INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
ESTATE OFFICE
NOTICE INVITING TENDER

Telephone No. 022 2576/4995,022/2159/6922 email id drestate@iitb.ac.in

IIT Bombay invites signed Technical Bid & Financial Bid for the following work from the contractors having similar experience in Central Government Departments / State Government Departments / Central or State Autonomous Bodies / Central or State Public Sector Undertakings / in reputed Private Companies. The detail of work is given below:

Sr. No.	Name of Work	Estimated Cost (In Rs.)	EMD (Rs.)	Mode and Type of Tender	Duration of contract
1	**Term Contract for maintenance and repair works at Central, Lakeside, Hillside area, Hospital, Gulmohar & all Guest houses in IITB Campus. EO/A/UMBRELLA/ CENTRAL, LAKESIDE & HILLSIDE/WKS-220/25-26**	**19,99,99,955/-**	**40,00,000/- (in the form of Demand Draft/FDR)**	Offline mode through Percentage Rate Tender	**01 year (One Year)**

All tender documents, forms, etc are available online on https://www.iitb.ac.in/resources/vendors-tenders and Central Public Procurement Portal (CPPP) e-tender publishing portal of the Government of India. **The date and time for distribution/download of tender for technical and financial bids are from 15.09.2026 to 28.09.2026.**

Date of submission of technical and financial bids in 2 separate envelopes on 28.09.2026 from 09:15 a.m to 11:15 a.m. in the tender box at 1st floor, Conference room, Estate Office. The date of opening the technical Bid will be 28.09.2026 at **11:30 a.m.The date of opening the financial bid shall be intimated later to the eligible tenderer.**

Bidders who full fill the following requirements shall be eligible to apply.

A) Stage-I (Eligibility)

1) Submit a **Demand Draft / FDR / BG of INR Rs.40,00,000/- (Forty lakhs) (Earnest Money Deposit amount),** drawn in Favour of "The Registrar, IIT Bombay" in a separate envelope along with a technical bid which will be released after preparation of comparative statement except for the lowest bidder who stood the lowest in the tendering processes.

2) Experience of having successfully completed similar works as detailed below during the last 7 years ending previous day of last date of submission of tenders.

i) Three similar completed works each costing not less than the amount equal to **40% of estimated cost,**

OR

ii) Two similar completed works each costing not less than **t**he amount equal to **50% of the estimated cost,**

OR

iii) One similar completed work costing not less than the amount equal to **80% of the estimated cost** put to tender

3) At least one of the above-mentioned projects of costing not less than the amount equal to **40% of estimated cost** should have been carried out for any Central Government Departments / Institutions/Autonomous Bodies/ /Public Sector organizations.

Note:

“Similar work” for this clause means “The Campus maintenance works comprising of civil addition, alteration, renovation, maintenance, retrofitting of buildings, including waterproofing, painting works, toilet renovation works, for various buildings.

4. The contractor should have an average annual financial turnover of **50% of the estimated cost** put to tender during the last 5 **(five) years** ending 31-03-2026. This should be certified by a chartered accountant and should not have incurred any loss in more than two years during the last 5 (five) years ending 31-03-2026.

5. Detail statement for work completed, work in hand including balance commitment of work should be enclosed for the last three years commencing from 1st April and ending with 31st March and the contractor should submit his details as per Annexure 'A' format with support of photo copies of the work order and **work completion certificates,** otherwise the bid capacity will not be calculated and his technical bid will be summarily rejected, and no Financial Bid will be opened.

Evaluation of applications for eligibility.

The applications will be evaluated for conformity to the eligibility criteria as mentioned in NIT under stage - I, Sr. No. 1 to 5 as per the prescribed format along with a copy of relevant documents and certificates.

All those applications found eligible in Stage-I will only be considered for the technical evaluation as under.

B) Stage – II (Technical)

Quality/safety/schedule/performance evaluation of completed / ongoing works shall be conducted by an Evaluation committee constituted by the Director, IIT Bombay. Evaluation will be based on the following parameters:

1. Quality/safety performance based on one similar completed work - 20 marks
2. Quality/safety performance based on one similar ongoing work - 20 marks
3. Schedule performance of the current and past completed works in last 5 work - 20 marks
4. Total manpower working in company and the manpower to be deployed at site along with technical and non-technical Staff, Engineers, etc. - 20 marks
5. Tools, equipment, plants resources, etc. - 20 marks

TOTAL MARKS = 100

The bidder shall submit documents/report detailing each of the above 5 items signed by the authorized signatory and should be part of the bid. Also submit the CVs of the manpower proposed to be deployed.

To qualify, the applicant must secure at least 60% (Sixty percent) marks in each one of the above criteria and 70% (Seventy percent) marks in aggregate.

The Indian Institute of Technology Bombay reserves the right to restrict the list of eligible Tenderers to any number deemed suitable.

Even though an applicant may satisfy the specified criteria, he would be liable to disqualification if he/she has:

• Made misleading or false representations or deliberately suppressed the information in the forms, statements and enclosures required in the application for eligibility.

• Record of poor performance such as, slow progress of work, abandoning of work, not properly completing the contract, or financial failures/ weaknesses etc.

The employer reserves the right to accept or reject any application and to annul the qualification process /Tender process and reject all applications at any time without assigning any reason or incurring any liability to the applicants.

C) List of documents to be submitted along with the bid application within the period of bid submission. Contractors who do not possess the documents listed below from Sr. No. 1 to 19 are advised not to apply, as submission of these documents is mandatory for qualification in the technical bid evaluation process.

1) Completion certificates in case of works carried out for Government department. The certificate should have been issued by an officer not below the rank of Executive Engineer.

2) Financial information in the form 'B' is enclosed.

3) Details of works in progress in form 'C' are enclosed.

4) Format of Performance report enclosed in form ‘D’.

5) Form of Machinery details enclosed in form ‘E’.

6) Form ‘F’ of undertaking and declaration of information in respect of manpower and man-days, list of Technical Staff, Engineers with copies of their Degree/Diploma certificate, required for above-said work must be given in undertaking with official signature and seal/stamp, otherwise tender will be rejected.

7) Bank Solvency certificate **07 crores** issued within one year from any Nationalized / Schedule Bank.

08) P. F. registration certificate.

09) P. F. challans of last 12 months (as per the labourers engaged during a particular month).

10) ESIC registration certificate and copies of ESIC challans of the last 12 months (as per the labourers engaged during a particular month).

OR

Contractors' all risks insurance (CAR policy)

11) PAN card.

12) GST registration certificate.

13) Income Tax Return for the last 03 years.

14) Labour License obtained during last 03 years.

15) Litigation history of the agency is required to be submitted in the form in **Judicial Stamp paper Notarised** along with the application. A tender would not be awarded if any inquiry proceeding / criminal case is found pending against the agency.

16) Power of Attorney, if any.

17) Proof of Constitution: An affidavit in case of Sole Proprietorship, Partnership Deed in case of Partnership Firm, and Article of Association in case of Private / Public Limited Companies.

18) List of works executed during last 7 years (with the date of schedule commencement / actual commencement ,schedule date of completion / actual date of completion, Value of work order, Total revised value of work etc.).

19) Index Sheet

D) Opening of Financial/Price bid.

The bidders who are found technically qualified under the technical evaluation of stage II will be considered for opening the financial bid. **The date of opening of the price bid shall be intimated to the bidders only those who are technically qualified.**

Note:
The selected bidder should submit a **Performance Guarantee for 5% of the quoted cost.** The time allowed for submission of the Performance Guarantee from the date of issue of the letter of acceptance is 14 days.

Separate sub-work orders will be issued to execute the works with a separate time limit as per the items and rates of the umbrella contract. The works shall be executed and completed as per the sub-work order issued and the time limit. Bills shall be submitted accordingly for payment against the sub-work orders from time to time

If there is a delay in the work as mentioned in the sub-work order then the agency has to apply for an extension of the time limit with proper justification and before the expiry of the time limit. Application for EOT after the time limit will be approved with penalty only.

The contractor has to submit an acceptance letter along with each estimate mentioning the time period for each sub work order.

The quantity of each item may vary from zero to indefinite, depending on the requirements of the site, as directed by the Engineer in charge.

The contractor has to submit the challans, and/ or invoice copies of material as per the request of the Engineer in charge as and when required.

The validity of the bid will be valid for 180 days from the date of opening of tender.

If required Contractors/Agencies/Proprietors should submit the Power of Attorney to their representative to deal any matter with any Officers or Staff of IIT Bombay on behalf of them or their agency.

The rates are taken from CPWD SOR 2023 & rate analysis.

Tenderers should be send by email all their queries to drestate@iitb.ac.in

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 interpretation of the documents and his decision shall be final and binding on the tenderer.

IIT Bombay reserves its right to verify all the credentials, quality, quantity, workmanship, other required details etc. of the bidders/contractors with their clients along with ongoing/completed projects based on on-site visit and other sources before finalization and award of the work. In case of requirements/emergency IIT Bombay reserves its right to award any quantity of works to any other contractor/agencies at his own risk and cost.

IIT Bombay reserves its right to reject/accept any or all applications for issue of blank tender forms and/or accept/reject any tender or re-invite the tenders without assigning any reason and without any reference.

sd/-

Dy. Superintending Engineer

<u>TO BE SUBMITTED IN A SEPARATE ENVELOP ALONG WITH FINANCIAL BID</u>

ANNEXURE 'A' (FORMAT)
TECHNICAL BID

File No. : EO/A/UMBRELLA/CENTRAL, LAKESIDE & HILLSIDE/WKS-220/25-26

Name of Work : Term Contract for maintenance and repair works at Central, Lakeside, Hillside area, Hospital, Gulmohar & all Guest houses in IITB Campus.

Name of the Contractor _____

Sr. No.	Name of Client	Name of Works	2022-2023 (In Lakhs)	2023-2024 (In Lakhs)	2024-2025 (In Lakhs)	2025-26 (In Lakhs)	
						Completed	Balance
			-	-	-	-	-
			-	-	-	-	-
		Total Amount (In Lakhs)	-	-	-	-	-

Note : Contractor must submit his details as per Annexure 'A' with declaration stating that **he is possessing all the original copies of work orders and experience certificates, it will be produced as and when required to IIT Bombay.** However, if it is found false at later stage, the contractor will be debarred or blacklisted. Whereas, if information is not submitted as per Annexure 'A' format his bid capacity will not been calculated and his tender will be summarily rejected.

Signature of Contractor
Name & Address in full

EO/A/UMBRELLA/CENTRAL, LAKESIDE & HILLSIDE/WKS-220/25-26

FORM 'B'

FINANCIAL INFORMATION

(To be duly filled, signed and submitted along with echnical bid by the tenderer)

I Financial Analysis –

Details to be furnished duly supported by figures in Balance Sheet / Profit and Loss Account for the last Five years duly certified by the Chartered Accountant, as submitted by the applicant to the Income-Tax Department (Copies to be submitted separately).

Sl No	Details	Year ending 31st March of				
		2020	2021	2022	2023	2024
1	Gross annual turnover in construction work					
2	Profit (+) / Loss (-)					

II. Financial arrangement for carrying out the proposed work.

III. Income Tax PAN details (to be enclosed separately)

IV. Solvency certificate from Bankers of Applicant (to be submitted separately)

SIGNATURE OF APPLICANT (S)

SIGNATURE OF CHARTERED ACCOUNTANT WITH SEAL

FORM ‘ C’
(To be duly filled, signed and submitted along with technical bid by the tenderer)

PROJECTS UNDER EXECUTION OR AWARDED

SR. NO.	Name of work/project & location	Owner or sponsoring organizations	Agreement No	Cost of work	Date of commencement as per contract	Stipulated Date of completion	Up to date percentage progress of work	Slow progress if any and reasons there of	Name and address/ Tel No of Officer to whom reference may be made	Remarks(Indicate whether any show cause notice issued or Arbitration initiated during the progress of work)
1	2	3	4	5	6	7	8	9	10	11

Signature of Applicants

EO/A/UMBRELLA/CENTRAL, LAKESIDE & HILLSIDE/WKS-220/25-26

FORM 'D'

(To be duly filled, signed and submitted along with technical bid by the tenderer)

PERFORMANCE REPORT FOR WORKS REFERRED

1. Name of the work / Project & Location.
2. Scope of work.
3. Agreement No.
4. Estimated Cost
5. Tendered Cost
6. Value of work done
7. Date of Start
8. Date of completion
   i. Stipulated date of completion.
   ii. Actual date of completion.
9. Amount of compensation levied for delayed Completion if any.
10. Performance report based on Quality of Work, Time Management, and Resourcefulness : Excellent/ Very Good / Good / Fair

DATE

EXECUTIVE ENGINEER / PROJECT MANAGER OR EQUIVALENT

(*Signature and seal of the client / owner to whom the work executed)

* **Certified by self will not be accepted**

TO BE SUBMITTED IN A SEPARATE ENVELOP ALONG WITH TECHNICAL BID

ANNEXURE 'E'

MACHINERY DETAILS

File No. : EO/A/UMBRELLA/CENTRAL, LAKESIDE & HILLSIDE/WKS-220/25-26

Name of Work : Term Contract for maintenance and repair works at Central, Lakeside, Hillside area, Hospital, Gulmohar & all Guest houses in IITB Campus.

Name of the Contractor _____

Sr. No.	Particulars	Yes/No
1.	Excavator, Poclain and JCB each	
2.	Milling Machine 01 nos	
3.	Paver Machine 01 nos	
4.	Vibrators (surface & needle)	
5.	Scaffolding, Shuttering, Props minimum 5,000 sq.mt.	
6.	Road Rollers static and Vibrator	
7.	Auto Level	
8.	Dewatering pump 05 nos	
9.	Cutting and Blending Machine	
10.	Building Hoist	

Note : Contractor must submit his details as per Annexure 'E' with declaration stating that **contractor is possessing all the original equipments required for awarded work, with all other required statutory & license formalities, it will be produced as and when required by concern authorities of IIT Bombay.** However, if it is found false at later stage, the contractor will be debarred or blacklisted.

Signature of the Contractor
with official Seal/Stamp of the agency

TO BE SUBMITTED IN A SEPARATE ENVELOP ALONG WITH TECHNICAL BID

WORK UNDERTAKING

FORM 'F'

EO/A/UMBRELLA/CENTRAL, LAKESIDE & HILLSIDE/WKS-220/25-26

To,
Dy. Superintending Engineer
Indian Institute of Technology Bombay,
Powai, Mumbai, Maharashtra – 400 076.

Sub : Term Contract for maintenance and repair works at Central, Lakeside, Hillside area, Hospital, Gulmohar & all Guest houses in IITB Campus.

Dear Sir,

We are hereby quoting all the rates for the attached schedule of short tender of the above mentioned job.

We hereby accept & signed all the General Terms and Conditions and Special Conditions of Contract.

The work will be completed within specified time limit of **One year** as mentioned in the notice inviting for tenders.

I / We agree to keep the tender open for One Hundred and Eighty (180) days from the due date of its opening / One Hundred and Eighty days from the date of opening of financial bid in case tenders are invited on 2 envelope system and not to make any modification in its terms and conditions.

List of information in respect of technical, non-technical and manpower : -

1) Technical and non-technical staff to be engaged in project.

Information to be provided for Engineer's, technical staff and non-technical staff as under:

Sr. No.	Name	Gender	Qualification	Designation	Discipline/ stream	University	Years of experience
1.							
2.							
3.							
4.							
5.							

Project manager/Engineer's with 10years of experience. Penalty for not employing Engineer/supervisors etc. to be double.

2) Information for labours required to be provided by the contractor for the contract period,

	Male	**Female**
Number of Unskilled casual labour to be required per day.		
Number of Skilled casual labour to be required per day.		
Total Mandays required for completion of work.		

Note:- The following information is required to be provided by the contractor. If fails to do so, the tender will be assumed incomplete and hence it may be rejected.

Thanking you,

Yours faithfully,

Signature of the Contractor
With official Seal / Stamp of the firm

Form of Earnest Money Deposit

Bank Guarantee Bond

WHEREAS, contractor.....……..…… (Name of contractor) (hereinafter called "the contractor") has submitted his tender dated .....… (date) for the construction of ..... …….. (name of work) (hereinafter called "the Tender")

KNOW ALL PEOPLE by these presents that we ..... (name of bank) having our registered office at .....……. (hereinafter called "the Bank") are bound unto ..... … (Name and division of Executive Engineer) (hereinafter called "the Engineer-in-Charge") in the sum of Rs. .....……. (Rs. In words …….....…….) for which payment well and truly to be made to the said Engineer-in-Charge the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this ..... day of ..... 20…...

THE CONDITIONS of this obligation are:

(1) If after tender opening the Contractor withdraws, his tender during the period of validity of tender (including extended validity of tender) specified in the Form of Tender;

(2) If the contractor having been notified of the acceptance of his tender by the Engineer-in-Charge:

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to contractor, if required;

OR

(b) fails or refuses to furnish the Performance Guarantee, in accordance with the provisions of tender document and Instructions to contractor,

We undertake to pay to the Engineer-in-Charge either up to the above amount or part thereof upon receipt of his first written demand, without the Engineer-in-Charge having to substantiates his demand, provided that in his demand the Engineer-in-Charge will note that the amount claimed by his is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions. This Guarantee will remain in force up to and including the date* .....…….. after the deadline for submission of tender as such deadline is stated in the Instructions to contractor or as it may be extended by the Engineer-in- Charge, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE .....…. SIGNATURE OF THE BANK

WITNESS .....…. SEAL

(SIGNATURE, NAME AND ADDRESS)

*Date to be worked out on the basis of validity period of 6 months from last date of receipt of tender

DECLARATION

(a) We are not involved in any litigation that may have an impact of affecting or compromising the works as required under this tender.

(b) We are not black-listed by any Central/State Government/Pubic Sector Undertaking in India.

(c) We hereby confirm and declare that M/s [Company Name] does not have any Litigation / Arbitration History with any Government department, Public Sector Undertaking (PSU), or Private Sector agency for works executed during the **last 5 years.**

(d) I/we undertake that the documents submitted are genuine/authentic and nothing material has been concealed therefrom and that I/we are not debarred by any Government organization and are competent to have the contract. I/we understand that the contract is liable to be cancelled, if found to be having obtained, through fraudulent means/concealment of information.

(Signature of Authorized Signatory)

Name of the bidder: _____

Complete Address: _____

Address (Works), if any: Contact Nos. _____

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
ESTATE OFFICE

Name of work :- Term Contract for maintenance and repair works at Central, Lakeside, Hillside area, Hospital, Gulmohar & all Guest houses in IITB Campus.

Sr. No.	Description of work	Qty.	Rate	Unit	Amount
1) Repair work					
1.01	Carefully removing internal or external plaster in patches or any length and at any height without damaging structure or brickwork in the vicinity including scaffolding/ stepladder by using electric cutting tools including cutting a groove first to demarcate exact area of damage taken place and removing with chisel & hammer including stacking the debrises with in 50 meter, cleaning the site etc. complete. including using stepladder / working platform for internal plaster wherever required covering the furniture, floor, windows and partitions with plastic sheets Note : a) No extra payment shall be made for extra thickness removed. b) The area in vertical plane area shall be measured. (Note : For external work scaffolding will be paid in respective item)	14000.00	51.74	Sqm	7,24,360.00
1.02	Removing the old cement concrete or any type of tiles from flooring manually at any floor including bedding levelling the surface, cleaning the site including sorting our serviceable tiles and lowering to ground level the debrises and stacking it upto a distance of 50 meters from building (as directed by Engineer Incharge)	4000.00	69.49	Sqm	2,77,960.00
1.03	Removing the any type of tiles manually from wall/ dado without damaging brick wall or any adjacent structure surface including removing plaster, levelling the vertical surface, cleaning the site including downloading the debrises & stacking the debrises upto 50 meters from building (as directed by Engineer Incharge)	4000.00	70.00	sqm	2,80,000.00
1.04	Chipping of unsound/weak external or internal concrete of any thickness material from slabs, beams, columns etc. with manual Chisel including tapering of all edges, making square shoulders of cavities including cleaning the exposed concrete surface and reinforcement with wire brushes etc. and disposal of debris for all lead and lifts, including working platform / stepladder / Scaffolding all complete as per direction of Engineer-In-Charge (Note : For external work scaffolding will be paid in respective item)	4500.00	100.00	Sqm	4,50,000.00
1.05	Cleaning of reinforcement from rust from the reinforcing bars to give it a total rust free steel surface by using alkaline chemical rust remover of approved make with paint brush and removing loose particles after 24 hours of its application with wire brush and thoroughly washing with water and allowing it to dry, including working platform / stepladder / Scaffolding all complete as per direction of Engineer-In-Charge. Note- The actual consumption of chemical shall be measured for payment on liter basis . Challans of authorized dealer will be verified (Note : For external work scaffolding will be paid in respective item)	1000.00	864.00	per lit	8,64,000.00

1.06	Providing and applying an effective bond coat of Epoxy bonding agent manufactured by M/s. Krishna conchem, Dr. Fixit , Roff , Chembond or M.C. Bouchmey and hardner in the proportion of as per manufacture instruction (Base hardner) by using brush in multiples of coat as required to accommodate the whole thickness of PMM wherever required including stepladder/ working platform wherever reqiired on the surface of old concrete/required concrete. Note- The actual consumption of Epoxy bonding coat shall be measured for payment on weight basis . Challans of authorized dealer will be verified (Note : For external work scaffolding wil be paid in respective item)	200.00	915.00	Kg	1,83,000.00
1.07	Providing and Placing in position Readymix Polymer mortar manufactured by M/s.Krishna Conchem, Dr.Fixit, Roff or M.C. Bouchmey, Chembond by adding water in the proportion of 1:0.14(Polymer morter:water) at any floor over the prepared RCC surfaces in layers as directed (thickness of each layer shall not exceed 10 to 15mm) including mixing the polymer mortar with water using forced action mixer including stepladder/ working platform wherever required mild curing will be done with water for 3 days etc complete.(payment will be paid for the actual quantity of polymer mortar PX used on weight basis.Challans of authorized dealer will be verified) (Note : For external work scaffolding wil be paid in respective item)	320000.00	47.00	Kg	1,50,40,000.00
1.08	Providing and applying an effective bond coat of Polymer (SBR) approved by IITB and cement in the proportion of 1:1 by using brush in multiples coats as required to accommodate the whole thickness of polymer modified mortar wherever required including stepladder/ working platform wherever required on the surface of old concrete / repaired concrete Polymer (SBR) of approved manufacturer should have the following properties: · Suspended solid particles should not be less than 40% · Specific gravity should not be more than 1.01 · PH should not be less than 8.5 Note: The actual consumption of polymer shall be measured for payment on weight basis. Challans of authorized dealer will be verified. (Note : For external work scaffolding wil be paid in respective item)	6000.00	351.00	Kg	21,06,000.00
1.09	Providing and Placing in position Readymix Plaster manufactured by M/s. A. V. Conchem, Ultra-Tech Cement, Ready Plast, up to 20mm thick in one coat and adding water in the proportion of 1:0.17(Ready Mix Plaster : water) at any floor over the prepared Brick wall, Solid ,Hollow & AAC block work and Concrete RCC surfaces, as directed mixing the Readymix Plaster with water using forced action mixer including step ladder wherever required, mild curing will be done with water for 3-5 days etc complete. (Invoice of authorized dealer will be verified)	3000.00	692.00	Sqm	20,76,000.00
1.10	Dismantling R.C.C. work manually/ mechanically including breaking concrete by chiselling, wedging etc., cutting the reinforcement, lowering down debrises, stacking the serviceable materials and stacking the debris upto a distance of 50 metres or spreading as directed.	9.00	3361.89	Cum	30,257.01
1.11	Pulling down burnt brickmasonry (in cement mortar) with plaster including sorting out serviceable bricks lowering down at Ground level and stacking the same and debris separately up to a distance of 50 metres beyond building etc. complete.	40.00	1950.35	Cum	78,014.00

1.12	Providing sand face plaster externally to concrete stone or brick surface at any height using approved screened sand including preparing the base, watering and applying base coat of 15 to 20mm thick in cement mortar 1:4 using water proofing compound at the rate of 1 kilogram per cement bag and curing the same for not less than two days and making the surface of base coat rough to receive the sand faced treatment 8 to 10mm thick in cement mortar 1:4 and finishing the surface by taking out grains and curing for 14 days etc. Complete. (Note : For external work scaffolding will be paid in respective item)	4000.00	623.00	Sqm	24,92,000.00
1.13	Providing second class burnt brick masonry with conventional / I.S. Type bricks in cement mortar 1:6 in superstructure at any floor and any height including striking joints, racking out joints, watering wherever required etc. complete . (Note : For external work scaffolding will be paid in respective item)	50.00	8620.40	Cum	4,31,020.00
1.14	Providing uncoursed rubble masonry of trap stones in cement morter 1:6 in foundation and plinth of inner wall including bailing out water by pumping with suitable pumps, striking joints on unexposed faces and watering complete, including providing header stones @ 1 header per sqm. to the full thickness of wall, providing weep holes, with 100mm dia A. C. pipes if required in walls etc. Complete	150.00	6921.40	Cum	10,38,210.00
1.15	Providing uncoursed rubble masonry (using IITB stones) of trap stones in cement mortar 1:6 (Cement:sand/grit) including racking out joints, striking out joints, watering and pointing with cement mortar 1:3 on outside exposed faces, including providing header stones @ 1 header per sqm. to the full thickness of wall, breaking and making/cutting stone/boulders in required size, lead and lift from any where in the campus etc. complete.	150.00	5187.00	Cum	7,78,050.00
1.16	Pulling down stone masonry in cement mortar with plaster/pointing without dust nuisance including sorting out stone chips and debris separately and stacking upto a distance of 50 metres or spreading the debris etc. Complete.	90.00	245.00	Cum	22,050.00
1.17	Providing and fixing 18 mm thick gang saw cut, mirror polished granite , premoulded and prepolished, machine cut for kitchen platforms, vanity counters, doors and windows cladding , sills, shelf, facias and similar locations at any floor of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 fine sand) or in neat cement as required, joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. a) area of slab upto 0.5 m2	700.00	5124.84	Sqm	35,87,388.00
1.18	Providing and fixing 18 mm thick gang saw cut, mirror polished granite , premoulded and prepolished, machine cut for kitchen platforms, vanity counters, doors and windows cladding , sills, shelf, facias and similar locations at any floor of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 fine sand) or in neat cement as required, joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. b) area of slab over 0.5 m2	700.00	4862.42	Sqm	34,03,694.00

1.19	Providing and laying nonskid ceramic tiles at any floor of Johnson &Johnson /Nitco/ Kajaria/ Orient Bell/ Somani for flooring approved by IITB required size **upto 300mm x 300mm** quality, brand and shade as available in market on cement mortar 1:4 bedding using white cement pigments finished to levels slope or plumb as required including cutting of tiles. Curing, acid washing etc. all complete.	200.00	1038.08	sqm	2,07,616.00
1.20	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	1000.00	1038.08	Sqm	10,38,080.00
1.21	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	700.00	1200.34	Sqm	8,40,238.00
1.22	Providing and fixing Ist quality ceramic glazed wall tiles not less than 300 mm x 200 mm conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, including 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	2000.00	1200.34	sqm	24,00,680.00
1.23	Providing and laying in position ready-mixed or machine batched and machine mixed design mix M-25 (1:1:2) grade cement concrete (with minimum cement content 330Kg/Cum) for all work above plinth level upto any floor level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	40.00	9334.62	Cum	3,73,384.80
1.24	Providing and laying in position ready-mixed or machine batched and machine mixed design mix M-25 (1:1:2) grade cement concrete (with minimum cement content 330Kg/Cum) for all work up to plinth level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	40.00	8997.94	Cum	3,59,917.60
1.25	Providing and laying in situ plain cement concrete **M-20** of trap metal for foundation and bedding including bailing out water manually, wherever reqired , formwork, compacting and curing.as directed.	60.00	7896.10	Cum	4,73,766.00

1.26	Disposing debris, loose stones, boulders, concrete pieces broken and dry leaves etc. collected and stacked as directed including loading in trucks, transporting out of IIT Campus including obtaining all approval of BMC competants authorities for disposing off on to their approved location. The debris are to be removed from site within 48 hours from stacking (30% voids will be deducted from actul stack measurement/ truck measurement for debrises, loose stones, boulders etc.).	4000.00	783.00	Cum	31,32,000.00
1.27	Removing excavated earth or debris including loading in trucks and conveying to approved dumping point in IITB campus unloading spreading etc. complete. The debris are to be removed from site within 24 hours from stacking (30% voids will be deducted from actul stack measurement/ truck measurement for debrises, loose stones, boulders etc.).	4000.00	247.41	Cum	9,89,640.00
1.28	Dismantling plain cement concrete work at any height & any floor including breaking concrete by chiselling, wedging etc., lowering down debrises, stacking the serviceable materials and stacking the debris upto a distance of 50 metres from building or spreading as directed.	100.00	2304.45	Cum	2,30,445.00
1.29	Providing second class burnt brick masonry at any height & any fllor with Conventional / I.S. Type bricks in cement mortar 1:4 in half brick thick wall including mild steel longitudinal reinforcement of 2 bars of 6 mm diameter/2 hoop iron strips 25 mm X 1.6 mm at every third course properly bent and bonded at ends, scaffolding , racking out joints and watering etc. Complete.	100.00	1063.88	Sqm	1,06,388.00
1.30	Providing and fixing Kadappa stone slab for kitchen platform/clading/tank platform of 25 to 30 mm thick in cement mortar 1:4 including providing and fixing border patti on front edge, filling joints, curing, cleaning etc. Complete.	100.00	865.00	sqm	86,500.00
1.31	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	2350.00	1470.62	Sq.m	34,55,957.00
1.32	P/L vitrified tiles for flooring of size not less than 600x600mm (thickness to be specified by the manufacturer) of approved shade and pattern ,with required finish (mirror / Mat) and decorative type of approved make as available in market **Fixing with cement based high polymer modified quick set tile adhesive** like fevimate(water based) conforming to IS: 15477, using 5kg adhesive per sqm of tile area, in average 5mm thickness. 'white cement pigments finished to levels slope or plumb as required including cutting of tiles. Curing, acid washing etc. all complete as directed. (Floor tiles basic cost up to Rs. 70 per sft.)	800.00	1378.93	Sq.m	11,03,144.00
1.33	Providing and laying vitrified tiles for skirting / dado of approved shade and pattern with required finish and quality laid on a plaster surface with neat cement, filling joints, curing and clearing etc. complete as directed	400.00	1536.51	Sq.m	6,14,604.00
1.34	Excavation for foundation in earth, soil of all types, sand, gravel and soft mueum including removing the excavated materials upto a distance of 50 meters beyond the building area and lift upto 1.50 meters, stacking and spreading as directed including dewatering unless provided elsewhere, preparing the bed for the foundation and necessary back filling, ramming, watering complete excluding shoring and strutting.	200.00	168.04	Cum	33,608.00

1.35	Excavation for foundation in earth, soil of all types, sand, gravel and soft mueum including removing the excavated materials upto a distance of 50 meters beyond the building area and lift upto 3 meters, stacking and spreading as directed including manual dewatering unless provided elsewhere, preparing the bed for the foundation and necessary back filling, ramming, watering complete including shoring and strutting.	135.00	320.00	cum	43,200.00
1.36	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge.	100.00	168.03	cum	16,803.00
1.37	Providing dry trap/ rubble stone soling 150mm to 200 cm thick including hand packing and compacting etc complete.	90.00	1887.00	cum	1,69,830.00
1.38	Laying dry trap/ rubble stone soling of 230mm size thickness including hand packing and compacting using IITB stone including breaking and making/cutting stone/boulders in required size, lead and lift from any where in the campus etc. Complete.	90.00	855.00	Cum	76,950.00
1.39	Mirror polishing on marble work/stone work wher ever required to give high gloss finish complete.	450.00	479.68	Sq.m	2,15,856.00
1.40	Hand polishing to dado, skirting including cleaning, washing etc. complete as directed.	200.00	206.00	Sq.m	41,200.00
1.41	Drilling straight and inclined holes upto 300mm depth and upto 20mm dia in concrete / masonry using electrically operated drilling machine and fixing nipple for grouting, conducting water test all complete etc. as directed	3000.00	35.00	Nos	1,05,000.00
1.42	Grouting existing RCC / brickwork structure as per following operations including sealing leak paths with lead wool, removing nipple, plugging the hole with neat cement paste by ram packing, cleaning etc. complete. 1) Add Sunplex powder 1.00 kg in one bag of cement of 50 kg with adequate water. 2) Using mechanical means of pressure grouting with the above mix. The pressure shall be 5-10 psi. 3) The grouting to be done into the cracks of ceiling , walls , columns, & beam if necessary. 4) After through grouting sealing the holes with cement slurry. (Note : For external work scaffolding will be paid in respective item)	250.00	34.00	Kg	8,500.00
1.43	Providing and sealing hairline / minor cracks in plaster by Paste formed out of polymer (S.B.R.) and cement in the proportion of (1:1 by volume) & adding extra cement for workable hand filling mix, cleaning and wetting the surface, curing and including cutting, demarcating grooves at any height with electrically operated cutter machine between sound and unsound plaster, cracks on external wall, separation cracks. (Note : For external work scaffolding will be paid in respective item)	10000.00	98.00	Rmt	9,80,000.00
1.44	Silicone sealants around window frames / window frame joints and drill holes for water outlet when the rain water on the glass fall into the channel and overflows (wherever required) including double scaffolding etc. Complete.	2000.00	71.00	Rmt	1,42,000.00

1.45	Providing and filling separation crack of 75mm width and 25mm deep with polymer modified cementatious mortar. a) Demarcating groove, removing plaster / concrete carefully, washing with potable water. b) Filling polymer modified cementatious mortar in layers of 20mm thick (applying bond coat at every layer) upto profile of concrete in vicinity (composition of mortar: cement 1Kg.: polymer (SBR) of approved manufacturer 15% by wt. of cement : 3Kg silica sand (grading IS 383, zone II, silt content = 0%) over a polymer + cement bond coat including applying making tape on both side of groove, cleaning, finishing to match the plaster in vicinity, disposing of debrises anywhere in IITB campus, cleaning as directed etc. complete. c) Proportion d) Bond coat e) SBR polymer + cement in the ratio 1:1 by volume f) Polymer modified cementitious mortar g) SBR polymer 150ml. h) Cement 1 Kg. i) Silica sand 3.0 kg. (Note: - Demarcating groove, breaking Plaster / concrete shall be paid under respective items). (Note : For external work scaffolding will be paid in respective item)	550.00	177.00	Rmt	97,350.00
1.46	Grouting in any RCC structure with low viscocity Monomor manufactured by M/s. CICO, SIKKA, MC Bouchmey, Sunanda Chemicals, Roffee etc. or any other approved brand epoxy based product of similar properties, as per manufacture's specification by providing suitable arrangement for grouting at pressure 2 to 3 kg / sqm. for all lift and leads. The grouting is to be done after cement grouting is completed etc. as directed.	125.00	990.00	Kg	1,23,750.00
1.47	Providing and erecting steel tubular H Frame scaffolding with bracing to all height all around the building as directed by engineer in charge before commencement of work for multipurpose use including working platform wherever equired, stiffened for all types of work and removing the same after completion of all external work requiring double scaffolding.(payments will be made once irrespective of duration / till completion of all external activity)	35000.00	146.00	Sqm	51,10,000.00
1.48	Providing and laying white/colour veined marble slabs 18mm thick in one piece stone for claddings,platform,treads and risers of steps and stair cases with rounded nosing and grooves for the treads laid on bed/ plaster of cement mortar 1:4 including cement float, filling joints with neat cement slurry, curing , polishing and cleaning comlete.	100.00	2221.66	Sq.m	2,22,166.00
1.49	Providing temporary steel supports such as tubular steel props 50mm dia, as required for supporting system till the repaired work of the beam, column, slab, chajja, etc. work completed in all respects as directed and when required in any floor of any height inside and outside of the building and removing the supporting system as directed without damaging the structure etc. all complete as directed by Engineer In-charge.	600.00	92.00	Nos	55,200.00
1.50	Dismantling existing kitchen platform top and support carefully and lowering down the debrise at ground level and stacking up to 50 meaters beyond the building area for tacking out the same all complete as directed. (size approximately 3.5mt X 0.75 mt)	11.00	2104.00	Job	23,144.00
1.51	Providing & levelling the undulation/ sagging of floor with cement mortar 1:4 upto 30 thk to make proper base for floor tileing including levelling, curing, and cleaning etc. complete at any floor	5000.00	161.00	Sqm	8,05,000.00

1.52	Providing and laying super fluid micro concrete of approved manufacturer at any floor after reinforcement treatment coat including providing marine plywood formwork in line and level, sealing the joints/ gaps with POP & cleaning ,curing etc. complete. The compressive strength of super fluid micro concrete should not be less than 20N/mm2. (reinforcement treatment coat shall be paid under respective items). (Consumption of weight of super fluid micro concrete powder shall be measured for payment ; Tax Inovice of authorized dealer will be verified) including stepladder etc. Complete. (Note : For external work scaffolding will be paid in respective item)	70000.00	69.00	kg	48,30,000.00
1.53	Providing and laying super fluid micro concrete of approved manufacturer (Dr. Fixit, Ultratech, Chembond etc.,) at any floor after reinforcement treatment coat including mixing with 10mm to 5mm size quartz aggregate in ratio of 1 part to 0.75 part of quartz aggregate by weight providing marine plywood formwork in line and level,sealing the joints/ gaps with POP & cleaning ,curing etc .complete. The compressive strength of super fluid micro concrete should not be less than 20N/mm2. (reinforcement treatment coat shall be paid under respective items). (Consumption of weight of super fluid micro concrete powder shall be measured for payment ; Tax Inovice of authorized dealer will be verified) etc. Complete. (Note : For external work scaffolding will be paid in respective item)	10000.00	88.00	kg	8,80,000.00
1.54	Providing internal cement plaster 12mm thick in a single coat in Cement mortar 1:4 without neeru finish to concrete or brick surface in all positions at any floor and at any height including stepladder/platform and curing complete.	200.00	328.54	Sq.m	65,708.00
1.55	Providing internal cement plaster 20mm thick in Single coat in cement mortar 1:4 without neeru finish to concrete or brick surface in all positions at any floor and at any height including stepladder/platform curing complete.	4000.00	446.22	Sqm	17,84,880.00
1.56	Providing and fixing in position tor steel bar having grade Fe-500 or more for reinforcement of various diameters for R.C.C. footings, foundations, slabs, beams, columns, canopies, staircases, chajjas, lintels, pardies, coping, fins, dowel bars with sleeve, tie bar, any other required work etc. as per detailed designs, drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed as directed.	4000.00	102.10	Kg	4,08,400.00
1.57	Providing and fixing hand rail of using 'C' class G.I pipe approved size by welding etc. ladder, fencing pole, gate, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer and two cost of synthetic enamel paint.	2000.00	192.22	kg	3,84,440.00
1.58	Providing and fixing hand rail of using M.S. tubes approved size by welding etc. ladder, fencing pole, gate, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer and two cost of synthetic enamel paint.	2000.00	186.31	kg	3,72,620.00
1.59	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-incharge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	1100.00	731.21	kg	8,04,331.00

1.60	Providing erecting and dismantling (after completion of all related work) double bamboo scaffold with verticals @ 1.2 to 1.8m inner as well outer faces and horizontal and braces. The scaffolding should have strutted diagonally to prevent from buckling under the weight of men and materials, at comfort levels for the men to work which is 6" to 9"' away from the wall (Mode of measurement for scaffolding will be elevational area) Note : Prior approval is requred for execution of this item before commencement of work from authority.	300.00	79.00	Sqm	23,700.00
1.61	Providing erecting and dismantling (after completion of work) single bamboo scaffold with verticals @ 1.2 to 1.8m from outer face of bldg as directed by Engineer In Charge(for payment the scaffold height will be measured elevational area. Note : Prior approval is requred for execution of this item before commencement of work from authority.	300.00	41.00	Sqm	12,300.00
1.62	Pointing on stone work with cement morter 1:3 with raised & cut pointing as directed including working platform / stepledder all complete.	300.00	663.67	Sqm	1,99,101.00
1.63	Providing & Applying external waterproof plaster using factory made ready mix polymer cement mortar plaster. 1) Providing and rendering the prepared surfaces with new sand faced cement plaster of minimum 20mm thick in two coats by using factory made ready mix polymer modified cement plaster waterproofing plaster of approved make (M/s Wall plast, M/s. Fare Matt) or equivalent. 2) The base coat of minimum 12mm thick using above ready mixed polymer modified mortar plaster to proper plumb level & line including making the plaster surface rough (all as per the manufacturer's specification) to receive the top finish coat 3)Applying top/finish coat plaster of minimum 8mm thickness with similar ready mix polymer cement mortar plaster finishing in perfect plumb. Line & level so as to obtain fine sand grain finish by using branded approved variety sponge or using machnised devise including adding additional required quantity of cement for managing richer mix preferable ordinary portland cement 43 grade variety of approved brand at no extra cost. Doing regular curing for minimum 7 days.	300.00	669.00	Sqm	2,00,700.00
1.64	Providing and laying vitrified floor tiles of size not less than 800 mm X 800 mm size (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	200.00	1784.96	Sqm	3,56,992.00
1.65	Providing and laying vitrified floor tiles of size not less than 1000 mm X 1000 mm size (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	200.00	1978.23	sqm	3,95,646.00

