

MAHINDRA WORLD CITY (JAIPUR) LIMITED, JAIPUR

Bid for Construction of Road in DTA Phase III (177 Acres) AT MWC JAIPUR

Tender No : MWCJL/HR/INFRA/DTAPH-III/177 ACRES/2012-13/T-22

Date of Issue : 09.05.2012

Tender Document issued to:

M/s

.....

.....

By

Mahindra World City (Jaipur) Limited

SEZ Project Office,
Vill & PO – Kalwara,
Tehsil- Sanganer, Dist-Jaipur -302029
Phone No: 09929093365/ 09929388806
Fax : 0141-3003474, 2243060

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MAHINDRA WORLD CITY (JAIPUR) LIMITED, JAIPUR

BID NO: MWCJL/HR/INFRA/DTAPH-III/177 ACRES/2012-13/T-22

**NAME OF WORK : Construction of Road in DTA Phase III (177 Acres) AT
MWC JAIPUR**

**PERIOD OF ISSUE OF BIDDING DOCUMENT : From: 09.05.2012 to 15.05.2012
Time: 10:00 Hours to 17:00 Hours**

**LAST DATE AND TIME FOR RECEIPT OF BIDS : Date: 19.05.2012 (Hard Copy submission)
Time: 17:00 Hrs.**

INVITATION FOR BID

(IFB)

MAHINDRA WORLD CITY (JAIPUR) LIMITED, JAIPUR

INVITATIONS FOR BIDS (IFB)

Date: May 09 , 2012

BID NO: MWCJL/HR/INFRA/DTAPH-III/177 ACRES/2012-13/T-22

1. **MAHINDRA WORLD CITY (JAIPUR) LIMITED** is developing an Multi Product SEZ & DTA Area and invites item rate Bids for the below mentioned works from the selected Bidders.
2. Tender document can be downloaded from our web site <http://www.mahindraworldcity.com/content.aspx?act=tenders&citi=jaipur>, Hard copies of the document can be taken from the below mentioned address;

Mahindra World City (Jaipur) Limited

SEZ Project Office,
Vill & PO – Kalwara,
Tehsil- Sanganer, Dist-Jaipur -302029
Phone No: 09929093365/ 09929388806
Fax : 0141-3003474, 2243060

3. Bids must be delivered to **Mahindra World City (Jaipur) Limited**, SEZ Project Office, Vill & PO Kalwara, Tehsil Sanganer, Dist- Jaipur -302029, on or before **17:00 Hours** on **19.05.2012** for Hard Copy submission. If the office happens to be closed on the date of receipt of the Bids as specified, the Bids will be received on the next working day at the same time and venue.
4. Other details can be seen in the Bidding documents.

TABLE - IFB 1

S. No.	Name of work	Cost of document (Rs.)	Period of completion
1	Construction of Horizontal Road in DTA Phase III (177 Acres) AT MWC JAIPUR	2000/-	Four Months(02)

The Cost of tender shall be in favour of **Mahindra World City (Jaipur) Limited** in the form of a Demand Draft or Banker's Cheque or Pay order payable at Jaipur.

SECTION 1: INSTRUCTIONS TO BIDDERS

(ITB)

Section 1: Instructions to Bidders

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A. General Instructions

1. Scope of Bid

- 1.1 **Mahindra World City (Jaipur) Limited (MWCJL)**, (referred to as Employer in these documents) invite Bids for the Construction of **Road in DTA Phase III (177 Acres) AT MWC JAIPUR** (as defined in these documents and referred to as "**the Works**") detailed in the table No.IFB-1.

2. One Bid per Bidder

- 2.1 Each Bidder shall submit only one Bid for one Contract.
2.2 Tender documents are not transferable

3. Cost of Bidding

- 3.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.

4. Site visit

- 4.1 The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a Contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

B. Bidding Documents

5. Contents of Bidding Documents

- 5.1 The set of bidding documents comprises the documents listed in the table below and addenda issued in accordance with Clause 8 (if any)

Part - I	Invitation for Bids containing Sections as below.	
Sections	1	Instructions to Bidders
	2	Letter of Acceptance and Agreement form
	3	Conditions of Contract
	4	Contract Data
	5	Forms of Securities
Part - II	Specifications	
Part - III	Tender Drawings	
Part - IV	Price Part (SCHEDULE OF QUANTITIES)	

6. Clarification of Bidding Documents

- 6.1 The Employer has the sole discretion to short list Bidders and shall inform them in writing by Fax/e-mail. These short listed Bidders (shall be known as Bidder/Bidders hereinafter) requiring any clarification of the Bidding documents may notify the Employer by Fax or may contact following person:

Mr. A.P.SINGH Sr. Manager (Contracts), Mobile No. 09929093365, 0141-3003411. The Employer will respond to any request for clarification all such quarries shall be made at least three (03) days before date of submission of Bids as per *Clause 16*.

The contractor shall submit Bid Security for a amount of **Rs. 50,000/- (fifty Thousand Only)**. The Bid Security of tender shall be in favour of **Mahindra World City (Jaipur) Limited** in the form of a Demand Draft or Banker's Cheque or Pay order payable at Jaipur valid for a period of 120 days from the date of submission of the tender documents..

C. Preparation of Bids

7. Language of the Bid

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

8. Documents comprising the Bid

8.1 The Bid submitted by the Bidder shall comprise the following:

- a) The SCHEDULE OF QUANTITIES wherein the Bidder shall fill in the rates duly signed and stamped by the Bidder on each page.
- b) Specifications and Drawing Volumes duly signed and stamped by the Bidder on each page.
- c) any other materials required to be completed and submitted by bidders in accordance with these instructions

The Price Part (SOQ) shall be filled in without exception.

9. Bid Prices

9.1 The quoted item rates shall be deemed inclusive of all costs for material, labour, plant, EPF, Workmen Compensation, taxes, duties, royalties, levies, service tax etc, equipment, overhead, supervision, profit, preliminaries, all temporary works, night works, shift works, storage facility, security, working with site constraints, working with full compliance to all requirement, restrictions etc. from all relevant authorities.

9.2 The item rate quoted by the Bidder shall be fixed for the duration of the Contract and shall not be subject to adjustment on any account whatsoever.

10. Currencies of Bid and Payment

10.1 The rates and the prices given are in Indian Rupees.

11. Bid Validity

11.1 Bids shall remain valid for a period not less than 60 (sixty) days after the date for Bid submission specified in *Clause 16*. A Bid corrected by the Bidder as valid for a shorter period shall be rejected by the Employer as non-responsive.

12. Contract Price

The Contract Price will remain fixed during the extended period of validity, if any.

13. Bid Security

13.1 The Employer on his sole discretion will notify the Bidder (as per *Sub-Clause 6.1*) for negotiation. The Bidder shall furnish as a part of his Bid, a Bid security in the amount as shown in column 4 of the table IFB-1 or as notified by the Employer before participating in negotiations. The Bid security shall be in favour of **Mahindra World City (Jaipur) Limited** in the form of a Demand Draft or Banker's Cheque or Pay order payable at Jaipur.

- 13.2 The Bid Security of unsuccessful Bidders will be returned within 30 days of the end of the Bid validity period specified in **Sub-Clause 11.1**.
- 13.3 The Bid Security of the successful Bidder will be adjusted with Performance Security when the Bidder has signed the Agreement and furnished the required Performance Security.
- 14. Format and Signing of Bid**
- 14.1 The Bidder shall prepare the Bid as specified in **Clause 8** in One(01) copy.
- 14.2 The Rate in the original and one duplicate copy of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder. All pages of the Bid where entries or amendments have been made shall be signed by the person or persons signing the Bid.
- 14.3 The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Bidder, in which case such corrections shall be signed by the person or persons signing the Bid.

D. Submission of Bids

15. Sealing and Marking of Bids

- 15.1 The Bidder shall submit the original Bid in one sealed envelop marking as “**Bid for Construction of Road in DTA Phase III (177 Acres) AT MWC JAIPUR**”

Financial Bid shall contain

Part – IV : SCHEDULE OF QUANTITIES wherein the Bidder shall fill in the unit rates in digits and words and each page duly signed and sealed.

- 15.2 The envelope shall be addressed to the Employer at the following address:

Mahindra World City (Jaipur) Limited

SEZ Project Office,
Vill & PO – Kalwara,
Tehsil- Sanganer, Dist-Jaipur -302029
Phone No: 09929093365/ 09929388806
Fax : 0141-3003474, 2243060

16. Deadline for Submission of the Bids

- 16.1 Bids must be received by the Employer at the address specified above no later than **17:00** hours on **19th May 2012**. In the event of the specified date for the submission of Bids declared a holiday for the Employer, the Bids will be received up to the appointed time on the next working day.
- 16.2 The Employer may extend the deadline for submission of Bids by issuing an amendment indicating the revised deadline.

E. Bid Opening and Evaluation

17. Process to Be Confidential

- 17.1 Information relating to the examination, clarification, evaluation, and comparison of Bids and recommendations for the award of a Contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.

18. Correction of Errors

- 18.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:
- (a) Where there is a discrepancy between the rates in figures and in words, the rate in words will govern; and
 - (b) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.
- 18.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected.

19. Employer's Right to Accept any Variation

- 19.1 The Employer reserves the right to accept or reject any variation, deviation from the Bid document, or any alternative offer. Variations, deviations and alternative offers and other factors which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Bid evaluation.

F. Award of Contract

20. Award Criteria

- 20.1 The Employer will negotiate with the Bidder whose Bid has been determined to be substantially responsive to the Bidding documents. On completion of negotiations the Employer will award the Contract to the most suitable Bidder.

21. Employer's Right to Accept any Bid and to Reject any or all Bids

- 21.1 Notwithstanding **Clause 19**, the Employer reserves the right to accept or reject any Bid or part of the Bid, 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 the Employer's action.

22. Notification of Award and Signing of Agreement

- 22.1 The Bidders whose Bid has been accepted will be issued Letter of Intent incorporating the final negotiated value of contract and major terms agreed mutually. Detailed work order comprising final negotiated item rates and detailed terms negotiated and agreed mutually shall be issued in due

course alongwith form of agreement provided in bidding documents incorporating all agreements between parties.

23. Performance Security

- 23.1 Within 10 days of receipt of the Letter of Intent, the successful Bidder shall deliver to the Employer a Performance Security in any of the forms given below for an amount equivalent to **5 % of the Contract price**.
- a bank guarantee in Employer's prescribed format.; or
 - Bank draft, in favour of **Mahindra World City (Jaipur) Limited** payable at **Jaipur**.
- 23.2 If the performance security is provided by the successful Bidder in the form of a Bank Guarantee, it shall be from a Nationalised/Scheduled Bank acceptable to Employer and shall be in Employer's prescribed format.
- 23.3 Failure of the successful Bidder to comply with the requirements of **sub-Clause 23.1** shall constitute a breach of Contract, cause for annulment of the award and any such other remedy the Employer may take under the Contract, and the Employer may resort to awarding the Contract to any other Bidder, on sole discretion of Employer.

24 Corrupt or Fraudulent Practices

- 24.1 The Employer expects the Bidders, Suppliers, Contractors, and Consultants, observe the highest standard of ethics and integrity during the procurement and execution of such Contracts .Therefore, the Employer will reject the Bid and blacklist such Bidder, barring him from participation in future Bidding in the event he found indulged in any malpractice such as bribe, or other inducements to any person with a view to influence the placing of the Contract

SECTION-2

LETTER OF INTENT AND AGREEMENT FORM

Table of Forms:

- **LETTER OF INTENT**
- **AGREEMENT FORM**
- **WORK ORDER**

Letter of Intent
(Letterhead of the Employer)

To,

.....
.....

Dear Sirs,

This is to notify that your Bid and subsequent negotiations for the execution of **Construction of Road in DTA Phase III (177 Acres) AT MWC JAIPUR** for the negotiated Contract Price of Rs..... (Rupees) is hereby accepted by Mahindra World City (Jaipur) Limited.

You are hereby requested to furnish Performance Security in the format attached herewith for an amount of Rs. within ten (10) days, of receipt of this Letter Of Intent, valid up to 30 days and sign the Contract, failing which action as per Sub-Clause 23 of Instruction to Bidders shall be taken.

Thank you

Yours faithfully,

Head (Infra. & Dev.)

Mahindra World City (Jaipur) Limited

SEZ Project Office,

Vill & PO – Kalwara,

Tehsil- Sanganer, Dist-Jaipur -302029

Phone No: 09929093365/ 09929388806

Fax : 0141-3003474, 2243060

Agreement Form

Agreement

This Agreement, made the _____ - 2011, between **Mahindra World City (Jaipur) Limited** (hereinafter called “the Employer”) of the one part and

_____ [name and address of Contractor] (hereinafter called “the Contractor”) of the other part.

Whereas the Employer is desirous that the Contractor execute **Construction of Road in DTA Phase III (177 Acres) AT MWC JAIPUR**

(Bid No. **MWCJL/HR/INFRA/DTAPH-III/177 ACRES/2012-13/T-22** (hereinafter called “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein, at a Contract price of Rs. _____ (Rupees _____)

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all aspects with the provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
4. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - i) Letter of Intent;
 - ii) Work order;
 - iii) Contractor’s Bid;
 - iv) Contract Data;
 - v) Conditions of Contract (including Special Conditions of Contract);
 - vi) Specifications;
 - vii) Drawings;
 - viii) SCHEDULE OF QUANTITIES and Rates; and
 - ix) Any other document listed in the Contract Data as forming part of the Contract.

In witness whereof the Parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of

_____ was hereunto affixed in the presence of:

Signed, Sealed and Delivered by the said _____

In the presence of:

Binding Signature of Employer _____

Binding Signature of Contractor _____

SECTION 3: CONDITIONS OF CONTRACT

General Conditions of Contract

A. General

1. Definitions

- 1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

SCHEDULE OF QUANTITIES or SOQ means the priced and completed SCHEDULE OF QUANTITIES and rates forming part of the Contract.

The **Contract** is the Contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in **Clause 2.2** below.

The **Contract Data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or corporate body who has been awarded the Works by the Employer.

The **Contractor's Bid** is the completed Bidding document submitted by the Contractor to the Employer.

The **Contract Price** is the price stated in the Work order and thereafter as adjusted in accordance with the provisions of the Contract.

Date of Commencement is the date as stated in the Letter of Intent from the Employer to the Contractor.

Days are calendar days; **months** are calendar months.

A **Defect** is any part of the Works not completed in accordance with the Contract.

The **Defects Liability Period** is the period named in the Contract Data and calculated from the Actual Completion Date.

The Employer is the Party who will employ the Contractor to carry out the Works.

Engineer in Charge shall be HEAD (Infrastructure & Development) of the Employer or person nominated by him.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer in Charge by issuing an extension of time.

The **Actual Completion Date** is the date on which the Engineer in Charges shall issue the Completion Certificate as per **Clause 33**

Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.

Plant is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.

The **Site** is the area defined as such in the Contract Data.

Specification means the Specification of the Works referred in the Contract and any modification or addition made or approved by the Engineer in Charge in writing.

Temporary Works are works designed, constructed, installed, and removed by the Contractor which are needed for construction or installation of the Works.

A **Variation** is a written instruction given by the Engineer in Charge which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

Party and Parties is the Employer and the Contractor individually and the word Parties shall be construed accordingly

Relevant Authority shall mean all Parties which have jurisdiction on the works.

2. Interpretation

- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer in Charge will provide instructions clarifying queries about the Conditions of Contract.
- 2.2 All Contract Documents, all correspondence and communications to be given, and all other documentation to be prepared and supplied under the Contract shall be written in **English**, and the Contract shall be construed and interpreted in accordance with that language.
- 2.3 If any of the Contract Documents, correspondence or communications are prepared in any language other than English then the English translation of such documents, correspondence or communications shall prevail in matters of interpretation.
- 2.4 The documents forming the Contract shall be as follows and their order of priority shall be interpreted in the given order
 - (i) Work order
 - (ii) Agreement
 - (iii) Letter of Intent.
 - (iv) Priced schedule of quantities
 - (v) Contract Data
 - (vi) Conditions of Contract including Special Conditions of Contract
 - (vii) Specifications
 - (viii) Drawings
 - (ix) Any other document listed in the contract data as forming part of the contract

3. Legal Construction.

Subject to provision of clause, the Work Order shall be in all aspect, construed and operated as Contract under Indian Contract Act 1872, and in accordance with Indian Laws enforce for the time being and is subject to the jurisdiction of the court, **Jaipur**.

4. Communications

4.0 Communications between Parties which are referred to in the conditions are effective only when given in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

5. Personnel

The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer in Charge. The Engineer in Charge will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.

If the Engineer in Charge or Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or his work force the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

6. Insurance

6.1 Notwithstanding that the Contractor is to indemnify The Employer. The Contractor All Risks and Workmen's Compensation insurance policies to cover the whole project and without limiting the obligations, responsibilities, duties and/or liabilities of the Contractor, the Contractor shall effect at his own costs for others insurance policies deemed necessary in the joint names of The Employer and Contractor to cover the Contract works as given below Insurance requirements are as under:

Sr. No.	Policy for	Insurance cover required
1	All risk insurance for works	By Contractor
2	Loss or damage to Employer's Equipment & material.	By Contractor
3	Other Employers property	By Contractor
4	Personal injury or death insurance: a) Third Party	By Contractor
	b) For Contractor's Employee	By Contractor Contractor should ensure such insurance is in force through out the Contract period (Including defect liability period) and necessary proof to be submitted before the commencement of the project and at least a fortnight before the expiry of current insurance. The Contractor should indemnify and include in the policy the Employer
5	Motor Vehicle Insurance	Comprehensive insurance policy to be taken by contractor as per statutory requirement.
6	Third Party liability insurance (Including the name of Employer)	By Contractor Minimum cover Rs. 10 Lacs.
7	Contractor's Equipments (Including liability arising out of usages of such equipment)	By Contractor.

