



Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

## INDIAN INSTITUTE OF MANAGEMENT UDAIPUR

(An Autonomous Institute under the Ministry of Education, Govt. of India)

### TENDER DOCUMENT

### FOR

Name of Work:- Recarpeting of Bituminous Road, CC Road & other miscellaneous work at IIM Udaipur.)



Tender No. :IIMU/Tender/Estate/Road work/24-25/01 dated 25 Sep 2024

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Indian Institute of Management Udaipur  
Balicha, Udaipur-313001, Rajasthan  
Website: [www.iimu.ac.in](http://www.iimu.ac.in)



CONTENT OF TENDER DOCUMENT

<b>S. No.</b>	<b>Topic</b>	<b>Page no.</b>
1	Notice Inviting Tender	3
2	Tender Information Summary (TIS)	4
3	Table of Contents	5
4	Section –1 Technical Bid Submission Form-1 ,2 ,3 ,4 & 5	6-13
5	Section-2 Instruction to the bidders	14-18
7	Section-3 General Condition of Contract	19-26
8	Section-4 Scope of Work	26-31
9	Section-5 Technical Specifications & BOQ/SOQ	32-55
10	Annexure-I	57
11	Agreement format	58-59



Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

**Notice Inviting Tender (NIT)**  
**Recarpeting of Bituminous Road, CC Road & other miscellaneous work at IIM Udaipur.)**

Indian Institute of Management Udaipur (hereinafter referred to as “Institute” or “IIMU”) is an Autonomous Institute under the Ministry of Education (MoE), Government of India. IIM Udaipur is recognized as a premier management institution in the country.

Indian Institute of Management Udaipur invites E-tender (online tender) from approved and eligible contractors, under two part bidding System [Technical Bid & Financial Bid] from enlisted agencies having valid registration with CPWD/MES/ Railways/PSU’s or any other State/Central Government organization registered under composite work category on last date of submission of bids for the Recarpeting of Bituminous Road, CC Road & other miscellaneous work at IIM Udaipur) Mentioned in tender documents. The bidders should have expertise experience in the similar field for undertaking works related to Civil works (specialized in civil construction) for the work “**Recarpeting of Bituminous Road, CC Road & other miscellaneous work at IIM Udaipur.)**”.

**Bidders must read the complete ‘Tender Documents:** This NIT is an integral part of the Tender Document and serves a limited purpose of invitation and does not purport to contain all relevant details for submission of bids. The Bidders must go through the complete Tender Document for details before submission of their Bids.

**‘The Bidders shall sign and stamp each page of this tender document as a token of having read, understood, and comply with tender, the terms, and conditions contained herein. Manual bid/tender will not be accepted under any circumstances. Incomplete bids/ documents shall be rejected without giving any reason.**

**Availability of the Tender Document** -This tender document containing eligibility criteria, the scope of work, terms and conditions, specifications, and other documents, can be ~~downloaded~~ at/from the Central Public Procurement (CPP) Portal <https://eprocure.gov.in/cppp/> or Indian Institute of Management Udaipur website: [www.iimu.ac.in](http://www.iimu.ac.in) .

**Clarifications** – A Bidder requiring any clarification regarding the Tender Document may ask questions in writing/ electronically from the Office/ Contact Person as mentioned in TIS, provided the questions are raised before the clarification end date mentioned in TIS. This deadline shall not be extended.

**Submission of Bids. EMD:** - Bids shall be submitted through online mode under the e-procurement system. **No manual Bids shall be made available or accepted for submission.** The bidders have to apply online through E-Procurement portal <https://eprocure.gov.in/cppp/> only. **“The original EMD is to be submitted in a sealed envelope to be superscribed this tender name & the name of their agency and must reach the below address before the last date & time for submission of the bid.”**

***The Chief of Administration  
IIM Udaipur,  
Balicha, Udaipur-313001,Rajasthan***



Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

## 1. TENDER INFORMATION SUMMARY (TIS)

Name of Work	<b>Recarpeting of Bituminous Road, CC Road &amp; other miscellaneous work at IIM Udaipur.)</b>
Period for Completion of work	3 months
Estimated Cost of Tender	<b>Rs. 43,83,436.00/- (Rupees Forty Three Lakhs Eighty Three Thousand Four Hundred &amp; Thirty Six only)</b>
Tender Fee	Rs. 1500/- (Fifteen Hundred Only)
Earnest Money Deposit	<b>Rs.87,668 /-(Rupees Eighty Seven Thousand Six Hundred Sixty Eight only) in the form of Demand Draft/ Pay Order in favor of “Director, Indian Institute of Management, Udaipur, Rajasthan”</b>
Performance Guarantee (at the time of signing of Agreement)	5 % of the tendered amount
Validity of Bid	90 Days from the date of submission of bid
Date of Publishing	25 Sep 2024
Tender Downloading Start Date	25 Sep 2024, 1800, hrs.
Pre-Bid meeting	01 Oct 2024, 1500, hrs.
Tender Submission Last Date	16 Oct 2024 by 1000 hrs.
Date and Time of Technical Bid Opening	16 Oct 2024 at 1100 hrs
Date and time of Financial Bid Opening	To be notified later
Submission of Bids	The bid shall be submitted online on CPP Portal
Tender Opening Place	On e-procurement portal
Office/ Contact Person/ email for clarifications	Phone – 02942477254 Email - <b>procurement@iimu.ac.in</b>



IIMU  
Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

## **TABLE OF CONTENTS**

**Section 1 : Technical Bid SubmissionForms**

**Section 2 : Instruction to Bidders**

**Section 3 : General Condition of Contract(GCC)**

**Section 4 : Scope of Work**

**Section 5 : Technical Specifications**



**TECHNICAL BID SUBMISSION FORM**

**FORM- 1**

<b>1</b>	<b>Name of Tendering Company / Firm / Tenderer</b>	
<b>2</b>	Name of Director/ Partners/Chairperson	
<b>3</b>	<b>Full Particulars of Office</b>	
(a)	Address	
(b)	Telephone Nos.	
(c)	Mobile Nos.	
(d)	E-mail Address	
<b>4</b>	<b>Registration Details</b>	
(a)	Firm Registration No./Partnership / Proprietorship	
(b)	PAN No.	
(c)	GST Registration No.	
(d)	Bidder Registered No. with CPWD/MES/Railways/PWD of State, PSU's, or any Central/ State Govt. Organization	
<b>5</b>	<b>Details of Tender Document Fee &amp; Earnest Money Deposit</b>	
(a)	Tender Document Fee Amount	
(b)	Earnest Money Deposit	

**Signature of Bidder as  
Authorized by the Company**



Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

## FORM- 2

### TENDER ACCEPTANCE LETTER (To be given on Agency Letter Head)

Date :

To,

The Director,  
IIM Udaipur  
Balicha, Udaipur, Rajasthan-313001.

Sub. : Acceptance of Terms & Conditions of Tender.Tender Reference No.

IIMU/Tender/Estate/Road work/24-25/01

Name of Tender/Work:. Recarpeting of Bituminous Road, CC Road & other miscellaneous work at IIM Udaipur.)

Dear Sir,

1. I/We have downloaded/obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely: CPPP Portal as per your advertisement, given in the above mentioned website(s).
2. I/We hereby certify that I/We have read the entire terms and conditions of the tender documents from Page No.\_to\_(including all documents like annexure(s), schedule(s), drawings, etc.,) which form part of the contract agreement and I/we shall abide by with the terms/conditions/clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/organization too have all been taken into consideration while submitting this acceptance letter.
4. I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.
5. In case any provisions of this tender are found violated, then your department/organization shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full earnest money deposit absolutely.

Yours faithfully,

(Signature of the Bidder, with Official Seal)



Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

### FORM - 3

#### DECLARATION ON THE LETTER HEAD OF THE BIDDER

1. I/we, the undersigned certify that I/we have gone through the terms and conditions mentioned in the tender documents and undertake to comply with them.
2. The rates quoted by me/us are valid and binding on me/us during the period of validity of the tender.
3. I/we, the undersigned hereby bind myself/ ourselves to the Indian Institute of Management Udaipur, Balicha Udaipur, Rajasthan-313001 during the period of contract and defect liability period.
4. The Performance Guarantee deposited by me/us shall remain in the custody of the Indian Institute of Management Udaipur, Balicha Udaipur, Rajasthan-313001 subject to settlement of all dues on either side. The performance Guarantee Deposit will not carry any interest.
5. The conditions contained herein shall form part of and shall be taken as included in the agreement itself.
6. I/we will be wholly responsible for undertaking "Recarpeting of Bituminous Road, CC Road & other miscellaneous work at IIM Udaipur.)".
7. An affidavit to the effect that there is no vigilance/CBI or court case pending/contemplated against the firm as on the date of submission of bid.
8. The decision of the IIM Udaipur regarding acceptance/rejection of Tender shall be final & binding on me/us.

#### Affirmation

1. I, Son / Daughter of Shri Partner / Director Authorised Signatory of affirm that I am competent to sign this declaration and execute this tender document.
2. I have carefully read and understood all the terms and conditions of the tender and here by convey my acceptance of the same.
3. The information / documents furnished along with the above application are true and authentic to the best of my knowledge and belief. I am aware of the fact that furnishing of any false information / fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.

Date: \_\_\_\_\_ Signature of Bidders / Managing Partner / Director

Place: \_\_\_\_\_ Name:

Seal:

**N.B. The above declaration, duly signed and sealed by the authorized signatory of the Company, should be enclosed with Technical Bid.**





## FORM 4 ELIGIBILITY CRITERIA

**Only those Bidders who meet the following minimum criteria will be considered for opening of financial bid. Supporting documents/annexures should be attached with this and must be serially numbered. An Index must be made for this to facilitate quick reference to the relevant page number.**

1. The Bidder shall submit the original EMD and tender fee in a sealed envelope superscribing this tender name & the name of the organization and must reach at IIMU before the last date & time for submission of Bid. Photocopies of the same EMD and tender fee should be enclosed to support this along with the format given below.

S No.	Type of Fee	Details	Page number of the attached Copy
1	Tender Fee	DD No. _____ of Rs. 1500/- (Rupees Fifteen hundred only) of Dated _____ drawn on Bank. _____ Branch	
2	EMD	DD No. _____ of Rs. 87,668/- (Eighty Seven Thousand Six Hundred Sixty Eight only) of Dated _____ drawn on Bank _____ Branch	

DD will be made in favor of "Indian Institute of Management Udaipur" payable at Udaipur.

2. **Empanelment:** The intending bidders should have valid empanelment on last date of receipt of tenders in an appropriate class for civil works with CPWD, MES, Railways, PSU or any other Central/State Govt. Organization. Please attach the documentary proof of empanelment.

S No.	Certificate/License No.	Validity	Page number of the attached Copy



3. The Bidder should have valid Indian Permanent Account (PAN) ,GST, EPF and ESI number number as per the detail given below: -

S No	Type	Number	Page number of the attached self-attested Copy
1.	PAN		
2.	GST		
3	EPF		
4	ESI		

4.The Bidder should have experience of executing successfully (completed similar works) during the last seven years ending on the last day of the month previous to the one in which tenders are invited in reputed Organizations (Central/State govt. Dept./PSUS of Central or State Govt./Railways/Similar Govt. Organizations).

Three Similar works of value not less than **40 % each** i.e. 17.53 Lacs.

or

Two Similar works value not less than **60 % each** i.e. 26.29 Lacs.

or

One Similar works of value of not less than **80 % each** i.e. 35.06 Lacs.

**Note - The value of executed works shall be brought to current costing level by enhancing the actual value of work at a simple rate of 7% per Annum, calculated from the date of completion to the previous day of the last day of submission of the Tender."**

Years	Name of Organisation	Description/ nature of multi-specialty work	Amount of work execute	Page no of the attachedcopy	Date of Completion
<b>FY 2017-18</b>					
<b>FY 2018-19</b>					
<b>FY 2019-20</b>					
<b>FY 2020-21</b>					
<b>FY 2021-22</b>					
<b>FY 2022-23</b>					
<b>FY 2023-24</b>					

5. Turnover (**Minimum Turnover of Rs 43.84 Lakhs**) during the Last Three (3) financial years ended on 31 Mar 2023.The documentary evidence duly certified by CA, indicating yearly total turnover and turnover from similar services related work, should be attached in the following format.

Financial Year	Total Turnover in Rupees (in words and figures)



Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

FY 2020-21	
FY 2021-22	
FY 2022-23	

6. **Past performance in IIM Udaipur:** Bidder, whose contract in IIM Udaipur has been.

(a) determined/ terminated due to contractor's inability to execute the work will be disqualified technically even though they may meet the other technical/eligibility criteria.

(b). Delayed due to contractor's inability to execute the work, will be disqualified technically even though they may meet the other technical/eligibility criteria.

7. There should be no case pending with the police against the Bidder/ Proprietor/ Firm /Partner/Director or the Company (agency) and should not be blacklisted by any Govt agency. A self-undertaking to this effect on the agency's letterhead should be attached as per annexure I.

S No.	Agency/ Bidder is blacklisted (Yes/No)	Site on which it is Blacklisted	Page number of the Undertaking on agency letterhead (If not blacklisted)

Note:- All third-party certificates should be duly signed and stamped by the bidding organization.

Certified that all above information is correct to the best of my/our information, knowledge, and belief. All the attached relevant documents are duly signed, sealed, and serially numbered.

Place:

Date:

(Signature of the bidder with seal)



Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

**FORM 5  
DECLARATION REGARDING BLACKLISTING**

[On the letterhead of the Bidder]

I /We Proprietor / Partner (s) / Director (s) of M/s .....hereby declare that the firm/ company namely M/S ..... has not been blacklisted or debarred in the past by any organization from taking part in Government tenders.

Or

I / We proprietor / partner (s) / Director (s) of M/S..... hereby declare that the firm/ company namely M/S..... Was blacklisted or debarred by any Government Department from taking part in Government tenders for a period of ..... years w.e.f..... The period over on ..... And now the firm/ company is entitled to take part in Government tender. In case the above information found false I / we are fully aware that the tender/ contract will be rejected / cancelled by IIMU shall be forfeited. In addition to the above IIMU. Will not be responsible to pay the bills for any completed/ partially completed work.

Date:

Authorized Signatory (Signature In full):

Name and title of Signatory:

Stamp of the Company:

In case of proprietorship firm, certificate will be given by the proprietor, and in case of partnership firm, certificate will be given by all the partners and in case of limited company by all the Directors of the company or company secretary on behalf of the Company.



Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

**FORM 6**  
**CERTIFICATE OF SITE INSPECTION**

[On the letterhead of the Bidder]

THIS IS TO CERTIFY that: I, (name of bidder or his representative) of the(name of the firm) visited the site in connection with the Bid No for the work of Recarpeting of Bituminous Road, CC Road & other miscellaneous work at IIM Udaipur.