1.66	Providing and erecting arrester/safety net in double layer meshhaving first layer 4mm PP rope in 100mmx100mm and second layer with blue fish net with 18mm mesh supported by border rope and tie cord 12mm PP at terrace floor level (6th floor level) to prevent the debris from falling on ground during progress of work and keeping the same during the entire period.Removing after completed of work as directed by engineer incharge	2500.00	78.00	Sq.m	1,95,000.00
1.67	Providing and fixing HDPE green Braided, Knotted construciton safety net of 6mm thickness with mesh size of 3 – 4 inch square to ceiling in various class rooms, With inner lay mesh of Delux Mono Knitted net, Border / Tie cord rope shall be of 12 mm dia Polypropflene (PP) (rope of M/s. Kwality Nets Mfg Company or approved IITB approved make of specified type) The safety net to be fixed as per the size required at site. The cost includes all supplying & fixing the materials with labourers , fixing hooks, scaffolding & ropes required for tying / fixing etc all complete as directed by Engineer-In-charge.	300.00	361.00	m2	1,08,300.00
1.68	Providing and laying autoclaved aerated cement blocks (siporex block) approved brand masonry with 100 mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.including cleaning site etc. Complete.	20.00	9651.81	cum	1,93,036.20
1.69	Providing and fixing FRP grills of approved brand, design and required size, manufactured by Ravalson FRP Industries or equlent brand for multi storied building upto 14th story hight, work includes removing the existing damaged grills lowering down and stacking aside at ground floor, fixing the new grills in position (duct area) with all tools & required fixtures, bonding addsive etc. (Scaffolding will be paid in respactive item if required)	1250.00	2238.00	Sqm	27,97,500.00
1.70	Providing and fixing Jute kantan (Tarat) screen to the scaffolding of external wall at any floor any height removing the same after the work is over etc. complete	2500.00	13.00	Sqm	32,500.00
1.71	Providing and applying acrylic synthetic plaster of IITB approved make manufacturer over existing cement plaster including removing existing paint/synthetic plaster to receive the acrylic synthetic plaster as per manufacturer specification at any floor including all the necessary tools & plants etc, complete all as directed by Engineer in charge.	900.00	466.00	SQM	4,19,400.00
1.72	Providing and laying in position Ready mix or machine batched M-30 grade cement concrete (with minimum cement content 350Kg/Cum) for all work above plinth level upto any floor level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	5.00	9477.52	cum	47,387.60

1.73	Providing and fixing double scaffolding system (cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube challies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after. The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-in-charge. The elevational area of the scaffolding shall be measured for payment purpose. The payment will be made once irrespective of duration of scaffolding. Note: - This item to be used for maintenance work judicially, necessary deduction for scaffolding in the existing item to be done.	1000.00	320.21	sqm	3,20,210.00
				Total Amount of Rs. (1)	**7,23,76,072.21**

2) Extenal/Internal Painting work					
2.01	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete.	26000.00	23.81	Sq.m	6,19,060.00
2.02	Providing and applying white cement based Birla make wall care putty with uniform thickness upto 1.5mm over the existing internal cement plaster in proper line / level including preparing the wall surface for the application of wall care putty etc. including scaffolding all complete as directed.	4500.00	147.73	Sqm	6,64,785.00
2.03	Providing and applying one coat of seal cement primer over the prepared surface of walls / ceiling, including stepladder / scaffolding and cleaning the surface as directed.	26000.00	14.00	Sq.m	3,64,000.00
2.04	Distempering with 1st quality acrylic distemper (ready mixed) of one or more coats having VOC (Volatile Organic Compound) content less than 50 gram/ litre, of approved brand and manufacturer including applying additional coats wherever required to achieve even shade and colour	6500.00	59.35	Sqm	3,85,775.00
2.05	Wall painting of two coats with acrylic emulsion paint , having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.	19500.00	130.12	Sq.m	25,37,340.00
2.06	Wall painting of one coats with acrylic emulsion paint , having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.	3500.00	87.10	Sq.m	3,04,850.00
2.07	Providing and applying two coats of synthetic enamel paint of IITB approved brand (Asian, Berger, ICI, Jenson & Nicholson, Goodlass Nerolac) & desired shade to old new wood work, steel grill work with the use of step ladder/ scaffolding if necessary, cleaning and preparing surface by solvent, degreasing and derusting by manul scrapping, fiiling holes with lambi / palti leavelling the surface cleaning etc. Complete.	3500.00	97.32	Sqm	3,40,620.00

2.08	Providing and applying zink priming coat over steel and other metal surfaces including preparing of the surface by thoroughly cleaning oil, grease, dirt and other foreign matter with wire brushing, fine fire steel wool,and sand paper, scaffolding/stepladder etc. Complete.	1200.00	63.81	Sqm	76,572.00
2.09	Applying priming coats with primer of approved brand and manufacture, having low VOC Volatile Organic Compound) content, With ready mixed pink or grey primer on wood work (hard and soft wood) having VOC content less than 50 grams/ litre	2100.00	66.60	Sqm	1,39,860.00
2.10	Providing and applying two coat of synthetic enamel paint of IITB approved brand (Asian, Berger, ICI, Jenson & Nicholson, Goodlass Nerolac) and shade to ceiling fans with the use of step ladder including scrapping cleaning etc. Complete.	200.00	90.00	Nos	18,000.00
2.11	Providing and applying one coat of acrylic primer and two coats of pure Acrylic exterior paint of IITB approved manufacturer as per manufacturer's specification on old/new plastered surface/ stone work surface at any height & any floor , including cleaning the surface thoroughly with coir brush, watering the surface etc.,levelling the undulation if any with external wall care putty, covering with plasic sheets all complete as directed Engineer incharge.	55000.00	152.04	Sqm	83,62,200.00
2.12	Providing and applying exterior coating for walls of multistoried building including mechanical cleaning of the external surface and treating surface in sound, clean and free from dirt, oil and other loose material and may be done with vacuum cleaning if required. All surface cracks upto 5 mm width will be filled up with Dr. Fixit Crack X paste or similar material. The external surface will be primed with Dr. Fixit Primeseal (or equivalent BASF/ FOSROC/ STP) diluted with potable water in the ratio of 2:1 by volume prior to application of Dr. Fixit Raincoat waterproof coat. Allow it to dry for at least 2 to 3 hours and then apply Dr. Fixit Raincoat waterproof coat or equivalent (BASF/ FOSROC/ STP) having DFT of 100-120 micron DFT.Apply second coat of Dr. Fixit raincoat Select Top Coat with interval of 6-8 hours to achive DFT of 60-70 microns. Apply with roller or spray allow it to air cure for 7 days. Do not dilute Dr. Fixit Raincoat waterproof Select top coat by any means. Work includes cleaning the surface thoroughly, watering the surface etc. complete including covering the floor, window glass with plastic sheet, removing & refixing existing grill while work in progress and as directed by this office. and work shall be guaranteed for 3 years by the contractor on requisite stamp paper. The maerial having following technical properties : Elongation of >100% as per ASTMD 412; Tensile strength 2.50Mpa per ASTM D 412, passes water resistance as per SS500 standard, complies to anti carbonation test as per EN 1062 part 6. (Double steel scaffolding will be paid in respective item)	2500.00	351.00	sqm	8,77,500.00
2.13	Painting lettering of approved type on the name boards on any surface in English 12cm to 15cm (inclusive) height in synthetic enamel paint of approved quality and shade including surface painting as directed complete.	3000.00	62.00	Per letter	1,86,000.00

2.14	Providing and applying one coat of Berger Protectomastic self priming high build coating, solvent borne zinc rich primer, having thickness as per manufacturer specification including preparing the surface by thoroughly removing grease, oil and other containments preferebly by using Bison degreasing solvent, using mechanical tools along with manual chipping and wire brushing to remove loose rust, thoroughly dust down all surfaces, followed by one coat of Epilux – 4 High Build Epoxy finish having thickness as per manufacturer specification followed by two coats of acrylic polyurethane enamel paint of Bergerthane finish of Berger having thickness as per manufacturer specification including suitable,tools, taking all safety measures, covering the floor area with plastic sheet, removing stains etc complete. NOTE : Mode of measurement will exposed surface area of painted work.	210.00	665.00	Sqm	1,39,650.00
2.15	Providing and erecting suspension construction cradle (gandola) platform length upto 7.5m at any height as per site requirement for maintenance and repair works by well trained operators / workers with proper safety precautions while erection, third party inspection of authorized agency and submission of saftey certificate wherever required as directed, and removing the same after complition of work etc. All complete as directed by Engineer in charge. (Idle chargers will not be counted for measurement)	360.00	4181.00	day	15,05,160.00
2.16	Painting road surface marking with adequate nos of coats to give uniform finish with ready mixed road marking paint conforming to IS : 164, on bituminous surface in white/ yellow shade, including cleaning the surface of all dirt, scales, oil, grease and foreign material etc complete. (Two or more coats)	150.00	240.76	Sqm	36,114.00
				Total Amount of Rs. (2)	**1,65,57,486.00**

3) Waterproofing work					
3.01	Removing the existing loose damaged brick bat coba waterproofing treatment by manually / mechanical means from the top of the terrace /w.c/bath at any floor or sunk surface upto any thickness without making any damages to the roof slab with the use od sharp chisels,levelling and cleaning the roof surface for providing new specialised waterproofing treatment without causing dust nuisance stacking the debris upto 50m distance from building as directed.	300.00	1183.00	Cum	3,54,900.00
3.02	Lowering down the debris of the existing waterproofing treatment from the terrace by head load without causing dust nuisance and damages to structure, stacking the same upto 50m beyond the building area as and where directed including cleaning the site complete.	300.00	377.00	cum	1,13,100.00
3.03	Providing waterproof plaster in w. c. bath, 20mm thick for dado at any floor in cement mortar 1:3 with neat finishing, floating using waterproofing compound at the rate of 1 kg per bag of cement of approved make and manufacturer and curing etc. complete.	150.00	584.15	Sqm	87,622.50
3.04	Providing waterproofing in W.C. and bath including brickbat coba in all position at any floor including all lead ,lifts wherever required including providing and laying 12mm bedding in cement mortar 1:3 on concrete slab & sides of sunken portion with waterproofing compound @ 1kg/per bag of cement laying brick bat coba of required thickness in cm 1:5 with waterproofing compound 1 kg/bag of cement grouting and finishing the top layer with 20mm thick bedding in cm mortar 1:3 with waterproofing compound 1 kg/per bag of cemenr and testing the treated portion for 48 hours by pond test and covering ten years guarantee on requisite stamp paper etc. Complete.	175.00	6169.00	Cum	10,79,575.00

3.05	Providing and laying waterproofing treatment of 120mm av. thickness consisting of 12mm thick layer in cement mortar 1:3 with water proofing compound 2% by weight of cement as base, constructing and laying brick bat coba in cement mortar 1:5 with waterproofing compound at the rate of 2% by weight of cement and having average thickness of 80mm and finishing with 20mm thick cement plaster layer in cement mortar 1:3 with water proofing compound 2% by weight of cement including laying glass fibre cloth of approved quality in top layer including all lead, lifts and laid to proper slope to drain off water entirely including watta at the junction of parapet and work upto a height of 300mm or as directed and including finishing the top layer of water proofing treatment with false marking of 30cm x 30cm or as directed and covering the whole treatment with ten years' guarantee, on requisite stamp paper etc. complete.	800.00	1594.77	Sq.m	12,75,816.00
3.06	Providing waterproof bedding 25 mm thick for flooring of bath and W.C. at any floor, In cement mortar 1:3 using 1 kg of waterproofing compound of approved make and manufacturer per bag of cement including leveling curing etc. complete.	60.00	2050.00	Sqm	1,23,000.00
3.07	Providing and laying water proofing cement concrete flooring to terrace to average 50mm thick with 1:1.5:3 cement concrete laid to proper level and slope using silt free clear river sand including compaction, filling joints, adding recommended waterproofing admixtures @ 2% by weight of cement, marking lines to give appearances of tiles of 30cm x 30cm or other approved size laid diagonally / square, finishing with extra cement in any colour as directed, testing the roof by ponding with water for 14 days, including all lead and lift wherever required etc. complete.	300.00	618.00	Sq.m	1,85,400.00
3.08	Providing and applying three coats of Dr. Fixit Roof seal coating including preparing surface by pressure washing the surface to remove all algae, mould, dirt, dust, chalking and waste products. All visible hairline cracks more than 0.50mm and not giving hollow sound on the IPS/screed or at the junctions of flat roof & vertical parapet wall, pipe joints, should be cut and widen V shape with mechanical cutter in the size (6mm W x 6mm D) and fill with Dr. Fixit PU Sealant covering the entire area uniformly with suitable gun. Allow sealant to cure a minimum 24 hours. Apply minimum 50mm - 100 mm width 45 GSM Glass Fibre Mesh / non-woven geo textile fleece with the coat of Dr. Fixit Roofseal Select along the length of crack. Apply one coat of Dr. Fixit Primeseal primer dilute with water in the ratio 2:1. Allow it to dry for 2 to 3 hours. Apply 1st coat of Dr. Fixit Roofseal Select at the rate of 2.0 sqmt / litre / coat. An open 45 Gsm glass fibre mesh of 2.5 mm x 2.5 mm must be sandwiched between the first and second coat. While the 1st coat is still wet, place the fibre mesh on it. Allow the first coat to dry for 6-8 hours. Apply second coat of Dr. Fixit Roofseal Select with the same application coverage. Application direction of second coat should be perpendicular to that of the first coat. Allow second coat to dry for 6-8 hours. Apply third coat of Dr. Fixit Roofseal Select at an application direction that is perpendicular to that of the second coat with same application coverage rate. Check to see no void surface is left untreated / uncoated. Allow the system to air cure for 7 days minimum. A total thickness of 1 mm must be achieved when Dr. Fixit Roofseal Select is dry. Work Shall be got executed through certified applicator of the product manufacturing company only and work shall be guaranteed for 03 years by the contractor on requisite stamp paper including submitting written guarantee from said certified applicator.Contractor to submit re-counsillation statement along with challans for work done.	700.00	475.00	sqm	3,32,500.00

3.09	Providing & levelling the exposed area on slab surface with ready mix polymer mortar upto 25mm thk layer including bond coat of Polymer (SBR) approved by IITB and cement in the proportion of 1:1 by using brush in multiples coats as required to accommodate the whole thickness of polymer modified mortar wherever required, mixing the polymer mortar with water using forced action mixer, mild curing will be done with water for 3 days etc complete to make proper base for applying waterprooging coating including levelling, curing, and cleaning etc. complete on the sloping roof of bungalow.	600.00	1290.00	Sqm	7,74,000.00
3.10	Removing the existing waterproofing sheet bitumen/ dongri cloth/ tarfelt layer coating etc, of any thickness from slopping roof of building without damages to structure,brick bat layer, using manual operated cutting tools, grinder, leveling and cleaning the surface for providing new waterproofing treatment, including lowering down removed material from roof by head load etc. all complete, (throwing down the APP/Tarfelt sheet from terrace will not be allowed)	2900.00	92.00	Sqm	2,66,800.00
3.11	Removing the loose/damaged cement concrete top layer/IPS layer/China chips layer of thickness upto 50mm, manually /by mechanical means without damages/ distubring to slab/ beam,column/ Brick bat coba/ any RCC members/ Structural including disposing of material within 50 meter lead as per the direction of Engineer-in-charge (throwing down the material from terrace will not be allowed). Note: This item will be considered for payment only for top layer removal i.e. IPS/China Chips above Brick Bat Coba	200.00	107.31	sqm	21,462.00
3.12	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer, 3 mm thick water proofing membrane, black finished reinforced with glass fibre matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufactured of density at 25°C, 0.87 - 0.89 kg/litre and viscocity 70 - 160 cps. Over the primer coat the layer of membrane shall be laid using butane torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 350/300 N/5 cm.Tear strength in longitudinal and transverse direction as 60/80N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147.The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane including finishing surface with heat reflective bitumen based silver paint @0.10 ltr/sqm and covering the hole treatment with five years guarantee,on requisite stamp paper etc. complete	2650.00	531.04	sqm	14,07,256.00

3.13	**Treatment for flat surface /vatta /khurra /parapet top/Junction & support of pipes.** **1) Thorough cleaning & base preparation.** Cleaning the roof slab by brush and broom, if any cracks found shall be filled with approved cementitious/chemical waterproofing coating for Protecting Concrete and Masonry, mortar and making the surface smooth for receiving the water proofing treatment as per manufacturere's specification. **2) Primer coat.** Applying a primer coat of chemical water proofing products/brands as per the approved painting policy, over the prepared surface to obtain good bonding between surface & waterproofing membrane as per manufacturere's specification. **3) 1st coat of waterproofing.** Applying 1st coat of chemical water proofing products/brands as per the approved painting policy, on the primer coat as per manufacturere's specification. **4) 2nd coat of waterproofing.** Applying 2nd coat of chemical water proofing products/brands as per the approved painting policy.Period for air curing of waterproofing process between the coats as per the manufactureres specification. **5)Geoextilecloth/polyster fleece/Reinforcement** Providing and laying Geo-textile/Reinforcement membrane of required thickness in between the layers of waterproofing as per manufactures specification.	100.00	1553.00	sqm	1,55,300.00
3.14	Providing and laying protective top layer of screeding/chemical coatings as per the manufactureres specification to protect the entire waterproofing system. The rates inclusive of lead & lift of material,etc all inclusive.	100.00	585.00	sqm	58,500.00
3.15	Removing the loose mortar joints between the brickbat coba waterproofing layers on terrace and brick walls carefully with sharp chisels with out damaging the waterproofing treatment and brick walls cleaning washing with water and filling the joints with cement mortar 1:2 adding recommended waterproofing admixture, filling water for 03 days, testing the leakages etc. complete.	100.00	213.00	sqm	21,300.00
3.16	**Vertical wall waterproofing for internal & external parapet wall,lift machine room walls & junction of pipes.** Providing and applying waterproofing treatment for vertical wall with one coat primer and required coat of chemical water proofing products/brands as per the approved painting policy. The item includes the preparation of vertical surface as per the site condition,filling of the cracks and make the surface smooth to receive the waterproofing treatment as per the manufactureres specification. Necessary arrangement for working platform/ scaffolding/ any mechanical means for execution of the waterproofing treatment to the external vertical walls shall be made by the contractor. Note:- In case of leakage/seepage found during rain, contractor has to cover terrace with tarpaulin sheet to stop the leakage /seepage. If contractor fails to do it during rain, Institute will cover the terrace at contractor's risk and cost.	100.00	683.00	sqm	68,300.00
3.17	Providing and applying one coat of solvent based bitumen primer as per IS 3384 on roof of the building @0.25 liters/sqm. Inculding cleaning and removing defective exting loose layer of membrane thoroughly with wire brush / coir brush rectification of all damages etc.completed as directed.	1450.00	53.00	Sqm	76,850.00

3.18	Providing and dammering to roof with one coat of bitumen 90/15 or 85/25 as per IS 73/ IS 702 @1.5 kg./sqm uniformly and providing dongri cloth including finishing surface with heat reflective bitumen based silver paint @0.10 ltr/sqm etc. Complete as directed and covering the bitumen treatment with the guarantee of 1 monsoon period,on requisite stamp paper etc.disel operated bitumen heating machine should be used for this activity (Wooden fuel is not allowed) complete as directed.	1450.00	267.00	Sqm	3,87,150.00
3.19	Providing and erecting Mechanical lift on hire basis with steel tubular H – frame double scaffolding with bracings to all heights upto G + 6 ,building ,shifting material and lowering down debrises till completion of entire work on building roof as directed by engineer in charge and removing the same as per directions of Engineer In Charge.	12.00	35107.00	per month	4,21,284.00
3.20	Providing and erecting Mechanical lift on hire basis with steel tubular H – frame double scaffolding with bracings to all heights upto G + 16 ,building ,shifting material and lowering down debrises till completion of entire work on building roof as directed by engineer in charge and removing the same as per directions of Engineer In Charge.	12.00	42544.00	per month	5,10,528.00
				Total Amount of Rs. (3)	**77,20,643.50**

4) Plumbing and sanitory work					
4.01	Taking out C.I. / PVC nahani trap with connecting pieces from floor carefully and taking away the same out of IIT campus etc. Complete.	150.00	211.00	Nos	31,650.00
4.02	Providing and fixing 100 mm PVC nahani trap with S.S grating, etc. complete.	90.00	681.00	Nos	61,290.00
4.03	Providing and fixing 100 mm CI nahani trap with S.S grating, etc. complete.	60.00	912.00	Nos	54,720.00
4.04	Providing and fixing white urinal parryware or equivalent make including necessary fittings such as L shaped hooks, spreader and flushing system and bottle trap of Jaquar, Click Clack Waste coupling of jaquar, connection pipe upto trap or pipe etc. complete as directed.	30.00	7693.00	No	2,30,790.00
4.05	Providing and fixing 1/2" dia CP push tap of Jaquar with wall flange with stainless steel pipe upto urinal pot including necessary fittings and fixtures etc. complete as directed.	30.00	2810.00	No	84,300.00
4.06	Providing and fixing ISI 1729/2002 grade 75mm dia. cast iron waste water pipes (Neco or equ.) with lugs necessary fittings such as bends, tees, single junctions, double junctions, slotted vent, offsets on walls or in the ground including filling joints with cement mortar 1:2 praportion and two coats of anti corrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holders / battens including removing the existing pipe if necessary and conveying and stacking taking away the same out of IIT campus , necessary complete or as directed. (Recovery of the removed damaged pipe will be done @ Rs. 20 per Rmt)	100.00	1241.00	Rmt	1,24,100.00
4.07	Providing and fixing ISI 1729/2002 grade 100 mm dia. cast iron soil pipes (Neco or equ.) with necessary fittings such as bends, tees, single junctions, double junctions, slotted vent, offsets on walls or in the ground including filling joints with cement mortar 1:2 and two coats of anti corrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holders / battens including removing the existing pipe if necessary and conveying and stacking taking away the same out of IIT campus complete or as directed. (Recovery of the damaged pipe will be done @ Rs. 25 per Rmt)	100.00	1419.00	Rmt	1,41,900.00

4.08	Providing & fixing 75mm dia. PVC temporary drain pipe line with fittings, necessary Coupling, bends, tees by supporting on scaffolding and maintaining the same from time to time till the new permanent drain pipes are laid and connected including removing the same after completion of work.	100.00	165.00	Rmt	16,500.00
4.09	Providing & fixing 110 mm dia. PVC temporary drain pipe line with fittings, necessary Coupling, bends, tees by supporting on scaffolding and maintaining the same from time to time till the new permanent drain pipes are laid and connected.including removing the same after completion of work.	100.00	238.00	Rmt	23,800.00
4.10	Providing and laying 15 mm diameter I.S.I. make TATA / Jindal/ Zenith heavy type C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, backnuts, elbows, tees, reducers, enlargers, plugs, clamps/ GI clamp etc. including necessary drilling in holes in walls / slabs etc, connecting the lines with old / new pipe lines / fittings / fixtures etc as required and remaking good the demolished portion to restore the same in original condition neatly and applying Zinc primer and two coats of oil painting etc. or as directed Complete. (scaffolding will be paid in separate item if required)	400.00	346.86	Rmt	1,38,744.00
4.11	Providing and laying 20mm diameter I.S.I. make TATA / Jindal/ Zenith heavy type C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, backnuts, elbows, tees, reducers, enlargers, plugs, clamps/ GI clamp etc. including necessary drilling in holes in walls / slabs etc, connecting the lines with old / new pipe lines / fittings / fixtures etc as required and remaking good the demolished portion to restore the same in original condition neatly and applying Zinc primer and two coats of oil painting etc. or as directed Complete. (scaffolding will be paid in separate item if required)	400.00	413.98	Rmt	1,65,592.00
4.12	Providing and laying 25mm diameter I.S.I. make TATA / Jindal/ Zenith heavy type C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, backnuts, elbows, tees, reducers, enlargers, plugs, clamps/ GI clamp etc. including necessary drilling in holes in walls / slabs etc, connecting the lines with old / new pipe lines / fittings / fixtures etc as required and remaking good the demolished portion to restore the same in original condition neatly and applying Zinc primer and two coats of oil painting etc. or as directed Complete. (scaffolding will be paid in separate item if required)	200.00	522.28	Rmt	1,04,456.00
4.13	Providing and laying 32mm diameter I.S.I. make TATA / Jindal/ Zenith heavy type C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, backnuts, elbows, tees, reducers, enlargers, plugs, clamps/ GI clamp etc. including necessary drilling in holes in walls / slabs etc, connecting the lines with old / new pipe lines / fittings / fixtures etc as required and remaking good the demolished portion to restore the same in original condition neatly and applying Zinc primer and two coats of oil painting etc. or as directed Complete. (scaffolding will be paid in separate item if required)	150.00	631.43	Rmt	94,714.50
4.14	Providing and laying 40mm diameter I.S.I. make TATA / Jindal/ Zenith heavy type C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, backnuts, elbows, tees, reducers, enlargers, plugs, clamps/ GI clamp etc. including necessary drilling in holes in walls / slabs etc, connecting the lines with old / new pipe lines / fittings / fixtures etc as required and remaking good the demolished portion to restore the same in original condition neatly and applying Zinc primer and two coats of oil painting etc. or as directed Complete. (scaffolding will be paid in separate item if required)	150.00	768.61	Rmt	1,15,291.50

4.15	Providing and laying 50mm diameter I.S.I. make TATA / Jindal/ Zenith heavy type C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, backnuts, elbows, tees, reducers, enlargers, plugs, clamps/ GI clamp etc. including necessary drilling in holes in walls / slabs etc, connecting the lines with old / new pipe lines / fittings / fixtures etc as required and remaking good the demolished portion to restore the same in original condition neatly and applying Zinc primer and two coats of oil painting etc. or as directed Complete. (scaffolding will be paid in separate item if required)	150.00	992.45	Rmt	1,48,867.50
4.16	Providing and laying 25mm diameter I.S.I make heavy type C Class galvanized iron pipes of TATA / Jindal / Zenith make having weight as per IS specification in trenchs etc. with elbows, tees, reducers, enlargers, plugs, etc. including connecting the lines with old / new pipe lines / fittings / fixtures etc as required and filling trench with excavated soil and applying metal primer and two coats of oil painting including removing the existing pipe if necessary and as directed etc. complete.	75.00	442.81	Rmt	33,210.75
4.17	Providing and laying 40mm diameter I.S.I make heavy type C Class galvanized iron pipes of TATA / Jindal / Zenith make having weight as per IS specification in trenchs etc. with elbows, tees, reducers, enlargers, plugs, etc. including connecting the lines with old / new pipe lines / fittings / fixtures etc as required and filling trench with excavated soil and applying metal primer and two coats of oil painting including removing the existing pipe if necessary and as directed etc. Complete.	75.00	584.15	Rmt	43,811.25
4.18	Providing and laying 50mm diameter I.S.I make heavy type C Class galvanized iron pipes of TATA / Jindal / Zenith make having weight as per IS specification in trenchs etc. with elbows, tees, reducers, enlargers, plugs, etc. including connecting the lines with old / new pipe lines / fittings / fixtures etc as required and filling trench with excavated soil and applying metal primer and two coats of oil painting including removing the existing pipe if necessary and as directed etc. Complete.	75.00	721.51	Rmt	54,113.25
4.19	Providing and fixing ISI approved heavy type 15 mm dia brass stop tap(seiko, techno make) including socket, union nut etc. Complete. Including removing the existing damaged tap. (5% cost will be deducted for taking away the removed material outside IIT campus)	110.00	334.41	Nos	36,785.10
4.20	Providing and fixing ISI approved heavy type 20 mm dia brass stop tap(seiko, techno make) including socket, union nut etc. Complete. Including removing the existing damaged tap. (5% cost will be deducted for taking away the removed material outside IIT campus)	120.00	358.98	No	43,077.60
4.21	Providing and fixing screw down 20mm gun metal Gate Valve of techno or uttam make bearing I.S.I. Mark including socket, union nut etc. including removing the old damaged gate valve & depositing Complete. (5% cost will be deducted for taking away the removed material outside IIT campus)	60.00	511.16	Nos	30,669.60
4.22	Providing and fixing screw down 25mm gun metal Gate Valve of techno or uttam make bearing I.S.I. Mark including socket, union nut etc. including removing the old damaged gate valve & depositing Complete. (5% cost will be deducted for taking away the removed material outside IIT campus)	60.00	589.21	nos	35,352.60

4.23	Providing and fixing screw down 32mm gun metal Gate Valve of techno or uttam make bearing I.S.I. Mark including socket, union nut etc. including removing the old damaged gate valve & depositing Complete. (5% cost will be deducted for taking away the removed material outside IIT campus)	30.00	652.83	Nos	19,584.90
4.24	Providing and fixing screw down 40mm gun metal Gate Valve of techno or uttam make bearing I.S.I. Mark including socket, union nut etc. including removing the old damaged gate valve & depositing Complete. (5% cost will be deducted for taking away the removed material outside IIT campus)	30.00	782.05	Nos	23,461.50
4.25	Providing and fixing screw down 50mm gun metal Gate Valve of techno or uttam make bearing I.S.I. Mark including socket, union nut etc. including removing the old damaged gate valve & depositing Complete. (5% cost will be deducted for taking away the removed material outside IIT campus)	15.00	971.91	Nos	14,578.65
4.26	Providing and fixing new sanitary fittings with new fixtures , removing old broken fittings wherever existing. ¼" Flexible pipe – 3 feet long	150.00	121.00	No	18,150.00
4.27	Providing and fixing new sanitary fittings with new fixtures , removing old broken fittings wherever existing. ½" PVC connection 2 feet long	150.00	196.00	No	29,400.00
4.28	Providing and fixing new sanitary fittings with new fixtures , removing old broken fittings wherever existing. ½" PVC connection 1½ feet long	150.00	173.00	nos	25,950.00
4.29	Providing and fixing new sanitary fittings with new fixtures , removing old broken fittings wherever existing. ½" PVC connection 3 feet long	150.00	219.00	Nos	32,850.00
4.30	Providing and fixing new sanitary fittings with new fixtures , removing old broken fittings wherever existing. S.S. Grating 4" dia	150.00	138.00	No	20,700.00
4.31	Providing and fixing new sanitary fittings with new fixtures , removing old broken fittings wherever existing. S.S. Grating 5"dia	150.00	150.00	nos	22,500.00
4.32	Providing and fixing new sanitary fittings with new fixtures , removing old broken fittings wherever existing. 1 1/4" Nirali Sink coupling set	150.00	973.00	Nos	1,45,950.00
4.33	Providing and fixing 40 mm dia Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes removing old damaged pipe, jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Exposed on wall, (scaffolding will be paid in separate item if required) (5% cost will be deducted for taking away the removed material outside IIT campus)	120.00	665.47	Rmt	79,856.40

4.34	Providing and fixing 25 mm dia Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes removing old damaged pipe, jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Exposed on wall, (scaffolding will be paid in separate item if required) (5% cost will be deducted for taking away the removed material outside IIT campus)	120.00	380.14	Rmt	45,616.80
4.35	Providing and fixing 20 mm dia Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes removing old damaged pipe, jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Exposed on wall, (scaffolding will be paid in separate item if required) (5% cost will be deducted for taking away the removed material outside IIT campus)	120.00	317.14	Rmt	38,056.80
4.36	Providing and fixing 15 mm dia I.S.I. approved heavy type C class galvanized iron pipes TATA / Jindal / Zenith make in **concealed** plumbing having weight as per IS specification complete with G.I. fittings and clamps, including painting with anti corrosive bitumastic paint , cutting chases in walls for fixing concealed pipe and making good the wall by means of leveling with cement plaster and testing of joints complete as per direction of Engineer in Charge.	100.00	549.50	Rmt	54,950.00
4.37	Providing and fixing 20 mm dia I.S.I. approved heavy type C class galvanized iron pipes TATA / Jindal / Zenith make in **concealed** plumbing having weight as per IS specification complete with G.I. fittings and clamps, including painting with anti corrosive bitumastic paint , cutting chases in walls for fixing concealed pipe and making good the wall by means of leveling with cement plaster and testing of joints complete as per direction of Engineer in Charge.	100.00	601.33	Rmt	60,133.00
4.38	Providing & fixing 40mm dia. PVC pipe for outlet of wash basin , sink etc. (heavy duty) with all fittings & fixtures making connection to old & new pipe line etc. complete as directed by Engineer.	100.00	223.00	Rmt	22,300.00
4.39	Providing and fixing white glazed earthenware wash hand basin of approved brand (Hindware/Cera/ parryware) of 55cm x 40cm size including one cold water pillar tap of jaquar , brackets, rubber plugs and brass chain, stop tap of jaquar and necessary pipe connection including polyethylene waste water pipe and trap	110.00	5091.00	No	5,60,010.00
4.40	Providing and fixing coloured glazed earthenware wash hand basin of approved brand (Hindware/Cera/ parryware) of 55cm x 40cm size including one cold water pillar tap of jaquar , brackets, rubber plugs and brass chain, stop tap of jaquar and necessary pipe connection including polyethylene waste water pipe and trap	40.00	5219.00	No	2,08,760.00
4.41	Providing and fixing white glazed earthenware wash hand basin of approved brand (Hindware/Cera/ parryware) of 45 x 30 cm size including one cold water pillar tap of jaquar , brackets, rubber plugs and brass chain, stop tap of jaquar and necessary pipe connection including polyethylene waste water pipe and trap	150.00	4864.00	No	7,29,600.00
4.42	Providing and fixing coloured glazed earthenware wash hand basin of approved brand (Hindware/Cera/ parryware) of 45 x 30 cm size including one cold water pillar tap of jaquar , brackets, rubber plugs and brass chain, stop tap of jaquar and necessary pipe connection including polyethylene waste water pipe and trap	40.00	4986.00	No	1,99,440.00

4.43	Providing and fixing 100 mm dia chromium plated brass shower rose of Jaquar brand to 15 mm dia. Supply pipe including necessary SS Bend and socket complete.	150.00	1768.00	Nos	2,65,200.00
4.44	Providing and fixing 100 mm dia chromium plated brass shower rose for Cera make brand to 15 mm dia. Supply pipe including necessary G.I. Bend and socket complete.	100.00	810.00	Nos	81,000.00
4.45	Providing and fixing 150 mm dia chromium plated brass shower rose for Jaquar brand to 15 mm dia. Supply pipe including necessary SS Bend and socket complete.	100.00	4701.00	Nos	4,70,100.00
4.46	Providing and fixing 150 mm dia chromium plated brass shower rose for Cera make brand to 15 mm dia. Supply pipe including necessary G.I. Bend and socket complete.	100.00	1101.00	Nos	1,10,100.00
4.47	Providing and fixing white solid plastic seat (Hindware/Cera/ parryware) with lid for european type W.C. pan complete with require fittings and fixtures etc. and including removing existing damaged plastic seat complete as directed.	175.00	648.33	nos	1,13,457.75
4.48	Providing and fixing Hydraulic white plastic seat (Hindware make) with lid for european type W.C. pan complete with require fittings and fixtures etc. and including removing existing damaged plastic seat complete as directed.	30.00	4176.00	Per No	1,25,280.00
4.49	Providing and fixing colour solid plastic seat (Hindware/Cera/ parryware) with lid for european type W.C. pan complete with require fittings and fixtures etc. and including removing existing damaged plastic seat complete as directed.	40.00	559.44	nos	22,377.60
4.50	Providing and fixing good quality 32mm Nelson flush valve to water closet all complete as directed including removing the old damaged /unserviceable flush valve and taking out IITB campus. (5% cost will be deducted from Item of work for material taken outside campus)	150.00	4313.00	nos	6,46,950.00
4.51	Providing and fixing Low / high level 10 liters capacity PVC flushing cistern of parryware / hindware / cera make with all fittings as inlet G.I. pipe with stop tap, brass chromium plated waste coupling and providing and fixing 32mm or required heavy duty PVC outlet bend pipe from flushing cistern upto the pan, 12mm dia PVC connection to the tank etc. all complete. as directed. (5% cost will be deducted from Item of work for material taken outside campus)	300.00	1127.16	Nos	3,38,148.00
4.52	Providing and fixing white color Low level 3/6 liters capacity PVC Dual flushing cistern parryware / hindware / cera make with all fittings as approved by IITB inlet G.I. pipe with stop tap, brass chromium plated waste coupling and providing and fixing 32mm or required heavy duty PVC outlet bend pipe from flushing cistern upto the pan, 12mm dia PVC connection to the tank etc. all complete. as directed. (5% cost will be deducted from Item of work for material taken outside campus)	50.00	4421.00	No	2,21,050.00
4.53	providing and fixing Stainless Steel sink of size **485 x 410 x 215mm**(Approximate internal size of sink) of approved make and design(Nirali Make) including all connections of G.I. Supply and PVC waste outlet pipe and coupling , making good damaged surface etc. complete.	110.00	9023.00	Nos	9,92,530.00
4.54	providing and fixing Stainless Steel sink of size **615mm x 460mm x 255mm**(Approximate internal size of sink) of approved make and design(Nirali Make) including all connections of G.I. Supply and PVC waste outlet pipe and coupling , making good damaged surface etc. complete.	110.00	14551.00	Nos	16,00,610.00

4.55	Providing and fixing stainless steel kitchen sink nirali make with drain board of size 510x915mm bowl depth 200mm approved brand (nirali or equlant) as per IS 13983 with CI brackets and stainless steel plug 40mm including painting of fittings and brackets, cutting, and making good the walls wherever required	15.00	10939.00	Nos.	1,64,085.00
4.56	Providing and fixing stainless steel cockroach trap of approved pattern, quality and make with all required fittings and fixtures etc. completed as directed.	75.00	318.00	Nos	23,850.00
4.57	Removing the old damaged / worn out plastic water storage tank of any size and capacity from the roof of the building carefully with out damaging any structural members of the building by using chainpulley arrangement and depositing in Estate stores etc. Complete. (5% cost will be deducted for old damaged tank from item of work)	100000.00	1.00	Ltr	1,00,000.00
4.58	Providing and fixing in position best quality salt glazed stone ware gully trap with 150mm x 150mm square inlet and 100 mm n.b. outlet conforming to IS 651 including embedding the trap in M-20 (1:1.5:3) cement concrete, construction of brick masonry chamber 300mm x 300mm internal in 230mm thick brick masonry, plastering, finishing with neat cement floating coat, providing and fixing C. I. cover and frame weighing not less than 7 kg. etc including removing the old damaged gully trap, connecting all old and new inlets and out let pipes including running lines, jointing etc. all complete as directed.	100.00	2588.41	Nos	2,58,841.00
4.59	Providing and laying temporary loop connection to main water supply inlet and outlet of water tank with 'C' class pipe of any dia elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line and remaking to original connections after repair etc. Complete. For B Type Building (G+2)	10.00	8987.00	Per Job	89,870.00
4.60	Providing and laying temporary loop connection to main water supply inlet and outlet of water tank with 'C' class pipe of any dia elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line and remaking to original connections after repair etc. Complete. For B/C Type Building upto (G+6)	10.00	12557.00	Per Job	1,25,570.00
4.61	Providing and laying temporary loop connection to main water supply inlet and outlet of water tank using 'C' class GI pipes of any dia. With all fittings like elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line and remaking to original connections after repair etc. complete. For H2 type building (G+1)	10.00	9460.00	per job	94,600.00
4.62	Providing and laying temporary loop connection to main water supply inlet and outlet of water tank using 'C' class GI pipes of any dia. With all fittings like elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line and remaking to original connections after repair etc. complete. For H1 type / Type 1 building upto (G+4)	8.00	10790.00	per job	86,320.00