7. Possession of the Site

7.1 The Employer shall give possession of the Site to the Contractor.

8. Instructions

8.1 The Contractor shall carry out all instructions of the Engineer in Charge which comply with the applicable laws where the Site is located.

9. Settlement of Dispute

If any dispute of any kind whatsoever shall arise between the Employer and the Contractor in connection with or arising out of the Contract, including without prejudice to the generality of foregoing, any question regarding its existence, validity or termination or the execution of the works, whether during the process of works or after completion and whether before or after termination or breach of the Contract the Parties shall seek to resolve any such dispute or difference by referring the matter to Engineer in Charge. The Engineer in Charge will give its decision within fifteen (15) days of referring the dispute, either Party if not in Agreement with Engineer in Charge's decision, may within fifteen days of decision by the Engineer in Charge refer to the senior management of the Employer, who will give its decision within thirty (30) days of referring the dispute. Either Party if not in Agreement with senior management's decision, may refer to arbitration pursuant to **Clause no. 10** of General Conditions of Contract.

10. Procedure for Disputes Resolution

10.1 The Arbitration shall be conducted in accordance with the arbitration procedure stated below.

The procedure for arbitration will be as follows:

- (a) In case of dispute or difference arising between the Employer and a Contractor relating to any matter arising out of or connected with this Agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of three (03) arbitrators one each to be appointed by the Employer and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding arbitrator. In case of failure of the two arbitrators appointed by the Parties to reach upon a consensus within a period of thirty (30) days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Dispute Resolution (India).
- (b) If one of the Parties fails to appoint its arbitrator in pursuance of sub-Clause (a) and (b) above within 30 days after receipt of the notice of the appointment of its arbitrator by the other Party, then the Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Dispute Resolution (India), both in cases of the Foreign Contractor as well as Indian Contractor, shall appoint the arbitrator. A certified copy of the order of the Indian Council of Arbitration /President of the Institution of Engineer in Charges (India)/The International Centre for Alternative Disputes Resolution (India), making such an appointment shall be furnished to each of the Parties.
- (c) Arbitration proceedings shall be at Jaipur, Rajasthan, India, and the language of the arbitration proceedings and that of all documents and communications between the Parties shall be English.
- (d) The decision of the majority of arbitrators shall be final and binding upon both Parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each Party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such Party or on its behalf shall be borne by each Party itself.

- (e) Where the value of the Contract is Rs.50 lacs and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by Agreement between the Parties; failing such Agreement, by the appointing authority, namely the Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India).
- (f) Performance under the Contract shall continue during the arbitration proceedings and payments due to the Contractor by the owners shall not be withheld, unless they are the subject matter of the arbitration proceedings.

B. Time Control

11. Avoidance Of Delay

- 11.1 It is paramount that the Contractor shall constantly plan his work so as to most efficiently utilize all or any available part or parts of the site, any completed part or parts of another Contractor's works which is to be integrated into the Contract Works (if any), the available drawings and all others matters as are available to him, as well as his own resources in order to avoid or reduce any standstill and down time.
- 11.2 In event that the Contractor cannot commence or proceed with a particular part of the Contract Works as per the programme furnished to the Employer in accordance with **Clause 11.1**, for any reason whether attributed to the Contractor or not, the Contractor shall be obliged to reschedule and proceed with other parts of the Contract Works at no costs to the Employer to ensure that the completion date of the Contract Works will be met.
- 11.3 Should the Contractor fall behind any program submitted in accordance with Clause 11.2, due to any act, default, neglect or omission of the Contractor and requires over-time, night work or shift work and /or an increase of man power and/or construction plant to regain the scheduled progress (whether or not instructed by the Employer), the cost of such measures shall be borne by the Contractor.
- 11.4 Within the time stated in the Contract Data the Contractor shall submit to the Engineer in Charge for approval a Construction Program including Environmental Management Plan.
- 11.5 The Engineer in Charge's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Engineer in Charge again at any time. A revised Program is to show the effect of Variations.

12. Extension of the Intended Completion Date

- 12.1 **Time shall be of the essence with respect to the commencement and completion as per the key Contractual dates as mentioned in the Contract Data as Milestones for the execution and completion of the Contract Works as stated.**
- 12.2 The Contractor acknowledges that a high rate of working is required to achieve the Dates for Completion of the Contract Works and Contractor shall be deemed to have allowed for shift working, sufficient plant, labour, flood lighting and any or all other measures to achieve the same.
- 12.3 The Dates of Completion of the Contract Works may be extended by The Employer subject to compliance by the Contractor with **Clause 11** (Avoidance of Delay), by such period which reasonably reflects any delay in completion of the Contract Works which, notwithstanding due diligence and taking of all reasonable steps by the Contractor to avoid or reduce the delay as provided for in **Clause 11**, is caused:-
- a) By the occurrence of an event of Force Majeure;
 - b) By a delay in handing over of the Site or part of the Site by The Employer after the Dates for Commencement of the Contract Works;
 - c) Any variations requested by The Employer;
 - d) By other Contractors carrying out works not forming part of the works to be carried out under the Sub Contract, and employed by the Employer;
 - e) By an instruction to suspend the Contract Works issued by the Employer pursuant to this Contract provided that such suspension is not due to the fault of the Contractor;

- f) If the Employer has delayed in providing materials, drawings, instructions and/or approvals where Employer is to seek the approval, which have been requested by the Contractor in writing, and which request is neither too early nor too late for the timely completion of the Contract Works;

and which affects the Contract Works PROVIDED that such delays are not due to the Contractor. PROVIDED FURTHER THAT if, while the Contractor is continuing works during the period when liquidated and ascertained damages are being deducted, The Employer gives instruction or matters occur which would entitle the Contractor to an extension of time then The Employer shall assess and give the Contractor an extension of time and so notify the Contractor accordingly.

- 12.4 It shall be a condition precedent that the Contractor shall notify The Employer in writing of any factors and the relevant Contract provision (if any) which Contractor considers entitles Contractor to an extension of time together with a statement of :
- a. the reason why the delay in completion of the Contract Works is likely to result or has resulted;
 - b. an estimate of the period by which the Contract Works are likely to be or had been delayed; and
 - c. details of steps that the Contractor proposes to take to avoid or reduce the delay;
- within seven (07) days of the commencement or occurrence of any such factor or such extension of this seven (07) days period as The Employer may allow.
- 12.5 The Contractor shall notify The Employer within fourteen (14) days of the cessation of the factors notified to The Employer under *sub-Clause 12.4*; to enable any provisions, that the Contractor may require to the proposed extended Date for Completion to be made as quickly as possible and such other particulars as shall be reasonably necessary to enable the Employer to properly consider the revision.
- 12.6 Without prejudice to any other grounds which do not entitle the Contractor to an extension of time, the Contractor shall not be entitled to extensions of time for delays resulting from weather conditions, or discrepancy in the Contract Documents, whether such events affect the Contract Works or not.
- 12.7 Notwithstanding the foregoing, the Employer shall not be obliged to take into account any circumstances that are not notified to The Employer in accordance with the periods referred to in *sub-Clause 12.3 and 12.4*.
- 12.8 The Employer shall as soon as is reasonably practical after receipt of the Contractor's notification furnished in accordance with the sub-Clause 11.3 determine and notify the Contractor in writing of any extension of time to which the Employer considers the Contractor is entitled under *Sub-Clause 12.4*.
- 12.9 For the avoidance of doubt, the Contractor had agreed NOT TO CLAIM for all costs, loss and /or expense suffered or incurred by reason of any extension of time granted by the Employer in accordance to Sub-Clause 11.4 herein except by reason of *sub-Clause 12.3 (b) 12.3 (d) 12.3 (f)*.

13. Force Majeure

- 13.1 Force Majeure" shall mean any event beyond the reasonable control of the Employer or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the Party affected, and shall include the following:
- 13.1.1 War, hostilities or warlike operations (whether a state of war be declared or not), invasion, act of foreign enemy and civil war, rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts, confiscation, nationalization, mobilization, commandeering or requisition

by or under the order of any government or de jure or de facto authority or ruler or any other act or failure to act of any local state or national government authority

13.1.2 Strike (other than strike by employees/staff/labour of Contractor or Sub-Contractor), sabotage, embargo, import restriction, epidemics, quarantine and plague.

13.1.3 Earthquake, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or nuclear or other natural disaster

14. Delays Ordered by the Engineer in Charge

14.1 The Engineer in Charge may instruct the Contractor to delay the start or progress of any activity within the Works.

C. Quality Control

15. Identifying Defects

- 15.1 The Engineer in Charge shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer in Charge may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer in Charge considers may have a Defect.
- 15.2 The Contractor shall permit the Employer's technical auditor to check the Contractor's work and notify the Engineer in Charge and Contractor of any defects that are found.

16. Tests

- 16.1 If the Engineer in Charge instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect all such test/tests shall be carried out by the Contractor at his own cost and shall be deemed to be included in the rates given by Contractor.

17. Correction of Defects

- 17.1 The Engineer in Charge shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 17.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Engineer in Charge's notice.

18. Uncorrected Defects

- 18.1 If the Contractor has not corrected a Defect within the time specified in the Engineer in Charge's notice, the Engineer in Charge will have the right to get the defect rectified by third party at risk & cost of the contractor, along with overheads.

D. Cost Control

19. SCHEDULE OF QUANTITIES

- 19.1 The SCHEDULE OF QUANTITIES shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.
- 19.2 The Schedule of Quantities is used to calculate the Contract Price. The Contractor Shall be paid for the actual quantities duly approved by the Engineer in Charge and the Contract Price shall be adjusted based on approved actual quantities of the Contract works as described in Schedule of Quantity for each item.
- 19.3 The rates set out in the Schedule of Quantity (SOQ) are fixed, firm and shall be inclusive of all costs and expenses.
- 19.3.1 Preliminaries works / costs such as site measurement, supervision, setting out, insurances, water, electricity/power, security/ watching, protection of public, working around and in connection with underground services, cables, pipes, etc. working/liaison with consultant engineers, Government and other Relevant Authorities etc.
- 19.3.2 All associated temporary and false works.
- 19.3.3 Preparation and maintenance of access and / or haul road, etc.
- 19.3.4 All tests, sampling, inspection, reports, opening up of works and related works (including testing on materials supply by Employer).
- 19.3.5 Material, labour, plant, equipment, machinery, tools and all related costs.
- 19.3.6 Shifts works, night works, overtime works, incentives, bonus, related labour employment costs etc.
- 19.3.7 Working with site constraints and conditions.
- 19.3.8 Liaison, including dealing and compliances with requirements, restrictions, etc. of all Relevant Authorities.
- 19.3.9 Overhead cost, profits, etc.
- 19.3.10 Protection and maintaining all Contract works and any thing affected by the Contract works until completion handing over.
- 19.3.11 Any other costs and / or expenses deemed necessary for the due execution and completion of the works.
- 19.4 The rates as contained in the SOQ shall be inclusive of all taxes, duties and royalties applicable in the State of Rajasthan from time to time. The Contractor accepts that all taxes on the Contract shall be to Contractor's account. Employer shall deduct Tax Deduction at Source (TDS) for such taxes at the rates fixed and revised by Relevant Authorities from each payment/bill due to Contractor. Employer shall issue TDS certificate in favour of Contractor for the TDS so recovered.
- 19.5 The rates as contained in the SOQ shall also be inclusive of all PF, ESI etc. and all other payment as per the statutory requirements. The Contractor shall produce proof of compliance of such requirement to Employer. In the event that the Contractor failed to produce such proof / paying such payment, Employer shall pay such payment direct (but is not obliged) to the Relevant Authorities and recovered the same from whatsoever monies due or to become due to the Contractor.

20.0 ALTERATIONS, ADDITIONS AND OMISSIONS

20.1 Variations

The Construction Manager shall have power:

- (a) to make alteration in, omissions from, additions to, or substitutions for the original specifications, Drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and
- (b) to omit a part of the Works in case of non availability of a portion of a Site or for any other reasons and the Contractor shall be bound to carry out the Works in accordance with any instruction given to him in writing signed by the Construction Manager and such alterations, omissions, additions or substituted work which the Contractor may be directed to do in the manner specified above on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.

The time for completion of Works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the Contractor, in the proportion, which the additional cost of the altered, additional or substituted work, bears to the original tendered value.

20.2 Valuation of Variations

Rates for such altered, additional or substituted work shall be determined by the Construction Manager as follows:

- (a) If the rate for which altered, additional or substituted item of work is specified in the Schedule of Quantities, the Contractor shall carry out the altered, additional or substituted items at the same rate. In the case of composite tenders, when two or more Schedules 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 lowest applicable rate for the same item of work in the other Schedules of Quantities.
- (b) If the rate for any altered, additional, or substituted item of work is not specified in the Schedules of Quantities, the rate for that item shall be derived from the rate for the nearest similar item specified therein. In case of composite tender 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 the Works in which the deviation is involved failing that from the lowest of the nearest similar items in other Schedules of Quantities.
- (c) If the rate for any altered, additional or substituted item of work cannot be determined in the manner specified in sub-para (a) & (b) above, the Contractor shall within 15 days of the date of receipt of the order to carry out the said work, inform the Construction Manager of the rate which he proposes to claim for such item of work, supported by analysis of the rate claimed, and the Construction Manager shall, within one month thereafter, after giving due consideration to the rate claimed by the Contractor, determine the rate on the basis of market rate(s). Rates of these items shall be decided by the Construction Manager before execution on the basis of rate analysis in both cases whether contractor submit the rate analysis or not. The rate analysis shall be derived on the basis of CPWD rate analysis and if the item is not listed in CPWD rate analysis, labor factor will be decided by physical verification. The prevailing market rates for materials and minimum wages as decided by the government for labor rates shall be considered in the rate analysis. **Contractor shall be paid 15% over material plus labor cost, towards profit, overhead and taxes etc.** However,

Construction Manager shall take approval from the Employer before finalization of rates and Employer's decision will be final and binding.

20.3 Extent of Variations

- (a) Quoted rates for all items shall be firm, fixed and binding on the Contractor irrespective of any variations of quantities of individual items stated therein up to $\pm 50\%$ variation of Contract value as a whole.
- (b) The amount due to price variation on account of escalation if payable in terms of Contract shall not be included in the payment of work done covered under Schedule of Quantities and prices for the purpose of working out the overall deviation limit of $\pm 50\%$ on the Contract value.
- (d) For variations beyond $+50\%$ (thirty percent) of Contract value, the rates for individual items contributing to the variations in quantities beyond $+ 60\%$ will be worked out on the basis of the rate analysis to be finally approved by the Owner. Market rates shall be determined by a committee comprising representatives of Employer and Construction Manager. The rates for the above items will be applicable only for the quantities beyond $+ 60\%$ variation of the individual items.

21. Terms of Payment

- 21.1 The Employer shall pay the Contractor for work done in accordance with the Contract, approved, accepted, and verified by the Engineer in Charge for these works.
- 21.2 The quantities paid in Interim Payment certificates shall be provisional quantities and subject to final assessment based on the re-measurement of work properly done on site or from approved construction drawings whichever is applicable.
- 21.3 Amount properly due to the Contractor shall be paid within twenty (20) days upon Contractor's submission of monthly invoice for works completed; which are subject to verification by the Employer authorized representative on the work done pursuant to the approved construction drawings. The Contractor shall submit details and proper statement of claims detailing the works completed according the Schedules of Quantities. Upon receiving detail and proper statement from the Contractor, the Employer shall verify the details stated in the statement and issue the payment certificate to the Contractor.

22. Tax

- 22.1 The rates quoted by the Contractor shall be deemed to be inclusive of all taxes which are applicable for DTA Area (Non SEZ) except Service tax which shall be paid by MWCJ. Contractor will see that he has considered all taxes he has to pay for the performance of this Contract. TDS & other applicable taxes shall be deducted by MWCJ.

23. Currencies

- 23.1 All payments shall be made in Indian Rupees.

24. Retention

- 24.1 Retention Money at the rate of 5 % of the value of work done for each running bill will be deducted until the actual completion of whole work, up to a maximum of 5% of Contract Price.
- 24.2 Retention money shall be refunded within 30 days after discharge of defect liability period.
- 24.3 No retention sum shall be deducted from interim progress payment subject to the submission of an unconditional bank guarantee at the time of award of work against the retention money equivalent to 5 % of the Contract Price which would valid up to 90 days after discharge of defect liability period.

25. Supply of Material

- 25.1 The Employer shall supply following material for incorporation into permanent works on reconciliation basis, free of cost. Wastage at a rate of 3% will be permitted for reinforcement steel only. For quantity of consumption in excess of allowed values, deduction will be effected from the Contractor's bill at current market price or Employer's average purchase price plus 25% whichever is higher.

Sr. No.	Material	Allowed Wastage	Remark	Supply Location
1	Steel Reinforcement	3%	In form of scrap & to be returned to MWCJL	Ex-Site
2	Cement	Nil	-	Ex-Site

However, the Employer reserves the right to supply any other material / materials also and the Contractor acknowledges that such supply of material shall affect his rates quoted in Schedules of Quantities.