Having examined the bid documents, I certify that I have acquainted with the nature, geographical and exact location of the works; the general conditions of execution; the neighboring area and other work that might affect the construction methods; the physical conditions specific to the sites; the climatic conditions; local conditions; means of communication and transport; the possibility of supplying electricity; the availability of labor sufficient in number and quantity; all constraints and obligations resulting from social, tax; and all conditions and circumstances which might influence the execution or price of the works.

I further certify that I am satisfied with the description of the works and that I understand perfectly the works to be undertaken as specified and implied in the execution of the Contract.

\*Note: All the bidders are advised to visit the site before bidding. In case the bidder is not making site visit he will be solely responsible for all or any discrepancy.

Signature of Bidder with seal:

Name and title of Signatory:

Stamp of Address of Company



Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

## Section-02

### INSTRUCTIONS TO THE BIDDERS

#### 1.0 GENERAL INSTRUCTIONS:

1.1 For Bidding / Tender Document Purposes, 'Office of the Director, Indian Institute of Management, Udaipur, Rajasthan referred to as 'Client' and the Bidder / Successful Bidder shall be referred to as 'Agency/ Contractor' and / or Bidder interchangeably.

1.2 The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates.

1.3 While all efforts have been made to avoid errors in the drafting of the tender documents, the Bidder is advised to check the same carefully. No claim on account of any errors detected in the tender documents shall be entertained.

**1.4 Each page of the Tender documents must be stamped and signed by the person or persons authorized to submit the Tender in token of his/their having acquainted himself/ themselves and accepted the entire tender documents including various conditions of contract. Any bid with any of the Documents not so signed is liable to be rejected at the discretion of the client.**

1.5 The Bidder shall attach the copy of the authorization letter / Power of Attorney as the proof of authorization for signing on behalf of the tendering company/ firm/ tenderer.

1.6 All Bidders are hereby explicitly informed that conditional offers or offers with deviations from the conditions of Contract, the bids not meeting the minimum eligibility criteria, technical bids not accompanied with EMD of requisite amount/format, or any other requirements, stipulated in the tender documents, are liable to be rejected.

1.7 The parties to the Bid shall be referred to as the 'Bidders' /Agency (to whom the work has been awarded) and 'Office of the Director, Indian Institute of Management, Udaipur, Rajasthan' shall be referred to as 'Client'.

1.8 For all purposes of the contract including arbitration there under, the address of the Bidder mentioned in the bid shall be final unless the Bidder notifies a change of address by a separate letter sent by registered post with acknowledgement to the 'Office of the Director, Indian Institute of Management, Udaipur, Rajasthan. The Bidder shall be solely responsible for the consequences of any omission or error to notify change of address in the aforesaid manner.

1.9 Bidders are advised to visit personally the worksite/place i.e. **Indian Institute of Management Udaipur, village Balicha, Udaipur, Rajasthan 313001** to acquaint themselves with site conditions.

1.10 The requirement/execution of the work is indicative as mentioned in Schedule of Quantity and may deviate or change at the sole discretion of the client up to the permissible deviation limit.

Signature of Associate Manager (Estate)

Signature of Bidder

Page 14 of 59



IIMU

Indian Institute of Management Udaipur

भारतीय प्रबंधन संस्थान उदयपुर

1.11 **Pre- Bid Meeting:-**The purpose of the pre-bid meeting will be to clarify issues and to answer questions on any matter concerning bids that may be raised at that stage or for any clarification in connection with the bid documents. The bidder may submit any queries in writing or by e-mail, to reach the Engineer In Charge before such meeting. Proceeding of the pre-bid meeting, including copies of the queries raised and responses given, will be furnished expeditiously to all those attending the meeting (and subsequently to all purchasers of the bidding documents). Any modification of the bidding documents which may become necessary as a result of the pre-bid meeting or otherwise shall be made by the Engineer In Charge through the issuance of an Addendum (or Amendment) to the bid documents and shall form part of the resultant contract.

## 2. EARNEST MONEY DEPOSIT:

2.1 This tenders should be accompanied with Earnest Money Deposit (E.M.D.) **Rs.87,668 /- (Rupees Eighty Seven Thousand Six Hundred Sixty Eight only)** in the form of Demand Draft/ Banker's Cheque/ Pay Order of any nationalized/Scheduled bank in favor of "Director, Indian Institute of Management, Udaipur, Rajasthan" payable at Udaipur, Rajasthan valid for 3 months.

2.2 The Earnest Money Deposit will be refunded to the bidders without any interest whose offers have not been accepted. The Earnest Money Deposit of the bidder whose offer is accepted will be kept until such time that the Performance Bank Guarantee is received.

2.3 The tenders without the Earnest Money shall be summarily rejected.

2.4 The tender security (EMD) may be forfeited:

(i) If the Tenderer withdraws his tender during the period of tender validity specified by the Tenderer in the tender form; or

(ii) In case of successful Tenderer, if the Tenderer

(a) Fails to sign the contract in accordance with the terms of the tender document.

(b) Fails to furnish required performance security in accordance with the terms of Tender document within the time frame specified by the client.

(c) Fails or refuses to honor his own quoted prices for the services or part thereof.

## 3. VALIDITY OF TENDERS AND RATES

Bid shall remain valid and open for acceptance for a period of 90 days from the last date of submission of Tenders.

The rates shall be valid for a period of One Year from the date of start of work.

### 3.1 Rates must be inclusive of GST and taxes.

## 4.PREPARATION/SUBMISSION OF BIDS

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

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

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

Signature of Associate Manager (Estate)

Signature of Bidder

Page 15 of 59



IIMU

Indian Institute of Management Udaipur

भारतीय प्रबंधन संस्थान उदयपुर

scanned document.

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

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

## 5. SUBMISSION OF TENDER

1) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.  
2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.  
3) Bidder has to select the payment option as “offline” to pay the tender fee / EMD as applicable and enter details of the instrument.

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

**5) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white-colored (unprotected) cells with their respective financial quotes and other details (such as the name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.**

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

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

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

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

10) The bid summary has to be printed and kept as an acknowledgment of the submission of the bid. This

Signature of Associate Manager (Estate)

Signature of Bidder

Page 16 of 59





IIMU

Indian Institute of Management Udaipur

भारतीय प्रबंधन संस्थान उदयपुर

acknowledgment may be used as an entry pass for any bid opening meetings.

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

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

13) The Agencies are requested to submit the bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bid online by the Agencies at the eleventh hour.

14) Not more than one tender shall be submitted by one Agency or Agencies having a business relationship. Under no circumstance will the father and his son(s) or other close relations who have a business relationship with one another (i.e. when one or more partner(s)/director(s) are common) be allowed to tender for the same contract as separate competitors. A breach of this condition will render the tenders of both parties liable to rejection.

15) Bidder who has downloaded the tender from the IIMU website [www.iimu.ac.in](http://www.iimu.ac.in) and Central Public Procurement Portal (CPPP) website <https://eprocure.gov.in/eprocure/app> shall not alter/modify the tender form including downloaded price bid template in any manner. In case if the same is found to be altered/modified in any manner, tender will be completely rejected and EMD would be forfeited, and Bidder is liable to be banned from doing business with IIMU.

## **6. TENDER OPENING PROCEDURE**

6.1 The tender will be opened online on the Central Public Procurement Portal (CPP Portal).

## **7. CLARIFICATION ON TENDER EVALUATION**

7.1 The Tender shall be evaluated based on the available documents submitted by the tenderer.

7.2 Client also reserves right to seek confirmation/ clarification on the supporting documents submitted by the tenderer.

## **8. RIGHT OF ACCEPTANCE**

8.1 Office of Director, IIM Udaipur, Rajasthan reserves all rights to reject any tender including of those tenderer's who fail to comply with the instructions without assigning any reason whatsoever and does not bind itself to accept the lowest or any specific tender. The decision of the Competent Authority in this regard shall be final and binding.

8.2 Any failure on the part of the Tenderer to observe the prescribed procedure and any attempt to canvass shall render the Tenderer liable for rejection.

8.3 The Competent Authority reserves the right to award any or part or full contract to any successful tenderer's at its discretion and this will be binding on the Tenderer's.

8.4 Office of Director, IIM Udaipur, may terminate the contract if it is found at any stage that Contractor is black listed on previous occasion by any institution.

## **9. LETTER OF ACCEPTANCE**

9.1 After determining the successful evaluated Tenderer, Client shall issue a Letter of Acceptance (LoA) in duplicate, who will return one copy to client duly acknowledged, accepted and signed by the authorized signatory, within 3 days of receipt of the same by him.

9.2 The issuance of the Letter of Acceptance to the Tenderer shall constitute an integral part of the contract and it will be binding on the contractor.

**Signature of Associate Manager (Estate)**

**Signature of Bidder**

**Page 17 of 59**



## **Section-03**

### **GENERAL CONDITIONS OF CONTRACT (GCC)**

#### **1. DEFINITIONS**

Unless repugnant to the subject or context of usage, the following expressions used herein shall carry the meaning hereunder respectively assigned to them, namely:

1. **“Annexure”** referred to in the Tender document shall mean the relevant annexure appended to the Tender Document and the Contract.
2. **“Approved”** shall mean approved in writing including subsequent confirmation of previous verbal approval. **“Approval”** shall mean approval in writing including as aforesaid.
3. **“Agreement”** the word **“Agreement”** and **“Contract”** has been used interchangeably.
4. **“Bidder”** shall mean the Bidder who submits the tender for the work and shall include the successors and permitted assigns of the Bidder.
5. **“Organization”** shall mean the Indian Institute of Management located at Udaipur, Rajasthan.
6. **“Commencement Date”** shall mean the date upon which the Contractor receives the notice to commence the supply of Services.
7. **“Competent Authority”** shall mean the Director, Indian Institute of Management, Udaipur, Rajasthan.
8. **“Competent Officer”** shall mean an officer authorized by the Director.
9. **“Contract”** shall mean the contract for the work and shall include the Tender Documents, the Special Conditions of Contract, the General Conditions of Contract, the Letter of acceptance and the accepted rates, the offer, the Agreement and mutually accepted conditions in the authorized correspondence exchanged between the Contractor and the Competent Officer and any other document forming part of the contract.
10. **“Contract Amount”** shall mean the sum quoted by the Contractor in his offer and accepted by Competent Authority.
11. **“Contractor”** shall mean the individuals or firm or company whether incorporated or not, undertaking the contract and shall include legal representatives of such individual or persons composing such firm or unincorporated company or successors of such firm or company as the case may be and permitted assigns of such individual or firm or company. This shall be synonymous with term **“Bidder”** used in the Detailed Tender Notice and shall mean the successful **“Bidder”**.
12. **“Engineer in Charge”** shall mean the Associate Manager-Estate of Indian Institute of Management, Udaipur
13. **“Letter of Acceptance”** means the formal acceptance of Bid issued by the Competent Officer.
14. **“Owner”** shall mean the Director, Indian Institute of Management, Udaipur, Rajasthan.
15. **“Prescribed”** shall mean as prescribed in the Tender Document.
16. **“Specifications”** means the specifications referred to in the Tender and any modification thereof or addition

**Signature of Associate Manager (Estate)**

**Signature of Bidder**



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or deduction thereto as may from time to time be furnished or approved in writing by the Competent Authority. In case where no particular specification is given, the relevant specification, where one exists, of the Bureau of Indian Standards shall apply.

17. **“Tender”** means the Contractor’s bid offered to the Competent Authority for the supply of the Services and remedying of any defects therein in accordance with the provisions of the Contract, the installation and services as accepted by the Letter of Acceptance.

19. **“Time for completion”** means the time for completing the supply of services or any part thereof as stated in the Contract calculated from the Commencement Date.

20. **“Similar Work” and “Scope of work”** shall mean the supply, installation, testing and commissioning of MS Steel work, and Bituminous & Cement Concrete Road work, road marking etc.

21. The specifications mean the CPWD specifications related to the work with up-to-date correction slips and amendment thereto. Any term that has not been defined hereinabove shall be governed by the meaning explained in Oxford Dictionary and/or should be determined by the General Clauses Act relevant to such contracts.

## **2. RETURNING OF EARNEST MONEY DEPOSIT (TENDER SECURITY AMOUNT)**

2.1 The Earnest Money Deposit of the unsuccessful tenderers shall be returned after opening of the financial bid.

2.2 The Earnest Money Deposit will be refunded to the bidders without any interest whose offers have not been accepted. Earnest Money Deposit of the bidder whose offer is accepted will be kept until such time that the Performance Bank Guarantee is received.

## **3. PERFORMANCE GUARANTEE (SECURITY DEPOSIT)**

3.1 The successful tenderer will deposit 5 % of the tendered value as Performance security in the form of FDR/Bank Guarantee pledged in favor of “Director, Indian Institute of Management, Udaipur, Rajasthan” from any Nationalized/Scheduled Bank within 10 days of the acceptance of the Loa. The validity of Performance security will be 60 months from date of completion of work. The performance security can be forfeited by order of the competent authority i.e. Director, Indian Institute of Management, Udaipur, Rajasthan.in the event of any breach of negligence or non-observance of any terms/ condition of contract or for unsatisfactory performance or for non-acceptance of the work order. Security deposit which shall be extended to cover **the defect liability period of 60 months after completion of the work**. The EMD deposited at the time of tendering will be returned after submission of the Performance Guarantee. **(Warranty of the Bitumen Road work and CC road {including all layers of the road which will be executed by the contractor}- 5 years).**

## **4. SIGNING OF CONTRACT AGREEMENT**

4.1 The successful tenderer shall enter into the contract and shall execute and sign the Contract Agreement in accordance with the Articles of Agreement on a non-judicial stamp paper of Rs. 500/- to be obtained by the successful tenderer.

4.2 The competent authority of the Client shall sign the Contract agreement and return a copy of the same to the successful tenderer.

## **5. CONTRACTOR'S OBLIGATIONS**

**Signature of Associate Manager (Estate)**

**Signature of Bidder**

**Page 19 of 59**



IIMU

Indian Institute of Management Udaipur

भारतीय प्रबंधन संस्थान उदयपुर

5.1 The Contractor shall provide services at Client's premises as per Scope of Work (Section 4) which may be amended from time to time by the Client during the Contractual period and it shall always form part and parcel of the Contract. The Contractor shall abide by such assignments as provided by the Client from time to time.

5.2 Contractor shall not engage any sub-contractor for the work assigned to him.

5.3 In the event of substandard performance or non-performance during the contract period, the client shall have the right to foreclose the contract and forfeit the Performance Guarantee/ Security Deposit.

5.4 The Agency/contractor has to make their own arrangement of machinery and T&P to undertake the work in mechanized manner.

## 6. VALIDITY OF CONTRACT

**The contract, if awarded, shall be for 90 days from the date of award.** In case of breach of Contract or in the event of not fulfilling the minimum requirements / statutory requirements, the Client shall have the right to terminate the contract forthwith in addition to forfeiting the performance security amount deposited by the contractor and initiating administrative actions for blacklisting etc. solely at the discretion of the Competent Authority of the office of the Client.

