

INVITATION LETTER FOR CIVIL WORKS

Package Code: TEQIP-III/UK/ctgp/74
Package Name: CT/CW/001

Current Date: 02-March-2020
Method: Shopping Civil Works

Dear Sir,

Sub: Invitation Letter for Construction of Proposed Extension of Building (Civil & Electrical Work) for use Class Rooms/Labs under TEQIP-III at NCT Pantnagar

1. You are invited to submit your most competitive quotation for the following works: -

Sr. No	Brief Description of the Works	Approximate value of Works (Rs.)	Expected Completion Period (in Days)
1	Proposed extension of building (Civil & Electrical work) for use class Rooms/Labs under TEQIP-III at NCT Pantnagar	49.19 Lac	150

2. Government of India has received a credit from the International Development Association (IDA) in various currencies equivalent to US\$ 36000000000 towards the cost of the Technical Education Quality Improvement Programme [TEQIP]-Phase III Project and intends to apply part of the Proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.

3. The _____ Project in _____ state is being implemented by _____, which is an autonomous society registered under the Societies Registration Act.

4. To assist you in the preparation of your quotation, we are enclosing the following:

- 1) Layout Drawings of the works;
- 2) Structural Details;
- 3) Detailed Bill of Quantities, with estimated rates and prices;
- 4) Technical Specifications;
- 5) Instructions to Bidders (in two sections).
- 6) Draft Contract Agreement format including GPW Form-9, which will be used for finalizing the agreement for this

7. Special condition of Contract
8. General conditions
5. You are requested to provide your offer latest by **03:00 pm** on **20-Mar-2020**
6. Quotations will be opened in the presence of Bidders or their representatives who choose to attend at **03:30 pm** on **20-Mar-2020** in the office of Dean College of Technology/Coordinator TEQIP-III, **College of Technology GB Pant University of Agriculture& Technology Pantnagar**
7. Liquidated Damages will be applied:
 - 1) Liquidated Damages Per Day Min % :N/A
 - 2) Liquidated Damages Max % : N/A
8. We look forward to receiving your sealed quotations/bid and thank you for your interest in this project.
(Employer)
Name: **Dean College of Technology/Coordinator TEQIP-III**
Address: **College of Technology, GB Pant University of Agriculture& Technology Pantnagar**
Tel. No: **05944233338**
Fax No.**05944233338**

Instructions to Bidders

SECTION – A

1. Scope of Works

The **College of Technology GB Pant University of Agriculture & Technology Pantnagar** (Employer) invites quotations for the construction of works as detailed in the table given below-

Sr. No	Brief Description of the Works	Approximate value of Works (Rs.)	Expected Completion Period (in Days)
1	Proposed extension of building (Civil & Electrical work) for use class Rooms/Labs under TEQIP-III at NCT Pantnagar	49.19 Lac	150

The successful bidder will be expected to complete the works by the intended completion date specified above

2. Qualification of the bidder: The bidder shall provide qualification information which shall include:-

(a) Total monetary value of construction works performed for each year of the last 3 years:

(b) Income tax clearance certificate from the concerned IT circle;

(c) Report on his financial standing; and

(d) Details of any litigation, current or during the last 3 years in which the bidder is involved, the Parties concerned and disputed amount in each case.

3. To qualify for award of the contract the bidder:-

(a) Should have satisfactorily completed as a prime contractor at least one similar work of value not less than Rs. 20,00,000 in the last three years;

(b) Should possess valid electrical license for executing building electrification works (in the event of the works being sub - contracted, the sub-contractor should have the necessary license);

(c) Should possess required valid license for executing the water supply/sanitary works (in the event of the works being sub-contracted, the sub-contractor should have the necessary license);

4. Bid Price

(a) The contract shall be for the whole works as described in the Bill of quantities, drawings and technical specifications. Corrections, if any, shall be made by crossing out, initialling, dating and re writing.

(b) All duties, taxes and other levies payable by the contractor under the contract shall be included in the total price.

(c) The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.

(d) The rates should be quoted in Indian Rupees only.

5. Submission of Quotations

5.1 The bidder is advised to visit the site of works at his own expense and obtain all information that may be necessary for preparing the quotation.

5.2 Each bidder shall submit only one quotation.

5.3 The quotation submitted by the bidder shall comprise the following:-

(a) Quotation in the format given in Section B.

(c) Signed Bill of Quantities; and

(d) Qualification information form given in Section B duly completed.

5.4 The bidder shall seal the quotation in an envelope addressed to the **Dean College of Technology/Coordinator TEQIP-III**

Address: **College of Technology, GB Pant University of Agriculture & Technology Pantnagar**

The envelope will also bear the following identification: - Quotation for **CT/CW/001**

(Proposed extension of building (Civil & Electrical work) for use class Rooms/Labs under TEQIP-III at NCT Pantnagar).

Do not open before **20-Mar-2020 03:30** (time and date of quotation opening).

5.5 Quotations must be received in the office of the **Dean College of Technology/Coordinator TEQIP-III College of Technology GB Pant University of Agriculture & Technology Pantnagar** (Employer) not later than the time and date given in the letter of invitation. If the specified date is declared a holiday, quotations shall be received up to the appointed time on the next working day

5.6 Any quotation received by the **College of Technology GB Pant University of Agriculture & Technology Pantnagar** (Employer) after the deadline for submission of quotations will be rejected and returned unopened to the bidder.

6. Validity of Quotation

Quotation shall remain valid for a period not less than **120** days after the deadline date specified for submission.

7. Opening of Quotations

Quotations will be opened in the presence of bidders or their representatives who choose to attend on the date and time and at the place specified in the letter of invitation.

8. Information relating to evaluation of quotations and recommendations for the award of contract shall not be disclosed to bidders or any other persons not officially concerned with the process until the award to the successful bidder is announced.

9. Evaluation of Quotations

The Employer will evaluate and compare the quotations determined to be substantially responsive i.e. Which

- (a) Meet the qualification criteria specified in clause 3 above;
- (e) Are properly signed; and
- (f) Conform to the terms and conditions, specifications and drawings without material Deviations.

10. Award of contract

The Employer will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price and who meets the specified qualification criteria.

10.1 Notwithstanding the above, the Employer reserves the right to accept or reject any Quotations and to cancel the bidding process and reject all quotations at any time prior to The Award of contract

10.2 The bidder whose bid is accepted will be notified of the award of contract by the Employer Prior to expiration of the quotation validity period.

11. Performance Security

Within 15 days of receiving letter of acceptance, the successful bidder shall deliver to the **College of Technology, GB Pant University of Agriculture & Technology Pantnagar** (Employer) the performance security (either a bank guarantee or a bank draft in favour of the Employer) for an amount equivalent of 5% of the contract price.

Also an amount of 5% of contract price will be deducted from the bills and shall be valid till the expiry of the period of maintenance of the work, specified in clause 12.

12. Period of Maintenance:

The "Period of Maintenance" for the work is 24 months from the date of taking over possession or one full monsoon season whichever occurs later. During the period of maintenance, the contractor will be responsible for rectifying any defects in construction free of cost to the Employer.

13. Purchase of all construction materials including cement and steel as per the specifications (ISI certification marked goods wherever available) shall be the responsibility of the contractor.

SECTION – B

1. **Format for Qualification Information.**
2. **Format for Submission of Quotation.**
3. **Format of Letter of Acceptance.**

QUALIFICATION INFORMATION

1. For Individual Bidders

1.1 Principal place of business: _____

Power of attorney of signatory of Quotation.

[Attach copy]

1.2 Total value of Civil Engineering _____

Construction work performed in the last _____

Three years (in Rs. Lakhs) _____

1.3 Work performed as prime contractor (in the same name) on works of a similar nature over the last three years.

Project Name, Name of Employer Description of work Contract No. Value of contract (Rs. Lakhs) Date of issue of work order Stipulated period of completion Actual date of completion Remarks explaining reasons for delay and work completed

Existing commitments and on-going works:

Description of Work

- (1) **Place & State**
- (2) **Contract No. & Date**
- (3) **Value of Contract**
(Rs. Lakh)
- (4) **Stipulated period of completion**
- (5) **Value of works* remaining to be completed**
(Rs. Lakhs)
- (6) **Anticipated date of completion**

* Enclose a certificate from Engineer concerned.

1.4 Proposed subcontracts and firms involve

Sections of the works	Value of Sub-contract	Sub-contractor (name & address)	Experience in similar work
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- 1.5 Evidence of access to financial resources to meet the requirements of working capital: cash in hand, lines of credit, etc. List them below and attach copies of support documents.
- 1.6 Name, address, and telephone, telex, and fax numbers of the Bidders' bankers who may provide references if contacted by the Employer.
- 1.7 Information on litigation history in which the Bidder is involved.

Other party(ies)	Employer	Cause of dispute	Amount involved	Remarks showing present status

QUOTATION

*Description of the Works:

To:

Subject: Construction of.....
.....

Reference : Letter No.....dated.....from.....

Sir,

We offer to execute the Works described in your letter referred to above in accordance with the Conditions of Contract enclosed therewith at percentage above / below the estimated rates, i.e., for a total Contract Price of -

Rs. ** _____ [in figures]

Rs. _____ [in words].

This quotation and your written acceptance of it shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any quotation you receive.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery. We hereby confirm that this quotation is valid for 45 days as required in Clause 6 of the Instructions to Bidders.

Yours faithfully,

Authorized Signature:

Date: _____

Name & Title of Signatory: _____

Name of Bidder: _____

Address : _____

* To be filled in by the Employer before issue of the Letter of Invitation.

** To be filled in by the Bidder, together with his particulars and date of submission at the bottom of this Form.

**LETTER OF ACCEPTANCE
CUM NOTICE TO PROCEED WITH THE WORK
(LETTERHEAD OF THE EMPLOYER)**

Dated: _____

To: [Name and address of the Contractor]

Dear Sir,

This is to notify you that your Quotation dated _____ for execution _____ for the contract price of Rupees _____ [amount in words and figures], is hereby accepted by us.

You are hereby requested to furnish performance security for an amount of Rs. _____ (equivalent to 3% of the contract price) within 15 days of the receipt of the letter. The Performance Security in the form of Bank guarantee or a Bank draft in favour of..... (Employer) shall be valid till the expiry of the period of maintenance i.e. up to _____. Failure to furnish the Performance Security will entail cancellation of the award of contract.

You are also requested to sign the agreement form and proceed with the work not later than _____ under the instructions of the Engineer, _____ and ensure its completion within the contract period.

With the issuance of this acceptance letter and your furnishing the Performance Security, contract for the above said work stands concluded.

Yours faithfully

Authorized Signature

Name and title of Signatory

Draft Agreement form for Construction through Lump Sum Contract

ARTICLES OF AGREEMENT

1. This deed of agreement is made in the form of agreement on _____ day _____ month _____ 20 ____, between the _____ (Employer) or his authorized representative (hereinafter referred to as the first party) and _____ (Name of the Contractor), S/O _____ resident of _____ (hereinafter referred to as the second party), to execute the work of construction of _____ (hereinafter referred to as works) on the following terms and conditions.

2. Cost of the Contract

The total cost of the works (hereinafter referred to as the "total cost") is Rs. ____ as reflected in Annexure - 1.

3. Payments under its contract:

Payments to the second party for the construction work will be released by the first party in the following manner: -

On Successful Completion:	100% of total cost
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(The above payment terms have been drafted for construction of school buildings; modify this suitably for other works)

3.1 The advance shall be repaid with percentage deductions from the interim payments, commencing with the next Interim Payment at the rate of ___@@percent of the amounts of all Interim Payment Certificates until the advance has been repaid, always provided that the advance shall be completely repaid prior to the expiry of the original time for completion

@The Guarantee shall remain effective until the advance payment has been repaid

@@Stipulate appropriately as 30/25/15 % depending on number of payment stages.

3.2 The Employer shall retain (Retention Money) 6% of the amount from each payment due to the Contractor subject to the maximum of 5% of final contract price. Half of the amount retained shall be repaid upon completion of the works, and other half shall be repaid when the Defects Liability Period has passed, and the Project Manager has certified that all Defects notified to the Contractor before the end of this period have been corrected. On completion of the whole works the Contractor may substitute the

balance retention money with an "on demand" Bank guarantee

3.3 Payments at each stage will be made by the first party:

- (a)** On the second party submitting an invoice for an equivalent amount
- (b)** on certification of the invoice (except for the first instalment) by the engineer nominated by the first party with respect to quality of works in the format in Annexure - 2; and
- (c)** upon proper and justified utilization of at least 50 % of the previous instalment and 100 % of any prior instalment.

4. Notice by Contractor to Engineer

The second party, on the works reaching each stage of construction, issue a notice to the first party or the Engineer nominated by the first party [who is responsible for supervising the contractor, administering the contract, certifying payments due to the contractor, issuing and valuing variations to the contract, awarding extension of time etc.) to visit the site for certification of stage completion. Within 15 days of the receipt of such notice, the first party or the engineer nominated by it, will ensure issue of stage completion certificate after due verification.

5. Completion time

The works should be completed in _____ (months/weeks/days) from the date of this Agreement. In exceptional circumstances, the time period stated in this clause may be extended in writing by mutual consent of both the parties

6. If any of the compensation events mentioned below would prevent the work being completed by the intended completion date, the first party will decide on the intended completion date being extended by a suitable period:

- a)** The first party does not give access to the site or a part thereof by the agreed period.
- b)** The first party orders a delay or does not issue completed drawings, specifications or instructions for execution of the work on time.
- c)** Ground conditions are substantially more adverse than could reasonably have been assumed before issue of letter of acceptance and from information provided to second party or from visual inspection of the site.
- d)** Payments due to the second party are delayed without reason.
- e)** Certification for stage completion of the work is delayed unreasonably.

7. Any wilful delay on the part of the second party in completing the construction within the

stipulated period will render him liable to pay liquidated damages. @ 0 % per day which will be deducted from payments due to him. The first party may cancel the contract and take recourse to such other action as deemed appropriate once the total amount of liquidated damages exceeds 5 % of the contract amount.

(@Note: The amount of liquidated damages per day should be determined at not less than 0.05 % of the contract value of the works and indicated here).

Liquidated Damages Per Day Min % :0

Liquidated Damages Max % : 0

8 Duties and responsibilities of the first party

- 8.1** The first party shall be responsible for providing regular and frequent supervision and guidance to the second party for carrying out the works as per specifications. This will include written guidelines and regular site visit of the authorized personnel of the first party, for checking quality of material and construction to ensure that it is as per the norms.
- 8.2** The first party shall supply 3 sets of drawings, specifications and guidelines to the second party for the proposed works
- 8.3** Possession of the site will be handed over to the second party within 10 days of signing of the agreement.
- 8.4** The Engineer or such other person as may be authorized by the first party shall hold meeting once in a month where the second party or his representative at site will submit the latest information including progress report and difficulties if any, in the execution of the work. The whole team may jointly inspect the site on a particular day to take stock of activities.
- 8.5** The Engineer shall record his observations/instructions at the time of his site visit in a site register maintained by the second party. The second party will carry out the instructions and promptly rectify any deviations pointed out by the engineer. If the deviations are not rectified, within the time specified in the Engineer's notice, the first party as well as the engineer nominated by it, may instruct stoppage or suspension of the construction. It shall thereupon be open to the first party or the engineer to have the deviations rectified at the cost of the second party.