- 25.2. The materials provided/supplied by the Employer shall continue to rest with the Contractor till the works are handed over to the Employer. The Contractor shall not utilize such supplied material or deal with them in any manner whatsoever except for use in execution of permanent works under this Contract.
- 25.3 The Contractor shall submit his material requirement schedule to the Employer minimum four (04) weeks in advance or as advised at the time of commencement of works. The Contractor shall submit bar bending schedule and quantity calculation to Employer prior to the supply of material along with the material requisition.
- 25.4 All material supplied to the Contractor shall be unloaded and safely and properly stored by the Contractor at his own cost and risk. The Employer in any event shall not be responsible for any loss, damage, theft, pilferage etc.
- 25.5 The Contractor shall maintain a proper account of all such material and shall submit returns and documents of consumption. The Contractor shall submit a statement with each running bill to Employer reconciling the quantity of material drawn from Employer and quantities consumed.
- 25.6 In case of steel of cut lengths of bars below the following size shall be ranked as wastage. Cut bars higher lengths shall be treated as prime steel:
- i) bars of 16 mm dia and above dia – 4 m long
 - ii) bars of below 16 mm dia – 2 m long
- Rolling margin shall be established for every lot of steel and for every diameter between the Engineer in Charge and the Contractor.
- 25.7 The free issue steel shall be used in the works as per the Scope Of Works pursuant to **Clause 2** of Special Conditions Of Contract. 3% wastage in the form of scrap steel shall be allowed to the Contractor. The scrap steel shall be returned to the Employer
- 25.8 For reconciliation purpose, the consumption of any material (supplied by the Employer) shall be calculated based on CPWD consumption co-efficient, however for mix design materials coefficient derived from the approved mix design shall be taken into account.

- 25.9 The empty cement bags (95% of the total consumption) shall be returned to the employer, failing which the penalty at the rate of Rs. 2/- per bag shall be recovered from the contractor's bill (s).

28 Liquidated Damages

- 28.1 If the contractor fails to complete the works by the date of completion as stated in the Tender or within extended time as per agreed project baseline schedule, the Owner shall withhold a sum calculated at the rate of 0.5 % of the total contract value per week (or part thereof) of delay as liquidated damages for the period during which the said work shall so remain or have remained in-complete. The owner may deduct such damages from any money's otherwise payable to the contractor under this contract, up to a maximum of 10.0 % of the total contract value after which Owner will have right to terminate the contract and claim for compensation from contractor for the financial losses on account of delay of project. The contractor admits that the loss shall always be caused if there is failure on its part.
- 28.2 The delay shall be assessed based on average delay over all due milestones. Reconciliation statement for Project Tracking giving detail of delay, duly verified by Engineer-in-Charge / project manager shall be submitted along with monthly running bills.
- 28.3 The Liquidated Damages imposed for not achieving intermediate milestone shall be subjected to refund/adjustment in case of Contractor achieve the final Milestone with the period as stipulated in the Contract.
- 28.4 Time shall be of the essence with respect to the commencement and completion as per the key Contractual dates for the execution and completion of the Contract Works as stated in Contract Data, and payment or deduction of liquidated damages shall not relieve the Contractor from his obligation to complete the work as per agreed construction program and milestones or from any other of the Contractor's obligations and liabilities under the Contract.**

29 Bonus

- 29.1 N.A

30. Advance Payment

- 30.1 Employer shall make advance payment to the Contractor of the amounts stated in the Contract Data by the date stated in the Contract Data, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The guarantee shall remain effective until the recoupment of advances, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor.
- 30.2 The Contractor is to use the advance payment only to pay for Equipment, Plant and Mobilization expenses required specifically for execution of the Works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other relevant documents to the Engineer in Charge.
- 30.3 The advance payment shall be recovered by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance (mobilization and equipment only) payment or its repayment in assessing valuations of work done, Variations, price adjustments or Liquidated Damages.

31. Performance Security

- 31.1 The Performance Security in the form of unconditional bank guarantee shall be provided to the Employer no later than the date specified in the Letter of Intent and shall be issued in an amount equal to 5% of Contract Price from a Nationalised or Scheduled bank in the

Employer's prescribed format the Performance Security shall be valid until a date 30 days from the date of expiry of Actual Date of Completion.

32. Defect Liability and Cost of Repairs

- 32.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Actual Date of Completion and the end of the Defects Liability Periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions. The Contractor shall be responsible to make good at his own expense any defect which may develop within the period mentioned as Defect Liability Period in the Contract Data. The Employer shall give the Contractor a notice in writing about the defects and the Contractor shall repair the defect in maximum of seven (07) days. If the Contractor fails to repair/remove the defect, the Employer may execute the work by himself and deduct the expense towards the work from any monies due to the Contractor. The Employer shall have the right to appropriate all or part of the Retention Money towards the expense in repairing the defects.

E. Finishing the Contract

33. Completion

33.1 After completion of the work, the Contractor will serve a written notice to the Engineer in Charge to this effect. The Engineer in Charge upon receipt of this notice shall conduct a complete joint survey of the work within seven (07) days and prepare a defects list jointly. The defects pointed out by the Engineer in Charge or his nominee would be rectified by the Contractor within fourteen (14) days and thereafter acceptance report be signed jointly by the Contractor, Engineer in Charge and the Employer. And a '**Completion Certificate**' shall be issued to Contractor by Employer.

34. Taking Over

34.1 The Employer shall take over the Site and the Works within seven days of the Engineer in Charge issuing a certificate of Completion.

35. As Built Drawings

35.1 The Contractor shall supply "As Built" Drawings by the dates stated in the Contract Data.

35.2 If the Contractor does not supply the As Built drawings by the dates stated in the Contract Data, or they do not receive the Engineer in Charge's approval, the Engineer in Charge shall withhold the amount stated in the Contract Data from payments due to the Contractor.

36. Termination of Contract

36.1 Due to any default by the Contractor, the Employer shall be entitled to terminate the Contractor's employment under the Contract by giving one (01) week advanced notice in writing by stating the reason. The date after seven (07) days from the date of issuance of the Termination Notice shall hence be defined as "Date of Termination". The Contractor will be paid for all works duly and properly completed up to the Date of Termination but shall not be entitled to anticipated profit or any consequential or indirect loss or damage and shall hold harmless and indemnify the Employer against Contractor's Contractors/suppliers or third parties arising from termination under this Clause.

36.2 The Contractor had agreed in the event of delay in progress or non-achievement of the Milestone Dates, The Employer shall reserve the sole discretion right in deploying its own plant and machinery or engaging third Party to speed up the Contractor's works and the Contractor's Contract shall be terminated with written notice at any point of time without any compensation or claims to be paid to the Contractor. All additional / extra cost incurred by The Employer shall be charged to the Contractor due to such event.

37. Payment upon Termination

37.1 Full payment to Contractor's workers, Contractors, suppliers and third parties engaged by the Contractor for any portion of the Contract works shall be paid in full by the Contractor and thereafter must be removed from site on or before the Date of Termination. If the Contractor failed to make full payment to these workers, Contractors, suppliers and third parties and/or remove them from site on the Date of Termination, then the Employer will carry out such duties on behalf of the Contractor. The Employer will recover all cost incurred due to the performing of such duties on behalf of the Contractor by making deduction from amount/s due to the Contractor or by any other process.

38. Release from Performance

38.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor the Employer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as

possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

F. Special Conditions of Contract

1. General

The Contractor is advised to note that the following Special Conditions are part of the Contract and he will not have any right to claim at any time for delays or for expenditure incurred by him in fulfilling the following special conditions.

2. Scope of Works

2.1 The Contract Works shall comprise of but not be limited to:-

2.1.1 Contract for the **Construction of Road in DTA Phase III (177 Acres) AT MWC JAIPUR**

2.1.2 Demarcation of routes of the related services and periphery of the plots with the help of Total Station machine with fixing points in the field after calculating the co-ordinates from the layout plan.

All the above shall be as per issued relevant drawings, Specifications, terms & conditions and other relevant National and International Standard Specifications and good engineering practices, safety measures as required all as per agreed construction methodology in consultation and coordination with and under the inspection of the Employer's personnel / design consultants.

2.2 All the Contract Works shall be executed in full compliance with the Specifications of the Contract and all requirements and always to the satisfaction of the Employer.

2.3 The Contractor shall be deemed to have inspected, tested and examined the site and surroundings and to have satisfied himself as to all the conditions, factors and risks which can be reasonably obtained or inferred from the inspections, tests and examinations that may influence or affect the progress and cost of Contract Works.

2.4 N.A

2.5 The Contractor shall resolve local constraints and problems, liaise, seek, and obtain any consent, permit, license, approval, etc. from all Relevant Authorities including paying all fees, charges, levies, etc all at his own cost.

2.6 Clearing all debris and disposing to location approved by Municipal authorities during progress of Contract works and before and after the dates of Completion.

2.7 All temporary works, haul/access roads that are necessary for the proper and due completion of the Contract Works.

2.0 Measurements & Payments

2.1 MOBILISATION ADVANCE

The Owner agrees to pay to the Contractor an interest free mobilization advance, of **10% (Ten percent) of Contract Value** , against submission of Bank Guarantee for an equivalent amount, strictly as per the format given by the Owner, valid for a period of one year or up to the Completion Period of the Project.

RECOVERY OF MOBILISATION ADVANCE

Recovery of Mobilisation Advance shall be made by deduction from the Contractor's running bills, in such a way that the entire advance is recovered by the time 80% of the gross value of the Contract is executed and paid.

2.2 Measurements

The works shall be measured net, notwithstanding any general or local custom, as per the method of measurement set out in bills of quantities and specifications and in respect of additional items of work as per the method of measurement specified in the C.P.W.D. Specifications 1977 Volume I & II and for item not covered by the C.P.W.D. Specifications, as per IS:1200 – Method of Measurement for Building Works (respective part), in that order of precedence.

The payable quantity (ies) against the executed work shall be determined on the basis of quantity certified, wherein certification conducted jointly by the Contractor and the Engineer-in-Charge. Work accepted, approved and certified by the Contract Dept. / PM, will only be paid for as specified in Bills of Quantities and payments shall be at the same rates.

2.3 Running Account Bills

The Contractor has to prepare and submit the Running Account Bills in triplicate once in a month along with details measurements in serially machine numbered register, abstract sheets, deviation statement and any specific instructions which may be given in this regard by the Engineer In-Charge shall also be attached to by the contractor. RA / Final Bill shall be submitted along with all compliances records along with summary as per Annexure C.

Running Bill Certification:

- 2.4 The Contractor shall prepare and submit running bill to the Engineer In-Charge once a month throughout the construction period considering that No payment shall be made for works estimated to cost less than rupees **5 (Five) Lacs**.
- 2.5 Within 21 days of receipt of the corrected bill from the Contractor, the Engineer In-charge/ Employer representative shall check the bill and forward the same to Manger Contract for verification for certification, who will certify the amount due to Contractor and recommend payment of the amount by the accounts department to the Contractor .
- 2.6 Within 07 days of receipt of the bill from Engineer In-Charge, account dept will release the payment along with certificate showing details pertaining to works done, total recoveries and statutory deductions.
- 2.7 Any running / interim Certificate of Payment given by the Infra / Account Dept. relating to work done or the materials delivered shall be adhoc in nature and may be modified or corrected by any subsequent interim Certificate or the Final Certificate of payment.
- 2.8 An interim adhoc payment within 07 days as assessed and max up to 60 % of the provisional bill amount may be certified by the Engineer-in-charge. Balance payment shall be made once Engineer-in-charge certifies quantity and item rate. Interim payment can be made within 07 days of engineer-in-charge certificate.

Final Bill payment

- 2.9 The Final Bill shall be submitted by the Contractor within two month of the date of Completion of the Work or if the work is completed earlier, within one month of such completion. The contractor shall give to the employer a detailed account of the total amount which he consider payable to him under the contract..
- 2.10 The final bill will be checked in terms actual measurement at site, quality of works and material supplied / used, approved extra items, by the Engineer In-Charge within **60** days from the date of the bill is received by the Engineer In-Charge, provided the contactor has complied with all

formalities as described in various clauses of the Contract and thereafter the same would be forwarded to the next concerned dept.

- 2.11 The payment of the final bill shall be made to the Contractor by the Employer within 15 days from the receipt of the Engineer in-charge approval certificate for payment.
- 2.11.1 No further claim shall be made by the Contractor in respect thereof even after submission of the final bill and the same shall be deemed to have been fully waived and absolutely extinguished.
- 2.12 The final billing shall be accompanied by all substantiating documents as required for running bills with the addition of the following items that shall be supplied by the contractor:
 - 2.12.1 All written guarantees / warranties and spares required by the Contract documents.
 - 2.12.2 Operation and Maintenance manuals and instructions for equipment and apparatus.
 - 2.12.3 Re producible and blue prints of all requisite As Built drawings along with the soft copy thereof on latest version of AutoCad software.

Certificate for payment format : (may be finalized later with the Engineer In-Charge)

	Value of Work done for Interim Certificate As per Contract	(1)
Less (-)	Deductions :	
	Retention 5% on '1' subject to a maximum of 5% on Contract Value	(a)
	Previous Payments made (Payment made till date including Advance/ Adhoc payments made upto the period of this bill)	(b)
	Deductions (a+b)	(c)
	Deduction on Govt. / Statutory liabilities such as TDS etc.	(d)
	Total Deductions (c+d)	(2)
	Net Value of This Bills (Amount payable)	(1 - 2)

3. Subcontract or Subletting of Works**3.1 Sub-Letting:**

3.1.1 No part of the Contract shall be sublet without the written permission of the Employer nor shall transfers be made by the 'Power of Attorney' authorizing others to carryout the work or receive payment on behalf of the Contractor.

3.2 Sub-Contract:

3.2.1 The Contractor is not permitted to subcontract any part of his works in this Contract without prior approval in writing from the Employer.

3.2.2 In any case, whether any part of the works is subcontracted or not; the principal liabilities of the works shall lie with the Contractor.

4. Tender Drawings

The drawings issued with these Tender Documents are Tender Drawings. Tender Drawings are prepared in such detail as are necessary to give a comprehensive idea of the works. The good for construction drawings will be issued during the construction stage based on the requirements as per the construction program submitted by the Contractor as per General Condition of Contract Clause 10.

5. Contract Drawings

5.1 The Engineer in Charge shall issue free of charge three sets of Contract Drawings, approved for construction, to the Contractor. Additional copies as and when required shall be supplied by the Engineer in Charge and costs shall be reimbursed by the Contractor.

5.2 The Engineer in Charge may from time to time during the course of the Contract issue the Contractor with revised Contract drawings and the Contractor shall ensure that all superseded drawings are removed from site and replaced by revised Contract Drawings.

5.3 The Contractor shall ensure that a complete up to-date list of drawing is maintained at site. All Contract Drawings shall be properly filed and indexed for ready reference.

- 5.4 The Contractor shall ensure that only the valid up to-date Contract Drawings are used for preparation of Working Drawings, setting out, construction, etc. shall be carried out as per valid Contract Drawings.
- 5.5 Working Drawings shall include shop and fabrication drawings for cross sections, bar bending schedules etc. as required by the Engineer in Charge.
- 5.6 The privilege of the authorship and ownership of drawing and designs of the building remains with Engineer in Charge. Drawings and design prepared by their Consultants shall be used only for the purpose specified in the Contract and all drawings issued shall be returned To Engineer in Charge after completion of works.

6. Additional Work

Any additional works, instructed during the Contract Period and within the Contract Amount, will be paid as per Schedule of Quantity rates and it shall not be considered as a cause for the Contractor to claim for delay, incurred overhead, mobilization etc.

7. Protection of the Works during Contract Period

It is clearly understood that any damage occurring to the Works (completed or under execution) is the Contractors responsibility and no claims will be entertained by the Employer since the matter shall be covered by the relevant Insurances.

8. Discrepancies in alignment

Discrepancies in alignment and levels etc. noticed during construction and/or on completion shall be rectified (including affected works executed by other Contractors) by the Contractor at his own cost and risk, Engineer in Charge's approval does not relieve the Contractor of his responsibilities.

9. Temporary Power and Water Supply

All costs, both for power supply and temporary installations and Power and Water required for construction and labour shall be borne by the Contractor.

10. Contractor's Facilities

10.1 Site Offices of the Contractor

The successful Tenderer is to provide and maintain a site office at a location approved by the Engineer in Charge, within 15 days from the date of issue of Notice to Proceed.

11. Safety on Site

Measures to ensure safety of workers and plant at site shall be taken by the Contractor. Excavations shall be protected by barriers and lighting shall be provided at night. motorable access to the site and within the site shall be maintained during the construction period. The Contractor shall designate a Safety Officer who will be in charge of all Safety Measures. The cost of all safety equipments and the cost of providing a safety officer at site would be deemed to be included in various Items of the SCHEDULE OF QUANTITIES and Rates. The Contractor will prepare a safety manual and submit for Engineer in Charge's approval before the commencement of work. Entire safety arrangement shall comply relevant safety norms and applicable IS codes in entire execution process.

12. As Built Drawings

The Contractor shall prepare As Built Drawings both in hard copy and in digital format.

The drawings shall be prepared for any given section of the work as soon as the work for that particular section is completed. Preparation of As Built Drawings shall keep pace with the work and shall not be

left over towards the end of the project. Three (03) hard copies and one soft copy of all drawings shall be submitted.

No separate payment will be made for the preparation of As-Built Drawings; Cost of preparation of As Built Drawing is deemed to be included in all other priced bill items.

13. Labour

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

The Contractor shall, if required by the Engineer in Charge, deliver to the Engineer in Charge a return in detail, in such form and at such intervals as the Engineer in Charge may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer in Charge may require. The Contractor shall ensure that there will not be any child labour.

The Contractor shall provide, or ensure that there is provided such number of suitable persons as adequate and appropriate in the circumstances for rendering first aid to his people if they are injured or become ill at work: and for this purpose a person shall not be suitable unless he has undergone:

Such training and has such qualifications as the Health and Safety Executive may approve for the time being in respect of that case of the class of case,

14. Housekeeping & Sanitation

- a) At the work site, an adequate supply of potable water must be provided, as well as clean drinking water dispensers. Potable water for clean up must be provided.

15. Drinking water

- b) In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.
- c) Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.
- d) Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or any other source of pollution.