## 7. PAYMENTS

7.1 After selection of the successful bidder as contractor, the payment shall be made as a running bill of amount not less than 15 lakhs and submission of computerized measurement of work and abstract of cost along with all required documents in full.

7.2 All payments shall be made in Indian Currency by means of NEFT/ RTGS in the account of the Contractor.

7.3 Client shall be entitled to deduct in accordance with Applicable Law, Income Tax, GST or withholding tax or other deductions (as the case may be), from any payments made to the Contractor, and the amount so deducted shall be deemed to be a payment made to the Contractor. The client shall provide a certificate certifying the deduction so made.

7.4 No payment shall be made in advance nor any loan from any bank or financial institution recommended on the basis of the order of award of work.

## 8. FORECLOSURE OF CONTRACT DUE TO ABANDONMENT OR REDUCTION IN SCOPE OF WORK

If at any time after acceptance of the tender, Competent Authority shall decide to abandon or reduce the scope of the works for any reasons whatsoever and hence not require the whole or any part of the works to be carried out, the Engineer In Charge shall give notice in writing to that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the work

## 9.0 TAXES AND DUTIES

The rates quoted by the tenderer shall be firm and final and inclusive of all taxes i.e. GST, TDS, Cess etc.

### 9.1 DEDUCTIONS

#### (i) GST/Income TAX and Surcharge

GST/Income Tax and Surcharge deductions shall be made from all payments made to the contractor including



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भारतीय प्रबंधन संस्थान उदयपुर

advances against work done, as per the rules and regulations in force, in accordance with the Income Tax act prevailing from time to time.

## **(ii) Labour welfare cess**

The rates of the contractor shall be inclusive of labour cess. Labour welfare cess shall be deducted from the running payment of the Contractor against the value of work done as per the rules & regulations in force during the period of contract.

Every contractor, sub-contractor, affiliates, their legal assigns or heirs as the case may, shall be responsible for registration of every Building worker who has completed eighteen years of age but has not completed sixty years of age and who has been engaged in any Building or Other Construction Work for not less than Ninety Days during the preceding twelve months; with the Board/ Funds as applicable under various sections of "THE BUILDINGS AND OTHER CONSTRUCTION WORKERS (REGULATION OF EMPLOYMENT AND CONDITIONS OF SERVICE) ACT, 1996 and THE BUILDING AND OTHER CONSTRUCTION WORKERS' WELFARE CESS ACT, 1996.

## **10. RIGHT TO INSPECTION**

The Competent authority or his/ her subordinates shall have unabridged right to inspect and supervise the day-to-day activity of the contractor to ensure maintenance of high-quality standards conformity to the Contract specifications.

## **11. COMPENSATION FOR DELAY**

If the contractor fails to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay compensation amount as: -

Compensation for delay of work @ 2% per month of delay to be computed on per day basis, provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the Tendered Value of work.

The substandard work carried out shall be dismantled and redone. In case the substandard work done by the contractor is acceptable, it will be devalued. The decision of the Competent Officer will be final and binding.

The Competent Authority or his representative shall have absolute powers to accept/ reject the materials brought to the site

## **12. TIME & EXTENSION OF DELAY**

The time allowed for execution of the works as specified in the tender document or the extended time in accordance with these conditions shall be the essence of the contract. The execution of the works shall commence from the 10th day after issue of LoA or from the date of handing over of the site whichever is later. If the contractor commits default in commencing the execution of the work as aforesaid, the Earnest Money & Performance Guarantee/ Security Deposit submitted by the contractor shall be forfeited.

## **13. MATERIALS & MANDATORY TESTS**

The contractor shall, at his own expense, provide all materials required for the works. The contractor shall, at his own expense and without delay, supply the Engineer In Charge with samples of the materials to be used on the work and shall get these approved in advance. All such materials to be provided by the contractor shall be in conformity with the specifications laid down or referred to in the contract. The Engineer In Charge shall, within



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भारतीय प्रबंधन संस्थान उदयपुर

three days of supply of samples, intimate to the contractor, whether samples have approved him or not. If samples are not approved, the contractor shall, forth with arrange to supply fresh samples. When materials are required to be tested in accordance with specifications, approval of the Engineer In Charge shall be issued after the test results are received.

#### **14. CONTRACTOR'S LIABILITY**

If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road kern fence, enclosure, water pipe, cables, drains, electric or telephone post or wires, trees, grass or grass land, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within three months after a final certificate or otherwise of its completion shall have been given by the Engineer In Charge as aforesaid arising ut of defect or improper materials or workmanship the contractor shall upon receipt of notice in writing on that behalf make the same good at his own expense or in default the Engineer In Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The security deposit of the contractor shall not be refunded before the expiry of three months, after the issue of final certificate or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later.

#### **15. LABOUR SAFETY PROVISIONS**

The contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, lights, watchmen etc. during the progress of work as directed by Engineer In Charge In case of all labour directly or indirectly employed in work for the performance on the contractor's part of this contract, the contractor shall comply with all rules framed by Govt. from time to time for the protection of health and sanitary arrangements for workers. Guidelines issued by MHA, MoHFW and/or Govt. of Rajasthan in context of COVID -19 must be strictly followed at workplace (site) by the contractor at his own cost.

#### **16. WORKMENS COMPENSATION ACT**

The contractor shall at all times indemnify the Competent Authority against all claims for compensation under the provisions of Workmen Compensation Act or any other law in force, for workmen employed by the contractor in carrying out the contract and against all costs and expenses incurred by the organization therewith.

#### **17. DEVIATIONS/VARIATIONS EXTENT & PRICING**

17.1The client shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer In Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work within the deviation limit of 30% of the original quantities.

17.2In the case of Extra Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plus cost index (at the time of tender) plus/minus percentage above/ below quoted

**Signature of Associate Manager (Estate)**

**Signature of Bidder**

**Page 22 of 59**



IIMU

Indian Institute of Management Udaipur

भारतीय प्रबंधन संस्थान उदयपुर

contract amount.

17.3 Payment of Extra/substitute items in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.

17.4 In the case of contract items, which exceed the limit(s) of quantity (ies) laid down in schedule, the contractor shall be paid rates specified in the schedule of quantities.

## 18. ESCALATION/ PRICE VARIATION

No claim on account of any price variation/ Escalation on whatsoever ground shall be entertained at any stage of works. All Rates as per Bill of Quantities (BOQ) quoted by Contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation/ price variation clause shall be applicable on this contract.

## 19. EXECUTION OF WORK

The contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications.

The contract shall comply with the provisions of the contract and execute the works with care and diligence and maintain the works and provide all labor and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these is specified or is reasonably inferred from the contract. The contractor shall take full responsibility for the adequacy, suitability and safety of all the works and methods of construction.

## 20. LAWS & ACTS

The following Laws/Acts will be applicable on the Contract:-

- (i) Contract Labor Act.
- (ii) Minimum Wages Act.
- (iii) Indian Contract Law.

## 21. RISK & COST

Non completion of work or willful abandoning the work or non-fulfillment of any condition of contract shall render the contract liable for termination of his contract. Upon such termination the work shall be taken out of his hand and will be got executed at the risk and cost of the defaulting contractor. The extra cost incurred shall be recovered from the dues of the defaulting contractor or as per the legal course of action available with the department. The same will be applicable for defect liability period of 12 month for the work executed by the agency. The agency have to resolve all type of complaints regarding the work carried out by him till the completion of Defect liability period of 12 months, if the agency fails to do so, the performance guarantee./ security deposited shall be forfeited and the work will be carried out by the other agency on Risk & Cost.

## 22. DISPUTES & ARBITRATIONS

Any dispute, difference or question with regard to any matter in connection with this contract, shall be referred to two arbitrators, one to be nominated by each party. In case of difference between the Arbitrators, the decision of the umpire appointed by the Arbitrators shall be final and binding on both the parties. The appointment of the arbitrators and the procedure to be followed shall be governed by Indian Arbitration and Conciliation Act, 1996

Signature of Associate Manager (Estate)

Signature of Bidder

Page 23 of 59



IIMU

Indian Institute of Management Udaipur

भारतीय प्रबंधन संस्थान उदयपुर

or any statutory modification thereof. The arbitrators or the Umpire may from time to time with the consent of the parties extend the time for making and publishing the Award. The arbitrators and Umpire shall be Engineers only. The Contractor shall continue to execute the work at site during the arbitration proceedings, and maintain the same pace of progress of work and required under the conditions of contract.

### **23 FORCE MAJEURE - OBLIGATIONS OF THE PARTIES**

"Force Majeure" shall mean any event beyond the control of Client or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected, and which could not have been prevented by exercise of reasonable skill and care and good industry practices and shall include, without limitation, the following:

- (i) War, hostilities, invasion, act of foreign enemy and civil war;
- (ii) Rebellion, revolution, insurrection, mutiny, conspiracy, riot, civil commotion and terrorist acts;
- (iii) Strike, sabotage, unlawful lockout, epidemics, quarantine and plague;
- (iv) Earthquake, fire, flood or cyclone, or other natural disaster.

As soon as reasonably practicable but not more than 48 (forty-eight) hours following the date of commencement of any event of Force Majeure, an Affected Party shall notify the other Party of the event of Force Majeure setting out, inter alia, the following in reasonable detail:

- (i) The date of commencement of the event of Force Majeure;
- (ii) The nature and extent of the event of Force Majeure;
- (iii) The estimated Force Majeure Period,
- (iv) Reasonable proof of the nature of such delay or failure and its anticipated effect upon the time for performance and the nature of and the extent to which, performance of any of its obligations under the Contract is affected by the Force Majeure.
- (v) The measures which the Affected Party has taken or proposes to take to alleviate/mitigate the impact of the Force Majeure and to resume performance of such of its obligations affected thereby.
- (vi) Any other relevant information concerning the Force Majeure and / or the rights and obligations of the Parties under the Contract.

### **24. CORRUPT & FRAUDULENT PRACTICES**

Director requires that bidders under the resultant contract observe the highest standard of ethics during the period of contract. In pursuance of this policy, the Director:

(a) Defines, for the purpose of these provisions, the terms set forth below as follows:

- (i) "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public servant; and
- (ii) "Fraudulent practice" means a misrepresentation of facts in order to influence the execution of a contract to the detriment of the Employer, and includes collusive practice among Applicants / Bidders (prior to or after bid submission) designed to establish bid prices as artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.





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Indian Institute of Management Udaipur

भारतीय प्रबंधन संस्थान उदयपुर

(b) Will reject a proposal for award of contract, if it is determined that the Applicant recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question will declare an Applicant/ Bidder ineligible, either indefinitely or for a stated period of time, for award a contract/ contracts, if it at any time it is found that the Applicant/ Bidder has engaged in corrupt or fraudulent practices in competing for, or in executing the contact.

**25. Safety Codes** : Ensuring safety at site for the captioned work need to be observed / ensured in accordance with the provision content in handbook of CPWD related to safety health & environment to the extent applicable to this work at IIM Udaipur, Decision in this regard will be governed by the competent authority of IIM Udaipur which shall be final and binding to the contractor.

**26. Fire Safety** : This will be as per the Fire Safety codes of the CPWD to the extent applicable to the IIM Udaipur. Decision in this regard will be governed by the competent authority of IIM Udaipur which shall be final and binding to the contractor.



## **SCOPE OF WORK** **(Special Terms and Conditions)**

### **SCOPE OF WORK**

#### **Recarpeting of Bituminous Road, CC Road & other miscellaneous work at IIM Udaipur.**

1. The tenderer shall acquaint himself with the proposed site of work.
2. The complete work as specified in SOQ(Schedule of Quantities) or as directed by Engineer In Charge or Estate Office representative shall be bound on contractor/tenderer to undertake the work.
3. The entire premise is to be kept free of any debris at the working site. The demolished/dismantled materials required to be dumped at the designated dumping site in consultation with Engineer In Charge and the same required to be disposed at designated Dumping Site on regular basis. The contractor has to maintain the designated dumping site within the campus neat and clean and also has to clear any dumped material brought at the site during execution of the awarded work whenever he asked for. The cost for the same is inclusive in the rates quoted against the items available in schedule of quantity. No extra payment for the same shall be paid.
4. Inspection of materials/work at site: The IIM Udaipur's engineer and /or his representative shall inspect the materials at site after delivery before the same is used in the work. The IIMU's engineer and /or his representative shall have free and full access at any time during execution of the contract to the contractor's works or site. In case of execution of work for the aforesaid purpose, and IIMU's engineer may require the contractor to make arrangements for inspection of work or any part thereof or any material at his premises or at any other place specified by the IIMU's Engineer.
5. The IIM Udaipur's Engineer shall have the power: (i) To reject the whole/part of the items & materials tendered for inspection, if after inspection of such portion thereof, as he may in his discretion think fit, he is satisfied that the same is unsatisfactory; and ii) To mark the rejected items / materials or parts with a rejection mark so that it may easily be identified if re-submitted.
6. Requirement of Technical Representative(s) and recovery Rate: -



S.No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical /Technical representative)	Minimum Experience	Number of Engineers/ Representatives	Rate at which recovery shall be made from the contractor in the event of not fulfilling the requirement
1.	Graduate Engineer/ Diploma Engineer	Civil Engineering	Principal Technical Representatives (Project Manager cum Planning/ Quality/ Site/ billing Engineers)	Graduate Engineer with minimum 2- year experience / Diploma holder with minimum 5 year experience	1	Rs. 500/- per day

7. If for any reasons, any part of the site is not available temporarily for some time for part of the work under the contract, the agreed construction schedule shall be suitably modified and contractor shall diligently divert his men and materials to utilize them appropriately, profitably and no claim of damages whatsoever shall be entertained on this account. However, the contractor shall be allowed extension of time for completing the work as deemed fit by the competent authority. The contractor shall also not be entitled to any compensation for any loss suffered by him and revision in the rates quoted by him.

- (a) On account of delay in commencing the work by the contractor.
- (b) On account of reduction in the scope of work.
- (c) On account of suspension of work or abandoned after award of work.

8. The contractor shall make his own arrangement for obtaining electric connection required for execution of work and make necessary payments directly to the concerned departments and nothing extra shall be payable on this account. The contractor shall make his own arrangement for water suitable for construction.

9. On account of security consideration, some restrictions may be imposed by the security staff on the working and/ movement of men and materials etc. The contractor shall be bound to follow all such restrictions/ instructions and he shall organise his work accordingly. No claim on this account, whatsoever,



shall be payable.

10. The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused to existing/ new work due to negligence on his part. No hindrance shall be caused to traffic during the execution of the work

11. The contractor shall be responsible for the watch and ward of all materials brought by the contractor to site against pilferage and breakage during the period of installation and thereafter till the works are physically handed over to the department

12. All materials to be incorporated in the work shall be arranged by the contractor and shall be in accordance with the specifications laid down.