9. Duties and responsibilities of the second party

- 9.1** The second party shall:
 - a)** take up the works and arrange for its completion within the time period stipulated in clause 5;
 - b)** employ suitable skilled persons to carry out the works;

- c) regularly supervise and monitor the progress of work;
- d) abide by the technical suggestions / direction of supervisory personnel including engineers etc. regarding building construction;
- e) be responsible for bringing any discrepancy to the notice of the representative of the first party and seek necessary clarification;
- f) ensure that the work is carried out in accordance with specifications, drawings and within the total of the contract amount without any cost escalation;
- g) keep the first party informed about the progress of work;
- h) correct the notified defects within the length of time specified by the Project Manager;
- i) be responsible for all security and watch and ward arrangements at site till handing over of the building to the first party;
- j) maintain necessary insurance against loss of materials/cash, etc. or workman disability compensation claims of the personnel deployed on the works as well as third party claims from the start date to the end of defect liability period;
- k) pay all duties, taxes and other levies payable by construction agencies as per law under the contract (First party will effect deduction from running bills in respect of such taxes as may be imposed under the law);
- l) abide by all labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority;
- m) abide by all enactments on environmental protection and rules made there under, regulations, notifications and by-laws of the Sate or Central Government, or local authorities;
- n) be responsible for the safety of all activities on the Site.

10. Variations / Extra Items

The works shall be executed by the second party in accordance with the approved drawings and specifications. No variation in cost is acceptable. However, if the Engineer issues instructions for execution of extra items, the following procedure shall be followed: -

- a) The second party shall provide the Engineer with a bid for carrying out the extra items when requested to do so by the Engineer. The Engineer shall assess the bid, which shall be given within seven days of the request before the extra items are ordered
- b) If the bid given by the second party is unreasonable, the Engineer may order the extra items and make a change to the Contract Price which shall be based on Engineer's own forecast of the effects of the extra items on the Contractor's costs.
- c) The second party shall not be entitled to additional payment for costs, which could have been avoided by giving early warning.

11. Securities

The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer. The Performance Security shall be valid until a date 28 days from the date of issue of the Certificate of Completion in the case of a Bank Guarantee.

12. Termination

12.1 The Employer may terminate the Contract if the other party causes a fundamental breach of the Contract.

12.2 Fundamental breaches of Contract include, but shall not be limited to the following:

- (a)** the contractor stops work for 28 days and the stoppage has not been authorized by the Engineer;
- (b)** the Contractor has become bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (c)** the Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
- (d)** the Contractor does not maintain a security which is required;
- (e)** the Contractor has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract; and
- (f)** the contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid

12.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

12.4 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible

13. Payment upon Termination

13.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done less advance payments received up to the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law.

13.2 If the Contract is terminated at the Employer's convenience, the Engineer shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments

received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

14. Dispute settlement

If over the works, any dispute arises between the two parties, relating to any aspects of this Agreement, the parties shall first attempt to settle the dispute through mutual and amicable consultation.

In the event of agreement not being reached, the matter will be referred for arbitration by a Sole Arbitrator not below the level of retired Chief Engineer / Superintending Engineer, (not connected in part or whole with this Project in his service) to be appointed by the first party. The Arbitration will be conducted in accordance with the Arbitration and Conciliation Act, 1996. The decision of the Arbitrator shall be final and binding on both the parties.

Annexure- A

BILL OF QUANTITIES

S.No.	Description of Work	Unit	Qty.

Gross Total Cost :Rs.

We agree to execute the works in accordance with the approved drawings and technical specifications at a total fixed contract price of Rs.....(amount in figures) (Rs..... amount in words).

Signature of Contractor

Annexure-B

Format of certificate

Certified that the works up to ----- level in respect of construction of -----
----- at ----- have been executed in accordance with the
approved drawing and technical specifications.

Signature

Name & Designation

(Official address)

Place :

Date :

Office seal

Bill of Quantity

Name of work:- Proposed extension of building for use class Rooms/ Labs under Teqip-PH, near multi-utility building at N.C.T Pantnagar.

S.N	Item	Qty	Unit	Rate	Amount
1.	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil. (2.8.1)	225.00 Cum	Per Cum	Rs. 200.65 (166.40+20.59%)	Rs. 45,146.25
2.	Supply & filling 40 mm shingle/Aggregate in plinth and under floor including watring ramming consolidating and dressing complete. (Analysis)	55.00 Cum	Per Cum	Rs. 1870.00	Rs. 1,02,850.00
3.	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:5:10 (1 cement : 5 coarse sand (zone-III): 10 graded stone aggregate 40 mm nominal size). (4.1.10)	35.00 Cum	Per Cum	Rs. 5075.70 (4209.05+20.59%)	Rs. 1,77,649.50
4.	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size). (5.1.2)	55.00 Cum	Per Cum	Rs. 7495.10 (6215.35+20.59%)	Rs. 4,12,230.50
5.	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size). (5.2.2)	7.00 Cum	Per Cum	Rs. 8617.10 (7145.80+20.59%)	Rs. 60,319.70
6.	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:1.5:3 (1 cement : 1.5coarse sand : 3 graded stone aggregate 20 mm nominal size). (5.3)	70.00 Cum	Per Cum	Rs. 8912.55 (7390.80+20.59%)	Rs. 6,23,878.50
7.	Providing and laying up to floor five level reinforced cement concrete in kerbs, steps and the like, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone	1.00 Cum	Per Cum	Rs. 8354.30 (6927.85+20.59%)	Rs. 8,354.30

	aggregate 20 mm nominal size). (5.4)				
8.	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Foundations, footings, bases of columns, etc. for mass concrete. (5.9.1)	2.00 Sqm	Per Sqm	Rs. 233.90 (193.95+20.59%)	Rs. 467.80
9.	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Suspended floors, roofs, landings, balconies and access platform. with water proof ply 12 mm thick. (5.9.20)	80.00 Sqm	Per Sqm	Rs. 599.85 (497.45+20.59%)	Rs. 47,988.00
10.	Centering and shuttering including strutting, propping etc. and removal of form for all heights: 5.9.16 Edges of slabs and breaks in floors and walls Under 20 cm wide. (5.9.16.1)	40.00 RM	Per RM	Rs. 147.35 (122.20+20.59%)	Rs. 5,894.00
11.	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Stairs, (excluding landings) except spiral-staircases. (5.9.7)	7.00 Sqm	Per Sqm	Rs. 505.70 (419.35+20.59%)	Rs. 3,539.90
12.	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Lintels, beams, plinth beams, girders, bressumers and cantilevers. with water proof ply 12 mm thick. (5.9.21)	125.00 Sqm	Per Sqm	Rs. 505.20 (418.95+20.59%)	Rs. 63,150.00
13.	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like. (5.9.15)	3.00 Sqm	Per Sqm	Rs. 233.90 (193.95+20.59%)	Rs. 701.70
14.	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. Hot rolled deformed bars. (5.22.4)	5400.00 Kg	Per Kg	Rs. 68.25 (56.60+20.59%)	Rs. 3,68,550.00
15.	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level. Hot rolled deformed bar. (5.22A.4)	6900.00 Kg	Per Kg	Rs. 68.25 (56.60+20.59%)	Rs. 4,70,925.00
16.	Brick work common burnt clay F.P.S. (non modular) bricks of class designation 12.5 in with foundation and plinth in cement mortar 1:6 (1 cement : 6 coarse sand). (Analysis)	35.00 Cum	Per Cum	Rs. 6350.00	Rs. 2,22,250.00
17.	Brick work common burnt clay F.P.S. (non modular) bricks of class designation 12.5 in superstructure above plinth level up to floor V level in all shapes and sizes in cement mortar 1:6 (1 cement : 6 coarse sand). (Analysis)	60.00 Cum	Per Cum	Rs. 6770.00	Rs. 4,06,200.00
18.	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching	10.00 Sqm	Per Sqm	Rs. 4042.10 (3351.95+20.59%)	Rs. 40,421.00

	pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Granite of any colour and shade Area of slab upto 0.50 sqm. (8.2.2.1)				
19.	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), 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. Granite of any colour and shade Area of slab over 0.50 sqm. (8.2.2.2)	10.00 Sqm	Per Sqm	Rs. 3754.35 (3113.30+20.59%)	Rs. 37,543.50
20.	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge. Granite work. (8.3.2)	8.00 Sqm	Per Sqm	Rs. 296.30 (245.70+20.59%)	Rs. 2,370.40
21.	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth. Granite Stone of approved shade. (8.10.2)	3.00 Sqm	Per Sqm	Rs. 3415.05 (2831.95+20.59%)	Rs. 10,245.15
22.	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters: 30 mm thick including ISI marked Stainless Steel butt hinges with necessary screws. (9.21.2)	10.00 Sqm	Per Sqm	Rs. 1880.90 (1559.75+20.59%)	Rs. 18,809.00
23.	Providing and fixing ISI marked oxidised M.S. sliding door bolts with nuts and screws etc. complete : 150x16 mm. (9.62.2)	7.00 Nos.	Per Nos.	Rs. 171.30 (142.05+20.59%)	Rs. 1,199.10
24.	Providing and fixing ISI marked oxidised M.S. tower bolt black finish, (Barrel type) with necessary screws etc. complete : 250x10 mm. (9.63.1)	12.00 Nos.	Per Nos.	Rs. 77.20 (64.00+20.59%)	Rs. 926.40
25.	Providing and fixing ISI marked oxidised M.S. handles conforming to IS:4992 with necessary screws etc. complete : 125 mm. (9.66.1)	12.00 Nos.	Per Nos.	Rs. 34.50 (28.60+20.59%)	Rs. 414.00
26.	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2 mm and	7.00 Sqm	Per Sqm	Rs. 6464.40 (5360.65+20.59%)	Rs. 45,250.80

	braced with flat iron diagonals 20x5 mm size, with top and bottom rail of T-iron 40x40x6 mm, with 40 mm dia steel pulleys, complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer. (10.3)				
27.	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer. Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size). (10.13.1)	65.00 Kg	Per Kg	Rs. 89.30 (74.05+20.59%)	Rs. 5,804.50
28.	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works. (10.25.2)	400.00 Kg	Per Kg	Rs. 103.65 (85.95+20.59%)	Rs. 41,460.00
29.	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-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.). (10.28)	100.00 Kg	Per Kg	Rs. 569.65 (472.40+20.59%)	Rs. 56,965.00
30.	Providing and fixing 1st 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. (11.36)	70.00 Sqm	Per Sqm	Rs. 898.15 (744.80+20.59%)	Rs. 62,870.50
31.	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), including pointing the joints with white cement and matching pigment etc, complete.	7.00 Sqm	Per Sqm	Rs. 830.10 (688.35+20.59%)	Rs. 5,810.70

	(11.37)				
32.	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : 25 mm thick. (11.26.1)	6.00 Sqm	Per Sqm	Rs. 1396.55 (1158.10+20.59%)	Rs. 8,379.30
33.	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete. (11.27)	3.00 Sqm	Per Sqm	Rs. 1493.15 (1238.20+20.59%)	Rs. 4,479.45
34.	Providing and fixing glazed screen printed border tile 75 mm wide having thickness 5 mm, of approved quality & make, in all shades, design and prints, in dado, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3 Kg/Sqm including pointing with white cement mixed with pigment of matching shade, all complete as approved by Engineer-in-charge. (11.46A)	16.00 RM	Per RM	Rs. 159.05 (131.90+20.59%)	Rs. 2,544.80
35.	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 110 mm diameter. (12.41.2)	50.00 RM	Per RM	Rs. 285.00 (236.35+20.59%)	Rs. 14,250.00
36.	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion. Bend 87.5° 110 mm bend. (12.42.5.2)	12.00 Nos.	Per Nos.	Rs. 136.40 (113.10+20.59%)	Rs. 1,636.80
37.	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion. Shoe (Plain) 110 mm Shoe. (12.42.6.2)	12.00 Nos.	Per Nos.	Rs. 118.20 (98.00+20.59%)	Rs. 1,418.40
38.	12 mm cement plaster of mix : 1:6 (1 cement: 6 fine sand). (13.1.2)	260.00 Sqm	Per Sqm	Rs. 193.35 (160.35+20.59%)	Rs. 50,271.00
39.	15 mm cement plaster on the rough side of single or half brick wall of mix : 1:6 (1 cement: 6 fine sand). (13.2.2)	260.00 Sqm	Per Sqm	Rs. 223.35 (185.20+20.59%)	Rs. 58,071.00
40.	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade : New work (two or more coats) over and including water tinnable priming coat with cement primer. (13.41.1)	400.00 Sqm	Per Sqm	Rs. 113.00 (93.70+20.59%)	Rs. 45,200.00
41.	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required	620.00 Sqm	Per Sqm	Rs. 116.75 (96.80+20.59%)	Rs. 72,385.00

	shade : New work (Two or more coats applied @ 1.43 ltr/ 10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm). (13.47.1)				
42.	Applying priming coat : With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood). (13.50.1)	150.00 Sqm	Per Sqm	Rs. 42.15 (34.95+20.59%)	Rs. 6,322.50
43.	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade : Two or more coats on new work. (13.61.1)	150.00 Sqm	Per Sqm	Rs. 94.55 (78.40+20.59%)	Rs. 14,182.50
44.	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. (13.78)	52.00 Sqm	Per Sqm	Rs. 262.10 (217.35+20.59%)	Rs. 27,258.40
45.	6 mm plaster on cement concrete or reinforced cement concrete work with white cement based polymer modified self curing mortar of approved make as per the direction of Engineer-in-charge. (13.86)	60.00 Sqm	Per Sqm	Rs. 176.60 (146.45+20.59%)	Rs. 10,596.00
46.	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests. (17.1.1)	2.00 Nos.	Per Nos.	Rs. 4213.65 (3494.20+20.59%)	Rs. 8,427.30
47.	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required : W.C. pan with ISI marked white solid plastic seat and lid. (17.2.1)	2.00 Nos.	Per Nos.	Rs. 4122.60 (3418.70+20.59%)	Rs. 8,245.20
48.	Providing and fixing white vitreous china flat back half stall urinal of size 580x380x350 mm with white PVC automatic flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556, C.I. trap with outlet grating and other couplings in C.P. brass, including painting of fittings and cutting and making good the walls and floors wherever required : Range of three half stall urinals with 10	1.00 Nos.	Per Nos.	Rs. 14102.90 (11694.90+20.59%)	Rs. 14,102.90

	litre P.V.C. automatic flushing cistern. (17.5.3)				
49.	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require: White Vitreous China Surgeon type wash basin of size 660x460 mm with single 15 mm C.P. brass pillar taps with elbow operated levers ISI marked. (17.7.9)	2.00 Nos.	Per Nos.	Rs. 3157.95 (2618.75+20.59%)	Rs. 6,315.90
50.	Providing and fixing white vitreous china pedestal for wash basin completely recessed at the back for the reception of pipes and fittings. (17.8)	2.00 Nos.	Per Nos.	Rs. 1176.05 (975.25+20.59%)	Rs. 2,352.10
51.	Providing and fixing 8 mm dia C.P./S.S. jet with flexible tube upto 1 metre long with S.S triangular plate to european type W.C. of quality and make as approved by Engineer-in-charge. (17.16A)	1.00 Nos.	Per Nos.	Rs. 307.25 (254.80+20.59%)	Rs. 307.25
52.	Providing and fixing CP Brass 32mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge. (17.22A)	2.00 Nos.	Per Nos.	Rs. 958.85 (795.15+20.59%)	Rs. 1,917.70
53.	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete. Semi rigid pipe 32 mm dia. (17.28.1.1)	2.00 Nos.	Per Nos.	Rs. 91.15 (75.60+20.59%)	Rs. 182.30
54.	Providing and fixing 100 mm sand cast Iron grating for gully trap. (17.29)	2.00 Nos.	Per Nos.	Rs. 35.25 (29.25+20.59%)	Rs. 70.50
55.	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing : Rectangular shape 1500x450 mm. (17.32.4)	2.00 Nos.	Per Nos.	Rs. 1595.55 (1323.10+20.59%)	Rs. 3,191.10
56.	Providing and fixing soil, waste and vent pipes : 100 mm dia Centrifugally cast (spun) iron socket & spigot (S&S) pipe as per IS: 3989. (17.35.1.2)	50.00 RM	Per RM	Rs. 1111.40 (921.65+20.59%)	Rs. 55,570.00
57.	Providing and fixing soil, waste and vent pipes : 75mm diameter : Centrifugally cast (spun) iron socketed pipe as per IS: 3989. (17.35.2.2)	38.00 RM	Per RM	Rs. 958.15 (794.55+20.59%)	Rs. 36,409.70
58.	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete. 100 mm dia Sand cast iron S&S as per IS - 1729. (17.38.1.1)	2.00 Nos.	Per Nos.	Rs. 410.90 (340.75+20.59%)	Rs. 821.80
59.	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete. 75 mm dia Sand cast iron S&S as per IS - 1729. (17.38.2.1)	4.00 Nos.	Per Nos.	Rs. 327.30 (271.40+20.59%)	Rs. 1,309.20
60.	Providing and fixing plain bend of required degree. 100 mm dia Sand cast iron S&S as per IS - 1729. (17.39.1.1)	2.00 Nos.	Per Nos.	Rs. 523.00 (433.70+20.59%)	Rs. 1,046.00
61.	Providing and fixing plain bend of required degree. 75 mm dia Sand cast iron S&S as per IS - 1729. (17.39.2.1)	4.00 Nos.	Per Nos.	Rs. 264.25 (219.15+20.59%)	Rs. 1,057.00
62.	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete. 100x100x100 mm Sand cast iron S&S	2.00 Nos.	Per Nos.	Rs. 584.60 (484.80+20.59%)	Rs. 1,169.20

