	Government eProcurement System	eProcurement System Government of India
	Tender Details	Date : 03-Sep-2024 05:41 PM

 Print

Basic Details

Organisation Chain	Indian Institute of Technology Indore Infrastructure Development Office - IITI		
Tender Reference Number	IITI/IDO/PR/C/PB/NIT-7/24-25/2		
Tender ID	2024_IITI_824279_1	Withdrawal Allowed	Yes
Tender Type	Open Tender	Form of contract	Percentage
Tender Category	Works	No. of Covers	2
General Technical Evaluation Allowed	No	ItemWise Technical Evaluation Allowed	No
Payment Mode	Offline	Is Multi Currency Allowed For BOQ	No
Is Multi Currency Allowed For Fee	No	Allow Two Stage Bidding	No

Payment Instruments

Offline	S.No	Instrument Type
	1	R-T-G-S
	2	NEFT

Cover Details, No. Of Covers - 2

Cover No	Cover	Document Type	Description
1	Fee/PreQual/Technical	.pdf	NIT for Covering of connecting bridge and railing of POD Building at IIT Indore
2	Finance	.xls	Financial bid for Covering of connecting bridge and railing of POD Building at IIT Indore

Tender Fee Details, [Total Fee in ₹ * - 0.00]

Tender Fee in ₹	0.00	Fee Payable To	Nil	Fee Payable At	Nil
Tender Fee Exemption Allowed	No				

EMD Fee Details

EMD Amount in ₹	3,92,000	EMD Exemption Allowed	No
EMD Fee Type	fixed	EMD Percentage	NA
EMD Payable To	Registrar IITI	EMD Payable At	IITI

[Click to view modification history](#)
Work /Item(s)

Title	Covering of connecting bridge and railing of POD Building at IIT Indore
Work Description	Covering of connecting bridge and railing of POD Building at IIT Indore
Pre Qualification Details	As Per tender
Independent External Monitor/Remarks	NA
Show Tender Value in Public Domain	Yes

Tender Value in ₹	1,95,98,749	Product Category	Civil Works	Sub category	NA
Contract Type	Tender	Bid Validity(Days)	180	Period Of Work (Days)	150
Location	POD Building, IIT Indore	Pincode	453552	Pre Bid Meeting Place	NA
Pre Bid Meeting Address	NA	Pre Bid Meeting Date	NA	Bid Opening Place	IDO Office, GF, Abhinandan Bhawan, IIT Indore
Should Allow NDA Tender	No	Allow Preferential Bidder	No		

Critical Dates

Publish Date	03-Sep-2024 05:50 PM	Bid Opening Date	25-Sep-2024 03:30 PM
Document Download / Sale Start Date	03-Sep-2024 05:55 PM	Document Download / Sale End Date	24-Sep-2024 05:00 PM
Clarification Start Date	04-Sep-2024 10:00 AM	Clarification End Date	24-Sep-2024 05:00 PM
Bid Submission Start Date	08-Sep-2024 10:00 AM	Bid Submission End Date	24-Sep-2024 05:00 PM

Tender Documents

NIT Document	S.No	Document Name	Description	Document Size (in KB)
	1	Tendernotice_1.pdf	NIT for Covering of connecting bridge and railing of POD Building at IIT Indore	988.85

Work Item Documents	S.No	Document Type	Document Name	Description	Document Size (in KB)
	1	BOQ	BOQ_866225.xls	BOQ for NIT	260.00

Bid Openers List

S.No	Bid Opener Login Id	Bid Opener Name	Certificate Name
1.	chainika@iiti.ac.in	Chainika Malhotra	CHAINIKA MALHOTRA
2.	shailendrajat@iiti.ac.in	shailendra Jat	SHAIENDRA KUMAR JAT
3.	devendra@iiti.ac.in	Devendra Gurjar	DEVENDRA GURJAR
4.	aecivil1@iiti.ac.in	Deepak Chourasia	DEEPAK CHAURASIA

Tender Properties

Auto Tendering Process allowed	No	Show Technical bid status	Yes
Show Finance bid status	Yes	Stage to disclose Bid Details in Public Domain	Technical Bid Opening
BoQ Comparative Chart model	Normal	BoQ Comparative chart decimal places	2
BoQ Comparative Chart Rank Type	L	Form Based BoQ	No

TIA Undertaking

S.No	Undertaking to Order	Tender complying with Order	Reason for non compliance of Order
1	PPP-MII Order 2017	Agree	
2	MSEs Order 2012	Agree	

Tender Inviting Authority

Name	Superintending Engineer, IDO, IIT Indore
Address	IDO Office, GF, Abhinandan Bhawan, IIT Indore, Khandwa Road, Simrol, Indore 453552, INDIA

Tender Creator Details

Created By	Deepak Chourasia
Designation	Sr. Engineer
Created Date	03-Sep-2024 05:18 PM



भारतीय प्रौद्योगिकी संस्थान इंदौर
Indian Institute of Technology Indore

ई-निविदा प्रणाली दो बोली प्रतिशत दर निविदा दस्तावेज
E- tender system two bid percentage rate tender document

NAME OF WORK : **Covering of connecting bridge and railing of POD Building at IIT Indore.**
आईआईटी इंदौर में पीओडी भवन के संपर्क सेतु और रेलिंग का आवरण।

ESTIMATED COMPOSITE COST: Rs. 1,95,98,749/-

EARNEST MONEY : **Rs. 3,92,000/-**

TIME ALLOWED : **05 (Five) Months.**

DATE OF TENDER OPENING : **24/09/2024 at 03:30 P.M.**

(NIT No. IITI/IDO/PR/C/PB/NIT-7/24-25/2 dated 03/09/2024)
(Last date of submission of online Tenders up to 5:00 pm on 24/09/2024)

IIT Indore

Name of work:		Covering of connecting bridge and railing of POD Building at IIT Indore.	
Index			
SL. NO.	DESCRIPTION	PAGE NOS.	
1.	Index	1-2	
2.	Notice inviting tender	3	
3.	Information and Instructions for Contractors	4-7	
4.	<u>PART – A</u>	8	
5.	CPWD-6 for e-Tendering	9 – 13	
6.	Receipt of Deposition of original EMD & Form “F”	14-14	
7.	Form CPWD – 7	15 – 16	
8.	Acceptance	17	
9.	Proforma of Schedules	18 – 24	
10.	<u>PART – B (CIVIL COMPONENT)</u>	25	
11.	Special Conditions for Cement & Steel	26-43	
12.	Specialized Items/ Works	44-45	
13.	Format of various Guarantee Bonds/Affidavit for work	46– 48	
14.	GRANITE STONE WORK SPECIAL CONDITION	49 – 52	
15.	Additional Specifications	53	
16.	Additional Conditions	54 – 80	
17.	General Specifications	81 – 88	
18.	Special Conditions To Prevent Air Pollution	89 – 90	
19.	Quality Assurance Programme	91 – 99	
20.	Approved Makes Of Materials	100 – 104	
21.	<u>PART – C</u>	105	
21.	Schedule of Quantities (Civil)	106-109	
22.	Proforma for Quoting the rates	110	

Name of work:	Covering of connecting bridge and railing of POD Building at IIT Indore.	
Index		
SL. NO.	DESCRIPTION	PAGE NOS.
	The NIT contains Pages 1 to 110.	
NIT amounting to Rs. 1,95,98,749/- is hereby approved.		

Senior Engineer (C)
IDO IIT Indore

Deputy Executive Engineer (C)
IDO IIT Indore

SE cum PIC
IIT Indore

IITI	
NOTICE INVITING TENDER	
N.I.T. No.	IITI/IDO/PR/C/PB/NIT-7/24-25/2
Name of work	Covering of connecting bridge and railing of POD Building at IIT Indore (M.P).
Estimated Cost	Total: Rs. 1,95,98,749/-
Earnest Money	Rs. 3,92,000/- [Online through link: https://forms.eduqfix.com/indoreiit/add]
Performance Guarantee	5% of tendered amount.
Security Deposit	2.5% of tendered amount
Time Allowed for completion of work	05 (Five) Months

**INFORMATION AND INSTRUCTIONS FOR CONTRACTORS FOR e-TENDERING
FORMING PART OF NIT AND TO BE POSTED ON WEBSITE**

(Applicable for inviting open bids)

The Superintending Engineer, Infrastructure Development Office (IDO), IIT Indore on behalf of the Director Indian Institute of Technology Indore invites online Percentage rate bids from approved and eligible contractors of BSNL, MPPWD, MES, CPWD, Central PSUs and working agencies of IIT/IIM/RRCAT, etc., in the appropriate class and in building & roads category for the following work(s):

Sl. No.	NIT No.	Name of Work & Location	Estimated Cost Put to Tender (Rs.)	Earnest Money (EMD) (Rs.)	Stipulated Period of Completion of work (in Months)	Time and date of site-visit	Time and date of pre-bid meeting to be held at O/o IDO, IIT Indore	Date & time of commencement of online submission of bid and other documents as specified in	Last date & time of online submission of bid and other documents as specified in the bid document	Time & date of opening of bid
1	2	3	4	5	6	7	8	9	10	11
1	IITL/IDO/PR/C/PB/NIT-2/24-25/7	Covering of connecting bridge and railing of POD Building at IIT Indore.	Rs. 1,95,98,749/- (One Crore Ninety-Five Lakhs Ninety-Eight Thousand Seven Hundred Forty Nine Only)	Rs. 3,92,000/- https://forms.edugfix.com/indoreiit/add	05 (Five) Months	From 04/09/2024 (10 am) to 06/09/2024 (3 pm)	06/09/2024 03:00 PM	08/09/2024 from 10:00 AM	24/09/2024 up to 05:00 PM	25/09/2024 at 03:30 PM

1. The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
2. Information and instructions for bidders posted on website shall form part of bid document.

3. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website http://iiti.ac.in/tender_estate or <https://eprocure.gov.in/eprocure/app> free of cost.
4. The bid shall accompany **EMD in favour of Registrar IITI**, paid online mode as per the link given on page number 4. The receipt for the deposition of EMD shall be attached along with all the other documents stipulated in the bid documents. If the scanned copies of all the documents stipulated in the bid documents are not uploaded, then the bid will become invalid and shall summarily be rejected.
5. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
6. The intending bidder must have valid class-III digital signature certificate with encryption key (combo type) to perform any operations/transactions on the e-tendering portal / website.
7. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
8. Contractor can upload documents in the form of JPG format and PDF format.
9. Contractor must ensure to quote rate in the prescribed column(s) meant for quoting rate in figures appears in pink colour and the moment rate is entered, it turns sky blue.

In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as “0”. Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as “0” (ZERO).

However, If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section/sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

10. Site visit is scheduled from 04/08/2024 (10 AM) to 06/08/2024 (3 PM), followed by Pre Bid conference in the chamber of SE cum PIC, IITI, Indore, to clarify the queries raised by bidders, if any.

List of Documents to be scanned and uploaded within the period of bid submission:

(ONLY SCANNED DOCUMENTS ARE TO BE UPLOADED. PHOTOGRAPHS OF RELEVANT DOCUMENTS, IF UPLOADED, ARE LIABLE TO BE REJECTED IN CASE OF LACK OF CLARITY)

<i>Sl. No.</i>	<i>List of Documents</i>
1*	<i>Certificate GST No.</i>
2*	<i>EMD Rs. 3,92,000/- via online link https://forms.edugfix.com/indoreiit/add</i>
3*	<i>Registration</i>
4*	<i>Form A: -Financial information</i>
	<i>Average Annual turnover of the Last Five Years should be above 50% of the Estimated cost</i>
5*	<i>Bank Solvency Certificate VALUE SHOULD BE 40% of Estimated Cost</i>
6*	<i>Details of Eligible Work or Similar Work</i>
	<i>Successfully completed similar work within last Seven years</i>
	<i>i) one similar work of value 80% of the estimated cost of tender. OR</i>
	<i>ii) Two similar works of value 60% of the estimated cost of tender. OR</i>
	<i>iii) Three similar works of value 40% of the estimated cost of tender.</i>
7	<i>Structure and organization of the firm/company</i>
8*	<i>Certificate of EPF and ESIC</i>
9*	<i>Labour Registration/ undertaking</i>
10*	<i>Undertaking of compliance of all the statutory laws to be submitted on the letter head of the organization with seal & signature.</i>
11*	<i>Loss and Profit certificate (certified by CA for Last Five years)</i>
12*	<i>Notarized /Self Attested on 100 Rs stamp regarding joint venture (in last Five years), Joint venture are not allowed.</i>
13*	<i>Notarized / Self Attested on 100 Rs stamp regarding firm are not blacklisted in last Five years.</i>

- **The Document should be uploaded in prescribed serial number and no extra number of document/ pages will be uploaded.**
- **Summary Sheet will be attached with uploaded document.**

*** MANDATORY**

- ❖ **Registration No. Means:** MSME, CPWD, PWD, Society firm and similar related to the construction/ civil work.
- ❖ **Bank Solvency:** Preferably of the Current Financial Year, but not older than one year.
- ❖ **Document for Eligibility of Similar Work:** Only Defined Document (with Seal signed by Client), up to the date of publication of tender is considered.
Completion Certificate of Work (Sealed and Signed)
- ❖ **Financial Information:**
 1. CA Certified Summary sheet year wise.
 2. Profit/ loss Statement by CA Last 05 Year (2018-2023).
 3. ITR returns of last 05 years
- ❖ **Similar Works means:**
Civil Work which includes structural steel work

Superintending Engineer
IITI, Indore (MP)

PART-A

CPWD-6 FOR e-TENDERING
INDIAN INSTITUTE OF TECHNOLOGY INDORE
NOTICE INVITING TENDER

1. Online Percentage rate bids are invited on behalf of Director, IITI from approved and eligible contractors of BSNL, MPPWD, MES, CPWD, Central PSUs and working agencies of IIT/IIM/RRCAT, etc., in the appropriate class and in building & roads category for the work of **Covering of connecting bridge and railing of POD Building at IIT Indore (M.P).**

The enlistment/ registration of the contractors should be valid on the last date of submission of bids.

In case only the last date of submission of tender is extended, the enlistment/ registration of contractor should be valid on the original date of submission of tenders.

- 1.1 The work is estimated to cost : **Rs. 1,95,98,749/- (One Crore Ninety Seven Lakhs Eighty Eight Thousand Eighty Seven Only)**

This estimate, however, is given merely as a rough guide.

- 1.1.1 The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.

2. Agreement shall be drawn with the successful bidders on prescribed Form No. CPWD 7 (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on website <https://www.cpwd.gov.in>. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be **05 (Five) Months** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
4. **The site for the work is available.**
The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submitted by the contractor after award of work.
5. The Bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms & conditions of contract to be complied with and other necessary documents except Standard General Conditions of Contract Form 2023 (Construction Work) can be seen from website http://iiti.ac.in/tender_estate or <https://eprocure.gov.in/eprocure/app> free of cost. The standard publications like General Conditions of Contract-2023 (Construction Work), Delhi Schedule of Rates (for Civil) specifications for Civil, works and Delhi Analysis of Rates (for Civil) with amendments / correction slips up to the previous day of submission of tender can be seen free of cost from website <https://etender.cpwd.gov.in> or <https://www.cpwd.gov.in>.

6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified.
7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.
9. EMD accepted through online mode only via link provided on page number four (4). A scanned copy of the original EMD/ receipt shall also be uploaded to the e-tendering website by intending bidder up to the specified bid submission date and time.

The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier.

Copy of Enlistment/ registration Order and certificate of work experience and other documents as specified in the notice inviting e- tender shall be scanned and uploaded on the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in e- tender notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority. Online bid documents submitted by intending bidders shall be opened only of those bidders, whose original EMD deposited with any division of CPWD and other documents scanned and uploaded are found in order.

The bid submitted shall be opened at 25/09/2024 at 15:30.

10. The bid submitted shall become invalid and e-Tender processing fee (if applicable) shall not be refunded if :
 - (i) The bidder is found ineligible.
 - (ii) The bidder does not upload all the documents including Goods and Service Tax (GST) registration or undertaking as stipulated in the bid document including the copy of receipt for deposition of original EMD.
 - (iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest tenderer in the office of tender opening authority.
 - (iv) If a tenderer does not quote any percentage above / below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
11. The Contractor whose bid is accepted will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in Schedule "E" and within the period specified in schedule F. This guarantee shall be in the form of Original bank guarantee including e-bank guarantee of any commercial bank in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest

Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. if applicable and also ensure the compliance of aforesaid provisions by the sub contractors, if any engaged by the contractor for the said work and Programme Chart (Time and Progress) within the period of specified in Schedule-F.

12. The work of **Covering of connecting bridge and railing of POD Building at IIT Indore (M.P.)** is to be executed at IIT, Simrol Campus, Indore (MP).

Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra claims / payments consequent on any misunderstanding or otherwise shall be allowed.

The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity, access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government mentioned if any, in this tender document and local conditions and other factors having a bearing on the execution of the work.

13. The competent authority on behalf of the Indian Institute of Technology Indore does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.
14. Canvassing whether directly or indirectly, in connection with tenderers is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
15. The competent authority on behalf of Indian Institute of Technology Indore reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rate quoted.

16. The contractor shall not be permitted to tender for works in the IITI section/ department responsible for award and execution of contracts, in which his near relative is posted in account section or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any officer in the Indian Institute of Technology, Indore or Ministry of Education. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
17. No Engineer of gazette rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the previous permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the tender or engagement in the contractor's service.
18. **The bid for the works shall remain open for acceptance for a period of 180 (One Hundred Eighty) Days from the date of opening of bid.**
- (i) If any bidder withdraws his bid or makes any modification in the terms & conditions of the tender which is not acceptable to the department within 7 days after last date of submission of bids, then the government shall without prejudice to any other right and remedy be at liberty to forfeit 50% of the said earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
- (ii) If any bidder withdraws his bid or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the government shall without prejudice to any other right and remedy be at liberty to forfeit 100% of the said earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
- (iii) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.
19. This notice inviting Tender shall form a part of the contract document. The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
- a) The Notice Inviting Tender, all the documents including additional conditions, specifications and drawings, if any, forming part of the tender as uploaded at the time of invitation of tender and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

- b) Standard C.P.W.D. Form-7 for CPWD works-2023 (Construction Work) as amended upto previous day of submission of bid.
20. The intending bidders are required to upload their bids well in advance of last date of submission of tender. Any issue related to uploading tender can be resolved through the concerned Engineer (Telephone:+91-731-6603333 (Ext.: 5588)/ E-mail : pic-1@iiti.ac.in). The e-tendering bidders are also advised not to wait to raise any issues till the last date of submission of the bid in their own interest.

Superintending Engineer
IDO-IITI,
Indore- (MP)

Form "F"

Undertaking on structural stability and soundness of already completed buildings and infrastructure projects.

I/we undertake and confirm that any building / infrastructure constructed by our firm /partnership firm/ company has not suffered any failure, making it unfit for intended use, either due to structural design and defects or due to use of sub-standard materials or execution of sub-standard work, poor workmanship or any other reason during the last 25 (twenty five) years.

I/we, further, undertake that if such information comes to the notice of CPWD, then Engineer-in-Charge shall be free to terminate the bid/agreement and to forfeit the entire amount of earnest money deposit, performance guarantee and security deposits.

I/we, also undertake that in addition to above, the Engineer-in-Charge shall be free to debar us forever from tendering in CPWD.

The decision of Engineer-in-Charge or any higher authority shall be final and binding.

Signature of notary with seal

Signature of bidder or an authorized person of the firm with stamp

**Note : (i) Affidavit to be furnished on a 'Non-judicial' stamp paper of Rs. 200/- (scanned copy of the notarized affidavit to be uploaded at the time of submission of bid)
(ii) If bidder is working in construction field for less than 25 years, the lesser period shall be mentioned in lieu of 25 years.**

CPWD - 7

INDIAN INSTITUTE OF TECHNOLOGY INDORE

PERCENTAGE RATE TENDER & CONTRACT FOR WORKS

Tender for the work of: - **Covering of connecting bridge and railing of POD Building at IIT Indore (M.P).**

- (i) To be uploaded by 17:00 hours on 02/09/2024 at web site: http://iiti.ac.in/tender_estate
- (ii) To be opened in presence of tenderer's who may be present at 15:30 P.M. on 25/09/2024 in the office of Superintending Engineer, IDO-IIT Indore.

TENDER

I/We have read and examined the notice inviting tender, schedule, A, D, E & F Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the Indian Institute of Technology Indore within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.

I/We agree to keep the tender open for **180 (One Hundred Eighty) days** from the due date of its opening and not to make any modification in its terms and conditions.

I/We have deposited EMD for the prescribed amount in the office of concerned Executive Engineer as per the bid document.

A copy of earnest money deposit receipt of prescribed amount deposited in the form of insurance Surety Bonds/ Account Payee Demand Draft/ Fixed Deposit Receipt/ Banker's Cheque or Bank Guarantee (as prescribed) issued by a Commercial Bank, is scanned and uploaded (strike out as the case may be). If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said Indian Institute of Technology Indore or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that Indian Institute of Technology Indore or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 (C) of the tender form.

Further, I/We agree that in case of forfeiture of Earnest Money or Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/We shall be debarred for tendering in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/ Performance Guarantee.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated

Signature of Contractor

Witness:

Postal Address

Address: Occupation:

.....* to be filled in by contractor

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the Indian Institute of Technology Indore for a sum of Rs.....** (Rupees.....**.....).

The letters referred to below shall form part of this contract Agreement: -

- a) }
 b) }**.....
 c) }

For & on behalf of the Indian Institute of Technology Indore

Signature.....**

Dated**

Designation: Superintending Engineer
 IDO-IITI, Indore- (MP)

(to be filled by SE)**

PROFORMA OF SCHEDULES

(Separate Performa for Civil, ~~Elect. & Hort.~~ Works in case of Composite Tenders)
(Operative Schedules to be supplied separately to each intending tenderer)

**Name of work :Covering of connecting bridge and railing
of POD Building at IIT Indore.**

SCHEDULE 'A'

Schedule of quantities (civil component)

(Civil Work:- Part C of this tender document)

SCHEDULE 'D'

Extra schedule for specific requirements/document for the work, if any.