**13. The contractor shall be required to get all the necessary mandatory and other tests as per the specifications/ IS codes, carried out on materials/ work from an approved laboratory as per the direction of the Engineer In Charge. The testing charges and conveyance from the site shall be borne by the contractor.**

14. The contractor shall take all preventive measures against any damage caused by rain, snowfall, floods or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the Owners property and to the work for which the payment has been advanced to him under the contract. However, the contractor shall maintain an equal to the payment received against the work done, at his own cost. This will also cover the defect liability period. This shall be favoring the Director, Indian Institute of Management Udaipur. Nothing extra on this account shall be payable to the contractor for maintaining such insurance, Policy.

15. In case any material / work is found sub-standard the same shall be rejected by the Engineer In Charge/ Architect representative and the same shall be removed from the site of work within 48 hours, failing which the same shall be got removed by the Engineer In Charge at the risk and cost of the contractor without giving any further notice and time.

16. The contractor shall be responsible for completing the work and for satisfying all terms and conditions of the Contract without any extra payment over his quoted rates unless otherwise specified. The contractor shall quote his rate for various items of work accordingly and no claim whatsoever shall be entertained for any incidental or extra work involved in the execution of the work as per nomenclature of the item and the specifications indicated in the tender documents.

17. In order to ensure quality of work during its execution, the Estate Office representative may require samples for mandatory or routine testing of materials. All costs of these samples, their packaging, conveyance from the site to the testing laboratory and return, shall be borne by the contractor.

18. Even ISI marked materials may be subjected to quality test at the discretion of the Engineer In Charge / Architect. Whenever ISI marked materials are brought to the site of work the contractor shall, if required by the Engineer In Charge / Architect, furnish manufacturer's test certificate or test certificate from approved testing laboratory to establish that the materials procured by the contractor, satisfy the provisions of relevant ISI codes. The testing charges shall be borne by the contractor. However cement/steel will be necessarily tested before start of work and also during the execution of work as per the requirements of specifications and will not be used till test certificates are obtained and approved by Engineer In Charge / Architect.



19. The contractor shall supply free of charge the material required for testing. The cost of tests shall be borne by the contractor.
20. The quantities of various items incorporated in the tender are approximate. However, the payments shall be made to the contractors on the basis of actual measurements taken at site.
21. Subject to the nomenclature of the item as per schedule of quantities, the specification indicated in the tender documents, the rates quoted shall include cost of all materials including royalty and taxes if any, labour, sundry inputs, execution of work at all heights, levels, pattern and design for all leads, lifts and depths including overhead charges and contractor's profit. Nothing extra shall be paid on this account.
22. No shifting charges will be paid to the Contractor for shifting the construction equipment and its accessories from one location to another or from one area to another.
23. Major material is of Bitumen/CC if found inferior a lot of material will be rejected & if not replaced, IIMU will deduct 30% amount of the end cost price.
24. The contractor shall supply free of charge samples of items as required for testing including its transportation to testing laboratories. The cost of testing reinforcement shall be borne by the contractor.
25. The contractor shall protect the adjoining buildings or works and the work under execution from fire and shall make adequate arrangements for fire protection and firefighting and if any property is damaged, by fire due to the negligence of the contractor, the same shall be made good by the contractor at his own cost, to the entire satisfaction of Engineer In Charge
26. The contractor shall get the samples of all the materials to be used in the work approved from Engineer In Charge and Architect before going for bulk procurement. Bulk procurement shall be taken up only after obtaining approval from the Engineer In Charge. Any delay in getting the samples approved shall be contractor's responsibility
27. All materials, articles and workmanship shall be of respective best quality and kind for the class described in the schedule of quantities and specifications. All materials, so used in different items of work shall be subject to the approval of the Engineer In Charge.
28. The contractor is supposed to abide the minimum wages act, and shall produce all records to the Engineer In Charge or any other statutory authority as and when called for. The Engineer In Charge does not hold any responsibility on account of any lapses in this regard
29. All spaces allotted to the contractor as described above shall be vacated and all structures removed from site at any time as and when required and directed by the Engineer In Charge, unconditionally and without any reservation. The Engineer In Charge will not be obliged to give any reason for such removal. Upon receiving instructions to vacate the space, the contractor shall immediately remove all his structures, materials, etc. from the sources and clear and clean-up the site to the satisfaction of the Engineer In Charge.
30. The security of workmen, materials, equipment stores etc. within the area allotted to the contractor shall be the responsibility of the contractor
31. The quantity of items may increase or decrease as per requirement at site. The contractor shall have no right to raise any objection and claim in respect of the increase or decrease, in quantities of items. The contractor is requested to quote their rates by considering this aspect.
32. During execution of work the contractor shall make all necessary barricade/covering of the site



wherever required at no extra cost.

**33. No extra cost beyond schedule of quantity items shall be paid to contractor for making arrangements like scaffolding/lifting arrangements for shifting of material. The contractors who like to participate in the bids should consider this criterion and requested to visit the site before filling the tender.**

34. In order to achieve the targeted date of completion the contractor may have to work in multiple shifts including public and gazetted holidays and nothing extra shall be paid on this account.

35. The requirement/execution of the work is indicative as mentioned in Schedule of Quantity and may deviate or change at the sole discretion of the client upto the permissible deviation limit as per IIMU Rules.

36. The work will be carried out as per CPWD Specification 2022 Vol. I & II and upto date correction & amendment slips. Those items which are not available/covered under the CPWD Specification 2022 Vol. I & II. General specification will prevail as per the material & labour consumed in the work.

37. All terms & conditions laid down in CPWD Works Manual 2022 shall be applicable.

38. All dismantled material having any salvage value to be determined by the Engineer In Charge shall be the property of IIMU.

39. The rates quoted by the tenderer shall be firm and fixed for the entire period of completion and till handing over of the work, No revision to Percentage/ Item rates or any escalation shall be allowed on account of any increase in prices of materials, labour, POL and Overheads etc. or any other statutory increase during the entire contract period of extended contract period.

40. No worker/employee of the Agency shall be allowed to stay in the premises of IIM Udaipur. The security of workmen, materials, equipment stores etc. within the area allotted to the contractor shall be the responsibility of the contractor.

41. No littering shall be allowed in the premises and routine disposal of debris shall be ensured by the contractor.

42. Special conditions in terms of final bill:

42.1 All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book having pages of A-4 size as per the format of the department and shall be submitted online within 7 days of the execution of the work along with copy of supporting document in hard copy.

42.2 The contractors shall submit his final bill to the Engineer In Charge within 15 days of Completion of work. No further claims shall be made by the contractor after submission of the final bill, and these shall be deemed to have been waived and extinguished.

42.3 The agency has to follow all the safety measures, in case of any happening due to any carelessness in safety regulations, IIMU will not be held responsible. No claim whatsoever will be entertained in this regard.

42.4 Care shall be taken by the contractor during the execution of the work to avoid damage to the building. He shall be responsible for repairing such damage and restoring the same. He shall also remove all unwanted and waste materials arising out of the installation from the site of work from time to time.



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भारतीय प्रबंधन संस्थान उदयपुर

42.5 The final inspection and testing will be done by the Engineer In Charge or his representative.

42.6 The material shall be got approved by Engineer In Charge or his authorized representative before its use at the site. The agency shall remove rejected material from the site of work within three days of rejection, otherwise, it will be got removed by the institute itself and the expenditure incurred will be recovered from your bill. In this regard, no claim whatsoever will be entertained.

42.7 It will be the responsibility to submit computerized measurements & bills. Payment will be made after verification of measurement.

42.8 Rates agreed are inclusive of

- Transportation, Loading-unloading and shifting at store and site.
- Transit Insurance of material.
- Scaffolding ladder etc required in height.
- Arrangements and equipment required for testing of equipment's.
- Testing and commissioning charges.

**Signature of Bidder**

**Page 31 of 59**

**Signature of Associate Manager (Estate)**



## **SECTION-5**

### **TECHNICAL SPECIFICATIONS OF THE MATERIALS TO BE USED AT SITE**

#### **1. General**

The work under contract shall be carried out in accordance with CPWD specifications Vol. I & II- 2022 for the execution of individual schedule items & DSR 2023 with up to date correction slips. The execution of schedule items which are not covered under CPWD specification 2019 shall be bound on contractor as per direction of Engineer- In charge. However, some of specifications have been describes from para-3, below. For disposal/stacking of dismantled /surplus item (s) the contractor shall be bound to dispose/ stack the dismantled/ surplus item (s) upto a lead of 200 meters or at designated placed as per directions of Engineer In Charge and no claim of extra payment in accordance with the CPWD specification 2019 shall be entertained in this regard.

#### **2. Cement Concrete**

The concrete work shall be done in accordance with CPWD Specifications 2022. Acceptance Criteria Compressive strength & Flexural Strength -- The concrete shall be deemed to comply with the strength requirements provided in Para 16 of IS : 456-2000 is met with & also with 5th amendments.

#### **3.Fine Sand**

Fine Sand shall be used dust free and will be sieved before mixing with cement.

#### **4. Crushed Stone**

The Stone aggregate to be used in the work of hard stone duly sieved with appropriate size.

#### **5. Curing of the Cement Work**

Curing of the plaster, PCC or RCC , Masonry work shall be done with clean water for 21 days in two spells in a day. Wherever the manually water cannot be sprayed, the contractor shall make arrangement of electric motor pump.

#### **6. Cast Iron**

Cast Iron Steel shall be as specified in SOQ/ CPWD Specifications 2022 and shall be approved by Engineer In Charge

Manhole covers and frames covered by this standard shall be of the following four grades and types:

Rectangular, Square or Circular Solid Types: Suitable for use within residential and institutional complexes/areas with pedestrian but occasional Light Motor Vehicle traffic. These covers are also used for 'Inspection Chambers'.

Circular or Rectangular Types: Suitable for use in service lanes/roads, on pavements for use under medium-duty vehicular traffic including for car parking areas.

Circular, Square or Rectangular (Scrapper Manhole ) Types Suitable for use in institutional/commercial areas/carriageways/ and parking areas and where the manhole chambers are located in-between the pavement and the middle of the road.





**MATERIAL:** Manhole covers and frames shall be manufactured from appropriate grade of grey cast iron, not inferior than FG 150 Grade of IS 210 : 1978.

**MANUFACTURE AND WORKMANSHIP**

Covers and frames shall be cleanly cast, and they shall be free from air and sand holes, cold shuts and warping which are likely to impair the utility of the castings.

Covers shall have on their operating top a raised checkered design to provide an adequate no-slip grip. The rise of the chequer shall be not less than 4 mm.

**Key Holes and Keys:** Key holes, keys and lifting devices shall be provided in the manhole covers to facilitate their placement in the frames, and their operative maintenance during use in the field.

**DIMENSIONS OF MANHOLE COVERS AND FRAMES:** Dimensions of manhole covers and frames for the various grades, types and shapes shall be as given by the Engineer in Charge as per BOQ. Size criteria has given in the item of BOQ.

**COATING:** Manhole covers and frames shall be coated with a material having base with a black bituminous composition. The coating shall be smooth and tenacious. It shall not flow when exposed to a temperature of 63°C and shall not be so brittle as to chip off at a temperature of 0 C.

**MARKING:** Each manhole cover and frame shall have cast on them the Following information: Manufacturer's name or trademark; Grade designation; Date of manufacture;

**7. Grading of Dense graded bituminous macadam as per following table: Grade- VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.** ((The bitumen shall be paving bitumen of suitable penetration grade of VG30 as per IS:73-2006 ((erstwhile 60/70 as per IS:73-1992)).

S.No	IS Sieve Designation	Per cent by weight passing the IS sieve
1.	37.5 mm	100
2	26.5 mm	90-100
3	19 mm	71-95
4	13.2 mm	55-60
5	4.75 mm	38-54
6	2.36 mm	28-42
7	300 micron	7-21
8	75 micron	2-8

Bitumen content % by mass of total mix – 4% (Maximum)-



**8. Grading of bituminous concrete as per following table : VG-30@ 5.5% (percentage by weight of total mix) and lime filler @3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity**

Table of 500.17 of MORT&H Specifications grading: Composition of Bituminous Concrete Pavement layers.

S.No	IS Sieve Designation	Per cent by weight passing the IS sieve
1.	37.5 mm	100
2	26.5 mm	90-100
3	19 mm	70-88
4	13.2 mm	53-71
5	4.75 mm	34-48
6	2.36 mm	26-38
7	300 micron	18-28
8	150 micron	12-20
9	75 micron	4-10

Bitumen content % by mass of total mix – 5.4% (Maximum) –Grade- VG30 (The bitumen shall be paving bitumen of suitable penetration grade of VG30 as per IS:73-2006 ((erstwhile 60/70 as per IS:73-1992).

**12) Physical Properties of Aggregate and Mix :**

- i) Flakiness index (IS : 2386, part-I) not more than 25%
- ii) Impact value (IS : 2386, part – IV) not more than 30%
- iii) Los Angles abrasion value (IS : 2386, part – IV)- not more than 35%
- iv) Stripping value (IS : 6241) – not more than 25%
- v) Water absorption (IS : 2386, part – III) – not more than 1%
- vi) Optimum Bulk density (OBD) = 2.0 to 2.1 gm/cc. vii) Field density – not to be less than 95% of optimum bulk density

**13. Temperature control:**

- 1.1 Temperature of aggregate at mixing should be 155 0C –163 0C.
- 1.2 Temperature of binder (Bitumen) at mixing should be 150 0C –177 0C.
- 1.3 Temperature of mix at laying should be 110 0C. –135 0C.
- 1.4 Temperature at rolling should not be less than 80 0C.

**14. Cleaning of Surface:**

Road surface should be properly cleaned with wire brush/ air compressor as per the site requirement. The surface on which the tack coat is to be applied shall be cleaned of dust and any extraneous material before the application of the binder, by using a mechanical broom or any other approved equipment/method as specified by the Engineer in Charge.

**15. Tack Coat:**

Tack coat of bitumen should be applied properly as per specifications:



applying tack coat using Bitumen of grade VG – 30 (conforming to IS: 73, 2013) including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications: On bituminous surface @ 0.50 Kg / sq.mtr **(Prime Coat and Tack Coat are included in the DBM and BC item of the BOQ. No Separate payment Will be done.)**

Preparation of the Base: The base on which bituminous macadam is to be laid shall be prepared, shaped and conditioned to the specified lines, grades and cross sections, and a priming coat where needed shall be applied as directed by the Engineer.

#### **16.Laying of Mix:**

The Mix transported from the Hot Mix Plant to the site shall be spread by means of a self-propelled Sensor Paver with suitable screeds capable of spreading, tampering and finishing the Mix true to specified width and profile. Hand spreading is prohibited.

#### **17.Rolling:**

After spreading of the mix, consolidation shall be done by an approved power-driven vibratory roller weighing not less than 8/10 tones. Except at super elevated portions, rolling shall start longitudinally at the sides and proceed towards the center of the pavement, over lapping on each successive trip be at least one half the width of a rear wheel. The speed of the roller shall not exceed 5 km/hr.