	as per IS - 1729. (17.43.1.1)				
63.	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete. 75x75x75 mm Sand cast iron S&S as per IS - 1729. (17.43.2.1)	3.00 Nos.	Per Nos.	Rs. 436.55 (362.00+20.59%)	Rs. 1,309.65
64.	Providing and fixing terminal guard : 100 mm Sand cast iron S&S as per IS - 1729. (17.56.1.1)	2.00 Nos.	Per Nos.	Rs. 298.90 (247.85+20.59%)	Rs. 597.80
65.	Fixing white vitreous china flat back half stall urinal : Range of two half stall urinals with 5 litre P.V.C. automatic flushing cistern. (17.5.2)	2.00 Nos.	Per Nos.	Rs. 11236.10 (9317.60+20.59%)	Rs. 22,472.20
66.	Providing and fixing collar : 100 mm Sand cast iron S&S as per IS - 1729. (17.57.1.1)	4.00 Nos.	Per Nos.	Rs. 226.05 (187.45+20.59%)	Rs. 904.20
67.	Providing and fixing collar : 75 mm Sand cast iron S&S as per IS - 1729. (17.57.2.1)	4.00 Nos.	Per Nos.	Rs. 155.00 (128.55+20.59%)	Rs. 620.00
68.	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of diameter : 100 mm. (17.58.1)	25.00 Nos.	Per Nos.	Rs. 373.75 (309.95+20.59%)	Rs. 9,343.75
69.	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of diameter : 75 mm. (17.58.2)	25.00 Nos.	Per Nos.	Rs. 317.90 (263.60+20.59%)	Rs. 7,947.50
70.	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, i/c cutting and making good the walls etc.15 mm dia nominal bore. (18.10.1)	30.00 RM	Per RM	Rs. 224.80 (186.40+20.59%)	Rs. 6,744.00
71.	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, i/c cutting and making good the walls etc. 20 mm dia nominal bore. (18.10.2)	40.00 RM	Per RM	Rs. 270.30 (224.15+20.59%)	Rs. 10,812.00
72.	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc. 50 mm dia nominal bore. (18.12.6)	30.00 RM	Per RM	Rs.413.25 (342.70+20.59%)	Rs. 12,397.50
73.	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete : 50 to 80 mm nominal bore. (18.13.2)	1.00 Nos.	Per Nos.	Rs. 930.00 (771.20+20.59%)	Rs. 930.00
74.	Providing and fixing brass bib cock of approved quality : 15 mm nominal bore. (18.15.1)	4.00 Nos.	Per Nos.	Rs. 313.65 (260.10+20.59%)	Rs.1,254.60
75.	Providing and fixing brass stop cock of approved quality : 15 mm nominal bore. (18.16.1)	4.00 Nos.	Per Nos.	Rs. 313.65 (260.10+20.59%)	Rs. 1,254.60
76.	Providing and fixing gun metal gate valve with C.I wheel of approved quality (screwed end) : 20 mm nominal bore. (18.17.1A)	2.00 Nos.	Per Nos.	Rs. 478.20 (396.55+20.59%)	Rs. 956.40
77.	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete : 20 mm nominal bore. (18.18.2)	2.00 Nos.	Per Nos.	Rs. 394.40 (327.05+20.59%)	Rs. 788.80
78.	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) : 50 mm nominal bore. (18.17.4)	1.00 Nos.	Per Nos.	Rs. 904.30 (749.90+20.59%)	Rs. 904.30
79.	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. (18.48A)	1000.00 Ltr.	Per Ltr.	Rs. 8.75 (7.25+20.59%)	Rs. 8,750.00

80.	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete : 100 mm diameter. (19.1.1)	10.00 RM	Per RM	Rs. 260.80 (216.25+20.59%)	Rs. 2,608.00
81.	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design : Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5. (19.7.1.1)	2.00 Nos.	Per Nos.	Rs. 10411.85 (8634.10+20.59%)	Rs. 20,823.70
82.	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design. With common burnt clay F.P.S. (non modular) bricks of class designation 7.5. (19.32.1)	1.00 Nos.	Per Nos.	Rs. 24939.90 (20681.55+20.59%)	Rs. 24,939.90
83.	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) : For fixed portion Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15). (21.1.1.1)	50.00 Kg	Per Kg	Rs. 428.35 (355.20+20.59%)	Rs. 21,417.50
84.	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/	30.00 Kg	Per Kg	Rs. 500.50 (415.05+20.59%)	Rs. 15,015.00

	appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) : For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15). (21.1.2.1)				
85.	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or gazed wood particle board confirming to I:S 12823 graded-II type-II in penelling fixed in aluminium door's window shutters and partition frames with C.P brass/stainless steel screw's etc. complete as per architectural drawing and direction of engineer I/C. prelaminated particle board with decorative lamination on one balancing lamination on other side. (Analysis)	2.00 Sqm	Per Sqm	Rs. 820.00	Rs. 1,640.00
86.	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. With float glass panes of 5.50 mm thickness. (21.3.2)	2.00 Sqm	Per Sqm	Rs. 1210.65 (1003.95+20.59%)	Rs. 2,421.30
87.	Providing and fixing double action hydraulic floor spring 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. With stainless steel cover plate minimum 1.25 mm thickness. (21.4.1)	1.00 Nos.	Per Nos.	Rs. 2477.40 (2054.40+20.59%)	Rs. 2,477.40
88.	Providing and fixing aluminium tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction	2.00 Nos.	Per Nos.	Rs. 559.25 (463.75+20.59%)	Rs. 1,118.50

	of Engineer-in-Charge. Anodized (AC 15) aluminium tubular handle bar. (21.12.1)				
89.	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete. (21.13)	1.00 Nos.	Per Nos.	Rs. 432.90 (359.00+20.59%)	Rs. 432.90
90.	Providing and fixing ISI marked aluminium butt hinges anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade with necessary screws etc. complete: 100x63x4 mm. (9.95.4)	8.00 Nos.	Per Nos.	Rs. 95.80 (79.45+20.59%)	Rs. 766.40
91.	Providing, hoisting and fixing up to floor five level precast reinforced cement concrete work in string courses, bands, copings, bed plates, anchor blocks, plain window sills and the like, including the cost of required centering, shuttering but excluding cost of reinforcement, with 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size). (5.12)	1.20 Cum	Per Cum	Rs. 8407.65 (6972.10+20.59%)	Rs. 10,089.18
92.	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete. 40 mm thick with 20 mm nominal size stone aggregate. (11.3)	115.00 Sqm	Per Sqm	Rs. 437.25 (362.60+20.59%)	Rs. 50,283.75
93.	Centering and shuttering including strutting, propping etc. and removal of form for Weather shade, Chajjas, corbels etc., including edges. (5.9.19)	15.00 Sqm	Per Sqm	Rs. 629.20 (521.75+20.59%)	Rs. 9,438.00
94.	Centering and shuttering including strutting propping etc. and removal of from for all heights Columns, Pillars, Piers, Abutments, Posts and Struts. (5.9.6)	151.00 Sqm	Per Sqm	Rs. 564.20 (467.85+20.59%)	Rs. 85,194.20
95.	Centering and shuttering including strutting propping etc. and removal of from for all heights Small surfaces such as cantilever ends, brackets and ends of steps, caps and bases to pilasters and columns and the like. (5.9.18)	0.50 Sqm	Per Sqm	Rs. 622.05 (515.85+20.59%)	Rs. 311.03
96.	for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured). Suspended floors, roofs, landing, beams and balconies (Plan area to be measured). (5.11)	110.00 Sqm	Per Sqm	Rs. 456.55 (378.60+20.59%)	Rs. 50,220.50
97.	Providing and fixing glass strips in joints of terrazo/ cement concrete floors. 40 mm wide and 4 mm thick. (11.13)	170.00 RM	Per RM	Rs. 63.30 (52.50+20.59%)	Rs. 10,761.00
98.	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level. Cement mortar 1:3 (1 cement : 3 coarse sand). (Analysis)	11.00 Sqm	Per Sqm	Rs. 920.00	Rs. 10,120.00

99.	Providing & fixing fly proof wire gauze to windows, clerestory windows & doors with M.S. Flat 15x3 mm and nuts & bolts complete. Galvanised M.S. Wire gauze with 0.63 mm dia wire and 1.4 mm aperture on both sides. (10.29.1)	35.00 Sqm	Per Sqm	Rs. 656.55 (544.45+20.59%)	Rs. 22,979.25
100.	Providing & fixing glass panes with putty and glazing clips in steel doors, windows, clerestory windows, all complete with : 4.0 mm thick glass panes. (10.30.1)	35.00 Sqm	Per Sqm	Rs. 830.95 (689.05+20.59%)	Rs. 29,083.25
101.	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement. 18 mm thick. (11.6)	5.00 Sqm	Per Sqm	Rs. 422.15 (350.05+20.59%)	Rs. 2,110.75
102.	Providing and fixing M.S. angle 50x50x5 mm to act as nosing with lugs of M.S. flat 10x5 mm, 10 cm long, forked at end 60cm apart (minimum three lugs to be provided), including necessary welding and applying a priming coat of approved primer on exposed surface etc. complete. (11.35)	162.00 Kg	Per Kg	Rs. 103.25 (85.60+20.59%)	Rs. 16,726.50
103.	Diluting and injecting chemical emulsion (Chlorpyrifos/Lindane E.C. 20% with 1% concentration), at the rate of one litre per hole at 300 mm c/c to all the horizontal and vertical surfaces of the excavations made for the foundation of the building, soil under floors, apron, back fill material and along all the faces of the walls for PRE-CONSTRUCTIONAL anti-termite treatment (including the cost of chemical emulsion) as per IS : 6313 Part-III. (Plinth area of building shall be measured for payment). (26.2) (As per PWD schedule effective from 16/05/2014)	121.00 Sqm	Per Sqm	Rs. 273.30	Rs. 33,069.30
104.	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. (10.2)	270.00 Kg	Per Kg	Rs. 81.50 (67.60+20.59%)	Rs. 22,005.00
105.	Providing corrugated G.S. sheet roofing including vertical/ curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. (12.1.3)	50.00 Sqm	Per Sqm	Rs. 844.80 (700.55+20.59%)	Rs. 42,240.00
106.	Extra for providing and fixing wind ties of 40x6 mm flat iron section. (12.11)	40.00 RM	Per RM	Rs. 124.55 (103.30+20.59%)	Rs. 4,982.00
107.	Painting top of roofs with bitumen of approved quality at 17kg per 10 sqm impregnated with a coat of coarse sand at 60 cudm per 10 sqm including cleaning the slab surface with brushes	150.00 Sqm	Per Sqm	Rs. 123.60 (102.50+20.59%)	Rs. 18,540.00

	and finally with a piece of cloth lightly soaked in kerosene oil complete. With residual type petroleum bitumen of penetration 80/100. (12.15)				
108.	Providing and laying three courses water proofing treatment with bitumen felt over roofs consisting of first and third courses of blown bitumen 85/25 or 90/15 conforming to IS : 702 applied hot @ 1.45 Kg per square meter of area for each course, second course of roofing felt type 3 grade-I (hessian based self finished bitumen felt) and including preparation of surface but excluding grading complete with bitumen felt (hessian base) type 3 grade I conforming to IS : 1322. (22.8)-(22.13.1) (312.00-11.95=300.05)	55.00 Sqm	Per Sqm	Rs. 361.85 (300.05+20.59%)	Rs. 19,901.75
109.	Providing and fixing factory made ISI marked steel glazed doors, windows and ventilators, side /top /centre hung, with beading and all members such as F7D, F4B, K11 B and K12 B etc. complete of standard rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and riveted, including providing and fixing of hinges, pivots, including priming coat of approved steel primer, but excluding the cost of other fittings, complete all as per approved design, (sectional weight of only steel members shall be measured for payment). Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size). (10.11.1)	500.00 Kg	Per Kg	Rs. 137.00 (113.60+20.59%)	Rs. 68,500.00
110.	Providing and fixing ISI marked oxidised M.S. tower bolt black finish, (Barrel type) with necessary screws etc. complete : 200x10 mm. (9.63.2)	28.00 Nos.	Per Nos.	Rs. 61.55 (51.05+20.59%)	Rs. 1,723.00
				TOTAL	Rs. 44,99,601.86
				SAY	Rs. 45,00,000.00

Bill of Quantity

Name of Work: Electification of Proposed Extension Of Building for use of Class Rooms/Labs under TEQIP-PH III At N.C.T.