As attached in tender form

SCHEDULE 'E'

Reference to General Conditions of contract: General conditions of contract for construction works 2023 as amended upto previous day of submission of tender

Name of work: - Covering of connecting bridge and railing of POD Building at IIT Indore .	
Estimated composite cost :	Rs. 1,95,98,749/- (One Crore Ninety Seven Lakhs Eighty Eight Thousand Eighty Seven Only)
Earnest money	Rs. 3,92,000/-
Performance Guarantee	5% of the tendered value of the work
Security Deposit	2.5% of the tendered value of the work

SCHEDULE 'F' GENERAL RULES & DIRECTIONS:

Officer inviting tender	Superintending Engineer, IDO-IITI, Indore- (MP)
Maximum percentage of quantity of items of work to be executed beyond which rates are to be determined in accordance with Clause 12.2 (C)	See Page 23

Definitions:**2(v)Engineer-in-Charge**

For Civil items of work	Deputy Executive Engineer, IDO-IITI, Indore or his successor
2(vii) Accepting Authority	SE cum PIC, IDO-IITI, Indore- or his successor
2(x) Percentage on cost of materials and labour to cover all overheads and profits	15% (Fifteen percentage)

2(xi) **Standard Schedule of Rates:**

For Civil items of work		Delhi Schedule of rate 2023(Civil) Volume-I & II with correction slips upto the previous day of submission of bid & Market Rate for non DSR items.
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2(xii)

Department	Infrastructure Development Office, IIT Indore.
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9(ii)

Standard CPWD contract Form:	General conditions of contract for construction works 2023 & CPWD form-7 as amended upto the previous day of submission of bid.
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Clause 1	1. Time allowed for submission of Performance Guarantee, Program chart (Time and Progress) and applicable labour licenses /registration, registration with EPFO, ESIC & BOCW welfare Board including Provident Fund Code No., if applicable or proof of applying thereof from the date of issue of letter of acceptance.	7 Days
	2. Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period as provided in (i) above	3 Days
Clause 2	Authority for fixing Compensation under Clause 2	Director, IIT Indore
Clause 5	Number of days from the date of issue of letter of acceptance for reckoning date of start.	10 Days

Time allowed for execution of work	05 (Five) Months
Recovery on account of delay in submission of MPR (Monthly progress report)	Rs. 1000 per day, Maximum Rs. 20000/- for one MPR
Recovery on account of delay in submission of Revised programme chart	Rs. 1000 per day

Table of Mile stone(s)			
Sl. No	Description of Mile stone	Time allowed from date of start (Days)	Amount to be withheld in case of non achievement of milestone
1	Mobilisation of Site	15	1% of tendered cost
2	Supply of materials (structural steel, ACP, UPVC pipes, polycarbonate sheet etc.	30	2 % of tendered cost
3	Structural steel work with painting complete.	80	3 % of tendered cost
4	Plumbing work	90	1 % of tendered cost
5	Cladding/ roofing work.	140	2% of tendered cost
6	Cleaning and handing over	150	1% of tendered cost

NOTE: Withheld amount shall be released if and when subsequent milestone is achieved within respective time specified. However, in case milestones are not achieved by the bidder for the work, the amount shown against milestone shall be withheld.

Time allowed for execution of work	05 (Five) Months
(i) Authority to convey the decision of shifting of milestone and extension of time.	Director IIT Indore or his successor
(ii) Authority to decide rescheduling of milestone and extension of time	Director IIT Indore or his successor
(iii) Shifting of date of start in case of delay in handing over of site	Superintending Engineer, IDO-IITI, Indore or his successor

Schedule of Handing over the site			
Part	Portion of Site	Description	Time period for handing over reckoned from date of issue of letter of intent
Part A	Portion without any hindrance	-	Full site for the work is available.
Part B	Portion with encumbrances	-	
Part C	Portion dependent on work of other agencies	-	

Clause 6	Whether clause 6 shall be applicable	Yes-CMB
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Clause 7	Gross work to be done together with net payment/Adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	Rs. 40.00 Lakh
Clause 7 A	Whether clause 7A shall be applicable	Yes
Clause 7 B	Whether clause 7B shall be applicable	Yes
Clause 8A	Authority to decide compensation on account if contractor fails to submit completion plans	SE cum PIC, IDO-IITI, Indore- or his successor

CLAUSE 10A**Civil work**

Contractor may establish a field lab at site although it is not mandatory.

All necessary equipment for conducting all necessary tests as per direction of Engineer In-Charge may be provided at the site in the well furnished site laboratory by the contractor at his own cost with proper light and ventilation. All equipment's, testing machines shall be calibrated by appropriate agency.

Clause 10B(ii)	Whether clause 10B(ii) shall be applicable	No
Clause 10C	Component of labour expressed as percentage of value of work	25 % Applicable
<i>Note: Payment under this clause is admissible when contractor submits proof of having paid wages due to every worker through bank or ECS or online transfer to his bank account.</i>		

Clause 10 CC:	NOT APPLICABLE
Clause 11	Specification to be followed for execution of work:
For Civil items of work	For Civil: CPWD specification 2019, Volume-I & II with correction slips upto the previous day of submission of bid, suppliers / manufacturer specification for non DSR items.

Clause 12

Type of work:	Original work	
12.2(C)	Deviation limit beyond which clause 12.2(C) shall apply for building work.	100%
	i. Deviation limit beyond which clauses 12.2 (C) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)	100%
	ii. Deviation limit for items mentioned in earth work subhead of DSR and related item	100%

Clause 16

Competent Authority for Deciding reduced rates (for Civil items of work)	SE cum PIC, IDO-IITI, Indore- or his successor
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Clause 18	
List of machinery, tools & plants which may require to be deployed by the contractor at site.	
All machinery, t&p as per requirement of work and site to the satisfaction of Engineer-in-charge.	

Clause 19C..... SE cum PIC, IDO-IITI, Indore

Clause 19D SE cum PIC, IDO-IITI, Indore

Clause 19G SE cum PIC, IDO-IITI, Indore

Clause 19K SE cum PIC, IDO-IITI, Indore

Clause 25

Designation	
Conciliator	DOID, IIT Indore
Arbitrator Appointing Authority	Director-IITI, Indore or his successor
Place of Arbitration	INDORE

Clause 32

“Requirement of Technical Representative(s) and Recovery Rate

Sl. No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical / Technical representative)	Minimum experience	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 32	
					Figures	Words
1	Graduate Engineer Or Diploma Engineer	1 of major component	Project Manger cum Planning / quality/ Site / billing Engineer	2 or 5-Years respectively	25,000/- per month per person	Rupees Twenty-Five Thousand per month per person

Note :Cost of work in the table above, means the estimate amount of the work.

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10 years relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers

Clause 38

i)	a)	Schedule / statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2023 printed by CPWD	DSR- 2023 for civil works with upto Date correction slips.
ii)		Variations permissible on theoretical quantities	
		For works with estimated cost put to Tender is more than Rs. 25 Lacs	2% plus/minus
	b)	Bitumen all works	2.5% plus only & nil on minus side
	c)	Steel reinforcement and structural steel Sections for diameter, section and category.	2% plus/minus
	d)	All other materials	Nil

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sl. No.	Description of Item	Unit	Rates in figures and words at which recovery shall be made from the Contractor	
			Excess beyond permissible variation	Less use beyond permissible variation
1.	Cement PPC)	MT	Nil	Substandard work shall not be acceptable.
2.	Reinforcement Bars TMT/CRS-fe500D or more grade (i)Primary Manufacturer	MT	Nil	Substandard work shall not be acceptable.
3.	Structural Steel	MT	Nil	Substandard work shall not be acceptable.

PART -B

SPECIAL CONDITIONS FOR CEMENT & STEEL

1. The contractor shall, at his own expense procure and provide all materials including cement and steel required for the work.
2. The contractor shall procure all the materials in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work.
3. All materials brought by the contractor for use in the work shall be got checked from the Engineer-In-Charge or his authorized representative of the work on receipt of the same at site before use.
4. The contractor shall also employ necessary watch and ward establishment for the safe custody of materials at his own cost. The contractor shall be fully responsible for the safe custody of materials brought by him/ issued to him even though the materials may be under double lock and key system.
5. Contractor has to produce manufacturers test certificate for each lot of cement & steel procured at site.
6. **CONDITIONS FOR CEMENT:-**
 - 6.1 The contractor shall procure 43 grade ordinary Portland Cement conforming to IS 8112/ Portland Pozzolana cement conforming to IS 1489 (Part-I), as required in the work, from reputed manufacturers of cement such as ACC, UltraTech, Birla, Vikram, Shree Cement, Ambuja, Jaypee Cement & J.K. Cement or from any other reputed cement Manufacturer having a production capacity not less than one million tones per annum as approved by ADG for that sub region. The tenderers may also submit a list of names of cement manufacturers which they propose to use in the work. The tender accepting authority reserves right to accept or reject name(s) of cement manufacturer(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufacturers, given by the tenderer, fully or partially. The supply of cement shall be taken in 50 kg bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the contractor shall be taken by the Engineer-in-charge and got tested in accordance with provisions of relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected, and it shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer- in-charge to do so.
 - 6.2 The cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer- in- charge. The cement godown of the capacity to store a minimum of 2000 bags of cement or as directed by Engineer-in-charge

and shall be constructed by the contractor at site of work for which no extra payment shall be made.

- 6.3 Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Engineer-in-Charge or his authorized representative and the keys of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.
- 6.4 The cement shall be got tested by the Engineer-in-charge and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of charge the cement required for testing including its transportation cost to testing laboratories. All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading , documentation, including testing charges shall be borne by the contractor.
- 6.5 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10A of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein. In case the cement consumption is less than theoretical consumption including permissible variation, recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to made.
- 6.6 The cement brought to the site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the Engineer-in-charge.
- 6.7 The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-charge. If he does not do so within 3 days of receipt of such notice, the Engineer-in-charge shall get it removed at the cost of the contractor.
- 6.8 The cement in bags shall be stacked by the contractor in two godowns one for fresh arrival to be tested for quality and another already tested in use having weather proof roof and walls and on a proper floor consisting of two layers of dry bricks laid on well consolidated earth at a level at least 30 cm above the ground level. These stacks shall be in rows of two bags deep and 10 bags high with a minimum of 60 cm. clear space all round. The bags should be placed horizontally continuous in each line as per sketch given in **CPWD Specification – 2019**. The sketch is only for guidance. Actual size / shape of go downs shall be as per site requirement. The decision of Engineer-in-Charge regarding the capacity needed will be final and nothing extra shall be paid on this account.

- 6.9 Cement register for the cement shall be maintained at site. All the entries in the registers will be made by the designated Engineering Staff of the contractor and same shall be regularly reviewed by Engineer-in-charge or his representative.

PROFORMA FOR THE CEMENT REGISTER

PARTICULARS OF RECEIPT			PARTICULARS OF ISSUE			REMARK							
Date of receipt	Quantity received	Progressive Total	Date of issued	quantity issued	Item of work for which issued	Quantity returned at the end of the day	Total issued	Daily Balance in hand	Contractor initials	J.E's initials	Asstt. Engg initials	A.E. E.E initials	Periodical Check
1	2	3	4	5	6	7	8	9	10	11	12	13	14

7. Special conditions for steel (TMT and CRS)

A.–For TMT bars

7.1 The contractor shall procure TMT/CRS bars of **Fe500D or more grade** from primary producers such as SAIL, Tata Steel Ltd., RINL, Jindal Steel & Power Ltd or any other producer as approved by CPWD who are using iron ore as the basic raw material / input and having crude steel capacity of 2.0 million tones per annum and above.

In case of non-availability of steel from primary producers the NIT approving authority may permit use of TMT reinforcement bars procured from secondary producers having Integrated Steel Plants (ISPs) using iron ore as the basic raw material for production of crude steel which is further rolled into finished shapes in-house having crude steel capacity of 0.5 Million tonne per annum and more.

In case of non-availability of steel from primary producers as well as ISPs then the NIT approving authority may also permit use of TMT reinforcement bars procured from secondary producers in such cases following conditions are applicable.

- (a) The grade of the steel such as **CRSFe500D or more** grade to be procured is to be specified as per BIS 1786-2008 or as mentioned in Schedule of Quantity.
- (b) The secondary producers must have valid BIS licence to produce HSD bars conforming to IS 1786 : 2008. In addition to BIS licence, the secondary producer must have valid licence from either of the firms Tempcore, Thermex, Evcon Turbo & Turbo Quench to produce TMT Bars.
- (c) The **CRS** bars procured from primary producers & ISP shall conform to manufacture's specifications.
- (d) The TMT bars procured from secondary producers shall conform to the specifications as laid by Tempcore, Thermex, Evcon Turbo & Turbo Quench as the case may be.
- (e) **CRS** bars procured either from primary producers ISP or secondary producers, the specifications shall meet the provisions of IS 1786: 2008 pertaining to Fe **500D grade or more** of steel as specified in the tender.

7.2 Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications as defined under para (1)(d) & (1)(e) above, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer-in-Charge to do so.

B. For Corrosion resistant Steel (CRS)

The contractor shall procure **CRS bars of Fe 550D or more grade** from primary producers such as SAIL, Tata Steel Ltd., JSW, RINL, Jindal Steel & Power Ltd or any other producer as approved by CPWD who are using iron ore as the basic raw material / input and having crude steel capacity of 2.0 million tones per annum and above.

7.2 (a) For reinforced cement concrete or pre-stressed concrete works, the reinforcement bars shall consist of the following grades conforming to IS 1786: 2008 (Indian Standard specification for high strength deformed steel bars and wires for concrete reinforcement): **Fe 550D or more grade**.

(b) The contract shall obtain manufacturer's certificate stating the process of manufacturer, chemical composition and test sheet giving result of each mechanical test applicable to the material purchased and submit it to the Engineer-in-Charge. Each test certificate shall indicate the number of the cast to which it applies corresponding to the number or identification mark to be found on the material.

(c) The Engineer-in-Charge shall get each consignment tested for both chemical composition and physical properties (including bend and re-bend test) as specified in IS : 1786 from approved laboratory.

(d) Only corrosion resistant steel rebars shall be used.

(e) corrosion resistant steel (CRS) is in fact low alloy steel with improved corrosion resistance.

(f) The mechanical properties of such low alloy steel reinforcement bar shall be conforming to mechanical properties of equivalent grade to normal TMT reinforcement bar as per IS: 1786. However, its chemical properties shall be complying with guidelines pertaining to low alloy steel in IS: 1786.

7.3 The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-charge.

7.4 The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall

be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

- 7.5 For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below:

<i>Size of bar</i>	<i>For consignment below 100 tonnes</i>	<i>For consignment above 100 tonnes</i>
Under 10 mm dia bars	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes or part thereof
10 mm to 16 mm dia bars	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes or part thereof
Over 16 mm dia bars	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

- 7.6 The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor.
- 7.7 The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10A of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made.
- 7.8 The steel brought to site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.
- 7.9 In case the contractor bring surplus quantity of steel the same after completion of the work will be removed from the site by the contractor at his own cost after approval of the Engineer-in- Charge
- 7.10 The mild steel and medium tensile steel bars to be used shall conform to latest version of IS: 432 and cold twisted bars and TMT bars shall conform to the latest version of IS: 1786.
- 7.11 (i) Reinforcement including authorized spacer bars and lappages shall be measured in length of different diameters as actually (not more than as specified in the drawings) used in the work nearest to a centimetre. **Wastage and unauthorized overlaps shall not be measured.**
- ii) The standard sectional weights referred to as in Table 5.4 in para 5.3.4 in CPWD Specifications (Vol-I) 2019 for Cement Mortar, Cement Concrete and RCC

Works will be considered for conversion of length of various sizes of M.S. Bars, T.M.T. and CRS Bars into Standard Weight.

- iii) Records of actual Sectional weights shall also be kept dia-wise and lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as Derived Actual Weight.
- iv) a) If the Derived Weight as in sub-para (iii) above is lesser than the Standard Weight as in Sub-para (ii) above then the Derived Actual Weight shall be taken for payment. (If found within the permissible limit of variation as per CPWD specifications 2019 Vol. 1&2 or relevant IS Code).

If the Derived Actual Weight is found more than the Standard Weight, the Standard Weight as worked out in sub-para (ii) above shall be taken for payment. In such case nothing extra shall be paid for the difference between the Derived Actual Weight and the standard Weight. The standard weight of TMT bars in CPWD specification will be consider for CRS bars standard weight.

CONDITION FOR RMC AND DESIGN MIX CONCRETE

THIS CHAPTER IS PROVIDED TO ENSURE BETTER QUALITY CONTROL AND DOCUMENTATION. THIS CHAPTER SHALL BE READ ALONG WITH RELEVANT CPWD SPECIFICATION. PROVISIONS OF THIS CHAPTER ARE COMPLEMENTARY TO RELEVANT CPWD SPECIFICATION(S).

1. **C.C. Work (Design mix concrete):-**The CC work shall be done with Design Mix Concrete unless otherwise specified. In the nomenclature of items wherever letter M has been indicated, the same shall imply for the Design Mix Concrete. For the nominal mix is CC, CPWD Specifications shall be followed. The Design Mix Concrete will be designated based on the principles given in IS: 456: 2000. The Contractor shall submit design mixes for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting requirements specified. In case of use of admixture and or white cement, the mix shall be designed with these ingredients as well.

The first concrete mix design / laboratory tests, with admixture (if to be used by contractor at his own cost) and without admixture will be carried out by the contractor through approved laboratory mentioned in this document. All expenditure on this account shall be borne by the contractor.

The various ingredients for mix design / laboratory tests shall be sent to the lab / test houses through the Engineer-in-charge and the samples of such aggregates sent shall be preserved at site by the contractor in supervision of department.

The contractor shall submit the report on design mix from any of approved laboratories for approval of Engineer-in-Charge within 30 days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the design mix is approved. In case of white Portland cement and the likely use of admixtures where CC / RCC is done with concrete pumps in concrete with ordinary Portland / White Portland cement, the contractor shall design and test the concrete mix by using trial mixes with white cement and / or admixtures also, for which nothing extra shall be payable.

In case of change of source or characteristic properties of the ingredient(s) used in the concrete mix during the work, a revised laboratory mix design report conducted at approved laboratory or laboratory established at site shall be submitted by the contractor as per the direction of the Engineer-in-charge at no extra cost.

1.1 **Approval of design mix:-**It shall be in accordance with CPWD specification 2019 Vol. I to II shall be followed with upto date correction clips.

The Design mix/ job mix shall be got designed by the contractor only from the Government institute as approved by Engineer in charge at his own cost.

All other operations in concreting work like Mixing, Slump transportation, laying / placing of concrete, compaction, curing sampling, etc. and tests not mentioned in this particular specification for Design Mix of Concrete shall be as per CPWD specifications 2019 and other relevant codes.

1.2 **Production of Concrete**

All concrete shall be produced at site through fully computerised weigh-batching plant of suitable capacity conforming to IS:4925 revised/ modified upto last day of submission of bid. with the arrangements for automatic dispensing of admixture and having facility of giving print out indicating weight / details of all ingredient of concrete

in each lot/ batch and variations from the approved design mix if any. **Minimum 1 fully automatic batching and mixing plant having capacity 10 to 15 cum/ hour may be installed at site by the contractor at his own cost.** Site shall be provided by Engineer-in-charge within 20 km road distance from work site. The batching and mixing plants shall be dedicated plant for this project. Contractor shall make his own arrangements for the necessary infrastructure for installation of batching plant and other machineries. Contractor shall make arrangement of water, electricity etc. To make the plant functional and for proper production of concrete. Plant calibration shall be got done through appropriate agency, **for establishing batch mix plant contractor shall obtain requisite NOC's, permission and approval from concerned local authorities at his own cost.**

Automatic batcher shall be charged by devices which when actuated by a single starter switch will automatically start the weighing operation of each material and stop automatically when the designated weight of each material is fed in the mixer. The batching plant shall have automatic arrangement for dispensing the admixture and shall be capable of discharging water in more than one stage. A batching plant essentially shall consist of the following components:

- Separate storage bins for different sizes of aggregates, sand, silo for cement and flyash, water storage tank, admixture etc.
- Batching equipment
- Mixers
- Control Panels
- Mechanical material feeding and elevating arrangements
- Other arrangement required as per standard practice

The compartments of storage bins for aggregates shall be approximately of equal size. The cement compartment shall be centrally located in the batching plant. It shall be water tight and provided with necessary air vent, aeration fittings for proper flow of cement & emergency cut off gate. The aggregate and sand shall be charged by power operated centrally revolving chute. The entire plant from mixer floor upward shall be enclosed and insulated. The batch bins shall be constructed so as to be self cleansing during draw-down. The batch bins shall in general conform to the requirements of IS:4925.

The batching equipment shall be capable of determining and controlling the prescribed amounts of various constituent materials for concrete accurately i.e. water, cement, admixture, sand, individual size of coarse aggregates etc.

The batching and mixing plant shall have the provision of adjusting the plus / minus quantity of various ingredients in the next batch so that there is no variation in quantity of ingredients from design mix in a lot consisting of 5 to 6 batches.

The mixer in the batching plant shall be so arranged that mixing action in the mixer can be observed from the operator's station. The mixer shall be equipped with a

mechanically or electrically operated timing, signalling and metering device which will indicate and assure completion of the required mixing period. The mixer shall have all other components as specified in IS: 4925.

Contractor shall submit calibration certificate of batching plant issued by appropriate authority/agency as and when asked by Engineer in charge.

1.3 Ready Mix Concrete (RMC) from RMC producer

1.3.1 However, if due to any reason, contractor wishes to supplement the concrete from Ready Mix Concrete (RMC) supplier, he is permitted to procure the same from the source approved by the Engineer-in-charge at no extra cost. Source should be within 45 km preferably or more road distance from work site in IIT Indore. In such a situation, all technical requirements such as quality of water, cement type and minimum cement quantity, w/c ratio, slump, admixture etc shall be conveyed to RMC supplier by the contractor and contractor shall be wholly responsible for ensuring the property of concrete as required at site/The contractor may take some time to install his own batching plants at site and till the batching plants are installed, the contractor is permitted to procure concrete from approved Ready Mix Concrete (RMC) supplier for a period **1 month** from date of start of work or the period as agreed by Engineer-in-Charge. Similarly, when the work is nearing completion and daily requirement of concrete is very less, **if agreed by the Engineer-in-Charge, the contractor may be permitted to procure the concrete from approved Ready Mix Concrete (RMC) supplier for work at no extra cost.**

1.3.2 The contractor shall, within a 15 days of award of the work, submit list of at least three RMC producers of approved suppliers with details of such plants including details and number of transit mixers & pumps etc. to be deployed indicating name of owner/company, its location, capacity, technical establishment, past experience and text of MOU proposed to be entered between purchaser (the contractor) and supplier (RMC producer) to the Engineer-in-charge. Engineer-in-charge shall give approval in writing (subject to drawl of MOU) failing which the contractor shall give list of other RMC producers of repute along with required details for approval of Engineer in charge. The contractor shall draw the MOU with approved RMC producer and submit to Engineer-in-charge within a week of such approval. The contractor will not be allowed to use ready mixed-concrete without completion of above stated formalities.