16. Washing facilities:

- a) In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of Contract labour employee therein
- b) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

17. Latrines and Urinals

- a) Latrines shall be provided in every work place in adequate numbers.
- b) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times
- c) The Contractor shall at his own expense, carry out all instructions issued to him by the Engineer in Charge-in-charge to effect proper disposal of night soil and other conservancy work in respect of the Contractor's workmen or employees of the site. The Contractor shall be responsible for payment of any charges which may be levied by the municipal or cantonment authority for execution of such on behalf.

18. Canteens:

- a) In every work place where the work regarding the employment of Contract labour is likely to continue for six months and where in Contract labour numbering 100 or more

are ordinarily employed an adequate canteen shall be provided by the Contractor for the use of such labour.

- b) The canteen shall be maintained by the Contractor in an efficient manner.

19. Contractor's Other Obligations

- 19.1 All safety training and skill development of Contractor's workers and operators shall be carried out either by the Contractor or the Employer and all costs related to such training shall be borne by the Contractor.
- 19.2 The Contractor shall obtain all necessary approvals/ permission from the Relevant Authorities including where necessary securing the presence of the Relevant Authorities or their representative to inspect and supervise the operations in connection with the Contract Works. The Contractor shall bear all costs, fees, charges etc so imposed for the attendance of the Relevant Authorities or their representatives.
- 19.3 The Contractor shall be responsible for any damage caused by any work carried out by Contractor to the existing services and utilities whether shown or not shown in the drawings from whatsoever cause arising thereof and shall make good to its original condition at his own costs and expense to the satisfaction of the Employer.
- 19.4 Upon completion of the Contract Works the Contractor shall remove and clear all debris, waste and/or any excess materials, construction plant, and temporary works from the site and shall do all things to clear up the site which shall include any cleaning where instructed by the Employer to other areas affected by the Contract Works. During the Contract period the Contractor shall ensure that the site is kept clean and in proper order and free from rubbish, waste or debris and Contractor shall do all things necessary to prevent any damage to or pollution or the creation of any health or environmental hazard at or around or adjacent to the Site.
- 19.5 The Contractor shall defend (if requested to), save harmless and indemnify the Employer against all claims, demands, interest, penalties, proceedings, damages, loss, costs, charges and expenses arising out of or in connection with any failure, neglect or omission, by the Contractor to perform his obligations under the Contract or any damage to property (including the Contract Works) or injury to person (whether resulting in death or not) caused or contributed by the Contractor and/or his servants or agents or independent Contractors appointed by the Employer to carry out works on behalf of Contractor (whether or not such claims, losses and/or damages have been insured by the Employer). In addition, this indemnity shall include all legal costs incurred by the Employer as a consequence of such claim, demand or proceeding being made.
- 19.6 The Contractor shall, subject to this Contract and other obligations imposed by law, execute the Contract Works and provide all labour, materials, construction equipment and all things necessary and incidental for the Contract Works to the satisfaction of the Employer and / or the Relevant Authorities.
- 19.7 The Contractor shall bear all payments and other related costs on his own in connection with the execution and completion of additional, rectification, etc, works due to or caused by any act, default, neglect or omission by the Contractor. This shall also include the employment of consulting Engineer in Charges, professional experts and such other personnel as may be necessary for such works.
- 19.8 The Contractor acknowledges that he will not have any objection in re-structuring the Contract with respect to material and labour in order to realize the exemptions and benefits granted by the Government whenever required, and he will pass on such benefits to the Employer.
- 19.9 The Contractor accepts that in the event of supply of any material from Employers side pursuant to **Clause 25 (Supply Of Material)**. The Item rate quoted by the Contractor shall be re-calculated and the Contractor will not make any claim whatsoever in account of material part of the rates (including all profits, overheads, taxes etc. all) quoted by him in the Schedule of Quantities.

- 19.10 The Contractor has to Operate & Maintain all the plants & equipment, if Installed, for the period of 6 months from the certified date of commissioning. The contractor shall be bound to rectify all the defects or replacement of the equipment (s) within the guarantee period as mentioned in the Guarantee Card. The Contractor will train the Employer's staff to operate & maintain the equipment/ plant and will submit the copy of operation & maintenance manuals of the concerned equipment/plant to the Employer. All the spares & tools for the defect liability period shall be arranged by the contractor at his own cost.
- 19.11 The contractor has to submit the project quality plan for the work..

G. SAFETY MANUAL

CHAPTER 01

1.0. THE MAIN CONTRACTOR.

1.1. RELATIONSHIP WITH THE CLIENT.

A close relationship and continuous interaction must be maintained with the client by the Project Manager of the main or managing contractor. The client does have specific safety and health requirements to be observed and co-operation with his contractor, throughout the contract is essential. The prospective main contractors are given information on which to base their tenders and at the Tender Stage; the prospective contractors are expected to understand fully the Scope and Design Intent of these provisions.

1.2. Selection of sub contractors.

Management contractors should select sub or works contractors, using the same criteria of practical safety policy. Again, it must be ensured that the terms of contracts include adequate provision for safe working and for specified safety and health items.

1.3. Planning.

Detailed planning should take the following matters into account

- Know hazardous operations, e.g., use of cranes and site transport, steel erection, excavation and false work, scaffolding, roof work, demolition, asbestos removal, etc.
- Requirement for plant and equipment to ensure safe working, or ease of handling.
- The sequence of work and its phasing between contractors, to minimise the possibility of one contractor placing another contractor's men at risk. Where appropriate, the segregation of contractors should be considered.
- The need to provide information, instruction and appropriate training, both on general site safety and on hazards specific in the site. The latter could range from restricted zones, permit-to-work systems and lifting operation, to the wearing of safety helmets.
- The need for fire precautions and emergency procedures.
- The need for environmental monitoring and health surveillance.
- Site security and foreseeable risks to the public, including the need for directional and warning signs
- Safe access across the site for persons, vehicles and plant. Thought should be given to arrangements for keeping the site tidy, accommodation for site staff, welfare, first aid and other facilities
- The provision of safe places of work at different stages of the job, including the provision of scaffolding for a number of sub or works contractors.

1.4. Control.

Sub and works contractors should be briefed about the safety policy and site rules of the main contractor at an initial safety meeting. Decisions on all other matters affecting safety and health should be laid down so that the responsibilities of all parties are made clear before contractors start work. Such matters should include.

- Appropriate precautions and work methods for identified hazards or hazardous work.
- Necessary plant and equipment and arrangements for its provision, maintenance use and inspection.

- The question of trade union or other workforce safety representation and the need for a joint safety committee.
- Arrangements for some form of induction training for new-starters on site.
- Arrangements for any specialist training.
- Arrangements for promulgating safety and health information, e.g. on site notice boards.

It is important that such safety and health arrangements are reviewed at the first project meeting, where the site management can set the tone for the conduct of work by resolving, at an early stage, any difficulties which may arise.

1.5 Co-ordination.

The Project Manager, appointed by the main contractor, must be totally responsible for compliance with health and safety code. He must appoint a Chief Safety Officer and form a Safety Committee along with operatives from sub vendors. This Safety Committee will be Chaired by the Client's representative and sit twice a week and report to the Project Controller. The Project Manager must take suitable arrangements to ensure the effective co-ordination of the work of all contractors on site. He should ensure that he is kept informed on a day to day basis, of progress and problems which arise. Clear lines of communication should be set up between each contractor and the Safety Officer of the Main Contractor. Operatives must also know whom to contact over safety and health matters requiring action or a decision. Such effective co-ordination will be enhanced by ensuring that 'safety and health' figures prominently on the agenda of regular project meetings. Safety Committee's weekly report must be submitted to the Project Controller in every Project Meeting.

1.6 Monitoring.

Arrangements must be made for safety and health monitoring of the site on a regular basis. This will include, not only ensuring the safety of such items as scaffolding excavations and plant but also environmental matter such as hazardous dust fume noise etc. In all cases, the Project Manager should ensure that daily site inspections are carried out, by Safety Officer, more in depth inspections being done periodically by visiting safety advisers. It may be necessary for arrangements to be made for specialist occupational health and hygiene advice. The Check List for daily inspection is given in the following Chapters.

1.7 Records.

The Contractor should ensure that all statutory notifications, examinations and inspections are carried out. A copy of all the documents should be submitted to the Engineer-in-charge for his record.

1.8 Standards.

The following standards shall be followed, unless more onerous provisions have been specified in the Safety Provisions given in this Code.

IS: 3696 (Part I) - 1966 Safety code for scaffolds and ladders: Part I Scaffolds

IS: 3696 (Part II) - 1966 Safety code for scaffolds and ladders: Part II Ladders

IS: 3764-1966- Safety code for excavation work.

IS: 4082-1977- Recommendations on stacking and storage of construction materials at site (first revision)

IS: 4130-1976- Safety code for demolition of buildings (first revision)

IS: 4912-1978 -Safety requirements for floor and wall openings, railings and toe boards (first revision)

IS: 5121-1969- Safety code for piling and other deep foundations

IS: 5916-1970- Safety code for constructions involving use of hot bituminous materials.

IS: 7205-1974- Safety code for erection of structural steel work.

IS: 7969-1975- Safety code for handling and storage of building materials.

IS: 8989-1978- Safety code for erection of concrete framed structures.

1.9 Non Compliance of Safety and Health Provisions:

The Compliance of the Safety and Health provisions are of utmost important to the Client. The prospective contractors must note that the client will take a serious view of any non compliance report of Safety Committee. Based on Safety Committee's report, the Client has a right to order stoppage of work till rectification is carried out to the satisfaction of the Safety Committee and all stoppages on this account will be at the entire risk , costs and consequences of the Contractor.

CHAPTER 2.0

2.0 CONTRACTOR'S SAFETY INSPECTION CHECKS LIST.

Contractor _____ **Contract No.** _____
Project _____
Location _____
Type of Work _____
Date _____ **Checked By** _____

Sr	ITEM	STATUS	(Inspector) REMARKS
3.0	ACCIDENT PREVENTION ORGANISATION.		
3.1	Trained First Aid Person		
3.2	First Aid Kit.		
3.3	Safety Material Posted.		
3.4	Emergency Phone # Posted.		
4.0	HOUSEKEEPING & SANITATION		
4.1	General neatness of working areas.		
4.2	Regular disposal of waste and trash.		
4.3	Passageways and walkways clear.		
4.4	Adequate lighting		
4.5	Projecting nails removed.		
4.6	Oil and grease removed.		
4.7	Waste containers provided and used.		
4.8	Sanitary facilities adequate and clean.		
4.9	Drinking water tested and approved.		
4.10	Adequate supply of water.		
4.11	Drinking cups, Clean Dispensers.		
5.0	FIRE PREVENTION.		
5.1	Fire extinguishers identified, checked, lighted.		
5.2	Hydrants clear access to public thoroughfare open.		
5.3	Good housekeeping.		
5.4	NO SMOKING posted and enforced where needed.		
6.0	PERSONAL PROTECTION.		
6.1	Hard-hats		
6.2	Noise Level Exposure.		
6.3	Eye Protection.		
6.4	Safety Lines & Belts.		
6.5	Life Jackets.		
7.0	ELECTRICAL INSTALLATION.		
7.1	Adequate well insulated wiring.		
7.2	Fuses & GFI provided.		
7.3	Fire hazards checked.		
7.4	Electrical dangers posted.		

Sr	ITEM	STATUS	REMARKS
8.0	HAND & POWER TOOLS		
8.1	Tools and cords in good condition.		
8.2	Proper grounding.		
8.3	All mechanical safeguards in use.		
8.4	Tools neatly stored when not in use.		
8.5	Right tool being used for the job at hand.		
8.6	Wiring properly installed.		
8.7	Enough men used to handle material.		
9.0	LADDERS.		
9.1	Stock ladders in good condition.		
9.2	Stock ladders not spliced.		
9.3	Properly secured, top and bottom.		
9.4	Side rails on fixed ladders extend above top landing.		
9.5	Built-up ladders constructed of sound materials.		
9.6	Rungs not over 12 inches on centre.		
9.7	Stepladders fully open when in use.		
9.8	Metal ladders not used around electrical hazards.		
9.9	Proper maintenance and storage.		
10.0	SCAFFOLDING.		
10.1	All structural members adequate for use.		
10.2	All connections adequate		
10.3	Safe tie-in to structure.		
10.4	Ladders and working areas free of debris, snow, ice, grease.		
10.5	Proper footings provided.		
10.6	Passerby protected from falling objects.		
10.7	Supports plumb, adequate cross bracing provided.		
10.8	Guard rails and toe boards in place.		
10.9	Scaffold machines in working order.		
10.10	Ropes and cables in good condition.		
11.0	HOISTS, CRANES & DERRICKS.		
11.1	Inspect cables and sheaves.		
11.2	Check slings and chains, hooks and eyes.		
11.3	Equipment firmly supported.		
11.4	Outriggers used if needed.		
11.5	Power lines inactivated, removed, or at safe distance.		
11.6	Proper loading for capacity at lifting radius.		
11.7	All equipment properly lubricated and maintained.		
11.8	Signalmen where needed.		
12.0	MOTOR VEHICLES.		
12.1	Brakes, lights, warning devices operative.		
12.2	Weight limits and load sizes controlled.		
12.3	Personnel carried in safe manner.		
13.0	BARRICADES.		
13.1	Floor openings planked over or barricaded.		
13.2	Roadways and sidewalks effectively protected.		
13.3	Adequate lighting provided.		
13.4	Traffic controlled.		

Sr.	ITEM	STATUS	REMARKS
14.0	HANDLING & STORAGE OF MATERIALS.		
14.1	Neat storage area, clear passageway.		
14.2	Stacks on firm footings, not too high.		
14.3	Men picking up loads, correctly.		
14.4	Materials protected from heat and moisture.		
14.5	Protection against falling into hoppers and bins.		
14.6	Dust protection observed.		
15.0	EXCAVATION & SHORING.		
15.1	Shoring of adjacent structures		
15.2	Shoring and sheathing as needed for soil and depth		
15.3	Public roads and sidewalks supported and protected.		
15.4	Materials not too close to the edge of excavation.		
15.5	Lighting at night.		
15.6	Water controlled.		
15.7	Equipment at safe distance from edge.		
16.0	CONCRETE CONSTRUCTION.		
16.1	Forms properly installed and braced.		
16.2	Adequate shoring, plumbed and cross braced.		
16.3	Shoring remains in place until strength is attained.		
16.4	Proper curing period and procedures.		
16.5	Check heating devices.		
16.6	Adequate runways.		
16.7	Protection from cement dust.		
16.8	Hard-hats, safety shoes, shirts covering skin.		
16.9	Nails and stripped form material removed from area.		
17.0	MASONRY.		
17.1	Proper scaffolding.		
17.2	Masonry saws properly equipped, dust protection provided.		
17.3	Safe hoisting equipment.		

CHAPTER 3.0

3.0 ACCIDENT PREVENTION ORGANISATION.

3.1 Trained First Aid Person

A contractor shall provide, or ensure that there is provided, such number of suitable persons as is adequate and appropriate in the circumstances for rendering first aid to his employees if they are injured or become ill at work: and for this purpose a person shall not be suitable unless he has undergone –

- a) Such training and has such qualifications as the Health and Safety Executive may approve for the time being in respect of that case of the class of case, and
- b) Such additional training, if any, as may be appropriate in the circumstances of that case.

In practice, (a) refers to a trained first aider and (b) to an occupational first aider. In addition, a person who holds a current first aid certificate issued by registered medical association or Indian Red Cross Society will be classed as a “Suitable Person” for the purposes of Regulation.

For most sites, the contractor should ensure that at least one first aider is normally present when the number of employees at work is between 50 and 150, there should be at least one additional first aider for every 150 or so should ensure that sufficient first aiders are appointed to provide adequate coverage for each shift. Provisions for medical care must be made available by the contractor for every employee covered by the regulations. In the absence of infirmaries, clinics, or hospitals in proximity to the work site, properly trained and certified first aid personnel must be available, and first aid supplies must be provided by the contractor. Appropriate equipment for transportation of injured personnel to a physician or hospital must be provided for.

3.2. First Aid Kit

Regardless of the number of employees there must be at least one first-aid box on site. Every first aider and occupational first aider should have easy access to first-aid equipment, and provision should be made for every employee to have reasonably rapid access to first aid. Each box should be placed in a clearly identified and readily accessible location, and contain a sufficient quantity of suitable first-aid materials and nothing else. Boxes and kits should be checked frequently to ensure they are fully stocked and all items are in a usable condition. Sufficient quantities of each item should always be available in every first aid box or cabinet.

Sr.No	Item	Numbers of Employees.				
		1-5	6-10	11-50	100	150
1	Guidance Card individually wrapped.	1	1	1	1	1
2.	Sterile adhesive dressings.	10	20	40	40	40
3.	Sterile eye pads with attachment.	1	2	4	6	8
4	Triangular bandages	1	2	4	6	8
5	Sterile coverings for serious wounds (where applicable)	1	2	4	6	8
6	Safety pins.	6	6	12	12	12
7	Medium sized sterile un medicated dressings.	3	6	8	10	12

Sr.No	Item	Numbers of Employees.				
8	Large sterile un medicated dressings	1	2	4	6	10
9	Extra Large sterile un medicated dressings.	1	2	4	6	8
10	Sterile water or saline in 300 ml disposable containers, where tap water is unavailable.	1	1	3	6	6

The first-aid box or cupboard should protect the contents from dampness and dust and be clearly marked with a white cross on green background.

3.2.1 First - Aid Rooms.

Where there is 250 or more person at work on site, a suitably staffed and equipped first-aid room should be provided. In addition, where there is a large (over 150) number of employees divided into several dispersed working groups, or the location of the site makes access to places of treatment outside it difficult, the contractor should consider whether a centralised first-aid room may be needed.