Sl. No	S.I No.	Item	Qty	Unit	Rate	Amount
1.	1.10.1	Wiring for light point with 1.5 sq.mm FRLS PVC insulated copper conductor singlecore cable in surface / recessed medium class PVC conduit,with modular switch, modular plate, suitable GI box and earthingthe point with 1.5 sq.mm FRLS PVC insulated copper conductorsingle core cable etc. as required.. Group A	25Nos.	Each	641.92	16048.00
2.	1.10.1	Wiring for fan point pointwith 1.5 sq.mm FRLS PVC insulated copper conductor singlecore cable in surface / recessed medium class PVC conduit,with modular switch, modular plate, suitable GI box and earthingthe point with 1.5 sq.mm FRLS PVC insulated copper conductorsingle core cable etc. as required.. Group A	09Nos.	Each	641.92	5777.28
3.	1.10.1	Wiring for exhaust fan point with 1.5 sq.mm FRLS PVC insulated copper conductor singlecore cable in surface / recessed medium class PVC conduit,with modular switch, modular plate, suitable GI box and earthingthe point with 1.5 sq.mm FRLS PVC insulated copper conductorsingle core cable etc. as required.. Group A	01Nos.	Each	641.92	641.92
4.	1.11.	Wiring for twin control light point with 1.5 sq.mm FRLS PVCinsulated copper conductor single core cable in surface /recessed medium class PVC conduit, 2 way modular switch,modular plate, suitable GI box and earthing the point with 1.5sq.mm FRLS PVC insulated copper conductor single core cableetc. as required.	01 Nos.	Each	947.66	947.66
5.		Wiring for circuit/ sub main wiring along with earth wire with the following sizes of PVC insulated copper conductor, single core cable in surface/ recessed PVC conduit as required.				
	1.14.1	2 x 1.5 sq. mm + 1 x 1.5 sq. mm earth wire	85 RM	RM	131.19	11151.15
	1.14.2	2 x 2.5 sq. mm + 1 x 2.5 sq. mm earth wire	30 RM	RM	160.48	4814.40
	1.14.3	2x 4 sq. mm + 1 x 4 sq. mm earth wire	30 RM	RM	196.79	5903.70
	1.14.4	2x 6sq. mm + 1 x 6 sq. mm earth wire	05 RM	RM	265.90	1329.50
	1.14.8	4 x4 sq. mm + 2 x 4 sq. mm earth wire	10RM	RM	329.16	3291.60
	1.14.9	4x 6 sq. mm + 2 x 6 sq. mm earth wire	20 RM	RM	462.70	9254.00
	1.14.11	4x 16sq. mm + 2x 6 sq. mm earth wire	10 RM	RM	858.63	8586.30
6		Supplying and drawing following sizes of FR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
	1.17.3	3 x 1.5 sq. mm	05 RM	RM	58.57	292.85
	1.17.12	3 x 2.5 sq. mm	05 RM	RM	87.85	439.25
	1.17.21	3 x 4 sq. mm	05RM	RM	130.02	650.10
	1.17.30	3 x 6 sq. mm	05RM	RM	189.76	948.80
7.	1.31	Supplying and fixing suitable size GI box with modular plateand cover in front on surface or in recess, including providingand fixing 3 pin 5/6 A modular socket outlet and 5/6 A modularswitch, connections etc. as required	05 Nos.	Each	366.64	1833.20
8.	1.32	Supplying and fixing suitable size GI box with modular plateand cover in front on surface or in recess, including providingand fixing 6 pin 5/6 A & 15/16 A modular socket outlet and15/16 A modular switch, connections etc. as required.	05Nos.	Each	475.58	2377.90
09.	1.33	Supplying and fixing 3 pin, 5 amp. ceiling rose on the existing junction box/ wooden block including connection etc. as required	09Nos.	Each	53.88	484.92
10.	1.58	Supplying and fixing PVC batten/ angle holder including connections etc. as required.	01No.	Each	72.62	72.62

11.	2.4.1	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/ Isolator) 4 way (4 + 12), Double door	02 No	Each	2574.73	5149.46
12.	2.10.1	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. Single pole (173.00 +17.14%)	21 Nos.	Each	202.65	4255.65
13.	2.13.3	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required. 100 amps	02 No	Each	1006.23	2012.46
14.	2.18	Supplying and fixing 20 A, 240 V, SPN Industrial type socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 A, "C" curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	03 Nos.	Each	1147.97	3443.91
15.	1.24.1 1.24.4 1.24.3 1.24.5	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required. 5/6 A switch 3 pin 5/6 A socket outlet 5/6 A switch 3 pin 5/6 A socket outlet	08 Nos 08 Nos 05 Nos 05 Nos	Each Each Each Each	98.39 94.88 133.53 179.22	787.12 759.04 667.65 896.10
16.	1.25	Supplying and fixing two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. As required.	09 nos.	Each	337.36	3036.24
17.	12.38	Supplying and fixing of light class G.I. pipe of 80 mm dia. (nominal) 3 meter length along the pole for protection of underground cable as required	15 RM	RM	671.60	10074.00
18.	5101	Supplying & Laying of Aluminium conductor PVC insulated armoured served sheathed cable 1100 volts grade at a depth of 750 mm below ground level over a cushion of 75 mm thick sand around and protected with burnt bricks on sides and on top. On surface the cable run shall be fixed on MS clamps etc of suitable size or as directed by E/I complete in all respects. The armoring of the cable shall be properly connected with the earth conductor by clamps etc. (r)(i)- 120sqmm 3½ core size Cat. A	263 RM	RM	968.00	254584.00
19	5.4	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required (4327.00 +17.14%)	01 Nos.	Each	5068.64	5068.64
20.	5.9	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 meter below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50 mm) (85.00 +17.14%)	25 RM	RM	99.56	2489.00
21.	5107	S/F of palm or pin type copper tin plated cable socket (lugs) to the cable leads insulating with tape and making connections etc. complete in all respects as per directions of Engineer in charge. (g) 50 sqmm (h) 70 sqmm (j) 120 sqmm	06 Nos 06 Nos 12 Nos	Each Each Each	68.00 99.00 194.00	408.00 594.00 2328.00
22.	5110	Deduct in item No. 5101 to 5104 when cable is passed through GI/MS or Hume pipe in road crossing or along the wall. The cost of GI pipe Hume pipe is to be extra when and where required.	15 RM	RM	(-)50.00	(-) 750.00
23.	3223(i)	S/F of 40 Amp. (10KA) C Series SP MCB. Cat A	03 Nos.	Each	235.00	705.00

24.	-	S/F of factory wired LED Tube light fitting suitable for 1x18 watt LED Tube complete including tube etc. on surface Complete in all respect. (Make Havell's) Cat. No. fitting code-LHEWEBP5IN1W020	23 Nos.	Each	353.00	8119.00
25.	-	S/F of Following sizes change over switches fixed on existing fabricated angle iron bracket complete in all respect. 200 Amp/415 V FP	01 No	Each	17745.00	17745.00
26.	-	S/F of. LED recessed 36 Watt light (2'x2') Complete in all respects vide sanction no. 511687755260457 dt. 09-03-19 of sanction order (Make Crompton)	02Nos.	Each	2810.00	5620.00
27.	-	S/F of 200 Amp /415V TPN metal clad TPN CFS complete with HRC fuse on angle iron bracket grouted on wall complete in all respects. Cat. A (Havells /HPL or equivalent make)	01 Nos.	Each	15840.00	15840.00
					Total Rs.	418677.42

Conditions:

1. 05% Security will be with hold for Two years as per norm for guarantee period of two year.
2. 01% of work value as labour cess shall be deducted from the bill as per norm.
3. 01% of the work value as water charge shall be deducted as per norm.
4. 0.5% of work value as electric charge shall be deducted as per norm.
5. Contractor is required to deposit performance security as per norm at the time of Agreement.
6. Against SI. No. 1.32 the power plug 15 Amp to be provided with 6 pin with separate switch and socket.
7. Contractor is required to furnish the test certificate of the cable alongwith the cash memo/bill of authorized dealer.

J.E. (Elect.)

A.D.W.P. (Elect.)

I/We M/S _____ quoted by _____ % below / above in the entered in bill of quantity.

Contractor

SECTION-4

SPECIFICATION

FOR

CONSTRUCTION

OF

BUILDING

TECHNICAL SPECIFICATIONS

- 1- **General:**-All work shall be carried out as per latest P.W.D. detailed specification. The rates shall include all lead, lifts, carriages, supply of all materials, labour & T&P, including special T&P, local taxes, toll taxes and all other taxes which the contractor has to pay including incidental there to for proper completion of the work. The materials will be used by the contractor after due approval of Engineer-in-charge & shall conform to P.W.D detailed specification.
- 2- **Site of work**
 - 2.1- **Site Clearance & Site Development:**-The ground shall be leveled up & down so to accommodate the building by the contractor by bulldozer, loader or and by daily labour whichever is available as per direction of the Engineer-in-charge. After leveling, the entire site will be cleared, dressed and leveled having inward slope of 1:40 by the contractor concern. No extra payment shall be made for this work as this included in the overall rates. The cavity shall be filled as desired by the Engineer-in-charge with cement concrete with 4 cm gauge stone ballast approved sand & cement in the proportion of 12:6:1 properly pinned & vibrated through pin vibrator, complete as per direction of Engineer-in-charge.
 - 2.2- **Access to site & approach road :-** the contractor shall provide & maintain all approach roads require in connection with the construction of work at his own cost. No extra payment shall be admissible on this account.
 - 2.3- **Layout:-** The contractor shall make all necessary arrangement & make all reference marks, level pillars etc. required to mark its correct layout at site. No separate payment shall be made for marking layout & to construct reference & level pillar etc.
- 3- **Excavation in Foundation :-** The foundation trenches shall be dug out to the width & the depth as provided in the drawing & estimate or as directed by the Engineer-in-charge. In case firm soil may not be available at the prescribed depth, further digging shall be done as per instruction of the Engineer-in-charge. The foundation trenches shall be well rammed before laying concrete. The measurement of the excavation shall be as the area of the concrete for lowest footing multiplied by the depth of the foundation, notwithstanding that the contractor may find it more convenient to take out the excavation with sloping sides. The rates will cover filling of excavated earth in the space between the building & sides of the trenches, the surplus material not required for refilling, shall be removed & disposal off by the contractor as directed by the Engineer-in-charge. The contractor shall keep the site free from surplus materials to facilitate the inspecting officer for the inspection of the work. If the rainwater or other water finds its way into the trenches, it shall be drained out & foundation will be cleaned off water at contractor's own expenses. The work shall be strictly carried out in accordance with the detailed P.W.D. specification No.3 in part I Building 1957 addition.
- 4- **Sand Filling in Plinth & Under Floors :-** The Haldwani coarse sand shall be filled when & where specified into the foundation or as directed by the Engineer-in-charge. The layer shall not be less than 15 cm thick which shall be thoroughly be rammed & watered. It should be free from dust, organic & other foreign matters, under the floors & shall be filled in a layer of 15 cm thick duly rammed & properly watered. The rates shall include frequent curing of water for compaction the sand filling or as directed by the Engineer-in-charge. This shall be carried out in accordance with the P.W.D. detailed specification No. 7 the finish shall be smoothing with cement & Haldwani coarse sand mortar in 1:3 cement having thickness not less than 6 mm average. Necessary reinforcement shall provided as per drawing & design. The contractor's rate shall be inclusive of all centering & shuttering & all cost of materials, a labour, T&P, royalty, taxes required for proper completion of the work, excluding supply of reinforcement but including cost of binding wire, which is included in an overall rates. The work shall be carried out as per detailed P.W.D. specification No. 5.6.

- 5- **Chaukhats** :- The chaukhats of all doors shall be of 18 gauge pressed steel door frames size 100 mm x 40 mm and sal wood. For single rebate and 125 mm. x 40 mm. for double rebate with hold fasts 3 No. in each side.
- 6- **Windows & Ventilators** :- All the windows & ventilators shall be of "Z" section with at least 2 No's hold fasts in each side embedded in 1:1.5:3 cement concrete.
- 7- **Shutters**:- All the works shall be carried out as per detailed P.W.D. specifications up to date. Door fittings shall be made as per directions of Engineer-in-charge. The rates shall be inclusive of all materials, labour, T&P etc. & supply & fixing of stops cleats & adjustment of door complete as per directions of Engineer-in-charge, including adjustment & fixing of hinges, bolts, locks, handles, springs & all other fittings, if necessary but excluding their supply including painting of two coats of Black Japan on all iron fittings if necessary & including fixing the glasspans with putty & brades. The necessary screws, hinges & fittings shall be supplied free of cost by the department.
- a) **Doors** :- All shutters shall be made of 40 mm thick sitapur commercial ply or other approved ply or as directed by Engineer-in-charge until & unless specified.
- b) **Windows & Ventilators Shutters**:- It shall be of "fully glazed" with "Z" section frames ..
- 8- **M. S. Iron Work in Reinforcement**:- This shall be done in RCC or R.B. work such as in base of columns, footings, pillars, beams, band, lintels, sunshades, slabs & retaining walls where necessary as per detailed drawings & design supplied by the Engineer-in-charge. Vertical reinforcement also be provide due to seismic zone. The contractors rates shall be inclusive of all cost of materials, such as steel including wastages, overlaps etc. All the works shall be carried out as per detailed P. W.O. specification No. 89.
- 9- **Cement Concrete Floorings** :-
- 9.1 **Cement Concrete** :- Cement concrete of speci fi ed mix shall be used.
- 9.2 **Base Concrete** :-
- 9.2.1 Flooring shall be laid on base concrete where so provided. The base concrete shall be provided with the slopes required for the flooring. It consists of 1 part cement 6 part sand & 12 parts of aggregate & flooring shall be laid with in 3 days.
- 9.2.2 If the cement concrete flooring is to be laid directly on the RCC slab, the top surface of RCC slab shall cleaned & the laitance shall be removed & a coat of cement slurry at 2 kg of cement spread over an area of one sqm so as to get a good bond between the base & concrete floor.
- 9.3 **Thickness** :- The thickness of floor shall be as specified in the description of the item.
- 9.4 **Laying** :-
- 9.4.1 **Panels**:- Flooring of specified thickness shall be laid in the pattern including the border/ or as given in the drawings or as directed by the Engineer-in-charge. The border panels shall not exceed 450 mm in width & the joints in the border in line with panel joints. The panels shall be of uniform size & no dimension of a panel shall exceed 2 m & the area of a panel shall not be more than 2 sqm.
- 9.4.2 **Laying of flooring with strips** :- Cement concrete flooring shall be laid in one operation using 4 mm thick glass strip shall be fixed with their tops at proper level, giving required slopes.
- Concreting** :- Cement concrete shall be placed in the panels & be leveled with the help of straight edge & trowel & beaten with the "Thapy" or mason's trowal. The blows shall be fairly heavy in the beginning but as consolidation takes place, light & rapid strokes shall be given. The evenness shall be checked with straight edge & made true required slopes.
- 9.5 **Finishing** :-
- 9.5.1 The finishing of surface shall fallow immediately after the cessation of beating. The surface shall be left for some time, till moisture disappears from it or surplus water can be mopped up. Use of dry cement or cement & sand mixture sprinkled on the surface to stiffen the concrete or absorb excessive moisture shall not be permitted. Excessive trowelling shall be avoided.

- 9.5.2 Fresh cement shall be mixed with water to form a thick slurry & spread at the rate of 2 kg of cement over an area of one sqm of flooring while the flooring concrete is still green. The cement slurry shall then be properly processed & finished smooth.
- 9.5.3 The edges of sunk floors shall be finished & rounded with cement mortar 1:2 (1 cement: 2 coarse sand) & finished with a floating coat a neat cement.
- 9.5.4 The junctions of floor with wall plaster, dado or skirting shall be rounded off where so specified.
- 9.5.5 The men engaged on finishing operations shall be provided with raised wooden platform to sit on so as to prevent damage to new work.
- 9.6 **Curing** :- The curing shall be done for a minimum period of ten days. Curing shall not be commenced until the top layer has hardened. Covering with empty gunnies shall be avoided as the colour of the flooring is likely to be bleached due to the remnants of cement dust from the bags.

10- Glazed Tile Flooring :-

- 10.1 **White Glazed Tiles** :- The tiles shall be of approved make & shall generally conform to IS : 777. They shall be flat, & true to shape & free from blisters crazing, chips, welts, crawling or other imperfections detracting from their appearance. The tiles shall be tested as indicated in Appendix of IS : 777.

The tiles shall be square or rectangular of nominal size such as 150 x 150 mm, 100 x 100 mm, 100 x 200 mm or as directed by the Engineer-in-charge. The thickness shall be 5 mm, or 6 mm as specified. The length of all four sides shall be measured correct to 0.1 mm & average length breadth shall not vary more than ± 0.8 mm from specified dimension. Tolerance in thickness shall be ± 0.4 mm.

The top surface of the tiles shall be glazed & glaze shall be either glossy or matt as specified. The underside of the tiles shall not have glaze on more than 5% of the area in order that the tile may adhere properly to the base. The edges of the tiles shall be preferably free from glaze. However, any glaze if unavoidable, shall be permissible on only upto 50% of the surface area of the edges.