4.63	Providing and laying temporary loop connection to main water supply inlet and outlet of water tank using 'C' class GI pipes of any dia. With all fittings like elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line and remaking to original connections after repair etc. complete. For type 2B building	10.00	11588.00	per job	1,15,880.00
4.64	Providing and laying temporary loop connection to main water supply inlet and outlet of water tank using CPVC pipes of any dia. With all fittings like elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line and remaking to original connections after repair / cleaning of tank etc. complete. For C type bldgs in Central area	5.00	5180.00	per job	25,900.00
4.65	Providing and fixing P.V.C. rain water pipes 'A' Type 160mm outer dia. conforming to I.S. including proper rain water receiving recess with P.V.C. plug bend, necessary fittings such as offsets, shoes including fixing the pipe on wall using approved M.S brakets projecting 25mm to 40mm from face of wall & fixing with heavy duty PVC clips of approved quality & number, filling the joints using rubber gasket with solvent cement and properly resting the shoe of pipes on C.C. or masonry blocks, including maintenance for 3 years for any leakages or dislocation of pipes. All the PVC fittings and additional two piece socket clips shall be got approved from engineer in charge complete.	110.00	721.00	Rmt	79,310.00
4.66	Providing and fixing P.V.C. rain water pipes 'A' Type 110mm outer dia. conforming to I.S. including proper rain water receiving recess with P.V.C. plug bend, necessary fittings such as offsets, shoes including fixing the pipe on wall using approved M.S brakets projecting 25mm to 40mm from face of wall & fixing with heavy duty PVC clips of approved quality & number, filling the joints using rubber gasket with solvent cement and properly resting the shoe of pipes on C.C. or masonry blocks, including maintenance for 3 years for any leakages or dislocation of pipes. All the PVC fittings and additional two piece socket clips shall be got approved from engineer in charge complete.	210.00	357.00	Rmt	74,970.00
4.67	Providing and fixing heavy duty P.V.C. waste water pipes of approved brand for 75mm outer dia. conforming to I.S. with P.V.C. plug bend, necessary fittings such as offsets, including fixing the pipe on wall using approved GI brakets projecting upto 50mm from face of wall & fixing with heavy duty PVC clips of approved quality & number, filling the joints using rubber gasket with solvent cement. All the PVC fittings and additional two piece socket clips shall be got approved from engineer in charge complete. (scaffolding will be paid in separate item if required)	150.00	209.00	Rmt	31,350.00
4.68	Arresting leakages from PVC / Plastic storage tank by making necessary welding to cracked portion with all tools and plants etc. completed as directed.	25.00	3476.00	per job	86,900.00
4.69	Providing and fixing 110mm(ID) dia.ISI approved HDPE pipes manufactured by ARHAM Engineering/ BERLIA /NOCIL / PIL with wall thickness of 6 mm to 8mm for taking sewage waste water with all required fittings such as bend, elbows etc. with proper line and gradient connecting all joints with fusion butt weilding by using suitable welding machine or hot plate, testing the line & joint as per manufacturer specification etc. all complete as directed by Engineer In-charge.	250.00	1039.00	Per Rmt	2,59,750.00

4.70	Providing and fixing 160mm(ID)dia ISI approved HDPE pipes manufactured by ARHAM Engineering/ BERLIA /NOCIL / PIL with wall thickness of 6 mm to 8mm for taking sewage waste water with all required fittings such as bend, elbows etc. with proper line and gradient connecting all joints with fusion butt weilding by using suitable welding machine or hot plate, testing the line & joint as per manufacturer specification etc. all complete as directed by Engineer In-charge.	250.00	1345.00	Per Rmt	3,36,250.00
4.71	Arresting leakage through HDPE pipe by welding/jointing the damaged member with required tools and tackles all complete as directed by Engineer-in-charge.	20.00	183.00	Job	3,660.00
4.72	Providing and fixing health faucet jet spray set with SS tube upto 1.5m length of approved Jaquar make including necessary socket/ union etc. complete as directed.	175.00	2025.00	No	3,54,375.00
4.73	Providing and fixing SS towel ring upto 9 inch dia round flange of approved jaquar make etc. Complete.	150.00	1530.00	No	2,29,500.00
4.74	P/F ½" dia CP Bib Cock / Angle Cock of jaquar (continental series) including necessary fitting and fixtures etc. complete as directed	150.00	1240.00	No	1,86,000.00
4.75	Providing & fixing ISI approve heavy type Angle Cock (Cavier make Rienza series) including extension Pipe, C.P Double nippal etc.complete.	150.00	1443.00	No	2,16,450.00
4.76	Providing and fixing ISI approve two way Wall mixture (cavier / Jaquar make) system with provision for only overhead shower complete with 115mm long bend pipe including fixtures etc. Complete.	70.00	5234.00	No	3,66,380.00
4.77	Providing and fixing ISI approve three in one Wall mixture (Jaquar make) system with provision for both hand shower and overhead shower complete with 115cm long bend pipe, including fixtures (Excluding hand shower)etc. Complete.	70.00	7464.00	No	5,22,480.00
4.78	Providing & fixing jaquar make telephonic hand shower 80mm round with 1.5m long jaquar make flexible chrome tube which connected to three way mixer including fixtures etc. Complete.	30.00	2929.00	No	87,870.00
4.79	Providing & fixing Cera make Platform top white wash hand basin of size 602mm x 433mm including vertical pillar cock, Stop Cock, of approved jaquar / Cavier brand), SS Waste Coupling, Waste Pipe, Connection Pipe, etc complete as directed.	30.00	11453.00	No	3,43,590.00
4.80	Providing hoisting and fixing in position MCGM approved plastic storage water tank on roof of buildings at any height with all fitting, fixtures viz 1" PTMT ball cock, extension nipple, 1" dia coupling and plug for washout and 1" dia coupling and bend for overflow connecting the tank (in let and out let) with the existing water line, providing and fixing over flow pipe with mosquito proof brass coupling & mosquitoproof CI cover with locking arrangements approved by MCGM, using required fitting / fixtures including hoisting till any height using manual/ mechanical means without damaging the structure and making good the damaged structure if damaged during hoisting at contractors risk and cost all complete as directed by Estate office.	100000.00	14.00	Ltr	14,00,000.00
4.81	Providing & fixing granite counter wash basin of size upto 750 X 500 for counter including coloured oval / round shape wash basin of size 22'' x 16'' with Jaquar make Pillar tap, CP bottle trap, connector, angle cock complete including kaddpa supports, moulding, facia patti all complete as directed by Engineer incharge.	75.00	15548.00	No	11,66,100.00

4.82	Providing and fixing oval shape coloured earthenware below counter wash hand basin of Parryware make including one cold water angle cock of Jaguar make (Continental series), Stainless steel click clack waste coupling, chromium plated brass bottle trap etc. complete as directed.	10.00	7156.00	Nos	71,560.00
4.83	Providing and fixing hindware make white glazed earthenware pedstal wash hand basin of size 56cm x 43cm , pedstal height 68cm including one cold water contentail series 450mm long swan neck tap of jaquar , brackets, rubber plugs and brass chain, stop tap of jaquar and necessary pipe connection including jaquar make bottle trap etc. Complete as directed	30.00	10089.00	No	3,02,670.00
4.84	Providing & fixing hindware / cera make Platform top wash basin of size 630 mm x 500 mm including ,one cold water contentail series 450mm long swan neck tap of jaquar,Stop Cock, Waste Coupling, jaquar make bottle trap, Connection Pipe, etc complete or as directed.	30.00	8567.00	No.	2,57,010.00
4.85	Providing and fixing European type wall hung white glazed earthenware water closet pan as per existing size of Parryware, Hindware, Cera make with P.V.C seat and lid with chromium plated brass hinges and rubber buffers including PVC heavy type flush pipe with fittings and clamps, cutting and making good walls and floors etc. complete as directed.	60.00	11541.00	No.	6,92,460.00
4.86	Providing & fixing ISI approve long swan neck pillar tap jaquar make including necessary fixtures etc.complete as directed	20.00	1879.00	No	37,580.00
4.87	Providing & fixing ISI approve SS bottle trap below wash basin including necessary fixtures etc.complete as directed	75.00	1071.00	nos	80,325.00
4.88	Providing & fixing ISI approve heavy type Kitchen sink cock with swinging casted spout (wall mounted) jaquar make including necessary fixtures etc.complete as directed	70.00	2163.00	No	1,51,410.00
4.89	Providing & fixing ISI approve heavy type two way bib cock jaquar make including necessary fixtures etc.complete as directed	150.00	1358.00	No	2,03,700.00
4.90	Remvoing & taking out the wash basin with connecting pieces from floor/wall carefully without disturbing base floor/wall and taking away the same out of IIT campus etc. Complete.	200.00	154.00	Nos	30,800.00
4.91	Remvoing & taking out the European WC with connecting pieces from floor/wall carefully without disturbing base floor/wall and taking away the same out of IIT campus etc. Complete.	200.00	234.00	No	46,800.00
4.92	Remvoing & taking out the Flush tank with connecting pieces from floor/wall carefully without disturbing base floor/wall and taking away the same out of IIT campus etc. Complete. (5% cost will be deducted for taking away the removed material outside IIT campus)	400.00	120.00	No	48,000.00
4.93	Removing the existing toilet fittings while the other cement related activities are in progress and refixing the same after the work gets completed. 1)Wash basin	200.00	553.00	Nos	1,10,600.00
4.94	Removing the existing mirror & glsss shelf with screws while the other cement related activities are in progress and refixing the same with new coach screw after the work gets completed.	250.00	346.00	Nos	86,500.00

4.95	Providing and fixing Orrisa type white glazed earthenware 580mm x 440 mm water closet pan of approved make and brand (Cera, Hindware or equivalent) including trap, cast iron soil and vent pipes upto the outside face of the wall including 100mm. diameter cast iron plug bend, cement concrete bedding, 10 litres capacity H.D.P.E. approved flushing cistern with fittings, inlet pipe with brass stop tap(Cico), brackets, 32mm. diameter galvanised iron heavy type flush pipe with fittings and clamps, painting to the exposed pipes and cutting and making good the walls and floors etc. complete. (excluding waterproof brick bat coba)	150.00	6406.55	Nos	9,60,982.50
4.96	Providing and fixing European type white glazed earthenware 580mm water closet pan of approved make and brand (Cera, Hindware or equivalent) with PVC seat and lid with chromium plated brass hinges and rubber buffers including cast iron soil and vent pipes upto the outside face of wall and 100mm. diameter cast iron plug bend, 10 litres approved low level white PVC flushing cistern with all fittings, pipes and stop tap, brackets for fixing the low level flushing cistern, 32mm dia galvanised iron / PVC heavy type flush pipe with fittings and clamps, 20mm dia. PVC galvanised iron overflow pipe with mosquito proof coupling, and exposed pipes and cutting and making good walls and floors etc. complete as directed.	160.00	6168.13	Nos	9,86,900.80
4.97	Providing & fixing Techno / Sicko bib tap (Min weight 400gm) with new fittings & new screws, removing old broken fittings & taps wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	300.00	811.00	nos	2,43,300.00
4.98	Providing & fixing Jaquar make corner glass shelf set with new fittings & new screws.	35.00	1021.00	per no	35,735.00
4.99	Providing & fixing Jaguar make sink cock with new fittings & new screws, removing old broken sink cock wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	150.00	1984.00	per no	2,97,600.00
4.100	Providing & fixing Jaguar make SS soap dish holder with new fittings & new screws, removing old broken seap dish holder wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	150.00	1137.00	per no	1,70,550.00
4.101	Providing and fixing brass Eye glass of approved quality, peep hole type,make,size and shape etc to door shutter complete including removing existing damaged. Contractor will be allowed to take away old peep glass eye glass if available	150.00	173.00	No	25,950.00
4.102	Carefully removing the existing G.I. pipe 12mm to 50mm diameter from floor / walls / slab etc. with out damaging the structures and Deposting to Estate store including scaffolding if required. (scaffolding will be paid in separate item if required) (5% cost will be deducted from Item of work for material taken outside campus)	1000.00	141.81	Rmt	1,41,810.00
4.103	Connection of pipe line which is newly laid outside to old GI pipe line in wall with required length of barrel piece, union, elbow etc. required fittings and fixtures including making hole carefully in wall without disturbing exisiting pipe line inside quarter, p/f new GI piece of existing dia remaking good the demolished portion from inside/outside to restore the same in original condition neatly, painting to pipe etc. complete. (scaffolding will be paid in respective item if required) a) 15mm dia	60.00	610.00	per job	36,600.00

4.104	Connection of pipe line which is newly laid outside to old GI pipe line in wall with required length of barrel piece, union, elbow etc. required fittings and fixtures including making hole carefully in wall without disturbing exisiting pipe line inside quarter, p/f new GI piece of existing dia remaking good the demolished portion from inside/outside to restore the same in original condition neatly, painting to pipe etc. complete. (scaffolding will be paid in respective item if required) b) 20mm dia	60.00	668.00	per job	40,080.00
4.105	Connection of pipe line which is newly laid outside to old GI pipe line in wall with required length of barrel piece, union, elbow etc. required fittings and fixtures including making hole carefully in wall without disturbing exisiting pipe line inside quarter, p/f new GI piece of existing dia remaking good the demolished portion from inside/outside to restore the same in original condition neatly, painting to pipe etc. complete. (scaffolding will be paid in respective item if required) C) 25mm dia	60.00	726.00	per job	43,560.00
4.106	Connection of pipe line which is newly laid outside to old GI pipe line in wall with required length of CPVC brass FT, brass MT, CPVC union, CPVC elbow etc. required fittings and fixtures including making hole carefully in wall without disturbing exisiting pipe line inside quarter, p/f new GI piece/CPVC pipe of existing dia remaking good the demolished portion from inside/outside to restore the same in original condition neatly etc. complete. (scaffolding will be paid in respective item if required) 20mm or 25mm dia	20.00	606.00	per job	12,120.00
4.107	P/F ISI approved heavy type ½" dia CP Washing Machine Tap of long bib body Techno/Sieko made including socket, union nut etc. Removing existing damaged tap complete as directed (5% cost will be deducted for taking away the removed material outside IIT campus)	200.00	834.00	Per Nos.	1,66,800.00
4.108	Cleaning the Overhead & Underground water tanks of capacities mentioned below for RCC/Plastic storage water tanks on the roof or underground of buildings by dewatering excess water with portable Electric water pump and/or transferring the water into another tank located near by, before schedule time of cleaning as directed, to ensure minimum wastage of water, then thoroughly cleaning with wire brush / coir brush including cleaning again using water jet cleaner to clean all Algae, sludge and impurity accumulated even in the smallest pores of the water tank. Closing the inlet and outlet water supply line and plugging the outlets inside the tanks with cotton plug and string of Nylon to be tied at fix end. Finally washing the tank with diluted bleaching powder or potassium Permagnate or disinfection of the tank using imported Food Grade Chemical Disinfectant which also has a residual effect, Removing the muddy water and cleaning the bottan surface of tank neatly, removing the plug and opening the inlet valve for filling the tank. Writing the date of cleaning over the existing place by erasing old dates with base coat of plain black enamel paint on the side of tanks and write as "Cleaned on.……" etc. complete including collecting water sample and testing for potability at IITB testing lab. Contractor should ensure the water supply is regular in quarters, if not, then regularised the water supply by removing air lock if any etc. **Each PVC tank or compartment in RCC tank will be measured in this item as per no..** **For capacities upto 5,000 litrs.** **(NOTE:- The Contractor has to make an own arrangement of Power supply from nearest recommended power point as shown by EMD)**	174.00	903.00	Per Nos.	1,57,122.00

4.109	Cleaning the Overhead & Underground water tanks of capacities mentioned below for RCC/Plastic storage water tanks on the roof or underground of buildings by dewatering excess water with portable Electric water pump and/or transferring the water into another tank located near by, before schedule time of cleaning as directed, to ensure minimum wastage of water, then thoroughly cleaning with wire brush / coir brush including cleaning again using water jet cleaner to clean all Algae, sludge and impurity accumulated even in the smallest pores of the water tank. Closing the inlet and outlet water supply line and plugging the outlets inside the tanks with cotton plug and string of Nylon to be tied at fix end. Finally washing the tank with diluted bleaching powder or potassium Permagnate or disinfection of the tank using imported Food Grade Chemical Disinfectant which also has a residual effect, Removing the muddy water and cleaning the bottan surface of tank neatly, removing the plug and opening the inlet valve for filling the tank. Writing the date of cleaning over the existing place by erasing old dates with base coat of plain black enamel paint on the side of tanks and write as "Cleaned on.……" etc. complete including collecting water sample and testing for potability at IITB testing lab. Contractor should ensure the water supply is regular in quarters, if not, then regularised the water supply by removing air lock if any etc. **Each PVC tank or compartment in RCC tank will be measured in this itemas per no..** **For capacities above 5001 litres & upto 10,000 litrs.** **(NOTE:- The Contractor has to make an own arrangement of Power supply from nearest recommended power point as shown by EMD)**	48.00	1,371.00	Per nos	65,808.00
4.110	Cleaning the Overhead & Underground water tanks of capacities mentioned below for RCC tanks on the roof or underground of buildings by dewatering excess water with portable Electric water pump and/or transferring the water into another tank located near by, before schedule time of cleaning as directed, to ensure minimum wastage of water, then thoroughly cleaning with wire brush / coir brush including cleaning again using water jet cleaner to clean all Algae, sludge and impurity accumulated even in the smallest pores of the water tank. Closing the inlet and outlet water supply line and plugging the outlets inside the tanks with cotton plug and string of Nylon to be tied at fix end. Finally washing the tank with diluted bleaching powder or potassium Permagnate or disinfection of the tank using imported Food Grade Chemical Disinfectant which also has a residual effect, Removing the muddy water and cleaning the bottan surface of tank neatly, removing the plug and opening the inlet valve for filling the tank. Writing the date of cleaning over the existing place by erasing old dates with base coat of plain black enamel paint on the side of tanks and write as "Cleaned on.……" etc. complete including collecting water sample and testing for potability at IITB testing lab. Contractor should ensure the water supply is regular in quarters, if not, then regularised the water supply by removing air lock if any etc. **Compartment in RCC tank will be measured in this item as per no..** **For capacities above 10,001 litrs to upto 20,000 liters.** **(NOTE:- The Contractor has to make an own arrangement of Power supply from nearest recommended power point as shown by EMD)**	33.00	2,642.00	Per nos	87,186.00

4.111	Cleaning the Underground RCC water tanks of capacities mentioned below, dewatering excess water with portable Electric water pump and/or transferring the water into another tank located near by, before schedule time of cleaning as directed, to ensure minimum wastage of water, then thoroughly cleaning with wire brush / coir brush including cleaning again using water jet cleaner to clean all Algae, sludge and impurity accumulated even in the smallest pores of the water tank. Closing the inlet and outlet water supply line and plugging the outlets inside the tanks with cotton plug and string of Nylon to be tied at fix end. Finally washing the tank with diluted bleaching powder or potassium Permagnate or disinfection of the tank using imported Food Grade Chemical Disinfectant which also has a residual effect, Removing the muddy water and cleaning the bottom surface of tank neatly, removing the plug and opening the inlet valve for filling the tank. Writing the date of cleaning over the existing place by erasing old dates with base coat of plain black enamel paint on the side of tanks and write as "Cleaned on.……" etc. complete including collecting water sample and testing for potability at IITB testing lab. Contractor should ensure the water supply is regular in quarters, if not, then regularised the water supply by removing air lock if any etc. **RCC tank will be measured in this item. (NOTE:- The Contractor has to make an own arrangement of Power supply from nearest recommended power point as shown by EMD)** **For capacities from 20,001 litrs to 40,000 liters.**	21.00	3,624.00	Per nos	76,104.00
4.112	Cleaning the Underground RCC water tanks of capacities mentioned below, dewatering excess water with portable Electric water pump and/or transferring the water into another tank located near by, before schedule time of cleaning as directed, to ensure minimum wastage of water, then thoroughly cleaning with wire brush / coir brush including cleaning again using water jet cleaner to clean all Algae, sludge and impurity accumulated even in the smallest pores of the water tank. Closing the inlet and outlet water supply line and plugging the outlets inside the tanks with cotton plug and string of Nylon to be tied at fix end. Finally washing the tank with diluted bleaching powder or potassium Permagnate or disinfection of the tank using imported Food Grade Chemical Disinfectant which also has a residual effect, Removing the muddy water and cleaning the bottom surface of tank neatly, removing the plug and opening the inlet valve for filling the tank. Writing the date of cleaning over the existing place by erasing old dates with base coat of plain black enamel paint on the side of tanks and write as "Cleaned on.……" etc. complete including collecting water sample and testing for potability at IITB testing lab. Contractor should ensure the water supply is regular in quarters, if not, then regularised the water supply by removing air lock if any etc. **RCC tank will be measured in this item. (NOTE:- The Contractor has to make an own arrangement of Power supply from nearest recommended power point as shown by EMD)** **For capacities from 40,001 litrs to 1,20,000 liters.**	10.00	6,226.00	Per nos	62,260.00
4.113	Providing and fixing Wall mounted closet STUDIO 20061 (41x36x52)cm along with white seat cover,anchor fastner,washer including removing the old pan and fixing the new with proper position etc all complete	50.00	10515.00	Per No	5,25,750.00
4.114	Providing and constructing Brick Masonry Inspection Chamber 90 cm x 45 cm upto 90 cm in depth including cement concrete in M-20 100mm thick foundation with 100mm offset outside of wall , 23 cm thick channels, 230mm width brick masonry, 20mm thick floting plastering from inside surface in 1:3 and 20mm thick single coat plaster outside in 1:4 as required and airtight RCC cover medium duty manufactured by K.K.Manholes, Neco or equivalent as approved by Engineer with frame work fixed in cement concrete 1:1.5:3 etc all complete as directed by Engineer In-charge.	150.00	21286.00	Nos	31,92,900.00

4.115	Providing and constructing Brick Masonry Inspection Chamber 90 cm x 45 cm and 90 cm to 150 cm in depth including cement concrete in M-20 100mm thick foundation with 100mm offset outside of wall , making necessary channel in cement concrete 1:1.5:3 finished with a floating coat of neat cement, all complete as per standard design,, 230mm width brick masonry 1:6, 20mm thick floating plastering from inside surface in 1:3 and 20mm thick single coat plaster outside in 1:4 as required and airtight RCC cover with frame work fixed in cement concrete 1:1.5:3 etc all complete as directed by Engineer In-charge.	30.00	25493.00	Nos	7,64,790.00
4.116	Constructing conical manhole of size 900mm internal diameter at bottom and 525mm internal diameter at top up to depth 1500 mm with brick masonry circular wall 340mm thick in cement mortar 1:6 over a bed of 230mm thick cement concrete M-20 (1:1½:3) foundation square shape in plan with 150mm minimum offset beyond masonry wall plastering with cement mortar 1:4, 20mm thick on internal, external and all exposed faces, finished with floating coat of neat cement, including necessary cement concrete M-20 (1:1½:3) for forming benching and channel, providing and fixing C.I. steps weighing not less than 3.50 Kg. fixing top one at 450mm from top level and remaining steps at 300mm vertical spacing in staggered fashion, including providing and fixing precast R.C.C. frame and cover of thickness 100/150mm, heavy duty, manufactured by K.K.Manholes, Neco or equivalent as approved by Engineer Incharge and fixing with cement concrete coping M-20 (1:1½ :3) and plastering complete including necessary dewatering etc.all complete as directed by Engineer In-charge.	30.00	30319.00	Nos	9,09,570.00
4.117	Extra & above for manhole depth beyond 1500mm in cylindrical shape of 900mm diameter with 340mm thick brick masonry wall in cement mortar 1:6 providing and fixing C.I. steps, plastering, finishing, dewatering etc. Complete.	30.00	13585.00	Rmt	4,07,550.00
4.118	Making necessary connection / disconnection to existing chamber / branch line / tank or as specified etc. with making necessary hole / cutting etc. & remaking the same etc.all competed as directed by Engineer In-charge.	60.00	1001.00	Nos	60,060.00
4.119	Providing and fixing 560mm dia. Heavy duty ductile iron manhole covers with frame for inspection chamber / manhole and other required places manufactured by M/s.NECO or equivalent etc. all complete as directed.	30.00	11338.00	Nos	3,40,140.00
4.120	Providing and fixing 600mm x 450mm rectangular heavy duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places of NECO or equivalent make etc. all complete as directed.	30.00	18914.00	Nos	5,67,420.00
4.121	Providing and fixing 900mm x 450mm rectangular heavy duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places of NECO or equivalent make etc. all complete as directed.	30.00	23766.00	Nos	7,12,980.00
4.122	Providing and fixing 900mm x 600mm rectangular heavy duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places of NECO or equivalent make etc. all complete as directed.	30.00	21335.00	Nos	6,40,050.00
4.123	Providing and fixing 900mm x 450mm rectangular Heavy duty FRP grating covers with frame for inspection chamber / manhole / gulley trap/ over storm water drain and other required places manufactured by M/s.KK or equivalent including closing the gaps between frame and surface with cement mortar all complete as directed.	30.00	13080.00	Nos	3,92,400.00

4.124	Providing and fixing 600mm diameter circular Heavy duty composite FRP manhole covers with frame for inspection chamber/ manhole and other required places manufactured by M/s.KK or equivalent etc. all complete as directed.	30.00	13216.00	Nos	3,96,480.00
4.125	Providing and fixing precast RCC slab for drain cover and chember cover of required size with M-25 grade concrete and reinforced with 10mm dia main steel bars (along shorter span) and 8mm. dia distribution bars (along longer span) at 100mm center to center including making steel form work, making temporary concrete platform for casting, compaction using surface vibrator, with two lifting hooks of 6mm dia / holes of 40mm dia PVC pipe 8 to 10 nos per cover finishing the surface with smooth cement finish curing, placing the precast slab in proper position etc. complete as directed.	20.00	23278.00	m3	4,65,560.00
4.126	Raising manhole cover and frame of any size slab to required level including dismantling existing slab and making good the damage as required (a) Rectangular manhole/ chamber of any size	30.00	2485.50	Nos	74,565.00
4.127	Raising manhole cover and frame of any size slab to required level including dismantling existing slab and making good the damage as required (b) Circular manhole of any size	30.00	3674.53	Nos	1,10,235.90
4.128	Providing and fixing 300 x 300 mm precast gully trap cover with frame for required places manufactured by approved brand etc. all complete as directed.	150.00	1131.00	Nos	1,69,650.00
4.129	Providing & fixing 15 mm of approved brand brass patti valve with new fittings, removing old broken valve wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	150.00	440.00	Nos	66,000.00
4.130	Providing & fixing 20 mm of approved brand brass patti valve with new fittings, removing old broken valve wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	150.00	510.00	Nos	76,500.00
4.131	Providing & fixing 25 mm of approved brand brass patti valve with new fittings, removing old broken valve wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	90.00	672.00	Nos	60,480.00
4.132	Providing & fixing 40 mm of approved brand brass patti valve with new fittings, removing old broken valve wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	60.00	1102.00	Nos	66,120.00
4.133	Providing & fixing 15 mm of Satyam /Kohinoor brand brass ballcock & rod with new fittings, removing old broken ballcock wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	60.00	556.00	Nos	33,360.00
4.134	Providing & fixing 20 mm of Satyam /Kohinoor brand brass ballcock & rod with new fittings, removing old broken ballcock wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	90.00	626.00	Nos	56,340.00
4.135	Providing & fixing 25 mm of Satyam /Kohinoor brand brass ballcock & rod with new fittings, removing old broken ballcock wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	150.00	788.00	Nos	1,18,200.00

4.136	Providing & fixing 40 mm of Satyam /Kohinoor brand brass ballcock & rod with new fittings, removing old broken ballcock wherever existing. (5% cost will be deducted for taking away the removed material outside IIT campus)	150.00	1485.00	Nos	2,22,750.00
4.137	Providing and fixing 25 mm dia gun metal pressure reducing valve I.S.I. approved heavy type including removing existing pressure reducing valve , with all required fittings etc. complete as directed (5% cost will be deducted for taking away the removed material outside IIT campus)	50.00	3457.00	Nos	1,72,850.00
4.138	Providing and fixing 32 mm dia gun metal pressure reducing valve I.S.I. approved heavy type including removing existing pressure reducing valve , with all required fittings etc. complete as directed (5% cost will be deducted for taking away the removed material outside IIT campus)	50.00	3584.00	Nos	1,79,200.00
4.139	Providing and fixing 40 mm dia gun metal pressure reducing valve I.S.I. approved heavy type including removing existing pressure reducing valve , with all required fittings etc. complete as directed (5% cost will be deducted for taking away the removed material outside IIT campus)	50.00	3759.00	Nos	1,87,950.00
4.140	Providing and fixing 25 mm vertical gun metal non-return valve ISI approved heavy type including removing existing non-return valve. with all required fittings etc. complete as directed. (5% cost will be deducted for taking away the removed material outside IIT campus)	10.00	590.82	per no	5,908.20
4.141	Providing and fixing 32 mm vertical gun metal non-return valve ISI approved heavy type including removing existing non-return valve. with all required fittings etc. complete as directed. (5% cost will be deducted for taking away the removed material outside IIT campus)	10.00	804.91	per no	8,049.10
4.142	Providing and fixing 40 mm vertical gun metal non-return valve ISI approved heavy type including removing existing non-return valve. with all required fittings etc. complete as directed. (5% cost will be deducted for taking away the removed material outside IIT campus)	10.00	1074.20	per no	10,742.00
4.143	Providing and fixing 50 mm vertical gun metal non-return valve ISI approved heavy type including removing existing non-return valve. with all required fittings etc. complete as directed. (5% cost will be deducted for taking away the removed material outside IIT campus)	10.00	1368.09	per no	13,680.90
4.144	Providing and fixing 40 mm foot valve ISI approved including removing existing foot valve, with all required fittings etc. complete as directed. (5% cost will be deducted for taking away the removed material outside IIT campus)	10.00	5190.00	Nos	51,900.00
4.145	Providing and fixing 50 mm foot valve ISI approved including removing existing foot valve, with all required fittings etc. complete as directed. (5% cost will be deducted for taking away the removed material outside IIT campus)	10.00	5527.00	Nos	55,270.00
4.146	Providing & fixing Jaquar spindle for bib tap and removing old broken spindle wherever existing etc. complete as directed. (5% cost will be deducted for taking away the removed material outside IIT campus)	75.00	388.00	Nos	29,100.00

4.147	Providing & fixing Jaquar spindle for mixure and removing old broken spindle wherever existing etc. complete as directed. (5% cost will be deducted for taking away the removed material outside IIT campus)	75.00	388.00	Nos	29,100.00
				Total Amount of Rs. (4)	**3,28,85,722.45**

5) Wooden joinery / Aluminium / Roofing work					
5.01	Removing door and windows of any size and any height type with frame, mild steel / wrought iron grill work and stacking the same and depositing to Estate stores if required. (scaffolding will be paid in separate item if required) (Recovery of wood scrap will be done @ Rs. 25 per kg, aluminium scrap will be done @ Rs. 120 per kg and structural steel will be done @ Rs. 20 per kg from Item of work agains actual weigth if material taken outside campus)	150.00	347.62	Nos	52,143.00
5.02	Removing flush door and glazed windows shutters carefully without damaging wooden frame of any size and stacking the same and depositing to Estate stores if required. (Recovery of wood scrap will be done @ Rs. 25 per kg, aluminium scrap will be done @ Rs. 120 per kg and structural steel will be done @ Rs. 20 per kg from Item of work agains actual weigth if material taken outside campus)	150.00	135.85	Nos	20,377.50
5.03	Modification of existing door shutter by removing the door shutter and cutting the door shutter from bottom side up to 1/2" to 11/2" thick and refixing the same shutter after rectification with new beading patti, painting work with new brass hinges, screws etc. Complete.	250.00	406.22	Nos	1,01,555.00
5.04	Providing and fixing M.S. grills of required pattern in frames of windows etc. fixed to openings /wooden frames with rawl plugs screws etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.	1000.00	225.64	kg	2,25,640.00
5.05	Providing and fabricating structural steel works in rolled sections like joints, channels, angles, tees etc. as per details designs & approved pattern including fixing in position with connecting plates, braces and welding, riveting, bolting as necessary including zinc primer coat & two coats of synthetic enamel paint etc. (scaffolding will be paid in separate item if required)	2000.00	111.09	Kg	2,22,180.00
5.06	Providing fabricating and fixing Steel work in built up tubular (round, square or rectangular hollow tubes,trusses etc.) in hot finished welded type tubes , 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.	750.00	184.03	kg	1,38,022.50
5.07	Providing and fixing 35mm FRP door manufactured by M/s. Advance Company including brass hinges, both side brass handles, brass aldrop, tower bolt, brass tadi patti etc. complete at any location in residential building as directed.	100.00	3765.00	Sqm	3,76,500.00
5.08	Providing and fixing 3" Anchor Fastener wherever necessary etc. Complete.	100.00	115.00	nos	11,500.00

5.09	Supplying fabricating and fixing in position fully glazed aluminium openable window using aluminium section 42 x 30 x 1.5mm (0.526/rmt) size aluminium single border outer frame of window shutter, 42 x 37 x 1.5mm size(0.724kg/rmt), aluminium Z section for window shutter, 28 x 14.5 x 1.5mm(0.286kg/rmt) size, aluminium clip for window shutter 45 x 45 x 1.5mm(0.762kg/rmt)(size, Z aluminium center patti for mullion & intermediate section, 37mm x 37mm (0.820kg/rmt) aluminium angles 2mm thick, 5mm thick plain or frosted glasses with rubber gasket, 3 Nos. S.S. Hinges 75mm size (heavy) on each window shutter, aluminium tower bolt 100mm size 1 Nos on each leaf, aluminium stay 200mm to 250mm long 1 No per leaf, aluminium handle 1 Nos per leaf, provision for fixing AC with teak wood members inside box, (if required).etc. Complete. (all aluminium section should be 15 micron anodized or as directed and of Jindal make.	75.00	8258.00	Sq.m	6,19,350.00
5.10	Providing and fixing aluminium louvered ventilators using 50mm x 25mm x 16 gauge (not less than 0.593 kg/mtr) aluminium box frame anodized to 15 microns for outer frame and intermediate vertical members as directed including 5mm thick plain or frosted glass (Make Modi Guard/Saint-Gobain) 125mm wide for louvers at proper inclination including P/F glass on adjustable aluminium louvered of approved size and making provision of fixing exhaust fan etc. all complete (Aluminium section anodized to 15 microns , Jindal make or as directed.	175.00	6157.00	Sqm	10,77,475.00
5.11	Providing and fixing in position fixed glazing using 63mm x 38mm x 1.65mm (0.942 kg/rmt) 15 micron / powder coated anodized aluminium partition section for frame with screws and providing 5mm thick clear plain glass (Make Modi Guard/Saint-Gobain) fixed to the above frame using glazing clip with rubber gaskets, filling all gaps with appropriate fillers etc. all complete.(Jindal Make)	75.00	5047.00	sqm	3,78,525.00
5.12	Providing and fixing in position two track aluminium sliding windows using track section of size 61mm x45mm x1.3mm(1.055kg/rmt) thick for bottom, section of size 61mmx31mmx1.3mm(0.659kg/rmt)for side &top .The shutter should be of bearing bottom of size 40mm x18mmx1.25mm (0.417kg/rmt)thick, top member of size 40mm x 18mm x 1.20mm(0.475kg/rmt) thick , Interlocking section of size 43mm x 27mm x 1.30mm (0.558kg/rmt)thick , handles section of size 43mm x 18mm x 1.30mm(0.424kg/rmt) thick including providing and fixing **SS304 grade flyproof mesh** in the shutter using aluminium U clip, approved quality minimum two nos. PVC rollers for each shutter,necessary locks,handles,PVC liningand other required fitting s etc. complete as directed by engineer incharge. (all aluminium section should be 15 micron anodized/ section of Jindal make or as directed.)	75.00	5926.00	Sq.m	4,44,450.00
5.13	Providing and fixing in position two track aluminium sliding windows using **rectangular box section** of size 63mmx38mmx2.00mm (1.054kg/mtr) for outer frame, bottom section of size 61 mm x 45 mm x 1.3 mm (1.055kg/mtr) thick for bottom, sections of size 61 mm x 31mm x 1.3 mm (0.659kg/mtr) thick for sides and top. The shutter should be of bearing bottom of size 40 mm x18 mm x 1.25 mm (0.417kg/mtr) thick , top member of size 40 mm x 18 mm x 1.20 mm (0.475kg/mtr) thick, Interlocking section size of 43 mm x 27 mm x 1.30 mm (0.558kg/mtr) thick and handle section of size 43mm x 18 mm x 1.30 mm (0.424kg/mtr) thick including providing and fixing **S.S. 304 Jali flyproof mesh** in the shutter using u channel approved quality minimum two nos.PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings,shutter width should not be more than 0.6m etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized Jindal make or as directed).	75.00	6902.00	Sq.m	5,17,650.00

5.14	Providing and fixing in position two track aluminium sliding windows using **drain bottom section or equivalent** of size 61 mm x 45 mm x 1.3 mm(1.055kg/rmt) thick for bottom, sections of size 61 mm x 31mm x 1.3 mm (0.659kg/rmt)thick for sides and top. The shutter should be of bearing bottom of size 40 mm x18 mm x 1.25mm(0.417kg/rmt) thick , top member of size 40 mm x 18 mm x 1.20 mm (0.475kg/rmt)thick, Interlocking section size of 43 mm x 27 mm x 1.30 mm(0.558kg/rmt) thick and handle section of size 43mm x 18 mm x 1.30 mm(0.424kg/rmt) thick including providing and fixing **5mm thk. glass (plain or frosted) (Make Modi Guard/Saint-Gobain)**in the shutter using rubber gasket, approved quality minimum two nos.PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized Jindal make or as directed).	75.00	5830.00	Sq.m	4,37,250.00
5.15	Providing & fixing in position extruded modular aluminium section two track sliding window mounted on **rectangular frame of size 63mm x 38mm x 2.00mm thick** (1.054 kg/Rmt) made up of two track drain bottom section of size 61mm x 45mm x 1.3mm thick (1.055 kg/Rmt) and top and sides sections of size 61mm x 31mm x 1.3mm thick (0.659 kg/Rmt) The shutter should be of bearing bottom of size 40mm x 18mm x 1.25 mm (0.417 kg/Rmt) top member of size 40mm x 18mm x 1.20mm thick (0.475 kg/Rmt) Interlocking section size of 43mm x 27mm x 1.30mm thick (0.558 kg/Rmt) and handle sectionof size 43mm x 18mm x 1.30 mm thick (0.424kg/Rmt),selected quality **5mm thick clear glass (plain or frosted) (Make Modi Guard/Saint-Gobain)** to be fixed in shutter with neoprene gasket with approved quality PVC rollers, necessary locks, handles PVC lining and wooden encasement wherever necessary etc. Complete. (All aluminium sections and fitting should be 15 micron anodized and Jindal make or as directed).	40.00	7591.00	sqm	3,03,640.00
5.16	Providing and fixing in position three track aluminium sliding windows using track sections of size 92 mm x 31mm x 1.3 mm (0.933kg/mtr) thick for bottom, sides and top. The shutter comprising of bottom and top member of size 40 mm x18 mm x 1.25 mm (0.417kg/mtr) thick , interlocking section of size 40 mm x 18 mm x 1.10 mm (0.469kg/mtr) thick and handle section of size 40mm x 18 mm x 1.25 mm (0.417kg/mtr) thick including providing and fixing **S.S 304 grade flyproof mesh** in the shutter using aluminium U clip, approved quality minimum two nos.PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, provision for fixing A.C. units (if required) etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized and of Jindal make)	40.00	6357.00	Sq.m	2,54,280.00
5.17	Providing and fixing in position three track aluminium sliding windows using **rectangular box section** of size 100mmx40mmx1.30mm (0.976kg/mtr) for outer frame, drain bottom section of size 92 mm x 45 mm x 1.05 mm (1.659kg/mtr) thick for bottom, sections of size 92 mm x 31mm x 1.3 mm (0.933kg/mtr) thick for sides and top. The shutter comprising of bottom and top member of size 40 mm x18 mm x 1.25 mm (0.417kg/mtr) thick , interlocking section of size 40 mm x 18 mm x 1.10 mm (0.469kg/mtr) thick and handle section of size 40mm x 18 mm x 1.25 mm (0.417kg/mtr) thick including providing and fixing **S.S. 304 Jali flyproof mesh** in the shutter using u channel approved quality minimum two nos PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, shutter width should not be more than 0.6m etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized and of Jindal make)	40.00	7341.00	Sq.m	2,93,640.00