A first aid room should:

- a) Be under the charge of an occupational first aider in most circumstances; names and locations of all first aiders should be displayed.
- b) Be readily available and used only for the rendering of first aid
- c) Be clearly identified and of sufficient size to allow access for a stretcher, wheelchair, etc. and to hold a couch with space for people to work around it
- d) Contain in addition to the previously mentioned first aid materials ; a sink with hot and cold running water, drinking water, paper towels, impermeable work surfaces, clean garments for use by first aiders and occupational first aider's clinical thermometer a couch with pillow and blankets frequently cleaned
- e) Be heated, lighted, ventilated and cleaned regularly
- f) Be designed so that immediate contact can be made with the person on call, e.g. radio, siren, and a telephone link if feasible. It should be stressed that a sufficient number of first - aid boxes must be provided for any work area which is not within easy reach of the first aid room.

3.3 Emergency Phone # Posted.

Project Name _____ Project No. _____

The following are the business telephone numbers where project key personnel can be reached at all times. In addition, the emergency telephone numbers of other vital agencies are listed:

	BUSINESS	RESIDENCE
CLIENTS PROJECT CONTROLLER		
CHIEF PROJECT MANAGER		
SAFETY OFFICER (CONTRACTOR).		
OTHER EMERGENCY TELEPHONE NUMBERS		
FIRE		
AMBULANCE		
DOCTOR		
HOSPITAL		
POLICE		
GAS COMPANY		
ELECTRIC COMPANY		
WATER COMPANY		
TELEPHONE COMPANY		
INSURANCE CARRIER		
OTHER		
OTHER		
OTHER		

CHAPTER 4.0

4.0 HOUSEKEEPING & SANITATION

At the work site, an adequate supply of potable water must be provided, as well as clean drinking water dispensers. Potable water for cleanup must be provided. Where non potable water is used for industrial or fire fighting purposes it must be identified by appropriate signs.

CHAPTER 5.0

5.0 **FIRE PREVENTION.**

Electrical wiring equipment for heating, light, or power purposes must be installed in compliance with the requirements. Internal combustion engine-powered equipment must be located with exhausts well away from combustible materials. Smoking is to be prohibited in the vicinity of fire hazards, and such areas must be conspicuously posted. Care shall be taken properly to ground nozzles, hoses, or steam lines used in hazardous tankage or vessels.

In location of temporary buildings and yard storage, appropriate care shall be taken for proper separation to preclude an accumulation of fire potential. The contractor is responsible for maintaining the entire area, but particularly storage areas, free from accumulation of unnecessary combustible materials.

Site Fire Check List

1. Are safe ashtrays provided where smoking is permitted?
2. Are heaters properly guarded?
3. Are wet clothes kept clear of heaters?
4. Are portable heaters secure from being knocked over?
5. Is all temporary wiring well supported and protected?
6. Are any circuit's overloads?
7. Are all flammable liquids, gas cylinders and flammable materials separately and properly stored?
8. Are all gas appliances fitted with control taps?
9. Is rubbish being "burned in proper fashion"?
10. Is all flame cutting and welding taking place with proper precautions?
11. Are all blowlamps and blowtorches being used correctly?
12. Do all night watchmen and security patrols know the fire routines?

Preventing the spread of fire

1. Is waste accumulating in hoist shafts, under butts, in odd corners?
2. Are separate metal waste containers supplied for each of the following: oily rags, paint rags, paint scrapings, waste flammable liquids, wood shavings and off cuts?
3. Is all waste regularly cleared?
4. Are all huts safely sited?

Means of escape

1. Are all gangways, stairs and platforms free from obstruction?
2. Does everyone know what to do in emergency?
3. Is fire drill practised, and is there a system to ensure that all persons have evacuated the area?

Fire Fighting

1. Have all extinguishers been checked and / or recharged?
Are they clearly identified and easily accessible? Are operatives trained in their use

CHAPTER 6.0

6.0 **PERSONAL PROTECTION.**

Workers are often reluctant to use protection equipment. Such items should not only be suitable for their purpose but also be as comfortable as possible and acceptable to the workers concerned. Only then can efforts to ensure that equipment is worn or used prove successful.

All necessary personal safety equipment as considered adequate by the Engineer-in-charge shall be available for use of persons employed on the site and maintained in a condition suitable for immediate use; and the contractor shall take adequate steps to ensure proper use of equipment by those concerned.

- a) Workers employed on mixing asphaltic materials, cement and lime mortars / concrete shall be provided with protective footwear and protective gloves.
- b) Those engaged in handling any material which is injurious to eyes shall be provided with protective goggles.
- c) Those engaged in welding works shall be provided with welder's protective eye-shields.
- d) Stone workers are employed in sewers and manholes, which are in use, the contractor shall ensure that man-holes cover are opened and manholes are ventilated at least for an hour before workers are allowed to get into them. Manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to public.
- e) The contractor shall not employ men below the age of 18 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 shall be taken :-
 - i) No paint containing lead or lead products shall be used except in the form of paste or ready.
 - ii) Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scraped.
 - iii) Overalls shall be supplied by the contractor to workmen and adequate facilities shall be provided to enable working painters to wash during and on cessation of work.

CHAPTER 7.0

7.0 **ELECTRICAL INSTALLATION.**

Contact of plant with un insulated overhead electric cables (over 200 volts) or electrical discharge due to plant coming into close proximity.

Electrical short circuit or overload causing explosion or fire resulting in stoppage of plant involved for more than 24 hours and which might have caused injury.

General Guidelines Electrical

1. Provide earth leakage protection (ELCB of 20mA) on every socket outlet and lighting circuits.
2. Use separate 15 A socket outlets also multi sockets are not to be used.
3. All socket outlets shall be shuttered type.
4. All wiring shall be properly colour coded.

Phase	-	Red / Yellow / Blue
Neutral	-	Black
Earth	-	Green.

5. Wiring shall be done only in rigid metal conduits. PVC and metal flexible are not to be used.
6. Fuses are not to be used. Only circuit breakers to be used.
7. Lighting protection as per IS: 2309 to be provided.

CHAPTER 8.0

8.0 **HAND & POWER TOOLS**

Hand and power tools must be maintained in a safe condition, whether furnished by the contractor or by the employee. When power-operated tools are designed to accommodate guards, they must be equipped with appropriate guards when in use. Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains and other moving parts of equipment must be guarded if the parts are exposed to contact by employees.

All hand-held power tools must be equipped with a constant pressure switch that shuts off when the pressure is released. Electric power-operated tools shall be of the approved double insulated type, or grounded in accordance with good electrical practice. Pneumatic power tools must be secured to the hose or whip by positive means. Safety clips or retainers must be maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.

Pneumatically driven nails, staplers, and similar equipment provided with automatic fastener feed that operate at more than 100 psi pressure at the tool must have safety devices on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in direct contact with the work surface.

Hoses shall not be used for hoisting or lowering tools, and hoses exceeding ½-in inside diameter must have a safety shutoff at the source of supply to reduce pressure in case of a hose failure.

All fuel-powered tools must be stopped while being refuelled, serviced, or maintained.

Only trained employees may be allowed to operate a powder-actuated tool. Such tools must be tested each day before loading to see that the safety devices are in proper working condition, in accordance with manufacturer's recommended test procedure. Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employee, and hands shall be kept clear of the open barrelled end. Fasteners shall not be driven into very hard or brittle materials such as cast iron, glass block, face brick, hardened steel, or hollow tile. For driving into materials that are easily penetrated, appropriate backing must be available to prevent the pin fastener from passing completely through.

All employees using abrasive wheels must use eye protection, and other tools must be operated using appropriate personal safety equipment.

CHAPTER 9.0

9.0 **LADDERS**

Use of Ladders and Folding Step-Ladders.

- This regulation applies to all ladders and pairs of steps but not roof ladders and crawling boards.
- **Ladders must :**
 - a) **Be fixed near the top if practicable, or near the bottom if not: if suspended they must be secure,**
 - b) **Be placed (except when suspended) on a firm level base; they must not stand on loose packing (e.g. bricks),**
 - c) Be intermediately secured, where necessary, to prevent swaying and sagging, and
 - d) Be supported, or suspended, equally on each stile.
- If a ladder, standing on the ground, cannot be fixed to prevent slipping, then someone must hold it at the base when it is being used.
- A ladder which is not more than 3 m in length, need not be fixed or footed, provided it is securely placed so as to prevent it from slipping or falling. This exemption does not apply to ladders which are used as a means of communication between one working place and another, or to suspended ladders.
- Ladder must :
 - a) Extend at least 1.05 m above any landing place beyond the highest rung from which a person may be working, or have a nearby handhold of equivalent height.
 - b) Be placed so that there is space behind each rung for proper foothold (e.g. no rung should coincide with a scaffold tube).

CHAPTER 10.0

10.0 SCAFFOLDING

Collapse of any scaffold or part of a substantial part of the scaffold falling or overturning; also collapse or part collapse of the suspension arrangements of a slung or suspended scaffold, causing the platform or cradle to fall more than 5m.

10.1. Provision of Scaffolds, ETC.

Scaffolds must be provided for all work which cannot be safely done from the ground or part of the building.

Ladders, properly secured, can be used - but only for light work which can be done with one hand.

10.2. Supervision of Work and Inspection of Material.

Scaffolds must be erected, altered, or dismantled only under competent supervision and, as far as possible, by experienced persons. All scaffolding materials must be inspected before use to check that they are up to standard.

10.3. Construction and Material.

Sufficient sound material must be provided for a scaffold to be strong enough and stable enough for the job.

Wherever timber is used for any kind of scaffolding purpose, it must be of the right type for the job, be free from back and must not be painted so that any defects are hidden.

Scaffold tubes and fittings must not be bent, distorted or unduly rusty.

10.4. Defective Material

- Scaffold tubes, couplers or fittings that are bent unduly rusty or distorted should be rejected.

Timber with dangerous splits and knots should always be rejected.

- Ropes and lashings showing signs of chafing through wear, or of being corroded, should be rejected.
- All scaffold components must be properly stored when not in use and kept separately from all other building materials.

10.5. Maintenance of Scaffolds.

Scaffolding must be kept in good order and every effort made to prevent the accidental displacement of any part.

10.6. Partly Erected or Dismantled Scaffolds.

In any scaffold is either partly erected (or partly dismantled), but nevertheless is still capable of being used to some extent, it must have a bold warning notice fixed, or all access blocked off or barred, at the point beyond which it cannot be safely used.

10.7. Standards or Uprights, Ledgers and Putlogs.

- Scaffold standards should be vertical and spaced closely enough for the intended use of the scaffold.
- Base plates must be used. Timber sole plates should also be used to distribute the load from the standard over a wider area, as well as to offset possible local subsidence.
- Ledgers must be level and fixed to standards with right-angle couplers.
- Putlogs and transoms must be firmly fixed to ledgers or standards.

The flattened end of the putlog must be pushed right into the wall to provide maximum support.

- Putlogs and transoms should be spaced according to the expected load and the thickness of the boards to be used in the platform.

In normal use, putlogs and transoms should be spaced so that the spans of scaffold boards should not be greater than:

- 32 mm boards : 1 m
- 38 mm boards : 1.50 m
- 50 mm boards : 4.60 m

10.8. Ladders used in Scaffolds

- Ladders used as uprights must be :
 - a) Strong enough for the load,
 - b) Equally supported on each stile, and
 - c) Secured to prevent slipping.
- Ladders are only to be used to support a scaffold platform when the work is light, e.g. painting.

10.9. Stability of Scaffolds

- All scaffolds must be :
 - a) On a solid, even base; or suspended from a sound structure.
 - b) Braced to prevent failure, and
 - c) Tied to the building or structure unless specially designed to be completely independent.
- Any building or structure which supports a scaffold must be strong enough to carry the scaffold and its load.
- Mobile scaffolds must :
 - a) Be stable, weighted at the base if necessary.
 - b) Be used only on a flat, level surface.
 - c) have the wheels locked to prevent movement whilst being used for work, and

- d) Be pushed, or pulled only at the base when being moved.
- Scaffolds must not be built on loose bricks, drain pipes, chimney pots, etc. Bricks or blocks can be used to support a platform no higher than 600 mm from the ground or floor.

10.10. Slung Scaffolds

- a) Be strong enough,
b) **Be properly secured to be overhead anchor-ages and to be platform frame,**
c) Be spaced so as to keep the platform stable,
d) Be vertical, and
e) Be kept taut.
- No rope other than wire rope may be used for suspension.
- Packing must be used to prevent damage to suspension ropes or chains at any point where sharp or rough - edged protrusions could cause chafing.
- The platform must be secured to prevent swaying whilst in use.

10.11. Cantilever, Jib, Figure and Bracket Scaffolds.

Cantilever or jib scaffolds must be anchored to a structure which is strong enough to carry the total load. Outriggers must be long enough and strong enough and the scaffold must be braced to ensure stability.

Figure or bracket scaffolds supported by dogs or spikes must not be used if there is any danger of these pulling out of the brickwork or stone-work.

10.12. Support for Scaffolds, etc.

No part of the building may be used to support scaffolding unless it is strong enough to do so. Unless gutters have been designed as walkways and are strong enough to bear the weight, they must not be used to support scaffolding or ladders.

10.13. Suspended Scaffolds (Not Power Operated)

- The ropes, winches, blocks and tackle must be strong enough and correctly rigged. A safe anchorage for the suspension must be provided.
- Winches or similar lifting devices must :
 - a) Have brakes which apply when the operating lever is released, and
 - b) Be protected from the weather, falling dirt, etc.
- Outriggers must :
 - a) Be long enough and strong enough,
 - b) Be horizontal (light cradles are excepted),
 - c) Have stops at their outer ends (light cradles excepted)
 - d) Be tied down or properly counterweighted at the tail, and
 - e) Be close enough together to support the rails and scaffolds properly.
- Counterweights Must :
 - a) Be bolted or securely attached to the outriggers, and
 - b) Be at least three times the overturning moment or load.
- Platforms must be hung clear of the building or face of the structure.
- Runways must :

- a) Be strong enough and in good condition,
- b) Have stops at each, and
- c) Be bolted or tied securely to their supports.

- Suspension ropes or chains must :
 - a) Be properly secured, both overhead and to the frame of the platform, and
 - b) Be kept taut.

- Winches must :
 - a) Have at least two full turns of rope on the drum when the platform is in its lowest position, and
 - b) Be marked with the length of rope on the drum.

- Suspended scaffolds and associated equipment must be maintained in good condition. Platforms must be prevented from tipping or swaying whilst in use.
- Steel wire rope must be used for the suspension of all platforms other than lightweight cradles.

Lightweight cradles may be suspended by fibre ropes and pulley blocks which should not be more than 3.20 m apart. (only ropes recommended by manufacturers for this purpose should be used).

- Platforms of suspended scaffold must :
 - a) Be close boarded,
 - b) Be at least 430 mm wide on lightweight cradles.
be at least 600 mm wide on all other types, if used only for workmen, or
be at least 800 mm wide, if used for workmen and materials, and
 - c) Never be used to carry another higher platform.

Platforms should be as close as possible to the face of the building, but where persons sit on the edge of the platform to carry out their work, then the distance between platform and building can be up to 300 mm.

10.14. Boatswain's Chairs Cages, Skips etc. (Not Power Operated)

- Hand-operated boatswain's chairs, skips etc. must :
 - a) Be well constructed, strong enough, and properly maintained.
 - b) have outriggers strong enough and firmly anchored,
 - c) Have chains, ropes and lifting gear firmly secured to the outriggers above and to the chair, skip etc. The construction (lifting operations) regulations apply to the lifting gear,
 - d) Be designed so that the occupant cannot fall out,
 - e) Carry no loose materials which could interfere with the safety of the occupant,
 - f) Have means of preventing spinning and tipping (a swivel connection at the suspension point is strongly advised),
 - g) In the case of skips, be at least 910 mm deep, and
 - h) Be under the supervision of a competent person during installation and use.

- A boatswain's chair may only be used as a workplace when the work would not take long enough to make the use of a suspended (or standard) scaffold reasonably practicable.

CHAPTER 11.0

11.0 HOISTS, CRANES & DERRICKS

Safety of Hoist ways. Platforms and Cages.

- Hoist ways must be enclosed wherever access is provided or wherever persons could be struck by the platform or other moving parts. Gates must be fitted in the enclosure at all landing places and must normally be at least 2m high, but gates 910 mm high are acceptable where persons are not at risk of falling down the hoist-way or coming into contact with moving parts. Gates must be kept closed except for the movement of persons and materials; it is the duty of all persons to see that this is done.
- Hoist platforms and cages must be fitted with a device capable of supporting them, fully loaded, should hoists, ropes or driving gear fail.
- Hoists must be fitted with ver-run stops at the top.

Operation of Hoists.

- Hoists must only be capable of being operated from one position at a time, whether by rope, lever or switch. Hoists must not be operated from the cage.
- Where the hoist driver cannot see the platform or cage during its movement, a signalling system, which covers all landing places, must be used.

Safe working Load and Marking of Hoists.

- A) The platform of materials or goods hoists must carry a notice stating (I) the safe working load and (ii) that passengers must not ride on the platform.
-
- The safe working load must not be exceeded except for test purposes.
- B) Cages for passenger's hoists must carry a notice stating (i) the safe working load and (ii) the number of passengers permitted.
- No greater number of passengers may be carried and the safe working load must not be exceeded except for test purposes.

Cranes & Derricks

Manufacture's recommendations on operating conditions shall be followed by the contractor. Rated load capacities and recommended operating speeds and special hazard warnings or instructions must be conspicuously posted on all equipment visible to the operator while he is at his control station.

A boom angle indicator and a load-indicating device in good working order must be provided for cranes and derricks. Hand signals to crane and derrick operators shall be those prescribed by the applicable ANSI standards for the type of crane in use. Accessible areas within the swing radius of the rear of the rotating superstructure of a crane must be barricaded to prevent an employee from being struck or crushed by the crane.