The Contractor shall, after final rolling and before opening the surface to traffic, cut samples from the finished work for testing. Samples for the full depth of the course shall be cores with diameters of 100 or 150 mm as directed, and cut by an approved coring machine, from the locations directed by the Engineer. At least one sample for density and thickness measurement shall be taken for each 50 m of completed surfacing. Samples for analysis and other tests shall be taken from the surfacing when the Engineer so directs. Where samples have been taken from the surface course, fresh material shall be placed, thoroughly compacted and finished to the satisfaction of the Engineer.

#### **Bitumin Laying on Existing Bitumin Pavement:**

##### **Scraping/Pavement Milling:**

Pavement milling, also called asphalt milling, cold milling, or cold planing, is a process of removing part of the paved surface, covering roads, driveways, bridges, or parking lots. Thanks to asphalt milling, the height of the road won't increase after laying down new asphalt and all the existing structural damages can be fixed.

Micro milling, as the name suggests, only removes a thin layer-25 mm(Bitumin Concrete) (about one inch or less) of asphalt instead of the whole surface or pavement. The main purpose of micro milling is maintenance rather than repair. This is an excellent method to prevent the pavement from getting worse. A rotating milling drum is used in micro milling, with many carbide-tipped cutting teeth, aka road milling teeth, mounted on the drum. These road milling teeth are arrayed in rows to create a fairly smooth surface. However, unlike standard milling drums, micro milling only mills the surface to a shallower depth, yet solving the same road problems.

A cold milling machine performs pavement milling, also called a cold planer, mainly comprising a milling drum and a conveyor system. As mentioned above, the milling drum is used to remove and grind the asphalt surface by rotating. The milling drum rotates in the opposite direction of the machine's moving direction, and the speed is lower. It consists of rows of tool holders, holding carbide-tipped cutting teeth, aka road milling teeth. It's the cutting teeth that actually cut the asphalt surface. As a result, cutting teeth and tool holders are easily worn out and need replacement when broken. Intervals are determined by the milling material, ranging from hours to days. The number of road milling teeth directly influences the milling effects. The more, the smoother. During operation, the removed asphalt falls off the conveyor. Then, the conveyor system



transfers the milled old asphalt to a human-driven truck which is slightly ahead of the cold planer. In addition, the milling process generates heat and dust, so water is applied to cool the drum and minimize the dust. After the asphalt surface has been milled to the desired width and depth, it needs to be cleaned. Then, new asphalt will be laid evenly to ensure the same surface height. The removed asphalt will be recycled for new pavement projects.

## 18. PREPARATION OF SUBGRADE

18.1 Description This work shall consist of the preparation of subgrade in embankment, or in cut by scarifying, watering, compacting and shaping existing or previously placed material in accordance with these Specifications and to the lines, levels, grades, dimensions and cross sections shown on the Drawings or as required by the Engineer.

18.2 Materials All subgrade material shall be from sources, which the contractor shall propose and which shall be approved by the Engineer. The material shall be free from roots, sods or other deleterious material and when compacted to 98% of maximum dry density determined in accordance with STP 4.3 shall have a 4 day soaked CBR value of not less than 5%. Subgrade material shall satisfy the following criteria: · Liquid limit of soil fraction passing 0.425 mm sieve not to exceed 50% (STP 3.2) · Plasticity index of soil fraction passing 0.425 mm sieve not to exceed 15% (STP 3.2) Any subgrade material in cut or existing old embankment, which is found to be unsuitable, shall be removed and replaced as directed by the Engineer.

18.3 Construction Methods The subgrade shall be prepared over the full width of the embankment including shoulders. Part width working may be allowed with the prior written approval of the Engineer. The subgrade shall be prepared in lengths of not less than 100 metres at any one time, unless otherwise approved by the Engineer. Subgrade material shall be scarified to a depth of 150 mm until the soil is fully loosened. Any lumps or clods shall be removed or broken to pass a 50 mm sieve. If the Drawings require the subgrade to be compacted for a depth greater than 150 mm, the work shall be carried out in more than one layer, the material in the upper layer being first removed in the case of road sections in cut. The moisture content of the sub-grade material before compaction shall be within  $\pm 2\%$  of the predetermined optimum moisture content established in accordance with STP 4.3 (Standard Compaction). The achieved dry density after compaction of the subgrade layer shall not be less than 98% of maximum dry density as determined in accordance with STP 4.3. When necessary, each layer, before being compacted, shall be allowed to dry or be watered to bring the moisture content to within  $\pm 2\%$  of optimum to make possible its compaction to the required dry density. The material shall be so worked as to have a uniform moisture content through the entire layer. The subgrade material shall be compacted uniformly by use of adequate and appropriate compaction equipment. The compaction shall be done in a longitudinal direction along the embankment and shall generally begin at the outer edges and progress toward the centre in such a manner that each section receives equal compactive effort. Samples to determine the compaction shall be taken regularly with a set of three samples for each 1,000 square metres of finished layer or as decided by the Engineer will be carried out according to STP 6.2. If the test results show that the density is less than the required dry density, the Contractor shall carry out further compaction to obtain at least the required dry density. The compacted subgrade layer shall be approved by the Engineer before the Contractor can commence a new layer. The surface of the finished subgrade shall be neat and workmanlike and have the required form, super elevation, levels, grades and cross section. The finished surface shall be constructed with a tolerance of 20 mm above or below the specified levels at any point.

18.4 Measurement :Subgrade preparation shall be measured in square metres based on the surface area



of compacted and accepted subgrade actually completed in accordance with the Specifications, to the lines, levels, grades and cross sections required as directed by the Engineer. No allowance will be made for overlapping of areas due to half width working. Separate quantities shall be measured for subgrade compacted to different depths. No differentiation will be made between subgrade compaction in cut or in fill.

## 19. GRANULAR SUB-BASE

19.1 Scope This work shall consist of laying and compacting well graded material on prepared subgrade in accordance with the requirements of these Specifications. The material shall be laid in one or more layers as sub-base or lower sub-base and upper sub-base (termed as sub-base hereinafter) as necessary according to lines, grades and cross sections shown on the drawings or as directed by the Engineer.

19.2 Materials The material to be used for the work shall be natural sand, moorum, gravel, crushed stone, or combination thereof depending upon the grading required. Materials like crushed slag, crushed concrete, brick metal and kankar may be allowed only with the specific approval of the Engineer. The material shall be free from organic or other deleterious constituents and conform to one of the three grading's given in Table 400-1 and physical requirement given in table 400-2 Grading 3 and 4 shall preferably be used in lower sub base. The grading to be adopted for a project shall be specified in a Contract/Construction Drawing. Where the sub base is laid in 2 layers as upper sub base and lower sub base, the thickness of each layer shall not be less than 150 mm. The material shall have a 10 percent fines value of 50kN or more (for sample in soaked condition) when tested in compliance with IS:2386 (Part IV) 1963. The water absorption value of the coarse aggregate shall be determined as per IS:2386 (Part 3). If the water absorption of the aggregate determined as per IS:2386 (part 3) is greater than 2%, the aggregate shall be tested for wet aggregate impact value (AIV) (IS:5640). Soft aggregate like kankar, brick ballast and laterite shall also be tested for wet (AIV) (IS: 5640).

TABLE 400-1: Grading for Granular Sub-Base Materials

Percent by Weight Passing the IS Sieves

IS Sieve (mm)	Grading I	Grading II	Grading III	Grading IV	Grading V	Grading VI
75	100	-	-	-	100	-
53	80-100	100	100	100	80-100	100
26.5	55-90	70-100	55-75	50-80	55-90	75-100
9.5	35-65	50-80	-	-	35-65	55-75
4.75	25-55	40-65	10-30	15-35	25-50	30-55
2.36	20-40	30-50	-	-	10-20	10-25
0.85	-	-	-	-	2-10	-
0.0425	10-15	10-15	-	-	0-5	0-8
0.075	<5	<5	<5	<5	-	-

## 20. Wet mix macadam

Wet mix macadam construction is an improvement over the conventional water bound macadam providing speedy and more durable construction. It differs from the water bound macadam in that graded aggregates (conforming to requirements indicated in Table 3.11) and granular materials are mixed with predetermined quantity of water in accordance with the specifications to form dense mass which is spread and wiled to approved lines, grades and cross-section to serve as pavement course(s).



Physical requirements of coarse aggregates for wet mix macadam for subbase/base courses:

S.No.	Test	Test Method	Requirements
1.	Los Angeles Abrasion Value	IS:2386 (part IV)	40 per cent (Max)
2	Aggregate Impact Value 30 per cent (Max)	IS:2386 (part IV) or IS:5640	30 per cent (Max)
3	Combined Flakiness and Elongation Indices	(Total) IS:2386 (part I)	30 per cent (Max)

Table of 400.13 of MORT&H Specifications grading for Wet Mix Macadam

S.No	IS Sieve Designation	Per cent by weight passing the IS sieve
1.	53 mm	100
2	45 mm	95-100
3	22.4 mm	60-80
4	11.2 mm	40-60
5	4.75 mm	25-40
6	2.36 mm	15-30
7	600 micron	8-22
8	75 micron	0-8

## 20.CEMENT CONCRETE PAVEMENT :

**20.1 Scope :** The work shall consist of construction of un-reinforced, dowel jointed, plain cement concrete pavement in accordance with the requirements of these Specifications and in conformity with the lines, grades and cross sections shown on the drawings. The work shall include furnishing of all plant and equipment, materials and labour and performing all operations in connection with the work, as approved by the Engineer

**20.2 Materials :** The Contractor shall indicate to the Engineer the source of all materials to be used in the concrete work with relevant test data sufficiently in advance, and the approval of the Engineer for the same shall be obtained at least 45 days before the scheduled commencement of the work in trial length. If the Contractor subsequently proposes to obtain materials from a different source during the execution of main work, he shall notify the Engineer, with relevant test data, for his approval, at least 45 days before such materials are to be used.

### 20.3 Cement

Any of the following types of cement capable of achieving the design strength may be used with prior approval of the Engineer, but preference shall be to use at least the 43 grade or higher.

S.No. Type Conforming to i) Ordinary Portland Cement 43 Grade IS:8112 ii) Ordinary Portland Cement 53 Grade IS:12269 iii) Portland Pozzolana Cement IS:1489-Part I.

20.4 The cement shall be subjected to acceptance test. Fly-ash upto 20 percent by weight of cementitious material may be used in Ordinary Portland Cement 43 and 53 Grade as part replacement of cement provided



uniform blending with cement is ensured. The fly ash shall conform to IS:3812 (Part I). Site mixing of fly ash shall be permitted only after ensuring availability of the equipments at site for uniform blending through a specific mechanised facility with automated process control like batch mix plants conforming to IS:4925 and IS:4926. Site mixing will not be allowed otherwise. The Portland Pozzolana Cement produced in factory as per IS:1489-Part I shall not have fly-ash content more than 20 percent by weight of cementitious material. Certificate from the manufacturer to this effect shall be produced before use.

#### 20.5 Chemical Admixtures

Admixtures conforming to IS:9103 and IS:6925 shall be permitted to improve workability of the concrete and/or extension of setting time, on satisfactory evidence that they will not have any adverse effect on the properties of concrete with respect to strength, volume change, durability and have no deleterious effect on steel bars. The particulars of the admixture and the quantity to be used, must be furnished to the Engineer in advance to obtain his approval before use. Satisfactory performance of the admixtures should be proved both on the laboratory concrete trial mixes and in the trial length paving. If air entraining admixture is used, the total quantity of air shall be  $5 \pm 1.5$  percent for 31.5 mm maximum nominal size aggregate (in air-entrained concrete as a percentage of the volume of the mix).

#### 20.6 Aggregates:

Aggregates for pavement concrete shall be natural material complying with IS:383 but with a Los Angeles Abrasion Test value not exceeding 35 percent. The limits of deleterious materials shall not exceed the requirements set out.

Coarse aggregates :shall consist of clean, hard, strong, dense, non-porous and durable pieces of crushed stone or crushed gravel and shall be devoid of pieces of disintegrated stone, soft, flaky, elongated, very angular or splintery pieces. The maximum size of coarse aggregate shall not exceed 31.5 mm for pavement concrete. No aggregate which has water absorption more than 2 percent shall be used in the concrete mix. The aggregates shall be tested for soundness in accordance with IS:2386 (Part-5). After 5 cycles of testing, the loss shall not be more than 12 percent if sodium sulphate solution is used or 18 percent if magnesium sulphate solution is used. The Los Angeles Abrasion value shall not exceed 35. The combined flakiness and elongation index of aggregate shall not be more than 35 percent.

The fine aggregates : shall consist of clean natural sand or crushed stone sand or a combination of the two and shall conform to IS:383. Fine aggregate shall be free from soft particles, clay, shale, loam, cemented particles, mica and organic and other foreign matter. The fine aggregates shall have a sand equivalent value of not less than 50 when tested in accordance with the requirement of IS:2720 (Part 37).

#### Combined Gradation of Fine and Coarse Aggregates

Sieve Designation	Percentage by Weight Passing the Sieve
31.5 mm	100
26.5 mm	85-95
19.0 mm	68-88
9.5 mm	45-65
4.75 mm	30-55
600 micron	8-30
150 micron	5-15
75 micron	0-5

**20.7 Water :** Water used for mixing and curing of concrete shall be clean and free from injurious amount of oil, salt, acid, vegetable matter or other substances harmful to the finished concrete. It shall meet the requirements stipulated in IS:456.

**20.8 Steel for Dowels and Tie Bars :** Steel shall conform to the requirements of IS:432 and IS:1786 as



relevant. The dowel bars shall conform to IS:432 of Grade I. Tie bars shall be either High yield Strength Deformed bars conforming to IS:1786 and grade of Fe 500 or plain bars conforming to IS:432 of Grade I. The steel shall be coated with epoxy paint for protection against corrosion.

#### **20.9 Joint Filler Board**

Synthetic Joint filler board for expansion joints shall be used only at abutting structures like bridges and shall be of 20-25 mm thickness within a tolerance of  $\pm 1.5$  mm and of a firm compressible material and complying with the requirements of IS:1838, with a compressibility more than 25 percent. It shall be 25 mm less in depth than the thickness of the slab within a tolerance of  $\pm 3$  mm and provided to the full width between the side forms. It shall be in suitable lengths which shall not be less than one lane width. If two pieces are joined to make up full width, the joint shall be taped such that no slurry escapes through the joint. Holes to accommodate dowel bars shall be accurately bored or punched out to give a sliding fit on the dowel bars.

#### **Joint Sealing Compound :**

The joint sealing compound shall be of hot poured, elastomeric type or cold polysulphide/polyurethane/silicone type having flexibility, resistance to age hardening and durability as per IRC:57. Manufacturer's certificate shall be produced by the Contractor for establishing that the sealant is not more than six months old and stating that the sealant complies with the relevant standard mentioned below. The samples shall meet the requirements as mentioned in IRC:57. If sealant is of hot poured type, it shall conform to Hot applied sealant : IS:1834 or ASTM : 3406-95, as applicable

Cold poured sealants shall be one of the following : i) polysulphide IS:11433 (Part I), BS:5212 (Part II) ii) polyurethane BS:5212 iii) silicone ASTM 5893-04.