- 10.2 **Coloured Tiles** :- Only the glaze shall be coloured as specified. The sizes & specifications shall be the same as for the white glazed tiles.
- 10.3 **Decorative Tiles** :- The type & size of the decorative tiles shall be as follows:

i) **Decorated white back ground tiles** :-

The size of these tiles shall be 152 x 152 x 6 mm & / or 108 x 108 x 6 mm.

ii) **Decorated & having coloured background** :-

The sizes of the tiles shall be 152 x 152 x 6 mm &/or 108 x 108 x 6 mm.

11- Kota Stone in Risers of Steps, Skirting & Dado :-

- 11.1 **Kota Stone Slabs** :- The slabs shall be of selected quality, hard, sound, dense & homogeneous in texture free from cracks, decay, weathering & flaws. They shall be hand or machine cut to the requisite thickness. They shall be of the colour indicated in the drawings or as instructed by the Engineer-in-charge.

The slabs shall have the top (exposed) face polished before being brought to site, unless otherwise specified. The slabs shall conform to the size required. Before starting the work the contractor shall get the samples of slabs approved by the Engineer-in-charge.

- 11.2 **Dressing**:- Every slab shall be cut to the required size & shape & fine chisel dressed on the sides to the full depth so that a straight edge laid along the side of the stone shall be in full contact with it. The sides (edges) shall be table rubbed with coarse sand or machine rubbed before paving. All angles & edges of the slabs shall be true, square & free from chippings and the surface shall be true and plane.

The thickness of the slab after it is dressed shall be 20, 25, 30 or 40 mm as specified in the description of the item. Tolerance of ± 2 mm shall be allowed for the thickness. In respect of length and breadth of slabs tolerance of ± 5 mm for hand cut slabs and ± 2 mm for machine cut slabs shall be allowed.

11.3 Preparation of surface :- The joints shall be raked out to a depth of at least 15 mm in masonry walls. In case of concrete walls, the surface shall be hacked & roughened with wire brushes. The surface shall be cleaned thoroughly, washed with water & kept wet before skirting is commenced.

11.4 Laying :- The risers of steps and skirting shall be in grey or white cement admixed with or without pigment to match the shade of the stone, as specified in the description of the item, with the line of the slab at such a distance from the wall that the average width of the gap shall be 12 mm and at no place the width shall be less than 10 mm, if necessary, the slabs shall be held in position by temporary M.S. hooks fixed into the wall at suitable intervals. The skirting or riser face shall be checked for plane and plumb and corrected. The joints shall thus be left to harden then the rear of the skirting or riser slab shall be packed with cement mortar 1:3 (1 cement : 3 coarse sand) or other mix as specified in the description of the item. The fixing hooks shall be removed after the mortar filling the gap has acquired sufficient strength.

The joints shall be as fine as possible. The top line of skirting and risers shall be truly horizontal and joints truly vertical, except where otherwise indicated.

The risers and skirting slab shall be matched as shown in drawings or as instructed by the Engineer-in-charge.

11.5 Finishing :- For small areas or where circumstances so require, hand polishing may be permitted in lieu of machine polishing after laying. For hand polishing the following carborundum stones, shall be used:

First grinding	:	coarse grade stone (No. 60)
Second grinding	:	medium grade (No. 80)
Final grinding	:	fine grade (No. 120)

In all other respects, the process shall be similar as for machine polishing.

After the final polish, oxalic acid shall be dusted over the surface at the rate of 33 gm per square metre sprinkled with water and rubbed hard with a "namdah" block (pad of woolen rags). The following day the floor shall be wiped with a moist rag and dried with a soft cloth and finished clean.

12- Preparation of Surface & laying :- Base concrete or the RCC slab on which the tiles are to be laid shall be cleaned, wetted & mopped. The bedding for the tile shall be with cement mortar 1:3 (1 cement: 3 coarse sand) or as specified. The average thickness of the bedding shall be 10 mm while the thickness under any portion of the tiles shall not be less than 5 mm.

Mortar shall be spread, tamped & corrected to proper levels & allowed to harden sufficiently to offer a fairly rigid cushion for the tiles to be set & to enable the mason to place wooden plank across & squat on it.

Over this mortar bedding neat grey cement slurry of honey like consistency shall be spread at the rate of 3.3 kg of the cement per square metre over such an area as would accommodate about twenty tiles. Tiles shall be soaked in water washed clean & shall be fixed in this grout one after another, each tile gently being tapped with a wooden mallet till it is properly bedded and in level with the adjoining tiles. The joints shall be kept as thin as possible & in straight lines or to suit the required pattern.

The surface of the flooring during laying shall be frequently checked with a straight edge about 2 m long, so as to obtain a true surface with the required slope. Where full size tiles cannot be fixed these shall be cut (sawn) to the required & their edge rubbed smooth to ensure straight & true joints.

Tiles, which are fixed in the floor adjoining the wall, shall enter not less than 10 mm under the plaster, skirting or dado. After tiles have been laid surplus cement slurry shall be cleaned off.

13- Pointing and Finishing : - The joints shall be cleaned off the grey cement slurry with wire/coir brush or trowel to a depth of 2 nun to 3 nun and all dust and loose mortar removed. Joints shall then be flush pointed with white cement added with pigment if required to match the colour of tiles. The floor shall then be kept wet for 7 days. After curing, the surface shall be washed and finished clean. The finished floor shall not sound hollow when tapped with a wooden mallet.

14- Glazed Tiles in Skirting & Dado :- The tiles shall be of approved make & shall generally conform to IS: 777. The tiles shall be of earthenware covered by a glaze thoroughly matured & fitted to the body. The tiles shall be sound, true to shape, flat & free from flaws & other manufacturing defects affecting their utility.

The top surface of the tiles shall be glazed. The underside of the tiles shall not have glaze on more than 5 % of the area in order that the tile may adhere properly to the base. The edges of the tiles shall be free from glaze, however, any glaze if unavoidable shall be permissible on only upto 50% of the surface area of edges.

The glazed shall be free from welts, chips, craze, specks, crawlin, or other Imperfections detracting from the appearance when viewed from a distance of one metre. The glaze shall be either glossy or matt as specified. The glaze shall be white in colour except in the case of coloured tiles when colours shall be specified by the Engineer-in-charge. There may be more than one colour on a tile.

15- Railings (Stair Case) :- Hand rail shall be of 40 x 6 mm flat iron with 1½" dia pipe top as per drawing.

16- Finishing :-

A- Plaster:- All the plaster shall be done 12.00 nun thick in 1:6 cement & fine sand mortar except jambs of doors & windows which shall be done in 1:3 cement & fine sand mortar.

The plinth shall be plastered with 1:3 cement & fine sand mortar.

All ceiling of the buildings shall be finished with 1:2 cement & coarse sand mortar having the thickness not less than 6 nun (average).

B- Painting:- Painting shall be done on all doors & windows shutters with super lack or other approved high grade enamel or superior synthetic enamel two coats over one coat over one priming coat.

C- Water Proof cement paint :- All outer faces of the building shall be finished with water proof cement paint of approved make & quality with two coats to give an even shade.

D- White Wash :- All the ceilings of the buildings are to be finished with 3 coats white washing. In workshop buildings all the shops are to be white washed.

E- Distempering :- Inner portions of all the rooms of the buildings shall be finished with two coats dry distemper over one coat priming.

17- Rolling Shutters :- Rolling shutters shall be of approved make of size 80 x 125 mm gauge 1.25 nun cold rolled M. S. Laths interlocked throughout their entire length & joint together a end by end locks & mounted on specially designed pipe shaft with brackets side guides & arrangements for inside & outside locking with pull & push operation complete with top cover of 0.83 mm gauge sheet.

18- Concrete work :-

18.1 Material

a) **Brick :-** M 100 class brick shall be used in super structure.

b) **Cement:-** The cement shall be 1st class ordinary Portland cement conforming to I.S. 269 - 1976. Whose use may be permitted only in plain cement base concrete or in masonry work.

Storage of cement shall be done as per P. W.O. detailed specification. The cement shall be used in sequence as the consignment are received to avoid excessive deterioration in anyone

lot. The contractor shall report the Engineer-in-charge in writing the quantity of each consignment brought to the site godown. The set cement due to any reason will not be allowed to use in construction works.

- c) **Fine aggregate (Coarse sand) :-** Sand requiring use of mortar for plaster work shall conform IS 1542- 1977 & for masonry work shall conform to IS 2116-1980.
- d) **Coarse aggregate :-** These shall be of stone ballast and shall conform to IS 383.
- e) **Steel for Reinforcement :-** Mild steel reinforcement shall conform to the following IS specifications.
- f) Mild steel & medium tensile steel bars conforming to IS 432 (Part I).
Where directed, the reinforcing bars shall be given a cement wash before stacking to prevent scale and rust.
- i) **Water :-** Water used for both mixing and curing shall be free from injurious amount of deleterious materials, Potable water is generally considered satisfactory for mixing and curing concrete.

PH value of water shall generally be not less than 6 and when ever found necessary test shall be done as per IS 3025. Mixing and curing with sea/saline water shall not be permitted.

18.2 Storage of Material:- All material shall be stored as to prevent their deterioration or intrusion of foreign material and to ensure the preservation of their-quality and fitness for the work. Any material, which has deteriorated or has been damaged or is otherwise considered defective by the Engineer-in-charge shall not be used in the works.

18.3 Proportioning & Mixing :- Unless otherwise specified by Engineer-in-charge the concrete mix shall consist of the material in proportion as given in drawings. In proportioning concrete the quantity of both cement and aggregate shall be determined by weight, however the quantities of aggregate may be determined by volume in case of nominal mix and if allowed by Engineer-in-charge. Concrete shall be mixed in mechanical cement concrete mixer until a dense concrete of uniform colour and consistency is obtained, shall conform to IS 1791 - 1985.

The quantity of water used in concrete mixed for concrete work should be sufficient but not more than required to produce a dense concrete of adequate work properly grip or only reinforcement. Workability of concrete should be controlled by maintaining of water cement ratio that is found to give a concrete, which is just sufficiently wet to place compacted without difficulty with the means available.

The type of concrete as generally intended for various situations and their strength requirement are given below.

Table

Sl. No.	Grade	Compressive Strength of 15 cm. cube at 28 days after mixing (IS - 516 -1959)	General use
1	1 :5:10	-	Sub-concrete used foundation & below floors.
3	M -10 (1 :4:8)	100 kg/Sq.cm	Sub-concrete in foundation of heavy structures such as-bridge etc.
5	M -20 (1: 1.5:3)	200 kg/Sq.cm	In RCC columns, beam & slab of buildings.
6	M - 25 (1: 1.5:3) design mix	250 kg/Sq.cm	RCC members in fabricated members or as specified.

The mix proportions given above in brackets are normally adopted mixes where it is not considered practicable to use controlled concrete.

18.3.1 The mixing shall be done by mechanical mixture but in case mixing is to be done by hand due to any practical unavoidable reasons, the prior approval is to be obtained from Engineer-in-charge 10% extra cement has to be used than confide requirement in case of hand mixing is done.

18.3.2 **Placing of concrete** :- Concreting shall be commenced only after the Engineer-in-charge has inspected the centering, shuttering and reinforcement if any and approved the same. The concrete shall be deposited (and not dropped) in its final position.

It is to ensure that vertical drop is not more than 1.5 meter. It is necessary that the time between mixing and placing shall not exceed 20 minutes so that initial setting process is not interfered with, during cold weather, concreting shall not be done when the temperature falls below 4°C, the concreting shall also be protected against frost action & rainfall etc. by suitable coverings.

Concrete shall be deposited in horizontal layers to a compacted depth of not more than 450 mm. When internal vibrators are used and not more than 300 mm. in all other cases.

Concrete shall be thoroughly compacted by vibrations or other means during placing and worked around the reinforcement, tandems or duct formers, embedded fixtures and into comers of the formwork to produce a dense homogeneous void free mass having the required surface finish.

Mechanical vibrators used for compaction shall conform with IS 2505, IS 2506 IS 2514 & IS 4656 to prevent segregation, over vibration shall be avoided

18.3.3 **Curing**:- Curing & protection shall start immediately after the compaction of concrete to protect it from -

- 1- Pre-mature drying.
- 2- High internal thermal gradients.
- 3- Leaching out by rain & flowing water.
- 4- Rapid cooling during the first few days after placing.
- 5- Low temperature or frost.
- 6- Vibrations & impact, which may disturb the concrete & interfere with its bond to the reinforcement.

Exposed surface of concrete shall be kept continuously in a damp or wet condition by pounding or by covering with a layer of canvas and shall be kept constantly wet for a period of not less than seven days from the date of placing of concrete.

Over the foundation concrete, the masonry work may be started after 48 hours of its compaction but the curing of exposed surface of cement concrete shall be continued along with the masonry work for at least seven days & when cement concrete is used as base concrete for flooring, the flooring may be commenced before the curing period of base concrete is over but the curing of base concrete shall be continued along with top layer of flooring for a minimum period of 7 days.

18.3.4 **Finishing**:- Immediately after the removal of forms all exposed bars or bolts etc. shall be cut out and surface be finished with cement mortar. All this caused by firm joints, all cavities, holes & depressions, honey comb spots, broken edges or corners & other such defecates shall be thoroughly cleaned, saturated with water & carefully pointed and rendered true with mortar. Surface which has been such pointed shall be kept moist for period of 24 hours.

If rock pockets/honey comb in the opinion of the Engineer-in-charge are of such and extent or character as to affect the strength of the structure materially or to endanger the life of the steel reinforcement he may declare the concrete defective & require the removal & replacement of the portion of the structure effected.

19. Sub - Structure :-

19.1 **Base Concrete** :- The concrete in foundation shall be laid when desired depth and level of trenches has been reached and approved by Engineer-in-charge. At the time of laying the concrete

the foundation trenches shall be truly leveled & dried as far as possible.

The concrete shall be mixed, laid, rammed & cured as per specification mentioned above & in relevant codes. The mix shall be 1:5:10 (1 part of cement, 5 part of fine aggregate (coarse sand of B.M. 2.2 to 3.2) & 10 parts of coarse aggregate (40 mm size stone ballast)).

19.2 R.C.R. Masonry in Foundation :-

Material :-

- 19.2.1 Stone :-** It shall be hard sound free from cracks, decay and weathering and shall be freshly quarried from an approved quarry. Stone with round surface shall not be used. The stone when immersed in water for 24 hours shall not absorb water by more than 5% of their dry weight when tested in accordance with IS 1124 - 1990 & its LAV shall not be more than 50% when tested according to IS 2360 - 1963.
- 19.2.2. Dressing of Stones:-** Face stone shall be hammer dressed on all beds and joints as to give them approximately rectangular shape. These shall be square on all joints and beds. The bed joints shall be chiseled drafted for at least 80 mm back from the face & for at least 40 mm for the side joints. No portion of the dressed stone surface shall show a depth of gap more than 6 mm from straight edge placed on it. In general dressing of stone shall be as confirming the provisions laid in IS 1129 - 1993.
- 19.2.3. Hearting Stone:-** The hearting or interior filling of the wall shall consist of flat bedded stone. The use of chips shall be restricted to the filling or inter-sties between the adjacent stones in hearting and these shall not exceed 10% of the quantity of masonry and it is to be ensured that no hollow spaces are left anywhere in the masonry.
- 19.2.4. Bond Stone :-** Through bond stones shall be provided in masonry up to 600 mm thickness of wall & in case of above 600 mm thickness, a set of two or more bond stones over lapping each other at least 150 mm shall be provided in a line from face to back. Bond stones shall be provided at 1.5 meter to 1.8 meter apart clear in every course. Bell shaped bond stones or header shall not be used. P.C.C. pre cast blocks of 150 mm x 150 mm size to the length of wall thickness can also be used as bond stones.
- 19.2.5. Face Stone :-** Face stone shall tail into the work for not less than the height & at least one third of stones shall tail into the work for a length not less than twice their height. These shall be laid header & stretcher alternatively.
- 19.2.6. Laying :-** These stones shall be laid on horizontal layer in course and all vertical joint shall be truly vertical. The quoin stones shall be laid square on their beds, which shall be rough chisel, dressed to a depth of at least 100 mm.
- Stones shall be sufficiently wetted before laying to prevent absorption of water from mortar. The bed, which is to receive the stone shall be cleaned, wetted & covered with a layer of fresh cement sand mortar of 1:4 ratio. All stones shall be laid full in mortar both in beds in vertical joints and settled carefully in place.
- 19.2.7. Joints:-** The face joints shall not be more than 10 mm thick but shall be sufficiently thick to prevent stone to stone contact and shall be completely filled with mortar.
- 19.2.8. Pointing :-** Pointing if specified shall be carried out in cement sand mortar not leaner than 1:3 & it shall conform to relevant IS code provisions or PWD detailed specifications.
- 19.2.9. Curing:-** Green work shall be protected from rains by suitable covering. The top of masonry work shall be left flooded with water at the close of day and curing shall be started as soon as the mortar used finishing has hardened sufficiently and shall be continued for a minimum period of seven days.
- 19.2.10. Weep Holes :-** In case of retaining/breast walls weep holes as shown in drawing or directed by Engineer-in-charge shall be provided in the masonry. Weep holes shall be 80 mm wide & 150 mm high & shall extend through the full width of wall with a slope 1 to 20 towards drain face. The spacing of weep holes shall be generally 1 meter in either direction.