In operating boom equipment, careful clearance shall be given to electrical distribution and transmission lines. For lines rated 50 kV or below, minimum clearance is 10 ft, whereas for loads rated over 50 kV, minimum clearance shall be 10 ft + 0.4 in per each kV over 50 - or use twice the length of the line insulator, but never less than 10 ft.

For hammerhead tower cranes, adequate clearance must be maintained between the moving and rotating structures and fixed objects to allow the passage of employees without harm. Employees required to perform duties on the horizontal booms of hammerhead tower cranes must be protected against falling by guard rails or by safety belts and lanyards. Overhead and gantry cranes must have the rated load of the crane plainly marked on each side, and if the crane has more than one hoisting unit, each must have its rated load marked on the load block in marking clearly legible from the ground or floor. All operation must be prescribed in ANSI B30.2, “Safety code for Overhead and Gantry Cranes”

Derricks in use must meet the applicable requirements for design, construction, installation, inspection, testing, maintenance, and operation prescribed in ANSI B30.6, “Safety code for Derricks”

CHAPTER 12.0

12.0 MOTOR VEHICLES

Motor equipment left unattended at night near areas where work is in progress must have appropriate lights, reflectors, or barricades to identify the location of the equipment. A safety tire rack, cage, or equivalent protection must be used when a worker is inflating, mounting, tires installed on split rims or rims equipped with locking rings. Heavy machinery that is suspended or held aloft by the use of slings, hoists, or jacks must be blocked or cribbed to prevent falling or shifting before employees are permitted to work under them. Bulldozer and scraper blades and similar equipment shall be either fully lowered or blocked when being repaired or when not in use. All controls must be in the neutral position and the motor stopped and brakes set, unless work being performed requires otherwise. Parked equipment must be checked and parking brakes set. All cab glass shall be safety glass. All vehicles must have a service brake system, an emergency brake system, and a parking brake system. Vehicles that require additional light shall have at least two headlights, as well as brake lights.

Other standard vehicles equipment such as seat belts, rear-view mirrors, and safety latches on operating levers shall be in accordance with standard vehicle codes, and state-inspected where appropriate.

CHAPTER 13.0

13.0 **BARRICADES**

- i) Contractor shall erect and maintain barricades required in connection with his operation to guard or protect.
 - a) Hoisting Areas.
 - b) Areas adjudged hazardous by contractor or Client.
 - c) Owner's existing property subject to damage by Contractor's operations.
- ii) Contractor's employees and those of his subcontractors shall become acquainted with Project Managers barricading practice and shall respect the provisions thereof.

13.1. Guarding of Floor Openings and Floor Holes.

13.1.1 Every temporary floor opening shall have railings, or shall be constantly attended by someone. Every floor hole into which persons can accidentally fall shall be guarded by either:

- a) A railing with toe board on all exposed sides, or
- b) A floor hole cover of adequate strength and it should be hinged in place. When the cover is not in place, the floor hole shall be constantly attended by some one or shall be protected by a removable railing.

13.2. Every stairway floor opening shall be guarded by a railing on all exposed sides, except at entrance to stairway. Every ladder way floor opening or platform shall be guarded by a guard railing with toe board on all exposed sides (except at entrance to opening), with the passage through the railing either provided with a swinging gate or so offset that a person can not walk directly into the opening.

13.3. Guarding of Open-Side Floors and Platform.

Every open-sided floor or platform 120 cm or more above adjacent floor or ground level shall be guarded by a railing (or the equivalent) on all open sides, except where there is entrance to ramp, stair-way, or fixed ladder. The railing shall be provided with a toe board beneath the open sides wherever.

- a) Persons may pass;
- b) There is moving machinery ; or
- c) There is equipment with which falling materials could create a hazard.

CHAPTER 14.0

14.0 **HANDLING & STORAGE OF MATERIALS**

14.1 **Cement.**

- a) Storage and Stacking - Cement shall be stored at the work site in a building or a shed which is dry, leak proof and as moisture-proof as possible. The building or shed for storage should have minimum number of windows and close fitting doors and these should be kept closed as far as possible.

Cement received in bags shall be kept in such a way that the bags are kept free from the possibility of any dampness or moisture coming in contact with them. Cement bags shall be stacked off the floor on wooden planks in such a way as to keep them 150 to 200 mm clear from the floor and space of 450 mm minimum shall be left all-round between the exterior walls and the stacks. In the stacks the cement bags shall be kept close together to reduce circulation of air as much as possible. Owing to pressure on bottom layer of bags sometimes 'warehouse pack' is developed in these bags. This can be removed easily by rolling the bags when cement is taken out for use.

The height of stack shall not be more than 15 bags to prevent the possibility of lumping up under pressure. The width of the stack shall be not more than four bags length or 3 metres. In stacks more than 8 bags high, the cement bags shall be arranged alternately lengthwise and crosswise so as to tie the stacks together and minimise the danger of toppling over.

For extra safety during monsoon, or when it is expected to store for an unusually long period, the stack shall be completely enclosed by a water proofing membrane such as polyethylene, which shall close on the top of the stack. Care shall be taken to see that the waterproofing membrane is not damaged any time during the use.

Drums or other heavy containers of cement shall not be stacked more than two layers high.

The manner of storage shall facilitate the requirement that lots of cement received are removed and used more or less in the order in which they are received.

- b) HANDLING - Hooks shall not be used for handling cement bags unless specifically permitted by the engineer-in-charge.

14.2. **Polyethylene Pipes.**

- a) Storage & Stacking - Black polyethylene pipes may, be stored either under cover or in the open. Natural polyethylene pipes, however, should be stored under cover and protected from direct sunlight.

Coils may be stored either on edge or stacked flat one on top of the other, but in either case they should not be allowed to come into contact with hot water or steam pipes and should be kept away from hot surface.

Straight lengths should be stored on horizontal racks giving continuous support to prevent the pipe taking on a permanent set.

Storage of pipes in heated areas exceeding 27° C should be avoided.

- b) Handling - Removal of pipe from a pile shall be accomplished by working from the ends of the pipe.

14.3. Pipes of Conducting Materials.

- a) Storage and Stacking - Pipes shall be stacked on solid level sills and contained in a manner to prevent spreading or rolling of the pipe. Where quantity storage is necessary, suitable packing shall be placed between succeeding layers to reduce the pressure and resulting spreading of the pile.

In stacking and handling of pipes and other conducting materials, the following minimum safety distances shall be ensured from the overhead power lines:

11 kV and below	40m
Above 11 and below 33 kV	60 m
Above 33 and below 132 kV	70 m
Above 132 and below 275 kV	70 m
Above 275 and below 400 kV	50 m

- b) Handling - Removal of pipes from a pile shall be accomplished by working from the ends of the pipe. During transportation, the pipes shall be so secured as to insure against displacement.

14.4 Paints Varnishes and Thinners.

- a) Storage and Stacking - Paints, varnishes, lacquers, thinners and other flammable materials shall be kept in properly sealed or closed containers. The containers shall be kept in a well ventilated location, free from excessive heat, smoke, sparks or flame. The floor of the paint stores shall be made up of 10 cm thick loose sand.

Paint materials in quantities other than required for daily use shall be kept stocked under regular storage place.

Where the paint is likely to deteriorate with age, the manner of storage shall facilitate removal and use of lots in the same order in which they are received.

Temporary electrical wiring / fittings shall not be installed in the paint store. When electric lights, switches or electrical equipment are necessary, they shall be of explosion proof design.

- b) Handling - Ventilation shall be adequate to prevent the accumulation of flammable vapours to hazardous levels of concentration shall be provided in all areas where painting is done.

When painting is done in confined spaces where flammable or explosive vapours may develop, any necessary heat shall be provided through duct work remote from the source of flame.

Sources of ignition, such as open flame and exposed heating elements, shall not be permitted in area or rooms where spray painting is done nor shall smoking be allowed there.

Care should be taken not to use any naked flame inside the paint store. Buckets containing sand shall be kept ready for use in case of fire. Fire extinguishers when required shall be of foam type conforming to accepted standards.

Each workman handling lead based paints shall be issued 1/2 litre milk per day for his personal consumption.

14.5. Bitumen, Road Tar, Asphalt, etc.

- a) Storage and Stacking - Drums or containers containing all types of bitumen, road tar, asphalt, etc. shall be stacked vertically on their bottoms in up to 3 tiers. Leaky drums shall be segregated. Empty drums shall be stored in pyramidal midal stacks neatly in rows.
- b) Handling Bitumen / Tar - Bitumen / tar shall not be heated beyond the temperature recommended by the manufacturer of the product. While discharging heated binder from the boiler, workers shall not stand opposite to the jet so as to avoid the possibility of hot binder falling on them. The container shall be handled only after closing the control valve. While handling hot bitumen / tar, workers shall exercise scrupulous care to prevent accidental spillage thereof. The buckets and cans in which the hot material is carried from boiler shall be checked before use to ensure that they are intact and safe. Mops and other applicators contaminated with bituminous materials shall not be stored inside buildings.

14.6. Bituminous Roofing Felts.

- a) Storage and Stacking - Bituminous roofing felts shall be stored away from other combustible flammable materials. For long storage it shall be kept under shade.
- b) Handling - Bituminous roofing felts should be handled in a manner to prevent cracking and other damages.

14.7. Flammable Materials.

- a) Storage and Stacking - In addition the following provisions shall also apply :
 - 1) Outdoor storage of drums requires some care to avoid contamination because moisture and dirt in hydraulic brake and transmission fluid, gasoline, or lubricants may cause malfunction of failure of equipment, with possible danger to personnel. The storage area should be free of accumulations of spilled products, debris and other hazards.
 - 2) Compressed gases and petroleum products shall not be stored in the same building or close to each other.
- b) Handling - Petroleum products delivered to the job site and stored there in drums shall be protected during handling to prevent loss of identification through damage to drum markings, tags, etc. Unidentifiable petroleum products may result in improper use, with possible fire hazard, damage to equipment or operating failure.

Workmen shall be required to guard carefully against any part of their clothing becoming contaminated with flammable fluids. They shall not be allowed to continue work when their clothing becomes so contaminated.

CHAPTER 15.0

15.0 EXCAVATION & SHORING

Excavation and Trenching: All trenches, 1.5 meters or more in depth, shall at all times be supplied with at least one ladder for each 30 meters in length or fraction thereof. Ladder shall be extended from bottom of trench to at least 1 meter above surface of the ground. Sides of a trench which is 1.5 meters or more in depth shall be stepped back to give suitable slope, or securely held by timber bracing, so as to avoid the danger of sides collapsing. Excavated material shall not be placed within 1.5 meters of edge of trench or half of depth of trench, whichever is more cutting undermining or undercutting be done.

CHAPTER 16.0

16.0 CONCRETE CONSTRUCTION

16.1. **Handling of Plant.**

- 16.1.1. Mixers - All gears, chains and rollers of mixers shall be properly guarded. If the mixer has a charging skip the operator shall ensure that the workmen are out of danger before the skip is lowered. Railings shall be provided on the ground to prevent anyone walking under the skip while it is being lowered.
- 16.1.2. All cables, clamps, hooks, wire ropes, gears and clutches, etc, of the mixer, shall be checked and cleaned, oiled and greased, and serviced once a week. A trial run of the mixer shall be made and defects shall be removed before operating a mixer.
- 16.1.3. When workmen are cleaning the inside of the drums, and operating power of the mixer shall be locked in the off position and all fuses shall be removed and a suitable notice hung at the place.

16.2. **Trucks.**

When trucks are being used on the site, traffic problems shall be taken care of. A reasonably smooth traffic surface shall be provided. If practicable, a loop road shall be provided to permit continuous operation of vehicles and to eliminate their backing. If a continuous loop is not possible, a turnout shall be provided. Backing operations shall be controlled by a signalman positioned so as to have a clear view of the area behind the truck and to be clearly visible to the truck driver. Movement of workmen and plant shall be routed to avoid crossing, as much as possible, the truck lanes.

16.3. **Formwork.**

- 16.3.1. Formwork shall be designed after taking into consideration spans, setting temperature of concrete, dead load and working load to be supported and safety factor for the materials used for formwork.
- 16.3.2. All timber formwork shall be carefully inspected before use and members having cracks and excessive knots shall be discarded.
- 16.3.3. The vertical supports shall be adequately braced or otherwise secured in position that these do not fall when the load gets released or the supports are accidentally hit.
- 16.3.4. Tubular steel centering shall be used in accordance with the manufacturer's instructions. When tubular steel and timber centering is to be used in combination necessary precautions shall be taken to avoid any unequal settlement under load.
- 16.3.5. All centering shall be finally, inspected to ensure that:
- a) Footings or sills under every post of the centering are sound.
 - b) All lower adjustment screws or wedges are snug against the legs of the panels.
 - c) All upper adjustment screws or heads of jacks are in full contact with the formwork.
 - d) Panels are plumb in both directions.
 - e) All cross braces are in place and locking devices are in closed and secure position.

- f) In case of CHHAJAS and balconies, the props shall be adequate to transfer the load to the supporting point.

16.4. Ramps and Gangways.

16.4.1. Ramps and gangways shall be of adequate strength and evenly supported. They shall either have a sufficiently flat slope or shall have cleats fixed to the surface to prevent slipping of workmen. Ramps and gangways shall be kept free from grease, mud, snow or other slipping hazards or other obstructions leading to tripping and accidental fall of a workman.

16.4.2. Ramps and gangways meant for transporting materials shall have even surface and be of sufficient width and provided with skirt boards on open sides.

16.5. Prestressed Concrete.

16.5.1. In pre-stressing operations, operating, maintenance and replacement instructions of the supplier of the equipment shall be strictly adhered to.

16.5.2. Necessary shields should be put up immediately behind the prestressing jacks during stressing operations.

16.5.3. Wedges and other temporary anchoring devices shall be inspected before use.

16.5.4. The prestressing jacks shall be periodically examined for wear and tear.

16.6. Erection of Prefabricated Members.

16.6.1. A spreader beam shall be used wherever possible so that the cable can be as perpendicular to the members being lifted as practical. The angle between the cable and the members to be lifted shall not be less than 60°.

16.6.2. Methods of assembly and erection specified by the designer shall be strictly adhered to at site. Immediately on erecting any unit in position, temporary connections or supports as specified shall be provided before releasing the lifting equipment. The permanent structural connections shall be established at the earliest opportunity.

16.7. Heated Concrete.

When heaters are being used to heat aggregates and other materials and to maintain proper curing temperatures, the heaters shall be frequently checked for functioning and precautions shall be taken to avoid hazards in using coal, liquid, gas or any other fuel.

CHAPTER 17.0

17.0 **MASONRY**

17.1. **Walls.**

17.1.1. **General** - Depending on the type of wall to be constructed the height of construction per day shall be restricted to ensure that the newly constructed wall does not come down due to lack of strength in the lower layers. Similarly, in long walls adequate expansion / crumple joints shall be provided to ensure safety.

17.2. **Opening in Walls** - Whenever making of an opening in the existing wall is contemplated, adequate supports against the collapse or cracking of the wall portion above or roof or adjoining walls shall be provided.

17.2.1. **Guarding of Wall Openings and Holes** - Wall opening barriers and screens shall be of such construction and mounting that they are capable of withstanding the intended loads safely. For detailed information reference may be made to good practice. Every wall opening from which there is a drop of more than 120 mm shall be guarded by one of the following;

- a) Rail, Roller, Picket Fence, Half Door or Equivalent Barrier - The guard may be removable but should preferably be hinged or otherwise mounted so as to be conveniently replaceable. Where there is danger to persons working or passing below on account of the falling materials, a removable toe board or the equivalent shall also be provided. When the opening is not in use for handling materials, the guards shall be kept in position regardless of a door on the opening. In addition, a grab handle shall be provided on each side of the opening. The opening should have a sill that projects above the floor level at least 2.5 cm.
- b) Extension platform into which materials may be hoisted for handling shall be of full length of the opening and shall have side rails or equivalent guards.

17.2.2. Every chute wall opening from which there is a drop of more than 120 mm shall be guarded by one or more of the barriers specified in 17.2.1. or as required by the conditions.

CHAPTER 18.0

18.0 **HEALTH STANDARDS**

18.1 **DRINKING WATER**

- a) In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.
- b) Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.
- c) Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or any other source of pollution.

18.2 **WASHING FACILITIES**

- a) In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of contract labour employed therein.
- b) Separate and adequate cleaning facilities shall be provided for the use of male and female workers.
- c) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

18.3 **LATRINES AND URINALS**

- a) Latrines shall be provided in every work place on the following scale namely:-
 - i) Where female are employed there shall be at least one latrine for every 25 females.
 - ii) Where males are employed, there shall be at least one latrine for every 25 males.

Provided that where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females as the case may be upto first 100, and one for every 50 thereafter.

- b) Every latrine shall be under cover and so partitioned off as to secure privacy and shall have proper door and fastenings.
- c) Construction of latrines: The inside walls shall be constructed of masonry or some suitable heat-resisting non-absorbent materials and shall be cement washed inside and outside at least once a year, latrines shall not be of standard lower than borehole system.
- d)
 - i) Where workers of both sexes are employed, there shall be displayed out side each block of latrine and urinal, a notice in the language understood by the majority of the workers ‘‘ For Men only ‘‘ or ‘‘ For Women only ‘‘ as the case may be.
 - ii) The notice shall also bear the figure of man or woman, as the case may be.
- e) There shall be at least one urinal for male workers upto 50 and for female workers upto 50 employed at a time, provided that where the number of male or female workers, as the case may be exceeds 50, it shall be sufficient if there is one urinal for every 50 males or females upto the first 50 and one for every 100 or part thereafter.
- f)
 - i) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

- ii) Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of Public Health Authorities.
- g) Water shall be provided by means of tap or otherwise so as to conveniently accessible in or near the latrines and urinals.
- h) Disposal of excreta: Unless otherwise arranged by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternately excreta may be disposed off by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with 15 cm layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn to manure).
- i) The contractor shall at his own expense , carry out all instructions issued to him by the Engineer-in-charge to effect proper disposal of night soil and other conservancy work in respect of the contractor's workmen or employees of the site. The contractor shall be responsible for payment of any charges which may be levied by the municipal or cantonment authority for execution of such on behalf.