1.3.3 For all purposes the contractor shall carry out fully the responsibilities of the “placement contractor” and the “manufacturer of concrete”.

1.3.4 The Engineer-in-charge will reserve right to inspect at any stage and reject the concrete if he is not satisfied about quality of product at the user’s end.

1.3.5 The Engineer-in-charge reserves the right to exercise control over the: -

- I. Ingredients, water and admixtures purchased, stored and to be used in the concrete including conducting of tests for checking quality of materials, recording of test results and declaring the materials fit or unfit for use in production of mix.
- II. Calibration check of the RMC plant.
- III. Weight and quantity check on the ingredients, water and admixture added for batch mixing.
- IV. Time of mixing of concrete.
- V. Testing of fresh concrete, recordings of results and declaring the mix fit or unfit for use. This will include continuous control on the workability during production and taking corrective action, if required.
- VI. For exercising such control, the Engineer-in-charge may periodically depute his authorized representative at the RMC plant. It shall be responsibility of the contractor to ensure that all necessary equipment, manpower & facilities are made available to E-in-C and/or his authorized representative at RMC plant.

The contractor should therefore draw MOU/agreement with RMC producer very carefully keeping in view all terms and conditions/specifications forming part of this tender document.

1.3.6 Quality control of Ready-mixed concrete

It shall be the responsibility of the contractor to ensure that RMC producer provides all necessary testing equipment's and takes all necessary measures to ensure Quality Control of ready mixed concrete. In general the required measures shall be:-

(I) Control of purchased material quality

RMC producer shall ensure that all the materials purchased and used in the production of concrete conform to the stipulation of the relevant agreed specifications/ standard and the requirements of the concrete mix design and quality control procedures. This shall be accomplished by visual checks, sampling and testing, certification from material supplier and information/data from material(s) supplier(s). Necessary equipment for the testing of all material(s) shall be provided and maintained in calibrated condition at the plant by the RMC producer.

(II) Control of material storage

Adequate and effective storage arrangement shall be provided by RMC producer at RMC plant for reliable transfer and feed systems, drainage of aggregates, prevention of freezing or excessive solar heating of aggregate, prevention of contamination etc.

(III) Record of mix design and mix design modification

RMC producer shall ensure that record of mix design and mix design modification is readily available in his computer at RMC plant for inspection of Engineer-in-charge or his authorized representative at any time. Any modification in mix design shall be done only after the approval of Engineer-in-charge.

(IV) Transfer and weighing equipment

RMC producer shall ensure that a documented calibration procedure is in place. Proper calibration records shall be made available indicating date of next calibration due & corrective action taken. RMC producer shall ensure additional calibration checks whenever required by E-in-C in writing to contractor. RMC producer shall also maintain a daily production record including details of customers to whom RMC was supplied including details of mixes supplied. Shall also be maintained of what materials were used for each day's production including water and admixtures.

(V) Maintenance of Plant, Truck Mixers and Pumps;-

Plant, Truck Mixer and Pumps should be well maintained so as to not hamper any operation of production transportation and placement of concrete.

(VI) Production of concrete at RMC producing plant

- i) Weighing (correct reading of batch data and accurate weighing) for each load, written, printed or computerised graphical records shall be made of the weights of the materials batched, the estimated slumps, the total amount of water added to the load, the delivery tickets number for that load and the time of loading the concrete into the truck shall be produced by the contractor, failing which no payment shall be released.
- ii) Visual observation of concrete during production and delivery of during sampling and testing of fresh concrete (assessment of uniformity, cohesion, workability, adjustment to water content):-the workability of the concrete shall be controlled on a continuous basis during production. The batch mix found unfit shall not be loaded into the truck for transportation. Necessary corrective action shall be taken in the production of mix as required for further batches.
- iii) Adequate testing equipment at the plant including equipment for measuring surface moisture content of aggregates shall be provided by the RMC producer.
- iv) Making corresponding adjustments at the plant automatically or manually to batched quantities to allow for observed, measured or reported changes in materials or concrete qualities.
- v) Sampling of concrete, testing, monitoring of results.
- vi) Diagnosis and correction of faults identified from observations/complaints

- vii) Control of designed and the prescribed mixes: a quality control system shall be operated to control the strength of designed mixes to the required levels. The system shall include continuous analysis of results from cube tests.

1.4 TRANSPORTATION, PLACING AND COMPACTION OF CONCRETE

Mixed concrete from the RMC / Batching plant shall be transported to the point of placement by transit mixers and placed in position through concrete pumps and/or steel closed bottom buckets capable of carrying minimum 0.6 cum concrete. The operational speeds and general construction of transit mixer and other requirement shall conform to **IS:5892 revised upto previous day of submission of bid.**

In case concrete is to be transported by pumping, the conduit shall be primed by pumping a batch of mortar through the line to lubricate it. Once the pumping is started, it shall not be interrupted (if at all possible) as concrete standing idle in the line is liable to cause a plug. The operator shall ensure that some concrete is always there in the pump receiving hopper during operation. The lines shall always be maintained clean and shall be free of dents at all stages. Special precaution shall be taken that surrounding temperature during concreting shall not exceed 30 degree centigrade Except where otherwise agreed to by the Engineer-in-Charge, concrete shall be deposited in horizontal layers to a compacted depth of not more than 450 mm. Unless agreed to by the Engineer-in-Charge, concrete shall not be dropped into place from a height exceeding 1.5m. In order to avoid such situations chutes, tremie pipe or closed bottom buckets shall be used. These shall be kept clean and used in such a way as to avoid segregation. Slope of the chute shall be so adjusted that concrete flows without the use of excessive quantity of water. The delivery end of chute shall be as close as possible to the point of deposit. the chute shall be thoroughly flushed with water before and after each working period and the water used for this purpose shall be discharged outside the formwork. The concrete shall be compacted by using immersion type vibrators. When the concrete is being continuously deposited to a uniform depth along a member, vibrator shall not be operated within one meter of free end of the advancing concrete. Every effort shall be made to keep the surface of the previously placed layer of concrete alive so that the succeeding layer can be amalgamated with it by the vibration process. In case the concrete in underlying layer has hardened to such an extent that it cannot be penetrated by the vibrator but is still fresh (that is, just after initial set), un-imposed bond shall be achieved between the top and underlying layer by first scarifying the lower layer before the new concrete is placed by systematically and thoroughly vibrating the new concrete. The points of insertion of vibrator in the concrete shall be so spaced that the range of action overlap to some extent and the freshly filled concrete is sufficiently consolidated at all locations. The

spacing between the dipping positions of vibrator shall be maintained uniformly throughout the surface of concrete so that concrete is uniformly vibrated. The vibrating head shall be regularly and uniformly inserted in the concrete so that it penetrates of its own accord and shall be withdrawn slowly whilst running so as to allow redistribution of concrete in its way and allow the concrete to flow back into the hole behind the vibrator. The vibrator head shall be kept in one position till the concrete within its influence is completely consolidated. Vibration shall be continued until the coarse aggregate particle have blended into the surface but have not disappeared. The contractor shall keep at least one additional vibrator in serviceable condition to be used in the event of breakdowns and maintenance problems.

The vibrator head shall not be brought more than 50/100/200 mm as applicable near to the formwork as this may cause formation of water stagnations. The formwork shall be strong and great care shall be exercised in its assembly. It shall be designed to take up increased pressure of concrete and pressure variations caused in the neighbourhood of vibrating head, which may result in excessive local stress on the formwork. The joints of the formwork shall be made and maintained tight and close enough to prevent the squeezing out slurry or sucking in of air during vibration. The formwork to receive concrete shall be cleaned and made free from standing water, dust, etc. The contractor shall keep provision for screed and shutter vibrators at site.

No concrete shall be placed in any part of the structure until the approval of Engineer-in-Charge has been obtained. If concreting is not started within 24 hours of the approval being given, it shall have to be obtained again from the Engineer-in-Charge. Concreting shall be done continuously over the area between construction joints. Fresh concrete shall not be placed against concrete which has been in position for more than 30 minutes unless a proper construction joint is formed. When concreting has to be resumed on a surface which has hardened, it shall be roughened, swept, clean, thoroughly wetted and covered with a 13 mm thick layer of mortar composed of cement and sand in the same ratio as in the concrete mix itself. The 13 mm layer of mortar shall be freshly mixed and placed immediately before placing of new concrete.

Where concrete is not fully hardened, all latency shall be removed by scrubbing the wet surface with wire or bristle brushes. Care shall be taken to avoid dislodgement of particles of coarse aggregate. The surface shall then be thoroughly wetted, all free water removed and then coated with neat cement grout. Particular attention shall be given to corners and close spots.

1.4.1 SURFACE FINISH

The exposed surface of concrete of all grades shall be shutter finished except where form liner is used. Concrete with surface defects larger than 1/6th of the cover shall be rejected. Any special surface finish such as form liner finish of outer surface of any RCC element, shall be as per approved drawing or as directed by the Engineer-in-Charge. The quoted rates shall be deemed to have included such elements and nothing extra shall be payable on this account.

All members above ground or formation level shall have shutter finished surfaces. No tie bolt shall be permitted in piers. Cast-in-situ superstructure shall be casted in single pour between the expansion joints. Utmost care shall be taken by the contractor in erection of formwork for components cast in stages if any. Location of construction joints in between such stages shall be pre-decided and all such joints shall be treated in a manner approved by the Engineer-in-charge so as to match with the surrounding concrete without leaving any visual aberration or bad patches and/or bands. The contractor shall be deemed to have included the cost of such operation in his quoted rates and no claim whatsoever shall be entertained at a later date.

The form finished Concrete surfaces shall be free from honeycomb, blemishes, holes, surface defects, surface undulation etc. In no case such defects shall exceed 200 mm in any direction for individual spots or the continued area of such defects shall not exceed 0.2% of the entire area of related surface. Any variation beyond this limit shall be considered as a substandard work and shall be liable for rejection. The Engineer-in-Charge shall have the option to accept the so formed concrete at a reduced rate for defects exceeding this limit provided it is structurally adequate and due matching of defective patches is done by the contractor to the entire satisfaction of the Engineer-in-Charge.

Special care shall be taken to ensure that no stains are left on the formed concrete either from formwork or exposed reinforcement bars. Such stains shall be removed by the contractor at no extra cost so as to match with adjoining concrete surfaces to the satisfaction of the Engineer-in-Charge.

1.4.2 CURING OF CONCRETE

Curing of concrete shall be complete and continuous using water that is free of harmful amounts of deleterious materials that may attack, stain or discolour the concrete.

Immediately after compaction and completion of any surface finishes, the concrete shall be protected from evaporation of moisture by means of polyethylene sheets, wet hessian or other material kept soaked by spraying. As soon as the concrete has attained a degree of hardening sufficient to withstand

surface damage, moist curing shall be implemented and maintained for a period of at least 14 days after casting.

Method of curing and their duration shall be such that the concrete will have satisfactory durability and strength and members will suffer a minimum distortion, be free from excessive efflorescence and will not cause undue cracking in the works by its shrinkage.

The top surface of the slabs and other horizontal surfaces shall be cured by impounding water in cement mortar bunds. Steeply sloping and vertical formed surfaces shall be kept completely and continuously moist prior to and during the striking of formwork by applying water to the top surfaces and allowing it to pass down between the formwork and the concrete. After removal of form, moist curing to be done by wrapping hessian cloth, etc. and keeping it moist by suitable means.

Approved non-wax base curing compounds can be applied on vertical and inclined surfaces, after 7 days of moist curing, where permitted by the Engineer-in-Charge at no extra cost. However it is required to be proved that using curing compound the concrete shall not have less strength than concrete cured by water curing. It shall not leave any discolouration on the structural concrete. Such approved compounds shall be applied to all exposed surfaces of the concrete.

Steam curing with approved methodology can be adopted if required, for precast segments. No additional payment will be made for adopting steam curing.

1.4.3 CONCRETING OF NARROW MEMBERS

Wherever the concreting of narrow member as in case of piers/ column/ diaphragm wall etc. (as adjudged by Engineer-in-Charge) is required to be carried out within shutters of considerable depth, temporary openings in the sides of the shutters shall, if so desired by the Engineer-in-charge, be provided to facilitate the pouring and consolidating of concrete. Before any concreting is commenced, shutters and centering shall be carefully examined and the space to be occupied by the concrete be thoroughly cleaned out. The concrete in such members shall be compacted with suitable shutter vibrators as appropriate.

1.4.4 PROTECTION OF CONCRETE BELOW GROUND LEVEL

Concrete placed below the ground shall be protected from falling earth during and after placing. Concrete placed in ground containing deleterious substances shall be kept free from contact with such ground and with water draining there from during placing and for a period of seven days or as otherwise instructed thereafter. Appropriate measures shall be taken to protect immature concrete from damage by debris, excessive loading, abrasion, vibrations, deleterious

ground water, mixing with earth or other materials, and other influences that may impair the strength and durability of the concrete.

1.4.5 CONSTRUCTION JOINTS

Before the concrete is fully hardened, all latency shall be removed by scrubbing the wet surface with wire or bristle brushes. Care shall be taken to avoid dislodgement of particles of coarse aggregate. The surface shall then be thoroughly wetted, all free water removed and then coated with neat cement grout. Particular attention shall be given to corners and close spots.

Construction joints in all concrete work shall be made as directed by the Engineer-in-Charge. Where vertical joints are required, these shall be shuttered as directed and not allowed to take the natural slope of the concrete. Before fresh concrete is placed against a vertical joint, the old concrete shall be chipped, cleaned and moistened.

When a horizontal construction joint is formed, provision shall be made for interlocking with the succeeding layer by the embedment of saturated wooden blocks or wooden strips beveled on four sides to facilitate their removal. Prior to the next pour the wooden pieces shall be loosened and removed in such a manner as to avoid injury to the concrete. After about 8 to 12 hours of concreting, contact surface shall be hacked to expose the aggregate surface and remove laitance. Immediately thereafter clean the surface using compressed air to remove all the dirt. The surface shall then be compressed cleaned to remove all dirt. Before applying fresh concrete, the contact surface shall be wetted for at least 6 hours. After the surface has dried, a coat of cement slurry shall be applied uniformly using a brush over the old concrete just before placing the fresh concrete. The fresh concrete shall be placed immediately after applying the cement coats. The fresh concrete shall be thoroughly vibrated near the construction joint so that the mortar from the new concrete flows between the large aggregate and develop proper bond with old concrete. The construction joint shall ensure proper bond and leak proof joint.

If use of metal, rubber or plastic water stops is specified, this shall be cast into joints. Measures shall be taken by the Contractor to ensure that no displacement or distortion of water stops takes place during placing of concrete. The construction joints shall **ensure proper bond and leak proof joint.**

1.4.6 The contractor shall place the concrete by pumping wherever necessary to expedite the progress of work. Nothing extra shall be paid on this account.

1.5 DEFECTS IN CONCRETE

A. CRACKS

If external cracks developed in concrete construction are more than 0.2 mm and in the opinion of the Engineer-in-Charge, these are detrimental to the strength of the construction, the Contractor at his own expense will conduct 'Loading Tests' on the structure in the manner as specified elsewhere in this document. If under such test loads the cracks develop further, the Contractor shall dismantle the

construction, carry away the debris, replace the construction and carry out all consequential work thereto.

If any cracks develop in the concrete construction are not more than 0.2 mm or in the opinion of the Engineer-in-Charge, the cracks are not detrimental to the stability of the construction, the Contractor at his own expense shall grout the cracks with neat cement grout or with other composition as directed by Engineer-in-Charge and also at his own expense and risk shall make good to the satisfaction of the Engineer-in-Charge all other works such as plaster, moulding, surface finish, which in the opinion of the Engineer-in-Charge have suffered damage either in appearance or stability owing to such cracks. The Engineer-in-Charge's decision as to the extent of the liability of the Contractor in the above matter shall be final and binding.

B. HONEYCOMBING

If any concrete be found honeycombed or in any way defective, such concrete shall be cut out partially or wholly by the Contractor as per the directions of the Engineer-in-charge and made good at his own risk and cost using pressure grouting or any other technique. If Engineer-in-Charge feels that repaired structure will not be having same strength or shape or uniformity with other exposed surface as original desired structure / original structure, the same shall be rejected by Engineer-in-Charge and required to be dismantled and disposed by contractor at his own cost as instructed by Engineer-in-Charge. Decision of the Engineer-in-Charge shall be final binding in this regard.

On no account shall concrete surfaces be patched or covered up or damaged concrete rectified or replaced until the Engineer-in-Charge or his representative has inspected the works and issued written instructions for rectification. Failure to observe this procedure will render that portion of the works liable to rejection. Contractor shall submit methodology for rectification of defects for approval. Proprietary products for concrete repair shall be used.

SPECIALISED ITEMS/ WORKS

1.0 The Contractor shall associate specialized agencies meeting eligibility criteria as detailed below for specialized nature of items / work listed below:

S. No.	Specialized work(s)/ item of work (s)	Eligibility Criteria for Specialized Agency to be associated by contractor for the work
1	Water proofing treatment works	Three specialized works of similar nature, each costing not less than amount equal to 40% of tendered amount of corresponding specialized item(s), OR Two specialized works of similar nature, each costing not less than amount equal to 60% of tendered amount of corresponding specialized item(s), OR One specialized work of similar nature, each costing not less than amount equal to 80% of tendered amount of corresponding specialized item(s), in last 7 years ending last day of the month previous to the one in which the tenders are invited. Value of amount shall be enhanced @7% per annum from date of completion to previous day of submission of bid.
2	Post Construction Anti- termite chemical treatment	
3	Diaphragm walls	
4	Special foundations including all types of piles	
5	Water Treatment Plants	
6	Synthetic play area surface for games	
7	Custom made wooden furniture (factory made)	

- 2.0 The main contractor shall submit name and credentials w.r.t. meeting eligibility criteria for specialize agency he propose to associate for the specialize work(s). The approval of specialize agency shall be given by Engineer-in-charge of work. The Contractor and the associated specialized agencies shall give required affidavit to confirm their association.
- 3.0 However, the contractor shall also be eligible to carry out himself any or all of these works without associating any specialized agency provided:
- (a) He fulfils the prescribed eligibility criteria respectively for these work(s). or
- (b) He directly procures the equipment of approved make from manufacturer and get it installed from authorised agency/service provider of the manufacturer or specialized agency as per criteria mentioned above.
- 4.0 Contractor has to submit Bank Guarantee or Guarantee bond for these items for specific mentioned period. Proforma is given hereinafter. If no Performa is available, same shall be approved by Engineer in charge.

Sl. No.	Items	Bank Guarantee or Guarantee bond	Period
1.	SOQ items sl. No. 7 & 8	Yes	10 Years

5.0 Wherever work is specified to be done or material procured through specialized agencies, their names shall be got approved well in advance from Engineer- in-charge of relevant component. Failure to do so shall not justify delay in execution of work. It is suggested that immediately after award of work, contractor should negotiate with concerned specialist agencies and send their names for approval to Engineer-in-charge. Any material procured without prior approval of Engineer- in- charge in writing is liable to be rejected. Engineer- in-charge reserves right to get the materials tested in laboratories of his choice before final acceptance. Non standard materials shall not be accepted.

6.0 GUARANTEE FOR POLYCARBONATE PANELS

Ten years guarantee in prescribed Performa as decided by Engineer in charge must be given by the contractor for the item nos. 7 & 8. In addition 05% (Five percent) of the cost of this item would be retained as guarantee to watch the performance of the work executed. However half of this amount (withheld) would be released 05 (five) years after the date of completion of the work, if the performance of the item no. 7 & 8 works is satisfactory.

The remaining 50% withheld amount can be released after completion of 10 (Ten) years after the date of completion of the work if performance of the polycarbonate Panels work is satisfactory. If any defect is noticed during the guarantee period, it should be rectified by the contractor within seven days and, if not attended to, the same shall be got done by other agency at the risk and cost of the contractor. In any case the guaranteeing firms during the guarantee period should inspect and examine the treatment once in every year and make good any defect observed. However, the security deposit can be released in full, if Bank Guarantee of equivalent or more amount for 11(Eleven) years validity is deposited to the department.

GUARANTEE BOND TO BE EXECUTED BY CONTRACTORS FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS

The Agreement made thisday of two thousand and betweenson of of (hereinafter called the Guarantor of the one part) and the INDIAN INSTITUTE OF TECHNOLOGY INDORE (hereinafter called Government of the other part).

WHEREAS this agreement is supplementary to a contract (hereinafter called the Contract) dated and made between the GUARANTOR of the one part and the Government of the other part, whereby the Contractor, inter alia, undertook to render the buildings and structures in the said contract recited completely water and leak-proof.

AND WHEREAS GUARANTOR agreed to give a guarantee to the effect that the said **structures will remain water and leak-proof for Ten years from the date of giving of water proofing treatment.**

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the **structures completely leak-proof and the minimum life of such water proofing treatment shall be Ten years to be reckoned from the date after the maintenance period prescribed in the contract.**

Provided that the guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose:

- (a) Misuse of roof shall mean any operation which will damage proofing treatment, like chopping of firewood and things of the same nature which might cause damage to the roof;
- (b) Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts;
- (c) The decision of the Engineer-in-Charge with regard to cause of leakage shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found, render the building water-proof to the satisfaction of the Engineer-in-Charge at his cost, and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-Charge calling upon him to rectify the defects, failing which the work shall be got done by the Department by some other contractor at the GUARANTOR'S cost and risk. The decision of the Engineer- in-Charge as to the cost, payable by the Guarantor shall be final and binding.

That if GUARANTOR fails to execute the water proofing or commits breach thereunder then the GUARANTOR will indemnify the Principal and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the Government the decision of the Engineer-in-Charge will be final and binding on the parties.

IN WITNESS WHEREOF these presents have been executed by the Obligorand byand for and on behalf of the INDIAN INSTITUTE OF TECHNOLOGY INDORE on the day, month and year first above written.