5.18	Providing & fixing in position extruded modular alluminium section three track sliding window made up of three track drain bottom section of size 92mm x 45mm x 1.05mm thick (1.659 kg/Rmt) three track and top and side sections of size 92mm x31mm x 1.30mm thick (0.933 kg/Rmt) The shutter comprising of bottom and top member of size 40mm x 18mm x 1.25mm thick (0.417 kg/Rmt) interlocking section of size 40mm x18mm x 1.10mm thick (0.469 kg/Rmt)handles section of size of 40mm x 18mm x1.25mm thick (0.417 kg/Rmt) with **5mm thick glass (plain or frosted) (Make Modi Guard/Saint-Gobain)** fixed in shutter with approved quality neoprene, gasket, P.V.C lining etc. Complete. (excluding frame.(Note: All aluminium sections and fitting are 15 micron anodized and Jindal make)	60.00	6974.00	Sq.m	4,18,440.00
5.19	Providing & fixing in position extruded modular aluminium section three track sliding window made up of **rectangular box section** of size 100mmx40mmx1.30mm (0.976kg/mtr) for outer frame, three track drain bottom section of size 92mm x 45mm x 1.05mm thick (1.659 kg/Rmt) three track and top and side sections of size 92mm x31mm x 1.30mm thick (0.933 kg/Rmt) The shutter comprising of bottom and top member of size 40mm x 18mm x 1.25mm thick (0.417 kg/Rmt) interlocking section of size 40mm x18mm x 1.10mm thick (0.469 kg/Rmt)handles section of size of 40mm x 18mm x1.25mm thick (0.417 kg/Rmt) with **5mm thick glass (plain or frosted)** (Make Modi Guard/Saint-Gobain) fixed in shutter with approved quality neoprene, gasket, P.V.C lining etc. Complete. (excluding frame.(Note: All aluminium sections and fitting are 15 micron anodized and Jindal make)	50.00	7427.00	Sq.m	3,71,350.00
5.20	Providing & fixing in position extruded modular aluminium section three track sliding window mounted on **rectangular frame** of size 100mm x 40mm x 1.30mm thick (wt 0.933 kg/Rmt) made up of three track drain bottom section of size 92mm x 45mm x 105mm thick (1.659 kg/Rmt) three track top and side of size 92mm x31mm x 1.3mm thick (0.933 kg/Rmt) The shutter comprising of bottom and top member of size 40mm x 18mm x 1.10mm thick (0.469 kg/Rmt)handle sides of size 40mm x18mm x 1.25mm thick (0.417 kg/Rmt)with 2 shutter of 5.0mm thick glass (plain or frosted) fixed in shutter with approved quality neoprene gasket, PVC rollers, locks, handles, PVC lining and one shutter with **S.S. 304 Jali flyproof mesh** in the shutter using u channel approved quality minimum two nos PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, shutter width should not be more than 0.6m etc. complete as directed wherever necessary etc. Complete. (Note: All aluminium sections and fitting are 15 micron anodized and of Jindal make)	40.00	7398.00	Sq.m	2,95,920.00
5.21	Providing & fixing in position extruded modular aluminium section three track sliding window made up of three track drain bottom section or equivalent of size 92mm x 45mm x 105mm thick (1.659 kg/Rmt) three track top and side of size 92mm x31mm x 1.3mm thick (0.933 kg/Rmt) The shutter comprising of bottom and top member of size 40mm x 18mm x 1.10mm thick (0.469 kg/Rmt)handle sides of size 40mm x18mm x 1.25mm thick (0.417 kg/Rmt)with 2 shutter of 5.0mm thick glass (plain or frosted) (Make Modi Guard/Saint-Gobain) fixed in shutter with approved quality neoprene gasket, PVC rollers, locks, handles, PVC lining and one shutter with **S.S. 304 Jali flyproof mesh** in the shutter using u channel approved quality minimum two nos PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, shutter width should not be more than 0.6m etc. complete as directed wherever necessary etc. Complete. (Note: All aluminium sections and fitting are 15 micron anodized and of Jindal make)	40.00	6199.00	Sq.m	2,47,960.00

5.22	Providing and fixing in position aluminium 15 micron anodized openable window with stainless steel flyproof mesh of 304 grade having aluminium powder coated " L" pipe section 38mm x 25mm (0.45kg/rmt) for frame and shutter frame of 38mm x 18mm (0.45kg/m) aluminium section and fixing the stainless steel mesh with U channel with screws including necessary fitting and fixtures such as two numbers stainless hinges, stainless steel handle one number and magnet one number or tower bolt etc. complete as directed. (All aluminium section of Jindal make)	55.00	3963.00	Sq.m	2,17,965.00
5.23	Providing and fixing openable shutter made up of aluminium anodized 15 micron handle section 38mm x 18mm(0.45kg/rmt) or near available sections on top, bottom and sides, P/F 4mm thick hardner sheet of Bckelite of desire shead and pattern, P/F stainless steel hinges 75mmx35mm(2 nos.) for each shutter,1nos. of S.S tower bolt on each shutter,1no handle(S.S) for each shutter, magnet etc. including fixing the shutter over the L pipe section of 38mmx25mmx1.5mm (45kg/rmt) with screws in line and level,rectification of all damages etc. complete as directed. (All aluminium section of Jindal make)	85.00	6862.00	Sq.m	5,83,270.00
5.24	Providing and fixing with anodising or powder coating aluminium section for **door frame, windows, partitions** and any other require work etc. of required size including fixing with required fittings such as screws and other required fittings including fixing in proper alignment, rectifying all damaged, P/F wood inside frame for fixing hinges (if required) etc. completed as directed.	175.00	541.00	kg	94,675.00
5.25	Providing and fixing bright finished brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality (Godrej make or equivelent) with necessary screws etc. Complete	75.00	809.08	nos	60,681.00
5.26	Providing and fixing 18mm thick commercial plywoods for drower, panelling, shutters, partition and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	100.00	861.00	Sq.m	86,100.00
5.27	Providing and fixing 18mm thick marine plywood for drower, panelling, shutters, partition and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	100.00	1347.00	Sq.m	1,34,700.00
5.28	Providing & fixing 1mm thick designer laminate of approved brand and pattern wherever required including, making necessary groves wherever required as per standard practice with all required fittings and fixtures etc. complete as directed.	200.00	650.00	sq.m	1,30,000.00
5.29	Providing and fixing magnetic catcher of approved quality in cupboard / ward robe shutters, including fixing with necessary screws etc. complete a) Triple strip vertical type	75.00	49.70	each	3,727.50
5.30	Providing and fixing magnetic catcher of approved quality in cupboard / ward robe shutters, including fixing with necessary screws etc. complete b) Double strip (horizontal type)	80.00	37.58	each	3,006.40
5.31	Providing and fixing mirrors 6mm thick of approved Indian quality copper plated with 10mm thick waterproof plywood backing, fixing mirror on wall with cup washer and screws etc. all complete as directed.	200.00	1514.00	sq.m	3,02,800.00

5.32	Providing and fixing 600 x 450mm x 6mm thk mirrors of approved Indian quality copper plated with 10mm (3/8") thick plywood backing, in the masonry etc. Make Modi Guard/Saint-Gobain etc. complete. contractor will be allowed to take away old mirror if available and for which 5% deduction will be made of schedule rate of this item.	150.00	1522.21	each	2,28,331.50
5.33	Providing and fixing 6mm thk Glass shelf 125mm (5") wide and 610mm (24") long with necessary chromium plated brackets providing teak wood gutties etc. Make Modi Guard/Saint-Gobain etc. complete. contractor will be allowed to take away old glass shelf if available and for which 5% deduction will be made of schedule rate of this item.	150.00	1025.73	each	1,53,859.50
5.34	Providing and fixing chromium plated SS towel rod 20 mm dia and 75 cm. in length including all accessories complete.	200.00	718.00	No	1,43,600.00
5.35	Providing and fixing cement bonded wood particle board (bison panel) of 20mm thick to chajja at any floor, providing suitable hole for fixing nuts and bolts including making suitable groove in walls providing plaster and vatta with proper slope complete as directed. (scaffolding will be paid in separate item if required)	200.00	1467.00	Sqm	2,93,400.00
5.36	Providing and fixing 12mm thick cement bonded wood particle board (bison panel) for chajja, ceiling, staircase at any floor, providing suitable hole for fixing nuts and bolts including making suitable groove on walls, making vata at joint, P/F sheet in proper slope including double scaffolding wherever required complete as directed.	120.00	1177.00	Sqm	1,41,240.00
5.37	Providing Second class teak wood in wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).	6.00	135327.33	Cum	8,11,963.98
5.38	Shifting all the material inside the flats to nearby location (vacant flat) in IITB campus & relocating the same to the original flats as per original arrangement , removing all fitting like Auqa gard, geyser and carpentry work and refixing the same in alternate as well as reallotted accomendation after reallotment etc., Complete as directed	55.00	9875.00	per job	5,43,125.00
5.39	Shifting all the material inside the flats to any where at the required location (vacant flat) in IITB campus & relocating the same to the original flats as per original arrangement , removing all fitting like Auqa gard, geyser and carpentry work and refixing the same in alternate as well as reallotted accomendation after reallotment including vehicle (tempo/truck) all Complete as directed	15.00	13109.00	per job	1,96,635.00
5.40	Providing and fixing solid core flush door in single or double leaf 35mm thick of commertial type of exterior grade, approved commertial plywood facing both side without glazing and venetians, all necessary beads, moulding and lipping, 300mm long 2 nos. decoretive type S.S handles for each shutters, 8" long stainless steel tower bolt 1 no for each shutter etc. complete (without frame). (fittings will be approved by Engineer in charge before fixing)	60.00	5816.00	Sq.m	3,48,960.00

5.41	Providing and fixing solid core flush door in single or double leaf 35 mm thick of commercial type of exterior grade, approved commercial plywood facing both side without glazing and venetians, all necessary beads, moulding and lipping, 300mm long 2 nos. decorative type S.S handles for each shutters, 8" long stainless steel tower bolt 1 no for each shutter, 6 lever Godrej mortise lock with triplicate keys and other required fittings etc. complete (without frame). (fittings will be approved by Engineer in charge before fixing)	50.00	6701.00	Sq.m	3,35,050.00
5.42	Providing and fixing country teakwood 2nd class fully glazed single / double leaf windows / ventilators rectangular in shape adopting section of 70mm x 32mm for styles and rails as per drawing including providing and fixing 5 mm thick plain / bajiri glass (Make Modi Guard/Saint-Gobain) with teakwood beading, fixing the window / ventilator shutters with 75mm size butt hinges (Brass oxidized) 2 Nos. for each shutter, aluminium towerbolt 100mm size one for each shutter, aluminium handle 125mm one for each shutter, hooks & eyes 200mm one for each shutter, applying two coats of synthetic enamel paint of approved brand and shade over a coat of wood primer including removing the existing shutter etc. Complete.	150.00	7618.00	sqm	11,42,700.00
5.43	Providing and fixing single leaf or double leaf panelled door shutters 35mm thick as per detailed drawings consisting of country cut teak wood styles, top rail, frieze rail of 95mm x 35mm, lock rail of 145mm x 35mm and bottom rail of 245mm x 35mm and insert panels of 12mm thick, **marine plywood** generally conforming to IS: 710 with heavy duty M.S. pressed butt hinges bright finished of required size with necessary screws, P/F 300mm long heavy duty stianless steel aldrop, other require fittings and fixtures etc. complete.	60.00	5728.00	sqm	3,43,680.00
5.44	Providing & fixing solid core flush door in single leaf 35mm thick commertial plywood facing both side without glazing and venetians, all necessary beads, moulding and lopping , **with 1mm thk laminate on both sides** including 6" long 2 nos S.S. handle, 8" long S.S. tower bolt 1nos, 4" long brass hings (heavy type), 6 lever Godrej mortise lock with triplicate keys and other required fittings etc. complete (without frame)	30.00	8086.00	Sq.m	2,42,580.00
5.45	Providing and fixing Fire rated door shutter made with 1.6 mm thick G.I sheet having 2 hours of fire resistant and all necessary required fittings and fixtures etc., door closer, panic bar, SS ball baring, vision wired panel, D type handle all of approved make, all complete as directed by Engineer In-charge.	20.00	16266.00	Sq.m	3,25,320.00
5.46	Providing and fixing 16mm dia. mild steel round bars at 100mm c/c to windows / ventilators / fanlights, fixing mild steel Flats 40 x 6mm in frame, cutting a recess to fit the flat exactly including drilling the holes to flats to pass the bars through it 25mm inside in wooden frame including providing one central mild steel flat of 40 x 6mm by drilling holes (when bar length exceeds 75cm) etc. Complete.	250.00	114.31	kg	28,577.50
5.47	Providing and laying 6mm thick plain glass fibre sheet of translucent top side tissue material as per IS 12866, resin with U.V stablized isophthalic base , light, transmission approved manufacture and desired shade including laying on surface , cleaning etc. All directed.	60.00	5982.00	Sq.m	3,58,920.00
5.48	Providing & replacing in position Godrej night latch without damaging door & frame with automatic locking arrangement, triplicate keys etc. complete as directed.	50.00	2791.00	No	1,39,550.00

5.49	Providing and Replacing 5 mm thick plain/bajri glass (Modi Guard/Saint-Gobain make)of doors and windows etc. including teakwood beading etc. Complete.	150.00	1348.00	sqm	2,02,200.00
5.50	Providing and fixing fly proof stainless steel mesh of approved quality SS 304 grade to windows, doors and any other location using teak wood or aluminium anodised section of require size with necessary fittings and fixtures etc. complete as directed.	200.00	1511.99	Sq.m	3,02,398.00
5.51	Making the wooden doors, windows etc. and all the fittings and fixtures in easily operational condition in all type of quarteres by providing necessary screws, oiling the fixtures, removing rust etc. from fittings plaining the frames etc. all complete as directed.	30.00	1066.00	Jobs	31,980.00
5.52	Easying the aluminium sliding windows by means of making freely operationable condition including cleaning the tracks, providing and fixing PVC rollers/ bearing (Heavy quality), concealed locks – 02 Nos etc. all required fittings for window of two track or three track etc. all complete as directed.	100.00	1791.00	Per window	1,79,100.00
5.53	Easying the aluminium sliding windows by means of making freely operationable condition including cleaning the tracks, providing and fixing PVC rollers/ bearing (Heavy quality), concealed locks – 04 Nos etc. all required fittings for window of four tracks and more etc. all complete as directed.	30.00	3024.00	per window	90,720.00
5.54	Removing the existing kitchen trolly & refixing existing sliding channels with oiling and greasing, welding existing broken SS round bars. Providing new screws after that refixing to orignal place including cleaning site etc. Complete	50.00	1119.00	Per job.	55,950.00
5.55	Replacing by providing and fixing 6 mm thick toughen plain glass of doors and windows etc. including removing existing damaged glass neatly without damaged structure etc. Complete.	30.00	2896.00	Sq.m	86,880.00
5.56	Providing and applying French polishing to new wood work including knotting, preparing the surface including step ladder etc. complete as directed.	30.00	422.46	Sqm	12,673.80
5.57	Providing and applying French polishing for required polish on previously polished wood including knotting, preparing the surface, step ladder etc. complete as directed.	30.00	212.81	Sqm	6,384.30
5.58	Providing and fixing colour coated Galvalume profile precoated sheet for roofing and cladding having thickness 0.50mm TCT of Jindal Make with required colour along with necessary accessories like self drilling and tapping screws with weather cap with all leads and lift etc. complete as directed. (scaffolding will be paid in separate item if required)	200.00	957.00	Sq.m	1,91,400.00

5.59	Providing and fixing colour coated Galvalume profile precoated sheet for roofing and cladding having thickness 0.80 mm TCT of Jindal Make with required colour along with necessary accessories like self drilling and tapping screws with weather cap with all leads and lift etc. complete as directed. (scaffolding will be paid in separate item if required)	80.00	958.00	Sq.m	76,640.00
5.60	Providing & fixing hydraulic door closer of approved quality and approved make (ISI Marks) to door shutter including making proper adjustment for smooth operation etc. Complete.	40.00	1228.00	Nos	49,120.00
5.61	P/F 25mm dia aluminum powder coted heavy duty (58.33gram/ft) approved draftery curtain rod with decorative side holders including required fittings and screws (**length upto 1.5m**) all complete	125.00	365.00	Rmt	45,625.00
5.62	P/F 25mm dia aluminum powder coted heavy duty (58.33gram/ft)approved draftery curtain rod with decorative side holders and middle brackets including required fittings and screws(**length beyond 1.5m**) all complete	110.00	375.00	Rmt	41,250.00
5.63	P/F Stainless steel SS grade 304, curtain rod 25 mm dia 1.20 mm thick upto 1.5 meter with Stainless steel SS grade 304, brackets (curtain rod) 25 mm dia 1.20 mm thick including required fittings and screws, all complete.	100.00	547.00	Rmt	54,700.00
5.64	P/F Stainless steel SS grade 304, curtain rod 25 mm dia 1.20 mm thick more than 1.5 meter with Stainless steel SS grade 304, brackets (curtain rod) 25 mm dia 1.20 mm thick including required fittings and screws, all complete.	100.00	769.00	Rmt	76,900.00
5.65	Providing ,Fabricating and fixing at all floors, locations and heights stainless steel storage / Service Units / kitchen trolleys below existing granite Kitchen Platform upto depth 24 " to 26" as required made with 304 S.S. (Food grade) Comprising of 19mm square pipes outer frame , sink unit with bottle and bin holders , bottle pull out , utensils and storage unit kit etc. as desired by Engineer incharge and as per approved design consisting of 6mm dia S.S. round bars and 5mm dia distribution S.S. round bars or 1 mm thick perforated S.S. sheet where ever required & fabricated as directed including cost of providing teakwood Frame work , Sliding channel, 18mm waterproof plywood with sunmica facia , handles , screws , nails, cost of materials , transporting , labour, wastage and testing etc complete as directed(weight of the trolly should not be less than 55kg/sqm of elevational area)	100.00	30041.00	Rmt	30,04,100.00
5.66	Providing & fixing in position wall unit, overhead storage, made out of using 18mm thick waterproof plywood sides & shutters,6mm thick waterproof plywood backing, 1 mm thick sunmica for all exposed surfaces , CP teakwood frame work / supports fixing the unit on wall , handles with providing & fixing glass shelf of 12mm thick 1 no at 45 cm including necessary edging, moulding , buffing etc. & locking arrengement , hinges & other hardware & required fitting etc. all complete as directed	40.00	10182.00	Sq.m	4,07,280.00
5.67	Supplying fabricating & fixing in position fully galzed aluminium single/double leaf **double glass window** using 15 micron anodized RZ section 46mm x 33mm x 2mm (0.38 kg//Rft)for window shutter , 46mm x 33mm x 2mm aluminium RZ single border outer frame , 21mm x 15mm x 2mm (0.38 kg//Rft) aluminum RZ clip , 60mm x 34mm x 2mm (0.4 kg/rft)aluminum RZ centre , aluminum angle , 5mm thick plain double glass with jambo rubber gasket, adjustable hinges 2 nos on each shutter, z handle 2nos, window stay 2 nos, P/F aluminium outer hollow box section of sixe 50mm x 25mmx 1.5mm (0.18 kg/rft) and fixing the shutter on aluminium outer frame etc. complete as directed(All aluminium section Jindhal make)	40.00	20164.00	Sq.m	8,06,560.00

5.68	Providing,making and fixing in position 19mm thick marine plywood cabinets (kitply/century make) above/below kitchen platform with using 2" x 1 1/2" finished size teak wood frame properly polished and finished and approved sunmica(Marine/greenlamp) of 1mm on both side, Each shutter shall be provided with 4" stainless steel hinges and 6" stainless steel handles of approved quality. The work shall be executed in all respects as directed by the Engineer-in-Charge, ensuring a neat, durable, and high-quality finish.	100.00	6883.00	Sq.m	6,88,300.00
5.69	Providing and fixing in position aluminium **2 track sliding double glass window** in heavy anodized section 15 micron with including frame work of aluminium hollow pipe section 75mm x 25mm size with 14 gauge thick weight of 1.036kg/m , aluminium sliding track of size 66.5x50mm of weight 1.329kg/m with shutter section of size 66x26mm of weight 0.774kg/m including gazing clip of size 38.7x 28.5 mm of weight 0.303kg/m including making holes for draining of water fixing 5mm thick clear double glass shutter with rubber gasket, concealed lock, Meeti make heavy quality bearing including all necessary fittings required for double glass window , providing silicon sealent if required all complete as directed. (all aluminium section will be Jindal make)	40.00	12603.00	sqm	5,04,120.00
5.70	Providing and fixing in position aluminium **2 track sliding double glass window** with **top and bottom fixed double glass** window in heavy anodized section 15 micron with including frame work of aluminium hollow pipe section 75mm x 25mm size with 14 gauge thick weight of 1.036kg/m , aluminium sliding track of size 66.5x50mm of weight 1.329kg/m , shutter section of size 66x26mm of weight 0.774kg/m ,gazing clip of size 38.7x 28.5 mm of weight 0.303kg/m with single groove section of 89x32mm of 2.75 mm thk of weight of 1.933kg/m for fixed glass above and below of sliding window including fixing 5mm thick clear double glass shutter with rubber gasket, concealed lock, Meeti make heavy quality bearing for sliding window including all necessary fittings required for double glass window,providing silicon sealent if required all complete as directed.(all aluminium section will be Jindhal make)	10.00	13884.00	sqm	1,38,840.00
5.71	Providing and fixing in position aluminium **3 track sliding double glass window** in heavy anodized section 15 micron with including frame work of aluminium hollow pipe section 100mm x 40mm size with 14 gauge thick of weight 1.469kg/m , aluminium sliding track of size 101.5x50mm of weight 1.798kg/m with shutter section of size 66x26mm of weight 0.774kg/m including gazing clip of size 38.7x 28.5 mm of weight 0.303kg/m including making holes for draining of water fixing 5mm thick clear double glass shutter with rubber gasket, concealed lock, Meeti make heavy quality bearing including all necessary fittings required for double glass window ,providing silicon sealent if required all complete as directed.(all aluminium section will be Jindhal make)	40.00	10555.00	Sq.m	4,22,200.00
5.72	Providing and fixing in position three track aluminium sliding windows of six shutter using aluminium section of drain bottom of size 116mm x 25mm x 1.35 mm (1.160kg/mtr) thick ,for sides and top section of size 116mm x 25mm x 1.4 mm (1.005kg/mtr) thick . The shutter comprising of bearing bottom section of 60mm x25mm x1.45mm (0.781kg/rmt) and handle aluminium section member of size 50 mm x25mm x 1.5 mm (0.717kg/mtr) thick , interlocking alumnium section with both side interlocking arrangement 44.5mmx25mmx1.06mm(0.637kg/m) and interlocking section with one interlocking arrangement of 45mmx25mmx1.2mm(0.595kg/m) and for central locking providing F section of of section of 40mm x25mm x1.5mm (0.545kg/rmt) including providing and fixing S.S 304 grade flyproof mesh in two shutter using ,aluminium U clip & 6mm toughen glass in four shutter using rubber gasket,. Heavy type of PVC rollers for each shutter, necessary sliding shutter latch, handles, PVC lining and other required fittings etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized & Jindhal make).	20.00	6887.00	Sq.m	1,37,740.00

5.73	Providing and fixing extra shutter of comprising of bottom and top member of size 40 mm x18 mm x 1.25 mm (0.417kg/mtr) thick , interlocking section of size 40 mm x 18 mm x 1.10 mm (0.469kg/mtr) thick and handle section of size 40mm x 18 mm x 1.25 mm (0.417kg/mtr) thick including providing and **fixing S.S 304 grade flyproof mesh** in the shutter using aluminium U clip, approved quality minimum two nos.PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized & Jindhal make).	60.00	2383.00	Sq.m	1,42,980.00
5.74	Providing and fixing extra shutter of comprising of bottom and top member of size 40 mm x18 mm x 1.25 mm (0.417kg/mtr) thick , interlocking section of size 40 mm x 18 mm x 1.10 mm (0.40kg/mtr) thick and handle section of size 40mm x 18 mm x 1.25 mm (0.417kg/mtr) thick including providing and **fixing 5 mm thick glass (Plain or frosted)** in the shutter using neoprene gasket, approved quality minimum two nos.PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, etc. complete as directed by Engineer in charge. (Note: All aluminium sections and fitting are 15 micron anodized & Jindhal make)	80.00	2508.00	Sq.m	2,00,640.00
5.75	Providing & fixing butt hinges heavy aluminium 100mm in brass with new screws, removing old broken hinges wherever existing.	150.00	212.00	Nos	31,800.00
5.76	Providing & fixing butt hinges heavy aluminium 75mm in brass with new screws, removing old broken hinges wherever existing.	150.00	188.00	Nos	28,200.00
5.77	Providing & fixing 150mm tower bolt in aluminium with new screws, removing old broken tower bolt wherever existing.	150.00	107.00	Nos	16,050.00
5.78	Providing & fixing 100mm tower bolt in aluminium with new screws, removing old broken tower bolt wherever existing.	150.00	96.00	Nos	14,400.00
5.79	Providing & fixing buffer stopper with new screws, removing old broken buffer stopper wherever existing.	150.00	145.00	Nos	21,750.00
5.80	Providing and fixing 300mm long stainless steel heavy duty aldrop with require fittings and fixtures etc. Complete.	150.00	592.00	Nos	88,800.00
5.81	Providing and fixing 300mm long heavy duty brass oxidized aldrop with require fittings and fixtures etc. Complete.	40.00	346.00	Nos	13,840.00
5.82	Providing & fixing Jaguar make paper holder with new screws, removing old broken paper holder wherever existing.	80.00	1022.00	Nos	81,760.00
5.83	Providing & fixing Jaguar made towel rack 600mm long with new screws, removing old broken towel rack wherever existing.	65.00	3810.00	No	2,47,650.00
5.84	Providing & fixing Sliding channel of kitchen trolley upto 18 inch long with new screws, removing old broken rusted kitchen trolley channel.	45.00	573.00	Per pair	25,785.00
5.85	Providing & fixing Sliding channel of kitchen trolley upto 20 inch long with new screws, removing old broken rusted kitchen trolley channel.	50.00	1040.00	Per pair	52,000.00

5.86	Providing & fixing Sliding channel of kitchen trolley upto 22 inch long with new screws, removing old broken rusted kitchen trolley channel.	45.00	647.00	Per pair	29,115.00
5.87	Providing & fixing Sliding channel of kitchen trolley upto 24 inch long with new screws, removing old broken rusted kitchen trolley channel.	45.00	684.00	Per pair	30,780.00
5.88	Providing & fixing Hydraulic Sliding channel (Soft Close) of kitchen trolley upto 24 inch long with new screws, removing old broken rusted kitchen trolley channel.	20.00	1214.00	Per pair	24,280.00
5.89	Providing & fixing PVC gasket/ rubber lining with with necessary fitting & fixtures new screws, removing old broken rubber gasket wherever existing.	150.00	86.00	Rmt	12,900.00
5.90	Providing and fixing Galvanised Welded mesh 12mm x 12mm and (18 gauge) to teakwood frame work including fixing weld mesh with 37mm x 12mm teakwood bedding patti and necessary pocketing for opening for shutters with necessary screws , fitting as directed	90.00	758.00	Sq.m	68,220.00
5.91	Replacement of damaged wooden window frames with P/F aluminium outer hollow box frame anodized section of size 65mm x 30mmx 1.5mm (0.227 kg/rft) and removing the existing double glass shutter & damaged teak wood frame with making good base surface with neat cement mortar 1:4 and providing & fabricating aluminium frame of same size and including re- fixing the existing aluminium shutter on anodized aluminium frame with proper rubber gaskets and other fittings such as handle,screws,hinges etc. Complete.	50.00	6408.00	Sq.m	3,20,400.00
5.92	Providing and fixing aluminium framing for the existing/new mirror of Ananta with 2" x 1" aluminum handle patti, rubber gasket, 1" x 1" x 2" aluminum 'L' and screws including removing the mirror from the wall safely and refixing it back with necessary fitting and cleaning the site etc complete.	50.00	3898.00	Per No	1,94,900.00
5.93	Providing and fixing multicell 16mm thick (min.) Polycarbonate UV Insulated sheets of Coxwell, Danpal, Palram, DPI Daylighting make of approved colour in curve or plane shape, panel width 900mm (min.), panels shall be uniform in colour with multi-cell structure. Weight of the panel shall not be less than 3.11Kg/sqm. Panels shall have vertical standing seam at both sides of the panel including all fittings and fixtures such as snap on connector with grip lock 1 / 2 tooth locking mechanism for water and air tightness. Panels shall be fixed on purlins with SS expansion fastener and polycarbonate U connectors. Panels shall be sealed with additional End-cap/Aluminium U profile(mill finish) for ends or welded ends. Panels shall be fixed on end wall by making grooves on wall plaster and fixing the sheet with necessary cement plastering/ grouting with required flashing at the junction of wall/concrete surface and sheets and other required fittings as per manufacturer specifications including scaffolding etc. Panels should be covered under 10 years warranty against any manufacturing defects Note: Payment for flashing will be made in separate item.	120.00	4509.00	Sqm	5,41,080.00

5.94	Providing and fixing in position collapsible steel shutters with vertical channels 20 x 10 x2mm and braced with flat iron diagonals 20 x 5mm size with Top bottom rail of T-iron 40 x 40 x 6mm with 40mm dia. Steel pulleys complete with bolts, nuts, locking arrangement, stoppers, handles including applying priming coat of approved steel primer etc. Including removing the existing damaged collapsible gate and taking it away out of IIT campus etc. Complete as directed.	50.00	10829.62	sq.m	5,41,481.00
5.95	Providing and fixing G. I. chain link fencing 50mm x 50mm x 8 guage thick and of desired height for fencing including welding the chain link fencing with G.I. pipes or M.S. angle frames / flats, applying one coat of metal primer and two coats of synthetic enamel paint of approved colour / brand etc. Complete.	150.00	630.00	sq.m	94,500.00
5.96	Providing and fixing rolling steel shutter fabricated from 18/19 gauge steel laths with side guides, bottom rail, brackets, door suspension shaft including rolling springs, locking arrangement and housing box at the top with one coat of red lead primer etc. Complete.	35.00	5731.00	sq.m	2,00,585.00
5.97	Removing rolling shutters, door shutters and window shutters of any size and type with fittings (if available) and taking out the same outside IIT Campus etc. complete. (5% cost will be deducted from Item of work for material taken outside campus) (scaffolding will be paid in separate item if required)	30.00	155.00	sq.m	4,650.00
5.98	Providing and laying Kotah stone for flooring, skirting, tread, riser of steps 25mm to 30mm thick of required size in plain / diamond pattern on a bed of 1:4 cement mortar (1 cement : 4 crush sand) or 20 mm thick plaster of cement mortar 1:3 (1 cement : 3 coarse sand) including cement float, filling joints with neat cement slurry, curing, polishing and cleaning complete.	100.00	2229.14	Sq.m	2,22,914.00
5.99	Providing and fixing Chequerred precast Cement concrete tiles 22mm thick of approved colour and pattern over steps vertically and horizontaly including filling the joints with light shed pigment with white cement to match the shade of tiles including rubbing, curing and cleaning etc. complete on 20mm thick bed of cement mortar 1:4 (1 Cement : 4 coarse sand) .	75.00	1327.24	Sq.m	99,543.00
5.100	Providing fabricating and fixing in position required shape precoated Galvalume with 0.50 mm TCT flashing having 150mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	90.00	555.00	per rmt	49,950.00
5.101	Providing fabricating and fixing in position required shape precoated Galvalume with 0.50 mm TCT flashing having 200mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	90.00	613.00	per rmt	55,170.00
5.102	Providing fabricating and fixing in position required shape precoated Galvalume with 0.50 mm TCT flashing having 610mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	90.00	1078.00	per rmt	97,020.00

5.103	Providing fabricating and fixing in position required shape precoated Galvalume with 0.50 mm TCT gutter having 610mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	90.00	578.00	per rmt	52,020.00
5.104	Providing fabricating and fixing in position required shape precoated Galvalume with 0.50 mm TCT ridge having 610mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	90.00	520.00	per rmt	46,800.00
5.105	Providing and fixing corrugated galvanized iron sheets of 0.63 mm thickness (24 B.W.G.), if required without wind ties including fastening with galvanized iron screws and nut bolts to the existing structural steel frame work etc complete. As directed by Engineer in charge.	100.00	1029.65	sq.m	1,02,965.00
5.106	Providing and fixing 4mm thick exterior grade ACP sheet of approved colour and pattern over exisitng alumnium frame, fixing the panels using 3M tape, filling the joints using 789 grade silicon sealant with all required fittings and fixtures, screws, hardware using scaffolding or any mechanincal arrangements erected for ACP facade cleaning work etc complete as directed by Engineer In-charge.	100.00	3280.00	sq.m	3,28,000.00
5.107	Supplying and fixing in position sandwich roofing using color galvalume profile precoated sheet for roofing having thickness 0.5mm TCT and jindal make with required colour at top and bottom sheet including necessary accessories like self drilling and tapping screws with weather cap with all leads and lift and fixing as per manufacturers specification, stiching the lap joints (Minimum 150mm) along the length of the sheet with rivets at a maximum spacing of 450 mm including necessary cutting of sheet wherever required and fixing properly in all respects to make the wall /roof water tight and leak proof, providing and fixing WMVPR RB Glasswool 16 kg/m3 - 50mm thickness between galvalume sheets and G. I. Channel having 50mm depth and 1.5mm thickness and connecting the Z purlins with each other including scaffolding etc complete all as directed. No extra payment will be made for overlapping.	80.00	2509.00	sq.m	2,00,720.00
5.108	Providing & fixing 12mm thick Gypsum board on partition, false ceiling including, making necessary groves wherever required as per standard practice, The boards should be taped and filled from underside to give smooth, seamless surface with all required fittings and fixtures etc. complete as directed.	80.00	1149.00	sq.m	91,920.00
5.109	Providing & fixing Z adjustable hinge with new screws, removing old broken Z adjustable hinge.	100.00	479.00	Per No	47,900.00
5.110	Providing & fixing 6 pipes x 5 feet heavy duty SS ceiling cloth hanger with pully including UV protected nylon rope of approved thickness.	20.00	3553.00	Per No	71,060.00
5.111	Providing & fixing UV protected nylon rope of approved thickness for heavy duty SS ceiling cloth hanger.	160.00	30.00	per rmt	4,800.00

5.112	Providing & fixing in position extruded modular aluminium section two track sliding window mounted on **rectangular frame of size 63mm x 38mm x 2.00mm thick** (1.054 kg/Rmt) made up of two track drain bottom section of size 61mm x 45mm x 1.3mm thick (1.055 kg/Rmt) and top and sides sections of size 61mm x 31mm x 1.3mm thick (0.659 kg/Rmt) The shutter should be of bearing bottom of size 40mm x 18mm x 1.25 mm (0.417 kg/Rmt) top member of size 40mm x 18mm x 1.20mm thick (0.475 kg/Rmt) Interlocking section size of 43mm x 27mm x 1.30mm thick (0.558 kg/Rmt) and handle sectionof size 43mm x 18mm x 1.30 mm thick (0.424kg/Rmt), selected quality **4mm thick ACP sheet of desire shead and pattern** to be fixed in shutter with neoprene gasket with approved quality PVC rollers, necessary locks, handles PVC lining and wooden encasement wherever necessary etc. Complete. (All aluminium sections and fitting should be 15 micron anodized and Jindal make or as directed).	10.00	8571.00	Sqm	85,710.00
5.113	Providing and fixing openable shutter made up of aluminium anodized 15 micron handle section 38mm x 18mm(0.45kg/rmt) or near available sections on top, bottom and sides, P/F 4mm thick ACP sheet of desire shead and pattern, P/F stainless steel butt hinges 75x47x1.8 mm IS: 12817 marked (2 nos.) for each shutter, 1nos. of Anodised Aluminium tower bolt on each shutter,1no handle(S.S) for each shutter, magnet etc. including fixing the shutter over the L pipe section of 38mmx25mmx1.5mm (45kg/rmt) with screws in line and level,rectification of all damages etc. complete as directed. (All aluminium section of Jindal make)	10.00	7774.00	Sqm	77,740.00
5.114	Supplying, fabricating and fixing in position partly openable and partly fixed aluminium window using aluminium sections 42 x 30 x 1.5mm (not less than 0.526 kg/mtr) size aluminum single border outer frame of window shutter, 42 x 37 x 1.5mm (not less than 0.724 kg/mtr) size aluminum Z section for window shutter, 28 x 14.5 x 1.5mm size (not less than 0.286 kg/mtr), aluminum clip for window shutter, 45 x 45 x 1.5mm size (not less than 0.764 kg/mtr) Z aluminum center patti for mullion, 37mm x 37mm (not less than 0.820 kg/mtr) angles 2mm thick, 5mm thick plain or frosted glasses with rubber gasket, 3 Nos. S.S. hinges 75mm size (heavy) on each window shutter, aluminum tower bolt 100mm size 1 Nos on each leaf, aluminum stay 200mm to 250mm long 1 No per leaf, aluminum handle 1 Nos. per leaf, provision for fixing AC with teak wood members inside box, (if required) including fixing the window shutter on the aluminium single side partition section for outer frame and intermediate section of size 63x38x1.47mm thick (not less than 0.781 kg/mtr)etc. complete. (all aluminium sections should be 15 micron anodized / powder coated section)	10.00	6000.00	Sqm	60,000.00
				Total Amount of Rs. (5)	**2,65,38,104.48**

6) Special Item					
6.01	Removing the Electrical fittings, wires and electrical conduit pipes from the ceiling surface and Staircases area during the repairing works and keeping aside with proper screws, nuts and bolts and Re-fixing the same with proper fittings with screws and anchor bolts after the completion of repairing works.	150.00	417.00	rmt	62,550.00
6.02	Removing the electrical cable, points, conduits carefully without damage and refixing the same with all necessary fittings etc. all complete as directed by Engineer Incharge.	175.00	130.00	Points	22,750.00

6.03	Deep cleaning of vacant quarter average area of 75 sqm, before handing over the key including wet mopping entire floor, cleaning of toilets with dilute acid, bathrooms, door and window shutters cleaning, fans, kitchen trolley, floor under sink, cabinet drawers inside and outside, loft, cleaning of slidding window track with air blower as required etc. complete.	275.00	1986.00	per quarter	5,46,150.00
				Total Amount of Rs. (6)	**6,31,450.00**

7) Additional items for utility / public building					
7.01	Providing and fixing armstrong mineral fibre board 600mm x 600mm sheet in existing false ceiling frame by removing damaged sheet with required modification in frame as necessary all complete as directed.	20.00	478.00	Per Nos.	9,560.00
7.02	Providing and fixing modular false ceiling of 600mm x 600mm c/c and placing 3mm thick square aluminium composite sheet (alto bond sheet) to be fixed on frame work of aluminium section for suspended false ceiling consisting of aluminium T 1" x 1 ½"(25 x 40mm) weighing 0.259 Kg/m suspended on GI wire at 1200mm c/c, fixed on wall beams, slab including rounding the edge with aluminium T of 1"x 1 ½" (25mm x 40mm) weighing 0.259kg/m(all aluminium section shall be anodized 15micron or powder coated), making necessary cutout for light and fixtures including all labour, material, lifts and scaffolding all complete as directed by Engineer incharge etc.	20.00	2003.00	m2	40,060.00
7.03	Providing & fixing cove false ceiling of 12.5mm thick gypsum board of Gyproc make at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of intermediate G.I channels 45 x15 x 0.90mm & perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long of required width as per site condition suspended from ceiling using angle hangers of 25 x10 x0.50mm of required length with nuts & bolts including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes,finishing with jointing compounds suitable for boards, all as per manufacture's specification	200.00	465.00	Rmt	93,000.00
7.04	Providing & Fixing of G.I Lay-in perforated metal ceiling system consisting of 600x600mm size grid with fleece laying in tiles of pre-coated galvanized steel in 0.4/0.5 mm thickness in required colour with 15mm wide T - section silhoute flanges of required colour having rotary stitching on the main Runner including P/F 1200mm &600mm cross Tees as per manufacturer specifications.	50.00	1780.00	m2	89,000.00
7.05	Providing & fixing 12mm thick Calcium Silicate board on partition, false ceiling including, making necessary groves wherever required as per standard practice, The boards should be taped and filled from underside to give smooth, seamless surface with all required fittings and fixtures etc. complete as directed.	200.00	1751.00	m2	3,50,200.00