19.2.11. Dry rubble stone masonry :- In case of retaining wall breast wall R.R. dry stone masonry shall be provided conforming the above R.R. masonry (W/coarsed) as above except that-

- 1- The masonry shall be dry and without mortar.
- 2- The space between larger stones shall be filled with spells as tightly as possible.
- 3- The foundation shall be excavated at right angle to the batter face and shall not horizontal. The beds of the stones shall be laid at right angle to the face batter.

20- Reinforced Cement Concrete in Foundation & in Super Structure :-

20.1.1 For RCC work lowest grade for foundation & slab it shall be permitted as M- 20 (1:1.5:3). Its proportioning shall be done either as design mix concrete or nominal mix concrete as may be mentioned in drawing & bill of quantities.

The size of coarse aggregate for R.C.C. nominally is adopted as 20 mm and larger size up to 31.5 mm may be used in special case where there is no restriction to flow of concrete. For smaller size 10 mm to 12.5 mm may also used where it is specified in the drawings.

20.1.2 Proportioning of concrete mix shall be as either nominal mix or as design mix basis. Nominal mix concrete may be used for grade M -15 & M - 20 & not for any higher grades. Proportion for nominal mix concrete are as per table below-

Grade of concrete	Total quantity (kg) of dry aggregate by mass per 50 kg of cement to be taken as the sum of individual masses of fine & coarse aggregate, Kg. max	Proportion of fine aggregate to coarse aggregate (by mass)	Quantity of water per 50 kg of cement, Max
M ₁₅	330	Generally 1:2 but subject to an upper limit of 1: 1.5 & a lower limit of 1:2.5	32
M ₂₀	250		30

Design mix concrete :- It shall be done as per IS 10262 (Recommended guide lines for mix design).

20.1.3 Admixture :- Engineer-in-charge may permit the use of approved admixture conformity to IS : 6925 for improving special characteristics.

20.1.4 Mixing of concrete :- For all works concrete shall be mixed in a mechanical mixer as specified above in para 4.3.1.

20.1.5 Form work:- Form work for R.C.C. shall be constructed of metal or timber suitably lined and substantial and rigid construction true to shape and dimension shown in drawings. Where timber is used it shall be seasoned, free from loose knots, projecting nails, split or other defect that may affect the surface of C.C.

Form shall be mortar tight and shall be made sufficiently rigid by the use of ties and bracing etc. to prevent any displacement or sagging between support. These shall be strong enough to with stand all pressure, ramming and vibration etc. without any deflection from the prescribed lines occurring during and after placing the concrete.

The inside surface of form shall except in case of permanent form work or where otherwise agreed to by the Engineer-in-charge, be coated with an approved material to prevent adhesion of concrete to the form work. Release agents shall be applied strictly in accordance with manufacturer instructions & shall not be allowed to come in contact with any reinforcement.

Contractor shall give the Engineer-in-charge due notice in writing before placing any concrete in the form work to permit him to inspect & accept the form work and reinforcement placed in it.

20.1.6 Removal of form work :- The vertical form of beam, column & wall may be removed after two days, but the bottom & the props of beam may be removed after 21 days. All form work shall be

removed without causing any damage to the concrete. Centering shall be gradually & uniformly lowered in such a manner as to avoid any shock or vibrations. Support shall be removed in such a manner as to permit the concrete to take stresses due to its own weight uniformly and gradually.

The Engineer-in-charge shall be informed in advance by the contractor of his intention to strike any form work.

20.2.1 Bending & Placing of Reinforcement:- Reinforcement bars conform accurately to the dimensions given on the drawing. Bars shall be bent cold to the specified shape & dimensions & then these shall be placed accurately in exact position as shown in the drawings. These shall be securely held in position by annealed binding wire not less than 1 mm in size & conforming to IS 280. Stays or metal chairs, spacers, at sufficiently close intervals be also provided to keep the bars in position. Bars will not be allowed to sag between supports nor displaced during concreting or any other operation over the works.

20.2.2 Welding of Bars:- Welding of mild steel reinforcement bars conforming to IS 432 shall be permitted.

Where permitted or specified in the drawing, joints of reinforcement bars shall be butt welded so as to transmit their full strength. Welded joints shall preferably be located at points where steel will not be subject to more than 75% of its maximum permissible stresses and joints so staggered that any one section not more than 20% of the bars are welded. The MS electrode used for welding shall conform to IS : 814 & only electric arc welding is acceptable.

20.2.3 Transporting, Placing, Compaction, Curing & Finishing :- These shall be in accordance already specified above in para 4.3.2. to 4.3.5.

20.2.4 Construction Joint :- Concrete shall be carried out continuously up to construction joints, the position & details of which shall be as shown on approved drawings or as directed by Engineer-in-charge. Such joints shall, however, be kept to the minimum number.

20.2.5 Testing:- Cube tests for ascertaining the quality of mix & concrete strength shall be done frequently at site at the cost of contractor, as deemed necessary by the Engineer-in-charge. Similarly other material tests regarding its quality can also be done at site/or laboratory before their approval by Engineer-in-charge or his representative for which the expenses if any shall be borne by the contractor.

NOTE :- Wherever there is any discrepancy between the above specification and P.W.D. specification the later will be followed.

Signature of Contractor

Officer Issuing
Tender

Officer Opening
Tender

Officer Recommending
Tender

Officer Accepting
Tender

G.P.W.
Form - 9

G.P.W. No.-09
(Chapter VII-Para 371)

GENERAL CONDITIONS OF CONTRACT:-

1. The contract means the documents forming the tender and acceptance thereof and the formal agreement executed between the G.B. Pant University and the Contractor together with the documents referred to therein 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 another.
2. In the contract the following expression shall, unless the context otherwise requires, have the meanings herewith respectively assigned to them.
 - (a) The "Works" or work or work shall unless there be something either in the subject or context repugnant to such construction, shall 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.
 - (b) The "Site shall mean the land and/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.
 - (c) The, "Contractor" shall mean the individual or firm or company whether incorporated or not undertaking the works and shall include the legal personal representatives of such individual or the persons composing such firm or company or the successors of such firm or company and the permitted assign of such individual or firm or company.
 - (d) The 'Vice-Chancellor' shall mean the Vice-Chancellor of the G.B. Pant University, Pantnagar, his successor or assigns.
 - (e) The 'Engineer-in-charge' shall mean the Assistant Director, Works and Plants, as the case may be, who shall supervise and be in-charge of the work.
 - (f) The 'University' shall mean the G.B. Pant University, Pantnagar.
 - (g) The 'Director' Director, Works and Plants, G.B. Pant University, Pantnagar.
 - (h) The 'Estimated cost' shall mean the cost shall mean the cost of the work or works as estimated on the basis of tendered rates or rates agreed to between the contract.
 - (i) The 'Department' shall mean the Department of Works and Plants, Pantnagar words importing the Singular number include plural numbers and vice-versa.

SECURITY DEPOSIT

CLA USE 1. The Contractor has to deposit

A- Performance Security-

- (i) **Percentage Rate Contracts** - The performance Security shall be provided by the Contractor to the Employer not later than the date specified in the letter of acceptance and shall be issued for an amount of 5% of the Contract Price or the estimate cost of the work, whichever is higher, in the form acceptable to be Employer from reputable local banks including schedule banks or nationalized banks acceptable to the Employer. The performance security shall be valid until the date of issuance of Completion Certificate. The Employer may increase the Performance Security to a level sufficient to protect it against the possibility of financial loss, if the lowest evaluated bid is below the estimated cost of the work. The amount of additional performance security shall be worked out as follows:-
- (ii) Up to 5% below the Estimated Cost: No Additional Performance Security.

- (iii) From 5% below to 15% below the estimated cost, an Additional performance security of 0.5% of the estimated cost for every 1 % below the estimate cost.
- (iv) For more than 15% below the estimated cost, an Additional performance security of 1 % of the estimated amount for every 1 % below the estimated cost.

Note :-

1. *If the percentage below is not a whole number, any percentage above 0.5% shall be rounded off to next higher whole number and any percentage below 0.5% shall be rounded off to immediate lower whole number.*
2. *The Performance Security and Additional Performance Security as applicable shall be refunded to the contractor after satisfactory completion of the works and after the payment of the final bill.*

B- Security Deposit / Retention Money:-

The Employer shall retain from each payment due to the Contractor an amount of 5% of the bill amount, subject to a maximum of 5% of the contract price until the Defect Liability period has passed and the Engineer has certified that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected. The Defects Liability Period shall be 24 months from the date of completion of the Contract.

If any and failure on his part to do so shall be construed as a breach of this contract and without prejudice to any other remedy provided in these conditions, the Engineer-in charge shall have the right to withhold payment and deduct the entire security amount from any money becoming payable to the contractor.

All compensation or other sums of money payable by the contractor to Government under the terms of contract may be deducted from or paid by the sale of a sufficient part of his security deposit or from the interest arising therefore or from any sums which may be due or may become due to the contractor by the contractor by the Government person on any such whatsoever, and in the event of his security deposit being reduced by person on any such deduction or sale as aforesaid, the contractor shall within ten days thereafter make good in cash or Government securities as aforesaid any sum or sums which they may have been deducted, form or raised by sale of his security deposit or any part thereof.

Without prejudice to any other remedy, provided by law the Government may recover all dues hereunder from the contractor as the arrears to land revenue.

COMPENSATION FOR DELAY

Clause 2- The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor and shall be reckoned from the date on which the order to commence work is given to the contractor. The work shall throughout the stipulated period of the contract be proceeded with all due diligence (time being deemed to be the essence of the contract) on the part of contractor and contractor shall pay as compensation an amount equal to one percent or such smaller amount as the authority next higher to the officer accepting the contract on behalf of the Government (whose decision in writing shall be final) may decide on the amount of the estimated cost of the whole work shown by tender for everyday that the work remains uncompleted or unfinished after the proper dates and then further, to ensure good progress during the execution of the work*, the contractor shall be bound, in all cases in which the time allowed for any work to complete the works as per schedule-D. In the event as compensation an amount equal to one percent, or such smaller amount as the authority next higher to the officer accepting the contract on behalf of the Vice-Chancellor (Whose decision in writing shall be final) may decide on the said estimated cost of the whole work for everyday that the due quantity of work remains incomplete provided that before taking action under this clause the officer accepting the contract on behalf of the Vice-Chancellor, shall give a notice of 15 days in writing to the Contractor and provided always that the entire amount of compensation to be paid under the provisions of this clause shall not exceed the maximum of security as specified in clause 1.

ACTION WHEN WHOLE OF SECURITY DEPOSIT IS FOR FEITED

Action when
whole of
security Deposit
is for feited

Clause 3-(1) The officer accepting the contract on behalf of the Vice-Chancellor or the Engineer-in-charge shall have the power, without prejudice to his right against the contractor in any respect of any delay or inferior workmanship or otherwise or to any claims for damages in respect of any breaches of the contract and without prejudice to any right or rights or remedies under any of the provisions of this contract or otherwise and whether the date for completion has or has not elapsed by notice in writing to determine, the contract in any of the following cases: -

*To be struck off in all cases within the time allowed for completion does not exceed onemonth.

- (a) If the contractor or having been given by the Engineer-in-charge a notice in writing (which notice under the hand of the Engineer-in-charge or communicated through the Assistant Director shall be conclusive evidence to rectify reconstruct or replace any defective work or any work damaged by any reason whatsoever or that the work is being performed in an inefficient or otherwise improper or unworkman like manner shall omit to comply with the judgment of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date of completion or he has already failed to complete the work by the date.
 - (b) If the Contractor being a company shall pass a resolution or the Court shall make an order the company shall be wound up or a receiver or a manager on behalf of a creditor shall be appointed if circumstances, shall arise which entitle the court of creditor to appoint a receiver or manager or which entitle the court to make winding up order.
 - (c) If the Contractor commits breach of any of the terms and conditions of this contract other than those mentioned in sub clause (a) above.
 - (d) If the Contractor commits any act mentioned in clause 21 hereof.
- (2) When the Contractor has made himself liable for action under any of the cases aforesaid the officer accepting the contract on behalf of the University or the Engineer in- charge shall have powers to adopt anyone or more of following courses as he may deem best suited to the interest of University.
- (i) To determine or rescind the contact as aforesaid (of which termination or Rescission notice in writing to the contractor under the hand of the Engineer-in-charge communicated through the Assistant Director shall be conclusive evidence). Upon such determination or recession the security deposit of the contractor shall be liable to be forfeited and shall be absolutely at the disposal of University.
 - (ii) To employ labour paid the department and to supply materials to carry out the work or any part of the work debiting contractor with the cost of the labour and the price of the materials of the work debiting contractor with the cost and price the certificate under the hand of the Engineer-in-charge or communicated through the Assistant Director shall be final and conclusive against the Contractor and crediting him with the value of the of the work done in all respects in the same manner and in at the same rate as if it had certificate of the Engineer-in-charge as to the value of the work done shall be this Sub-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 differences shall not be paid to the Contractor.
 - (iii) After giving notice to the Contractor to measure up the work of the Contractor and to take such part there of as shall be unexecuted out of his hands and to give it to another Contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original Contractor if the whole work had been executed by him (of the shall be final and conclusive) shall be borne and paid by the University under this contract or any other account whatsoever or from his security deposit or the proceeds of the sales there of or a sufficient part there of as tile case may be.
- (1) In the event of anyone or more of the courses mentioned in Sub Clause.
 - (2) Above being adopted by the Engineer-in-Charge the Contractor shall have no claim to compensation for any loss sustained by him by reason engagement or made any advances

on account or with a view to the Execution of the work of the performance of contract and in case action is taken under any of the provisions aforesaid the Contractor in therefore 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.

Contractor remains liable to pay compensation if action not taken under Clause 3

Clause 4- In any case in which any of the powers conferred upon the officer accepting contract on behalf of the University or Engineer-in-charge by Clause 3 here of shall have become exercisable and the same are not exercised the non exercise thereof shall not constitute a waiver of any of the Conditions there of and such power shall notwithstanding be exercisable in the event of any future case of default by the Contractor in which by any clauses or hereof he is declared liable to pay compensation all remain unaffected In the event of the Engineer-in-charge putting in force all or any of the powers vested in him under the proceeding clause the Engineer-in-charge may if he so desires, take possession of all or any tools, plant, materials or any stores in or upon the works or the site there of belonging to the contractor or procured by him and intended to be used for the execution of the work or any partner of paying or allowing for 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 there of shall be final otherwise the Engineer-in-charge may give notice in writing to the contractor or his clerk of the work foreman or other authorized agent require him to remove such tools, plants, materials or stores from the premises (within a time to be specified in such notice) and in the event of the Contractor expenses or sell them by auction or private sale on the account of contractor and at his risk in respect and the certificate of the Engineer-in charge as to the expenses of any such removal and the amount of the proceeds and expense of any shall be final and conclusive against the contractor.