Signed, sealed and delivered by OBLIGOR in the presence of

- 1.
- 2.

Signed for and on behalf of THE INDIAN INSTITUTE OF TECHNOLOGY INDORE byin the presence of

Annexure-V**GUARANTEE BONDS/AFFIDAVIT FOR WORK****GUARANTEE TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF ANTI TERMITE TREATMENT, DIAPHRAGM WALLS, SPECIAL FOUNDATIONS INCLUDING ALL TYPES OF PILES, WATER TREATMENT PLANTS, SYNTHETIC PLAY AREA SURFACE FOR GAMES, CUSTOM MADE WOODEN FURNITURE (FACTORY MADE)**

The agreement made this _____ day of _____ two thousand and _____ between _____ S/o _____ (hereinafter called the GUARANTOR of the one part) and the INDIAN INSTITUTE OF TECHNOLOGY INDORE (hereinafter called the Government of the other part).

WHEREAS THIS agreement is supplementary to a contract. (Herein after called the Contract) dated _____ and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor interalia, under look to render the work in the said contract recited structurally stable workmanship and use of sound materials.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said work will remain structurally stable and guarantee against faulty workmanship , finishing, manufacturing defects of materials and leakages etc.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable, after the expiry of maintenance period prescribed in the contract for the minimum life of **Ten years**, to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer in charge with regard to nature and cause of defects shall be final.

During the period of guarantee the guarantor shall make good all defects to the satisfaction of the Engineer in charge calling upon him to rectify the defects, failing which the work shall be got done by the Department by some other contractor at the guarantor's cost and risk. The decision of the Engineer in charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all the defects, commits breach there under then the guarantor will indemnify the Principal and his successor against all loss, damage cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and / or damage and / or cost incurred by the Government the decision of the Engineer in charge will be final and binding on the parties.

IN WITNES WHEREOF those presents have been executed by the obligator

_____ and _____ by for and on behalf of the
INDIAN INSTITUTE OF TECHNOLOGY INDORE on the day , month and year first above
written.

Signed sealed and delivered by OBLIGATOR in presence of :

1. _____
2. _____

SIGNED FOR AND ON BEHALF OF THE INDIAN INSTITUTE OF TECHNOLOGY INDORE
BY _____ in the presence of :

1. _____
2. _____

A. GRANITE STONE WORK SPECIAL CONDITION

A.1 Granite Stone Slab / Flooring

The granite stone shall be of approved shade and sources as mentioned in the Schedule of Quantities and their size and the thickness shall be as shown on the drawings and as approved by the consultant/engineer-in-charge. They shall be of selected quality, dense, uniform and homogenous in texture and free from cracks or other structural defects. It shall have even and cry stalling grains. The surface shall be machine polished to an even and perfectly plain surface and edges machine cut, true and square. The rear face shall be rough enough to provide a key for the mortar. No slab shall be rough enough to provide a loose key for the mortar. No slab shall be thinner than the specified thickness at its thinnest part. The dimensions of the slabs shall be as specified. A few approved samples of finished slabs to be used shall be submitted by the contractor to Engineer-in-Charge.

A.2 Laying

The sub-grade concrete or R.C.C. slab on which stone slab is to be laid shall be cleaned, wetted and mopped. The bedding for the stone slab shall be cement mortar 1:4 (1 cement: 4 coarse sand) or as specified in the Schedule of Quantities.

The bedding mortar shall be spread to required thickness. The slab shall be washed clean and then laid on top of the mortar layer, pressed, tapped with a wooden mallet and brought to level with adjacent slabs. It shall then be carefully lifted and laid aside. The top surface of the mortar shall then be corrected by adding fresh mortar at hollows. The mortar should be allowed to harden a bit. Cement slurry of 4.4 kg of cement per square meter shall then be spread. Edges of slabs already laid shall be buffered with white cement mixed with pigment. The granite slabs shall then be placed in position and tapped with a wooden mallet till the slab is properly embedded in line and level. The joints between slabs be as fine as possible. The surplus cement slurry oozing from joints shall be cleaned. The slabs shall be matched as shown in drawing. **The flooring shall be cured at least for (07) seven days.** The setting out and line out of the entire pattern with check key points mentioned in the drawing shall be marked on site first, get it approved from the engineer in charge and then proceed for installation. The spacers / enhanced grooves mentioned in the drawing shall be plotted on site as well to achieve the accuracy of the flooring layout at site. All stone sizes as per given pattern shall be cut to high level of accuracy with no tolerance, checked duly before installation. Any mistake / wrongly done pattern at site need to removed and redone as per instructions of Engineer-in-Charge.

A.3 Polishing and Finishing

The finishing shall be of mirror polish conforming to CPWD Specifications and as per item of BOQ.

For the purpose of river finish texture and sand blasting finish to the granite stone, same need to be achieved as per requirement of the consultant of aesthetical and safety appearance. The stone shall be pre texture in the factory and then to be installed with precision and all carefulness at site protecting its edges and corners. Damage to the edges and corners will liable to rejection of such stone piece. The texture formed on granite shall be completely uniform in nature and application revealing its true appearance. Any crack, visible as well as hair line, needs to be accessed by contractor before putting stone for texture to avoid rejection of such stone at site. Samples of the said textures for all type of granite stones shall be approved first from Consultant / Engineer-in-Charge before mass procurement. All the parapet tops, window sills, skirting's, plantar tops, tread risers as mentioned in the drawing shall be pre textured before installation.

A.4 Measurements

The measurement shall be in square meter correct to two decimal places. The length and breadth shall be measured correct to a cm from wall to wall as actually laid.

A.5 Granite Stone in Risers of Steps and Skirting as required**A.5.1 Granite Stone Slabs**

The stone slabs for risers / skirting shall be the same as per granite flooring or as specified in the Schedule of Quantities as pre direction of engineer in charge.

A.6 Preparation of Surface

Where required, the wall surface shall be cut uniformly to requisite depth so that the skirting face shall have uniform projection from the finished face of wall as per drawings or as directed by the engineer. The concrete walls shall be hacked and roughened with wire brushes. Masonry walls shall have joints racked at least 15 mm deep. The surface shall be thoroughly cleaned, washed and kept wet.

A.7 Laying

The risers of steps and skirting shall be set in grey or white cement with an admixture to match the shade of stone, with the line of slab at an average distance of 12 mm from the wall but not less than 10 mm. If necessary, the slabs shall be held in position by temporary M.S. hooks at suitable intervals. The joints shall be left to harden, then the rear of the skirting or

riser slab shall be packed with cement mortar 1:3 (1 cement : 3 coarse sand). The fixing hooks shall be removed after the backing mortar is set. The joint shall be as fine as possible.

A.8 Polishing & Finishing

The finishing shall be of mirror polish conforming to CPWD Specifications and as per item of BOQ.

A.9 Measurements

The measurement shall be in square meter correct to two decimal places. The length and breadth shall be measured correct to a cm from wall to wall as actually laid.

A.10 Granite Cladding on Walls

In case of reinforced cement concrete or brick work backing the lining shall be secured to the backing after it has set. The S.S. clamps as mentioned in drawing shall be fixed in backing while laying at the required positions as specified in the description of items in the BOQ. The grouting for veneering/ photo frame work shall be full of mortar; hollows noticed shall be made good by taking out the marble slab and re fixing.

The measurement shall be in square meter or as specified in Schedule of Quantities, correct to two decimal places. The length and breadth shall be measured correct to a cm.

A.11 Glass Mosaic Tiles

The surface of the wall or floor is to be plastered with cement mortar 1:4 and allowed to set for a day. A coat of 12 mm thick cement mixed in lime water is to be then spread over the surface. After about half an hour, a thin coating of white cement for other coloured tiles is to be then applied. On this the sheets of mosaic tiles are to be placed and tapped gently with a wooden mallet to get the tiles in proper level. The paper is then soaked with water and peeled out carefully so as not to disturb the tiles from their positions. Any piece not in level or which is broken while tapping shall be pulled out immediately with a sharp instrument and then replaced without leaving time for the cement to set. After removing the paper, the mosaic surface is to be washed with water using a thin brass brush, thus removing the excess cement. On setting of cement, the tiles shall be polished with fine cloth or cotton waste. The surface is to be watered twice a day for four to five days.

The colour and type selection shall be as per approval by Consultant / Engineer-in-Charge. It shall be laid as per pattern specified.

The measurement shall be in square meter or as specified in Schedule of Quantities, correct to two decimal places. The length and breadth shall be measured correct to a cm as per CPWD specification.

A.12

FLOORING,SKIRTING,VENEERING,DADO,TREADS&RISERSOFSTEPS,JAMBS,SILLS& SOFFITS

- A.13** Nothing extra shall be payable for using combination of marble, granite.kota, sand stone slabs & ceramic tiles etc. in the required pattern at various locations.
- A.14** **Nothing extra will be paid for the additional thickness of bed mortar/or wall that will be required to achieve uniform finished surfaces as per architectural drawing on account of difference in specified thickness of marble, granite, Kota stone, sand stone vitrified, CC tile & ceramic tiles etc.** In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specification, the level of top surface of RCC shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the contractor.
- A.15** Flooring in toilets, verandah, kitchen, courtyard etc. shall be laid to the required slope/gradient as per the directions of Engineer-in-charge.
- A.16** The pattern, spacing and locations of joints shall be as per drawings and direction of the Engineer-in-charge.
- A.17** All the stone used at site shall be of natural colour. Stone having industrial processing with colour and dye for enhancing the colour is not accepted and will not be paid. The agency has to replace the industrial processed stone with natural colour stone at his risk and cost.
- A.18** **The Granite/Marble at sills and Jambs/soffit of door/window, planter top & facia shall be measured and paid in Item 8.2 of DSR 2021 VOL 1.**

ADDITIONAL SPECIFICATIONS

1. The work in general shall be executed as per the description of the item, specification mentioned in schedule – “F” with correction slips up to previous day of submission of bid, specifications attached, other relevant specifications, specification supplied by manufacturer/supplier as per direction of Engineer-in-Charge.
2. All the works unless otherwise specified hereinafter or permitted by Engineer-in-Charge shall be done in accordance with the latest editions of NBC codes as on the date of receipt of tenders or any other specified code. In addition, relevant IS Codes.(latest revision), CPWD Specifications 2019 Vol, I & II with upto date correction slips shall also be applicable.
3. Any additional standard specifications or criteria published by the IRC/BIS or other foreign standard and in practice on the date of receipt of tenders shall also be taken into account. In the absence of any definite provisions on any particular issue in the above mentioned specifications, the design and construction shall be in conformity with the Sound Engineering Practice and in all such matters the decision of the Engineer-in-Charge shall be final and binding on the contractor and nothing shall be paid extra.
4. The contractor shall ensure quality control measures on different aspects of construction materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of the work. The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control.
5. The contractor shall submit brand/make of various materials to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.
6. For all DSR (Delhi Schedule of rates) items CPWD Specifications 2019 Volume I & II shall be followed for the purpose of execution of item, measurement with upto date correction slips upto pervious day of submission of bid etc.
7. For Non DSR items/ Modified Items, specifications are mentioned in this tender document or related I.S. code shall prevail. In case of any ambiguity decision of Engineer-in-charge shall be final and binding.
- ~~8. If there is any discrepancy noticed in unit or rate of any DSR item in SOQ, then unit/Rate marked in updated DSR with correction slips upto the previous day of submission of bid shall prevail.~~
- 9. The contractor is required to procure 43-grade Ordinary Portland Cement (OPC), compliant with IS 8112, for the execution of items associated with waterproofing, nothing extra shall be paid on this account.**

ADDITIONAL CONDITIONS

- 1.0 The several documents forming the tender are to be taken as mutually complementary to one another. Detailed drawings being followed in preference to small scale drawings and figured dimensions in preference to scale and special conditions in preference to general conditions.
- 1.1 If there be any difference or discrepancy between the description of items as given in the schedule of quantities, specifications and or the drawings., the following order of preference shall be observed.
- (i) Description of items as given in Schedule of quantities
 - (ii) Particular specifications
 - (iii) Special condition, Additional condition and Additional specification attached with the tender document.
 - (iv) Drawings
 - (v) CPWD Specifications including correction slips issued up to the previous day of uploading/submission of tender.
 - (vi) General Conditions of Contract for CPWD works including correction slips issued up to the last date of uploading/submission of tender.
 - (vii) Indian Standards Specifications of Bureau of Indian Standards.
 - (viii) Manufacturer's specifications and as decided by the Engineer-in-Charge.
 - (ix) Sound Engineering Practice and as per Decision of Engineer in charge.
- 1.2 If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer in charge shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.
- 1.3 Any error in description, quantity or rate in schedule of quantities or any omission there from shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or form any of his obligations under the contract.

2.0 SCOPE OF WORK

(i) SETTING OUT

The scope of work also includes Preliminary works like setting and maintenance of permanent bench marks reference points, central line of the carriageway etc. It shall also include making adjustment in the layout if required as per site conditions and as directed by the Engineer-in-Charge. The layout shall be got approved from the Engineer-in-charge before starting actual work. Existing levels of the area under the scope of work shall also be recorded.

- A) The Contractor shall carry out survey of the work area, at his own cost, setting out the layout of building/ Structure in consultation with the Engineer -in-Charge & proceed further. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Total station survey instruments only shall be used for layout, fixing boundaries, and center lines, etc., Nothing extra shall be payable on this account.
- B) Setting out of whole work area including building(s), Road(s), ramp(s), street(s), footpath, green area, park(s), drain(s), any other structure(s) shall be done by Total station survey including all relevant activities mentioned here and anywhere in this NIT document.
- C) All the survey work except leveling work shall be carried out using total stations with one second accuracy The leveling work shall be carried out using Auto level or as decided by Engineer-in-charge .For road work leveling work shall be carried out using Auto Level.
- D) The Contractor shall set out the Works covered in the scope Contract. The Engineer-in-Charge shall provide datum points and levels for the setting out of the works. The Contractor will relate all his construction information and temporary work design to these reference points. The Contractor shall provide suitable stones with flat tops and build the same in concrete for temporary bench marks. All the pegs for setting out the Works and fixing the levels required for the execution thereof shall, if desired by the Engineer-in-Charge, likewise be built in masonry at such places and in such a manner as the Engineer-in-Charge may direct. The contractor will make overall layout of complete work and get it checked from Engineer-in-Charge. The cost of all operations of setting out including construction of bench marks is deemed to be included in the quoted rates as per Bill of Quantities.

The triangulations points, if given by Engineer-in-Charge before start of work shall be maintained during execution and handed over back to Engineer-in-Charge after completion of work.

The Contractor shall satisfy himself that there is no conflict between the data given and shall provide all subsidiary setting out points, monuments, towers and the like which may be necessary for the proper and accurate setting out of the works.

The Contractor shall establish, maintain and assume responsibility for grades, lines, levels and benchmarks. He shall report any errors or inconsistencies regarding grades, lines, levels, dimensions etc. to the Engineer -in-Charge before commencing work. Commencement of work shall be regarded as the Contractor's acceptance of such grades, lines, levels, and dimensions and no claim shall be entertained at a later date for any errors found.

The Contractor shall carefully protect all the survey reference points, bench marks, setting out points, monuments, towers and the like from any damage and shall maintain them and repair or replace any points damaged from any cause whatsoever.

- E) If at any time, any error appears due to grades, lines, levels and benchmarks during the progress of the work, the Contractor shall, at his own expense rectify such error, if so required, to the satisfaction of the Engineer -in-Charge. Nothing extra shall be payable on this account.
- F) The approval by the Engineer-in-Charge, of the setting out by the Contractor, shall

not relieve the Contractor of any of his responsibilities and obligation to rectify the errors/ defects, if any, which may be found at any stage during the progress of the work or after the completion of the work.

- G) The Contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the Contractor at his own cost to the entire satisfaction of the Engineer - in-Charge.
- H) A once yearly instrument calibration by a licensed service centre is required. Calibrations of every piece of survey equipment every three months may also be recommended. If the Contractor cannot do 'in-house' periodic calibrations, then external calibration of all instruments twice yearly will be required. All the calibration certificates and 'in-house' reports must be maintained in a filing system by the contractor, and be available for an audit, authorized by the Engineer-in-Charge, at regular intervals.
- I) The stated survey must be carried out by an engineering surveyor with extensive civil and structural survey experience. He will act on the contractor's instructions and at the contractor's expense. The choice of the surveyor is subject to acceptance by the Engineer-in-charge / Design consultant.
- J) Levels recorded with total station/ Auto station may be used for measurement purpose also as per standard engineering practice and as decided by Engineer-in-charge.
- K) (i) The rates quoted by the Contractor are deemed to be inclusive of :
- (a) Site clearance, setting out work taking spot levels, construction of all safety and protection devices, barriers, barricading, signage, labour safety, labour welfare and labour training measures, preparatory works, working during monsoon, working at all depths, height and location etc. and any other incidental works required to complete this work. Nothing extra shall be payable on this account.
 - (b) Clearing of site for construction of the work and all activities connected therewith before commencement of work to the satisfaction of the Engineer-in-Charge.
 - (c) Maintenance of all works during construction till handing over to the Department.
 - (d) Protection and maintenance of existing services.
 - (e) Provision for all safety measures for traffic, pedestrian workmen, machinery etc. as considered necessary by the Engineer-in-charge.
 - (f) Identification of services like sewer lines, water supply lines, electric and telephone cables etc. well in advance of actual execution.
 - (g) It may be noted that all the safety requirements as may be felt necessary by the Engineer- in-Charge, shall have to be provided by the contractor during the construction period at his own cost.
- (ii) In case of defective construction by the contractor or on account of any other reason attributable to the contractor if the consultants appointed by the

department, submit additional claims for re-designing on account of additional input by them, due to such reasons, the same shall also be borne by the contractor. The opinion of the Engineer-in-charge in these matters shall be final and binding.

- (iii) All ancillary and incidental facilities required for execution of the work i.e. labour camps, stores, offices for contractors, work shop facilities, watch and ward, temporary structure for plants and machinery, well equipped. site laboratory as mentioned in the tender; document, water storage structure, tube wells, electric /telephone installation and charges, liaison work, protection work during execution and not included in the main items, any other item /activity contained elsewhere in the tender documents which is necessary for execution of work in the opinion of the Engineer-in-Charge.
- (iv) **Pumping and bailing out water if required, in suitable manner as directed by Engineer-in-Charge and nothing extra shall be payable for this.**
- (v) Intending tenderer must visit the sites of work and physically assess the activities which are involved for completing the work, including the quantum of work besides the information supplied in the tender document. No claim whatsoever shall be entertained on this account.
- (vi) The contractor shall make arrangement for a regular fortnightly/ monthly or other frequency as desired by Engineer-in-Charge for the documentation of the progress of work.
- (vii) Activities related to setting of various items such as permanent benchmarks, reference points, central line of carriageway, layout of foundations and bearings etc. shall be performed by total station survey.
- (viii) Services like water supply lines, sewer lines, storm water drains, electricity lines, telephone lines, overhead and underground cables /structure, if any falling in the alignment of the work, (which are required to be removed or shifted in the opinion of the Engineer-in-Charge) shall be removed /shifted by the department if found necessary by the Engineer-in-charge. Time taken for its shifting, removal, diversion shall be accounted for towards according extension of times if it actually causes hindrance in execution as per the discretion of the Engineer-in-Charge. No claim for delay or otherwise due to above reasons shall be entertained on this account.
- (ix) The contractor shall remove the malba on daily basis at his own cost and keep the site neat and clean during the execution of the work. In case the Agency fails to remove the malba, the same shall be removed by the department at his risk and cost.
- (x) The contractor shall make his own arrangement for obtaining water & electric connection(s) if required and make necessary payments directly to the department concerned.

- (xi) Other agencies doing works related with this project may also simultaneously execute their works and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary holes, openings etc. for laying/burying in the work, pipes cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for the other agencies. Nothing extra over the Agreement rates shall be paid for doing these.
- (xii) Some restrictions may be imposed by the security staff etc. on the working and for movement of staff, labour, materials etc. The contractor shall be bound to follow all such restrictions/ instructions and nothing extra shall be payable on account of the same.
- (xiii) The contractor has to arrange for the passes for entry and exit of staff & labourers in the campus directly from IIT Indore authorities
- (xiv) No space for construction of labour housing shall be provided in the premises of IIT Indore. The bidder himself shall construct clean hygienic and well ventilated labour housing outside the premises with adequate water supply, electrical, sanitation facilities, etc as per “Model Rules for the Protection of Health and Sanitary Arrangement for the Workers Employed by the Contractors” of General Conditions of Contract, or applicable Labour Regulations.
- (iv) The structural and architectural drawings shall at all times be properly co-related before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities appended with the tender and Architectural drawings relating to the relevant item, the former shall prevail unless otherwise given in writing by the Engineer-in-charge.
- (v) **Contractor should follow all the safety instruction given by IIT Indore. Nothing extra shall be paid on this account .Contractor should quote the rate accordingly.**
- (vi) **Contractor should arrange all the safety gadgets/Fireworks/Drum etc. For making noise to keep away wild Animals in forest area in IIT Campus as there is presence of Leopard and other wild animals .The permission shall be taken from Forest/IIT Indore authorities as per prevailing Norms/Guidelines. Nothing extra shall be paid on this account .Contractor should quote the cost accordingly.**

Note : No extra payment will be made for operation/activities mentioned above.

3.0 SITE CONDITIONS

Site conditions given hereunder and elsewhere are given as guidelines and contractor shall satisfy himself regarding all aspects of site conditions and no

claim will be entertained on the plea that the information supplied by the department is erroneous or insufficient.

3.1 LOCATION

IIT Indore, Simrol Campus, Khandwa Road, Indore .

3.2 CLIMATIC CONDITIONS

The climate in the region is extreme with three major seasons- winter, summer and rainy. The winter season lasts from October to March, summer season from April to mid June and rainy season from mid June to September. This is only for guidance and there may be variations.

3.3 HOUSING, WATER SUPPLY, DRAINAGE AND ELECTRICITY

No accommodation is available at the site of work. The contractor has to make his own arrangements for electric connection, housing, stores and field offices, accommodations for his labour and other employees etc. Contractor should visit the site and see in what manner he is able to arrange the above. Arrangement of water for drinking purpose in addition to the water required for construction work is also to be made by the contractor. No other space shall be made available at work site except for temporary site office/ contractor's compound. However onus will be on contractor to arrange the space on its own. No claim whatsoever will be entertained on this account.