7.06	Providing & fixing 6mm thick calcium silicate board (make: Hilux) false ceiling in classrooms, labs at all floors, foyer area, washrooms etc including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I chanels 45 x15 x 0.90mm running at the spacing of 1200 mm c/ c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm centre, with 25mm long dry wall screws @ 230mm interval, including fixing of calcium silicate Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes,finishing with jointing compounds in three layers covering up to 150mm on both sides of joints, all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, covering the carpet, tables, chairs, machines etc with plastic sheets all complete as per drawings, specificaton and direction of the Engineer in charge but excluding the cost of painting.	20.00	1435.00	m2	28,700.00
7.07	Providing & fixing 12.5mm thick gypsum board of Gyproc make at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I chanels 45 x15 x 0.90mm running at the spacing of 1200 mm c/ c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm centre, with 25mm long dry wall screws @ 230mm interval, including fixing of gypsum Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes,finishing with jointing compounds in three layers covering up to 150mm on both sides of joints all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, covering the carpet, tables, chairs, machines etc with plastic sheets all complete as per drawings, specificaton and direction of the Engineer in charge.	1600.00	1351.00	m2	21,61,600.00

7.08	Providing and fixing trap door in existing false ceilling cutting and making 8mm Calcium silicate board / 12 to 18 mm ply wood trap door for service line using 15 mm GI pre-coated wall angle for framing and 8 mm calcium silicate board including all fixture with G.I support, stepladder , putty for felling gaps and joints ..etc.all complete as directed by Engineer In-charge.	10.00	1718.00	Sqm	17,180.00
7.09	Providing and fixing in position Calcium silicate board (hilux make) false ceiling as per India gypsum manufacturer's instruction with 12 mm thick Calcium silicate board screw/fixed to the underside of suspended from the main ceiling as per manufacture's instruction and specification. G. I. Grid should consist of ceiling sections at maximum center to center distance 450 mm, Perimeter channel intermediate 1200 mm. The ceiling section should be fixed to intermediate channel with connection clips G. I. Grid should be fixed to R.C.C.slab above with the help of 25mmX0.5mm strap hanger & soffit cleat. The joints between soffit cleat, strap hanger &G.I. grid should be fixed with nut bolts, Soffit cleats should be fixed to R.C.C. ceiling with W.E.type rawl plug& fastener maximum c/c distance (both ways) of strap hangers should be 1200mm including covering the furniture while working etc.	10.00	1789.00	m2	17,890.00
7.10	Removing existing modular alto bond or other 600X600mm grid false ceiling sheets with false ceiling aluminium supports, stacking the material without getting damaged to desired location and re-fixing the false ceiling after completion of other renovations including all necessary supports, making necessary cutout for light and fixture, all labour, material, lifts and scaffolding, covering the floor area, furniture with good quality sheets As directed by Engineer in charge etc.	20.00	436.00	m2	8,720.00
7.11	Providing and applying Melamine polish of required finish to wood work by spray machine including knotting and preparing the surface by scrapping, applying French polishing, scaffolding if required etc. complete as directed.	50.00	1044.00	m2	52,200.00
7.12	Providing and applying 12 mm thick (average) premixed formulated one coat gypsum lightweight plaster having additives and light weight aggregates as vermiculite/ perlite respectively conforming to IS: 2547 (Part - 1 & II) 1976, applied on hacked / uneven background such as bare brick/ block/ RCC work on walls & ceiling at all floors and locations, finished in smooth line and level etc. Complete.	50.00	443.90	m2	22,195.00
7.13	Removing teak wood or aluminium paneled / partly glazed or veneer / plywood partitions, any type of ceiling carefully without damaging the frame or panels and taking out the same outside IIT Campus etc. complete. (Recovery of wood scrap will be done @ Rs. 25 per kg, aluminium scrap will be done @ Rs. 120 per kg and structural steel will be done @ Rs. 20 per kg from Item of work agains actual weigth if material taken outside campus)	1600.00	53.35	m2	85,360.00
7.14	Carefully removing the existing C.I. / PVC / HDPE / C I drain pipes from floor / slab with out damaging the structure and taking out the same out of IIT Campus inlcuding scaffolding etc. completed as directed.	50.00	71.00	Rmt	3,550.00
7.15	Providing and fixing urinal sensor (Hindware / Askon / Jaquar make) flush valve electrically or battery operated of Askon / Jaquar or equivalent make including making cut out in walls and concealed outlet pipe up to the urinal pot with all required fittings and fixtures etc. completed as directed.	5.00	11549.00	Nos	57,745.00

7.16	Providing and fixing Easy Flex Tube in Chrome Finish with Nuts for shower jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged Flex Tube and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled material should be deposited in Estate store and take certificate of it)	5.00	1079.00	No.	5,395.00
7.17	Providing and fixing Hand Shower Pack (Single flow 70mm fround shape hand shower with 1.5M long spirochrome flex hose & wall bracket of Essco make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged hand shower pack and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled material should be deposited in Estate store and take certificate of it)	5.00	2223.00	No.	11,115.00
7.18	Providing and fixing Bath Tub Spout With Button Attachment For Hand Shower With Wall Flange of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged bath tub spout and cleaning the site etc. all complete as directed by Engineer In- charge. (Note: The old dismantled taps should be deposited in Estate store and take certificate of it)	5.00	2124.00	No.	10,620.00
7.19	Providing and fixing Single lever kit consisting of operating lever, wall flange & button of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged Single lever kit and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	5.00	2357.00	No.	11,785.00
7.20	Providing and fixing Bottle Trap (with Internal Partition) 32mm Size with 300mm & 190mm Long Wall Connection Pipes & Wall Flange of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged Bottle trap and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	5.00	2303.00	No.	11,515.00
7.21	Providing and fixing Premium Wall Bracket for Hand Shower, ø35mm & 100mm Long Round Shape of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged wall bracket and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	10.00	696.00	No.	6,960.00
7.22	Providing and fixing Cloth Liner Retractable (Stainless Steel) of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged cloth liner and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	5.00	1248.00	No.	6,240.00
7.23	Providing and fixing Concealed Flush tank with kit of parryware make, as per existing model, including necessary fittings and fixtures, removing the old flush tank and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	5.00	4816.00	No.	24,080.00
7.24	Providing and fixing 300mm long stainless steel handles to door of approved quality and design with necessary fittings and fixtures etc. completed as directed.	5.00	632.00	Set	3,160.00

7.25	Providing and fixing 450mm long stainless steel handles to door of approved quality and design with necessary fittings and fixtures etc. completed as directed.	5.00	748.00	Set	3,740.00
7.26	Providing and fixing 12mm thick Toughen glass openable door shutter including heavy duty decorative stainless steel handles 300mm long (2 Nos.) on each leaf, lock of approved quality and make, heavy duty floor spring of CNR brand having capacity not less than 150kg for each leaf with dorma make top and bottom patch fittings, SS top and bottom pivot including making proper adjustment for smooth operation including making necessary excavation in floor for fixing the floor spring and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete all as directed Engineer-in Charge.	3.00	8366.00	m2	25,098.00
7.27	Providing and fixing double action hydraulic floor spring With stainless steel cover plate minimum 1.25 mm thickness of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.	2.00	2673.28	Nos	5,346.56
7.28	Providing and fixing Godrej / Enox / Hardwyn make concealed type door closer as per the existing pattern of approved quality and make to door shutter including making proper adjustment for smooth operation etc. Complete.	100.00	4700.00	Nos	4,70,000.00
7.29	Providing, supplying and fixing new (10+10)mm thick doubled clear (or as per existing pattern) Toughened glass at any height including removing the old damaged/broken glass including fixing with lamination sheet as per site requirements between two (10+10)mm thick doubled glass including required fittings and fixtures, filling the gaps with silicon sealant etc all complete as directed by Engineer Incharge. (Double glass of (10+10)mm will be considered as one Sqm area for payment)	2.00	16054.00	m2	32,108.00
7.30	Providing, supplying and fixing new (8+8)mm thick doubled clear (or as per existing pattern) Toughened glass at any height including removing the old damaged/broken glass including fixing with lamination sheet as per site requirements between two (8+8)mm thick doubled glass including required fittings and fixtures, filling the gaps with silicon sealant etc all complete as directed by Engineer Incharge. (Double glass of (8+8)mm will be considered as one Sqm area for payment)	2.00	13839.00	m2	27,678.00
7.31	Providing, supplying and fixing new (5+5)mm thick doubledclear (or as per existing pattern) Toughened glass at any height including removing the old damaged/broken glass including fixing with lamination sheet as per site requirements between two (8+8)mm thick doubled glass including required fittings and fixtures, filling the gaps with silicon sealant etc all complete as directed by Engineer Incharge. (Double glass of (8+8)mm will be considered as one Sqm area for payment)	2.00	9890.00	m2	19,780.00
7.32	Providing and fixing Mortise Lock with handles of Shalimar or equivalent make, as per existing model including necessary fittings and fixtures, removing the old damaged set without damaging to door and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	20.00	3188.00	No.	63,760.00

7.33	Providing and fixing Mortise lock cylinder 80mm with keys as per existing model including necessary fittings and fixtures, removing the old damaged set without damaging to door and cleaning the site etc. all complete as directed by Engineer In- charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	10.00	783.00	No.	7,830.00
7.34	Providing and fixing Main door side stainless steel safety chain lock heavy type, as per existing model including necessary fittings and fixtures, removing the old damaged set without damaging to door and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	5.00	348.00	No.	1,740.00
7.35	Providing and fixing SS 304 heavy duty hinges of 3.5'' x 4.5'' for glass partition wall in bathroom of Enox or any other IITB approved brand including safely removing and refixing by making it in proper alignment and operation. (Note: The old dismantled hinges should be deposited in Estate store and take certificate of it)	12.00	4638.00	Job	55,656.00
7.36	Hire charges for providing J.C.B for cutting and leveling the heaps of soil, for desilting / widening/deepening the kachha nallah /drains including necessary labour, operator, fuel etc. excavating, shifting, spreading and leveling the soil / debris at low lying area using the machinery etc. all complete as directed.	5.00	1304.00	Per Hr.	6,520.00
7.37	Hiring charge of road roller 8 to 10 ton capacity for rolling and levelling in various locations in IITB campus. The hiring charges are inclusive of wages of roller driver, cleaner, diesel/ oil, incidentals etc, payment will be given for the actual period of roller operated and no breaks will be considered for payment.	5.00	828.00	Per Hr.	4,140.00
7.38	Providing & applying two coats of Fenomastic pure colour (Jotun)/ Beauty gold washable (Nerolac) / Apcolite Premium Emulsion (Asian) as per manufacturer specification and of existing colour and shade to old / new surfaces with uniform finish including one coat of primer of same brand, applying same make putty, lambi / palti wherever required for surface preparation including preparing, cleaning, removing all old surface coating if necessary etc. by using emmery papers including necessary scaffolding, taking all safety precautionary measures, covering the floor area, furniture by plastic sheet, removing stains of paint from floor etc. all complete as directed by Engineer In-charge. (MAKE BY : JOTUN/NEROLAC/ASIAN)	10000.00	344.00	m2	34,40,000.00
7.39	Providing & applying two coats of decorative paint/texture paint of JOTUN/ NEROLAC/ ASIAN as per manufacturer specification and of existing colour and shade to old / new surfaces with uniform finish including applying same make lambi / palti wherever required for surface preparation, applying 1 coat of primer of same brand and 2 coats of Fenomastic pure colour (Jotun)/ Beauty gold washable (Nerolac) / Apcolite Premium Emulsion (Asian) including cleaning, removing all old surface coating etc. by using emmery papers including necessary scaffolding, taking all safety precautionary measures, covering the floor area, furniture by plastic sheet, removing stains of paint from floor etc. all complete as directed by Engineer In-charge. (MAKE BY : JOTUN/ NEROLAC/ASIAN)	1700.00	944.00	m2	16,04,800.00
7.40	Providing and applying polyurethane polish of required finish to wood work by spray machine including knotting and preparing the surface by scrapping, applying French polishing, scaffolding if required, covering the floor area, furniture by plastic sheet, removing stains from floor etc. etc. All complete as directed by Engineer In-charge.	300.00	1086.00	m2	3,25,800.00

7.41	Providing & applying Fenomastic pure colour (Jotun)/ Beauty gold washable (Nerolac) / Apcolite Premium Emulsion (Asian) In one coat over existing colour and shade to old / new surfaces with uniform finish including filling the surface cracks with Dr Fixit Crack X paste , applying same make putty, lambi / palti wherever required for surface preparation applying one coat of primer of same brand, including preparing, cleaning, removing all old surface coating if necessary etc. by using emmery papers including necessary scaffolding/ step ladder, taking all safety precautionary measures, covering the floor area, furniture by plastic sheet, removing stains of paint from floor etc. all complete as directed by Engineer In-charge. (MAKE BY : JOTUN/NEROLAC/ASIAN)	200.00	207.00	m2	41,400.00
7.42	Repairing , re-coating and finishing to old texure paint surface with nearly matching colour as per the existing/approved pattern and shade including applying lambi / palti , filling the surface cracks with Dr Fixit Crack X paste wherever required for surface preparation, applying primer and Fenomastic pure colour (Jotun)/ Beauty gold washable (Nerolac) / Apcolite Premium Emulsion (Asian) including cleaning site including scaffolding/step ladder, taking all safety precautionary measures all complete as directed by Engineer In-charge. (MAKE BY : JOTUN/ NEROLAC/ASIAN)	100.00	735.00	m2	73,500.00
7.43	Providing and replacing Aluminium Die casting front plate / SS front plate with frame suitable for existing sensor (Hindware / Askon / Jaquar make) with necessary fittings and fixtures as per manufacturer specifications and necessary plumbing work etc complete as directed by Engineer In-charge.(visiting charges / service charges for mechanic for repairing existing sensor will be paid under respective item)	2.00	1684.00	Per no	3,368.00
7.44	Providing and replacing Integrated electronic control circuit which is suitable for existing sensor (Hindware / Askon / Jaquar make) with necessary fittings and fixtures as per manufacturer specifications and necessary plumbing work etc complete as directed by Engineer In-charge.(visiting charges / service charges for mechanic for repairing existing sensor will be paid under respective item)	2.00	3194.00	Per no	6,388.00
7.45	Providing and replacing full solenoid valve which is suitable for existing sensor (Hindware / Askon / Jaquar make) with necessary fittings and fixtures as per manufacturer specifications and necessary plumbing work etc complete as directed by Engineer In-charge.(visiting charges / service charges for mechanic for repairing existing sensor will be paid under respective item)	2.00	2904.00	Per no	5,808.00
7.46	Providing and replacing full coil set for solenoid valve (coil + plunger+spring + Diaphram) which is suitable for existing sensor (Hindware / Askon / Jaquar make) with necessary fittings and fixtures as per manufacturer specifications and necessary plumbing work etc complete as directed by Engineer In-charge. (visiting charges / service charges for mechanic for repairing existing sensor will be paid under respective item)	2.00	929.00	Per no	1,858.00
7.47	Visiting charges / service charges for mechanic for repairing existing sensor (Hindware / Askon / Jaquar make) including minor works like replacement of batteries etc complete as directed by Engineer In-charge.	5.00	465.00	Per visit	2,325.00

7.48	Providing and fixing solid core flush door in single or double leaf 45-50 mm thick of commercial type of exterior grade, approved commercial plywood facing both side including prelaminated sheet/ sunmica as per existing pattern with all necessary beads, moulding and lipping, Mortice lock with handles(shalimar / equivalent make) , 12" long stainless steel heavy tower bolt 1 no , 4 no. of heavy duty butt hinges as per existing pattern, 1 no. Door stopper, 1 no concealed door closer and other required fittings etc as per the existing pattern etc all Complete as directed by Engineer In-Charge. (shade and pattern of door should be matched with existing doors). (fittings will be approved by Engineer in charge before fixing) contractor will be allowed to take away old dismantled material if available for which 5% deduction will be made of schedule rate of this item.	10.00	10441.00	m2	1,04,410.00
7.49	Removing the old cement concrete or any type of tiles very carefully from flooring/dado including back coat plaster (if plaster found loose) levelling the surface, cleaning the site including sorting out serviceable tiles and stacking the same, utilizing the same tiles for dado work as per the instructions and debris disposing off at designated location and taking the debris out of IITB campus as directed by Engineer In charge. (Note : Fixing of old tiles for dado will be paid under respective item)	2500.00	69.49	Sqm	1,73,725.00
7.50	Providing and laying old removed tiles as per above item wall dado in 300mm x 600mm sizes laid on back plaster of 20 mm (Avg) thick cement mortar 1:4 (1 cement: 4 coarse sand) laid on back plaster of 20 mm (Avg) thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement paste including grouting the joints with white cement and matching pigments , proper finishing the wall portion above dado and false ceiling with wall care putty, fenosmastic pure colour to make them stain free etc. The tiles must be cut with the zero chipping diamond cutter only and matching the corner tiles by bevelled edge cutting . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily etc all complete as directed by Engineer Incharge. Note : 1)The joints should be perfectly aligned with floor joints, accordingly tiles has to cut. 2) Plastering will be paid under respective Item. 3) If any tiles broken intensionally while removing from wall or tiles broken due to negligence , this office will be recover the amount equal to ongoing market rate.	1500.00	708.00	Sqm	10,62,000.00
7.51	Providing and laying Vitrified matt finish dado tiles (design , pattern, shade should match with existing one and need to get the sample approval from Estate office) in wall in 300mm x 600mm sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on back plaster of 20 mm (Avg) thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement paste including grouting the joints with white cement and matching pigments , proper finishing the wall portion above dado and false ceiling with wall care putty, fenosmastic pure colour to make them stain free etc. The tiles must be cut with the zero chipping diamond cutter only and matching the corner tiles by bevelled edge cutting . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily etc all complete as directed by Engineer Incharge. Note : 1)The joints should be perfectly aligned with floor joints, accordingly tiles has to cut. 2) Plastering will be paid under respective Item.	1000.00	1618.00	Sqm	16,18,000.00
7.52	Removing the glass partition carefully from wash rooms and Refixing the same glass pannels with out any damages, including necessary fittinhs and fixtures etc all complete as directed by Engineer Incharge	120.00	3242.00	Per Job	3,89,040.00

7.53	Providing and laying polythene/ tarpaulin sheet covering for furniture (cupboards, chairs, shelves, teapoy, wash basin , kitchen platorm,kitchen sink etc) and floor in the room during the process of renovation etc all complete as directed by Engineer Incharge	120.00	653.00	Per room	78,360.00
				Total Amount of Rs. (7)	**1,27,82,008.56**
				TOTAL AMOUNT OF Rs. (1+2+3+4+5+6+7)	**16,94,91,487.20**
				Say Rs.	16,94,91,487.00
				At Par	
				(In words._____%) (In figures……..%) Above	
				(In words._____%) (In figures……..%) Below	
				Gross Total Amount Rs.	
				CGST 9%	
				SGST 9%	
				Net Total Amount Rs.	
				Say Rs.	

(Amount in Rs_____

(Rates for all items & net amount of total to be filled with figure and words, Percentage for above/below in words as well as in figures should be mention clear & correct. If it is not done, it will be assumed as incomplete tender & tender opening committee will reject your offer at the time of opening of tenders/quotations).

Special Condition :

1. Recovery of scrap material will be done in respective item at the rates mention below -
   a) Wood scrap – Rs. 25.00/kg
   b) Aluminium scrap – Rs. 150.00/kg
   c) MS Steel / Tor steel & structural steel – Rs. 28.00/kg
   d) Kitchen trolley – Rs. 45.00/kg
   e) GI / CI Pipe – Rs. 20.00/kg
   f) Brass taps of all types – Rs. 120.00/kg
2. Existing passenger lifts should not be use for shifting construction materials or debrises.
3. Manufacturer & brand list for various items should be supplied as per approved list.
4. Safety precutions should be strictly followed while repair construction work.
5. Time required for attending each and every complaint or executing the job will be finalised by the Engineer Incaharge or his representative at the time of giving the job or handing over the complaint, compensation @Rs.250 per day per complaint / per job will be charged against if delayed for completion of item / job.

1) If you will engage labourer 20 or more any day, you have to get labour licence as per contract Regulation & Abolition Act 1970 Rule 1971, and also, you have to keep all such recored for inspection to the Principal Employer. If you will engage labour up to 10 Nos. per day, you have to file returns after completion of work as per Building & Construction Act to the Office of Regional Labour Commissioner (Central), Sion, Mumbai.

2) This schedule of work is legal documents of Estate Office, IIT Bombay and directed to enlisted contractors to get the copy of schedule of work to fill the rates and can submit his offer. No changes in schedule of work is allowed i.e. item description , units , quantity, rates, etc. If noticed his offer will be rejected and the contractor will be blacklisted or any other strict action will be initiated against him.

3) This work is to be executed as per the the clauses mentioned in the tender document signed by you. In addition to the existing safety clause of the tender documents a penalty of Rs. 5,000/- (per case) will be recovered from the bills of the particular work, in case any safety violations are noticed.

4) Tender will be rejected if white ink applied for correction in the schedule of work.

5) Taxes as per government notification time to time.

6) Contractor must pay GST Taxes to concern authority within 30 days time limit after receipt of payment from IIT Bombay & said record must be submitted to IIT Bombay Accounts Section, otherwise action will be taken as deemed fit.

7) If any malpractices / fraud / negligent professional behaviour or any discrepancy / inconsistency / disparity / deviation / disagreement / dissimilarity / mismatch noticed, their contract will be terminated by issuing one month notice by following legal procedure and will be blacklisted and informed to all Government Authorities and Organisations.

Signature of the Contractor
Name & Address in full

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

Condition of contract for the Safety, Health, and Environment

The purpose of this document is to define the Safety, Health, and Environment (SHE) requirements applicable to all contractors, vendors, and agencies engaged in activities at IIT Bombay premises, excluding new construction projects. All such parties are responsible for ensuring full compliance with the specified SHE requirements.

General obligations

The Contractor shall:

1. give the highest regard to SHE to avoid any injury to any person and damage to any property.
2. ensure that the management of SHE is an integral and visible part of its work planning and execution processes.
3. understand and comply with relevant SHE, legal, and other requirements.
4. identify potential hazards and take actions to correct them as needed.
5. be solely responsible for any liability arising from non-compliance, negligence, defects, or breaches.

Site- Specific Requirements:

The Contractors shall:

1. appoint competent persons to oversee work and conduct regular safety checks.
2. ensure workers are medically fit, safety inducted, and provided with ID cards and PPE's before starting work.
3. ensure that a system of permits to work is followed.
4. prepare Job Safety Analysis (JSA). They shall submit and take approval from Project Management consultant (PMC) / Indian Institute of Technology Bombay (IITB) officials of design/ estate office/ EMD/employer before starting any work at the site:

Sr. No.	Activity	Steps Involved	Potential Hazards & associated risks	Control Measures

Instructions for Use:

- Sr. No.: Serial number for each entry.
- Activity: The specific task or job to be performed.
- Steps involved: Detailed breakdown of each step in the activity.
- Potential Hazards: write potential hazards and risks associated with each step.
- Control Measures: Safety precautions or actions to address the identified hazards.

5. ensure that safety shoes, helmets, reflective jackets, full body harness while working at height, and other work-specific Personal Protective Equipment ("PPE") are provided and ensure proper use of PPE. The colour code for helmet and reflective jacket shall be followed as mentioned I below:

Helmet (conforming to IS 2925)	Person to use
Violet with their company logo	Engineers
Blue with their company logo	Supervisors
Red with their company logo	Electricians
Green with their company logo	SHE steward/ Safety Officer

Orange with their company logo	Security guards and Traffic marshals
Yellow with their company logo	All Workmen
White with their company logo	Visitors
Reflective Jackets (conforming to BS EN 471: 1994)	**Person to use**
Orange / Red	workmen, Security Guards & Traffic marshals
Blue	Supervisors
Fluorescent Green	Engineers

6. make sure that safe electrical distribution board of suitable rating, plug-top and cables including all electrical equipment inspected and safe to use.
7. make sure safe working at height. The provisions of lifelines, fall arrestors, full body harnesses as required shall be made. Ensure the use of safe ad standard scaffolding. use ladders that are of right size and suitable for the job.
8. ensure safe access and egress to the site.
9. check for hazards before entering small or enclosed areas. ensure proper ventilation and a rescue plan ready.
10. protect areas from sparks and heat during hot work like welding or cutting. Keep a fire extinguisher nearby.
11. arrange regular safety training to make worker competent and safety conscious.
12. ensure that waste materials are collected, stored, disposed of in a suitable manner.
13. ensure that all vehicles used for transportation and material handling equipment are fit for use and have valid documentation. All operators of vehicles shall have valid licenses, training, and experience.
14. ensure that traffic rules are followed at all times on IITB's premises.
15. use barriers and signs to keep people safe from potential hazards.
16. Ensure to take measure for safe lifting including lift study/ plan.
17. develop emergency response plan and make sure everyone knows what to do in case of an emergency.
18. promptly report any incidents to IITB officials and perform the follow-ups.
19. document all safety inspections, observations and incidents, ad submit monthly SHE report with SHE statistics and summary of these records.

Notwithstanding the above, IITB may communicate certain additional or amended requirements regarding SHE, which must be met and adhered to without fail.

D. Details penalties for SHE violations

Sr. No.	Type of Violation	Penalty Amt. (INR)
1	**General: SHE Management**	
1a	Absence of contractor's execution supervisor at site during work.	3000/Instance
1	Absence of contractor's safety steward/ officer at site during work.	3000/Instance
1c	Failure to submit SHE report	5000/Instance
1d	Workers without safety induction, and/ or not provided with ID cards before starting work.	500/worker/ instance

1e	Working without work permit / clearance	3000/violation
1f	For not using maintained PPE at Site	150/person/ day
1g	For not following safety instructions	150/person/ day
1h	Non-display of caution boards, emergency telephone number at work locations	200/day
1i	Working without Job Safety Analysis	500/day
1j	Failure to report the accident	
2	**Site Electricity**	
2a	RCCB not installed	1000/day
2b	Inserting of bare wires into the socket	1000/Violation
2c	Temporary cable connections with poor joints	1000/day
2d	Improper earthing of electrical appliances	1000/day
2e	Unauthorized and direct tapping of electricity	1000/day
2f	Positive isolation not ensured when repairing electrical equipment	1000/day
2g	Laying wire/cables on roads	1000/day
2h	Electrical work without licensed/competent electrician	1000/day
2i	Use of improper tools	1000/day
2j	Non-use of 24V appliances in confined space	1000/day
2k	DBs, panels etc are not iron clad of suitable rating minim IP55 and not closed tightly.	1000/day
3	**Working at Height**	
3a	Not using or anchoring Full Body Harness	1000/violation
3b	Absence of fall arrestor (rope grab), life line or anchorage point to anchor Full Body harness	1000/violation
3c	Improper guardrail, toe board, barriers, access ladders, works platforms, safety nets etc.	1000/day
3d	Poor scaffolding (no base plate / no bracing / improper fixing of platforms, damaged components / unstable scaffolding, etc)	1000/day
3e	Working at unprotected edges (staircases, etc)	1000/day
3f	Barricades / covers not provided on open holes/ pits	1000/day
3g	Using unsafe scaffold/ Ladder	1000/day
3h	Improper usage of ladder (less than 1m extension above landing point, not maintaining 1:4 ratio)	500/day
3i	Aluminium ladder without base rubber bush	500/day
3j	Usage of broken / weak ladders	500/day
3k	Usage of re-bar welded unsafe ladders	500/day
3l	Scaffold not built by experienced person / no tag system	1000/day
3m	No inspection of full body harness	500/day
4	**Gas Cutting**	
4a	Gas Cylinders not stored in upright position.	500/violation
4b	Flash back arrester, non-return valve and regulator either not present or not in working condition.	1000/day
4c	Fail to store cylinder 6m away from fire prone materials	500/day
4d	Failure to put cylinders in a cylinder trolley.	500/day

4e	Damaged hose.	500/day
4f	Using domestic LPG cylinders	1000/instance
4g	Failure to use hose clamps	500/day
4h	Fire extinguisher not kept near cutting operation	500/day
5	**Welding**	
5a	Improper grounding and return path.	1000/day
5b	Non-availability off switch to the welding unit.	500/day
5c	Damaged electrode holder	500/day
5d	Damaged welding cable	500/day
5e	Bare openings in the cable.	500/day
5f	Non-availability of separate switch in the transformer	500/day
5g	Usage of reinforcement rod as return conductor	500/day
5h	Fire extinguisher not kept during welding operation	500/day
6	**Excavation**	
6a	Excavated material not stored at least 650mm away from edge of an open excavation	1000/day
6b	metal ladders or ramps not provided for safe access to and egress from excavation exceeding 1.5 meter	1000/day
6c	Trench and excavation not protected against falling of person e.g. hard barricading	1000/day
6d	Not shoring the excavation	1000/day
7	**Fire Protection**	
7a	Smoking and open flames in fire prone area	1000/day
7b	Using more than 24V portable electrical appliances in fire (hazardous zones) prone area	500/day
7c	Absence of fire extinguishers / damaged / empty / extinguishers not maintained	500/day
7d	No proper ventilation in cylinder storage area.	500/day
7e	Fire extinguisher placed in a not easily accessible location	500/day
8	**Vehicles: Traffic Rule Violations**	
8a	Unfit / unlicensed drivers or operators	1000/day
8b	Power / hand brakes not in working condition.	1000/day
8c	Over speeding / Rash Driving	1000/day
8d	Use of mobile phone while driving / operation	1000/day
8e	Over loading of vehicles	200/day
8f	Unlicensed vehicles	200/day
8g	Absence of reversing alarm	500/day
8h	Absence of fog light (in winter)	200/day
8i	Not using seat belt	200/day
8j	heavy or construction vehicle without helper	200/day
8k	Carrying people in unauthorized vehicles like tractors	200/day
8l	Sleeping / resting below parked vehicles	200/day
9	**Lifting Tools & Tackles and Machines**	
9a	Use of lifting tackles, machines without competent person certificate at site	1000/day

9b	Unsafe Rigging practices (e.g.; overloading of lifting tools and machines, standing below loads, etc)	1000/day
9c	Pulleys, etc not anchored securely	500/day
9d	Guards not provided on rotating / moving parts	1000/day
9e	Improper use of tool- e.g.; wheels without guards	1000/day
9f	Signalman without reflective jacket	200/day
10	**Occupational Health**	
10a	Non-availability of first-aid box	1000/day
10b	Alcohol and drug abuse in work site	1000/instance
10c	Non - availability of Doctor / arrangement with Hospital	1000/day
10d	Fail to conduct Medical examination of workers	1000/day
10e	Workers not having ID card	1000/day
10f	Smoking inside the construction site	200/instance
10g	Allowing worker to work in environment with excessive noise without PPE	500/day
11	**Housekeeping**	
11a	Stairways, gangways, passageways blocked	500/Instance
11b	Lumber with protruding nails left exposed	500/Instance
11c	Openings unprotected	500/Instance
11d	Work locations not properly cleaned post daily work.	500/Instance
11e	Dustbins at appropriate places not provided / not cleaned.	500/Instance
11f	Vehicles / equipment parked / placed on roads obstructing free flow of traffic	500/Instance
11g	Unused surplus cables / steel scraps lying scattered	500/Instance
11h	Wooden scrap, empty wooden cable drums lying scattered	500/Instance
11i	Water stagnation leading to mosquito breeding	500/Instance

Note: The Fire and Safety Section may conduct surprise checks and is authorized to record violations and recommend to impose penalties as specified in the document.

Signature of the Contractor

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
ESTATE OFFICE

TENDER DOCUMENT

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ABOUT CONTRACT

1. This is a percentage rate tender in two cover system (Eligibility and Financial bid) under an Umbrella contract for entire campus of IIT Bombay.

2. Superintending Engineer is the Head of the Estate Office and Engineer-in-Charge.

3. The works in entire campus under Estate Office are divided into two Divisions. Executive Engineer is the divisional Head. Further each Divisions are divided into three Sub-divisions as under and Assistant Engineer / Assistant Executive Engineers are Sub-divisional Head.

4. The entire Campus under Estate Office is divided as under;

a. Academic Sub-Division
b. Workshop & Infrastructure Sub-Division
c. Central & Lake side Residential Sub-Division
d. Hostel Area Sub-Division
e. Hill side, Hospital & Guest House Sub-Division

5. The tenderers are requested to enter their percentage above / below in the prescribed cell in the BOQ.

6. The percentage rate quoted by the tenderers shall be the same for all the five Sub-Divisions and quoted as a single percentage in the prescribed cell.

7. If the lowest percentage quoted is not within the justified limit, negotiation will be conducted with the Lowest (L1) tenderer.

8. The work will be awarded to the L1 contractor. After the award of work, work will be executed with separate Agreements for each Sub-Division. Agreements will be drawn with the contractor for the following Sub-Divisions:

Division-I

a. Academic Sub-Division
b. Workshop, Infrastructure Sub-Division
c. Central & Lake side Residential areas Sub-Division

Division-II

d. Hostel Area Sub-Division
e. Hill side, Hospital & Guest House Sub-Division

Under the Sub Divisional agreements, the works would be executed through separate Work Order as per the requirement. The work would be certified by the respective Junior Engineers, Assistant Engineers/ Assistant Executive Engineer and put up for final certification of the Executive Engineer.

9. The rate quoted shall be inclusive of all applicable taxes including GST prevailing on the date of tender. However, the rate of tax prevailing at the date of billing will only be paid based on submission of tax invoice as per GST rules.

10. The rates considered by IIT Bombay is inclusive of 18% GST. Any reduction in the rates of GST from the quoted rates in the BOQ during the currency of the contract commensurate reduction in the quoted rates in BOQ will be effected and payment will be made accordingly.

11. All the tenderers should ensure that they are GST compliant and the quoted rates are as per GST Law. The Tenderer should submit their GST registration certificate while uploading the tender document.

12. If the tenderer fails to upload GST Registration certificate, the tender will be summarily rejected.

13. Construction labour shall **not be permitted** to stay inside the campus and no labour camp shall be allowed to be set up inside the campus.

14. The work should be executed during day time only. If the work is required to be carried out in the night, necessary permission of the Engineer-in-charge shall be obtained. Contractor will make his own arrangement for lighting the area and no extra amount for carrying out the work during night is payable. To the extent possible engaging women labour in the night shift should be avoided.

15. Any error in description, quantity or rate in schedule of Quantities or any omission there from shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract. All such variations, errors, additions, substitutions etc shall be decided as per the terms of the contract.

16. The building work shall be carried out complying in all respects with the requirements of relevant bye-laws 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.

17. Where CPWD specifications are not available for fittings and fixtures, the same should conform to bye-laws and specification of the local Body. The contractor should engage licensed plumbers for the work.

18. The tenderer shall comply with all legal orders and directions of the local or public authority or municipality and abide by them.

19. The tenderer shall give a performance test of the installation(s) as per specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the tenderer for the test.

20. Any cement slurry added over base surface (or) for continuation of concreting to obtain better bond between old and new concrete is deemed to have been included in the items and nothing extra shall be payable or extra cement considered in consumption on this account.

21. The rate for Centering & shuttering under concrete items will be the same for Centering & shuttering in curves & arches also unless specified otherwise in the BOQ.

22. The contractor should construct proper mortar bands of lean mix with adequate depth & size over the roof for flooding with water & proper curing. In case of Arches, wet gunny bags shall be used for a period of two weeks.

23. Holes and chase for water supply and drainage, etc, shall be provided as directed during progress of work without any claim for extra for finishing.

24. The rate quoted for tiling on walls shall include providing the bevel edges for the corners or the PVC corner strips. No additional payment shall be payable on this account.

25. Sample of all materials, fixtures, flooring tiles, wall tiles, doors, windows, sanitary fittings, roofing sheets, fittings etc, shall be got approved in advance from the Engineer-in- Charge before taking up the respective work. The contractor shall produce all the materials in advance so that there is sufficient time for testing and approving the materials and clearance of the same before their use in work.

26. The contractor shall be furnished, free of cost one certified copy of the contract documents except Standard Specifications, Schedule of Rates and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract.

27. For any dispute arising out of this agreement, the legal jurisdiction will be at Mumbai in Maharashtra only.

28. Other agencies related to this contract will also simultaneously execute their part of works and the contractor shall cooperate and allow smooth working of all such agencies. The contractor shall leave such holes, openings etc, for laying / burying of pipes, cable, conduits, clamps, boxes and hooks for fans etc. as may be required for other agencies. The rates quoted for the items of work are deemed to include charges for coordinating with all such agencies and nothing extra is payable on this account.

29. The few events/ activities will take place in the Campus which may hinder the progress of work.

30. The completion time stipulated in the contract is deemed to have included the above, if they happen during the duration of the contract with additional provisions and resources.

31. The work is to be carried out by skilled workers conversant with existing system in the campus. If the contractor is associating any sub-contractor for execution, the sub contractor so associated shall have the full knowledge of the existing system in the campus and such association shall be got approved by IIT Bombay.

32. The contractor has to bring the container for site office as well as the storage of materials at his own cost. The location for site office will be identified by the Engineer-in-charge.

33. Help desk to be provided with sufficient man power to receive all the request through IVRS, Phone call, oral, etc by the contractor. Proper record and registrar shall be maintained and follow ups by the efficient staffs from the Contractor side under this contract.

34. In clause 25, a Dispute Redressal Committee has been constituted by IIT Bombay. The procedure for inviting Dispute Redressal Committee is to be done as per Clause 25.

35. Any reduction in the rates of GST from the quoted rates in the BOQ during the currency of the contract, commensurate reduction in the quoted rates in BOQ will be effected and payment will be made accordingly. The market rate analysis adopted by IIT Bombay for calculating the reduction in GST will be final and binding on the contractor.

Superintending Engineer

TENDERS

I / We have read and examined the notice inviting tender, schedule of items specification 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 documents for the work.

I / We hereby tender for the execution of above work within the time specified in the contract 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.

We agree to keep the tender open for One Hundred Eighty (180) days from the due date of its opening / ninety days from the date of opening of financial bid in case tenders are invited on2/3 envelop system (Strike out as the case may be) and not to make any modification in its terms and conditions.

A sum equal to 2% estimated value of work is hereby forwarded in demand draft of a scheduled bank / Pay Oder issued by a scheduled bank as earnest money.

EMD submitted by the bidders will be released after preparation of comparative statement except for the bidder who stood lowest. EMD of lowest / selected bidder will be released on application from the bidder after the commencement of work.

I / We agree that IIT Bombay 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 IIT Bombay prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money absolutely, otherwise the said earnest money shall be retained by him towards security deposit 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 of the tender form. Further, I/We agree that in case of forfeiture of Earnest money 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 works(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 IIT Bombay in future forever. Also, if such a violation comes to the notice of the Institute before date of start of work, the Engineer-in-charge shall be fee to forfeit the entire amount of Earnest Money Deposit.

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 :

ACCEPTANCE

The above tender (as modified by you as provided in the letter mentioned hereunder) is accepted by Director for and on behalf of the Indian Institute of Technology, Bombay

for a sum of Rs .....…

(Rupees.....)

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

a)

b)

c)

Signature.....

Designation.....

Dated :

GENERAL RULES & DIRECTIONS

1) All work proposed for execution by contract will be notified in a form of invitation to tender to enlisted contractors of IIT Bombay or by publication in News papers as the case may be.

This form will state the work to be carried out, as well as the date for submitting and opening tenders and the time allowed for carrying out the work, also the amount of earnest money to be deposited with the tender, and the amount of the security deposit to be deposited by the successful tender and the percentage, if any, to be deducted from bills. Copies of the specifications, designs and drawings and any other documents required in connection with the work signed for the purpose of identification by the officer inviting tender shall also be open for inspection by the contractor at the office of officer inviting tender during office hours.

2. In the event of the tender being submitted by a firm, it must be signed separately by each partner there of or in the event of the absence of any partner, it must be signed on this behalf by a person holding a power of attorney authorizing him to do so, such power of attorney to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act, 1932.