FINAL CERTIFICATE

Power to take possession or require removal of or sell Contractor's plant

Clause 5- If the Contractor shall desire an extension of the time for completion of the work on the grounds of his having been unavoidable hindered in its execution, or any other ground he shall apply in writing to the officer accepting the contract on behalf of the University through the Engineer-in-charge and a copy there of is sent to Engineer in-charge within 30 days of the date of the hindrance on account of which he desires such extension as aforesaid, and the officer accepting the contract on behalf of the University shall if in his opinion (which shall be final) reasonable ground be shown there of authorize such extension of time if any as may in his opinion be necessary or proper. Provided that the extension of time should be limited to 50 percent of the total period of the contract but in no case exceeding six months. The cases of the extension of time beyond such period shall be submitted to the authority next higher that if contractor continues to perform the work beyond the date of completion or the extended date as the case may be without obtaining approval for extension as aforesaid the right of the University to claim compensation under clause 3 shall not be deemed to have been waived.

Extension of time

Clause 6- On completion of the work the contractor shall send a registered notice to the Engineer-in-charge giving the date of completion and sending a copy of in to the officer accepting the contract on behalf of the Government and shall request the Engineer-in charge to give him a certificate of completion but no such certificate shall be given nor shall the work be considered to be complete until the contractor shall have removed from the site on which the work shall be executed all scaffolding surplus materials and rubbish and declared off the dirt from all wood work doors, window, walls, floors, or other parts of any building in upon of about which the work shall be executed all scaffolding surplus materials and rubbish and cleaning off dirt and filling of pits on or before the date fixed for completion of the work the Engineer-in-charge may at the expense of the contractor remove such scaffolding surplus materials, and the rubbish and dispose of the same as he thinks fit and clean off such dirt and fill the pits as aforesaid and the contractor shall forthwith pay the amount of all expenses so incurred and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale there of. On completion the work shall be measured by the Engineer in- charge himself or through his subordinate whose measurements shall be binding and conclusive against the contractor provided that if subsequent to the taking of measurements by the subordinates as

Final certificate

aforesaid the Engineer-in-charge had reason to believe that the measurements by his subordinates are not correct, the Engineer-in-charge shall have the power to cancel the measurements already take materials and rubbish an declared off the dirt from all wood work doors, window, walls, floors, or other parts of any building in upon of about which the work shall be executed all scaffolding surplus materials and rubbish and cleaning off dirt and filling of pits on or before the date fixed for completion of the work the Engineer-in-charge may at the expense of the contractor remove such scaffolding surplus materials, and the rubbish and dispose of the same as he thinks fit and clean off such dirt and fill the pits as aforesaid and the contractor shall forthwith pay the amount of all expenses so incurred and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale there of. On completion the work shall be measured by the Engineer in-charge himself or through his subordinate whose measurements shall be binding and conclusive against the contractor provided that if subsequent to the taking of measurements by the subordinates as aforesaid the Engineer-in-charge had reason to believe that the measurements by his subordinates are not correct, the Engineer-in-charge shall have the power to cancel the measurements already taken by his subordinates and acknowledged by the Contractor and to take measurements again after giving reasonable notice to the contractor and such re measurements shall be binding on the contractor.

Delete whichever is not applicable (Ten days will apply to work at the head quarters of Engineer-in-Charge and thirty days for work at other places).

Within ten/thirty days of the receipt of the notice the Engineer-in-Charge shall inspect the work and if there is visible no defect on the face of the work. Shall give the contractor a certificate of completion, if the Engineer-in-Charge finds the work has been fully completed, it shall be mentioned in the certificate so granted. If on the other hand, it is found that there are certain visible defects to be removed, the certificate to be granted by Engineer-in-Charge shall specifically mention the details of the visible defects along with the estimate of the cost for removing these defects. The final certificate of completion of work shall be given after the visible defects pointed out above have been removed.

Clause 7- No payments shall be made for work estimated to cost less than rupees one Thousand till after the whole of the work shall have been completed and certificate of completion given. But in the case of works estimated to cost more than rupees one thousand the contractor shall on submitting the bill there of be entitled to receive a monthly payment proportionate to the part thereof than approval and passed by the Engineer-in-Charge whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the contractor. But all such intermediate payments shall be regarded as payments by way of advance against the final payments only and not as payments for works actually done and completed shall not be preclude the requiring of bad, unsound and imperfect or unskilled work to be removed and take away and reconstructed, or resurrected, or it shall not be considered as an admission of the due performance of the contractor determine or affect in any way the power of the Engineer in-charge under these conditions or any of them as to the final settlement and adjustment of the accounts or otherwise or in any other way very or affect the contract.

The final bill shall submitted by the contractor within one month of the date fixed for completion of the work or of the date of the certificate of completion furnished by the Engineer-in-Charge and payment shall be made within 3 months of submission of the such bills, if the amount of the control plus that of the additional items is up to Rs.2 Lacks. If there shall be any dispute about any item or items only shall be paid within the said period of three months as the case may be. The contractor shall submit a list of the disputed items within 30 days from the disallowance thereof and if he fails to do so this claim shall be deemed to have been fully waived and absolutely extinguished.

BILL TO BE SUBMITTED MONTHLY

Clause 8- A bill shall be submitted by the contractor each month on or before the date fixed by the Engineer-in-charge for all work executed in the previous month and the Engineer-in-charge shall take or cause to be taken the requests measurement for the purpose of having the same verified and the claim as admissible adjusted if possible before the expiry of ten days from the

Payments on intermediate certificate to be regarded as advances

Bills to be submitted monthly

presentation of the bill. If the contractor does not submit the bill within the time fixed as aforesaid the Engineer-in-charge may get the said work measured up in the presence of the contractor whose countersignature to measurement list will be sufficient warrant and the Engineer-in-charge may prepare a bill from such list which shall be binding on the contractor in all respects.

Contractor to be given a week to file objection to the measurement recorded by the deptt.

Clause 9- Before taking any measurement of an work as has been referred to in clauses 6, 7 and 8 there of the Engineer-in-charge or subordinate deputed by him shall give reasonable notice to the contractor. If the contractor fail to attend at the time of measurement after such notice or fails to countersign or record the difference within a week from the date of measurement in the manner require by the Engineer-in-charge then and in any such event the measurements taken by the Engineer-in-charge or by subordinate deputed by him as the case any be shall notwithstanding the provision in clause 8 be final and binding on the contractor and the contractor shall have no right to dispute the same.

Bills to be on printed forms

Clause 10- The contractor shall submit all bills on the printed forms to be on application at office of the Engineer-in-charge and the charge in the bills shall always be entered at the rates specified in the case of any extra work ordered in pursuance of this condition and not mentioned or provided for such work.

Stores supplied by Govt.

Clause 11- If the specification or estimate of the work provides for the use of any special description of material to be supplied from the Engineer-in-charge store if it is require that the contractor shall use certain stores to be provide by the Engineer-in-charge (such materials and stores and the prices to be charged there for as here in after mentioned being so far as practicable for convenience of the contractor but not so as in any way to control the meaning or effect of this contract specified in the Schedule or memorandum here to annexed) the contractor shall be supplied with such material and stores as are required from time to time to be use by him for purpose of the contractor only and the value of the full quantity of materials and stores so supplied at the rates specified in the said schedule or memorandum may be set off or deducted from any sums then due or thereafter to become due to the contractor under the contract or otherwise or against or from the security deposit, or the proceeds of sale thereof. If the same is held in Governments securities the same or a sufficient portion the of being in this case sold for the purpose. It shall be the responsibility of the contractor to ascertain from time to time from the Engineer-in-Charge about the position of availability of the materials as after mentioned and any delay on the part of the Engineer-in-charge to arrange supplies of the same shall not entitle the contractor to any compensation but in the event of all such delays the contractor shall be granted reasonable extension of time. All materials supplied to the contractor are the property of the contractor, but shall not on any account be removed from the site of the work excepted with written permission of the Engineer-in charge or under his orders and shall at all times be open to inspection by the Engineer-in charge. Any such materials unused and in perfectly good condition at the time of completion of determination of the contract may, by special arrangement by taken over by Government at the prevailing market rates, if required for use or other works in progress provided that the price allowed shall not exceed the amount charged to the contractor.

Works to be executed in accordance with specification drawing order, etc.

Clause 12- The contractor shall execute the whole and every part of the work in the most substantial and work-man like manner and both as regards materials and otherwise in every respect in strict accordance with the specification. The contractor shall also confirm exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Engineer-in-Charge and lodged in his office, and to which the contractor shall be entitled to have access to such office, for the purpose of inspecting during office hours and the contractor shall be furnished free of charge one copy of the specifications and of all such designs, drawings and instructions not included in the detailed PWD specifications for buildings and road enforced from time to time or any other printed publication on general specification referred to elsewhere in the contract.

Alteration in specifications and designs, do not invalidate contract

Clause 13- The Engineer-in-Charge shall have power to make any alteration or omission from, additions to or substitution for the original specification, drawings, designs and instruction that may appear to him to be necessary during the progress of the work and the contractor shall carry out the work in accordance with any instructions that may be given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions, or substitutions, shall not, invalidate the contract any altered additional or substituted work which the contractor may be directed to do

**Extension of
time in
consequence of
alterations**

in the manner above specified as part of the work shall be carried out by the Contractor on the same conditions in all respects on which he agreed to do the main work, the time for the completion of the work shall be extended in the proportion that the altered additional or substituted work bears to the original contract work, and the certificate of the Engineer-in-charge shall be conclusive as to proportion. Over and above this, a further period to the extent of 25 percent of the time so extended may be allowed to the contractor, the rates for such additional, altered or substituted work under this clause shall be worked out in accordance with the following provision in their respective order :-

- (i) If the rates for the additional, altered, or substituted work are specified in the contract for the work, the Contractor is bound to carry out the additional altered or substituted work at the same rates as are specified in the contract for the work.
- (ii) If the rates for the additional, altered, or substituted work includes any work for which no rates are specified in the contract for the work or cannot be derived from the similar class of work in the contract then such work shall be carried out at the rates entered in the schedule of rates for Udhm Singh Nagar district minus/plus percentage which the total tendered amount bears to the estimated cost of the entire work put to tender.
- (iii) If the rates for the additional, altered or substituted work are not specifically provided in the contract for the work, the rate will be arrived from the rates for similar class or work, as are specified in the contract for the work.
- (iv) If the rates for the additional, altered or substituted work cannot be determined in the manner specified in sub clauses (i) to (ii) above, then the rates for such work shall be worked out on the basis of the Schedule of rate of the District specified
- (v) Above minus/plus the percentage which the total tendered amount bears to the estimated cost of the entire work put to tender, provided always that if the rates for a particular part or parts of the item is not in the schedule of rate, the rate for such part or part will be determined by the officer accepting the contract on behalf of the University on the basis of the prevailing market rates when the work was done
- (vi) If the rates for additional, altered or substituted work cannot be determined in the manner specified in sub clause (i) to (iv) above, then the contractor shall with 7 days of the date of receipt of the order to carry out the work inform the officer accepting the contract on behalf of the University of the rates which it is his intention to charge for such class of work supported by analysis of the rate or rates claimed and the Director, Works and Plants shall determine the rate or rates on the basis of the prevailing market rates and pay the contractor accordingly.

However, the officer accepting, the contract on behalf of the University by notice, in writing will be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner as he consider advisable. But under no Circumstances, the contractor shall suspend the work on the plea of non settlement of rates of items, failing under this clause-

The rates under sub-clause (i), (iii) shall be worked out by the officer accepting the contract on behalf of the Government.

- (i) If the rates for the additional, altered, or substituted work are specified in the contract for the work, the contractor is bound to carry out the additional, altered or substituted work at the same rates as are specified in the contract for the work.
- (ii) If the rates for the additional, altered, or substituted work includes any work for which no rates are specified in the contract for the work or cannot be derived from the similar class of work in the contract then such work shall be carried out at the rates entered in the schedule of rates for Udhm Singh Nagar district minus /plus percentage which the total tendered amount bears to the estimated cost of the entire work put to tender.
- (iii) If the rates for the additional, altered or substituted works are not specifically provided in the contract for the work the rate will be arrived from the rates for similar class of work, as are specified in the contract for the work.
- (iv) If the rates for the additional, altered or substituted work cannot be determined in the manner specified in sub clauses (i) to (iii) above, then the rates for such works shall be worked out on

the basis of the schedule of rate of the District specified above minus/plus the percentage which the total tendered amount bears to the estimated cost of the entire work put to tender, provided always that if the rate for a particular part of parts of the items is not in the schedule of rate, rate for such part of parts will be determined by the officer accepting the contract on behalf of the Government on the basis of the prevailing market rates when the work was done.

- (v) If the rates for additional, altered or substituted work cannot be determined in the manner specified in sub clause(i) to (vi) above, then the contractor shall within 7 days of the date of receipt of the order to carry out the work inform the officer accepting the contract on behalf of the University of the rate which it is his intention to charge for such class of work supported by analysis of the rate of rates claimed and the Director, Works and Plants shall determine the rate of rates on the basis of the prevailing market rates and pay the contractor accordingly. However the officer accepting the contract on behalf of the University by notice, in writing will be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner as he consider advisable. But under on circumstances, the contractor shall suspend the work on the plea of no settlement of rate of items, falling under this clause-

The rates under sub-clause (i),(iii) shall be worked out by the officer accepting the contract on behalf of the University.

No
compensation
for alteration in
of restriction of
work to be
carried out

Clause 14- If at any time after the commencement of the work the University or the Director, Works and Plants shall for reason whatsoever not require the whole there of as specified in the tender to be carried out, the Engineer-in-charge shall give notice in writing of the fact to the contractor who shall have no claim to any payment or compensation whatsoever on account of any profit or advantage, which he might have derived from the execution of the work in full, but which he did not neither shall have any claim for compensation by reason or any alteration having been made in the original specifications drawings, designs and instruction which shall involve any curtailment of the work as originally contemplated nor shall he have any claim to compensation by reason of his having purchased or procured materials with a view to the execution of the work or the performance of the contract. But the Engineer-in-Charge shall have the option either to take over the materials at site, if of approved quality and not in excess of the requirements of the work and to pay to the contractor the actual cost thereof (of the amount of which cost, a certificate by the Engineer-in-Charge shall be binding on the contractor) In the event of within one month of the date of the order closing down the work a detailed statement of the loss that he estimates he will sustain by removing date, selling or other-wise disposing of the materials. The estimate will be forwarded to the Vice-Chancellor who will decided what sum, if any, should as a matter of grace be paid to the contractor to compensate him for the loss suffered by him and the decision of Vice-Chancellor shall be final and binding on the contractor.

Action and
compensation
payable in case
of bad work

Clause 15- If it shall appear to the Engineer-in-charge or his subordinate in-charge of the work, that any work has been executed with unsound, imperfect or unskillful workmanship, or with materials, or any inferior description or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to the contracted for or otherwise not in accordance with the contract the contractor shall, on demand in writing from the Engineer-in-charge specifying the work, material or articles complained of notwithstanding that the same may have been adversity passed, certified and paid for forthwith rectify or remove and reconstruct the work so specified whole or in part as the case may require or as the case may be, remove the material or articles so specified and provide other proper and suitable articles at his own proper charge and cost, and in the event of his Failing to do so within a period to be specified by the Engineer-in-charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the rate of one percent on the amount of the estimate for every day not exceeding ten days while his failure to do so shall continue, and in the case of any such failure the Engineer-in-Charge may rectify or remove and re-execute the work or remove and replace with other the materials or articles complained of as the case may be at the risk and expense in all respects of the contract.