The contractor shall have to make his own arrangement for housing facilities for staff and labour away from construction site and shall have to transport the labour to and from between construction site and labour camp at his own cost. No labour huts will be allowed to be constructed at the project site except a few temporary sheds for chowkidars and storekeepers. The decision about how many huts can be allowed for chowkidars and storekeepers at project site shall rest with the Engineer-in-Charge and the contractor shall have no claim on this account.

If as per the rules of the local authority, the huts for labour are not to be erected at the site of work by the contractors, the contractors are required to provide such accommodation as is acceptable to Engineer-in-Charge / local bodies and nothing extra shall be paid on this account. No accommodation is available at the site of work. The labour huts shall not be erected on the plot and the Contractor shall make his own arrangements to provide such accommodation as per the rules of the local bodies. He shall make his own arrangements for stores, field office etc. Before tendering, he shall visit the site and assess the manner in which he is able to arrange the above facilities. The Engineer-in-Charge

shall in no way be responsible for any delay on this account and no claim, whatsoever, on this account shall be entertained.

- 3.4 It shall be deemed that the contractor has satisfied himself as to the nature and location of the work, general and local conditions and particularly those pertaining to transport, handling and storage of materials, availability of labour, weather conditions at site and general ground / sub soil conditions and the contractor has to estimate his cost accordingly.
- 3.5 The CPWD will bear no responsibility for the lack of such knowledge and also the consequence thereof to the contractor. The information and site data shown in the drawings and mentioned herein and elsewhere in these tender documents are furnished for general information and guidance only. The Engineer-in-charge in no case shall be held responsible for the accuracy thereof or / and whatsoever, interpretations or conclusions drawn there from/ by the contractor and no claim shall be entertained whatsoever if the site conditions/ information is different or otherwise incorrect as it is presumed that the contractor has satisfied himself for all possible contingencies, situations, bottlenecks and acts of coordination which may be required between the different agencies.

3.6 SIGN BOARDS: The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, Client/Owner, Engineer-in-charges, Structural Consultants, Department etc. Nothing extra shall be payable on this account.

4.0 SAFETY PRACTICES

- i) **WARNING/ CAUTION BOARDS:**
Contractor shall make adequate arrangement for temporary barricading boards wherever necessary at the start of work to physically define the boundaries of the plot for restricted entry to only those involved in the work and also to prevent any accidents, at the same time without causing any inconvenience to the traffic and the users of the buildings in the adjacent plots. The structural dimension of the barricade, material and composition, its colour scheme, warning signs, Retro reflective tapes, CPWD logo and other details shall be in accordance with the drawing and the direction of Engineer-in-charge. The barricade especially those exposed to public shall be aesthetically maintained by regular cleaning and painting till the completion of work or as directed by the Engineer-in-charge. These barricading boards shall be maintained in one line and level. Requirement of providing and fixing barricading boards at site shall be decided as per direction and approval of Engineer-in-charge. No extra payment shall be made for providing barricading of required size/specification as the cost of barricading is deemed to be included in the quoted rates of different items by the contractor.
- ii) All temporary warning / caution boards / glow signage display such as "Construction Work in Progress", "Keep Away", "No Parking", Diversions & protective Barricades

etc. shall be provided and displayed during day & night time by the Contractor, wherever required and as directed by the Engineer-in-Charge. The Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work. This signage shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer – in – Charge. Nothing extra shall be payable on this account.

- iii) Thus, The Contractor(s) shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night. In case of any accident of labours/ contractual staffs the entire responsibility will rest on the part of the contractor and any compensation under such circumstances, if becomes payable, shall be entirely borne by the contractor.
- iv) No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules / instructions issued by the relevant authorities and as per the direction of Engineer -in- Charge in this regard. Also all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.
- v) On account of security consideration, there could be some restrictions on the working hours, movement of vehicles for transportation of materials and location of labour camp and In the event of any restrictions being imposed by the Security agency of IIT, or any other authority having jurisdiction in the area on the working or movement of labour / material, the contractor shall strictly follow such restrictions and nothing extra shall be payable to the contractor on such accounts. The loss of time on these accounts, if any, shall have to be made up by augmenting additional resources whatever required.
- vi) Necessary protective and safety equipment's shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and to be used at site.
- vii) The construction material of any kind that is stored in the site will be fully covered in all respects so that it does not disperse in the Air in any form.
- viii) Every worker working on the construction site and involved in loading, unloading and carriage of construction material and construction debris shall be provided with mask to prevent inhalation of dust particles.
- ix) Contractor should provide all medical help, investigation and treatment to the workers involved in the construction of road/building and carry of construction material and debris relating to dust emission.
- x) For the safety of all labour directly or indirectly employed in the work for the performance of the contractor's part of this agreement, the contractors shall, in addition to the provision

of CPWD safety code and directions of the Engineer-in-Charge, make all arrangements to provide facility as per the provision of Indian Standard Specifications (Codes) listed below & nothing extra shall be paid on this account :

IS 3696 Part I	Safety Code for Scaffolds and ladders.
IS 3696 Part II	Safety Code for Scaffolds and ladders Part II ladders.
IS 3764	Safety Code for excavation work.
IS 4138	Safety Code for working in compressed air.
IS 7293	Safety Code for working with construction machinery.
IS 7969	Safety Code for storage and handling of building materials.
IS 4130	Safety Code for demolition of buildings

- xi) Failure to comply with the requirements mentioned above shall be deemed to be breach of the contract on the part of the contractor for which the contractor shall be liable to action under relevant clauses/conditions of the agreement. The Engineer-in-Charge shall give notice to the contractor for such default and the contractor shall comply with the same within one day of such notice failing which the Engineer-in-Charge will get the set right in accordance with above provisions at risk and cost of the contractor in addition to the compensation payable by the contractor for default and nothing extra shall be paid on this account. For each default a compensation of Rs. 1000/- shall be levied.

5.0 **PROGRESS OF WORK AND ITS DOCUMENTATION**

The contractor shall make arrangements for a regular monthly or other frequency as directed by Engineer-in-Charge for the documentation of the progress of work. He shall give 2 (Hard and Soft) copies of progress report of the work done during the previous month upto the 5th Day of the next month or by such date as directed by Engineer-in-Charge . Such progress report will include:

- a. Actual quantum of work done during the previous month with respect to the targets of the previous month.
- b. Shortfall if any of the previous month and proposal to make up the shortfall.
- c. Target of each item of work proposed to be executed during the month.
- d. Important material consumed during the previous month and requirement for the next month.
- e. Materials at site at the beginning of previous month, procured and consumed during the month and balance at site at the end of the month.
- f. Manpower and T&P deployed during the previous month and requirement for the coming month
- g. Updated Completion Programme in the form of Microsoft Project Management Software output or CPM output or other software as decided by Engineer-in-Charge
- h. Photographs and video recording, of the important activities showing progress of the work on site, activities in casting yard, testing of material(s) in field lab, in the month as below:-

- (I) Minimum 10 coloured photographs in 2 copies (5"x 7") and also in digital format, of works including contractor's yard, plant, etc. depicting the progress of work at site depicting the progress of work during the month.

Besides the above, documentation will include all drawings, machinery and labour deployed, service details, pre casting/ batching plant yard details, electrical lighting fixtures and construction schedule etc. In a nutshell complete documentation is required. Nothing extra will be paid for above activity.

6.0 INSPECTION OF WORK

1. In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by the SE cum PD, IPC, CPWD, Indore or his successor and other senior officers of CPWD in addition of the Engineer-in-charge and his authorized representative. The contractor shall at times during the usual working hours and at all times at which reasonable notices of the intention of the Engineer-in-charge or other officers as stated above to visit the works shall have been given to the contractor, either himself be present to receive the orders and instructions or have a responsible representative duly accredited in writing, to be present for that purpose.
2. **Inspection of the work by Architects/consultant appointed by the IITI.**
 - (i) The consulting architect appointed by IITI shall be inspecting the works including workshops and fabrication factory to ensure that the works are in general being executed according to the design, drawings and specifications laid down in the contract. His observations shall be communicated by IITI engineering staff and compliance is to be reported to IITI.
 - (ii) The consulting architect appointed by IITI shall certify on completion of particular building that it has been constructed according to the approved drawings design and specifications.
3. Senior Officers of CPWD, Dignitaries from Central Ministry / Department, State Government and IITI Authorities shall be inspecting the on-going work at site at any time with or without prior intimation. The contractor shall, therefore, keep updated the following requirements and detailing.
 - (i) Display Board showing detail of work, weekly progress achieved with respect to targets, reason of shortfall, status of manpower, wages being paid for different categories of workers.
 - (ii) Entrance and area surrounding to be kept cleaned.
 - (iii) Display layout plan key plan, Building drawings including plans, elevations and sections.

- (iv) Upto date displays of physical progress chart.
- (v) Keep details of quantities executed, balance quantities, deviations, possible Extra item-etc.
- (vi) Keep plastic / cloth mounted one sets of building drawings.
- (vii) Set of Helmets and safety shoes for safety.

- 7.1 All the labourers deputed by the contractor at site should wear fluorescent Red colored jacket with CPWD monogram in reflective tapes at front and back of the jacket along with nameplate of the labour as decided & approved by Engineer-in-charge. Nothing shall be paid extra on this account. If the contractor/agency failed to provide dress to the labours at site, a sum of Rs. 500/- per day per labour shall be deducted from the contractor's bill.**
- 8.0 For execution of work, The contractor shall make his own arrangements for water and for obtaining electric connections and make necessary payments directly to the IIT Indore or other concerned authority. Nothing is payable on this account.
- 9.1 The contractor shall have to make approaches to the site, if so required and keep them in good condition for transportation of labour and materials as well as inspection of works by the Engineer-in-charge. Nothing extra shall be paid on this account.
- 9.2 The contractor shall provide and bear all expenses and charges for special or temporary service roads required by him in connections with access to the site (except for the purpose of diversion of traffic as directed by the Engineer-in-Charge), at no extra charges and his quoted rate shall deem to include the same. He shall alter, adopt or maintain the same as required from time to time or as directed by the Engineer-in-Charge. The department shall have right of way to this at all times and will not entitle the contractor to claim extra on this account.
10. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the nearby occupants/users of building(s), if any.
- 11.0 The contractor shall maintain in good condition all work till the completion of entire work allotted to him. From the commencement of the work to the completion of the same, the work is to be under the contractor's charge. The contractor is to be held responsible for and to make good all injuries, damages and repairs, caused by fire, rain, snow fall, traffic, floods or other natural calamities and no payment shall be made to the contractor on this account. Engineer-in-Charge shall not be held responsible for any claims for injuries to persons/workmen or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the contractor or any other of his authorized representatives in his employment during the execution of the work. The compensation, if

any, shall be paid directly to the department/authority/ persons concerned, by the contractor at his own cost.

- 12.1 The work shall be carried out in such a manner so as not to interfere and disturb other works being executed by other agencies, if any.
- 12.2 Other agencies doing works related to this projects/ campus/site will also simultaneously execute the work and the contractor shall provide necessary facilities for the same. The contractor shall leave such necessary holes opening etc. for burying in the work pipes, cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for other agencies. Conduits for electrical wiring /cables will be laid in a way that they leave enough space for concreting and do not adversely affect the structural members. Nothing extra over the agreement rates shall be paid for the same.
- 12.3 Any damage done by the contractor to any existing work or work being executed by other agencies shall be made good by him at his own cost.
- 12.4 The contractor shall be fully responsible for any damage to the government property and the work for which payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him.
- 13.0 The contractor(s) shall give to the concerned authorities, local body, police, fire service, Department of Forest, Department of Labour and other authorities all necessary notices etc. that may be required by law and obtain all requisite permission/ licenses for temporary obstructions, enclosures etc. and pay all fee, taxes and charges which may be leviable on account of these operations in executing the contract. He shall make good any damage to the adjoining property whether public or private and shall supply and maintain lights either for illumination or for cautioning the public at night.
- 14.0 The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by Collector, Labour Authorities, Forest Department, any other statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities. All statutory taxes, levies, charges (including water and sewerage charges, charges for temporary service connections and / or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor. The water charges (for municipal water connection as well as tanker water) shall be borne by the contractor. Also, if the contractor obtains water connection for the drinking purposes from the municipal authorities/ or any other statutory body, the consequent sewerage charges shall be borne by the contractor. He shall protect and indemnify the Department and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts.

- 15.0 (a) The work will be carried out in the manner complying in all respects with the requirements of relevant bye laws, rules and regulations of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer in charge and nothing extra will be paid on this account.
- (b) The contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charges which he may be liable. Nothing extra shall be paid on this account.
- 16.0 In the case of items of which abbreviated nomenclature is not available in the above cited publication and also in case of extra and substituted items of works for which abbreviated nomenclature is not provided in the agreement, the full nomenclature of items shall be reproduced in the measurements books and bill forms for running account bill. The full nomenclature of the items shall be adopted in preparing abstract of final bill in the measurement book and also in the bill form for final bill.
- 17.0 The contractor is required to deploy resources as per requirement and availability of site. Contractor shall plan to execute work in such a way so that deployed resources and labour may be optimum utilized. If work can not be executed due to some hindrance, contractor shall demobilized resources and remove labour with approval of engineer-in-charge. No claim for idle establishment & labour, machinery & equipments, tools & plants and the like, for any reason whatsoever, shall be admissible during the execution of work as well as after its completion.
- 18.0 The goods, including for works contract, shall be supplied by bidder or its authorized distributor. The bidder dealer or its authorized distributor, as that case may be, who supplies the goods should be registered with GST department . The bidder shall however, be responsible of the fact that the goods are supplied by him directly or through its authorized distributor. Further, the quoted bid price in the tender shall be inclusive of all taxes and duties.
- 19.0 Contractor shall acknowledge all the instructions conveyed to him through Site Order Book and shall comply the instructions. Engineer-in-charge or his representative shall record necessary instructions given by them and compliance by contractor. The contractor or his authorized representative will also be at liberty to note his difficulties etc. in Site Order Book.
- 20.0 The contractor or his authorised representative should always be available at the site of work to take instructions from departmental officers and ensure proper execution of work. No work should be done in the absence of such authorised representative.
- 21.0 The contractor shall take instruction from the Engineer- in-charge for stacking of materials at any place. No excavated earth or building material shall be stacked on areas where other buildings, roads, services or compound walls are to be constructed.
- 22.0 **Royalty at the prevalent rates and all other incidental expenditure shall have to be paid by the contractor on all the boulders, metal, shingle, earth, sand, bajri etc. collected by**

him for the execution of the work direct to the concerned Revenue Authority of the State or Central Government. His rates are deemed to include all such expenditure and nothing extra shall be paid.

- 23.0 Work is to be carried out in 2 & 3 shift (during night also) as directed by the Engineer in charge, no claim on this account shall be entertained. The contractor has to take permission from the police , local bodies and concerned authorities etc. if required for work during night hours. No claim / hindrance on this account shall be considered if work is not allowed during night time. The requisite supervision shall be made available by the department along with necessary issue of material under joint custody.
- 24.0 Contractor shall not divert any advance payments or part thereof for any work other than that needed for completion of the contracted work. All advance payments received as per terms of the contract (i.e. ~~mobilization advance~~, secured advance against materials brought at site, secured advance against plant & machinery and/or for work done during interim stages, etc) are required to be re-invested in the contracted work to ensure advance availability of resources in terms of materials, labour, plant & machinery needed for required pace of progress for timely completion of work.
- 25.0 CPWD safety codes, Model rules for protection of health and sanitary arrangements for workers employed by the contractor , Central CPWD Contractors Labour Regulations, Fair wages clauses with modifications and correction upto last date of submission of bid shall be part of this bid. Contractor shall abide to follow them. Nothing extra shall be given on this account.

Note : No extra payment will be made for operation/activities mentioned above.

26.0 CLEANLINESS OF SITE

- i) The Contractor shall not stack building material/malba/muck on the land or road of the local development authority or on the land owned by the others, as the case may be. So the muck, rubbish etc. shall be removed periodically as directed by the Engineer-in-Charge, from the site of work to the approved dumping grounds as per the local byelaws and regulations of the concerned authorities and all requisite permissions in this regard from the local bodies shall be obtained by the Contractor. Nothing extra shall be payable on this account. In case, the Contractor is found stacking the building material/malba as stated above, the Contractor shall be liable to pay the stacking charges/penalty as may be levied by the local body or any other authority and also to face penal action as per the rules, regulations and bye-laws of such body or authority. The Engineer –in-Charge shall be at liberty to recover, such sums due but not paid to the concerned authorities on the above counts, from any sums due to the Contractor including amount of the Security Deposit and performance guarantee in respect of this contract agreement.
- ii) The contractor shall take instructions from the Engineer-In-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, services and compound walls are to be constructed.
- iii) The site of work shall be always kept clean due to constraints of space and to avoid any nuisance to the users of buildings in the adjacent plots. The Contractor shall take all care to prevent any water- logging at site. The waste water, slush etc. shall not be allowed to be collected at site. It may be directly pumped into the creek with prior approval of the concerned authorities. For discharge into public drainage system, necessary permission shall be obtained from relevant authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.
- iv) The malba / garbage, removed from the site, shall be disposed off by the contractor within IIT campus or at any of the approved dumping ground or at any other location authorised by local body.

28.0 SCAFFOLDING / SHUTTERING

Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed by the contractor. It shall be provided strictly, suitably braced for stability, with all the accessories, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. It shall be designed to take all incidental loads. It should cater to the safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding.

28.1 Only steel shuttering, unless otherwise specified, with suitably designed steel frame supporting system is to be used in the work. The contractor shall ensure that there shall be no leakage at formwork joints and there shall be no movement at joints or bending of the formwork under pressure of the concrete. Nothing extra shall be paid on this account.

29.0 Defects Liability Period (DLP)

29.1 **Defects liability period shall be taken as Twelve (12) months from the date of completion of the work for building/road work as a whole, wherein all the defects shall be rectified by the contractor at his own cost. For specialized works such as water proofing/ polycarbonate work , the defect liability period shall be for a period of 10 years.**

29.2 Defects of serious nature causing inconvenience such as leakage, reverse floor slopes affecting the drainage (ponding of water), warping and opening of joints in doors and window shutters, etc, shall be undertaken by the contractor immediately on receipt of the complaint but not exceeding (07 days) one week time, failing which the defects will be got removed at his risk and cost.

29.3 All other defects notified to the contractor during the DLP shall be rectified to the entire satisfaction of Engineer-in-Charge or item replaced as soon as possible but not beyond one month failing which Engineer-in-Charge shall get it done at his risk and cost after final notice of 10 days. The decision of Engineer-in-Charge regarding a defect being of serious nature or otherwise shall be final and binding.

30.0 Other Conditions

- (a) The execution of items shall be carried out in accordance to relevant CPWD specifications (amended upto date of receipt of tenders). For the items which are not covered under CPWD Specifications, the Particular Specifications / B.I.S. Specifications shall have to be followed. The decision of Engineer-in-Charge shall be final in this regard.
- (b) Wherever any reference is made to any Indian Standard, it shall be taken as reference to the latest edition with all amendments / revision issued thereto upto the date of receipt of tenders.
- (c) all items of work of the Schedule of Quantities are for all heights, depths, leads and lifts involved in the execution of work. Unless otherwise provided in the Schedule of quantities or in CPWD Specifications or in tender document
- (d) The contractor shall make his own arrangement of water required for the work.
- (e) The contractor shall make his own arrangements for obtaining electric connection for carrying out any construction or maintenance activity and make necessary payment to the department

- concerned. In the absence of electric connection or failure of power supply, the contractor shall make his own arrangements of generators.
- (f) Other agencies working at site will also simultaneously execute the work. The contractor shall offer necessary cooperation to other agencies wherever required.
- (g) On account of security consideration, there could be some restrictions on the working hours, movement of vehicles for transportation of materials, etc. The contractor shall be bound to follow all such restrictions and adjust the programmes for execution of works accordingly.
- (h) The work shall be carried out in a manner complying in all respects with the requirements of any prevalent statutory laws enacted either by Central Govt. as well as State Govt.
- (i) No residential accommodation shall be provided to any of the staff engaged by the contractor. The contractor shall also not be allowed to erect any temporary set up for his staff in the campus.
- (j) No claim of the labourers shall be entertained including that of providing employment, regularization of services etc.
- (k) The contractor shall take action to attend any complaint received from occupants during defects liability period. In all cases, he shall attend the complaints in the specified duration as mentioned below:-
- i. No delay complaints – Complaints of emergent nature such as electricity/data networking not being available, plumbing or sewerage systems not working etc. are to be attended on emergent basis but in no case delayed beyond 06 hours.
 - ii. Minor complaints – Complaints relating to the trades of mason, carpenter, air-conditioning are to be attended within 72 hours.
 - iii. Major complaints – Complaints other than no delay & minor complaints.
 - iv. In case of any complaint mentioned under column (i) and (ii) above is registered again with a period of 7 days, it will treated as if the complaint registered earlier was not attended.
- (l) In case of failure to meet deadlines to attend a complaint, a lump sum amount of Rs. 200/- (Rupees two hundred only) per complaint per day from the date/time of expiry of attending the respective complaint will be recovered from any sum due to the contractor.
- (m) Any malba / building rubbish generated is to be removed from the site within 24 hours and to be stacked at a pre-designated place. The malba / building rubbish so stacked shall be disposed off as soon as one truck load is accumulated (approx 5 cum) from such designated place.
- (n) In case the malba / building rubbish is not removed either from the site of original malba generation point or from the designated malba stacking place within a period as specified above, recovery of Rs. 1,000/- per day shall be effected from any sum due to the contractor.