#### **20.10 Proportioning of Concrete:**

After approval by the Engineer of all the materials to be used in the concrete, the Contractor shall submit the mix design based on weighed proportions of all ingredients for the approval of the Engineer. The mix design shall be submitted at least 30 days prior to the paving of trial length and the design shall be based on laboratory trial mixes using the approved materials and methods as per IRC:44 or IS:10262. The target mean strength for the design mix shall be determined as indicated .The mix design shall be based on the flexural strength of concrete.

#### **Cement Content:**

When Ordinary Portland Cement (OPC) is used the quantity of cement shall not be less than 360 kg/cu.m. In case fly ash grade I (as per IS:3812) is blended at site as part replacement of cement, the quantity of fly ash shall be upto 20 percent by weight of cementitious material and the quantity of OPC in such a blend shall not be less than 310 kg/cu.m. The minimum of OPC content, in case ground granulated blast furnace slag cement blended, shall also not be less than 310 kg/m<sup>3</sup> . If this minimum cement content is not sufficient to produce concrete of the specified strength, it shall be increased as necessary by the contractor at his own cost.

#### **Concrete Strength:**

The characteristic flexural strength of concrete shall not be less than 4.5 MPa unless specified otherwise. Target mean flexural strength for mix design shall be more than 4.5 MPa + 1.65s, where s is standard deviation of flexural strength derived by conducting test on minimum 30 beams. While designing the mix in the laboratory, correlation between flexural and compressive strengths of concrete shall be established on the basis of at least thirty tests on specimens. However, quality control in the field shall be exercised on the basis of flexural strength. It may, however, be ensured that the materials and mix proportions remain substantially unaltered during the daily concrete production. The water content shall be the minimum required to provide the agreed workability for full compaction of the concrete to the required density as determined by the trial mixes or as approved by the Engineer and the maximum free water cement ratio shall be 0.45 when only OPC is used and 0.50 when blended cement (Portland Pozzolana Cement or





Portland Slag Cement or OPC blended with fly ash or Ground Granulated Blast Furnance Slag, at site) is used. The ratio between the 7 and 28 day strength shall be established for the mix to be used in the slab in advance, by testing pairs of beams and cubes at each stage on at least six batches of trial mix. The average strength of the 7 day cured specimens shall be divided by the average strength of the 28 day specimens for each batch, and the ratio "R" shall be determined. The ratio 'R' shall be expressed to three decimal places. If during the construction of the trial length or during some normal working, the average value of any four consecutive 7 day test results falls below the required 7 day strength as derived from the value of 'R' then the cement content of the concrete shall, without extra payment, be increased by 5 percent by weight or by an amount agreed by the Engineer. The increased cement content shall be maintained at least until the four corresponding 28 day strengths have been assessed for in conformity with the requirements. Whenever the cement content is increased, the concrete mix shall be adjusted to maintain the required workability.

#### **20.11 Workability :**

The workability of the concrete at the point of placing shall be adequate for the concrete to be fully compacted and finished without undue flow. The optimum workability for the mix to suit the paving plant being used shall be determined by the Contractor and approved by the Engineer. The control of workability in the field shall be exercised by the slump test as per IS:1199. 602.3.4.2 The workability requirement at the batching and mixing plant and paving site shall be established by slump tests carried during trial paving. These requirements shall be established from season to season and also when the lead from batching and mixing plant site to the paving site changes. The workability shall be established for the type of paving equipment available. A slump value in the range of  $25 \pm 15$  mm is reasonable for paving works but this may be modified depending upon the site requirement and got approved by the Engineer. These tests shall be carried out on every tipping truck/dumper at batching and mixing plant site and paving site initially when the work commences but subsequently the frequency can be reduced to alternate tipping trucks or as per the instructions of the Engineer.

#### **20.12 Design Mix :**

The Contractor shall carry out laboratory trials of design mix with the materials from the approved sources to be used as per IRC:44. Trial mixes shall be made in presence of the Engineer or his representative and the design mix shall be subject to the approval of the Engineer. They shall be repeated, if necessary, until the proportions, that will produce a concrete which complies in all respects with these Specifications, and conform to the requirements of the design/drawings. The proportions determined as a result of the laboratory trial mixes may be adjusted, if necessary, during the construction of the trial length. Thereafter, neither the materials nor the mix proportions shall be varied in any way except with the written approval of the Engineer. Any change in the source of materials or mix proportions proposed by the Contractor during the course of work shall be assessed by making laboratory trial mixes and the construction of a further trial length of length not less than 50 m unless approval is given by the Engineer for minor adjustments like compensation for moisture content in aggregates or minor fluctuations in the grading of aggregate.

#### **20.13 Separation Membrane**

A separation membrane shall be used between the concrete slab and the sub-base. Separation membrane shall be impermeable PVC sheet 125 micron thick transparent or white in colour laid flat with minimum creases. Before placing the separation membrane, the sub-base shall be swept clean of all the extraneous materials using air compressor. Wherever overlap of plastic sheets is necessary, the same shall be at least 300 mm and any damaged sheathing shall be replaced at the Contractor's cost. The separation membrane may be nailed to the lower layer with concrete nails. The separation membrane shall be omitted when two layers of wax-based curing compound is used.



## 20.14 Joints :

The locations and type of joints shall be as shown in the drawing. Joints shall be constructed depending upon their functional requirement. The location of the joints should be transferred accurately at the site and mechanical saw cutting of joints done as per stipulated dimensions. It shall be ensured that the required depth of cut is made from edge-to-edge of the pavement. Transverse and longitudinal joints in the pavement and Dry Lean Concrete sub-base shall be staggered so that they are not coincident vertically and are at least 800 to 1000 mm and 300 to 400 mm apart respectively. Sawing of joints shall be carried out with diamond studded blades soon after the concrete has hardened to take the load of the sawing machine and crew members without damaging the texture of the pavement. Sawing operation could start as early as 4-8 hours after laying of concrete pavement but not later than 8 to 12 hours depending upon the ambient temperature, wind velocity, relative humidity and required maturity of concrete achieved for this purpose. When the kerb is cast integrally with the main pavement slab, the joint cutting shall also be extended to the kerb. Where the use of maturity meter is specified, sawing should not be initiated when the compressive strength of the concrete is less than 2 MPa and should be completed before it attains the compressive strength of 7 MPa.

**Transverse Joints** : Transverse joints shall be contraction, construction and expansion joints constructed at the spacing described in the drawings. Transverse joints shall be straight within the following tolerances along the intended line of joints. i) Deviations of the performed filler board (IS:1838) in the case of expansion joints from the intended line of the joint shall not be greater than  $\pm 10$  mm. ii) The best fit straight line through the joint grooves as constructed shall be not more than 25 mm from the intended line of the joint. iii) Deviations of the joint groove from the best fit straight line of the joint shall not be greater than 10 mm. iv) Transverse joints on each side of the longitudinal joint shall be in line with each other and of the same type and width. Transverse joints shall have a sealing groove which shall be sealed in compliance.

**Contraction Joints** The contraction joints shall be placed transversely at pre-specified locations as per drawings/ design using dowel bars. These joints shall be cut as soon as the concrete has undergone initial hardening and is hard enough to take the load of joint sawing machine without causing damage to the slab. Contraction joints shall consist of a mechanical sawn joint groove, 3 to 5 mm wide and one-fourth to one-third depth of the slab  $\pm 5$  mm or as stipulated in the drawings and dowel bars complying with Clause 602.6.5. Contraction joint shall be widened subsequently to accommodate the sealant as per Clause 602.10, to dimensions shown on drawings or as per IRC:57.

**Expansion Joints** : The expansion joint shall consist of a joint filler board complying with Clause 602.2.9 and dowel bars complying with Clause 602.6.5 and as detailed in the drawings. The filler board shall be positioned vertically with the prefabricated joint assemblies along the line of the joint within the tolerances given in Clause 602.6.2.1. The adjacent slabs shall be completely separated from each other by the joint filler board. 602.6.3 Transverse Construction Joint Transverse construction joint shall be placed whenever concreting is completed after a day's work or is suspended for more than 30 minutes. These joints shall be provided at location of contraction joints using dowel bars. If sufficient concrete has not been mixed to form a slab extending upto a contraction joint, and if an interruption occurs, the concrete placed shall be removed upto the last preceding joint and disposed of. At all construction joints, steel bulk heads shall be used to retain the concrete. The surface of the concrete laid subsequently shall conform to the grade and cross sections of the previously laid pavement. When positioning of bulk head/stop-end is not possible, concreting to an additional 1 or 2 m length may be carried out to enable the movement of joint cutting machine so that joint grooves may be cut and the extra 1 or 2 m length is cut out and removed subsequently after concrete has hardened. After minimum 14 days of curing, in case OPC cement is used and 16 days of curing when flyash or blended cement is used, the construction joint shall be widened to accommodate the sealant as



per Clause 602.10 to dimensions shown on drawing or as per IRC:57.

**Longitudinal Joint :** The longitudinal joints shall be constructed by forming or by sawing as per details of the joints shown in the drawing. Sawed longitudinal joints shall be constructed when the concrete pavement placement width exceeds 4.5 m. The groove may be cut after the final set of the concrete. Joints should be sawn to at least one-third the depth of the slab  $\pm 5$  mm as indicated in the drawing. The joint shall be widened subsequently to dimensions shown on the drawings. Where adjacent lanes of pavement are constructed separately using slip form pavers or side forms, the tie bars may be bent at right angles against the vertical face/ side of the first lane constructed and straightened before placing concrete in the adjacent lane. Broken or damaged tie bars shall be repaired or replaced as required. The groove for sealant shall be cut in the pavement lane placed later.

**Tie Bars:** Tie bars shall be provided at the longitudinal joints as per dimensions and spacing shown in the drawing and in accordance with Clause 602.6.6. The direction of the tie bars at curves shall be radial in the direction of the radius.

**Dowel Bars :** Dowel bars shall be mild steel rounds in accordance with details/dimensions as indicated in the drawings and free from oil, dirt, loose rust or scale. They shall be straight, free of irregularities and burring restricting slippage in the concrete. The sliding ends shall be sawn or cropped cleanly with no protrusions outside the normal diameter of the bar. Any protrusions shall be removed by grinding the ends of the dowel bars. The dowel bar shall be supported on cradles/dowel chairs in pre-fabricated joint assemblies positioned prior to the construction of the slabs or mechanically inserted with vibration into the plastic concrete by a method which ensures correct placement of the bars besides full re-compaction of the concrete around the dowel bars. Unless shown otherwise on the drawings, dowel bars shall be positioned at mid depth of the slab within a tolerance of  $\pm 20$  mm, and centered equally about intended lines of the joint within a tolerance of  $\pm 25$  mm. They shall be aligned parallel to the finished surface of the slab and to the centre line of the carriageway and to each other within tolerances given here-in-under, the compliance of which shall be checked as per. i) For bars supported on cradles prior to the laying of the slab: a) All bars in a joint shall be within  $\pm 2$  mm per 300 mm length of bar b) 2/3rd of the number of bars shall be within  $\pm 3$  mm per 500 mm length of bar c) No bar shall differ in alignment from an adjoining bar by more than 3 mm per 300 mm length of bar in either the horizontal or vertical plane d) Cradles supporting dowel bar shall not extend across the line of joint i.e. no steel bar of the cradle assembly shall be continuous across the joint. ii) For all bars inserted after laying of the slab except those inserted by a Dowel Bar Inserter the tolerance for alignment may be twice as indicated in (i) above. The transverse joints at curves shall be radial in the direction of the radius. Dowel bars, supported on cradles in assemblies, when subject to a load of 110 N applied at either end and in either the vertical or horizontal direction (upwards and downwards and in both directions horizontally) shall conform to be within the limits given. The assembly of dowel bars and supporting cradles, including the joint filler board in the case of expansion joints, shall have the following degree of rigidity when fixed in position:- i) For expansion joints, the deflection of the top edge of the filler board shall be not greater than 13 mm, when a load of 1.3 kN is applied perpendicular to the vertical face of the joint filler board and distributed over a length of 600 mm by means of a bar or timber packing, at mid depth and midway between individual fixings, or 300 mm from either end of any length of filler board, if a continuous fixing is used. The residual deflection after load shall be not more than 3 mm. ii) The fixings for joint assembly shall not fail under 1.3 kN load and shall fail before the load reaches 2.6 kN when applied over a length of 600 mm by means of a bar or timber packing placed as near to the level of the line of fixings as practicable. iii) Fixings shall be deemed to fail when there is displacement of the assemblies by more than 3 mm with any form of fixing, under the test load. The displacement shall be measured at the nearest part of the assembly to the centre of the bar or timber packing. Dowel bars in the contraction joints, construction joints and expansion joints shall be covered by a thin plastic sheath. The thickness of the



sheath shall not exceed 0.5 mm and shall be tightly fitted on the bar for at least two-thirds of the length from one end for dowel bars in contraction/construction joints and half the length plus 50 mm for expansion joints. The sheathed bar shall comply with the following pull-out tests: Four bars shall be taken at random from stock and without any special preparation shall be covered by sheaths as required in this Clause. The ends of the dowel bars which have been sheathed shall be cast centrally into concrete specimens 150 mm x 150 mm x 600 mm, made of the same mix proportions to be used in the pavement, but with a maximum nominal aggregate size of 20 mm and cured in accordance with IS:516. At 7 days a tensile load shall be applied to achieve a movement of the bar of at least 0.25 mm. The average bond stress to achieve this movement shall not be greater than 0.14 MPa. For expansion joints, a closely fitting cap 100 mm long consisting of waterproofed cardboard or an approved synthetic material like PVC or GI pipe shall be placed over the sheathed end of each dowel bar. An expansion space (about 25 mm) at least equal in length to the thickness of the joint filler board shall be formed between the end of the cap and the end of the dowel bar by using compressible sponge. To block the entry of cement slurry into the annular space between the sheathing and dowel bar shall be taped around its mouth. Tie Bars :Tie bars in longitudinal joints shall be deformed steel bars of strength 500 MPa complying with IS:1786 and in accordance with the requirements given in this Clause. The bars shall be free from oil, dirt, loose rust and scale. Tie bars projecting across the longitudinal joint shall be protected from corrosion for 75 mm on each side of the joint by a protective coating of bituminous paint with the approval of the Engineer. The coating shall be dry when the tie bars are used. In the case of coastal region and high rainfall areas, tie bars shall be epoxy coated in their full length as per IS:13620. 602.6.6.3 Tie bars in longitudinal joints shall be made up into rigid assemblies with adequate supports and fixings to remain firmly in position during the construction of the slab. Alternatively, tie bars at longitudinal joints may be mechanically or manually inserted into the plastic concrete from above by vibration using a method which ensures correct placements of the bars and recompaction of the concrete around the tie bars. Tie bars shall be positioned to remain in the middle from the top or within the upper middle third of the slab depth as indicated in the drawings and approximately parallel to the surface and approximately perpendicular to the line of the joint, with the centre of each bar on the intended line of the joints within a tolerance of  $\pm 50$  mm, and with a minimum cover of 30 mm below the joint groove. Spacing of tie bars on curves of radius less than 360 m shall not be less than 350 mm. To check the position of the tie bars, one metre length, 0.5 m on either side of the longitudinal joint shall be opened when the concrete is green (within 20 to 30 minutes). The pit shall be refilled with the fresh concrete of same mix after checking.