3. Receipt for payment made on account of work, when executed by a firm must also be signed by all the partners, except where contractor are described in their tender as a firm, in which case the receipts must be signed in the name of the firm by one of the partners, or by some other person having due authority to give effectual receipts for the firm.

4 Applicable For Item Rate Tender

Any person who submits a tender shall fill up the usual printed form stating at what rate he is willing to undertake each item of the work. Tenders, which proposed any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.

The rate(s) must be quoted in decimal coinage. Amounts must be quoted in full rupees by ignoring fifty paisa and considering more than fifty paisa as rupee one.

5.Applicable for Percentage Rate Tender Only

In case of Percentage Rate Tenders, tenderer shall fill up the usual printed form, stating at what percentage below / above (in figures as well as in words) the total estimated cost given in schedule of Quantities at schedule-A, he will be willing to execute the work. **The tender submitted shall be treated as invalid if :**

(i) The Contractor does not quote percentage above / below / at par on the total amount of tender or any section / sub head of the tender.

(ii) The percentage above /below is not quoted in figures & words both on the total amount or any section / sub head of the tender.

(iii) The percentage quoted above / below is different in figures & words on the total amount of tender or any section / sub head of the tender :

Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.

6) In case the lowest tendered amount (estimated cost + amount worked on the basis of percentage above / below) of two or more contractors is same, such lowest contractors will be asked to submit rebate over the quoted amount in sealed envelope. The lowest tender shall be decided on the basis of rebate offered.

If the revised amount of two more contractors after the rebate offer is again found to be equal, the lowest tender, among such contractors, shall be decided by draw of lots in the presence of Superintending Engineer/Executive Engineer.

7) The officer inviting tender or his duly authorized assistance will open tenders in the presence of any intending contractors who may be present at the time, and will enter the amounts of the several tenders in a comparative statements in a suitable form. In the event of a tender being rejected, the earnest money shall thereupon be returned to the contractor remitting the same, without any interest.

8) The officer inviting tenders shall have the right of rejecting all or any of the tenders and will not be bound to accept the lowest or any other tender.

9) The tenders shall sign a declaration under the officials secret Act 1923, for maintaining secrecy of the tender documents drawings or other records connected with the work given to them.

10) Use of correcting fluid, anywhere in tender document is not permitted. Such tender is liable for rejection.

11) (**Applicable for item rate tender only**)

In the case of Item rate tenders, only rates quoted shall be considered. Any tender containing percentage below / above the rates quoted is liable to be rejected. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However, if a discrepancy is found, the rates which correspond with the amount worked out by the contractor shall unless otherwise proved be taken as correct. If the amount of an item is not worked out by the contractor or it does not correspond with the rates written either in figures or in words, then the rates quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figure and in words tally, but the amount is not worked out

correctly, the rates quoted by the contractor will unless otherwise proved be taken as correct and not the amount. In event no rate has been quoted for any item(s), leaving space both in figure(s), words(s), and amount blank, it will be presumed that the contractor has included the cost of this / these item(s) in other items and rate for such item(s) will be considered as zero and work will be required to be executed accordingly.

12) In case of Percentage rate tenders only percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy

13) In the case of any tender where unit rate of any item / items appear unrealistic, such tender will be considered as unbalanced and in case the tenderer is unable to provide satisfactory explanation, such a tender is liable to be disqualified and rejected.

14. (**Applicable for item rate tender only**)

All rates shall be quoted on the tender form. The amount for each item should be worked out and requisite totals given. Special care should be taken to write the rates in figures as well as in words and the amount in figures only, in such a way that interpolation is not possible. The total amount should be written both in figure and in words. In case of figures, the word 'Rs.' should be written before the figure of rupees and word 'P' after the decimal figures, e.g 'Rs'. 2.15P' and in case of words, the word, 'Rupees' should precede and the work 'Paise' should be written at the end. Unless the rate is in whole rupees and followed by the word 'only' it should in variably be uptp two decimal places. While quoting the rate in schedule of quantities, the word 'only' should be written closely following the amount and it should not be written in the next line.

15. (**Applicable for percentage rate tender only**)

In percentage Rate Tender, the tenderer shall quote percentage below / above (in figures as well as in words) at which he will be willing to execute the work. He shall also work out the total amount of his offer and the same should be written in figures as well as in words in such a way that no interpolation is possible. In case of figures, the word 'Rs' should be written before the figure of rupees and word 'P' after the decimal figures, e/e Rs. 2.15p and in case of words, the word 'Rupees' should precede and the word ' Paisa' would be written at the end.

16. Completed tenders along with all the specified documents in a sealed cover, superscribed with the name of work and work number shall be put in the tender box kept in Estate Office within the prescribed time.

17. On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instruction from the Engineer-in-charges shall be communicated in writing to the Engineer-in-charge.

18. GST (except service tax), purchase tax, turnover tax or any other tax applicable in respect of this contract shall be payable by the Contractor and IIT Bombay will not entertain any claim whatsoever in respect of the same. However, in respect of service tax, same shall be paid by the contractor to the

concerned department on demand and it will be reimbursed to him by the Engineer-in-Charge after satisfying that it has been actually and genuinely paid by the contractor.

19. The contractor shall comply with the provisions of the **Apprentices Act 1961**, and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the Superintending Engineer / Executive Engineer may in his discretion, without prejudice to any other right or remedy available in law, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

20. The particular specification for certain items in the Financial bid – Volume – II – Part 1 – Civil work - Bill of Quantity (BOQ) is enclosed as Annexure 1 and the same shall be read in conjunction with the corresponding specification given in the BOQ.

21. Necessary site barricading details and material yard layout may be obtained from Engineer-in- charge.

22. Spillover of any construction materials / earth on the road surface should be cleared immediately.

23. No trees and vegetation shall be cut by the tenderer.

24. All construction activities and labour movements should be restricted within the area earmarked for these purpose.

25. No labour camp is allowed inside IIT Bombay campus.

26. Firewood collection is strictly prohibited.

27. All debris generated in the site premises / material yard should be removed and disposed outside IIT Bombay campus. Necessary approval from local authority shall be obtained by the tenderer. No additional charges will be paid for the same.

28. IIT Bombay traffic regulation and speed limit should be followed without any violation.

29. In case of violation of any rules by the tenderer, penalty will be levied by IIT Bombay at the following rate:

Sr. No.	Operations	Penalty per day
1	Construction labour shed without approval from Engineer-in-charge	Rs.5000/- per shed per day
2	Labour wander in to the nearby areas / buildings / forests.	Rs.500/-per person
3	Thrown food items / waste / package item inside or outside the site premises.	Rs.1000/- per day
4	If water stagnation inside the construction site.	Rs.500/- per day
5	Dumping of debris and storage of materials outside the barricaded area.	Rs.25000/- per day

6	Improper maintenance of barricade.	Rs.5000/- per day
7	Improper sanitation of labour toilets	Rs.1000/- per day
8	Collection of firewood	Rs.2500/- per day
9	Work without safety barricading / Signage	Rs.5000/- per day
10	Execution of work without any safety precaution	Rs.5000/- per day

30. Emergency complaints:

Attending to any safety related issues, clearing garbage, pipe line leakage, broken pipe line, damaged plumbing / sanitary fittings, drainage blockages, over flow of water / drainage, easing of door and lock repair etc. and specified by Engineer-in charge as per the emergency requirements are classified as emergency complaints. The contractor shall complete the emergency complaints within 12 hours from actual date of complaint / issue of job card or through any other communication.

If any unjustified delay occurs beyond this period penalty will be imposed and the same will be deducted from the subsequent running account bill as per the following.

1) If the number of emergency complaints attended with unjustified delay is less than 2% of the total number of emergency complaints for the particular month, no penalty will be imposed.
2) For each unjustifiably delayed emergency complaint attended beyond this limit of 2%, penalty of Rs5000 will be imposed.

31. Routine Maintenance complaints:

Penalty for unjustified delay in completion of day-to-day routine maintenance and minor complaints including preventive maintenance (other than emergency complaints):

The contractor shall complete the day-to-day routine maintenance and minor complaints including preventive maintenance (other than emergency complaints) within 7 days from actual date of complaint / issue of job card or through any other communication.
For unjustified delay in attending to and completing the day-to-day routine maintenance and minor complaints including preventive maintenance (other than emergency complaints) penalty will be imposed and the same will be deducted from the subsequent running account bill as per the following.

1) If the number of unjustified delays in attending to day-to-day routine maintenance and minor complaints including preventive maintenance (other than emergency complaints) is less than 3% of the total number of routine complaints for the particular month, no penalty will be imposed.
2) For each unjustifiably delayed complaint beyond this limit of 3%, penalty at the rate of Rs5000 will be levied.
3) Penalty for preventive maintenance will be calculated based on number of individual delayed jobs indicated in the preventive maintenance list.

Superintending Engineer

CONDITIONS OF CONTRACT

Definitions

1. The contract means the documents forming the tender and acceptance thereof and the formal the contractor, together with the documents referred to there in including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-in-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them :-

i) The expression works or work shall, unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

ii) The site shall mean the land / or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.

iii) The contractor shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

iv) Institute means Indian Institute Of Technology, Bombay.

v) The Engineer-in-charge means the Engineer Officer who shall supervise and be in charge of the work.

vi) Accepting Authority shall mean the authorized authority of the Institute.

vii) Excepted Risk are risks due to riots (other than those on account of contractor's employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the Accepting Authority or causes solely due to use or occupation by Institute of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to Institute faulty design of works.

viii) Market Rate shall be the rate as decided by the Engineer-in-charge on the basis of the cost of materials and labour at the site where the work is to be executed plus all overheads and profits.

ix) Schedule(s) referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers, with the amendments thereto issued upto the date of receipt of the tender.

x) Tendered value means the value of the entire work as stipulated in the letter of award.

xi) Date of commencement of work : The date of commencement of work shall be 15th day from date of issue of work order or the first date of handling over of the site or as mentioned in the work order, whichever is later, in accordance with the phasing if any, as indicated in the tender document.

xii) 'Department' means Estate Office, IIT Bombay which invites the tenders.

xiii) 'District specification' means the specifications followed by the state of Maharashtra in the area where the work is to be executed.

xiv) 'Tendered value' means the value of the entire work as stipulated in the letter of award.

xv) Employer means IIT Bombay.

xvi) Wherever the expression "Divisional Officer" appears in the Clauses, it should be substituted by the expression "Executive Engineer (Civil)"

Scope And Performance

3) Where the context so requires, words imparting the singular only also include the plural and vice versa. Any reference to masculine gender shall whenever required include feminine gender and vice versa.

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

5) The contractor shall be furnished, free of cost one certified copy of the contract documents, schedule of Rates and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of his contract.

Works to be carried out

6) The work to be carried out under the contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the Schedule of Quantities (Schedule – A) shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary

in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.

Sufficiency of Tender

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

Discrepancies and Adjustment of Errors

8) The several documents forming the contact are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to scale and special conditions in preference to General Conditions.

8.1 In the case of discrepancy between the schedule of Quantities, the Specification and / or the Drawings, the following order of preference shall be observed : -

i) Description of Schedule of Quantities
ii) Particular Specification and Special Condition, If any.
iii) Drawings.
iv) CPWD Specification.
v) Indian Standard Specification of B.I.S

8.2 If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority Shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.

8.3 Any error in description, quantity or rate in schedule of quantities or any omission therefrom 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 specification or from any of his obligations under the contract.

Signing of Contract

9. 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 : -

i) The notice inviting tender, all the documents including drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.

ii) Standard form consisting of:

a) Various standard clauses with correction up to the date stipulated along with annexures thereto.
b) Special Conditions

c) Safety Code.
d) Model Rules for the protection of health, sanitary arrangement for workers employed by Contractors.

e) Signed Article of agreement (given as Annexure-I) on Rs. 100/- stamp paper for work costing more than Rs.20.00 lakhs.

iii) No payment for the work done will be made unless contract is signed by the contractor.

10. Agreement for each work costing more than Rs. 20.00 Lakhs will be executed on stamp paper of Rs. 100/- for the works valuing less than Rs. 20.00 Lakhs, the tender document and the work order will be treated as the agreement.

11. The notice inviting e-tender, the financial bid and all other the documents including drawings, if any, forming the tender as issued at the time of invitation of e-tender and acceptance thereof together with any correspondence leading thereto.

12. Decisions taken in the Pre-bid meeting if conducted.

13. IIT Bombay reserves its right to verify all the credentials, quality, quantity, workmanship, other required details etc. of the contractors with his clients along with ongoing projects and other sources before finalization and award of work. IIT Bombay reserve its right to award any quantity of works to any other contractor/agencies at his own risk and cost.

Signature of Contractor

Superintending Engineer

CLAUSES OF CONTRACT

CLAUSE 1

Recovery of Security Deposit

The person / persons whose tender(s) may be accepted (hereinafter called the contractor) shall permit Institute at the time of making any payment to him for work done under the contract to deduct a sum at the rate of 05% of the gross amount of each running bill till the sum along with the sum already deposited as earnest money, will amount to security deposit of 5% of the actual value of work. Such deductions will be made and held the Institute by way of Security Deposit unless he / they has / have deposited the amount of security at the rate mentioned above in cash or in the form of Government Securities.
The Security deposit thus recovered will be released after a period of 24 months (Defect liability period) from the date of completion of work subject to the condition that no defects are noticed and reported during this period .Defect liability period will be rectified by the Contractor through their own cost and arrangement. In case the Contractor failed to do the rectification within the prescribed time frame, penal actions including cancellation of empanelment and black listing of the Contractor will be initiated.

All compensation or the other sums of money payable by the contractor under the terms of this contract may be deducted from, or paid by the sale of a sufficient part of his security deposit or from the interest arising there from, or from any sums which may be due to or may become due to the contractor by Government on any account whatsoever and in the event of his security deposit being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within 10 days make good in cash any sum or sums which may have been deducted from, or raised by sale of his security deposit or any part thereof. The security deposit shall be collected from the running bills of the contractor at the rates mentioned above.

The security deposit as deducted above can be released against bank guarantee issued by a schedule bank, on its accumulations to a minimum of Rs. 5 Lakh subject to the condition that amount of such bank guarantee, except last one, shall not be less than Rs. 5 Lakh. Provided further that the validity of bank guarantee including the one given against the earnest money shall be in conformity with provisions contained in Clause 17 which shall be extended from time to time depending upon extension of contract granted under provision of clause 2 and 5.

CLAUSE 2

Compensation for delay

If the contractor fails to maintain the required progress in terms of clause 5 or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below may decide on the amount of balance value of the work remains incomplete on stipulated / extended date of completion.

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

i) Compensation for delay of work : @1.00% per month of delay to be computed on per day basis.

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the Actual value of work or of the actual value of the item or group of items of work for which a separate period of completion is originally given. The amount of compensation may be adjusted or set-off against any sum payable to the contractor under this or any other contract with the Institute.

CLAUSE 3

Subject to other provisions contained in this clause, the Engineer-in-charge may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and / or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases :

i) If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or un workman like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.

ii) If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in-Charge (Which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continuous to so after a notice in writing of seven days from the Engineer-in-charge.

iii) If the contractor fails to complete the work withing the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-charge.

iv) If the contractor persistently neglects to carry out his obligation under the contract and / or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by Engineer-in-Charge.

v) If the contractor shall offer or given or agree to give to any person in the Institute service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for Government.

vi) If the contractor shall enter into a contract with Institute in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Engineer-in-Charge.

vii) If the contractor shall obtain a contract with the Institute as a result of wrong tendering or other non- bonafide methods of competitive tendering.

viii) If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors.

ix) If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.

x) If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 Days.

xi) If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Engineer-in-Charge.

When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge on behalf of the Institute shall have powers :
a) To determine the contract as aforesaid (of which termination notice in writing to the contractor under the hand of the Engineer-in-charge shall be conclusive evidence). Upon such determination, the Earnest Money Deposit, Security Deposit already recovered and performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the Government.

b) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof, as shall be un-executed out of his hands and to give it to another contractor to complete the work. The contractor, whose contract is determined as above, shall not be allowed to participate in the tendering process for the balance work.

In the event of above course being adopted by the Engineer-in-charge, the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

CLAUSE 3A

In Case, the work cannot be started due to reasons not within the control of the contractor within the stipulated time for completion of work, either party may close the contract. In such eventuality, the Earnest Money Deposit of the contractor shall be refunded, but no payment on account of interest, loss of profit or damages etc shall be payable at all.

CLAUSE 4

Contractor liable to pay Compensation even if action not taken under Clause 3

In any case in which any of the power conferred upon the Engineer-in-charge by Clause – 3 thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of contractor for compensation shall remain unaffected. In event of the Engineer-in-charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire(the amount of the hire money being also in the final determination of the Engineer-in-charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work / or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores form the premises (withing a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-charge may remove them at the contractors expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceed and expense of any such sale shall be final and conclusive against the contractor.

CLAUSE 5

Time and Extension for Delay

The time allowed for execution of the works as specified in work order or the extended time in accordance with these conditions shall be the essence of the contract. The execution of the works shall commence from such time period as mentioned in work order or from the date of handling over of the site whichever is later. If the contractor commits default in commencing the execution of the work as aforesaid, Government shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee absolutely.

5.1 As soon as possible after the contract is concluded, the contractor shall submit a Time and Progress chart for each mile stone and get it approved by the Department. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the work.
5.2 If the work(s) be delayed by :-

i) force majeure, or

ii) abnormally bad weather, or

iii) serious loss or damage by fire, or

iv) civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or

v) delay on the part of other contractors or tradesmen engaged by Engineer-in-charge in executing work not forming part of the contract, or

vi) non-availability of stores, which are the responsibility of Government to supply or

vii) non-availability or break down of tools and plant to be supplied or supplied by Government or

viii) any other cause which, in the absolute discretion of the Engineer-in-charge is beyond the contractor's control.

Then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the authority as indicated in the work order but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-charge to proceed with the works.

5.3 Request for rescheduling of Mile stone and extension of time, to be eligible for consideration, shall be made by the Contractor in writing withing fourteen days of the happening of the event causing delay on the prescribed form to the Institute. The contractor may also, if practicable, indicate in such a request the period for which extension is desired.

5.4 In any such case the Institute may give a fair and reasonable extension of time and reschedule the mile stones for completion of work. Non application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Institute and this shall be binding on the contractor.

CLAUSE 6

Computerized Measurement Book

Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of work done in accordance with the contract. All measurement of all items having financial value shall be entered by the contractor and compile in the shape of the Computerized Measurement Book having pages of A-4 size as per the format of the department so that a complete record is obtained of all the items of works performed under the contract.

All such measurement and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the Engineer-in-charge or his authorized representative as per interval or program fixed in consultation with Engineer-in-Charge , or his authorized representative. After the necessary correction made by Engineer-In-Charge, the measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to the Engineer -in-Charge for the dated signatures by the Engineer-in-charge and the contractor or their representatives in token of their acceptance.

Whenever bill is due for payment, the contractor would initially submit draft computerized measurement sheets and these measurements would be got checked / test checked from the Engineer-in-Charge and / or his authorized representative. The contractor will, thereafter, incorporate such changes as may be done during these checks / test checks in his draft computerized measurement, and submit to the department a computerized measurement book, with its pages numbered. The Engineer-in-charge and / or his authorized representative would thereafter check this MB, and record the necessary certificates for their checks / test checks.

The contractor shall also submit to the department separately his computerized abstract of cost and the bill based on these measurements, duly bound, and its pages numbered along with two spare copies of the “bill”. Thereafter, this bill will be processed.

The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for checking of measurements / levels by the Engineer-in-Charge or his representative.

Except where any general or detailed description of the work expressly shows to the contrary, measurement shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of India standards and if for any item no such standard is available then a mutually agreed method shall be followed.

The Contractor shall give not less than seven days' notice to the Engineer-in-charge or his authorized representative in charge of the work before covering up or otherwise placing beyond the reach of checking and / or test checking the measurement of any work in order that the same may be checked and / or test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of checking and / or test checking measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of checking and / or test checking measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing the same shall be uncovered at the contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the department to check the measurements recorded by contractor and all provision stipulated herein above shall be applicable to such checking of measurements or levels.

It is also a term of this contract that checking and / or test checking the measurement of any item of work in the measurement book and / or its payment in the interim, on account of final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

CLAUSE 7

Payment on Intermediate Certificate to be Regarded as Advance

No payment shall be made for work, estimated to cost Rs. Twenty thousand or less till after the whole of the work shall have been completed. For works estimated to cost over Rs. Twenty Thousand, the interim or running account bills shall be submitted by the contractor for the work executed on the basis of such recorded measurements on the format of the Institute in triplicate on or before the date of every month fixed for the same by the Engineer-in-Charge. The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment / adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Project Schedule, if any, in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved. Engineer-in-charge shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurement of the work. In the event of the failure of the contractor to submit the bills, Engineer – Incharge shall prepared or cause to be prepared such bills in which event no claims, whatsoever due to delays on payment including that of interest shall be payable to the contractor. Payment on account of amount admissible shall be made by the Engineer-in-Charge certifying the sum to which the contractor is considered entitled by way of interim payment at such rates as decided by the Engineer-in-Charge.

All such interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, remove, taken away and reconstructed or re-erected. Any certificate given by the Engineer-in-Charge relating to the work done or materials delivered forming part of such payment, may be modified or

corrected by any subsequent such certificate (s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is / are in accordance with the contract and specification. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer-in-Charge under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.

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

Payment in Composite Contracts

In case of composite tenders, running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor component shall be made by the Engineer-in-Charge of the discipline of minor component directly to the main contractor.

In case main contractor fails to make the payment to the contractor associated by him within 15 days of receipt of each running account payment, then on the written complaint of contractor associated for such minor component, Engineer-in-Charge of minor component shall serve the show cause to the main contractor and if reply of main contractor either not received or found unsatisfactory, he may make the payment directly to the contractor associated for minor component as per the terms and conditions of the agreement drawn between main contractor and associate contractor fixed by him. Such payment made to the associate contractor shall be recovered by Engineer-in-Charge of major or minor component from the next R/A/ Final bill due to main contractor as the case may be.

CLAUSE 8

Completion Certificate and Completion Plans

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-charge shall inspect the work and if there is no defect in the work, shall process the final bill other wise the defects are to be rectified by the contractor and / or for which payment will be made at reduced rates. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus material, rubbish and all huts and sanitary arrangement required for his / their work people on the site in connection with the execution of the works as shall have been erected or constructed by the Contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirement of this clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work,

the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

CLAUSE 8A

Contractor to Keep Site Clean

When the annual repairs and maintenance of works are carried out, the splashes and droppings from white washing, colour washing, painting etc., on walls, floor, windows, etc shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, quarters or premises etc. where the work is done without waiting for the actual completion of all the other items of work in the contract. In case the contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this work done at the cost of the contractor either departmentally or through any other agency. If the contractor fails to remove debris from the work site within 72 hrs of its generation, penalty as decided by Engineer-In-Charge upto a maximum of 10% of contract sum will be recovered and the final bill will not be processed and repeated offenders name will be removed from enlistment without giving any further notice. Contractors shall not throw out debris any where in the campus. They shall take out the debris as per schedule of items and contract conditions. If the contractor fails to hand over the site neat and clean, a penalty of minimum Rs. 1,000/- and 4 times actual cleaning charges will be recovered.

CLAUSE 9

Payment of Final Bill

The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished.

CLAUSE 10

Material to be provided by the contractor

The contractor shall, at his own expense, provide all materials, required for the works other than those which are stipulated to be supplied by the Government.

The contractor shall, at his own expense and without delay, supply to the Engineer-in-Charge samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the contractor shall be in conformity with the specification laid down or referred to in the contract. The contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction

of the Engineer-in-Charge, that the materials so comply. The Engineer-in-Charge shall within fifteen days of supply of samples or within such further period as he may require intimate to the contractor in writing whether samples are approved by him or not. If samples are not approved, the contractor shall forthwith arrange to supply to the Engineer-in-Charge for his approval, fresh samples complying with the specifications laid down in the contract. When materials are required to be tested in accordance with specification, approval of the Engineer-in-Charge shall be issued after the test results are received.

The contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by Engineer – In- charge. The contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.

The contractor shall, at his risk and cost, make all arrangements and shall provide all facilities as the Engineer-in-Charge may require for collecting, and preparing the required number of samples for such tests at such time and arrange to get it tested and obtaining test certificate from Labs mentioned below and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Engineer-in-Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance in obtaining the right to such access.

i) Labs of IIT Bombay (ii) Labs of VJTI (iii) Labs of SPCE (iv) Labs of Structwell Consultant & Engineers.

The Engineer-in-Charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Engineer-in-Charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full powers to require other proper material to be substituted thereof and in case of default, the Engineer-in-Charge may cause the same to be supplied and all costs which may attend such removal and substitution shall be borne by the contractor.

CLAUSE 10 A

Secured Advance on Non-perishable Material

The contractor, on signing an indenture in the form to be specified by the Engineer-in-charge, shall be entitled to be paid during the progress of the execution of the work up to 90% of the assessed value of any materials which are in the opinion of the Engineer-in-Charge non perishable, non fragile and non-combustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and / or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work, the

amount of such advance shall be recovered / deducted from the next payment made under any of the clause or clauses of this contract.

CLAUSE 10 B

Dismantled Material Govt Property

The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc as Institute's property and such materials shall be disposed off to the best advantage of the Institute according to the instructions in writing issued by Engineer-in-Charge.

CLAUSE 11

Work to be Executed in Accordance with Specifications, Drawings, Orders etc.

The contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions.

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

CLAUSE 12

Deviations / Variations Extent and Pricing

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

The Contractor shall bound to do execute additional quantities upto 25 % of work order quantity in the same rate agreed up on as per tender if required as per site condition and as decided by Engineer

Incharge. In exceptional cases, if the item of work to be executed needs to be exceeded beyond 25% of work order quantity, a mutually agreeable rate, either the work order rate or rate derived by the Engineer Incharge based on current market rate or CPWD schedule rate shall be considered.

12.1 The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the contractor, as follows :

i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus.

ii) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge.

Deviation, Extra Items and Pricing

12.2 In the case of extra item(s) (items) that are completely new, and are in addition to the items contained in the contract), the contractor may within fifteen days of receipt of order or occurrence of the item (s) claim rates, supported by proper analysis, for the work and the engineer-in-charge shall within 15 days of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following para.

Deviation, Substitute Items and Pricing.

(a) If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

(b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item(to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement items (to be substituted).

CLAUSE 13

Foreclosure of contract due to abandonment or reduction in scope of work.

If at any time after acceptance of the tender, Institute shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not required the whole or any part of the works to be carried out, the Engineer-in-Charge shall give notice in writing to that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of

compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

The contractor shall be paid at contract rates, full amount for works executed at site and, in addition, the cost of material arranged by the Contractor for the work as certified by the Engineer-in-Charge which could not be utilized on the work to the full extent in view of the foreclosure will be paid as mentioned below;

(i) Institute shall have the option to take over contractor's materials or any part thereof either brought to site or of which the contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work) provided, however Institute shall be bound to take over the materials or such portions thereof as the contractor does not desire to retain. For materials taken over or to be taken over by Institute, cost of such materials as detailed by Engineer-in-Charge shall be paid. The cost shall, however, take into account purchase price and cost of transportation.

CLAUSE 14

Carrying out part work at risk & cost of contractor

If Contractor :

(i) At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Engineer-in-Charge; or
(ii) Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Engineer-in-Charge; or

Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge.

The Engineer-in-charge without invoking action under clause 3 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to the Institute, by a notice in writing to take the part work / part in complete work of any item(s) out of his hands and shall have powers to ;

(a) Take possession of the site and any materials, constructional plant, implements, stores, etc, thereon; and /or

(b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.

The Engineer-in-Charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work / part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by the Institute because of action under this clause shall not exceed 10% of the tendered value of the work.

In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor. The certificate of the Engineer-in-charge as to the value of work done shall be final and conclusive against the contractor provided always that action under this clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the department are less than the amount payable to the contractor at his agreement rates, the difference shall not be payable to the contractor.

Any excess expenditure incurred or to be incurred by the Institute in completing the part work / part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by the Institute as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to the Institute in law or per as agreement be recovered from any money due to the contractor on any account, and if such money is insufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-charge shall have the right to sell any or all of the contractors unused materials, constructional plant, implements, temporary building at site etc and adjust the proceeds of sale thereof towards the dues recoverable from the contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract.

In the event of above course being adopted by the Engineer-in-charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagement or made any advance on any account or with a view to the execution of the work or the performance of the contract.

CLAUSE 15

Suspension of Work

(i) The contractor shall, on receipt of the order in writing of the Engineer-in-Charge, (whose decision shall be final and binding on the contractor) suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-Charge may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following reason :

(a) on account of any default on the part of the contractor or;

(b) for proper execution of the works or part thereof for reasons other than the default of the contractor ; or
(c) for safety of the works or part thereof.

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

(ii) If the suspension is ordered for reasons (b) and (c) in Sub-para (i) above, the contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25% for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part, and ;

CLAUSE 16

Action in case work not done as per Specification

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-in-Charge, his authorized subordinates in charge of the work and all the superior officers, or any organization engaged by the Institute for quality assurance and the contractor shall, at all times, during the usual working hours and at all the other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

If It shall appear to the Engineer-in-Charge or his authorized subordinates incharge of the work or officers of the organization engaged by the department for quality assurance, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand from the Engineer-in-Charge specifying the work, materials or articles, complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under clause 2 of the contract (for non-completion of the work in time) for this default. In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the Institute may consider reasonable and as approved by SE/Dean(IPS) during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and / or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

CLAUSE 17

Contractor Liable for Damages defects during maintenance period

Contractor is Liable for Damages and defects in the work during maintenance period of 24 months from date of completion of the work.

If the contractor or his working people or servant shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road, kerb, fence enclosure, water pipe, cables, drains, electric or telephone post or wires, trees grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within twenty four months for all works except the work mentioned below after a certificate final or otherwise of its completion shall have been given by the engineer-in-charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The balance 5% security deposit with Institute after payment of final bill shall not be refunded before the expiry of Twelve months or as mentioned in (a) below. After the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later.

(a) In case of labour supply work Defect Liability Period will be 12 months and Security Deposit will be released after this period. For waterproofing work the Defect Liability Period (Guarantee period) will be mentioned in schedule of item of that work and SD will be released on completion of 24 months after obtaining guarantee bond on non- judicial stamp paper from the contractor. There shall be no Defect Liability Period for grass cutting work, drain desilting works, rental services of machineries , temporary sheds, pandal, decoration, tank cleaning etc. and the SD will be released along with finalbill

CLAUSE 18

Contractor to supply tools & plants etc.

The contractor shall provide at his own cost all materials (except such special materials, if any, as may in accordance with the contract be supplied from the Engineer-in-charge's stores), machinery, tools & plants as specified in schedule of item. In addition to this, appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out

works, and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials. Failing his so doing, the same may be provided by the Engineer-in-charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and / or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

CLAUSE 18 A

Recovery of Compensation paid to workmen

In every case in which by virtue of the provisions sub-section (1) of section 12, of the workmen's compensation Act, 1923, the Institute is obliged to pay compensation to a workman employed by the contractor, in execution of the works, the Institute will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the Institute under sub-section(2) of section 12, of the said Act, the Institute shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by the Institute to the contractor whether under this contract or other wise. The Institute shall not be bound to contest any claim made against it under sub-section (1) of section 12, of the said Act, except on the written request of the contractor and upon his giving to the Institute full security for all costs for which the Institute might become liable in consequence of contesting such claim.

CLAUSE 18 B

Ensuring Payment and Amenities to workers if contractor fails

In every case in which by virtue of the provision of the Contract labour (Regulation and Abolition), Act, 1970 and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, the Institute is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under clause **19G**, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by IIT Bombay, Contractors, the Institute will recover from the contractor, the amount of wages so paid or the amount of expenditure so incurred ; and without prejudice to the rights of the Institute under sub-section (2) of section 20, and sub-section (4) of Section 21, of the contract labour (Regulation and Abolition) Act, 1970, the Institute shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by the Institute to the contractor whether under this contract or otherwise the Institute shall not be bound to contest any claim made against it under sub- section (1) of Section 20, sub – section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the Institute full security for all costs for which the Institute might become liable in contesting such claim.

CLAUSE 19

Labour Laws to be complied by the Contractor

The contractor shall obtain a valid license under the Contract Labour (R & A), Act 1970, and the contract labour (Regulation and Abolition) Central Rules, 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986.

The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.

Any failure to fulfill these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.

CLAUSE 19 A

No Labour below the age of eighteen years shall be employed on the work.

CLAUSE 19 B

Payment of Wages : -

(i) The contractor shall pay to labour employed by him either directly or through sub-contractors, wages not less than fair wages as per the provision of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

(ii) The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him.

(iii) In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied Labour Regulations and minimum wages Act made by Government from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorizedly made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provision of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

(iv) (a) The Engineer-in-charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.

(b) Under the provision of Minimum Wages (Central) Rules, 1950, the contractor is bound to allow to he labour directly or indirectly employed in the works one day rest for 6 days continuous work and pay wages at the same rate as for duty. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the person entitled thereto from any money due to the contractor by the Engineer-in-Charge concerned.

(v) The contractor shall comply with the provisions of the payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Factories Act, 1948, Shop & establishment Act, 1960, ESIC Act 1948, Maternity Benefits Act, 1961 amended in 2017, the Contractor's Labour (Regulation and Abolition) Act 1970 and Payment of Gratuity Act, 1972.
The Indian Parliament passed 04 labour codes in 2019 and 2020 sessions. These four codes will consolidate 44 existing labour laws. They are: The Industrial Relations Code,2020, The code on Social Security,2020, The Occupational Safety, Health and Working Conditions Code, 2020 and The code on Wages, 2019. The contractors should follow the modifications/notifications thereof or any other laws relating thereto and the rules made there under from time to time.

(vi) The contractor shall indemnify and keep indemnified the Institute against payments to be made under and for the observance of laws aforesaid without prejudice to his right to claim indemnity from his sub-contractors.

(vii) The laws aforesaid shall be deemed to be a part of this contract and nay breach thereof shall be deemed to be a breach of this contract.

(viii) Whatever is the minimum wage for the time being, or if the wage payable is higher than such wage, such wage shall be paid by the contractor to the workmen directly without the intervation of Jamadar and that Jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commission or otherwise.

(ix) The contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the Jamadar from the wage of workmen.

(x) The Contractor has to follow all labour laws, Govt of India & Govt of Maharashtra Labour Acts which are in force at present and introduced from time to time, such as Acts, enforced by Regional Provident Fund Commissioner, Directorate of E.S.I.C. and enforcement officer of Contract Labour Act, and all necessary arrangement for labour security insurance will have to be made by the contractor at his own cost including paying minimum wages, gratuity, etc. declared by competent authority from time to time.

CLAUSE 19 C

In respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall at his own expense arrange for the safety provision as per safety code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangement and provide necessary facilities as aforesaid, he shall be liable to pay a penalty of Rs. 200/- for each default and in addition, the Engineer-in-Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

CLAUSE 19 D

In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with all the rules frame by Government from time to time for the protection of health and sanitary arrangements for workers employed by the Institute and its contractors.

CLAUSE 19 E

Leave and pay during leave shall be regulated as follows : -

1. Leave

(i) in the case of delivery – maternity leave not exceeding 8 weeks, 4 weeks up to and including the day of delivery and 4 weeks following that day,
(ii) in the case of miscarriage – upto 3 weeks from the date of miscarriage.

2. Pay :
(i) In the case of delivery-leave pay during maternity leave will be at the rate of the women's average daily earning, calculated on total wages earned on the days when full time work was done during a period of three months immediately preceding the date on which she gives notice that she expects to be confined or at the rate of Rupee one only a day whichever is greater.
(ii) In the case of miscarriage – leave pay at the rate of average daily earning calculated on the total wages earned on the days when full time work was done during a period of three months immediately preceding the date of such miscarriage.

3. Condition for the grant on Maternity Leave :
No maternity leave benefit shall be admissible to a woman unless she has been employed for a total period of not less than six months immediately preceding the date on which she proceeds on leave.

4. The Contractor shall maintain a register of Maternity (Benefit) in the Prescribed form as shown in appendix – I and II, and the same shall be kept at the place of work.

CLAUSE 19 F

If it appear to the Engineer-in-Charge that the contractor(s) is/are not properly observing and complying with the provisions of the contract labour (Regulation and Abolition) Act 1970, and the Contract labour (R & A) Central Rules 1971, for the protection of health and sanitary arrangements for work-people employed by the contractor (s) (hereinafter referred as " the said Rules") the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said Rules be complied with and the amenities prescribed therein be provided to the work-people within a reasonable time to be specified in the notice. If the contractor(s) shall fail within the period specified in the notice to comply with and / observe the said Rules and to provide the amenities to the work-people as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities hereinbefore mentioned at the cost of the contractor(s). The contractor (s) shall erect, make and maintain at his / their own expense and to approved standards all necessary huts and sanitary arrangement required for his/their work-people on the site in connection with the execution of the works, and if the same shall not have been erected or constructed, according to approved standards, the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said huts and sanitary arrangement be remodelled and /or reconstructed according to approved standards, and if the contractor(s) shall fail to remodel or reconstruct such huts and sanitary arrangement according to approved standards within the period specified in the notice, the Engineer-in-Charge shall have the power to remodel or reconstruct such huts and sanitary arrangement according to approved standards at the cost of contractor(s).

CLAUSE 19 G

In case the Institutes competent authority allows and permits the contractor to construct labour camp in the Campus as a special case.

The conditions are as follows;

The contractor(s) shall at his / their own cost provide his/ their labour with a sufficient number of huts (hereinafter referred to as the camp) of the following specification on the plot of land approved by the Engineer-in-Charge.

(i) (a) The minimum height of each hut at the eaves level shall be 2.10m (7 ft.) and the floor area to be provided will be at the rate of 2.7 Sqm (30 Sq. Ft) for each member of the worker's family staying with the labourer.

(b) The contractor(s) shall in addition construct suitable cooking places having a minimum area of 1.80m x 1.50m (6' x 5') adjacent to the hut for each family.

(c) The contractor(s) shall also construct temporary latrines and urinal for the use of the labourers each on the scale of not less than four per each one hundred of the total strength, separate latrines and urinals being provided for women.

(d) The contractor(s) shall construct sufficient number of bathing and washing places, one unit for every 25 persons residing in the camp. These bathing and washing places shall be

suitable screened.

(ii) (a) All the huts shall have walls of sun-dried or burnt-bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in-Charge. In case of sun-dried bricks, the walls should be plastered with mud gobri on both sides. The floor may be kutcha but plastered with mud gobri and shall be at least 15cm (6") above the surrounding ground. The roofs shall be laid with thatch or any other materials as may be approved by the Engineer-in-Charge and the contractor shall ensure that throughout the period of their occupation, the roofs remain water-tight.

(b) The contractor(s) shall provide each hut with proper ventilation.

(c) All doors, windows, and ventilators shall be provided with suitable leaves for security purposes.

(iii) Water supply – The Contractor(s) shall provide adequate supply of water for the use of labourers. The provisions shall not be less than two gallons of pure and wholesome water per head per day for drinking purposes and three gallons of clean water per head per day for bathing and washing purposes. Where piped water supply is available, supply shall be at stand posts and where the supply is from wells or river, tanks which may be of metal or masonry, shall be provided. The contractor(s) shall also at his / their own cost make arrangement for laying pipe lines for water supply to his / their labour camp from the existing mains wherever available, and shall pay all fees and charges therefore.

(iv) Disposal of Excreta – The contractor(s) shall make necessary arrangement for the disposal of excreta from the latrines by trenching or incineration which shall be according to the requirements laid down by the PHO and local health authorities. If trenching or incineration is not allowed, the contractor(s) shall make arrangements for the removal of excreta through the Municipal Committee / authority and inform it about the number of labourers employed so that arrangements may be made by such committee / authority for the removal of excreta. All charges on this account shall be borne by the contractor and paid direct by him to the Municipality / Authority. The contractor shall provide one sweeper for every eight seats in case of dry system.

(v) Drainage – The contractor(s) shall provide efficient arrangement for draining away sullage water so as to keep the camp neat and tidy.

(vi) The contractor(s) shall make necessary arrangement for keeping the camp area sufficiently lighted to avoid accidents to the workers.