- (o) This malba/ building rubbish has to be disposed off to the dumping ground as approved by the Engineer-in-Charge in consultation with IITI. The rates quoted by the contractor are inclusive of all operations, labour, leads and lifts from site of work to the dumping ground. Unless otherwise provided in the Schedule of quantities or in CPWD Specifications or in tender document
- (p) Technical staff/Supervisor shall carry mobile telephone (s) to enable the Engineer-in-Charge / occupants to have easy and quick communication. Nothing extra shall be paid to the contractor on this account and his quoted rates for various items under this contract will be inclusive of this obligation.
- (q) The replaced materials used shall have same or richer specifications to the original materials and compatible to the work.
- (r) The staff employed by the contractor should be well behaved and any complaint of misbehavior shall be taken very seriously and such staff will have to be removed by the contractor immediately from the site.
- (s) The dismantled materials shall be taken away and disposed off by the contractor at his cost. Nothing extra shall be paid / recovered on account of this.
- (t) The contractor shall make all safety arrangements required for the labour engaged by him at his cost. All consequences due to negligence on behalf of security / safety or otherwise shall be on the contractor. The department shall not be responsible for any mishap, injury, accident or death of the contractor's staff. No claim in this regard shall be entertained / accepted by the department.
- (u) Contractor shall be fully responsible for any damages caused to government property or allottee's property by him or his labour in carrying out the work and shall be rectified by the contractor at his own cost action will be taken as per clause 17.
- (v) Chases, holes, etc shall be done using power operated tools.
- (w) No extra payment will be made for operation/activity mentioned above.
- (x) Each worker shall maintain a complaint diary and get the feedback recorded from the allottee regarding attending the complaint. In case, it is found that the complaint has not been attended satisfactorily, it will be considered as unattended.
- (y) The contractor shall be required to maintain sufficient quantity of spares at site to meet with the requirement of attending the complaints as per direction of Engineer-in-Charge.

Note : No extra payment will be made for operation/activities mentioned above.

31.0 Safety measures

31.1 The issue of construction safety & standards has gained utmost importance in recent times. This subject is to be dealt with in an overall manner with an approach to developing and establishment a safety culture at work sites. Broadly, its components are: All workers of contractor and associate agencies, invariably and at all the times, must follow all safety norms, adopt safe construction practices and use all required safety gadgets during execution of work. The agency has to follow safety code of GCC 2023 Construction works. No extra payment will be made for operation/activity mentioned.

32.0 SECURITY

32.1 ***The IITI is a fully furnished campus and work is located in academic zone. Contractor shall take all measures and precautions so as to cause no inconvenience to the occupants.*** He shall barricade the construction site / designated area of construction through the barriers ***at his own cost to secure the site*** as approved by the Engineer-in-charge. No material shall be stored / dumped outside the designated area.

32.2 The movement of the construction vehicles and the labours shall be restricted to the designated routes which will be decided by the IITI.

32.3 All the vehicles carrying the material to the work site shall be subject to check and entries to be made at the gates by IITI security post. No material shall be taken out without proper gate pass issued by the Engineer-in-Charge and endorsed by IITI.

32.4 Any labour engaged by the contractor shall be in possession of photo ID card failing which they are liable to be disengaged from the work and shall not be allowed to enter into the campus.

32.5 In case of any nuisance caused by activities attributed to contractors staff, workmen and movement of vehicle, and reported to IITI (an officer of the rank not lower than EE) commensurate penalty not exceeding Rs. 5000/- for each nuisance shall be imposed on the contractor by IITI.

32.6 The movement of the labour shall be restricted to the barricaded work site area only.

32.7 No extra payment will be made for operation/activity mentioned above unless specified.

~~33.0 3rd PARTY QUALITY ASSURANCE~~

~~33.1 In order to achieve high standards of materials, workmanship and overall quality of the execution, an agency engaged by CPWD may carry out Third Party Inspections as part of 'Third Party Quality Assurance'. This agency will carry out the checks of the quality assurance procedures followed at site, take samples of the materials for independent testing and check the workmanship of the works carried out. The contractor shall extend full co-operation to the TPQA agency in facilitating the inspections and collection of samples and regulate the execution stages with regards to the hold and witness points which shall be strictly adhered to by the contractor. The next stage work shall not be undertaken at the hold point stage and work shall be done in presence of the TPQA representative at the witness stage. The contractor shall be required to co-operate with agency in carrying out various activities including documentation at no extra time and cost to the owner. In case of any adverse findings by the TPQA agency, the contractor shall do the needful rectifications to the entire satisfaction of the TPQA agency and CPWD. If contractor fails to rectify the defects of the serious nature within a reasonable time frame no further payment shall be made.~~

~~————— If work is stopped due to non-rectification of defects and delay occurs on this account, no relief in completion of mile stone by way of grant of EOT or any other relaxation be given. Further No extra payment will be made for operation/activity mentioned above.~~

34.0 CONSTRUCTION VEHICLES TYRE WASHING FACILITIES

All the vehicles leaving the site shall be loaded in such a manner that the excavated materials, mud or debris will not be deposited on roads. All such loads shall be covered or protected to prevent dust being emitted. The wheels of all vehicles shall be washed properly before leaving the site to avoid the deposition of mud and debris on the roads. The contractor shall provide a

wash pit and a wheel washing facility with high pressure water jets for this purpose. Also, the contractor shall make necessary arrangements for sweeping and removal of mud from roads if it is deposited even after washing of wheels of vehicles leaving site. A penalty of Rs 10,000 per day for violation of such measures shall be levied. Nothing extra shall be paid for providing and maintaining this facility. No extra payment will be made for operation/activity mentioned.

35.0 BARRICADING OF SITE

The contractor shall make adequate arrangement for barricading as directed by the Engineer-in-Charge to cover the entire construction site including all T&P and materials. The requirement of providing and fixing barricading at site shall be decided as per the direction and approval of Engineer-in-Charge. The barricading shall be provided continuously during the execution of the entire work till completion and shall not be removed at any stage without prior approval of the Engineer-in-Charge.

The barricading shall include the following:

- a. G.I. Pre-coated 0.50mm or more thick profile sheet with MS framed work with sufficient anchoring and bracing to avoid over turning, Reflective signs, direction boards, marking of logo, etc as directed by the Engineer-in-Charge.
- b. Cleaning of barricading so as to ensure that there is no dirt or splashes on the barricading.
- c. Installation of temporary warning signs / lamps on all barricades as directed by the Engineer-in-Charge.
- d. Repainting of the barricading as directed by the Engineer-in-Charge.
- e. Proper maintenance of the barricading till completion of the work by repairing / replacing the damaged barricade.
- f. No extra payment will be made for operation/activity mentioned a to e.

36.0 WATER SUPPLY

The water supply to the contractor will be as per GCC Clause 30, Clause 30A

The contractor shall be allowed to construct temporary wells in IITI campus for taking water for construction purposes only after he has got permission of Engineer-in-Charge in writing and subsequent approval by IITI. No charges shall be recovered from the contractor on this account, but the contractor shall be required to provide necessary safety arrangements to avoid any accidents or damages to adjacent building, roads and service lines. He shall be responsible for any accidents or damages caused due to construction and subsequent maintenance of the wells and shall restore the ground to its original condition after the wells are dismantled on completion of the work.

The contractor(s) shall make his/their own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions. (i) That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the Engineer-in-Charge. (ii) The Engineer-in-Charge shall make alternative arrangements for supply of water at the risk and cost of contractor(s) if the arrangements made by the contractor(s) for procurement of water are in the opinion of the Engineer-in-Charge, unsatisfactory.

37.0 ELECTRIC SUPPLY

The contractor shall make his own arrangement for electricity. IIT Indore at its own discretion may however consider providing the electric connection in special circumstances on payment basis. In that case, contractor has to make his own arrangement for laying the cables and other distribution system from the tap off point. On completion of the project No dues certificate shall be obtained by the contractor. No extra payment will be made for operation/activity mentioned . **The electricity bill amount inform by IIT authorities shall be paid within 15 days after receiving of bill otherwise same amount will be withheld from running or final bill till the payment not done by agency.**

38. RESPONSIBILITY

- 38.1** The Contractor shall keep himself fully informed of all relevant acts and laws of the Central & State Governments, orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by District Collector / Indore Municipal Corporation / Indore Urban Development Authority and any other statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities. The water charges (for municipal water connection as well as tanker water) shall be borne by the contractor. Also, if the contractor obtains water connection for the drinking purposes from the municipal authorities or any other statutory body, the consequent sewerage charges shall be borne by the contractor. All statutory taxes, levies, charges (including water and sewerage charges, charges for temporary service connections and / or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and shall pay to such authority all the fees that is required to be paid for the execution of work. He shall protect and indemnify the Department/ IITI and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts. The fee payable to statutory authorities for obtaining the various permanent service connections and Building Use Certificate for the building shall be borne by the Department/ IITI.
- 38.2** The contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the Department from any and all damages and claims that may arise on any account. The Contractor shall indemnify the Department against all claims in respect of patent rights, royalties, design, trademarks of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify the Department in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.
- 38.3** The contractor shall keep himself fully informed of all acts and laws of the Central Government and Government of M.P., all local bye laws, ordinances, rules and regulations and all orders and decree of bodies or, tribunals having any jurisdiction or authority which in any manner affect those engaged or employed on the work or which in any way affect the conduct of the works. Contractor shall at all times, observe and comply with all such laws, ordinances, rules, regulations, orders and decrees, and shall give all notices and pay out of his own money any fees or charges to which he may be liable. He shall protect and indemnify the Department/ IITI

and its officers and employees against any claim or liability arising out of violations of any such law, ordinances, legislations, order or decree, whether by himself or by his employees & authorized representatives.

39. CO-OPERATION WITH OTHER CONTRACTORS/SPECIALIZED AGENCIES/SUB-CONTRACTORS

39.1 The contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The contractor shall use such methodology and equipments for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer-in-Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the contractor shall take all precautions to abide by the environmental related restrictions imposed by MP state Pollution control board, Govt. of M.P. as well as prevent any pollution of streams, ravines, river bed and waterways. All waste or superfluous materials shall be transported by the Contractor, entirely to the satisfaction of the Engineer-in-Charge. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints, such as distance from Indore city as approximately 20 km, lack of public transport, 20 km distance from Fast Moving Consumer Goods (FMCG) market, inadequate availability of skilled, semi-skilled or unskilled workers in the near vicinity, non-availability of construction machinery spare parts and any other constraints not specifically stated here, shall be entertained from the contractor. **Therefore, the Tenderer's are advised to visit site and get first-hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.**

39.2 The contractor shall cooperate with and provide the facilities to the sub-contractors and other agencies working at site for smooth execution of the work. The contractor shall indemnify the Department/ IITI against any claim(s) arising out of such disputes. The contractor shall :

- (i) Allow use of scaffolding, toilets, sheds etc.
- (ii) Properly co-ordinate their work with the work of other Contractors.

- (iii) Provide control lines and benchmarks to his Sub-Contractors and the other Contractors.
 - (iv) Provide electricity and water at mutually agreed rates.
 - (v) Provide hoist and crane facilities for lifting material at mutually agreed rates.
 - (vi) Co-ordinate with other contractors for leaving inserts, making chases, alignment of services etc. at site.
 - (vii) Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other contractors to suit the overall schedule completion.
 - (viii) Resolve the disputes with other contractors/ sub-contractors amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator.
- 39.3 The work should be planned in a systematic manner so as to ensure proper co-ordination of various disciplines viz. sanitary & water supply, drainage, rain water harvesting, electrical, fire fighting, information technology, communication & electronics and any other services.
- 39.4 Other agencies will also simultaneously execute and install the works of sub-station / generating sets, air-conditioning, lifts, etc. for the work and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings trenches etc. as may be required for such related works (for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall be supplied free of cost by the department unless otherwise specifically mentioned) and the contractor shall fix the same at time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.
- 39.4.1 The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and in a proper –o -ordination manner and shall perform it in proper sequence to the complete satisfaction of others.

40 Specialized Agencies

- 40.1 The tenderer must associate with himself, agencies of the appropriate eligibility to tender for each of specialized nature of items / work mentioned in this documents . Such works shall be got executed only through associated agencies specialized in these fields. The tenderer whose tender is accepted shall indicate the name(s) of his associated specialized agencies those fulfilling the eligibility criteria laid down below after award of work and atleast 30 days before commencement of such items / work for the approval of the Engineer in charge whose decision

shall be final and binding. If the tenderer himself fulfils the eligibility criteria laid down for associated specialized agencies, then the tenderer shall not require to associate with himself the associated specialized agency.

- 40.2 It shall be the responsibility of main contractor to sort out any dispute / litigation with the Specialized Agencies without any time & cost overrun to the Department. The main contractor shall be solely responsible for settling any dispute / litigation arising out of his agreement with the Specialized Agencies. The contractor shall ensure that the work shall not suffer on account of litigation/ dispute between him and the specialized agencies / sub-contractor(s). No claim of hindrance in the work shall be entertained from the Contractor on this account. No extension of time shall be granted and no claim what so ever, of any kind, shall be entertained from the Contractor on account of delay attributable to the selection/rejection of the Specialized Agencies.

41. SUBMISSION AND DOCUMENTATION

1. The contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc under various labour laws and other regulations applicable to the works, at his site office.
2. The contractor shall make available Four (04) sets of completed Building Drawings/Development drawings, “As Built Drawings” along with literatures, manuals, warranty certificates etc. of various installed fittings, fixtures and equipment for the completed projects. This shall be the prerequisite for payment of final bill.
3. The contractor shall make available Four (04) sets of all drawings of internal and external services i.e. Water Supply, Sanitary line and Drainage lines. This shall be the prerequisite for payment of final bill. These drawings shall have the following information:
 - (i) Piping and their diameters including soil, waste pipes and vertical stacks.
 - (ii) Ground and invert level of all drainage pipes together with locations of all manholes and connections, up to outfall.
 - (iii) All water supply lines with diameters location of control valves, access panels etc.
4. The contractor shall submit **Computerised measurement Book (CMB)** sheet for the work carried out by him for making payment as per Clause-6 of the CPWD General Conditions of Contract 2023 (construction work) with correction slips upto previous day of submission of bid. For casting of RCC members and other hidden items the corrected and duly test checked measurement sheets of reinforcement or that of other hidden items shall be deposited with Engineer in charge or his authorized representative, before casting of RCC or other hidden

items. The delay in submission of corrected and duly checked measurement sheet may, therefore, delay casting of RCC or execution of hidden item for which no hindrance shall be recorded.

5. To avoid delay, contractor should submit all samples well in advance so as to give timely orders for procurement.

Note: No extra payment will be made for operation/activities mentioned above.

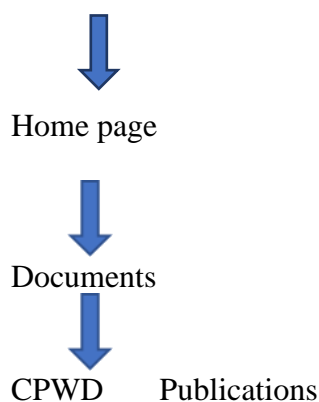
GENERAL SPECIFICATIONS

1.0 GENERAL

1.1 The work in general shall be executed as per the description of the item, specification mentioned in schedule – “F” with correction slips up to last date of submission of bid and other relevant specifications, specification supplied by manufacturer/ supplier as per direction of Engineer-in-Charge.

The specification(s) mentioned in Schedule -F shall become part of agreement. CPWD Specification(s) are available on CPWD web site. Bidders may download the same before quoting rates, as per following diagram -

<https://eprocure.gov.in/eprocure/app>



1. Specification (Civil)

1.2 The work shall be carried out in accordance with the Architectural drawings and structural drawings, to be issued from time to time, by the Engineer-in-Charge. Before commencement of any item of work the contractor shall correlate all the relevant architectural and structural drawings, nomenclature of items and specifications etc. issued for the work and satisfy himself that the information available there from is complete and unambiguous. The figure and written dimension of the drawings shall be superseding the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-charge before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and/ or incomplete information and no claim whatsoever shall be entertained on this account.

1.3 The nomenclature of the item given in the schedule of quantities gives in general the work content but is not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and/or described in the specifications, provided that the same can be reasonably inferred there from may be several incidental works, which are not mentioned in the nomenclature of each item but will be necessary to complete the item in all respect. All

these incidental works / costs which are not mentioned in item nomenclature but are necessary to complete the item shall be deemed to have been included in the rates quoted by the contractor for various items in the schedule of quantities. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Engineer-in-Charge. Nothing extra shall be payable on this account.

- 2.0 Wherever any reference to any Indian Standard Specification occurs in the documents related to this contract, the same shall be inclusive of all amendments issued there to or revisions thereof, if any, up to the last date of receipt of tenders.

3.0 COORDINATED DRAWINGS

- (i) The work shall be carried out in accordance with the approved architectural drawings, structural drawings, MEP services drawings and approved shop drawings (shop drawings prepared by the Contractor for which nothing extra will be paid). Before commencement of any item of work the contractor shall correlate all the relevant architectural and structural drawings, nomenclature of items and specifications etc. issued for the work and satisfy himself that the information available from there is complete and unambiguous. The figure and written dimension of the drawings shall be superseding the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-charge before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and or incomplete information and no claim whatsoever shall be entertained by the department on this account.
- (ii) Before taking up the work, the contractor shall correlate architectural, structural and shop drawings prepared by him for the works for various civil and electrical services showing details of lay out in plan including sections & elevations & large scale details and contractor shall plan and mobilize his resources as per these drawings and as per actual site conditions to facilitate convenient execution, installation as well as maintenance of these items.. Nothing extra shall be payable on this account.
- (iii) SHOP DRAWINGS

The bill of quantities, technical specifications and drawings together shall be considered as a tender requirement and the work shall be carried out as per good for construction (GFC) drawings, approved by Engineer-in-charge. The contractor shall study into account actual site conditions and selected material and requirements shall prepare shop drawings for the following works, as fully coordinated drawings, as given above.

- a. Suspended ceiling work, coordinated with all ceiling related services.
- b. Marble, granite, vitreous, ceramic, tile work

- c. All Electrical work
 - d. All Sanitary work
 - e. Doors and windows
 - f. PUF sandwich panel walls and roofs / standing seamless screw less sheet
 - g. Standing seamless screwless sheet
 - h. Pre-engineered building.
 - i. Any other work as directed by Engineer-in-charge
- (iv) Within the time frame agreed with the Engineer-in-charge, the contractor shall prepare shop drawings. The shop drawings shall be prepared timely by contractor and submitted for approval to achieve the milestones provided. Shop drawings shall show all layouts, details in plans & sections showing all connections, junctions, bends, supports, clearances. fixing arrangements with dimensions room, etc. All measurable items quantities shall be mentioned on each shop drawing being submitted for approval by the contractor. 3 sets of shop drawings (soft copy also) shall be submitted for approval.

Contractor shall also submit Technical submittals of manufacturer's catalogues and technical data for approval. The contractor shall designate an Engineer responsible for issue and preparation of shop drawings and control of GFC drawings.

Nothing Extra is payable on this account.

- 4.0 The works to be governed by this contract shall cover delivery and transportation up to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works.

The works to be undertaken by the contractor shall inter-alia include the following at no extra cost:

- (i) Preparation of detailed SHOP drawings and AS BUILT drawings.
 - (iii) Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
 - (iv) Warranty obligation for the equipment's and / or fittings/fixtures supplied by the contractor. Contractor shall provide all the shop drawings or layout drawings for all the coordinated services before starting any work or placing any order of any of the services etc. These shop drawings/ layout drawings shall be got approved from Engineer-in-charge before implementation and this shall be binding on the contractor. The contractor shall submit material submittals along with material sample for approval of Engineer-in-Charge prior to delivery of material at site.
- 5.0 ***Unless otherwise provided in the Schedule of quantities the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing extra shall be payable to him on this account.***
- 6.0 The Contractor(s) shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, services and compound walls exist or are to be constructed. The stacking shall take place as per stacking plan however, if any change is required, the same shall be done with the approval of Engineer-in-Charge; at no extra cost.

- 7.0 **No chase cutting/dismantling of plaster/RCC/CC shall be allowed at a later stage, so contractor has to execute the electrical work accordingly with proper planning in advance.**
- 8.0 The execution of any items of work where any incidental work is actually required but not specifically stated in the tender, it is to be understood that the rate quoted by the contractor shall cover such charges also and nothing extra on account of such incidental charges, if any, shall be paid.
- 9.0 All materials obtained from contractor shall be got checked by the representative of Engineer-in-Charge on receipt of the same at site before use.
- 10.0 The Contractor shall make all necessary arrangements for protecting from rains, snow, fog or likewise extreme weather conditions, the work already executed and for carrying out further work, during monsoon including providing and fixing temporary shelters, protections etc. Nothing extra shall be payable on this account and also no claims for hindrance shall be entertained on this account.
- 11.0 The contractor shall construct suitable godowns, yard at the site of work for storing all other materials so as to be safe against damage by sun, rain, snow fall, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost.
- 12.0 In case of flooding of site on account of rain, snow fall or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained notwithstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any. Further, no claims for hindrance shall be entertained on this account.
- 13.0 The contractor will take reasonable precautions to prevent his workman and employees from removing and damaging any flora (plant/vegetation) from the project area.
- 14.0 Unless otherwise specified in the schedule of quantities the rates for all items of the work shall be considered as inclusive of pumping out or bailing out water if required for which no extra payment will be made. This will include water encountered from any source, such as rains, floods subsoil water table being high due to any other cause whatsoever.
- 15.0 Photographs and videography are required to be taken up before start, during execution of work and after completion of work. These shall be submitted to engineer-in-charge along with progress reports and nothing extra shall be payable on this account.
- 16.0 Some restrictions may be imposed by the concerned authorities on quarrying of sand, stone etc. from certain areas. For timely completion of work, the contractor shall have to bring such material from other quarries located elsewhere, and nothing extra shall be payable on this account.
- 17.0 The structural, architectural and other drawings for the work shall, at all times, be properly correlated before executing any work and no claim whatsoever shall be entertained in this

respect.

18.0 The contractor shall maintaining good condition, all work executed till the completion of entire work awarded to the contractor.

20.0 EXISTING SERVICES:

Existing drains, cables, pipes, electricity cables, overhead wires and telephone cables, sewer lines, water lines, gas lines and similar services encountered in the course of the execution of the work shall be protected/ maintained against the damage by the contractor. Any damage to this services during the execution of work shall be made good by contractor at his own cost. Nothing shall be paid to contractor on this account. If contractor does not rectify or makes good the damaged service(s); expenditure/ penalty etc. demanded by concerned agency shall be recovered from contractor.

Besides this, the contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services. In case temporary shifting/supporting of such services is required to facilitate the work, the contractor at no extra cost shall do the same.