#### **20.14 Fixed Form Paving**

##### **Side Forms and Rails :**

These shall be provided in case of fixed form paving. All side forms shall be of mild steel of depth equal to the thickness of pavement or slightly less to accommodate the surface irregularity of the sub-base. The forms can be placed in series of steel packing plates or shims to take care of irregularity of sub-base. They shall be sufficiently robust and rigid to support the weight and pressure caused by a paving equipment. Side forms for use with wheeled paving machines shall incorporate metal rails firmly fixed at a constant height below the top of the forms. The forms and rails shall be firmly secured in position by not less than 3 stakes/pins for every 3 m length so as to prevent movement in any direction. Forms and rails shall be straight within a tolerance of 3 mm in 3 m and when in place shall not settle in excess of 1.5 mm in 3 m while paving is being done. Forms shall be cleaned and oiled immediately before each use. The forms shall be bedded on a continuous bed of low moisture content lean cement mortar or concrete and set to the line and levels shown on the drawings within tolerances  $\pm 10$  mm and  $\pm 3$  mm respectively. The bedding shall not extend under the slab and there shall be no vertical step between adjacent forms of more than 3 mm. The forms shall be got inspected by the Engineer for his approval 12 hours before construction of the slab and shall not be removed until at least 12 hours afterwards. No concreting shall commence till formwork has been approved by the Engineer. At all times sufficient forms shall be used and set to the required alignment for



at least 300 m length of pavement immediately in advance of the paving operations, or the anticipated length of pavement to be laid within the next 24 hours whichever is more.

### **Slip Form Paving:**

**Use of Guidewires** Where slip form paving is proposed, a guidewire shall be provided along both sides of the slab. Each guidewire shall be at a constant height above and parallel to the required edges of the slab as described in the contract drawing within a vertical tolerance of  $\pm 3$  mm. Additionally, one of the wires shall be kept at a constant horizontal distance from the required edge of the pavement as indicated in the contract drawing within a lateral tolerance of  $\pm 10$  mm. The guidewires shall be supported on stakes 5–6 m apart by connectors capable of fine horizontal and vertical adjustment. The guidewire shall be tensioned on the stakes so that a 500 gm weight shall produce a deflection of not more than 20 mm when suspended at the mid point between any pair of stakes. The ends of the guidewires shall be anchored to fixing point or winch and not on the stakes. On the curves, the stakes shall be fixed at not more than 3 m centre-to-centre. The stakes shall be positioned and hammered into the ground and the connectors will be maintained at their correct height and alignment from 12 hours on the day before concreting takes place till after finishing of texturing and spraying of curing compound on the concrete. However, the guidewire shall be erected and tensioned on the connectors at any section for at least 2 hours before concreting that section. The Contractor shall submit to the Engineer for his approval of line and level, the stakes and connectors which are ready for use in the length of road to be constructed next day. Such approval shall be obtained at least 12 hours before commencement of paving operation. Any deficiencies noted by the Engineer shall be rectified by the Contractor who shall then re-apply for approval of the affected stakes. Work shall not proceed until the Engineer has given his approval. It shall be ensured that the stakes and guidewires are not affected by the construction equipment when concreting is in progress.

### **20.15 Construction:**

General A systems approach may be adopted for construction of the pavement, and the Method Statement for carrying out the work, detailing all the activities, indication of time-cycle, equipment, personnel etc., shall be got approved from the Engineer before the commencement of the work. This shall include the type, capacity and make of the batching and mixing plant besides the hauling arrangement and paving equipment. The capacity of paving equipment, batching plant as well as all the ancillary equipment shall be adequate for a paving rate of at least 500 m in one day. The paving speed of slip-form paver shall not be less than 1.0 m per minute. The concreting should proceed continuously without stops and starts.

#### **Batching and Mixing:**

Batching and mixing of the concrete shall be done at a central batching and mixing plant with automatic controls, located at a suitable place which takes into account sufficient space for stockpiling of cement, aggregates and stationary water tanks. This shall be located at an approved distance, duly considering the properties of the mix and the transporting arrangements available with the Contractor.

Equipment for Proportioning of Materials and Paving Proportioning of materials shall be done in the batching plant by weight, each type of material being weighed separately. The cement from the bulk stock may be weighed separately from the aggregates. Water shall be measured by volume. Specified percentage of plasticizer in volume will be added by weight of cement. Wherever properly graded aggregate of uniform quality cannot be maintained as envisaged in the mix design, the grading of aggregates shall be controlled by appropriate blending techniques. The capacity of batching and mixing plant shall be at least 25 percent higher than the proposed capacity of the laying/paving equipment.

#### **Batching Plant and Equipment :**

1) General : The batching plant shall include minimum four bins, weighing hoppers, and scales for the fine aggregates and for each size of coarse aggregate. If cement is used in bulk, a separate scale for cement shall be included. There shall be a separate bin for flyash, if this additive is specified. The weighing hoppers



shall be properly sealed and vented to preclude dust during operation. Approved safety devices shall be provided and maintained for the protection of all personnel engaged in plant operation, inspection and testing. The batch plant shall be equipped with a suitable non-resettable batch counter which will correctly indicate the number of batches proportioned. A continuous type of mixing plant can also be used provided the ingredients are weighed through electronic sensors before feeding.

2) Automatic weighing devices : Batching plant shall be equipped to proportion aggregates and bulk cement by means of automatic weighing devices using load cells. The weighing devices shall have an accuracy within  $\pm 1\%$  in respect of quantity of cement, admixtures and water and  $\pm 2\%$  in respect of aggregates and the accuracy shall be checked at least once a month.

3) Mixer : Mixers shall be pan type, reversible type or any other mixer capable of combining the aggregates, cement, and water into a thoroughly mixed and uniform mass within the specified mixing period, and of discharging the mix, without segregation. Each stationary mixer shall be equipped with an approved timing device which will automatically lock the discharge lever when the drum has been charged and release it at the end of the mixing period. The device shall be equipped with a bell or other suitable warning device adjusted to give a clearly audible signal each time the lock is released. In case of failure of the timing device, the mixer may be used for the balance of the day while it is being repaired, provided that each batch is mixed in 90 seconds or as per the manufacturer's recommendation. The mixer shall be equipped with a suitable non-resettable batch counter which shall correctly indicate the number of batches mixed. The mixer shall be cleaned at suitable intervals. The pick-up and throwover blades in the drum or drums shall be repaired or replaced when they are worn down 20 mm or more. The Contractor shall (1) have available at the job site a copy of the manufacturer's design, showing dimensions and arrangements of blades in reference to original height and depth, or (2) provide permanent marks on blade to show points of 20 mm wear from new conditions. Drilled holes of 5 mm diameter near each end and at midpoint of each blade are recommended. Batching Plant shall be calibrated in the beginning and thereafter at suitable interval not exceeding 1 month.

4) Control cabin : An air-conditioned centralized computer control cabin shall be provided for automatic operation of the equipment.

5) The design features of the batching plant should be such that it can be shifted quickly.

**Paving Equipment:** The concrete shall be placed with an approved fixed form or slip form paver with independent units designed to (i) spread, (ii) consolidate, screed and float-finish, (iii) texture and cure the freshly placed concrete in one complete pass of the machine in such a manner that a minimum of hand finishing will be necessary and so as to provide a dense and homogeneous pavement in conformity with the plans and Specifications. The paver shall be equipped with electronic sensor controls to control the line and grade from either one side or both sides of the machine. Vibrators shall operate at a frequency of 8000-10000 impulses per minute under load at a maximum spacing of 600 mm. The variable vibration setting shall be provided in the machine.

**Hauling and Placing of Concrete:** Freshly mixed concrete from the central batching and mixing plant shall be transported to the paver site by means of tipping trucks or transit mixers of sufficient capacity and approved design in sufficient numbers to ensure a constant supply of concrete. Covers shall be used for protection of concrete against the weather. While loading the concrete truck shall be moved back and forth under the discharge chute to prevent segregation. The tipping trucks shall be capable of maintaining the mixed concrete in a homogeneous state and discharging the same without segregation and loss of cement slurry. The feeding to the paver is to be regulated in such a way that the paving is done in an uninterrupted manner with a uniform speed throughout the day's work. Tipping trucks shall be washed at a regular frequency as prescribed by the Engineer to ensure that no left-over mix of previous loading remains stuck. **Placing of Concrete** The total time taken from the addition of the water to the mix, until the completion of the

surface finishing and texturing shall not exceed 120 minutes when concrete temperature is less than 25°C and 90 minutes when the concrete temperature is between 25°C and 30°C. When the time between mixing and laying exceed these values, the concrete shall be rejected and removed from the site. Tipping trucks delivering concrete shall normally not run on plastic sheathing nor shall they run on completed slabs until after 28 days of placing the concrete. The placing of concrete in front of the PQC paver should preferably be from the side placer to avoid damage to DLC by concrete tipping trucks. In case of unavoidable situation, truck supplying concrete to the paver may be allowed to ply on the DLC with the approval of the Engineer. The paver shall be capable of paving the carriageway as shown in the drawings, in a single pass and lift

**Curing:** Immediately after the surface texturing, the surface and sides of the slab shall be cured by the application of approved resin-based aluminized reflective curing compound which hardens into an impervious film or membrane with the help of mechanical sprayer. The curing compound shall not react chemically with the concrete and the film or membrane shall not crack, peel or disintegrate within three weeks of application. Immediately prior to use, the curing compound shall be thoroughly agitated in its containers. The rate of spread shall be in accordance with the manufacturer's instructions checked during the construction of the trial length and subsequently whenever required by the Engineer. The mechanical sprayer shall incorporate an efficient mechanical device for continuous agitation and mixing of the compound during spraying. The curing compound shall be sprayed in two applications to ensure uniform spread. Curing compounds shall contain sufficient flake aluminum in finely divided dispersion to produce a complete coverage of the sprayed surface with a metallic finish. The compound shall become stable and impervious to evaporation of water from the surface of the concrete within 60 minutes of application and shall be of approved type. The curing compounds shall have a water retention efficiency index not less than 90 percent in accordance with BS Specification No. 7542 or as per ASTM C-309-81 Type 2. In addition to spraying of curing compound, the fresh concrete surface shall be protected for at least 3 hours by covering the finished concrete pavement with tents mounted on mobile trusses as described, during adverse weather conditions as directed by the Engineer. After three hours, the pavement shall be covered by moist hessian laid in two layers and the same shall then be kept damp for a minimum period of 14 days after which time the hessian may be removed. The hessian shall be kept continuously moist. All damaged/torn hessian shall be removed and replaced by new hessian on a regular basis. The Contractor shall be liable at his cost to replace any concrete damaged as a result of incomplete curing or cracked on a line other than that of a joint as per procedure in IRC:SP:83.

**Texture Depth - Tining** The following apparatus shall be used : i) Tire Tread Depth Gauge A stainless steel tire tread depth gauge with graduations with least count of 1.0 mm. The gauge end may be modified to measure depth of tine texture. ii) A stainless steel caliper to measure spacing of tines. If necessary the caliper may be modified to measure the spacing and width of tine texture. The guage shall be used after making necessary calibration. iii) Wire brush iv) Corborundum stone v) Steel straight edge to remove snots etc. sticking to the surface.

## **21. Road Marking:**

(A) **SCOPE:** - Hot applied thermoplastic material shall be used for marking traffic stripes using thermoplastic compound. The thermoplastic compound shall be screeded /extruded on the pavement surface in molten state by suitable machine capable of controlled preparation & lying with surface application of glass beads at a specific rate. Upon cooling to ambient pavement temperature, it shall produce an adherent pavement marking of specified thickness & width & capable of resisting deformation by traffic. The colour of the compound shall be white or yellow (IS: Colour No. 356).

(B) **THERMOPLASTIC MATERIAL:** - The thermoplastic material shall be homogeneously composed of aggregate, pigment, resins & glass reflectorizing beads as per requirement of MORT&H.



(a) COMPOSITION: - REQUIREMENT: - The pigments bead & aggregate shall be uniformly dispersed in the resin. The material shall be free from all skins, dirt & foreign objects & shall meet the requirement as in table

- Proportions of constituents of marking material (percentage by weight)

Sr. No.	Components	Colour	White
a.	Binder		18.0 minimum
b.	Glass beads (Inter mix)		30-40
c.	Titanium dioxide		10.0 minimum
d.	Calcium carbonate & inert filler		42.0 maximum

(b) PROPERTIES: - The properties of thermoplastic material, when tested in accordance with ASTM D36/BS-3262 (Part-I) shall be as below: -

(i) Luminance: White: - Day light luminance at 45 degree-65 percent min. Yellow: - Day light luminance at 45 degree-45 percent min.

(ii) Drying time:- The material shall set to bear traffic in not more than 15 minutes.

(iii) Skid resistance: - Not less than 45.

(iv) Cracking resistance at low temperature: - The material shall show no cracks on application to concrete blocks.

(v) Softening point: - 102.50C + 9.50C

(vi) Safe heating temperature: - 160 to 2000C

(vii) Flow resistance:- Not more than 25%.

(viii) Coverage area: - Recommended coverage shall be 5kg./sq. meter at thickness of 2.5 mm, on smooth surface.

(c) STORAGE LIFE: - The material shall meet the requirements of the specification for a period of one year. Any material not meeting the requirement shall be replaced by the manufacturer/supplier

(d) REFLECTORISATION: - Shall be achieved by incorporation of reflective glass spheres to the required specification w.r.t. the grades (detailed below at 'C').

(e) MARKING: - Each container of the thermoplastic material shall be clearly & indelibly marked with the information: - (i) The name, Trade mark (ii) Batch no. (iii) Dt. of manufacturing (iv) Colour (White or Yellow)

(v) Maximum application temperature & maximum safe heating temperature. (C) REFLECTORISING GLASS BEADS: -

(a) Description: - Glass beads to be used for the production of reflectorised pavement marking are those which are to be sprayed on the surface of marking. The glass beads shall be transparent, colourless & free from milkiness, dark particles.

(b) Requirement for Glass beads: - Sr. No. Sieve Size Percent retained 1. 1.18 mm 2. 850 micron 0 to 5 3. 600 micron 5 to 20 4. 425 micron --- 5. 300 micron 30 to 75 6. 180 micron 10 to 30 7. below 180 micron 0 to 15

(c) Roundness: - The glass sphere shall have minimum of 70 percent true sphere. (d) Refractive Index: - The glass spheres shall have minimum refractive index of 1.50. (e) Free Flowing: - The glass spheres shall be free of hard lumps & clusters & shall dispense readily under any condition suitable for paint striping. They shall pass the free flow test.