(vii) Sanitation – The contractor(s) shall make arrangements for conservancy and sanitation in the labour camps according to the rules of the Public Health and Medical Authorities.

CLAUSE 19 H

The Engineer-in-Charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractors employ upon the work who may be incompetent or misconduct himself and the contractor shall forthwith comply with such requirement. In respect of maintenance / repair or renovation works etc where the labour have an easy access to the individual houses, departments, the contractor shall issue identity cards to the labourers, whether temporary or permanent and he shall be responsible for any untoward action on the part of such labour.

CLAUSE 19 I

It shall be the responsibility of the contractor to see that the building under construction or repair is not occupied by any body unauthorizedly during construction and repair and is handed over to the Engineer-in-Charge with vacant possession.

CLAUSE 19 J

Employment of Skilled / Semiskilled workers

The contractor shall, at all stages of work, deploy skilled ./ Semi skilled tradesmen who are qualified and possess certificate in particular trade from CPWD Training Institute / Industrial Training Institute/ National Institute of Construction Management and Research (NICMAR) / National Academy of Construction, CIDC or any similar reputed and recognized Institute managed / certified by State / Central Government.

CLAUSE 20

Minimum Wages Act to be Complied with

The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract labour (Regulation and Abolition) Act, 1970, amended from time to time and rules framed thereunder and other labour laws affecting contract labour that any be brought into force from time to time.

CLAUSE 20 A

LABOUR LICENSE

If the contractor needs to engage more than 20 workers per day they shall get labour license from competent authority by completing the certain formalities. Wages to the labourers shall be paid by the contractor as per the minimum wages act and circular issued by the Regional Labour Commissioner, Mumbai. If any accident takes place contractor will be held fully responsible for that and they shall make arrangement to get worksman compensation. If the contractor engaging more than 10 labourers they shall compile the provision of building and construction act.

CLAUSE 21

Work not to be sublet. Action in case of insolvency

The contract shall not be assigned or sublet without the written approval of the Institute. And if the contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor, or any of his servants or agent to any public officer or person in the employ of the Institute in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Institute shall have power to adopt the course specified in Clause 3 hereof in the interest of the Institute and in the event of such course being adopted, the consequences specified in the said Clause 3 shall ensue.

CLAUSE 22

All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of the Institute without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

CLAUSE 23

Changes in firm's Constitution to be intimated

Where the contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern, such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of Clause 21 hereof and the same action may be taken, and the same consequences shall ensue as provided in the said Clause 21.

CLAUSE 24

All works to be executed under the contract shall be executed under the direction and subject to the approval in all respect of the Engineer-in-Charge who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

CLAUSE 25

Settlement of Disputes & Arbitration

Except where otherwise provided in the contract, all question and disputes relating to the meaning of the specification, design, drawings and instructions herein before mentioned and as to the quality of

workmanship or materials used on the work or as to any other question, claim, right, matter or things whatsoever in any way arising out of or relating to the contract, designs, drawings, specification, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter.

(i) If the contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer-in-Charge on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable, he shall promptly within 5 days request the Superintending Engineer/Executive Engineer in writing for written instruction or decision. Thereupon, the Superintending Engineer/Executive Engineer shall give his written instruction or decision within a period of 10 days from the receipt of the contractor's letter.

If The Superintending Engineer/Executive Engineer fails to give his instructions or decision in writing within the aforesaid period or if the contractor is dissatisfied with the instructions or decision of the Superintending Engineer/Executive Engineer, the contractor may, within 5 days of the receipt of Superintending Engineer/Executive Engineer's decision, appeal to the Dean (IPS) who shall afford an opportunity to the contractor to be heard, if the latter so desires, and to offer evidence in support of his appeal. The Dean (IPS) shall give his decision within 30 days of receipt of contractor's appeal. If the contractor is dissatisfied with this decision, the contractor shall within a period of 30 days from receipt of the decision, give notice to the Dean (IPS) for appointed of arbitrator failing which the said decision shall be final binding and conclusive and not referable to adjudication by the arbitrator.

(ii) Except where the decision has become final, binding and conclusive in terms of sub para (i) above, disputes or difference shall be referred for adjudication through arbitration by a sole arbitrator appointed by the Deputy Director (AIA) of IIT Bombay. If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever, another sole arbitrator shall be appointed in the manner aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

It is a term of this contract that the partly invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the Dean (IPS) of the appeal.

It is also a term of this contract that no person, other than a person appointed by Deputy Director (AIA) of IIT Bombay as aforesaid, should act as arbitrator and if for any reason that is not possible, the matter shall not be referred to arbitration at all.

It is also a term of this contract that if the contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 30 Days of receiving the intimation from the Engineer-in-Charge that the final bill is ready for payment, the claim of the contractor shall be deemed to have been waived and absolutely barred and the Institute shall be discharged and release of all liabilities under the contract in respect of these claims.

Th arbitration shall be conducted in accordance with the provision of the Arbitration and Conciliation

Act, 1996 (26 of 1996) or any statutory modifications or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause. It is also a term of this contract that the arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and in all cases, the arbitrator shall give reasons for the award.

It is also a term of the contract that if any fees are payable to the arbitrator, these shall be paid equally by both the parties.

It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statement of claims and counter statement of claims. The venue of the arbitration shall be such place as may be fixed by the arbitrator in his sole discretion. The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner, such costs or any part thereof shall be paid and fix or settle the amount of costs to be so paid.

CLAUSE 26

Contractor to Indemnify Govt against Patent Rights

The contractor shall fully indemnify and keep indemnified IIT Bombay against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against the Institute in respect of any such matters as aforesaid, the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the Institute infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Engineer-in-Charge in this behalf.

CLAUSE 27

Lumpsum Provisions in Tender

When the estimate on which a tender is made includes lump sum in respect of parts of the work, the contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not, in the opinion of the Engineer-in-Charge payable of measurement, the Engineer-in-Charge may at his discretion pay the lump-sum amount entered in the estimate, and the certificate in writing of the Engineer-in-Charge shall be final and conclusive against the contractor with regard to any sum or sums payable to him under the provisions of the clause.

CLAUSE 28

Action where no specification are specified

In the case of any class of work for which there is no such specification as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per CPWD specifications, and if not available work shall be carried out as per manufacturers specifications & if this also not available then as per District Specifications. In case there are no such specification as required above, the work shall be carried out in all respects in accordance with the instructions and requirement of the Engineer-in-Charge.

CLAUSE 29

Withholding and lien in respect of sum due from contractor

(i) Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, the Engineer-in-Charge or the Institute shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, the Engineer-in-Charge or the Government shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the Engineer-in-Charge or the Institute shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with the Engineer-in-Charge or Institute or any contracting person through the Engineer-in-Charge pending finalization of adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Institute will be kept withheld or retained as such by the Engineer-in-Charge or Institute till the claim arising out of or under the contract is determined by the arbitrator (if contract is governed by the arbitration clause) by the competent court, as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is partnership firm or a limited company, the Engineer-in-Charge or the Institute shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part form any sum found payable to any partner / limited company as the case may be, whether in his individual capacity or otherwise.

(ii) IIT Bombay shall have the right to cause an audit and technical examination of the work and the final bills of the contractor including all supporting vouchers, abstract, etc., to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for IIT Bombay to recover the same from

him in the manner prescribed in sub-clause (i) of this clause or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by IIT Bombay to the contractor, without any interest thereon whatsoever.

Provided that IIT Bombay shall not be entitled to recover any sum overpaid, nor the contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Superintending Engineer or Executive Engineer on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the Superintending Engineer or the Executive Engineer.

CLAUSE 29A

Lien in respect of claims in other contracts

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or the Government or any other contracting person or persons through Engineer- In- Charge against any claim of the Engineer-in-Charge or Government or such other person or persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with Engineer-in-Charge or the Government or with such other person or persons.

It is an agree term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the Government will be kept withheld or retained as such by the Engineer-in-Charge or the Government or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the arbitration clause or by the competent court, as the case may be and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

CLAUSE 30

Unfiltered Water Supply

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 purpose to the satisfaction of the Engineer-in-Charge.
(ii) The Engineer-in-Charge shall make alternative arrangement for supply of water at the risk and cost of contractor(s) if the arrangement made by the contractor(s) for procurement of water are in the opinion of the Engineer-in-Charge, unsatisfactory.
(iii)

CLAUSE 31

a. **Departmental Water Supply, if available**

Water **if** available may be supplied to the contractor by the department as per actual/applicable cost subject to the following conditions :-

(i) The contractor(s) shall make his / their own arrangement of water connection and laying of pipelines from existing main of source of supply.

(ii) The Department do not guarantee to maintain uninterrupted supply of water and it will be incumbent on the contractor(s) to make alternative arrangement for water at his/ their own cost in the event of any temporary break down in the Institute water main so that the progress of his / their work is not held up for want of water. No claim of damage or refund of water charges will be entertained on account of such break down.

b. Departmental Power Supply.

Based on Contractors application to Executive Engineer (Electrical), Power will be supplied by Institute at nearest available location and the charges will be recovered from the bills payable to the Contractors in the following manner-

i. 1% cost of electricity required items of work, if power connection is given from Institute.
OR

ii. If the Contractor arrange approved Energy meter, metered connection will be provided and charges as per actual consumption will be recovered.

CLAUSE 32

Return of Surplus Materials

Notwithstanding anything contained to the contrary in this contract, where any materials for the execution of the contract are procured with the assistance of Institute either by issue from IIT Bombay stocks or purchase made under orders or permits or licenses issued by IIT Bombay, the contractor shall hold the said materials economically and solely for the purpose of the contract and not dispose of them without the written permission of IIT Bombay and return, if required by the Engineer-in-Charge, all surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination for any reason whatsoever on being paid or credited such price as the Engineer-in-Charge shall determine having due regard to the condition of the materials. The price allowed to the contractor however shall not exceed the amount charged to him excluding the element of storage charges. The decision of the Engineer-in-Charge shall be final and conclusive. In the event of breach of the aforesaid condition, the contractor shall in addition to throwing himself open to action for contravention of the terms of the license or permit and / or for criminal breach of trust, be liable to IIT Bombay for all moneys, advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach.

CLAUSE 33

Employment of Technical Staff and employees

Designation	Minimum qualification and experience required	Scope of Work	Personal to be deployed	Rate of recovery per month per person for non Employment
Sr. Project Engineer	Graduate Engineer in Civil Engineering with minimum 5 years, or Diploma in Civil Engineering with minimum 10 years of experience	Engineer-in-charge for project execution	1	Rs. 80,000/-
Jr.Project Engineer	Graduate Engineer(Civil) with minimum 2 years or Diploma Engineer with minimum 5 years of experience	Monitor the work at Site	3	Rs. 50,000/-
Supervisors	Experience of 10 years with related field. Building maintenance & Civil works	Site Supervision	7	Rs. 30,000/-

Contractor Superintendence, Supervision, Technical staff & Employees
(i) The contractor shall provide all necessary superintendence during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

The contractor shall immediately after receiving letter of acceptance of the tender and before commencement of the work, intimate in writing to the Engineer-in-Charge, the name(s), qualifications, experience, age, address(s) and other particulars along with certificate, of principal technical representative to be in charge of the work and other technical representative(s) who will be supervising the work.

The principal technical representative and other technical representative(s) shall be present at the site of work for supervision at all times when any construction activity is in progress and also present himself / themselves, as required, to the Engineer-in-charge and / or his designated representative to

take instructions. Instruction given to the principal technical representative or other technical representative(s) shall be deemed to have the same force as if these have been given to the contractor. The principal technical representative and other technical representative(s) shall be actually available the decision of the Engineer-in-Charge as recorded in the site order book and measurement recorded checked / test checked in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to appoint suitable technical Principal technical representative and / or other technical representative(s) and if such appointed persons are not effectively present or are absent by more than two days without duly approved substitute or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as suitable other technical representative(s) is / are appointed and the contractor shall be held responsible for the delay so cause to the work. The contractor shall submit a certificate of employment of the technical representative(s) along with every on account bill / final bill and shall produce evidence if at any time so required by the Engineer-in-Charge at site fully during all stages of execution of work, during recording / checking /test checking of measurement of works and whenever so required by the Engineer-in-Charge or his designated representative(s) in the site order book and shall affix his / their signature in token of noting down the instructions and in token of acceptance of measurements / checked measurements / test checked measurements. The representative(s) shall not look after any other work. Substitute, duly approved by Engineer-in-Charge of the work in similar manner as aforesaid shall be provided in event of absence of any of the representative(s) by more than two days.

(ii) The contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper supervision to the work.

The contractor shall provide and employ skilled, semiskilled and unskilled labour as is necessary for proper and timely execution of the work.

The Engineer-in-Charge shall be at liberty to object to and require the contractor to remove from the works any person who in his opinion misconducts himself, or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the Engineer-in-Charge to be undesirable. Such person shall not be employed again at works site without the written permission of the Engineer-in-Charge and the persons so removed shall be replaced as soon as possible by competent substitutes.

CLAUSE 34

Levy / Taxes payable by Contractor

(i) Sales Tax / Vat (except Service Tax), Building and other Construction Workers Welfare Cess or any other tax or Cess in respect of this contract shall be payable by the contractor and IIT Bombay shall not entertain any claim whatsoever in this respect. However, in respect of service tax, same shall be paid by the contractor to the concerned department on demand and it will be reimbursed to him by the Engineer-in-Charge after satisfying that it has been actually and genuinely paid by the contractor.

(ii) The contractor shall deposit royalty and obtain necessary permit for supply of the red earth, Murum, Stone, Kankar, etc from local authorities.

If pursuant to or under any law, notification or order any royalty, cess or the like becomes payable by IIT Bombay and does not any time become payable by the contractor to the State Government, Local authorities in respect of any material used by the contractor in the works, then in such a case, it shall be lawful to IIT Bombay and it will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from dues of the contractor.

CLAUSE 35

Condition for reimbursement of levy / taxes if levied after receipt of tenders

(i) All tendered rates shall be inclusive of all taxes and levies (except Service Tax) payable under respective statutes. However, if any further tax or levy or cess is imposed by Statute, after the last stipulated date for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes / levies /cess, the contractor shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of the Dean IPS (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor.

(ii) The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of IIT Bombay and /or the Engineer-in-Charge and shall also furnish such other information / document as the Engineer-in-Charge may require from time to time.

(iii) The contractor shall, within a period of 30 days of the imposition of any such further tax or levy or cess, give a written notice thereof to the Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto**.**

CLAUSE 36

Termination of contract on death of contractor

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, IIT Bombay shall have the option of terminating the contract without compensation to the contractor.

CLAUSE 37

If relative working in IIT Bombay then the contractor not allowed to tender

The contractor shall not be permitted to tender for works in IIT Bombay, if his near relative is posted as

Accountant or as an officer in any capacity between the grades of the Superintending Engineer and Junior Engineer (both inclusive).

Note : By the term " near relatives" is meant wife, husband, parents and grand parents, children and grand children, brothers and sisters, uncles, aunts and cousins and their corresponding in laws.

CLAUSE 38

No Officer / Staff to work as contractor within one year of retirement

No Engineer or other staff employed in engineering or administrative duties in IIT Bombay shall work as a contractor or employee of a contractor for a period of one year after his retirement from the Institute service without the permission of IIT Bombay in writing. This contract is liable to be canceled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of IIT Bombay as aforesaid, before submission of the tender or engagement in the contractor's service, as the case may be.

Note : In case of difference or ambiguity in Hindi and English version, the English Version will prevail.

Signature of Contractor

Superintending Engineer

SPECIAL CONDITIONS

1) Construction Plant and Machinery

Applicant should furnish the list of construction plant and equipment including shuttering, centering and scaffolding likely to be used for carrying out the work (in form F). Details of any other equipment not mentioned in form F but available with the applicant and likely to be used in this work may also be indicated.

2) The contractor shall abide by all security regulations issued by the security staff from time to time and as per rules amended herewith.

3) Unless otherwise provision is made, the contractor will have to make his own arrangement of articles like cement and steel etc.

4) The rates quoted by the tenderer shall include all taxes, duties excise and no extra shall be paid on this account. Similarly, no price escalation during the tenure of the contract of for the extended period permitted by the Institute shall be allowed and the rates quoted in the contract shall be firm for the contract.

5) Sufficient care should be taken by the contractor to brick walls floor, glass windows, etc. while carrying out the work, any damage done to the departmental property shall be rectified at contractor's expenses.

6) The contractor shall remove all surplus materials, debrises except cement etc. out of the IIT Campus from the site of work on completion of work and will handover the site clean before the bill is processed for final bill. In case of dismantled material such as pans urinals, flush tanks, M.S. windows etc. which generally cannot be re-used should be removed and taken away by the winning contractor on rebate basis. Concerned contractor should be allowed to remove all such dismantled materials after completion of the relevant contract. The collected debris should be properly covered by sheets en-closer at specified location with proper signage.

7) The contractor shall not be permitted to construct labour hutment anywhere in the Campus. However, in case of the work is necessitates the construction of temporary stores for storing the cement or any other material, the same shall permitted to be constructed by the contractor at his cost with prior permission of the Engineer-in- Charge. The site, however, will have to be vacated including the encumbrances immediately after completion of work and before the payment of the final bill.

8) No cement will be issued from Estate store. Contractor's are instructed to procure OPC grade 43/53 as per requirement or otherwise PPC bag Manufactured by ACC. Testing of cement is required to be carried out either in IIT/ VJTI/SP College Labs / Structwel Laboratory on his own cost & report may be submitted to Assistant Engineer / Junior Engineer.

9) No cement will be issued from Estate Store and final bill will not be accepted without test report of IIT / VJTI/ SP College labs/ Structwel laboratory.

10) Visit to site within the restricted area

Permission to enter the restricted area at the time of submission of tenderers can be obtained through the Executive Engineer (Civil / Electrical) concerned. Tenders are advise to send prior information to the Executive Engineer concerned about the particular of their agents, representative etc. so that necessary arrangement may be made by him to secure admission. Whether a tendered visits at the site or not he shall be deemed to have full knowledge of restrictions on entering into exist, form and working within the restricted areas.

11) Entry and Exit

The contractor, his agents, representatives, workman, etc. and his materials, carts trucks, or other means of transport, etc. will be allowed to enter through and leave from only such gate or gates and at such times as the Executive Engineer concerned or authorized In-charge of the restricted areas may bear at their soles discretion permit to be used. Contractor's authorized representative if required are to be present at the places of entry and exist for the purpose of identifying his carts, trucks, etc. to the personnel In-charges of the security of the restricted area.

12) Temporary Identity Permits

The contractor or his representative / site In-charge overseers and other regular staff are required individually to be in possession of the temporary entry permit which will be issued by the Security on the recommendation of the Engineer-In-Charge. Regarding casual labourers skilled workers to be engaged in the execution of the work, the following procedure shall be followed.

The casual / skilled workers who will be engaged by the contractor shall be allowed to enter IIT premises through gates on production of Daily Attendance Card which will be marked by the authorized representative of the contractor before entering at the Security Gate.

The Security Officer shall have the authority not to allow any labourers who does not posses the " Marked muster roll cards". The labourers working and moving in the Campus areas should always carry the muster roll card with them for identification. Contractor shall be responsible for the conduct and action of his / workmen / agent of representative at all times.

In case of any concreting program which involves temporary engagement of more labourers, the contractor concerned shall apply to the site engineer for temporary permission for the day and intimate the same to the security prior to such engagement.

13) Movement of Contractor's Materials

Any materials which are removed from the site of works are required to be taken out from the IIT premises, the contractor should follow the following procedure.

The contractor shall supplying in writing to the Engineer-in-charge the details of the materials to be removed including the material which are rejected etc. This application shall be endorsed by the Engineer-in-charge, or his authorized representative. These materials shall only be allowed to go out of IIT premises after counter signature of the Security Officer an checked at the gate.

14) Search

Thorough search of all persons and transport shall be carried out each gate and for as many times as gate is used for entry or exist and may also be carried out at any time or any number of times at the works site within the restricted area.

15) Working Hours

The unit controlling restricted areas, usually work during five days in the week and remain closed on Saturdays and Sundays. Working hours available to contractor's labour and staff are however, appreciable reduced because of the time of entry and exist during working hours. The exact working hours, working days and non-working days observed for the restricted area, where work are to be carried out shall be deemed to have been ascertained by the contractor before submitting this tender. The tenderers attentions invited to the fact that the total number of working hours for the units are prescribed in regulation and no work beyond the prescribed working hours shall be permitted.

The contractor shall not carry out any work on declared holidays of IIT, weekly holidays and other non-working days unless he is expressly authorized in writing to do so by the Executive Engineer (Estate / Civil / Electrical) concerned.

16) Access to restricted area after completion of work.

After the works are completed and surplus stores etc. removed the contractor his agents, representatives or workmen etc. may not be allowed any access to the restricted area except for attending to and rectification defects pointed out to him by the Executive Engineer (Estate / Civil / Electrical) concerned or his representative.

17) Fire precaution

The contractor, his agents, representative, workmen etc. shall be strictly observed the orders pertaining to fire precautions prevailing within the restricted areas.

18) Work on Holidays Saturdays / Sundays

The contractor shall not carry out any work on declared holiday of IIT, weekly holiday and other non-working days unless he is expressly authorized in writing to do so by the Executive Engineer (Estate / Civil / Electrical) concerned. Contractors can execute the work on holiday, Saturday and Sundays with prior permission of the office under the supervision of the office staff. The overtime charges as per the rates of IIT will be recovered from the contractor. The necessary recovery will be done through bills.
The record of materials brought by the contractor inside the IIT Campus should be verified through the concern Assistant Engineer and Junior Engineer before commencing the work.

19) If any material is to issued by IIT Bombay the same will be issued as per requisition.

20) Any scaffolding or ladder required for access to the location of work for inspection shall be made by the contractor at his own cost and the same shall be removed on his own cost after completion of work.

21) The contractor shall carry out work in close co-ordination with the respective Department / Hostel without causing any inconvenience to all concerned. However, the job has to be completed within the stipulated time limit.

22) The contractor has to obtain CAR policy before commencement of the work and he should pay ESI and PF contribution against the workers engaged by him and challan are to be submitted along with the final bill.

23) The indemnity bond and promissory note shall required to be submitted by the contractor for secured advance if any.

24) No mobilization advance will be given to the contractor.

25) Consumption of chemicals has to be recorded daily by the contractor and it should be got verified / certified by the concerned Assistant Engineer / Junior Engineer of the Institute.

26) Shifting of debris's from any place, any height to any place in the IIT Campus/outside the Campus will be done by the contractor as per the item specification and contract condition.

27) The contractor has to carry out the structural repair work as per specification of construction, chemical manufacture.

28) The testing Charges

"The testing of material which will be used by the contractor for construction / maintenance job shall be carried out as per the relevant IS specification / standard procedure at the Institute own / recommended laboratory as per the decision of Engineer-in-Charge and contractor will bear the testing charges incurred if any unless otherwise mentioned in the schedule of items. The sample of material will be taken by the Engineer-in-Charge or his representative and it shall be sent to the laboratory in sealed manner as decided by the Engineer-In-Charge through contractors cost and arrangement.

29) Indication of Tests for Materials

a) Necessary gate pass will be issued by the concerned Engineer-in-Charge if the samples of material which will be taken out from IIT Campus for testing to be done in the recommended lab outside the campus.

b) Although concerned labs are expected to send the test report timely to the Engineer-in-Charges and if any delay occurred regarding the receipt of test report, no claim of the contractor will be entertained

regarding the delay, loss of time etc.

30) If any problem arises about the application / workmanship, the contractor has to arrange visit of representative of manufacturer of chemicals and under their guidance they will have to carry out work.

31) The contractor shall be required to give performance guarantee of structural repair work carried out by them for 10 years and guarantee for 10 years for water - proofing work carried out by them on Rs. 100/- Non Judicial stamp paper.

32) No escalation will be entertained for material, labour of any type during the period of contract including extended period if any.

33) It was decided that the contractors will procure construction chemicals from the respective manufacturers and it should be ensured by them that the date of receipt at site should be not later than two months from date of manufacturer i.e the expiry date should be more than ten months.

34) The concerned contractors shall work in co-ordination with Electrical Maintenance Division for smooth execution and for maintaining continuous power supply to the concerned Hostels / Departments. They shall co-ordinate with the concerned electrical contractor, department persons to execute repair / rehabilitation of electrical lines hand in hand with Civil structural / rehabilitation.

35) Contractor shall cover entire floor while carrying out work of plastering, applying polymer modified mortar, Trawling etc.

36) Contractor shall provide plastic sheets for covering the affected area.

37) Contractor shall provide Jute / plastic sheet to cover external face of building.

38) Contractor shall cover all electrical fittings / wire by plastic sheets / jute bags.

39) Contractor should not use departmental furniture's, equipment's or any other materials belongings to IIT Bombay. In case any furniture is inadvertently damaged / affected those should be made good by the contractor at his own cost.

40) Any wire, cable, removed will be re-fixed after plastering work by the contractor as directed by the Engineer- In-Charge.

41) Special conditions will be superseded to General Conditions.

42) Work has to be carried out in consultation with the Head of the department of concern building and other Committee members of the Departments as per their convenience or as directed by Engineer In Charge.

43) If the contractor violates security rules and regulations of the Institute or damages the Institute property as penalty of 0.5% of the work order amount will be recovered from their dues.

44) No service charges will be paid separately by IIT Bombay.

45) No escalation will be paid by IIT Bombay.

46) Electricity will be supplied on payment basis for work site from the nearest available supply point if available.

47) Junior Engineer of IIT Bombay will be the controlling in-charge of assigned work.

48) Arrangement of daily manpower for execution of the work under this contract:

a) Ample number of labours would be required under the contract for executing the various activities and work inside the campus.

b) The contractor has all necessary responsibilities for accommodation and welfare of the labour as per the various labour related act.

c) The contractors should make all necessary arrangements for labours within the premises of the campus to avoid any delay for transportation of labour. (not beyond distance of 7 KM)

d) No permission for accommodation of labour inside the campus shall be permitted.

49) The contractor has to arrange full fledged and fully furnished office of minimum 40 staff (30 staff as per clause no 33 table plus 10 staff as per contractor's wish) at his own cost to execute the work and perform the contract.

50) The space for the office shall be provided to the contractor by the Institution on nominal leave rent a) Godown License fees of Rs. 20.00 per square meter of footprint, b) Labour hutment license fees charge Rs. 250 per hutment and c) water charges Rs. 170 per hutment on monthly basis. All necessary equipment are to be installed/purchase/hired by the contractor at his own expenses.

51) The contractor has to provide the mobiles to its staffs and engineers for the execution of the work under this contract at his own cost nothing shall be paid in this regard. The respective mobile numbers, emails and contact details shall be submitted to the institution for the execution and follow up of the work.

52) The contractor has no right to reject/refuse the scope of work as assigned by the Section In-Charge / Engineer In-Charge.

53)The bamboo scaffolding should not be used on site unless otherwise approved by Section In-Charge / Engineer In-Charge.

Signature of Contractor

Superintending Engineer

STRUCTURAL REPAIRS METHODOLOGY

Following are the repair methodology specifically addressed for distresses in your building. The chemicals referred in following methodologies are of Dr. Fixit, Roff, M C Bouchmey, Sunanda Construction Chemicals, BASF, Anuvi, Chembond. However similar chemical of any brand can be used for repairs.

Steps to be followed for Structural Repairs.

Step 1 : Carefully removing the internal/external existing cement plaster damaged of any thickness from RCC members like columns, beams, slabs, chajjas, paradis,walls fins, staircase etc. in patches or any length by using electrical cutting tools/manually means up to any depth without damaging brickwork, plaster in the vicinity, cleaning, stacking the debrises at suitable location, cleaning the site etc. including covering the furniture with plastic sheet including scaffolding / step ladder etc. all complete as directed. Note: Proper tools to be used for removal of plaster.

Step 2 : Exposing the existing damaged RCC members like columns, beams, slabs, chajjas, etc in patches or any length by using electrical cutting tools up to any depth till the corroded reinforcement will be opened allround without damaging brickwork, plaster in the vicinity, cleaning, stacking the debrises, cleaning the site etc. complete, including covering the furniture with plastic sheet while exposing concrete including scaffolding/ step ladder. Note: Proper tools to be used for removal of concrete.

Step 3 : Providing and applying reinforcement treatment, comprising of following operations. Cleaning the reinforcement from all sides by using wire brush, tools etc. Application of rust converter such as Alkaline base as per manufacturers specification, cleaning if required as directed including scaffolding etc. all complete as directed. Actual consumption of Alkaline base converter shall be measured for payment on weight basis. Original bills/challans of authorized dealer will be verified before processing the bills.

Step 4 : Providing and applying an effective bond coat of Polymer (SBR) approved by IITB and cement in the proportion of 1:1 using brush in multiple coats as required to accommodate the whole thickness of polymer modified mortar wherever required on the surface of old concrete or repaired concrete. Polymer (SBR) of approved manufacturer should have the following properties: Suspended solid particle should not be less than 40%-specific gravity should not be more than 1.01-PH should not be less than 8.5.Note : The actual consumption of polymer shall be measured for payment on weight basis. Original bills/challans of authorized dealer will be verified before processing the bills.

Step 5 : Providing and Placing in position readymix polymer mortar manufacture by Dr. Fixit, Sunanda, Roff, MC Bouchmey, Chembond and approved and adding water in the proportion of 1:0.14 (polymer mortar : water) in prepared grooves / cracks/concrete surface in layers as directed including scaffolding mixing the polymer mortar with water etc all complete as directed. (Payment will be paid for the actual quantity of polymer mortar PX used on weight basis. Original bills/challans of authorized dealer will be verified before processing the bills.

Step 6 : Providing and laying super fluid micro concrete of approved manufacturer at any floor after reinforcement treatment coat including mixing with 5mm to 10mm size quartz aggregate in the ratio of 1 part ACC shrikomp to 0.75 part of quartz aggregate by weight providing marine plywood formwork in line and level, cleaning, curing and scaffolding, etc. complete. the compressive strength of super fluid micro concrete should not be less than 20N / mm2 etc. All complete as directed. Original bills/challans of authorized dealer will be verified before processing the bills.

Step 7 : Providing & fixing in position mild steel / tor steel / TMT bar reinforcement (Fe 500) of various diameters for RCC lintels, beams, slabs, column etc as per details given including cutting, hooking the bars, binding with wires or tack welding & supporting as required including scaffolding etc. all complete as directed.

Step 8 : Providing & fabricating structural steel works in rolled sections like joists, channels, angles, tees, plates, round pipes etc. as per site requirement including fixing in position with connection plates, braces, and welding, riveting, bolting as necessary including scaffolding and painting with one coat of metal primer and two coats of synthetic enamel paint etc. all complete as directed.

Step 9 : Providing and laying plain cement concrete M-20 of trap metal for leveling/bedding, flooring, plinth protection, etc. including bailing out water (dewatering), formwork, compacting and curing etc. all complete as directed.

Step 10 : Providing and casting in situ cement concrete in M-25 of trap metal for R.C.C footings / slab / columns / beam as per detailed designs and drawings or as directed including scaffolding, centering, formwork, cover blocks, compaction and finishing the surface, curing etc. all complete as directed.

Step 11 : Drilling straight and inclined holes upto 300mm depth and upto 20mm dia in concrete / masonry using electrically operated drilling machine and fixing PVC nipple for grouting, including scaffolding, conducting water test, etc. all complete as directed.

Step 12 : Grouting existing RCC structural members & tile work as per following operations including scaffolding, sealing leak paths with cement mortar & polymer, removing nipple, plugging the hole with neat cement paste by ram packing, cleaning etc. complete. 1) Add Sunflex powder 1.00 kg in one bag of cement of 50 kg with adequate water. 2) Using mechanical means of pressure grouting with the above mix. The pressure shall be 5-10 psi. 3) The grouting to be done into the cracks of ceiling, walls, columns, & beam wherever required. 4) After through grouting sealing the holes with cement slurry.

Step 13 : Providing temporary steel supports such as tubular steel props 50mm dia, as required for supporting system till the repaired work of the beam, column, slab, chajja, etc. work completed in all

respects as directed and when required in any floor of any height inside and outside of the building and removing the supporting system as directed without damaging the structure etc. all complete as directed.

Step 14 : Providing internal cement plaster 12mm thick in single coats in cement mortar 1:4 without neeru finish to concrete or brick surfaces in all positions including scaffolding and curing etc. all complete as directed.

Step 15 : Providing internal cement plaster 20mm thick in single coat in cement mortar 1:4 without neeru finish to concrete or brick surfaces in all positions including scaffolding and curing etc. all complete as directed.

Step 16 : Providing sand face cement plaster externally using approved screened sand in all positions including base coat of 15mm thick in cement mortar 1:4 using water proofing compound @ 2% by weight of cement and curing the same for not less than two days and keeping the surface of base coat rough to receive the sand faced treatment 6 to 8mm thick in cement mortar 1:4, finishing the surface by taking out grains and curing for 14 days, scaffolding etc all complete as directed.

Step 17 : Providing and applying white cement based Birla make wall care putty with uniform thickness over the existing internal cement plaster in proper line / level including preparing the wall surface including scaffolding etc. all complete as directed.

Signature of Contractor

Superintending Engineer

WATERPROOFING METHODOLOGY

Part – A : Cement Based Waterproofing:

Steps to be followed for Cement Based Waterproofing.

Step 1 : Carefully removing the internal/external existing cement plaster damaged of any thickness from RCC members like beams, slabs, chajjas, walls etc. in patches or any length by using electrical cutting tools/manually means up to any depth without damaging brickwork, plaster in the vicinity, cleaning, stacking the debrises at suitable location, cleaning the site etc. including covering the furniture with plastic sheet including scaffolding / step ladder etc. all complete as directed. Note: Proper tools to be used for removal of plaster. (The area in vertical/horizontal plane shall be measured for payment only).

Step 2 : Carefully removing top coat of IPS water proofing layer/kotah stone/ any type of tiled flooring without causing any damages to brickbat coba from terrace including cleaning, levelling the surface, lowering down debris without causing dust nuisance including stacking the debris upto a distance of 50 metres or at suitable location to take away outside IIT campus as directed etc. all complete as directed.

Step 3 : Carefully removing the existing loose and damaged brickbat coba waterproofing treatment from the top of terrace up to any thickness without making any damages to the roof slab with the use of sharp chisels, levelling and cleaning the roof surface for providing new specialised waterproofing treatment, lowering down debris without causing dust nuisance and stacking the same upto a distance of 50 metres or at suitable location to take away outside IIT campus as directed etc. all complete as directed.

Step 4 : Providing and laying cement concrete flooring to terrace to average 50mm thick with 1:2:3 cement concrete laid to proper level and slope using silt free clear river sand finished with a floating coat of neat cement including compaction, filling joints, adding recommended waterproofing admixtures @ 2% by weight of cement, cement slurry, curing, marking lines to give appearances of tiles as directed, including all lead and lift and covering the whole treatment with 07 years' guarantee on requisite (Rs.100/-) non-judicial stamp paper etc. all complete as directed.

Step 5 : Providing & laying cement based waterproofing treatment of 115mm average thickness consisting of 12mm thick layer in cement mortar 1:3 with waterproofing compound 2% by weight of cement as base, constructing and laying brick bat coba in cement mortar 1:5 with waterproofing compound at the rate of 2% by weight of cement and having average thickness of 80mm and finishing

with 20mm thick cement plaster layer in cement mortar 1:3 with water proofing compound 2% by weight of cement including fixing china mosaic tiles, all leads, lifts and laid to proper slope to drain off water entirely including watta at the junction of parapet and work upto a height of 300mm or as directed and including finishing the top layer of water proofing treatment with false marking of 30cm x 30cm or as directed and covering the whole treatment with 10 years' guarantee on requisite (Rs.500/-) non-judicial stamp paper etc. all complete as directed.

Step 6 : Providing second class burnt brick masonry with conventional type bricks in cement mortar 1:6 in superstructure including scaffolding, racking out joints and watering etc. all complete as directed.

Step 7 : Providing and fixing P.V.C Rain Water Pipes of 150mm outer dia. conforming to I.S. 13592-1992 including proper rain water receiving recess with P.V.C. plug bend, necessary fittings such as offsets, shoes including fixing the pipe on wall using approved MS frame supports projecting 25mm to 40mm from face of wall and fixing with clamps/clips of approved quality and number,filling the joints using rubber gasket with solvent cement including necessary scaffolding, screwing, cleaning the surface and maintenance for 3 years for any leakages or dislocation of pipes. All the P.V.C. Fittings shall be got approved from Engineer In-charge etc. all complete as directed. (Make- Supreme, Prince, Finolex)

Step 8 : Providing and fixing P.V.C. Rain Water Pipes 100mm outer dia. conforming to I.S. including proper rain water receiving recess with P.V.C. plug bend, necessary fittings such as offsets, shoes including fixing the pipe on wall using approved M.S brackets projecting 25mm to 40mm from face of wall & fixing with heavy duty PVC clips of approved quality & number, filling the joints using rubber gasket with solvent cement and properly resting the shoe of pipes on C.C. or masonry blocks, including necessary scaffolding, and maintenance for 3 years for any leakages or dislocation of pipes. All the PVC fittings and additional two piece socket clips shall be got approved from Engineer In-charge etc. all complete as directed. (Make- Supreme, Prince, Finolex)

Step 9 : Providing sand face cement plaster externally / internally using approved screened sand in all positions including base coat of 15mm thick in cement mortar 1:4 using water proofing compound @ 2% by weight of cement and curing the same for not less than two days and keeping the surface of base coat rough to receive the sand faced treatment 6 to 8mm thick in cement mortar 1:4, finishing the surface by taking out grains and curing for 14 days, scaffolding etc. all complete as directed.

Part - B : APP (Atactic Polypropylene Polymer) Membrane Waterproofing:

Steps to be followed for APP Membrane Waterproofing.

Step 1 : Carefully removing top coat of IPS water proofing layer/kotah stone without causing any damages to brickbat coba from terrace including cleaning, levelling the surface, lowering down debris without causing dust nuisance including stacking the debris upto a distance of 50 metres or at suitable location to take away outside IIT campus as directed etc. all complete as directed.

Step 2 : Removing the existing old cement plaster of any thickness without causing dust nuisance including stepladder/scaffolding and stacking the debrises for taking away out of IIT campus etc. all

complete as directed.

Step 3 : Providing second class burnt brick masonry with conventional type bricks in cement mortar 1:6 in superstructure including scaffolding, racking out joints and watering etc. all complete as directed.

Step 4 : Providing and laying cement concrete flooring to terrace to average 40mm thick with 1:2:3 cement concrete laid to proper level and slope using clear river sand finished with a floating coat of neat cement including compaction, filling joints, adding recommended waterproofing admixtures @ 2% by weight of cement, cement slurry, curing, marking lines to give appearances of tiles or as directed including all lead and lift etc. all complete as directed.

Step 5 : Providing and laying plain cement concrete M-20 of trap metal for leveling/bedding, flooring, plinth protection, etc. including bailing out water (dewatering), formwork, compacting and curing etc. all complete as directed.

Step 6 : Providing sand face cement plaster externally using approved screened sand in all positions including base coat of 15mm thick in cement mortar 1:4 using water proofing compound @ 2% by weight of cement and curing the same for not less than two days and keeping the surface of base coat rough to receive the sand faced treatment 6 to 8mm thick in cement mortar 1:4, finishing the surface by taking out grains and curing for 14 days, scaffolding etc. all complete as directed.

Step 7 : Providing and fixing P.V.C. rain water pipes 160mm outer dia. conforming to I.S. including proper rain water receiving recess with P.V.C. plug bend, necessary fittings such as offsets, shoes including fixing the pipe on wall using approved M.S brackets projecting 25mm to 40mm from face of wall , filling the joints using rubber gasket with solvent cement and properly resting the shoe of pipes on C.C. or masonry blocks, including removing the old damaged pipes, necessary scaffolding, and maintenance for 3 years for any type of leakages or dislocation of pipes. All the PVC fittings and additional two piece socket clips shall be got approved from Engineer In-charge etc. all complete as directed. (Make - Finolex/Kissan/Prince)

Step 8 : Providing and laying waterproofing treatment to terrace surface with 3mm thick APP modified bitumen membrane with polymer reinforcement with overlapping of 75mm along length and 100mm along width of any height including removing the existing waterproofing treatment such as tarfelt, chemical coating etc. without causing damages to the structure, cleaning the surface neatly, removing the dust and loose mortar from the terrace surface and repairing the same with 1:3 cement mortar mixed with waterproofing compound, including applying bitumen based primer @ 0.20Ltr/Sqm and laying the 3mm thick APP modified bitumen membrane, coating with torching method and finishing surface with heat reflective bitumen based silver @ 0.10Ltr /Sqm and covering the whole treatment with five years guarantee on requisite stamp paper of Rs.500.00 including scaffolding wherever required etc. all complete as directed. (Make - Nilobit/STP/Asian Paint Ltd/Chryso India Pvt. Ltd.)