21.0 RATES

- (i) The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work, profile, setting lay out on ground, establishment of reference bench mark(s), installing various signage, taking spot levels, survey with total station, construction of all safety and protection devices, compulsory use of helmet and safety shoes, and other appropriate safety gadgets by workers, imparting continuous training for all the workers, barriers, preparatory works, construction of clean, hygienic and well ventilated workers housings in sufficient numbers as per drawing supplied by Engineer in charge, working during monsoon or odd season, working beyond normal hours, working at all depths, height, lead, lift, levels and location, and any other unforeseen but essential incidental works required to complete this work. Nothing extra shall be payable on this account and no extension of time for completion of work shall be granted on these accounts.
- (ii) **The rates quoted by the tenderer shall be firm and inclusive of all taxes and levies, including GST etc.**
- (iii) The Contractor shall bear all incidental charges for cartage, storage, watch & ward, safe custody of materials etc., if any, issued by department as well as to those materials also arranged by the contractor.
- (iv) No foreign exchange shall be made available by the Department for importing (purchase) of equipment, plants, machinery, materials of any kind or any other items required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained from the Contractor, on account of variation in the foreign exchange rate.
- (v) Ancillary and incidental facilities required for execution of work like labour camp, stores,

fabrication yard, offices for Contractor, watch and ward, installation and consumption charges of temporary electricity, telephone, water etc. required for execution of the work, liaison and pursuing for obtaining various approvals and any other activity which is necessary (for execution of work and as directed by Engineer-in- Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts.

- (vi) The tendered rates for all items of work, unless specified otherwise, shall include the cost of all operations, labour, materials, de-watering and other inputs involved in the execution of the items.
- (vii) Unless otherwise specified in the Schedule of Quantities, the rates for all items of work shall be considered as inclusive of working in or under water and/or liquid mud and/or foul conditions including pumping or bailing out liquid mud or water accumulated in excavations during the progress of the work from springs, tidal or river seepage, rain, broken water mains or drains and seepage from subsoil aquifer.
- (viii) Unless otherwise provided in the schedule of quantities, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, depths, leads and lifts.
- (ix) For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason, to the labours and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.
- (x) All material shall only be brought at site as per program finalized with the Engineer-in- Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.
- (xi) The contractor shall be responsible for the watch and ward/guard of the buildings/ structure, safety of all fittings and fixtures including all equipment's, services provided by him against pilferage and breakage during the period of Installations and thereafter till the building/ structure is physically handed over to client through the Engineer-in-charge. No extra payment shall be made on this account and no claim shall be admissible on this account.

22.0 FINAL TESTING OF THE INSTALLATION

The Contractor shall demonstrate trouble free functioning of all the Civil and E & M installations and services. The Engineer-in-Charge or his authorized representatives shall carry out final inspection of the various Civil and E & M services and installations. Any defect(s) noticed during demonstration shall be rectified by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge. Nothing extra shall be payable on this account.

- 23.0 All work and materials brought and left upon the ground by the contractor or by his orders for the purpose of forming part of the works, are to be considered to be the property of Indian Institute of Technology Indore and same are not to be removed or taken away by the contractor or any other person without the special license and consent in writing of the Engineer-in-Charge, but the Indian Institute of Technology Indore is not to be, in any way, responsible for any loss or damage which may happen to or in respect of any such work or materials either by the same being lost or damaged by weather or otherwise.
- 24.0 Stacking of materials and excavated earth including its disposal shall be done as per the directions of the Engineer-in-Charge. Double handling of materials or excavated earth, if required, shall have to be done by the contractor at his own cost.
- 25.0 The contractor will not have any claim in case of any delay on the part of department in removal of trees or shifting / removing of telegraph, telephone or electric lines (overhead or underground), water and sewer lines and other structure etc., if any which may come in the way of the work. However, suitable extension of time may be granted to cover such delay.
- 26.0 The right of carry out the work either in conformity with or in a manner entirely different from the terms of this tender document that may be considered most suitable before or subsequent to the receipt of tenders due to exigencies of work, is reserved with the Engineer-in-Charge.
- 27.0 Engineer-in-Charge shall have full powers to send workmen and employ on the premises to execute fittings and other work not included in the contract. For whole operations the contractor is to afford every reasonable facility during ordinary working hours provided such operations are carried out in such a manner as not to impede the progress of work included in this contract, in the opinion of Engineer-in-Charge.
- 28.0 At the time of construction, contractor shall embed all electrical/other fixtures like base plates, brackets, conduits, etc. for street lighting, etc. as per the directions of the Engineer-in-Charge. Nothing extra whatsoever will be payable on this account.
- 29.0 The material shall conform to the quality and make as per Preferred make list given in this NIT. However for the items not appearing in the list preference shall be given to those articles which bear ISI certification marks. In case articles bearing ISI certification marks are not available the quality of sample brought by the Contractor shall be judged by the standard laid down in the relevant ISI specification/CPWD specification. All materials and articles brought by the contractor to the site for use shall conform to the samples approved, which shall be preserved till the completion of the work. However, such articles which bear ISI mark but stand banned by CPWD will not be used. Notwithstanding the case of materials of "Preferred Make", provisions of Clause 10A of the General Conditions of Contract for Central CPWD works shall be applicable on the materials of "Preferred Make" also.
- 30.0 The final approval of the brand to be used shall be as per the direction of Engineer-in-Charge. The brand used shall be one of the brands specified in the list of preferred make / materials. No claim shall be entertained on account of approval of a specific brand.
- 31.0 In case of non-availability of material of the brands specified in the list of approved materials an equivalent brand may be used after getting written approval of Engineer-in-charge giving details to indicate that the brand proposed to be used is equivalent to the brands mentioned in the agreement.**

32.0 De-watering

33.1 De-watering required, if any, shall be done conforming to BIS Code IS: 9759 (guide lines for de-watering during construction) or as per the specifications approved by the Engineer-in-Charge. Design of an appropriate and suitable dewatering system shall be the Contractor's responsibility.

Such scheme shall be modified / augmented as the work proceeds based on fresh information discovered during the progress of work, at no extra cost. At all times during the construction work, efficient drainage of the site shall be carried out by the Contractor and especially during the laying of plain cement concrete, taking levels etc. The Contractor shall also ensure that there is no danger to the nearby properties and installations on account of such lowering of water table. If needed, suitable precautionary measures shall be taken by the Contractor. Also the scheme of dewatering adopted shall have adequate built in arrangement to serve as stand-bye to attend to repair of pumps etc. and disruption of power / fuel supply. Nothing extra shall be payable on this account.

In trenches where surface water is likely to get into cut / trench during monsoons, a ring bund of puddle clay or by any other means shall be formed outside, to the required height, and maintained by the Contractor. Also, suitable steps shall be taken by the Contractor to prevent back flow of pumped water into the trench. Nothing extra shall be payable on this account.

For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of the water is required, the contractor shall do the same at his own cost and nothing extra shall be paid. It is intimated that the foundation depth and water table below the ground level are approximately at the same level. So most likely the water table will be struck in the excavation of foundation. Nothing extra shall be paid for execution of work in or under water and / or liquid mud including pumping out of water as required.

33.2 The tenderer is advised to obtain details of soil and sub-soil water directly as may be considered necessary by him before quoting rates in the tender. No claim whatsoever on account of any discrepancy between the sub-surface strata conditions that may be actually encountered at the time of execution of the work and those given in these tender documents, in-accuracy or interpretation thereof shall be entertained from the Contractor under any circumstances. The ground water table is a variable condition and the information is indicative and it may vary from time to time.

33.3 In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained notwithstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any. The contractor shall keep that area free from water. If dewatering or bailing out of water is required for execution of work the contractor shall do it at his cost and No extra payment will be made for operation/activity mentioned.

34.0 SPECIAL CONDITION FOR ROAD WORK AND SPORT GROUND WORK :

34.1 Before starting the earth work, the following steps are taken in Original ground levels are recorded in the Level Book in the presence of the contractor or his/her authorized representative, and the Assistant Engineer of CPWD. All the local mounds and depressions are indicated clearly in the drawing and the field Level Book, and agency get it checked by the Assistant engineer before the levelling work is started. Plans showing initial levels, location of bench marks and reduced levels, is prepared and signed by the contractor or his/her authorized representative, and the Assistant Engineer of CPWD. Further the levels after excavation ,after filling of compacted earth, G.S.B.,D.L.C.,Concrete Pavement OR any othe layer stated in schedule of quantities are recorded in the Level Book in the presence of the contractor or his/her authorized representative, and is signed by him/her and the Assistant Engineer of CPWD. Nothing extra shall be paid on this account.

Note : No extra payment will be made for operation/activities mentioned above

SPECIAL CONDITIONS TO PREVENT AIR POLLUTION

1. The dismantle material/building rubbish received from dismantling/ demolishing shall be dumped to the dumping ground in properly covered truck with precaution. Agency shall submit the hard copy of photograph showing the properly covered truck disposing dismantles material/building rubbish. Failure of which shall be sternly dealt and a penalty @ Rs.5000/- per trip of truck shall be levied and the decision of Engineer-in-charge shall be final & binding.
2. Agency / contractor shall not store/dump the construction material on the metalled road and shall keep the construction material on the physically demarcated space by the Engineer-in-Charge.
3. All the road/ building material responsible for pollution shall be brought at site from sources covered by tarpaulin and shall take all precautionary measure to ensure that no dust particles are permitted to pollute the air quality, failure of which Agency shall be liable to pay damages as decided by Engineer-in-Charge. The decision of Engineer-in-Charge shall be final & binding.
4. All the trucks or vehicles of any kind, which are used for construction purposes and / or are carrying construction materials like cement, sand and other allied material, shall be fully covered in the process of transporting the material.
5. There shall be no burning of leaves, plastic etc. at construction site.
6. The contractor shall get prior approval from Engineer-in-Charge for the area where the construction material or debris can be stored beyond the metalled road. This area shall not cause any obstruction to the free flow of traffic/inconvenience to the pedestrians. It should be ensured by the contractor that no accidents occur on account of such permissible storage.
7. The malba / garbage, removed from the site shall be disposed off by the contractor at any authorized dumping ground informed by IITI or as directed by the Engineer-in-Charge.
8. The contractor shall take appropriate protection measures like raising wind breakers of appropriate height on all sides of the plot/area using CGI sheets material to ensure that no construction material dust fly outside the plot area.
9. The contractor shall ensure that all the trucks or vehicles of any kind which are used for construction purposes/or are carrying construction material like cement, sand and other allied material are fully covered. The contractor shall take every necessary precautions that the vehicles are properly cleaned and dust free to ensure that enroute their destination, the dust, sand or any other particles are not released in air/contaminate air.
10. The contractor shall provide mask to every worker working on the construction site and involved in loading, unloading and carriage of construction material and construction debris to prevent inhalation of dust particles.

11. The contractor shall ensure that C&D (Construction and demolition) waste is transported to the C&D Waste site only and due record shall be maintained by the contractor.
12. The contractor shall compulsory use of wet jet in grinding and stone cutting.
13. Contractor should ensure that directives of Hon'ble National Green Tribunal orders dated 04-12-2014 and 10.04.2015 in O.A. No. 21 of 2014 and O.A. No. 95 of 2014 and MoEF guidelines of 2010 or any direction issued by Hon'ble NGT up to last date prescribed for submission of bid regarding dealing with Air Pollution from construction and demolition sites.
14. The contractor shall carry out on-Road- Inspection for black smoke generating machinery. The contractor shall use cleaner fuel.
15. The contractor shall ensure that all DG sets comply emission norms notified by MoEF.
16. The contractor shall use vehicles having pollution under control certificate. The emissions can be reduced by a large extent by reducing the speed of a vehicle to 20 kmph. Speed bumps shall be used to ensure speed reduction. In cases where speed reduction cannot effectively reduce fugitive dust, the contractor shall divert traffic to nearby paved areas.
17. Directive issued by D.G., CPWD, vide no. DG/SE/CM/CON/Misc./02 dated 16.03.2016 to comply N.G.T Guidelines shall be strictly followed.
18. No extra payment will be made for operation/activity mentioned on 1 to 17.

QUALITY ASSURANCE PROGRAMME**1.0 General conditions**

- (i) The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-charge & contractor shall be bound to replace / remove such sub-standard/ defective work immediately. If any material, even though approved by Engineer-In-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost.
- (ii) In addition to the supervision of work by IIT Indore engineers, the Consultants/ Third party quality control agency deployed by the IITI may also be carrying out regular and periodic inspection of the ongoing activities in the work and deficiencies, shortcomings, inferior workmanship pointed out by them shall be communicated by IITI engineers to the contractor. Upon receipt of instructions from Engineer in Charge these are also to be made good by necessary improvement, rectification, replacement up to his complete satisfaction.
- (iii) For works, Contractor shall get the water tested from laboratory approved by the Engineer-in-charge at regular interval as per the CPWD Specifications 2019 (Vol.-I & II) along with correction slips issued up to previous day of submission of bid. All expenses towards collection of samples, packing, transportation, testing, documentation etc. shall be borne by the contractor. Agency shall be allowed to use bore well, after approval of concerned authorities. If the tube well water is not suitable, contractor shall install RO plant for treatment of water or the contractor shall arrange Municipal water at his own cost and nothing extra shall be paid to the contractor on this account. They shall have to arrange water through tankers from any outside source after taking due permission from concerned authority.
- (iv) All materials brought by the contractor to the site for use shall conform to the samples approved by the Engineer- in-charge which shall be preserved till the completion of the work. If a particular brand of material is specified in the item of work in Schedule of Quantity, the same shall be used after getting the same approved from Engineer-In-Charge. Wherever brand / quality of material is not specified in the item of work, the contractor shall submit the samples as per list of approved makes given in the tender document for approval of Engineer-In-Charge. For all items, materials and fittings of ISI Marked shall be used with the approval of Engineer-In-Charge. Wherever ISI Marked material / fittings are not available, the contractor shall submit samples of materials / fittings manufactured by firms of repute conforming to relevant specifications or IS codes and use the same only after getting the approval of Engineer-In-Charge.
- (v) The contractor shall procure all the materials at least in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work.

- (vi) The Contractor shall procure and provide all the materials from the manufacturers / suppliers as per the list of approved makes attached with the tender documents, as per the item description and particular specifications for the work. The equivalent brand for any item shall be permitted to be used in the work, only when the specified makes are not available. This is, however, subject to documentary evidence produced by the contractor for non-availability of the brand specified and also subject to independent verification by the Engineer-in-Charge. In exceptional cases, where such approval is required, the decision of Engineer-in-Charge as regards equivalent make of the material shall be final and binding on the Contractor. No claim, whatsoever, of any kind shall be entertained from the Contractor on this account. Nothing extra shall be payable on this account. Also, the material shall be procured only after written approval of the Engineer-in-Charge.
- (vii) All materials shall be got checked/ tested and approved by the Engineer-in-Charge or his authorized supervisory staff on receipt of the same at site before use.
- (viii) The material shall conform to the quality and make as per Preferred make list given in this NIT. However for the items not appearing in the list preference shall be given to those articles which bear ISI certification marks. In case articles bearing ISI certification marks are not available the quality of sample brought by the Contractor shall be judged by the standard laid down in the relevant ISI specification/CPWD specification. All materials and articles brought by the contractor to the site for use shall conform to the samples approved, which shall be preserved till the completion of the work. However, such articles which bear ISI mark but stand banned by CPWD/ IITI will not be used. Notwithstanding the case of materials of "Preferred Make", provisions of Clause 10A of the General Conditions of Contract for Central CPWD works shall be applicable on the materials of "Preferred Make" also.
- (ix) The final approval of the brand to be used shall be as per the direction of Engineer-in-Charge. The brand used shall be one of the brands in case specified in the list of preferred make / materials. No claim shall be entertained on account of approval of a specific brand.
- (x) Removal of rejected/sub-standard materials. The following procedure shall be followed for the removal of rejected/sub-standard materials from the site of work:
- Whenever any material brought by the contractor to the site of work is rejected, entry thereof should invariably be made in the Site Order Book under the signature of the Junior Engineer/ Assistant Engineer/ AEE (Representative of Engineer –in-charge), giving the approximate quantity of such materials.
 - As soon as the material is removed, a certificate to that effect shall be recorded by the Junior Engineer/ Assistant Engineer/ Asstt. Executive Engineer against the original entry, giving, the date of removal and mode of removal, i.e., whether by truck, carts, or

by manual labour. If the removal is by truck, the registration number of the truck should be recorded.

- (c) When it is not possible for the JE/ Assistant Engineer/ AEE to be present at the site of work at the time of actual removal of the rejected/sub-standard materials from the site, the required certificate should be recorded by the Junior Engineer, and the Assistant Engineer should countersign the certificate recorded by the Junior Engineer.
- (xi) The contractor shall ensure quality control measures on different aspects of construction materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of the work. The quality assurance programme should include method statement for various items of work to be executed alongwith check lists to enforce quality control.
- (xii) The contractor shall submit a '**Methods statement**' for the approval of Engineer-in-charge soon after the award of work. The 'Methods statement' is a statement by which the construction procedures for important activities of construction are stated, checked, and approved. The 'Methods statement', should have a description of the item with elaborate procedures in steps to implement the same, the specifications of the materials involved, their testing and acceptance criteria, equipment's to be used, precautions to be taken, mode of measurement, etc.
- (xiii) The design mix for concrete work, and job mix for road work shall be obtained from any of the following laboratory
- a) State Engineering College
 - b) NIT
 - c) IIT

In case the Design/ Job mix already got designed by the contractor recently (not older than three months) from any of above Institutions is available, it can be allowed by the Engineer-in-Charge provided the source of raw materials remains the same with a recovery cost of Rs.25,000/- per Design/ job mix formula or cost for Design/ Job mix at the time of execution whichever is more for not getting the Design/ Job mix by the contractor for this work.

- (xiii) All the hidden items such as reinforcement, water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested as per the design conditions before covering and their measurements in **Computerised measurement Book (CMB)** duly test checked shall be deposited with Engineer in charge or his authorized representative, prior to hiding these items.

- (xiv) The contractor shall give performance test of the entire installation(s) as per the standing specifications before the work is finally accepted and commissioned and nothing extra whatsoever shall be payable to the contractor for the test.
- (xv) The Contractor shall arrange electricity at his own cost for testing of the various electrical installations as directed by Engineer- in-Charge and for the consumption by the contractor for executing the work. Nothing extra shall be payable on this account.
- (xvi) For better quality control Engineer-in-charge or his representative may visit source/ factory/ yard/ premises of manufacturers/ suppliers/ vendors of various materials. he may ask calibration certificates of various testing equipment's, source & test reports of various ingredients etc. It shall be responsibility of the contractor/ agency to ensure that all relevant codes, necessary testing equipment, manpower & facilities are made available to Engineer-in-Charge and/or his authorized representative at source/ factory/ yard/ premises. All required relevant records of materials, products shall be made available to the Engineer-in-Charge or his authorized representative. Engineer-in-Charge shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of materials, production & transportation of material/ product which shall be binding on the agency.
- (xvii) Contractor shall provide copy of bill's having GST No. for all the material procured for use in work. Engineer-in-Charge or his representative may verify the authenticity/quality of material from manufacturer/supplier and contractor shall assist in verification. Engineer-in-Charge may instruct for not procuring material from manufacturer/supplier that does not cooperate in verification of voucher and quality of material.
- (xviii) Contractor will submit original bill's/ challan/ voucher having GST No. for purchase of all the material/ products from approved suppliers/ vendors/ manufacturers within 07 days from purchased of materials as a proof of having purchased the material from suppliers/ vendors/ manufacturers. A stamp having details of work shall be printed/sealed on these vouchers/bills/challan with dated signature of Engineer-in-Charge or his representative and shall be returned to the contractor after verification keeping verify copy and making necessary endorsement.
- (xix) **FILED TESTING INSTRUMENTS**
1. Steel tapes – 3m
 2. Verniercalipers
 3. Micrometer screw 25mm gauge
 4. A good quality plub bob
 5. Spirit level, minimum 30 cms long with 3 bubbles for horizontal vertical

6. Wire gauge (circular type) disc
7. Foot rule
8. Long nylon thread
9. Rebound hammer for testing concrete
10. Dynamic penetrometer
11. Magnifying glass
12. Screw driver 30 cms long
13. Ball pin hammer, 100 gms
14. Plastic bags for taking samples
15. Moisture meter for timber

(XX) A. Laboratory at site:

For better quality control contractor may establish field lab at site although it is not mandatory. Field lab shall be a Semi-permanent structure using RMC/RCC/CC, full Bricks/AAC walls, plaster on walls, puff panel/GI profile sheet on roofs etc. Location for site lab shall be approved by Engineer-in-charge. Contractor shall arrange for proper light, water, sewer connections at his own expenses. Contractor shall make proper sitting arrangement for representative of Engineer-in-charge in the lab. **Nothing extra shall be given to contractor for providing Field lab and site office.**

List of testing equipment's is mentioned in schedule 'F'. All test in field lab setup at Construction Site shall be carried out by the Engineering Staff deployed by the contractor which shall be witnessed by Engineer-in-charge or his representative. Nothing extra shall be payable to him on this account. In all cases, cost of samples and to and fro carriage shall be borne by the contractor. All the testing equipment must be calibrated as per relevant code(s). Contractor shall always keep calibration certificates and produce before Engineer-in-charge for record purpose whenever asked.

The representatives of the department shall be at liberty to inspect the testing facilities at site and conduct testing at random in consultation with Engineer in charge. The contractor shall provide all necessary facilities for the purpose.

The equipment's not relevant for this work may be exempted by Engineer-in-Charge on the written request of the agency.

Any other equipment relevant for this work shall be provided by contractor as per direction of Engineer-in-Charge.

B. Other Laboratories:

All test which can be performed in the site/ field lab except that at least 10% testing of materials shall be got done from external laboratories. **If contractor does not establish his own field Lab, 100% testing as required shall be got done from other approved laboratories.** For the tests to be carried out by the external laboratories, the contractor shall supply free of charge all the materials required for testing, including transportation. Contractor shall supply, free of charge, all the materials required for testing. **All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading, documentation etc. i/c testing charges shall be borne by the contractor.**

Outside Testing of the material will be done in following institute/laboratory

- a) State Engineering College
- b) NIT
- c) IIT
- d) Any other Laboratory approved by Engineer in charge.
- e) FRI Dehradun
- f) Central Road Research Institute (C.R.R.I) Delhi
- g) Central building research institute (CBRI) Roorkee Uttarakhand

C. The contractor or his authorised representative shall associate in collection, preparation, transportation, submission/ forwarding and testing of such samples as per the frequency of test stipulated in the contract specifications or as considered necessary by the Engineer-in-Charge. In case he or his authorised representative is not present or does not associate himself, the Engineer-in-Charge shall do the needful for getting the samples collected and tested; the result of such tests and consequences thereof shall be binding on the contractor. All expenditure required for collection, preparation, transportation, forwarding and testing the samples to the laboratory will also be recovered from the contractor.