(D) CONCRETE PRIMER FOR THERMOPLASTIC ROAD MARKING PAINT

effective solution to be used on RCC or cemented roads by means of brush or spray machine before applying the Hot applied Thermoplastic Material to improve the adhesion of thermoplastic material.

Requirement for Concrete primer: -

Sr. No. Properties Required

1. Colour Natural, clear
2. Finish Smooth, Brushable and spray
3. Surface dry (minutes at 300C) Less than 20 minutes





(E) PACKING: - The thermoplastic material & reflectorizing beads shall be packed in 20/25 kg. polyethylene sack packs & concrete primer (For RCC or cemented road) in 20/25 litres.

## 22. Test Certificate:

Test certificate for Bitumen content and Cement Concrete of mix sample taken at site shall be done by Vendor at no extra cost to the IIMU and submitted to IIMU authority.

## 23. Filling available excavated earth:

The excavated earth/similar filling material shall be provided by the Institute, the contractor shall use necessary machinery/manpower to fill and transport the filling material from designated site to the filling area. Filling with excavated earth shall be done in regular horizontal layers each not exceeding 20 cm in depth. All lumps and clods exceeding 8 cm in any direction shall be broken. Each layer shall be watered and consolidated with steel rammer or ½ tonne roller. Where specified, every third and top must layer shall also be consolidated with power roller of minimum 8 tonnes. Wherever depth of filling exceeds 1.5 metre vibratory power roller shall be used to consolidate the filling unless otherwise directed by Engineer-in-charge. The top and sides of filling shall be neatly dressed. The contractor shall make good all subsidence and shrinkage in earth fillings, embankments, traverses etc. during execution and till the completion of work unless otherwise specified.

## 24. RCC pipes

Laying and Jointing Cement Concrete Pipes and Specials

- (i) Trenches: The pipes are to be bedded directly on soil, the bed shall be suitably rounded to fit the lower part of the pipe, the cost for this operation being included in the rate for laying the pipe itself.
- (ii) Loading, transporting and unloading of concrete pipes shall be done with care. Handling shall be such as to avoid impact. Gradual unloading by inclined plane or by chain pulley block is recommended. All pipe sections and connections shall be inspected carefully before being laid. Broken or defective pipes or connections shall not be used. Pipes shall be lowered into the trenches carefully. Mechanical appliances may be used. Pipes shall be laid true to line and grade as specified. Laying of pipes shall proceed upgrade of a slope.
- (iii) In case where foundation conditions are unusual such as in the proximity of trees or holes, under existing or proposed tracks manholes etc. the pipe shall be encased all-around in 15 cm thick cement concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) or compacted sand or gravel.
- (iv) In cases where the natural foundation is inadequate the pipes shall be laid either in concrete cradle supported on proper foundations or on any other suitably designed structure. If a concrete cradle bedding is used the depth of concrete below the bottom of the pipe shall be at least 1/4th of the internal dia of the pipe subject to the min. of 10 cm and a maximum of 30 cm. The concrete shall extend up the sides of the pipe at least to a distance of 1/4th of the outside diameter of pipes 300 mm and over in dia. The pipe shall be laid in this concrete bedding before the concrete has set. Pipes laid in trenches in earth shall be bedded evenly and firmly and as far up the haunches of the pipe as to safely transmit the load expected from the backfill through the pipe to the bed. This shall be done either by excavating the bottom of the trench to fit the curve of the pipe or by compacting the earth under around the curve of the pipe to form an even bed. Necessary provision shall be made for joints wherever required.
- (v) When the pipe is laid in a trench in rock hard clay, shale or other hard material the space below the pipe shall be excavated and replaced with an equalising bed of concrete, sand or compacted earth. In no place shall pipe be laid directly on such hard material.



(vi) When the pipes are laid completely above the ground the foundations shall be made even and sufficiently compacted to support the pipe line without any material settlement. Alternatively the pipe line shall be supported on rigid foundations at intervals. Suitable arrangements shall be made to retain the pipe line in the proper alignment, such as by shaping the top of the supports to fit the lower part of the pipe. The distance between the supports shall in no case exceed the length of the pipe. The pipe shall be supported as far as possible close to the joints. In no case shall the joints come in the centre of the span. Care shall be taken to see that super imposed loads greater than the total load equivalent to the weight of the pipe when running full shall not be permitted. Suitably designed anchor blocks at change of direction and grades for pressure lines shall be provided where required.

(vii) Jointing: Rigid Collar Joint : The two adjoining pipes shall be butted against each other and adjusted in correct position. The collar shall then be slipped over the joint, covering equally both the pipes. The annular space shall be filled with stiff mixture of cement mortar 1:2 (1 cement: 2 fine sand) which shall be rammed with caulking fool. After a day's work any extraneous materials shall be removed from the inside of the pipe and the newly made joint shall be cured.

#### 25. Brick Masonry Road gully chamber

The height shall be measured from the top of the floor to the top of the cover. 40 mm thick stone baffles shall be fixed 50 mm deep in masonry with cement mortar 1:4 (1 cement: 4 fine sand). The connection of open surface, drain with a soak pit shall be invariably through a grease trap.

#### 26 . Warranty. - (Warranty of the Bitumen work- 5 years from the Date of the completion of work)

#### List of Preferred makes for materials

S.No.	Material	Brand
1.	Cement	Ultra Tech, ACC Ltd., Ambuja, Birla, L&T, JK, Lafarge, Wonder
2.	Admixtures/construction chemical/ curing compound / plasticizers / super plasticizers	Pidilite Industries Ltd., FOSROC Chemicals (India) Pvt. Ltd., CICO Technologies Ltd., Sika India Pvt. Ltd., BASF India Ltd., Ferrous Crete, Ardex Endura (India) Pvt. Ltd., Asian Laboratories, Mapei, Flowcrete, M.C. Bauchemie
3.	TMT Reinforcement Steel (Primary producer only)	TISCO (TATA Steel), SAIL, RINL (VIZAG Steel), Jindal Steel & Power Ltd., JSW Steel Ltd.
4.	Structural Steel – MS Tubular Section (Circular, Square, Rectangular) for Columns, Truss, MS Pipes, Flats, Angles, Beams, Channels, Strips, etc.	SAIL, RINL, TISCO (TATA Steel), Jindal Steel, JSW, Apollo Steel, Hi- Tech tubes, Rana Capital, Bhushan
5.	RMC plants	Ultra-tech, JK



6.	Cast Iron	Neco, BIC, RIF, Electro Steel, SKF.
<p>1. Items which are not mentioned in the above list but required at site shall be supplied with prior approval of the Engineer-in-charge.</p> <p>2. Equivalent makes shall be considered only on non-availability of approved specified makes. In general, no change in brand will be entertained, however, the executing agency / vendor having similar experience will be / can be considered in case of non-availability of any material with certification from manufacturer, from the above list with cost adjustment (if any).</p> <p>3. The Contractor shall obtain prior approval from the Engineer-in-charge before placing order for any specific material. The Contractor shall make a detailed submittal with catalogues and highlighted proposed specifications, as well as full details of the works executed by the specialized agency, as specified.</p> <p>4. Wherever applicable, the Engineer-in-charge may approve any material equivalent to that specified in the tender subject to proof being offered by the Contractor for equivalence to his satisfaction.</p> <p>5. Unless otherwise specified, the brand / make of the material as specified in the particular specifications and in the list of approved materials attached in the tender, shall be used in the work. In case of non-availability of the brand specified in the contract, the Contractor shall be allowed to use alternate equivalent brand of the material subject to submission of documentary evidence of non - availability of the specified brand. The necessary cost adjustments on account of above change shall be made for the material.</p>		

**Schedule of Quantity**

**Name of Work : Recarpeting of Bituminous Road, CC Road & other miscellaneous work at IIM Udaipur.**

Signature of Bidder

Page 51 of 59

Signature of Associate Manager (Estate)



S.No.	Reference DSR Item	Description	Unit	Qty.	Rate in Rs.	Amount in Rs.
1	16.77	Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material within all lifts and lead upto 1km (by mechanical means).	Sqm	2400	7	16800
2	16.13	Cutting road and making good the same including supply of extra quantities of materials i.e. aggregate, moorum screening, red bajri and labour required. -----Wet Mix macadam (Prepared the surface including proper watering, rolling with proper compaction and make ready for the Bitumen work).	Cum	20	3078.05	61561
3	16.54	Providing and laying Dense bituminous macadam using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.-- 50 to 100 mm average compacted thickness <b>with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.- (Including tack coat and Prime coat using bitumen emulsion conforming to IS:8887, using emulsion pressure distributor including preparing the surface &amp; cleaning with mechanical broom. On bituminous surface @ 0.25kg/sqm).</b>	cum	40.00	11129.55	445182.00



4	16.57	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge. 40/50 mm compacted thickness <b>with bitumen of grade VG-30@ 5.5% (percentage by weight of total mix) and lime filler @3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.(Including tack coat using bitumen emulsion conforming to IS:8887, using emulsion pressure distributor including preparing the surface &amp; cleaning with mechanical broom. On bituminous surface @ 0.25kg/sqm).</b>	Cum	75.00	12126.2	909465.00
5	16.1	Preparation and consolidation of sub grade with power road roller of 8 to 12 ton capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 meters.	Sqm	450.00	218.9	98505.00
6	16.3	Supplying and stacking at site. Moorum(Subgrade)	Cum	30.00	768.25	23047.50
7	2.25a	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50 m and lift upto 1.5 km.	Cum	90.00	196	17640.00



8	16.78	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	Cum	70.00	2784	194880.00
9	16.79	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm ) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well-prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	60.00	2914.3	174858.00
10	16.62	Providing and applying 2.5 mm thick road marking strips (retro- reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications	Sqm	550.00	747.8	411290.00



11	16.5	Providing and fixing Glow studs of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro- reflective surface shall be 35 (+/- 5) degrees to base. The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4 : 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and . Make - 3M or equivalent as per direction of Engineer-in-charge	Each	700.00	206.3	144410.00
12	16.43	Providing and laying design mix cement concrete of M-30 grade, in roads/ taxi tracks/ runways, using cement content as per design mix, using coarse sand and graded stone aggregate of 40 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for contraction/ expansion, construction & longitudinal joints (10 mm wide x 50 mm deep) by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as per direction of Engineer in-charge (Item of joint fillers, sealants, dowel bars with sleeve/ tie bars to be paid separately). Note:- Cement content considered in M-30 is @ 340 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately:16.43.2 Cement concrete manufactured in automatic batching plant (RMC plant) including transportation to site in transit mixer	Cum	102	11098.45	1132041.90
13		Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:6.1.2 Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	11.00	7132.25	78454.75



14	16.42	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tamping complete.	Cum	30.00	7993.8	239814.00
15	19.6.7	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete : <b>450 mm dia. R.C.C. pipe</b>	Metre	18.00	1620.95	29177.10
16	10.25.2	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer and paint of approved color using structural steel etc. as required. In gradings, frames, guard bar, ladder, railings, brackets, gates and similar works- Including Chamber making with Chequered Plate.	kg	2000.00	172.6	345200.00
17	19.18	Supplying and fixing C.I. cover without frame for manholes: Sizes Minimum 455x610 mm rectangular/Circular C.I. cover (light duty) the weight of the cover to be not less than 23 kg.	Each	45.00	1358	61110.00
					Total	4383436.25





Indian Institute of Management Udaipur  
भारतीय प्रबंधन संस्थान उदयपुर

## Annexure-I

(to be provided on letter head of the Firm/LLP)

### Declaration regarding Blacklisting

To, Director, IIM Udaipur,  
Balicha, Udaipur 313001

Tender Reference No.: IIMU/Tender/Estate/Road work/24-25/01

I hereby certify that our firm (name) has never been blacklisted or debarred, or disqualified in the past by any Central/State Government/Public Undertaking/Autonomous Institute/ any International/National agency from taking part in tenders or for corrupt or fraudulent practices nor any criminal case is pending against the firm/LLP or its owner/partners anywhere in India.

I also certify that the above information is true and correct in every respect, and in any case, at a later date, it is found that any details provided above are incorrect, any contract given to our firm/LLP (name) may be summarily terminated, and the firm/LLP blacklisted.

Date :

Firm Name:

Place:  
person:

Name of the authorized

Designation:

(to be executed on 500/- Stamp Paper)

Signature of Bidder

Page 57 of 59

Signature of Associate Manager (Estate)



## CONTRACT AGREEMENT

This Agreement for “ .....” is made and executed on this.... day, the .....day of..... 2024 at Udaipur.

BY AND BETWEEN:

1. Indian Institute of Management Udaipur, (registered under the Rajasthan Society Registration Act, 1958 on April 5, 2010) is an Autonomous Institute under the Ministry of Education, Government of India, having its current office at Balicha, Udaipur-313001, Rajasthan, India (hereinafter referred to as the “Institute”, which expression shall unless repugnant to the context or meaning thereof be deemed to include its executors, administrators, and assignees),

AND

2. M/s ....., having its registered office at ....., India (hereinafter referred to as the “Contractor”, which expression shall, unless repugnant to the context or meaning thereof, be deemed to include its executors, administrators, and assignees), represented by Mr. , Authorised person of the company.

WHEREAS the contractor has agreed for the work at IIM Udaipur mentioned in the specification and schedule (Tender Document) attached hereto at the prices and in the manner and upon the terms and conditions hereinafter mentioned and whereas the contractor has deposited with the Institute, the sum of Rs. ....(Rupees ..... only) vide performance bank guarantee towards the security money for the due and faithful performance of this contract and to be forfeited in the event of the contractor failing duly and faithfully performance of this contract.

The Institute and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents (Tender Document) referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
  - (a) The Letter of Intent (LOA) dated .....2024.
  - (b) The Performance Bank Guarantee Rs. (Rupees ..... only) Fixed deposit No. .... dated .....2024 issued by ..... Bank.
  - (c) The Tender Document No.: ..... dated

Signature of Bidder

Page 58 of 59

Signature of Associate Manager (Estate)



..... 2024.

(d) Mail negotiation, correspondence on email, and other relevant documents.

3. In consideration of the payments to be made by the Institute to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Institute to execute the works and to comply with all statutory requirements existing as well as those promulgated from time to time. The price is payable for rendering requisite services after fulfilment of all statutory requirements as per the Letter of Acceptance & tender documents.

4. The period of the contract will be for a total of 60 days from the date of commencement of the work i.e. ....2024.

5. All disputes under this contract are subject to Udaipur jurisdiction only.

Agreement to be executed in accordance with the laws of India on the day, month, and year indicated above.

Signed by:

Signed by:

\_\_\_\_\_  
For and on behalf of the Institute  
Contractor  
in the presence of

\_\_\_\_\_  
For and on behalf of the  
in the presence of

Witness:  
Name:  
IIM Udaipur, Balicha, Udaipur

Witness:  
Name: Address:  
Address:

Date ... 2024.

Date: ... 2024