18.4 PROVISION OF SHELTER DURING REST

At every place there shall be provided , free of cost , four suitable sheds , two for meals and other two for rest separately for the use of men and women labour . The height of each shelter shall not be less than 3m from the floor level to the lowest part of the shed roof. These shall be kept clean and the space provided shall be on the basis of 0.6sq.m per head.

Provided that the Engineer-in-charge may permit subject to his satisfaction , a portion of building under construction or other alternative accommodation to be used for the purpose.

18.5 CRÈCHES

- I) At every work place , at which 20 or more women workers are ordinarily employed , there shall be provided two rooms of reasonable dimensions for the use of their children under at the age of six years . One room shall be used as a play room for the children and the other as their bedroom.
- ii) The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.
- iii) The contractor shall supply adequate number of toys and games in playroom and sufficient number of cots and bedding in the bed room.
- iv) The contractor shall provide one aya to look after the children in the crèche when the number of women workers does not exceed 50 and two when the number of women workers exceeds 50.
- v) The use of the rooms earmarked as crèches shall be restricted to children, their attendants and mothers of the children.

18.6 CANTEENS

- I) In every work place where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour numbering 100 or more are ordinarily employed , an adequate canteen shall be provided by the contractor for the use of such labour .
- ii) The canteen shall be maintained by the contractor in an efficient manner.
- iii) The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places separately for workers and utensils.
- iv) The canteen shall be sufficiently at all times when any person has access to it.
- v) The floor shall be made of smooth and impervious materials and inside walls shall be lime washed or colour washed at least once a year .The inside walls of the kitchen shall be lime washed every four months.
- vi) The premises of the canteen shall be maintained in a clean and sanitary condition.
- vii) Suitable arrangements shall be made for the collection of disposal of garbage.
- viii) Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause nuisance.
- ix) The dining hall shall accommodate at a time 30 percent of the contract labour working at a time.

- x) The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs shall not be less than one sq.m per diner to be accommodated as prescribed in sub-rule (ix).
- xi) a) 1. There shall be provided and maintained sufficient utensils crockery, furniture and any other equipment necessary for efficient running of canteen.
2. The furniture utensils and other equipment shall be maintained in a clean and hygienic condition.
b) 1. Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.
2. A service counter, if provided, shall have top of smooth and impervious material.
3. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.
- xii) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number.
- xiii) Sufficient tables stools or benches shall be available for the number of diners to be accommodated as prescribed in sub rule (ix).
- xiv) The food stuff and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour .
- xv) The charges for food stuffs, beverages and other items served in the canteen shall be based on ‘No profit No loss’ and shall be conspicuously displayed in the canteen.
- xvi) In arriving at the price of foodstuffs, and other article served in the canteen , the following items shall not be taken into consideration as expenditure namely :-
 - a) The rent of land and building.
 - b) The depreciation and maintenance charges for the building and equipment provided for the canteen.
 - c) The purchase, repairs and replacement of equipment including furniture , crockery, cutlery and utensils.
 - d) The water charges and other charges incurred for lighting and ventilation.
 - e) The interest and amounts spent on the provision and maintenance of equipment provided for the canteen.
- xvii) The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors.

18.7 ANTI-MALARIAL PRECAUTIONS

The contractor shall at his own expense, conform to all anti-malarial instructions given to him by Engineer-in-charge including the filling up of any borrow pits which may have been dug by him.

CHAPTER 19.0

19.0 RECORD OF FIRST AID TREATMENT.

Project Data: _____

Project:

Location:

Injured Data:

Name:

Employer:

Employer's Supervisor:

Injury Data:

Date:

Time:

Description of Injury:

First Aid Treatment:

Treatment administered by:

Type of treatment administered:

Referred for Medical Treatment:

_____ No

_____ Yes.

Doctor _____

Hospital _____

Report Prepared By:

Treatment Received By:

Date:

Date:

CHAPTER 20.0

20.0 DAMAGE REPORT FORM

Contract _____

Plant and equipment affected. _____

Serial numbers or identifying marks _____

Owner of plant or equipment _____

Place, date and time of incident _____

Circumstances of incident _____

Details of damage _____

Names of operators involved (if not Company employers, also give details of such contractors concerned) _____

Were normal working methods used ? _____

Contributory causes of incident _____

Names of witness _____

(attach statements) _____

Preventative action proposed or taken _____

Signature of Site Agent or Manager _____

Date _____.

CHAPTER 21.0

21.0 PERSONNEL ACCIDENT REPORT FORM.

Division / Dept (if applicable) _____

Contractor _____

Full name and address of injured person (IP) _____

Occupation of IP _____ Age of IP _____

Employed (state if self - employed or under training) _____

Trade of sub contractor (where applicable) _____

Particulars of accident:

Date and time of accident _____

Exact place where accident happened. _____

What was IP doing at time of accident? _____

Did IP cease work? _____

First air or hospital treatment. _____

Time lost (state if IP is still off work) _____

Brief description of accident, giving dimensions where applicable _____

Details of tools, equipment plant or machinery. _____

What protective clothing / equipment was being worn / used by IP? _____

Nature of injury and part of the body injured. e.g. punctured foot, hand, broken leg. _____

Contributory factors:

Unsafe system of work YES/NO _____

Lack of training, supervision etc. YES/NO _____

Environmental Conditions (wind, rain, ice, etc.) YES/NO _____

State of equipment (faulty brakes, damaged lifting gear, etc.) YES/NO _____

Housekeeping (untidy access, nails in timber. etc) YES/NO _____

Other _____

Delete as appropriate and give details.

Names and address of witness _____

If reportable:

Date and time Safety Officer informed by Telephone _____

Preventative action taken or proposed _____

Signature of Site Agent or Manager _____

Date _____

SECTION 4: CONTRACT DATA

Contract Data

1. The following documents are also part of the Contract:
 - The Schedule of Other Contractors working simultaneously in the area if any
 - The Schedule of Key Personnel organogram to be submitted along with Bio data of Key Personnel for approval of Engineer in Charge
 - The Methodology and Program of Construction
 - The Schedule of Key and Critical equipment to be deployed on the work as per agreed program of construction

2. The **Employer** is:
Mahindra World City (Jaipur) Limited
SEZ Project Office,
Vill & PO – Kalwara,
Tehsil- Sanganer, Dist-Jaipur -302029
Phone No: 09929093365/ 09929388806
Fax : 0141-3003474, 2243060

Authorized Representative: **HEAD (Infrastructure & Development)**

4. The Name and identification number of the Contract is: **Construction of Horizontal Road in DTA Phase III (177 Acres) AT MWC JAIPUR** and the number is **MWCJL/HR/INFRA/DTAPH-III/177 ACRES/2012-13/T-21**

5. The Works consist of **Development For DTA Area At Mahindra World City, Jaipur** as described in detail under the caption “Scope of Work” in the Special conditions of Contract.

6. The Date of Commencement shall be the date specified in the Letter of Intent of the work.

7. The Intended Completion Date for the whole of the Works is **Two (02) Months** reckoned from the date of commencement as indicated in the letter of Intent, issued by the Employer. The work shall have the following milestones

8. **Milestone dates:**

<u>Physical completion of works</u>	<u>Period from the date of commencement of work</u>
Milestone 1	will be given at the time of award
Milestone 2	will be given at the time of award
Milestone 3	will be given at the time of award

9. The Contractor shall submit a work schedule including the commencement date, to reflect the ground realities and adhering to the schedule of milestone indicated above. This revised work schedule shall be submitted within 10 days of delivery of the Letter of Intent.

10. The Site Possession Date shall be the date within seven days from the date of issue of letter of Intent.

11. The Site is located at **Mahindra World City (Jaipur) Limited, IT/ITES SEZ. Village: Kalwada, Tehsil : Sanganer, District: Jaipur, PIN- 302029**

12. The Defects Liability Period is **12 Months** from the certified date of completion of works. (where sectional completion certificate is issued this will apply from those dates for those sections).

13.. Insurance requirements are as under:

Sr. No.	Policy for	Insurance cover required
1	Contractor's All Risk Insurance for works	By Contractor
2	Loss or damage to Employer's Equipment	By Contractor
3	Other Employers property	By Contractor
4	Personal injury or death insurance: a) Third Party	By Contractor
	b) For Contractor's Employee	By Contractor Contractor should ensure such insurance is in force through out the Contract period (Including defect liability period) and necessary proof to be submitted before the commencement of the project and at least a fortnight before the expiry of current insurance. The Contractor should indemnify and include in the policy the Employer
(iii)	Motor Vehicle Insurance	By Contractor as per statutory requirements, covering third Party liability.
	Third Party liability insurance (Including the name of Employer)	By Contractor Minimum cover Rs. 10 Lacs.
	Contractor's Equipments (Including liability arising out of usages of such equipment)	By Contractor.

14. The language of the Contract documents is English

15. The law which applies to the Contract is the laws of Republic of India

16. The currency of the Contract is Indian Rupees.

17. The proportion of payments retained (retention money) shall be 5 % from each bill to be released within 30 days after completion of defect liability period.

18. The liquidated damages for the whole of the works are 0.5% of the Contract value per day or part or part thereof

19. The maximum amount of liquidated damages for the whole of the works is five percent (5%) of final Contract price.

20. Deleted

21. The amounts of the advance payment are:

<u>Nature of Advance</u>	<u>Amount (Rs.)</u>	<u>Conditions to be fulfilled</u>
1. Mobilization	10%	Against BG

(The advance payment will be paid to the Contractor no later than 15 days after fulfilment of the above conditions, if any).

22. Deleted
23. The Securities shall be for the following minimum amounts equivalent as a percentage of the Contract Price:
24. Performance Security shall be for 5% per cent of Contract price to be submitted prior to signing the Contract. Performance Security shall be released within 30 days after the Certified date of Completion.
25. The standard form of Performance Security acceptable to the Employer shall be an unconditional and irrevocable Bank Guarantee of the type as presented in Section 5 of the Bidding Documents and valid for one month after the expiry of the defect liability period.
26. The as-built drawings in 2 sets are required before issue of certificate of completion of whole or section of the work, as the case may be. The amount to be withheld for non submission is **Rs. 50, 000/-**.
27. The following events shall also be fundamental breach of Contract:
 - 27.1 The Contractor has contravened any Clause / sub-Clause of the General Condition of Contract.
 - 27.2 The Contractor does not adhere to the agreed construction program and agreed environmental management plan and also fails to take satisfactory remedial action as per Agreements.
 - 27.3 The Contractor fails to carry out the instructions of Engineer in Charge within a reasonable time determined by the Engineer in Charge in accordance with General Condition of Contract.

SECTION 5: FORMS OF SECURITIES

Forms of Securities

Acceptable forms of securities are annexed. Bidders should not complete the Performance and Advance Payment Security forms at this time. Only the successful Bidder will be required to provide Performance and Advance Payment Securities in accordance with one of the forms, or in a similar form acceptable to the Employer.

Annex A: Performance Bank Guarantee

Annex B: Bank Guarantee for Advance Payment

PERFORMANCE GUARANTEE

This Guarantee of guarantee (hereinafter referred to as “**Guarantee**”) made this (date)..... by Bank (Bank Name)....., a scheduled bank with its head office at (address)..... (hereinafter referred to as the “**Bank**”) of the first part in favour of M/s. Mahindra World City (Jaipur) Limited, a company incorporated under Companies Act, 1956 and having its office at 411, 4th Floor, Neel Kanth Tower, Bhawani Singh Road, C- Scheme, Jaipur -302001 (hereinafter referred to as “**MWCJL**” which expression shall, unless repugnant to the meaning and context here to, include its affiliates, successors and assigns) of the other part.

WHEREAS:

- A. M/s. Mahindra World City (Jaipur) Limited is developing a special economic zone at Jaipur called “Mahindra World City, Jaipur” (hereinafter referred to as “**SEZ**”);
- B. On the assurance of M/s -----having its registered office at ----- (hereinafter referred to “**Contractor**”) that they are having the necessary infrastructure and capacity to undertake construction of ----- package at the SEZ to the quality, specifications and time frame as per the terms and conditions stipulated by MWCJ, MWCJ and Contractor have entered into a contract dated xx (hereinafter referred to as “**Contract**” which expression shall include any agreed amendments or modifications thereto) to execute the work within the SEZ in accordance with the terms and conditions of such Contract;
- C. Contractor has, by its acceptance to enter into the Contract with MWCJ has agreed to furnish a bank guarantee to MWCJ to ensure timely and satisfactory performance and completion of the work as per terms of the Contract;
- D. The Bank has, at the request of the Contractor, agreed to grant in favour of MWCJ, a guarantee to secure performance by Contractor of its obligations under the said works contract.

NOW THIS GUARANTEE WITNESSES AS FOLLOWS:

- 1. The Bank hereby unconditionally, unequivocally and irrevocably guarantee to MWCJ and agrees and undertakes that if in the sole and unfettered opinion of MWCJ, Contractor has failed to perform its obligations under the said Contract and any amendments or modifications thereto, the Bank shall upon demand of MWCJ forthwith pay to MWCJ, without demur, contestation or dispute, without reference to Contractor, the amount set forth in certificate by MWCJ as the amount of loss / claim / damage / cost / expense arising or likely to arise out of breach or non fulfilment of the said Contract. Any such certificate or demand by MWCJ on the Bank, shall be conclusive as regards the amount due and payable by the Bank to MWCJ under this Guarantee, notwithstanding any dispute between Contractor and MWCJ as to the liability for or quantum of loss / damage / claim / costs / expenses and notwithstanding any notice by Contractor to the Bank withhold or not to pay any amount to MWCJ against this Guarantee either before or after invoking of this Guarantee by MWCJ. Provided always the total liability of the Bank hereunder shall be limited to Rs. (.....) (Rupees.....).
- 2. This Guarantee of the Bank shall be effective immediately from the date hereof and shall be in force for till a certificate is issued by MWCJ to the Bank in accordance with Clause 5 of this Guarantee unless a claim or demand in writing is served upon the Bank by MWCJ. If a demand is so served, this Guarantee shall continue in full force and effect (notwithstanding the

expiration date) in respect of the amount so demanded until the obligation of the Bank in respect hereof is finally determined and the payment made to MWCJ.

3. The Bank agrees that MWCJ has the fullest liberty, without affecting in any manner the Bank's obligations hereunder, to vary any of the terms and conditions of the said Contract, to extend the time of performance by the Contractor from time to time and to forbear from enforcing any of the terms of the said Contract without any notice to or the consent of the Bank and the Bank shall not be released from its liability under this Guarantee by reason of any such variation or extension or forbearance being granted to Contractor. The Bank agrees that MWCJ has no obligation whatsoever to exercise its rights against collateral, if any, of Contractor but may immediately call on this Guarantee.
4. The Bank agrees that MWCJ has the fullest liberty, without affecting in any manner the Bank's obligation hereunder, to assign this guarantee in favour of any MWCJ affiliate company in India without the consent of but with prior intimation to, the Bank, and the Bank shall not be released from its liability under this Guarantee by reason of any such assignment. The Bank shall forthwith, on receipt of such intimation; undertake necessary endorsements or amendments hereto to incorporate the assignment in favour of such MWCJ affiliate assignee.
5. This Guarantee herein contained shall remain in force and effect till MWCJ certify that the terms and conditions of the said Contract have been fully and properly carried out and that the Contractor has fulfilled all its obligations under the Contract and that MWCJ has no claim against the Contractor on any account against the said Contractor. The Bank shall be released of its liabilities and obligations under this Guarantee only after such a certificate as aforesaid is issued by MWCJ to the Bank.
 - i) The Bank shall not revoke this Guarantee during its currency except with the previous consent in writing of MWCJ.
 - ii) Only neglect or forbearance, on the part of MWCJ, in the enforcement of the payment of any money, the payment whereof is intended to be hereby secured or the giving of the time for the payment hereto shall in no way relieve the Bank of their liability under this Guarantee.
6. Any notice or communication under this Guarantee shall be in writing and shall be served on the Bank at its address first hereinbefore mentioned and to MWCJ at its address first hereinbefore mentioned. Either party may notify to the other in writing any change in such address for service of notice upon it. The notices shall be served personally against acknowledgement or by Registered Post / Fax / Telex.
7. This Guarantee shall not be affected by any change in the constitution of the Bank or of Contractor or of MWCJ.
8. This Guarantee shall be governed by the applicable laws of India.
9. The expression "The Bank" and the Contractor hereinbefore used shall include their respective successors and permitted assigns.

IN WITNESS WHERE OF..... FOR AND ON BEHALF OF THE BANK HAS SIGNED THIS GUARANTEE ON THE DAY AND THE YEAR FIRST ABOVE WRITTEN.

()

WITNESSES :

1.

2.

DRAFT OF ADVANCE BANK GUARANTEE

This Guarantee of guarantee (hereinafter referred to as “**Guarantee**”) made this (date)..... by Bank (Bank Name)....., a scheduled bank with its head office at (address)..... (hereinafter referred to as the “**Bank**”) of the first part in favour of M/s. Mahindra World City (Jaipur) Limited, a company incorporated under Companies Act, 1956 and having its office at 411,Neelkanth Towers, Bhawani Singh Marg, C-Scheme, Jaipur - 302001. (hereinafter referred to as “**MWCJL**” which expression shall, unless repugnant to the meaning and context here to, include its affiliates, successors and assigns) of the other part.