D. For frequency & procedure of testing of material/ingredients: CPWD specification 2019 (Vol-I & II), relevant MoRTH Specification, IS code, BIS Code, Standard Practices or manufacturer specifications etc. shall be followed.

(xxi) Sampling of Materials :

Sample of construction materials, fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge. Articles manufactured by companies of repute and approved by the Engineer-in-Charge shall only be used. Articles bearing BIS/ IS certification mark shall be used in case the above are not available, the quality of samples brought by the contractor shall be judged by standards laid down in the relevant BIS/ IS specifications. All materials and articles brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work.

The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material/work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-Charge.

BIS/ ISI marked Products /materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/materials. Wherever BIS marked Products are brought to the site of work, the contractor shall if required, by the Engineer-in-Charge furnish manufacturers test certificate or test certificate from approved testing laboratory to establish that the material produced by the contractor for incorporation in the work satisfies the provisions of BIS/ IS codes relevant to the material and/or the work done.

The contractor shall be fully responsible for the safe custody of the materials issued to him even if the materials are in double lock and key system.

2.0 Maintenance of Material at Site (MAS) Register –

- (i) All the MAS Registers including Cement, Steel, bitumen, paints/chemical, cube or Any other register as decided by the Engineer-in-charge relevant to work etc. shall be maintained by Contractor which shall be issued to the contractor by Engineer-in-charge.
- (ii) Each of the entry of receipt of material at site shall be 100% test checked by Engineer-in-charge or his representative.

3.0 Maintenance of Register of Tests -

- (i) All the registers of tests carried out at Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-charge.
- (ii) All Samples of materials including Cement Concrete Cubes shall be taken jointly by Contractor with Engineer-in-charge or his representative. All the necessary assistance shall be provided by the contractor. Cost of sample materials is to be borne by the contractor and he shall be responsible for safe custody of samples to be tested at site/ field lab.
- (iii) All the registers of tests carried out at Construction Site or in outside laboratories and all material at site (MAS) registers including cement register shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-charge. All the entries in the registers will be made by the designated Engineering Staff of the contractor and same shall be regularly reviewed by JE/AE/AEE/EE. Contractor shall be responsible for safe custody of all the registers.
- (iv) The tests mentioned in CPWD Specifications 2019 Volume 1 & 2 and on related IS Code, have to be done by contractor or his authorized representative and Engineer-in-Charge or his authorized representative. The reports shall be signed by contractor and Engineer-in-

charge or his authorized representative. The copies of such reports at various stages shall be appended with each running account bill and final bill failing which no payment shall be released to contractor.

(v) All the entries in the registers will be made by the designated Engineering Staff of the contractor and same shall be regularly reviewed by Engineer-in-charge or his representative.

(vi) Contractor shall be responsible for safe custody of all the test registers.

Submission of Material at Site Register and hindrance register along with each alternate Running Account Bill and Final Bill shall be mandatory. If all the test registers and hindrance register are not submitted along with each alternate R/A Bill & Final Bill, no payment shall be released to the contractor.

4.0 For testing plan for various materials & ingredients; check lists for various activities & approvals; Dos & Don't Does for building works; field testing instruments; Performa for various registers; list of equipment's for field testing laboratory etc. ; Quality assurance manual 2022 (available on <https://eprocure.gov.in/eprocure/app>) updated up to last day of submission of bid shall be referred and followed. Engineer-in-charge may modify any checklist, Performa, list etc.as per requirement of work. Decision of Engineer-in-charge shall be final and binding in this regard

Note : No extra payment will be made for operation/activities mentioned above.

Proforma For Mandatory Tests To Be Attached With Running Bills

Name of the work: Name of contractor..... Agreement no. and
date R/A Bill No.....

Sl. No.	Item	Quantities as per agreement	Frequency as per specification	No. of tests required	Upto date quantity	No. of tests required	No. of tests actually done	Remarks
1	2	3	4	5	6	7	8	9

NOTE: If the number is less than that required, then reasons shall be recorded.

APPROVED MAKE FOR CIVIL WORKS:

- i. Contractor shall adopt materials in work as per approved make of materials annexed in this contract document. Contractor shall submit samples of materials he propose to use for this work for approval of engineer-in-charge. The approved samples shall be preserved at work site in safe custody till completion of whole work. In case any sample submitted by contractor is not approved by Engineer-in-charge, contractor shall arrange and submit alternate samples for approval of engineer-in-charge. The efforts should be made by the contractor to use indigenous products. The agency should also consider the availability of spares parts/components for maintenance purposes while proposing any brand/manufacturer.
- ii. Wherever work is specified to be done or material procured through specialized agencies, their names shall be got approved well in advance from Engineer-in-charge. Failure to do so shall not justify delay in execution of work. It is suggested that immediately after award of work, contractor should negotiate with concerned specialist agencies and send their names for approval to Engineer-in-charge. Any material procured without prior approval of Engineer-in-charge in writing is liable to be rejected. Engineer-in-charge reserves right to get the materials tested in laboratories of his choice before final acceptance. Sub standard materials shall not be accepted.
- iii. Various factory made materials shall be procured from reputed and approved manufacturers or their authorized dealers and the material shall conform to the make as specified in this contract agreement. However for the items not appearing in the list, preference shall be given to those articles which bear ISI certification marks. In case articles bearing ISI certification marks are not available or where BIS certification system is available for a particular material/product but not even a single producer has so far approached BIS for certification, the material can be used subject to the condition that in such case written approval of the Engineer-in-charge shall be obtained before use of such material in the work.
- iv. All materials and articles brought by the contractor to the site for use shall conform to the samples approved, which shall be preserved till the completion of the work. However, such articles which bear ISI mark but stand banned by CPWD/ IITI will not be used. Not with standing the case of materials of "Approved Make" as given, provisions of Clause 10A of the General Conditions of Contract for Central PWD works shall be applicable on the materials of "Approved Make" also.

- v. If, in the schedule of quantities / nomenclature of items, the brand / make of product / material has been mentioned. The contractor is required to provide the same brand / make as mentioned in the item. If the same are not available in the market or the suppliers adopts monopolistic practice then the approval of other equivalent brand / make are to be obtained from Engineer-in-charge. The contractor will submit such a case at least (30) Thrity days before the materials is required at site. If the rate of other equivalent brand / make are less than the brand / make mentioned in the item, than necessary cost adjustment will be made for difference in rates.
- vi. For items / materials not appearing in the list of approved make of materials, decision of Engineer-in-charge shall be final and binding.

PREFERRED MAKES OF MATERIALS FOR CIVIL WORKS

Preferred makes of materials to be used in the work are as under. In case of non availability of these makes, the Engineer-in-Charge may allow use of alternative BIS makes of Materials in the work.

Sl. No.	Material	List of Preferred Makes
1	AAC Block	Birla Aerocon, , Orilite, ultratech, ACC, Ecrete Aerocon Buildwell .
2	AAC Block Adhesive	Ferrous crete(Ferro-1188), ARDEX ENDURA (White Star)., Ultratech (Fixed-Block)
3	Acrylic Distemper, Emulsion, Synthetic Enamel Paint and Primer.	Asian Paints, ICI Dulux, Berger, Nerolac
4	Epoxy Adhesive	FOSROC, Aquomix , Choksey, BAL-ENDURA
5	Aluminium Composite Panel	Alpolic, Aluco Bond, Reynobond, Euro bond, Alstrong
6	Aluminium Extrusions	Hindalco, Indalco, Jindal
7	Aluminum Sections	Jindal, Hindalco, Indalco
8	Annealed Float Glass	Saint Gobain, Modi Guard, AIS
9	Bitumen	Indian Oil, Hindustan Petroleum, Bharat Petroleum
10	Calcium Silicate Board / Tiles	Aerolite, Hilux, Starpan
11	CC Pavers/Grass pavers / Kerb stone	Nitco, Bharat Regency, Hindustan, Ultra, KJS Concrete, Duracrete, Dalal Tiles, Mehtab
12	Centrifugally Cast Iron Pipe & Fittings	NECO, BIC, RIF, KAPILANSH, RPMF
13	Ceramic Tiles	Kajaria, Nitco, Johnson, RAK
14	Chequered / Tactile Tiles	Dura, Unistone, Eurocon, Modern, Mehtab, Pavit
15	CI Manhole Cover	BIC, SKF, NICO, Hepco, Kapilansh, RIF, RPMF
16	CI Double flanged non-return valves	Kirloskar, Sant, Kartar
17	CP fittings	Jaquar,, Kohler, Grohe, Prayag polymers pvt. Ltd.
18	CPVC Pipes & Fittings (For Hot & Cold)	Astral ,Ashirvad, Prince, Supreme, Prayag polymers pvt. Ltd.
19	Curtain Carrier / Drapery Rod	Marvel, Vista levlor, Johnson.
20	Dash fastener, Expansion Bolt	Hilti, Bosch, Fischer
21	Hydraulic Door closer, Floor springs	Dorma, Hardwyn, Ozone, Hettich, Hafele ,Kich, Godrej
22	Ductile Iron Pipe (Water Supply)	Electro steel, Kessoram, TATA, Jindal
23	EPDM Gasket	Hanu, Anand, Lescuyer
24	GRC Tile	Unistone, Eurocon, Dazzle
25	Epoxy Grouting Compound	Pidilite, Ferrous Crete(Ferro-102), MYK, LATICRETE
26	Epoxy Primer & Paints	Asian, Nerolac, Berger, Pidilite, CICO, BASF, SIKA
27	Fire Check door	Navair, Godrej, Sukri, shakti
28	Float/Toghdned/Frosted Glass Mirror/Fire rated glass	Modi guard, Saint Gobain, AIS
29	Flush Doors (ISI Mark only)	Century, Kitlam, Archid, Greenply A-1 Teak Products – Indore, Greenply, M.P. Wood
30	Friction Stay	Earl-Bihari, Ebco, Hettich
31	Fire Door fitting	Dorma, Ozone, Hettich, Geze , Becker

32	Galvanized/Stainless Steel Anchor Fasteners	Arrow, Hilti, Fischer
33	GI Pipe & fittings	Tata, Zenith, Jindal, Prakash Surya, Swastik,unik,zoloto
34	GI Sheet	Sail, TATA or equivalent
35	Gun Metal Gate Valve	Zoloto, Leader, AUDCO, SANT, Prayag polymers pvt. Ltd.
36	Glass Mosaic Tile	Bisazza, Italia, Palladio, Mridul
37	Gypsum Board (False Ceiling)	Boral Gypsum, India Gypsum, St. Gobain
38	Hardener	Hardcrete of Snowcem India, Pidilite, CICO.
39	HDPE Pipes	Reliance,supreme, prayag polymers
40	Jet Assembly for EWC/Health Faucet	Parryware , Jaquar, Grohe, Kohler, Marc,Hindware
41	Kitchen loft tank	Sintex, TirupatiStructurals Ltd, KMS Plast world P.Ltd. Planet Plastics, Sri Kamakshi Traders, Sreyah Novel InC.
42	Laminate and Veneers	Merino, Greenlam, Formica, Kitlam, Durian, Ventura
43	Locks / Latch	Godrej, Dorma,Ozone Yale or equivalent
44	Marine Plywood / BWP Ply	Duro, Century, Greenlam
45	Melamine Polish	Asian Paints, Pidilite, ICI Dulux, Burger
46	Metal False Ceiling	Nitobond, Armstrong, Trac, Durlum, Lafarge, Anutone, Hi-Steel
47	Mineral Fiber Ceiling	Armstrong, Nitobond, Daiken, Hunter Douglas, Anutone
48	M.S. Pipe	Jindal, Tata, RINL, Prakash Surya, Apollo
49	Multicoat Synthetic Plaster/ Textured Exterior wall paint	Spectrum, Heritage, Ultratech,Asian Paints
50	Ready mix plaster	Ultratech (Readiplaster), ACC, silicoplast, permaplast mix, instaplast, JSW (Enduro plast)
51	Plywood,	Greenply, Century, Duro
52	Polycarbonate Sheet	Ultralite (Bayer), Macrolux, DPI Daylighting, V-Lite
53	Polysulphide / Silicon Sealent	Pidilite, Fosroc, Tuffseal, Chouksey Chemicals
54	POP (Plaster of paris)	JK, Laxmi, SriramNirman, Sakarni
55	PPR Pipes	SFMC, SAFE, Poineer Industries
56	Fire resistant Glass/Toughened glass/IGU	Saint gobain, AIS, modi guard
57	Precoatd Profile Sheet	Tata, Bhushan,NationalEssar, Jindal (JSW)
58	Pre-laminated Particle Board	Ecoboard, Action-Tesa, Duro, Century Ply.
59	PTMT Fittings	Prayag polymers, Supreme ,kingston
60	PVC Cistern	Steelbird, Jindal, Seabird, Prayag polymers pvt. Ltd.
61	PVC Connection Pipe	Supreme, Prince, Finolex
62	PVC Rain Water Pipe & Fitting	Finolax, Kisan, Kasta, Supreme, Astral, Prince
63	Ready Mix Concrete (RMC)	ACC, L&T, Ultratech, Prism Johnson Ltd. RMC Ind division or equivalent as decided by Engineer-in-Charge.
64	PVC Shutter	Rajshri, SintexPolygreen
65	PVC Water storage Tank (Only ISI)	Water well, Plasto, Polycon, Sintex, Prayag polymers.
66	Sluice Valve	Kirloskar, Venus, Kalpana, SANT,
67	Solid PVC frames and shutters	Polygreen, Rajshri, Plastogreen
68	Stainless Steel	Jindal,Dorma,Kich,godrej,Hrdwyn
69	Stainless steel Sink with or without Draining board.	Nirali, Hindware, Jaquar, Prayag polymers pvt. Ltd.
70	Stainless steel Door/Window fittings & Fixtures	Dorma, Ozone, D.Line, Hettich, Kich

71	Structural steel section	TATA, SAIL, RINL, Jindal
72	Super plasticizer / admixture	Sika, Fosroc, Chouksey Chemicals, BASF
73	Tensile Fabric	Bluestone, Encon, Structure Flex, Sergeferrari
74	Tile Adhesive	Ferrous Crete (Ferro-1122), ArdexEndura (Gold Star), PIDILITE (Fevimate XL), sika, iltratech, Endura
75	Towel Ring/Towel Rod/Towel Rack	Jaquar, Grohe, Kohler
76	UPVC Pipes & Fittings	Astral Flowguard, Ashirvad, Prince, Supreme, Finolex, VECTUS, Prayag polymers pvt. Ltd.
77	UPVC windows(profile)	Fenesta, Kommerling, Aluplast, Duroplast
	UPVC Doors and window hardware	Rotto, Dorset, Kinlong
78	Vitreous China Sanitary ware, Fittings & Fixtures	Hindware, Parryware, Jaquar, Roca
79	Vitrified Tile	Johnson -Marbonite, Kajaria, RAK, NITCO
80	Wall Putty	JK, BIRLA, Asian
81	Waste Pipe	Kamal, Viking, Jaquar
82	Water Proofing Compound (Liquid)	Pidilite, Cico, IFosroc, Roff/Dr fixit/Sika, BASF
83	White Cement	JK White, Birla White, Grasim
84	(i) Ordinary Portland Cement / Portland Pozzolona Cement / Sulphate Resisting Portland cement	ACC, Ultratech, Ambuja Cement, J.K.Cement, Birla, vikramshre, Jaypee cement,
85	Reinforcement Steel TMT bars Fe-500D or more	SAIL, Tata Steel, RastriyaIspat Nigam Ltd (RINL), JSW Steel Ltd., Jindal Steel & Power Ltd.
86	Barbed wire (with required GI coating as per BOQ)	SAIL, Tata, RastriyaIspat Nigam Ltd (RINL), JSW Steel Ltd., Jindal Steel & as per approved by Dept.
87	High pressure laminate sheet	Century, Fundermax, Alstone
88	Galvalume standing seam sheet	Lloyd, multicolor, JSW, Bhushan,
89	CRS steel bars Fe-500D or more	SAIL, Tata Steel, RastriyaIspat Nigam Ltd (RINL), JSW Steel Ltd., Jindal Steel & Power Ltd.

PART -C

SCHEDULE OF QUANTITIES (CIVIL)

Name of work: Covering of connecting bridge and railing of POD Building at IIT Indore

S/No.	Description	Qty	Unit	Rate	Amount
1	<p>Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding, with open grooves for linear as well as curvilinear portions of the building , for all heights and all levels etc. including:</p> <p>(a) Structural analysis & design and preparation of shop drawings for pressure equalisation or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design.</p> <p>(b) Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets (each 0.5mm thick). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF / Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc.</p> <p>(c) The fastening brackets of Aluminium alloy 6005 T5 / MS with Hot Dip Galvanised with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts of approved make in SS 316, Nylon separators to prevent bi-metallic contacts all complete required to perform as per specification and drawing The item includes cost of all material & labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working curtain wall with aluminium composite panel cladding, cleaning and protection of the curtain wall with aluminium composite panel cladding till the handing over of the building for occupation. Base frame work for ACP cladding is payable under the relevant aluminium item.s The Contractor shall provide curtain wall with aluminium composite panel cladding, having all the performance characteristics all complete , as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer-in-Charge. However, for the purpose of payment, only the actual area on the external face of the curtain wall with Aluminum Composite Panel Cladding (including width of groove) shall be measured in sqm. up to two decimal places.</p>	342	Sqm	₹ 4,474.20	₹ 15,30,176.00

2	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot-finished welded type tubes	36935.57	kg	₹ 154.90	₹ 57,21,320.00
3	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes of 110 mm diameter	496	metre	₹ 319.75	₹ 1,58,596.00
4	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.				
a	Bend 87.5' of 110 mm bend	60	each	₹ 132.00	₹ 7,920.00
b	Shoe (Plain) of 110 mm bend	30	each	₹ 115.95	₹ 3,479.00
5	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-Charge) of total coated thickness 0.80mm (base metal of minimum 0.75mm thickness with total coating thickness of 0.05mm) with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	1317.6	sqm	₹ 803.20	₹ 10,58,296.00
6	Providing and fixing 15 cm wide, 45 cm overall semi-circular gutter of plain G.S. sheet of 0.8 mm thick with zinc coating not less than 275 gm/m ² and iron brackets 40x3mm size, bolts, nuts and washers etc., including making necessary connections with rain water pipes complete (quote include the cost of iron brackets, fixing, etc. complete for all heights, nothing extra payable)	304	metre	₹ 811.85	₹ 2,46,802.00

7	Providing and fixing 10mm thick Both Side UV Protected, Compact, Solid Polycarbonate sheet in linear as well as on curvilinear shape of approved colour and shed with sheet of specified width and of required length at stair case railing/balcony railing/utility including SS fastners, nuts and Bolt and all carriage and lift as per direction of Engineer in charge [Note. The contractor has to submit a Guarantee bond for 10 years]	714.6	sqm	₹ 5,903.50	₹ 42,18,641.00
8	Design, manufacture, Supply and Installation of assembly of extruded cellular / x structure UV protected polycarbonate panels incorporated into a complete system. Co-extruded UV-protected polycarbonate panel system of minimum 16mm thick panel of 900-1200 mm width to ensure best performance for wind uplift, vibration, oil canning, and visual appearance. Panels shall be manufactured with vertical standing seam at both sides of the panel. Panels shall be fixed on Purlin with snap on connectors with grip on locking mechanism and will be secured on MS Structure with self drilling screws to ensure a pull-out load of min. 7000N (7KN) tested as per ISO 6892:1998 and IS 1608:2005. Polycarbonate panels also shall not have Yellowness Index as per ASTM D1925 of 15 units when tested on a sample exposed to UV for 500 Hours as per ASTM G155. The polycarbonate panels must satisfy Dart drop impact test as per IS 14443-97 shall show no sign of breakage on Polycarbonate sheets which have been exposed to UV for a min. of 500 Hours as per ASTM G155. Panel shall be with additional Endcap /AluminumU/ FProfile/ GlazingBar (mill finish) for ends as required. The panel shall be fixed over MS structural steel /MS purlin (to be paid separately) conforming to the detailed technical specifications as per approved architectural drawings. Trained and factory-authorized labour with supervision to complete the entire panel installation as per drawing & direction of the Engineer-in-Charge. [Note: Length and breadth of sheets shall be measured upto 1cm. The contractor has to submit a Guarantee bond for 10years]	1074.4	sqm	₹ 5,160.15	₹ 55,44,065.00

9	Providing and supplying aluminium extruded tubular and other aluminium sections as per the architectural drawings and approved shop drawings , the aluminium quality as per grade 6063 T5 or T6 as per BS 1474,including super durable powder coating of 60-80 microns conforming to AAMA 2604 of required colour and shade as approved by the Engineer-in-Charge. (The item includes cost of material such as cleats, sleeves, screws etc. necessary for fabrication of extruded aluminium frame work. Nothing extra shall be paid on this account). The weight of aluminium extruded section shall be taken for purpose of payment.	2188.80	kg	₹ 370.45	₹ 8,10,841.00
10	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete on steel work.	1480.48	Sqm	₹ 201.70	₹ 2,98,613.00
Total					₹ 1,95,98,749.00

- Note**
1. The agency quoting rates shall visit and acquaint with site conditions.
 2. The rate quoted is for complete items, including GST, and nothing extra is payable over quoted rates.
 3. Payment will be made as per actual work done, as recorded by the IITI site engineer.
 4. The contractor shall ensure only approved material is used in work.

Senior Engineer (C), IDO-IITI

DEE (C), IDO-IITI

Consultant (C), IDO-IITI

PROFORMA FOR QUOTING THE RATES

Name of Work: Covering of connecting bridge and railing of POD Building at IIT Indore

N. I. T. No. : *IIT/IDO/PR/C/PB/NIT-7/24-25/2*

Schedule of Quantity					
Name of the Contractor					
Sl. No	Name of Component	Estimated Cost	Percentage above or below the estimated cost	% in Figures	Total Cost
1	Civil Work (SOQ items 1 to 10)	1,95,98,749/-	Above / Below / At Par		
	Total Cost	1,95,98,749/-			
Total Percentage					

- 1 *Only one of the options is to be filled. More than one option shall be rejected.*
- 2 *Rate filled in any form shall be considered only in % age*
- 3 *Rate filled at any other place in the document shall not be considered.*
- 4 *No condition shall be accepted.*