Part - C : Chemical Waterproofing Treatment (Dr. Fixit) :

Steps to be followed for Chemical Waterproofing Treatment (Dr. Fixit).

Step 1 : Providing and applying two coat of Prime seal of Dr. Fixit over plaster, masonary or RCC

surface as per manufacturer specification including preparing the surface by thoroughly cleaning laitance, loose material, oil, grease and other foreign matter with wire brush and vacuum cleaning, including filling the cracks using appropriate exterior putty with use of scaffolding and covering the floor, window glass with plastic sheet during work and cleaning after work etc. all complete as directed by Engineer In-charge & as per manufactures specifications. (For vertical surface).

Step 2 : Providing and applying two coat of Prime seal of Dr. Fixit over plaster, masonary or RCC surface as per manufacturer specification including preparing the surface by thoroughly cleaning laitance, loose material, oil, grease and other foreign matter with wire brush and vacuum cleaning, including filling the cracks using appropriate exterior putty without scaffolding and covering the floor, window glass with plastic sheet during work and cleaning after work etc. all complete as directed by Engineer In-charge & as per manufactures specifications. (For horizontal surface).

Step 3 : Providing and applying two coats of Dr. Fixit Raincoat as per manufacturer's specification on plastered surface over concrete / brickwork including scaffolding and cleaning the surface thoroughly, watering the surface etc. complete including covering the floor, window glass with plastic sheet and cleaning after work as directed by Engineer In-charge (for vertical wall surface). (Warranty for three years on non judicial stamp paper of Rs.100/-)

Step 4 : Providing and applying three coats of Dr. Fixit New coat as per manufacturer's specification on plastered surface over concrete/brickwork including cleaning the surface thoroughly, watering the surface etc. complete including covering the floor, window glass with plastic sheet and as directed by Engineer In-charge (for horizontal surface / terrace). (Warranty for three years on non judicial stamp paper of Rs.100/-)

Signature of Contractor

Superintending Engineer

Special Conditions for Protection of Environment

1. The debris / construction waste and other waste generated from the work spot should not be thrown inside the campus. All waste material should be taken out of the campus or should be dumped at a place earmarked by the Engineer in charge. All construction material should be stored only at places earmarked by the engineer in charge.

2. Material like cement, aggregate, steel etc should not be stored in buildings that are in use. If any material stored in unauthorized location the same shall got removed at the cost of contractor and necessary penalty/ rent shall be levied for the area used for storage.

3. For Intercarting of various materials use of animal drawn vehicles are strictly prohibited.

4. Preparation of concrete, mortars in the roads, pavements, bare floors under the building is strictly prohibited.

5. While transporting the materials along the road, spillage of material should be avoided. If any spillage occurs, the same should be got cleaned immediately.

6. No vegetation inside the campus should be damaged.

7. Smoking is strictly prohibited at workplace.

Signature of Contractor

Superintending Engineer

SAFETY CODE

1. Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and hand-hold shall be provided on the ladder and the ladder shall be given an inclination not steeper than ¼ to 1 (¼ horizontal and 1 vertical).

2. Scaffolding of staging more than 3.6m (12ft) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90cm. (3ft) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends there of with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

3. Working platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6m (12ft) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in (2) above.

4. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90cm (3ft).

5. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m (30ft) in length while the width between side rails in rung ladder shall in no case be less than 29cm. (11 ½") for ladder upto and including 3m (10 ft) in length. For longer ladders, this width should be increased at least ¼" for each additional 30cm. (1 foot) of length. Uniform step spacing of not more than 30cm shall be kept. Adequate precautions shall betaken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defense of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages

and cost which may be awarded in any such suit; action or proceedings to any such person or which may, with the consent of the contractor, be paid to compensate any claim by any such person.

6. Excavation and trenching – All trenches 1.2m (4ft) or more in depth, shall at all times be supplied with at least one ladder for each 30m. (100ft) in length or fraction thereof, Ladder shall extend from bottom of the trench to at least 90cm (3ft) above the surface of the ground. The side of the trenches which are 1.5m (5ft) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5m. (5ft) of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances, undermining or undercutting shall be done.

7. Demolition – Before any demolition work is commenced and also during the progress of the work,

(i) All roads and open areas adjacent to the work site shall either be closed or suitably protected.

(ii) No electric cable or apparatus which is liable to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.

(iii) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding, No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

8. All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned : - The following safety equipment shall invariably be provided.

(i) Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

(ii) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes, shall be provided with protective goggles.

(iii) Those engaged in welding works shall be provided with welder's protective eye shields.

(iv) Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

(v) When workers are employed in sewers and manholes, which are in active us, the contractors shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public. In addition, the contractor shall ensure that the following safety measure are adhered to :

a) Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer.

b) At least 5 to 6 manholes upstream and down stream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.
c) Before entry, presence of Toxic gases should be tested by inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.

d) Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with oxygen kit.

e) Safety belt with rope should be provided to the workers. While working inside the manholes, such rope should be handled by two men standing outside to enable him to be pulled out during emergency.

f) The area should be barricaded or cordoned of by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

g) No smoking or open flames shall be allowed near the blocked manhole being cleaned.

h) The malba obtained on account of cleaning of blocked manholes and sewer line should be immediately removed to avoid accidents on account of slippery nature of the malba.

i) Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.

j) Gas masks with Oxygen Cylinder should be kept at site for use in emergency.

k) Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at least 2 meters away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.

l) The workers engaged for cleaning the manholes / sewers should be properly trained before allowing to work in the manhole.

m) The workers shall be provided with Gumboots or non sparking shoes bump helmets and gloves non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.

n) Workmen descending a manhole shall try each ladder stop or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.

o) If a man has received a physical injury, he should be brought out of the sewer immediately and

adequate medical aid should be provided to him.

p) The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.
vi) The contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precaution should be taken : -

a) No paint containing lead or lead products shall be used except in the form of paste or ready made paint.
b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.

c) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.

9) The contractor shall not employ women and men below the age of 18 on the work of painting with product containing lead in any form, wherever the men above the age of 18 are employed on the work of lead painting, the following principles must be observed for such use :

i) White lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.

ii) Measures shall be taken, wherever required in order to prevent danger arising from the application of a paint in the form of spray.

iii) Measures shall be taken, wherever practicable, to prevent danger arising out of from dust caused by dry rubbing down and scraping.

iv) Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.

v) Overall shall be worn by working painters during the whole of working period.

vi) Suitable arrangement shall be made to prevent clothing put off during working hours being spoiled by painting materials.

vii) Instructions with regard to special hygienic precautions to be taken in the painting trade shall be distributed to working painters.

10) When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision, should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.

11) Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions : -

(i) (a) These shall be of good mechanical construction, sound materials and adequate.
(b) Every rope used in hoisting or lowering material or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

(ii) Every crane driver or hoisting appliance operator, shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding winch or give signals to operator.

(iii) In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load each safe working load and the condition under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

(iv) In case of departmental machine, the safe working load shall be notified by the Electrical Engineer-in-Charge. As regards contractor's machines the contractors shall notify the safe working load of the machine to the Engineer-in-Charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.

12. Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mask, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductions of electricity.

13. All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

14. These safety provisions should be brought to the notice of all concerned by display on a notice boards at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.

15. To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Labour Officer or Engineer-in-Charge of the department or their representatives.

16. Notwithstanding the above clauses from (1) to (15), there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.

Signature of Contractor

Superintending Engineer

MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS

1. APPLICATION

These rules shall apply to all buildings and construction / maintenance works in IIT Bombay in which twenty or more workers are ordinarily employed or are proposed to be employed in any day during the period during which the contract work is in progress.

2. DEFINITION

Work place means a place where twenty or more workers are ordinarily employed in connection with construction work or maintenance work on any day during the period during which the contract work is in progress.

3. FIRST-AID FACILITIES

(i) At every work place, there shall be provided an maintained, so as to be easily accessible during working hours, first-aid- boxes at the rate of not less than one box for 150 contract labour or part thereof ordinarily employed.

(ii) The first-aid box shall be distinctly marked with a red cross on white back ground and shall contain

a) For work places in which the number of contract labour employed does not exceed 50- the following equipment : -

Each first-aid box shall contain the following equipments : -

1. 6 small sterilized dressings.
2. 3 medium size sterilized dressings.
3. 3 large size sterilized dressings.
4. 3 large sterilized burn dressings.
5. 1 (30ml.) bottle containing a two per cent alcoholic solution of iodine.
6. 1 (30ml.) bottle containing salvolatile having the dose and mode of administration indicated on

the label.
7. 1 snakebite lancet.
8. 1(30 gms) bottle of potassium permanganate crystals.
9. 1 pair scissors.
10. 1 copy of the first-aid leaflet issued by the Director General, Factory Advice service and Labour Institute, Government of India.
11. 1 bottle containing 100 tablets (each of 5 gms) of aspirin.
    Ointment for burns.
12. A bottle of suitable surgical antiseptic solution.

b) For work places in which the number of contract labour exceed 50. Each first-aid box shall contain the following equipments.

1) 12 small sterilized dressings.
2) 6 medium size sterilized dressings.
3) 6 large size sterilized dressings.
4) 6 large size sterilized burn dressings.
5) 6 (15 gms) packets sterilized cotton wool
6) 1 (60 ml.) bottle containing a two per cent alcoholic solution iodine.
7) 1 (60 ml) bottle containing salvolatile having the dose and mode of administration indicated on the label.
8) 1 roll of adhesive plaster.
9) 1 snake bite lancet.
10) 1 (30 gms) bottle of potassium permanganate crystals.
11) 1 pair scissors.
12) 1 copy of the first-aid leaflet issued by the Director General Factory Advice Service and Labour Institutes / Government of India.
13) A bottle containing 100 tablets (each of 5 gms) of aspirin.
14) Ointment for burns.
15) A bottle of suitable surgical antiseptic solution.

(iii) Adequate arrangement shall be made for immediate recoupment of the equipment when necessary.

(iv) Nothing except the prescribed content s shall be kept in the First-aid box.

(v) The first-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.

(vi) A person in charge of the First-aid box shall be a person trained in First-aid treatment in the work places where the number of contract labour employed is 150 or more.

(vii) In work places where the number of contract labour employed is 500 or more and hospital facilities are not available within easy distance from the works. First-aid posts shall be established and run by a trained compounder. The compounder shall be on duty and shall be available at all hours when the workers are at work.

(viii) Where work places are situated in places which are not towns or cities, a suitable motor transport shall be kept readily available to carry injured person or person suddenly taken ill to the nearest hospital.

4. LATRINES AND URINALS

(i) Latrines shall be provided in every work place on the following scale namely : -
(a) Where female are employed, there shall be at least one latrine for every 25 females.
(b) Where males are employed, there shall be at least one latrine for every 25 males
provided that, where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females as the case may be upto the first 100, and one for every 50 thereafter.

(ii) Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.

(iii) Construction of latrines : The inside walls shall be constructed of masonry or some suitable heat-resisting nonabsorbent materials and shall be cement washed inside and outside at least once a year, Latrines shall not be of a standard lower than boreholes system.

(iv) (a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers “For Men only” or “ For Women Only” as the case may be.

(b) The notice shall also bear the figure of a man or of a woman, as the case may be.

(v) There shall be at least one urinal for male workers upto 50 and one for female workers upto 50 employed at a time, provided that where the number of male or female workmen, as the case may be exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females upto the first 500 and one for every 100 or part thereafter.

(vi) (a) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

(b) Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the Public Health Authorities.

(vii) Water shall be provided by means of tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.

(viii) Disposal of excreta : - Unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternately excreta may be disposed of by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm. Layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn to manure).

(ix) The contractor shall at his own expense, carry out all instruction issued to him by the Engineer-in-Charge to effect proper disposal of night soil and other conservancy work in respect of the contractor's workmen or employees on the site. The contractor shall be responsible for payment of any charges which may be levied by Municipal or Cantonment Authority for execution of such on his behalf.

5. ANTI-MALARIAL PRECAUTIONS

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

6. The above rules shall be incorporated in the contracts and in notices inviting tenders and shall form an integral part of the contracts.

7. AMENDMENTS

IIT Bombay may, from time to time, add to or amend these rules and issue directions – it may consider necessary for the purpose of removing any difficulty which may arise in the administration thereof.

Signature of Contractor

Superintending Engineer

ANNEXURE – I

LIST OF BUREAU OF INDIAN STANDARD CODES

For Reference

Sr.No.	Item of work and subject	IS No.
1	Method of Measurement of Earth work	IS 1200(Part-1)
2.	Method of Measurement of Earth work By Mechanical Appliances	IS 1200 (Part-27)
3.	Excavators	IS 4988 (Part IV)
4.	Pre Constructional Anti termite treatment	IS 6313 (Part II)
5.	Anti termite treatment in existing building	IS 6313 (Part III)
6.	Methods of test for pesticides and their formulations	IS 6940
7.	Earth moving equipments	IS 12138
8.	33 grade ordinary Portland Cement	IS 269
9.	43 grade ordinary Portland Cement	IS 8112

10.	53 grade ordinary Portland Cement	IS 1269
11.	Portland slag Cement	IS 455
12.	Portland Pozzolana Cement	IS 1489
13.	Coarse and fine aggregates	IS 383
14.	Sand for plastering	IS 1542
15.	Sand for masonry mortar	IS 2116
16.	Test for concrete aggregates (Particle size and shape)	IS 2386 (Part-I, II & III)
17.	Masonry mortar-preparation and use	IS 2250
18.	Testing of water for concrete work	IS 3025
19	Masonry cement	IS 3406
20.	White Cement	IS 8042
21.	Fly ash for cement concrete and mortar	IS 3812 (Part I & II)
22.	Plain and reinforced Concrete	IS 456
23.	Structural Steel work	IS 226 & IS 800
24.	Concrete Reinforcement Steel	IS 432 (Part I & II)
25.	Test for strength of Concrete	IS 516

26.	Sampling and analysis of concrete	IS 1199
27.	Measurement of Concrete work	IS 1200 (Part II & V)
28.	Hard drawn Steel wire Fabric for concrete	IS 1566
29.	Tensile testing of Steel products	IS 1608
30.	High Strength deformed steel and wires	IS 1786
31.	Bending and fixing of reinforcement steel	IS 2502
32.	Welding of Reinforced steel	IS 2751
33.	Ready-Mixed Concrete	IS 4926
34.	Concrete Mix design Guidelines	IS 10262
35.	Common burnt clay building bricks	IS 1077
36.	Brick masonry work	IS 2212
37.	Method of measurement of Brick works	IS 1200 (Part 3)
38	Method of test for Burnt clay building bricks	IS 3495
39.	Method of sampling of clay building bricks	IS 5454

40.	Non Load bearing Gypsum partition blocks	IS 2849
41.	Determination of Properties and strength of natural building stones	IS 1121 (Part I)
42.	Determination of specific gravity of natural building stone	IS 1122
43.	Determination of water absorption, apparent specific gravity and porposity of natural building stones	IS 1124
44.	Identification of natural building stones	IS 1123
45.	Determination of weathering of natural building stone	IS 1125
46.	Determination of durability of natural building stone	IS 1126
47.	Lime Stone (Slab & Tiles)	IS 1128
48.	Dressing of natural building stone	IS 1129
49.	Method of measurement for stone masonry work	IS 1200 (Part IV)
50.	Construction of rubble stone masonry	IS 1197
51.	External facings and veneers (Stone facing)	IS 4104
52.	Sand stone (Slab & Tiles)	IS 3622
53.	Tower bolts	IS 204 (Part I & II)
54.	Non-Ferrous metal Butt Hinges	IS 205

55.	Tee & Strap Hinges	IS 206
56.	Gate and Shutter Hook & eye	IS 207
57.	Door Handles	IS 208
58.	Parliament Hinges	IS 362
59.	Hasps & Stapple	IS 363
60.	Fan Light Catch	IS 364
61.	Door Spring rat tail type	IS 452
62.	Double acting Spring Hinge	IS 453
63.	Steel Butt Hinges	IS 1341
64.	Floor Door stopper	IS 1823
65.	Door Closer (Hydraulic)	IS 3564
66.	Piano (Continuous) Hinges	IS 3818
67.	Night Latch	IS 3847
68.	Mortice Latch	IS 5930
69.	Mortice Lock	IS 4992
70.	Mortice Lock (Vertical Type)	IS 2209

71.	Rebated Mortice Lock (Vertical Type)	IS 6607
72.	Mortice Ball Catch	IS 8756
73.	Hold Fast	IS 7196
74.	S.S Butt Hinges	IS 12817
75.	FRP Panel type Door	IS 14856
76.	Coir Veneer board	IS 14842
77.	Laminated Veneer Lumber	IS 14616
78.	Pre-laminated Particle Boards	IS 12823
79.	Permissible moisture content of Timber	IS 287
80.	Ply wood	IS 303
81.	Marine Plywood	IS 710
82.	Veneered Decorative Plywood	IS 1328
83.	Block Boards	IS 1659
84.	Gypsum Plaster Board	IS 2095

85.	Asbestos Cement Flat Sheet	IS 2096
86.	Flush Door Shutter	IS 2202 (Part I & II)
87.	Wood particle boards (Medium density)	IS 3087
88.	Veneered Particle Board	IS 3097
89.	Fire Retardant Ply wood	IS 5509
90.	Medium Density Fibre Board	IS 12406
91.	Putty for use on window frames	IS 419
92.	Steel Counter sunk steel wire nails	IS 723
93.	Drawer Lock, Cupboard Lock & Box Locks	IS 729
94.	Synthetic resin Adhesive for Plywood	IS 848
95.	Timber paneled and Glazed shutters	IS 1003 (Part I & II)
96.	Measurement of wood work & Joinery	IS 1200 (Part XII)
97.	Measurement of Civil Engineering glazing work	IS 1200 (Part XIV)
98.	Oxidized Copper finishes	IS 1378
99.	Determination of Density & Moisture content of wood	IS 1734 & IS 11215
100.	Anodic coating on Aluminum & Alloys	IS 1868

101.	Gypsum Plaster	IS 2547
102.	Transparent Float glass	IS 14900
103.	Galvanized Steel sheets	IS 277
104.	Use of Structural Steel in Construction	IS 800
105.	Use of Steel Tube in Construction	IS 806
106.	Dimensions of Hot Rolled Steel Sections	IS 808
107.	Scheme of Symbols for Welding	IS 813
108.	Use of Metal Arc Welding to Mild Steel in Construction	IS 816
109.	Procedure for inspection of Welds	IS 822
110.	Manual for metal Arc Welding in Mild Steel	IS 823
111.	Steel door, windows & Ventilators	IS 1038
112.	Steel Tubes for Structural purpose	IS 1161
113.	Measurements of Steel and Iron works	IS 1200 (Part VIII)
114.	Method of Bend test	IS 1599

115.	Method of Tensile Testing of Steel tubes	IS 1894
116.	Dimensions for clearance holes for bolts and screws	IS 1821
117.	Rolling and cutting tolerance for hot rolled sections	IS 1852
118.	Steel Door Frames	IS 4351
119.	Hot Rolled High, Medium and Low tensile structural steel	IS 2062
120.	Hot-dip zinc coating on mild steel tubes	IS 4736
121.	Hollow Steel Sections for Structural use	IS 4923
122.	Metal Rolling Shutters and Rolling Grills	IS 6248
123.	Hot Rolled Steel Sections for Doors, Windows & Ventilators	IS 7452
124.	Industrial Bitumen	IS 702
125.	Marble	IS 1130
126.	Measurement of Paving, Floor finishes, skirting & dado	IS 1200 (Part XI)
127.	Cement concrete Flooring tiles	IS 1237
128.	Bitumen Felts for water proofing	IS 1322
129.	Laying and finishing Cement Concrete Flooring Tiles	IS 1443
130.	In Situ Terrazzo Floor Finish	IS 2114

131.	In Situ Cement concrete flooring	IS 2571
132.	Bituminous compounds for water proofing	IS 1580
133.	Timber Floors	IS 3670
134.	Acid and/or Alkali Resistant Tiles	IS 4457
135.	Testing of Ceramic Tiles	IS 13630 (Part 1to 15)
136.	Ceramic Tiles	IS 13712
137.	Pressed Ceramic tiles	IS 15622
138.	Paving Bitumen	IS 73
139.	Stone ware pipes & Fittings	IS 651
140.	Method of measurement of Roof covering, ceiling & Lining	IS 1200 (Part IX & X)
141.	Cast iron rain water pipe & Fittings	IS 1230
142.	Integrated water proofing compounds for cement mortar & Concrete	IS 2645
143.	Laying of A.C sheets	IS 3007 (Part-I & II)
144.	Fiber Insulation boards	IS 3348

145.	Bitumen primer for water proofing	IS 3384
146.	Rubber sealing ring for water mains and Sewer mains	IS 5382
147.	Glass fiber base coal tarpitch & bitumen felts	IS 7193
148.	UPVC pipe for soil and waste discharge	IS 13592
149.	White washing and Colour washing	IS 6278
150.	Plastic Emulsion	IS 5411
151.	Cement paint	IS 5410
152.	Enamel paint	IS 2932
153.	Aluminum paint	IS 2339
154.	Distemper, Oil Emulsion, Colour as required	IS 428
155.	Distemper Dry colour as required	IS 427
156.	French Polish	IS 348
157.	Varnish, Shellac for general purpose	IS 347
158.	Varnish, finishing interior	IS 337
159.	Coal tar black paint	IS 290
160.	Black Japan	IS 341

161.	Method of measurement- Plastering and pointing	IS 1200 (Part XII)
162.	Method of measurement- Painting, Polishing, varnishing etc.	IS 1200 (Part XV)
163.	Method of measurement-white washing, colour washing, distempering	IS 1200 (Part XIII)
164.	Road marking paint (ready mix)	IS 164
165.	Cut Back bitumen	IS 217
166.	Galvanized Steel barbed wire	IS 278
167.	Test sieves	IS 460
168.	Bitumen mastic	IS 1195
169.	Penetration testing of Bitumen	IS 1203
170.	Softening point testing of bitumen	IS 1205
171.	Ductility test for bitumen	IS 1208
172.	Hot applied sealing compound for concrete joints	IS 1834
173.	Performed fillers for expansion joints in concrete structures	IS 1838
174.	Determination of Liquid and plastic limit of soil	IS 2720 (Part V)

175.	Bituminous Concrete for road pavement	IRC 29
176.	Construction of earth embankment for road work.	IRC 36
177.	Bitumen mastic wearing courses	IRC 107
178.	Glazed Fire clay Sanitary appliances	IS 771 (Part I & II)
179.	Enameled C.I sanitary appliances	IS 772
180.	Flushing Cisterns (Other than plastic)	IS 774
181.	Copper alloy Float valve	IS 1703
182.	C.I. & D.I drainage pipes	IS 1729
183.	Pillar Taps	IS 1795
184.	Automatic Flushing Cistern (other than Plastic cistern)	IS 2326
185.	Plastic Seats and Covers for Water Closets	IS 2548 (Part 1 & 2)
186.	Vitreous Sanitary appliances	IS 2556
187.	Wash down water closets	IS 2556(Part 2)
188.	Squatting pans	IS 2556(Part 3)
189.	Wash basins	IS 2556(Part 4)
190.	Laboratory Sinks	IS 2556(Part 5)

191.	Urinals & partition plates	IS 2556(Part 6)
192.	Accessories for sanitary Appliances	IS 2556(Part 7)
193.	Integrated Squatting Pans	IS 2556(Part 14)
194.	Universal water Closets	IS 2556(Part 15)
195.	Copper Alloy waste fittings for Wash basins and sink	IS 2963
196.	Low density Polyethylene pipes for water supply	IS 3076
197.	Centrifugally cast (Spun) iron spigot & Socket soil, waste and vent pipes	IS 3989
198.	High density Polyethylene pipes for water supply	IS 4984
199.	Unplasticised PVC pipes for water supply	IS 4985
200.	Plastic Flushing Cistern	IS 7231
201.	Stainless Steel tanks	IS 13983
202.	Pipe threads for pressure tight joints	IS 554
203.	Copper alloy gate and check valves	IS 778
204.	Water meter (Domestic type)	IS 779

205.	Sluice Valves for water works (50 mm to 300mm size)	IS 780
206.	Cast Copper alloy screw down bib taps and stop valves	IS 781
207.	Caulking Lead	IS 782
208.	Underground Fire Hydrant, sluice valve type	IS 909
209.	Centrifugally cast (Spun) iron pressure pipes	IS 1536
210.	Vertically cast iron pressure pipe	IS 1537
211.	Cast iron fittings for pressure pipes	IS 1538
212.	Ferrules	IS 2692
213.	Hot dip zinc coating on MS tubes	IS 4736
214.	Swing type Reflux (Non-Return) valves	IS 5312 (Part I & II)
215.	Polyethylene spherical floats for float valves	IS 9762
216.	Plastic Bib taps and stop valves for cold water	IS 9763
217.	Chlorinated Polyvinyl Chloride (CPVC) pipes	IS 15778
218.	Pre-cast Concrete pipes	IS 458
219.	Laying Concrete Pipes	IS 783
220.	Cast iron Manhole covers and frames	IS 1726

221.	Laying glazed Stoneware pipes	IS 4127
222.	Pre cast Concrete Manhole covers and frames	IS 12592
223.	Concrete Structures for storage of Liquid	IS 3370
224.	Road marking	IRC 35
225.	Road Signs	IRC 67
226.	Precast Concrete blocks for paving	IS 15658
227.	Speed Breakers	IRC 99
228.	WBM Road	IRC 19
229.	F R P Door	IS 14856
230	Construction of Concrete Roads	IRC 15
231	Road Bridges	IRC 21
232	Road construction in Water logged Area	IRC 34
233	Earth embankment for road work	IRC 36

Items of works, if any, for which Code Number is not mentioned in the above list, the available

relevant IS/IRC/ASTM Codes are to be referred.

Signature of Contractor

Superintending Engineer

ANNEXURE-II
TECHNICAL SPECIFICATIONS FOR REFERENCE

Sr.No	Item Name	Reference
1.	Earthwork, mortars, Concrete (PCC & RCC), Masonry (Brick & Stone), flooring, Woodwork, Steel work and Roofing	CPWD Specifications Vol-I
2.	Plastering, painting, Building repairs, Demolition work, Sanitary and Water supply work, drainage, Aluminum work, horticulture and landscaping work.	CPWD Specifications Vol-II
3.	Road works	MCGM Standard - Specification for Road work
4.	Paver block pavement	MCGM Guidelines for Interlocking Concrete block pavements (July 2008) & IRC: SP-63-2004
5.	Quality control for construction of roads	IRC-SP-11

The Specification mentioned in schedule of items will supersede the specifications mentioned above.

Signature of Contractor

Superintending Engineer

ANNEXURE-III

LIST OF APPROVED MAKES OF MATERIALS

	Materials	Make/Manufacturer
1	Cement	ACC, Ultratech,Ambuja, Vasavadatta, Grasim
2	Steel Reinforcement(TMT & TOR)	SAIL, TATA, ESSAR, ISPAT, ,VIZAG, JRINL, IISCO
3	Bricks	KBK, GBK, RAM
4	Sand	Vaitarna, Tansa
5	Ceramic & Vitrified Tiles	Somani, Kajaria, Regency, Bell, H.R.Jhonson, Nitco, Euro,
6	Indian WC Pan, European WC pan & Orissa WC Pan	Hindware, Parryware, CERA, Jhonson-Peddar, Hindustan, Euro, Nycer
7	PVC Flushing Cistern	Hindware, CERA, Slimline, Hindustan, Nycer
8	Wash basin, Ceramic sink, Urinal	Hindware, Parryware, CERA, Jhonson-Peddar, Hindustan, Euro, Nycer
9	Bib tap & Stop tap	Jaquar, Seiko, Techno, Crystal, Hindware
10	Pillar Tap	Jaquar, Seiko, Techno, Crystal, Hindware
11	Waste Coupling	Jaquar, Parryware, Maxbrass,
12	C.I.Soil Pipes	NECO, ALCO, Bombay Iron Works,RIF
13	Mirror	Modiguard, Saint-Gobain, Parryware
14	Plastic Water tank	Syntex, Infra, Sharp
15	PVC.Pipe, Fittins & Fixtures	Supreme, Prince, Finolex
16	Manhole & Inspection Chamber Cover & frame (SFRC)	Bharat, KK, Moonlite, S.K.Precast, Pragati
17	RCC Hume Pipe	Indian Hume Pipe, Bharat, Akshay
18	G.I.Pipe & Fixtures	TATA, Jindal, Zenith
19	Three way tap	Asha
20	Plywood	Century, Anchor, Prince, Kitply
21	Prelaminated particle board	Novapan, Nepal Board, Butan Board, Eco Board, Deco Board, Turatuf
22	Sunmica	Royal touch
23	Veneer	Century, Anchor, Kitply
24	Glass	Modiguard, Saint-Gobain, Pilkington,Asahi Float

25	Aluminum Section	Jindal, Hindalco, Mahavir, Indal
26	Poly carbonate sheet	Danpolan, Sabic, Tofflit, Palram
27	Night Latch	Godrej, EUROPA
28	Mortice Lock	Godrej
29	Door Closer	Hyper, Everite, Hardwyn
30	Paints	Asian, Berger, ICI, Jenson Nicholson, Goodless Nerolac, Killick Nixon, Godavari, Shalimar
31	Polymer	Dr.Fixit, Roff, M C Bouchmey, Sunanda, BASF, Anuvi
32	Rust Passivator, Rust Inhibitor	BASF,Sunanda, M C Bouchmey, Dynamic enter-prises,
33	PVC Flooring	Marvel, Wonderfloor, Veekay
34	Plastic Door	Syntex
35	Flush Valve	Nelson,Jaquar,Parryware
36	Paver blocks	Vitco, Nitco, Continental, Supertiles
37	Waterproofing Compound	Impermo, Pidiproof, Aqua proof, CICO,Sunanda,
38	W.C. Connectors	Prince, Supreme
39	C.P.Fittings	Gem, Parko, Jaguar, Kingstone, ESS-ESS
40	C.P. Grating / Floor Trap	GMGR, Chilly
41	Ball valves	Zoloto, AM, Leader
42	CI “LA Class” Pipe	Electrosteel, Kesoram, IISCO
43	Stoneware pipe	Perfect, Burn
44	FRP Door	Advance, Rawji
45	CPVC Pipes	Ajay, Ashirwad, Astral
46	UPVC Pipe & Fittings	Supreme, Finolex, Polypack, Prince, Astral
47	Pipe clamp & Supports	Chilly, Euroclamp
48	Structural Steel	SAIL, TATA, JRINL, IISCO
49	Flush Door	Duraboard, Kitply, Merino Ply
50	Stainless Steel	Jindal, SAIL, Golden
51	Paint/Primer/OBD/Acrylic paint	Asian, Berger, Nerolac, ICI, Jenson-Nicolson (1st Quality)
52	Waterproof paint	Snowcem, Asian, Berger
53	Aluminum Fittings	Crown, ALANS, Classic, Bharat, Argent
54	Block Board/Ply	Merino, Dyro, Samrat, KitPly
55	Dead Lock	Vision, Godrej, Dorma
56	HDPE Pipe	Arham engs, berlia, Nocil, PIL, Suprime
57	Fire rated door	Tata Parvesh, sukriti, navair, hormann, Bhavani
58	FRP Cover, Grating	Everlast, KK
59	DI grating	NECO
60	Toilet cubicle	Green lam, merino, polo international
61	Polymer Morter	Dr. Fixit, ACC

The make mentioned, if any, in schedule of items will supersede this list.
Any other make can also be used with prior approval of engineer Incharge.

Signature of Contractor

Superintending Engineer

ANNEXURE-IV

ARTICLE OF AGREMENT

CONTRACTOR AGREEMENT for all work orders issued to the contract by Institute
_____ _____
_____
_____
_____

Article of agreement made at _____ this _____day of the Two Thousand_____, between Indian Institute Of Technology, Bombay under Institute of Technology Act 1961, and having its Administrative Office in the Main Building 1st Floor, Powai, Mumbai – 400 076 (hereinafter called the Institute of Technology Bombay) of the one part and_____whose Registered office is situated at_____ (herein after called "the contractor") of the other part.

WHEREAS

The IIT Bombay being desirous of having provided and executed certain works mentioned enumerated or referred to in the Tender Notice, General Tender Notice, Instructions to Tendered, Conditions of Contract, Special Condition, Specification, Technical Report, Schedule of Quantities for Works, Drawing and Other documents constituting the tender and acceptance thereof, copy to be annexed all of which are designed to form part of this contract and are included in the term 'CONTRACT' herein used.

ANDWHEREAS

The II Bombay accepted the tender of the contractor for the provisions and the execution of the said work at the rate stated in the schedule of quantities of works (Herein after called ' Schedule Of Rates') upon the terms and subject to the conditions of contract.

NOW THIS AGREEMENT AND WITNESS AND IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES AND AS FOLLOWS.

1) The documents which form part of the contract will be the tender notice, Instructions to tenders, conditions of contract, special conditions of contract, schedule of quantities of work, specifications, drawings and other documents, constituting the 'Tender' and acceptance thereof. It is further agreed that the work order No. _____ dated _____ shall constitute the contract between the parties.

2) In consideration of the payments to be made to the contractor for the works to be executed by him, the contractor shall and will duly provide, execute and complete the work on or before _____ as per the time limit mentioned in the tender documents and shall maintain the same at his own cost for the defect liability period thereafter, perform all such acts and things in the contract mentioned or described or which are to be implied there from or may be reasonably necessary for the completion of the said work and at the times and the manner and subject to the terms and conditions or stipulations mentioned in the contract.

3) In consideration of the due provision, execution and completion of the said work, the IIT Bombay, do hereby agree with the contractor that IIT Bombay, will pay to the contractor in the respective amount for the work actually done by him at the 'Schedule rate' quoted and accepted by IIT Bombay such other sums as may become payable to the contractor under the provisions of the contract such payment to be made at such time and in such manner as provided for in the agreement.

4) In consideration of the due provision, execution and completion of the said work and contractor does hereby agree to pay to the IIT Bombay the sum as may be due to the IIT Bombay for the services if any rendered by the IIT Bombay to the contractor and such other sum or sums as may become payable to the IIT Bombay towards loss, damage to the IIT Bombay's equipment,

material, plant and machinery including these hired to the contractor if any as set forth in the said conditions of contract, such payment to be made at such time and in such manner as provided in the contract.

5) The contractor has to deposit with the IIT Bombay the sum of 1% equal value of financial limit as the fixed Earnest Money Deposit and remaining part will be recovered from contractor by allowing the IIT Bombay to deduct from the bills payable to them at the rate of 5%, 8%, 10% of amount payable to the contractor. This security deposit will be retained until the expire of the Defect Liability Period for the due observance and performance of this contract.

6) All disputes arising out of or any in connection with this agreement or concerning thereto shall be deemed to have arisen in Bombay and the same will be referred to the sole arbitrator of Deputy Director or anybody nominated by the Deputy Director, I.I.T Bombay for his decision and his decision will be final.

7) The several parts of this contract have been read by me / us and fully understood by me / us.

IN WITNESS WHEREAS THE PARTIES HAVE ACCEPTED THESE PRESENT IN DUPLICATE THE DAY AND THE YEAR FIRST AS MENTIONED ABOVE.

SIGNED AND DELIVERED FOR AND ON BEHALF OF THE INDIAN INSTITUTE OF TECHNOLOGY BOMBAY.

SIGNATURE :_____

DESIGNATION : _____

_____

In the presence of witness

1) _____(Address)

2)_____(Address)

SIGNED AND DELIVERED FOR ON BEHALF OF_____

_____ in the presence of

Witness

1) _____(Address)

2) _____(Address)

ANNEXURE – V

FORM OF PERFORMANCE SECURITY (GUARANTEE)

BANK GUARANTEE BOND

In consideration of Indian Institute of Technology Bombay (hereinafter called "IIT Bombay") having offered to accept the terms and conditions of the proposed agreement between. IIT Bombay and.....(hereinafter called "the said Contractor(s)")for the work.....(Hereafter called "the said agreement") having agreed to production of a irrevocable Bank Guarantee for Rs.....(Rupees .....only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

We.....(Indicate the name of the Bank).....(hereinafter referred to as "the Bank") hereby undertake to pay to IIT Bombay an amount not exceeding Rs..... (Rupees.....only) on demand by IIT Bombay.

2. We.....(indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demure, merely on a demand from IIT Bombay stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. .....(Rupees .....only)

3. We, the said bank further undertake to pay to IIT Bombay any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or

Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

4. We .....(Indicate the name of the bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of IIT Bombay under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of IIT Bombay certified that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee.

5. We .....(Indicate the name of the bank) further agree with IIT Bombay that IIT Bombay shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of other terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by IIT Bombay against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liablility by reason of any such variation, or extension being granted to the said contractor(s) or for any forbearance, act of omission on the part of IIT Bombay or any indulgence by IIT Bombay to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We .....lastly undertake not to revoke this guarantee except with the previous consent of IIT Bombay in writing.

8. This guarantee shall be valid upto ..... Unless extended on demand by IIT Bombay. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs.....(Rupees.....only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the.....day of.....for.....(indicate the name of bank)

**

ANNEXURE – VI

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

The Agreement made this..... day of .....Two thousand and ..... between .....son of ..... of (hereinafter called the Guarantor of the one part) and Indian Institute of Technology, Bombay (hereinafter called the Institute 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 Institute 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 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 there under 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 Institute and the decision of the Engineer-in-Charge will be final and binding on the parties.

IN WITNESS WHEREOF these present have been executed by the Obligor the day, month and year first above written.

SIGNED, SEALED and delivered by OBLIGOR in the presence of -

1) .....

2) .....

SIGNED for and behalf of INSTITUTE by ..... in the presence of -

1).....

ANNEXURE – VII

INDEMINITY BOND FOR MATERIAL ADVANCE

In consideration of Indian Institute of Technology Bombay (hereinafter called "IIT Bombay") having offered to accept the terms and conditions of the proposed agreement between IIT Bombay and M/s. ..... office at.....(hereinafter called "the Contractor(s)") for the work.....(Hereafter called "the Contract") and Work order No.EO/A/…….. The Contractor signed herein below hereby agree with IIT Bombay and declare as follows.

1. That, the contractor has sought secured advance against material bought at site by the contractor @ …% of the actual purchase amount of the material, the quantities and other particulars of which are obtained in the relevant Running Account Bill for the said contract.

2. That, the said advance amount as per the relevant Running Account Bill so advanced by IIT BOMBAY to the Contractor as aforesaid shall be employed by the contractor in or towards expediting the execution of the said works and no other purpose whatsoever.

3. That, the material detailed in the said Running Account Bill which have been offered to and accepted by IIT BOMBAY as security are absolutely the contractor's own property and free from encumbrances of any kind and the contractor will not make any application for or receives a further advance on the security of materials which are not absolutely his own property and free from encumbrances if any kind and contractor indemnifies IIT BOMBAY against all claims to any materials in respect of which as advance has been made to him as aforesaid.

4. That, the contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe-custody and protection against risk of the said materials and

that until used in construction, as aforesaid, materials shall remain at the site of the said works in the contractor's custody and his own responsibility and shall at all times be available to inspection by IIT BOMBAY or any officer authorized by him. In the custody, materials or any part thereof being stolen, destroyed or damage or deteriorates in greater degree than is due to reasonable use and thereof the contractor will forthwith replace the same with other materials of like quality or repair and made good the same as required by IIT BOMBAY.

5. That, the said material shall not on any account be removed from the site of works except with the written permission of the IIT BOMBAY or officer authorized by him on that behalf.

6. That, the advance shall be recovered in the next Running Account Bill as per consumption of such material actually used in the construction.

7. This Agreement of Indemnity Bond will be binding on me as well as my successors legal heirs and I hereby solemnly affirm to that effect in the presence of witness and the day and year written below.

Place : Powai, Mumbai – 400 076.

Date : _____

Name : M/s_____

Address:_____

_____

Witness : 1)

Signed by :

Witness : 2)

Signed by

Superintending Engineer