WHEREAS:

- A. M/s. Mahindra World City (Jaipur) Limited is developing a special economic zone at Jaipur called “Mahindra World City, Jaipur” (hereinafter referred to as “**SEZ**”);
- B. On the assurance of M/s -----having its registered office at ----- (hereinafter referred to “**Contractor**”) that they are having the necessary infrastructure and capacity to undertake construction of ----- package at the SEZ to the quality, specifications and time frame as per the terms and conditions stipulated by MWCJ, MWCJ and Contractor have entered into a contract dated xx (hereinafter referred to as “**Contract**” which expression shall include any agreed amendments or modifications thereto) to execute the work within the SEZ in accordance with the terms and conditions of such Contract;
- C. MWCJ has agreed to pay an advance of Rs. ----- in accordance with the terms of the Contract to the Contractor to perform its obligations under the Contract. Such advance given by MWCJ shall be secured by Contractor by way of a bank guarantee;
- D. The Bank has, at the request of the Contractor, agreed to grant in favour of MWCJ, a guarantee to secure advance payment made by MWCJ to the Contractor.

NOW THIS GUARANTEE WITNESSES AS FOLLOWS:

- 1. The Bank hereby unconditionally, unequivocally and irrevocably guarantee to MWCJ and agrees and undertakes that if in the sole and unfettered opinion of MWCJ, Contractor has failed to pay the amount equivalent to Rs. -----given as advance by MWCJ to the Contractor (hereinafter referred to as “**Advance**”)with in the time stipulated in the Contract, the Bank shall upon demand of MWCJ forthwith pay to MWCJ, without demur, contestation or dispute, without reference to Contractor, amount equivalent to Advance. Any such certificate or demand by MWCJ on the Bank, shall be conclusive as regards the amount due and payable by the Bank to MWCJ under this Guarantee, notwithstanding any dispute between Contractor and MWCJ as to the liability for or quantum of loss / damage / claim / costs / expenses and notwithstanding any notice by Contractor to the Bank withhold or not to pay any amount to MWCJ against this Guarantee either before or after invoking of this Guarantee by MWCJ Provided always the total liability of the Bank hereunder shall be limited to Rs. (.....) (Rupees.....).

2. This Guarantee of the Bank shall be effective immediately from the date hereof and shall be in force for till a certificate is issued by MWCJ to the Bank in accordance with Clause 5 of this Guarantee unless a claim or demand in writing is served upon the Bank by MWCJ. If a demand is so served, this Guarantee shall continue in full force and effect (notwithstanding the expiration date) in respect of the amount so demanded until the obligation of the Bank in respect hereof is finally determined and the payment made to MWCJ.
3. The Bank agrees that MWCJ has the fullest liberty, without affecting in any manner the Bank's obligations hereunder, to vary any of the terms and conditions of the said Contract, to extend the time of performance by the Contractor from time to time and to forbear from enforcing any of the terms of the said Contract without any notice to or the consent of the Bank and the Bank shall not be released from its liability under this Guarantee by reason of any such variation or extension or forbearance being granted to Contractor. The Bank agrees that MWCJ has no obligation whatsoever to exercise its rights against collateral, if any, of Contractor but may immediately call on this Guarantee.
4. The Bank agrees that MWCJ has the fullest liberty, without affecting in any manner the Bank's obligation hereunder, to assign this guarantee in favour of any MWCJ affiliate company in India without the consent of but with prior intimation to, the Bank, and the Bank shall not be released from its liability under this Guarantee by reason of any such assignment. The Bank shall forthwith, on receipt of such intimation; undertake necessary endorsements or amendments hereto to incorporate the assignment in favour of such MWCJ affiliate assignee.
5. This Guarantee herein contained shall remain in force and effect till MWCJ certify that the Contractor has dully paid the Advance back to MWCJ. The Bank shall be released of its liabilities and obligations under this Guarantee only after such a certificate as aforesaid is issued by MWCJ to the Bank.
 - i) The Bank shall not revoke this Guarantee during its currency except with the previous consent in writing of MWCJ.
 - ii) Only neglect or forbearance, on the part of MWCJ, in the enforcement of the payment of any money, the payment whereof is intended to be hereby secured or the giving of the time for the payment hereto shall in no way relieve the Bank of their liability under this Guarantee.
6. Any notice or communication under this Guarantee shall be in writing and shall be served on the Bank at its address first hereinbefore mentioned and to MWCJ at its address first hereinbefore mentioned. Either party may notify to the other in writing any change in such address for service of notice upon it. The notices shall be served personally against acknowledgement or by Registered Post / Fax / Telex.
7. This Guarantee shall not be affected by any change in the constitution of the Bank or of Contractor or of MWCJ.
8. This Guarantee shall be governed by the applicable laws of India.
9. The expression "The Bank" and the Contractor hereinbefore used shall include their respective successors and permitted assigns.
10. IN WITNESS WHEREOF..... FOR AND ON BEHALF OF THE BANK HAS SIGNED THIS GUARANTEE ON THE DAY AND THE YEAR FIRST ABOVE WRITTEN.

()

WITNESSES :

1-

2-

The contractor shall be strictly followed with all the compliances as per check list attached below and submitted along with each bill or as per the direction of site in charges.

Annexure

Compliance status

1. WO No./ Ref. No.:-

2. Name of Contractor / Agency:-

3. Nature of Work :-

4. Bill – Running Bill / Final Bill

Compliance requirements

	Points to be checked	Remarks	S.No	Points to be checked	Remarks
1	Attendance Sheet (Month wise)	<u>Annexure No. –</u>	12	Minimum Wages paid as per law	
2	Wage Sheet / Muster Roll (Month wise)	<u>Annexure No. –</u>	13	Bonus / Gratuity compliances as per applicability	<u>Annexure No. –</u>
<u>Provident Fund</u>			<u>WC Policy</u>		
3	Code No. Allotment Letter (One Time)	<u>Annexure No. –</u>	14	Policy No. & Cover to No. of Workers	<u>Annexure No. –</u>
4	P.F. Challan	<u>Annexure No. –</u>	15	Policy Valid upto	

	(month wise)				
5	Site wise break up (if Challan amount not match with wage sheet)	<u>Annexure No. –</u>	<u>Employees State Insurance (not applicable for construction contractors)</u>		
6	Monthly Return (Form 12A;10;5)	<u>Annexure No. –</u>	16	ESI Challan (If applicable)	<u>Annexure No. –</u>
7	Annual Return under PF	<u>Annexure No. –</u>	17	Return under ESI Laws	<u>Annexure No. –</u>
<u>Contract Labour (R&A) Act</u>			<u>Contractors’ All Risk Policy / Third Party Insurance</u>		
8	Whether Form V Issued, if yes, Date		18	Policy No. & Cover Amount (as per contract terms and agreement)	<u>Annexure No. –</u>
9	Licence No. and No. of Maximum Workers (Workers employed by Contractor should not exceed with maximum numbers given in licence at site any time, if yes, please provide numbers)	<u>Annexure No. –</u>	19	Policy Valid upto	
10	Commencement/ Completion report submission to Labour Department	<u>Annexure No. –</u>	<u>Others</u>		
11	Half yearly return / Registers maintained under CL Laws	<u>Annexure No. –</u>	20	Indemnity Bond Given	<u>Annexure No. –</u>
<u>Below declaration along with final bill :-</u>					
I / We also confirm that we have submitted final bill no..... dated.....for WO No..... relating to,.....and there are no dues after settlement of this final bill.					
<u>(Signature of Authorised Signatory of the Contractor)</u>					
<u>COMMENTS</u>					

Signature of Authorised Signatory of Contractor

Verified by – Site Engineer / Contract Dept.

**MAHINDRA WORLD CITY (JAIPUR) LTD.
Vendor Selection Criteria**

SI No	Particular	
a)	Name & Address of The Company	
b)	Contact Numbers	
	Contact Person and Mob.	
c)	Fax	
d)	E-Mail	-
e)	Web-Site	-
f)	PAN No.	
g)	TIN No.	
h)	Service Tax no.	
i)	PF No.	
j)	ESI No	
1	Copy of memorandum and article of the company along with certificate of incorporation	
2	Annual turnover of the company for past 3 years	
	2007-2008 (Rs. -Lacs)	
	2008-2009 (Rs. -Lacs)	
	2009-2010 (Rs. -Lacs)	
3	Details about projects having total value in excess of Rs. 100 Lac completed during past 3 years.	

4	Does your company have local presence in Jaipur? Who is the person who heads the local team in Jaipur? Please give details of staff.	
5	Indicate AT LEAST 6 client references with address / phone nos, for whom your company has executed work with value in excess of Rs. 50 Lac during one single financial year or one contract having value in excess of Rs. 100 Lac.	
		1-
		2-
		3-
		4-
		5-
		6-
6	Indicate AT LEAST 6 Architect/Consultants with address / phone nos, whose designed projects your company has executed in last 5 years with value in excess of 100 Lacs.	
		1-
		2-
		3-
		4-
		5-
		6-
7	Maximum value of contract handled in the past 5 years (Rs. In Lacs)	
8	Quality benchmarks and acceptance criteria will be comparable to international levels.	
i)	What are the quality assurance standards you propose for this project?	
ii)	What are the quality standards achieved by your company?	

iii)	Do you have any systems procedures standards in place?	
9	If you are awarded the project, what site staff organization you propose? Submit org chart.	
10	What will be the qualification of the PM?	
11	Time and quality is the essence of this project! Are you willing to work with a stiff penalty clause in the contract document?	
12	Do you have any Minimum Value of contract, which will be acceptable to you?	
13	Please enclose the following documentation as given below:	
a)	Copy of Power of Attorney of the Signatory	
b)	Latest Income Tax Clearance Certificate	
c)	Sales Tax Clearance Certificate	
d)	Certified Copy of memorandum and article of the company along with certificate of incorporation	
e)	Plant and Equipment	
f)	Organisation Chart	
g)	Quality assurance manual/procedures	
h)	List of ongoing Projects with photograph during and after completion	
i)	List of Projects executed in last 5 years	
j)	Solvency Certificate from a Scheduled Bank.(Rs. In Lacs)	
k)	Bankers	
l)	Registration number/documents for Statutory Requirements (ESI, PF labour license etc).	
m)	Performance Standards for Health and Safety	
n)	ISO Certification if any.	
14	Any other relevant information.	
15	Major Works in Hand with value in excess of 100 Lacs.	

	1-	
	2-	
	3-	
	4-	
	5-	

PART-II

TECHNICAL SPECIFICATIONS

PREAMBLE

- 1 The Technical Specifications referred herein shall be read in conjunction with the other Bidding Documents
- 2 The Technical Specification governing the works shall be “Specification For Road and Bridge Works (Fourth Revision) of Ministry of Shipping, Road Transport & Highways (MORTH), Indian Road Congress Publications (IRC) and relevant Indian Standard (IS) codes.

PART-III

Bill of Quantities

MAHINDRA WORLD CITY , JAIPUR

BOQ FOR ROAD WORKS IN DTA (PHASE-III) (177 ACRES AREA)

S. N.	DESCRIPTION	UNIT	QTY	RATE (RS)	AMOUNT (RS)
1	Cleaning and Grubbing of site as per direction of Engineer - in - Charge.	Hectare	4		
2	Earth work in excavation for road works including dressing of sides and ramming of bottom including making required camber, watering & consolidation the sub grade with road roller to achieve the required O.M.C. as per MORTH specifications , making proper slopes etc. for drainage purpose, for all lifts and leads involved including stacking the excavated material, within site premises				
	a) All kinds of soil	Cum	68634		
3	Earth filling with available excavated earth satisfying to soaked CBR value, free from rocks, vegetation and unuseful material for road embankment works and in site levelling and grading work in layers not exceeding 20 cm in thickness including making required camber, watering & consolidation each layer with road roller to achieve the required O.M.C. as per MORTH specifications, making proper slopes etc. for drainage purpose, for all lifts and leads involved.	Cum	5634		
4	Earth work in road embankment and site levelling and grading works with aproved material satisfying to soaked CBR value from borrow pits within site boundry, free from vegetation and unuseful material and filling the same in layers not exceeding 20 cm in thickness including making required camber, watering & consolidation each layer with road roller to achieve the required O.M.C. as per MORTH specifications, making proper slopes etc. for drainage purpose, for all lifts and leads involved.	Cum	28605		

5	Earth work in road embankment and site levelling and grading works with approved material satisfying to soaked CBR value from borrow pits outside the site boundary, free from vegetation and unuseful material and filling the same in layers not exceeding 20 cm in thickness including making required camber, watering & consolidation each layer with road roller to achieve the required O.M.C. as per MORTH specifications, making proper slopes etc. for drainage purpose, for all lifts and leads involved.	Cum	R/O		
6	Providing, laying, spreading and compacting granular sub-base material conforming to Grading 1 of Table 400-1 of the specifications, compaction being carried out at optimum moisture content so as to achieve 98 percent of the maximum dry density as per IS:2720- Part 8, as per clause 401 of MORTH specifications.	Cum	6720		
7	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density including making arrangement for traffic, all complete as per Clause 406 of MORTH specifications.	Cum	10513		
8	Providing and applying primer coat over granular base using BITUMEN EMULSION(RS-1) at a rate of 9 Kg per 10 sq.m in accordance with Clause 502 of MORTH Specifications	Sqm	42052		
9	Providing and applying tack coat over pavement layers using BITUMEN EMULSION(RS-1) at a rate of 2.0 to 2.5 Kg per 10 Sq. m for bituminous surfaces as per Clause 503 of MORTH Specifications	Sqm	43585		

10	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder of grade 60/70 @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per Clause 507 of MORTH specification, complete in all respects.	Cum	2153		
13	Providing and laying semi dense bituminous concrete with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder of 60/70 grade @ 4.5 to 5 per cent of mix and filler as per Job Mix Formula, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per Clause No. 508 of MORTH specification, complete in all respects	Cum	1328		
14	Providing and laying cement concrete kerb sections casted with kerb casting machine for carriageway, concrete of strength M-20, laid over a bedding of concrete M-15, and set in cement mortar 1:3 as per drawings, including bedding, as per Clause 408 of Specifications	Metre	18892		
15	Providing and laying cement kerb and channel sections casted with kerb casting machine for carriageway, concrete of strength M-20, laid over a bedding of concrete of strength M-15, and set in cement mortar 1:3 ; as per drawings and Clause 408 of Specifications	Metre	440		
16	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering:		R/O		

	a) 1:4:8 (1 Cement : 4 coarse sand :8 graded stone aggregate 40mm nominal size)	Cum	R/O		
17	Constructing stone masonry road/ plot side gully chamber 50x45x60 cm with hard stone in cement mortar 1:5 (1 cement : 5 coarse sand) including 500x450mm precast SFRC horizontal grating with frame complete as per standard design.	Each	R/O		
18	Constructing RCC road side gully chamber 285x400x310 mm with M-25 gradecement concrete as per specifications, necessary form work, steel reinforcement, PCC 1:4:8, 12 mm inside plaster in CM 1:4 & M.S. horizontal grating etc., all complete as per drawing and as directed by Engineer-in-charge.	Each	48		
19	Providing and laying uPVC pipes 160 mm OD of I.S:4985-1988 including jointing with solvent cement etc. complete in all respect (Class-IV, 6Kg/Sq.cm working pressure).	Metre	996		
20	laying non pressure NP3 class medium duty R.C.C pipes with Spigot and socket jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement :2 fine sand) including testing of joints etc. complete under road for heavy traffic				
	a) 150mm dia RCC pipe	Metre	500		
	b) 300mm dia RCC pipe	Metre	300		
	c) 450mm dia RCC pipe	Metre	100		
	d) 600mm dia RCC pipe	Metre	R/O		

21	Encasing CI/GI/RCC/SW/ PVC pipes around including bed concrete with 150mm thick cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 40mm nominal size) including necessary form work etc. , complete as per drawing and as directed.	Cum	R/O		
22	Chequered precast cement concrete tiles 22 mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and cleaning etc. complete on 20 mm thick bed of cement mortar 1:4 (1 cement : 4 coarse sand)				
	a) Medium shade using 50% white cement & 50% grey cement.	Sqm	R/O		
23	Providing and laying 60mm thick Interlocking Cement Concrete Pavers of required shape, size, finish & colour as approved having minimum crushing strength not less than 350kg/sqcm over and including 50 mm thick bed of sand layer complete as per drawing and as directed.	Sqm	R/O		
24	Marking center line, stop line etc. on road as per IRC pattern with thermoplastic paint.	Sqm	R/O		
25	Earth work in Excavation for cross drainage works etc.	Cum	R/O		
26	Add Extra for every additional lift of 1.5m or part thereof in all kinds of soil	Cum	R/O		
27	a) Disposal of surplus earth beyond 0.50 km and upto 1.0 km	Cum	R/O		
27	b) Disposal of surplus earth beyond 1.0 km and upto 2.0 km	Cum	R/O		
28	Providing and laying in position CC including curing compaction etc. centering and shuttering M-15 grade	Cum	R/O		
29	M25 grade design Mix RCC	Cum	R/O		
30	Centering and shuttering with plywood or steel sheets including strutting, propping, bracing both ways and removal of form work etc.	Sqm	R/O		
31	P/F reinforcement for RCC Work	Tonne	R/O		

32	Construction of Pre-cast RCC M-40 grade Single Cell Box Culverts of required size including cost of cement & steel reinforcement, conforming to class "AA" loading- all as per Morth Specification including lifting arrangement, FOR at site, fixing & placing in position, equipment, machinery & labour involved in the process complete in all respects (Earth work & PCC levelling course at bottom shall be paid separately):				
	a) 1500 x 1500 mm (internal size)	Metre	130		
	b) 1750 x 1500 mm (internal size)	Metre	16		
	c) 1500 x 1250 mm (internal size)	Metre	33		
	d) 1000 x 1000 mm (internal size)	Metre	25		
	d) 750 x 750 mm (internal size)	Metre	15		
33	Providing Granular bedding and haunching with graded crusher broken stone aggregate	Cum	R/O		
34	Site Levelling Works.	Hectare	R/O		
	Total AMOUNT				