Clause 16- University shall have the right to accept at reduced rate, Sub- Standard or defective work, and to cause an audit and technical examination of the work and the running and final bills of the contractor including all supporting vouchers, abstracts etc. to be made before or after the payment of the final bills and if as a result of such acceptance of sub-standard or defective work,

Acceptance of sub-standard work and causing technical examination of work

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 but found not to have been actually executed, the contractor shall be liable to refund the amount of the over payment and it shall be lawful for University to recover the same from him in the manner prescribed in Clause 1 above or in any other manner legally permissible and if it is found that the contractor was paid less than that was due to him under the contract in respect of any work executed by him under it, the amount of such under payment may be duly paid by University to the Contractor. Provided that the Sub-Standard or defective work accepted in not considered to be seriously defective by the Engineer-in-Charge and the rate of the work so accepted is suitable reduced by him to compensate the University and such reduction in binding on the contractor.

Work to be open to inspection

Clause 17- All work under or in the course execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Engineer-in-Charge and his subordinates, and the contractor shall at all times during the usual working hours and at all other time, at which reasonable notice of the contract or, either himself be present to receive orders and instructions, or have a responsible agent duly authorized in writing present for that purpose. Orders given to the contractor agent shall be considered to have the same force as if there had been given to the contractor himself.

Contractor or responsible agent to be present

Clause 18- The contractor shall give not less than five days notice in writing to the Engineer-in-Charge or his subordinate in charge of the work before covering up or otherwise placing beyond the reach or measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is so covered up to place beyond the reach of measurement and shall not cover up or place beyond the-reach of measurement any work without the same consent in writing of the Engineer-in-charge or his subordinate in charge of the work, and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or consent obtained the same be uncovered at the contractor's expenses or-in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed

Notice to be given before work is covered up

Clause 19- If the contractor or his work people or servants shall break, deface, injure or destroy any part of a building on or in which they may be working, or any building, road, fence, enclosure, grass land or cultivated ground contiguous to the premises on which the work or any part of it being executed, or if any damage shall happen to the work while in progress from any cause whatever, or any defect shrinkage or other faults appear in it within twenty four months after a certificate final or otherwise of its completion shall have been given by the Engineer-in-charge as aforesaid, the contractor shall make the same good at his own expenses, or in default, the Engineer-in-charge may cause the same to be made good by other workmen and deduct the expenses (of which the certificate of the Engineer-in-charge shall be final) from any sums that may then or at anytime thereafter, become due to the contractor or from his security deposit or the proceeds of the sale there or a sufficient portion thereof or in any other manner, legally permissible.

Contractor liable for damage done and for imperfection for Twenty Four months after certificates

Clause 20- The contractor shall supply 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 plants tools appliances, implements, ladders, cordage, tackle, scaffolding and temporary work requisite or proper 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, which may be necessary for the purpose of satisfying or complying with the requirements of the 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 thereafter to and from the work. The contractor shall also supply without charge the requisite number of person with the means of and materials necessary for the purpose of setting out work, and counting weighing and assisting in the measurement or 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 expense may deducted from any money due to the contractor under the contract or from his security deposit or the proceeds of sale thereof, or a sufficient portion thereof. The contractor shall also provide all necessary fencing and lights

Contractor to supply plant ladders, scaffolding etc.

required 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 costs 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 compromise any claim by from the contractor's bills at current rates fixed by the Director, Works and Plants the terms of such issue to be ascertained by the contractor from the Engineer-in-charge in writing in advance

Work not to be sublet. Contract may be rescinded and security deposit forfeited for solvating bribing or in contractor becomes insolvent

Clause 21- The contract shall not be assigned or sublet without the written approval of the officer accepting the contract on behalf of the University. And if the contractor shall assign or sublet the contract, or attempt to do so or become insolvent or commence any insolvency proceeding or make any composition with his creditors or attempts to do so, or if any bribe, gratuity, gift, loan, perquisite reward or advantage pecuniary or otherwise, shall either directly or indirectly or indirectly be given, promised or offered by the contractor, or any of his servant or agents to any Public officer or person in the employ of University in any way relating to his office or employment or if any such officer or person shall become 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 officer accepting the contract on behalf of the University may thereupon by notice in writing rescind the contract, and the security deposit of the contractor shall the reopen stand forfeited and be absolutely at the disposal of University on the same consequence shall ensue as if the contract had been rescinded under clause 3 here of and in addition the contractor shall not be entitled to recover or be paid for any work thereto or for actually performed under the contract

Clause 22- The contract shall not for the execution of the work employ any labour under 18 years of age and within the limits of any cantonment any female labour. For every breach of this covenant the contractor shall be liable to pay by way of liquidated damages such sums not exceeding fifty rupees as the Engineer -in- charge may fix may be due, or may at any time thereafter become due to the contractor.

Clause 23(a)- The contractor shall pay to his labourers a fair wage and shall supply every labourer employed by him with a wage card on which the rate of wages the attendance and payment will be entered.

Clause 23(b)- The contractor before he commences works paste in conspicuous place of the work a notice giving the rates of wages which shall not be less than the minimum wages applicable and where no minimum wages are applicable the wages will be such as may be certified as fair wages by the Engineer-in-charge and shall send a copy of the notice to the Engineer-in-charge

Clause 24- The contractor shall be bound by all statutory provisions with regard to the period for which wages shall be paid and deduction from wages.

Clause 25- The contractor shall comply with all labour laws as applicable at the site of this work

Clause 26- In respect of all labour directly or indirectly employed in the work for the performance of the contractors part of this agreement, the contractor shall comply with or cause to be complied with all the directions issued by University from time to time for the protection of health and sanitary arrangements for workers employed by the department and its contractors.

Clause 27- Leave and pay during leave of all labour employed by the contractor shall be regulated as follows:

1- Leave-

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

2- Pay

- (i) In case of delivery-leave pay during maternity, leave will be at the rate of the women's average daily earning calculated on the total wages earned on the days when full time work was done during a period of 3 months immediately preceding the date on which she gives notice that she expects to be confined or at the rate of seventy five paise a day which ever in greater.

Maternity benefit rules for female workers employed by contractors

- (ii) In case of miscarriage-leave pay at the rates of average daily earnings calculated on the total wages earned on the days when full time work was done during a period 3 months immediately preceding the date of such miscarriage.

3- Condition for the grant of maternity leave

No maternity leave benefit shall be admissible to a woman unless she has been employed for total period not less those 6 months immediately preceding the date of which she proceeds on leave. In the event of the contractor committing default or breach of any of the provisions of the Public Works Departments Direction of Contractor for the protection of health and sanitary arrangements for the workers or furnishing any information or submitting or filling any statement under the provision of the provision of the above direction which is materially incorrect, the contractor shall without prejudice to any other liability pay to government a sum not exceeding Rs. 50/- for every default or, breach and in the event of the contractor defaulting continuously in this respect the penalty may be enhanced to Rs. 50/- percent of the estimated cost of the work put to tender. The decision of the Engineer-in-charge shall be final and binding on the parties. Should it appear to the Engineer-in-Charge that the contractor is not properly observing and complying with the said direction for the protection of health any sanitary arrangement for work-people employed by the contractor (herein referred as the said directions). The Engineer-in-Charge shall have power to give notice in writing to contractor requiring that the said directions be complied with and the amenities prescribed therein be provided to the work people within a reasonable time to be specified in the notice to comply with and observe the said directions and to provide the amenities to the work people as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities herein before mentioned at the cost of the contractor. The contractor shall erect, make and maintain at the expense and approved standards all necessary huts and sanitary, arrangement required for this same shall not have been erected or constructed according to the approved standard, and if the contractor 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 arrangements according to approved standards at the const of contractor.

Clause 28- The contractor shall at his own cost provide his labour with a sufficient number of huts (Hereinafter referred to as the camp) of the following specifications on suitable plot of land to be approved by the Engineer-in-Charge.

- 1-a) The minimum height of each hut at the eye level shall be 7 feet and the floor area to be provided will be at the rate of 30 Sq. feet for each member of the worker's family staying with the labour.
- b) The contractor shall in addition construct, suitable cooking places having a minimum area of 6'x5' adjacent to the hut for each family.
- c) The contractor shall also contract temporary latrines and urinals for the use of the labourer each on the scale of not less than four per one hundred of the total strength, Separate latrines and urinals being provided for women.
- d) The contractor shall construct sufficient number of bathing and washing places, one unit for every 25 persons residing in the camp. These bathing and was1ring places shall be suitably screened
- 2-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 wall should be plastered with mud-gobri on both sides. The floor may be katcha but plastered with mud-gobri and shall be at least 6" above the surrounding grounding. 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 through the period of their occupation the roofs remain water-tight.
- b) The contractor shall provide each hut with proper ventilation.
- c) All doors, windows and ventilators shall be provided with suitable leaves for security purpose.
- d) There shall be kept on open space of at least 8 yards. between the rows of huts which may

be reduced at 20 feet according to the availability of sites with the approval of the Engineer-in-Charge. Back to back construction will be allowed. Water Supply. The contractor shall provide adequate supply of water for the use of labourers. The provisions shall not be less than 2 gallons of pure and wholesome water per head per day for drinking purpose and 3 gallons of clean water per head for bathing and washing purposes. Where pipe water supply is available, the supply shall be at stand post and where the supply is from wells or river, tank which may be of metal or masonry shall be provided. The contractor shall also at his own cost make arrangements for laying pipe lines for water supply to his labour camp from the existing main whatever available and shall pay all fees and charges therefore

- 3- The site selected for the camp shall be high ground removed from jungle.
- 4- **Disposal of Excreta-** The contractor shall make necessary arrangements for the disposal of excreta from the latrines by trenching or incineration which shall be according to the requirements laid down by the local Health Authorities. If trenching or incineration is not allowed, the contractor shall make arrangements for the removal of excreta through the Municipal Committee/Authority and inform it about the number of labourers employed so that arrangement may be made by such committee/Authority for the removal the 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 dry system.
- 5- **DRAINAGE-** The contractor shall provide efficient arrangements for draining away silage water so as to keep the camp neat any tidy.
- 7- The contractor shall make necessary arrangements for keeping the camp area sufficiently lighted to avoid any accidents to the workers.
- 8- **SANITATION-** The contractor shall make arrangements for conservancy and sanitation on the labour camps according the rules of the Local Public Health and Medical Authorities.

Clause 29- 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 Government without reference to the actual loss or damage sustained and whether or not any damages shall have been sustained.

Clause 30- In the case of a tender by partners any change in the constitution of the firm s shall be forthwith notified by the contractor to the Engineer-in-Charge. For his information.

Clause 31- All works to be executed under the contract shall be executed under the direction and subject to the approval all respects of the Engineer-in-Charge for the time being who shall be entitled to indirect at what point and in what manner they are to be commenced and from time to time carried on.

Clause 32- a) If the contractor considers any work demanded of him to be outside the requirements of contract, or considers any record or ruling of the Engineer-in-charge or of his subordinates to be unfair, he shall immediately upon such work being demanded or such record or ruling being make ask in writing for written instructions or decisions, whereupon he shall proceed without delay to perform the work or confirm to the record ruling and within twenty days after date of receipt of the written instructions or decision he shall file a written protest with the Engineer-in-charge stating clearly and in detail the basis of his objections. Except for such protest or objections, as are made on record in the manner herein specified, and within the time limit stated, the record rulings, instructions, or decisions of the Engineer-in-charge shall be final and conclusive. Instructions and/or decisions of the Engineer-in charge contained in letters transmitting drawings to the contractor shall be considered as written instruction or decisions, subject to protest objections as wherein provided.

- b) If the contractor is dissatisfied with the final decision of the Engineer-in-charge in pursuance of clause 32(a), the contractor may within twenty eight days after receiving notice of such decision, give notice in writing requiring that the matter be submitted to arbitration and furnishing detailed particular of the dispute or difference specifying clearly the point at issue. If the contractor fails to give such notice within the period of twenty days as stipulated above, the decision the Engineer-in-charge shall be conclusive and binding on the contractor.

Sums payable
be way of
compensation
to be
considered
reasonable
compensation
without
reference to
actual loss
changes in
constitution of
firm

Protests

c) Except where otherwise provided in the contract all questions and disputes relating to meaning of the specifications, designs, drawings and instructions hereinbefore mentioned and as to the quality or workmanship or materials used on the work or as to any other questions, claim, right, or rates for extra items sanctioned and decided or not by the competent authority under the conditions of this contract, matter or thing whatsoever, in any way arising out of relating to the contract, design, drawings, specifications, estimates instructions, or order on these conditions or otherwise, concerning the works, or the execution or failure to execute the same, whether arising during the progress of the work after the completion or abandonment thereof shall be referred to the sole arbitration of the person or persons appointed by the Vice-Chancellor. It will be no objection to any such appointment that the arbitrator so appointed is a university officer that he had to deal with the matter to which the contract relates and that in the course of his duties as University officer he had expressed views on all or any of the matters in dispute or difference. The arbitrator to whom the matter is originally or subsequently referred being incapacities to act, the Director, Works and Plants shall appoint another the person to act as arbitrator in accordance with the terms of contract. It is also a term of this contract that no person other than a person appointed by the Vice-Chancellor as aforesaid shall act as arbitrator and if for any reason that is not possible, the matter is not to be referred to arbitration at all. The arbitrator(s) may from time to time with the consent of the parties enlarge the time for making and publishing the award Subject as aforesaid the provisions of the Arbitration Act, 1960, or any statutory modification 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. The sole arbitrator or arbitrators to be appointed by the Chief Engineer shall be of the status given below-

1. For claim for amount in dispute of not over Rs. 5000/- in the case of work order and incase of contracts accepted, by an Assistant Director. Dy.DWP
2. For claims or amount in dispute of over Rs. 5000/-but Director (W&P) not over Rs. 50,000.
3.
 - For claim or amounts in dispute aggregating to more Than Rs.50,000. Two arbitrators of the Rank of Professor appointed by the Vice- Chancellor

All dispute between the parties to the contractor arising out of and relating to the contractor shall after written notice by either to the contract to the other party, be referred to arbitration as above. Unless the parties otherwise agree such reference shall not take place until after the completion or abandonment of the work or the determination of the contract. The venue of arbitration shall be such a place of places as may be fixed by the arbitrator in his/ their sole discretion. Any unit or application for the enforcement of this arbitration clause shall be filed in the competent court at Udham Singh Nagar, and no other court of any other district of the Pradesh or outside Uttarakhand shall have any jurisdiction in the matter. The award of the arbitrator shall be final, conclusive and binding on the both the parties to the contract.

Clause 33- The contractor shall obtain from the stores of the Engineer-in-charge all stores and all imported materials, if required to any considerable extent for the work or any part thereof or in making articles required therefore or in connection therewith. The value of such stores and articles as may be supplied to the contractor by the Engineer-in- Charge will be debited to the contractor in his account at the rates shown in the Schedule attached to the contract, and if they are not entered in the Schedule, they will be debited at cost price which for the purpose of this contract shall include the cost of carriage and all other expenses whatsoever which shall have been incurred in obtaining delivery of the same at the stores aforesaid. The Engineer-in-charge may issue materials of contractor from existing stock if he asks for any in excess of those entered in the schedule. In such case the price charged must be stock rate or market rate whichever is greater.

Clause 34- Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, designs, drawings and instructions herein mentioned and as

Stores imported from Europe to be obtained from Government Arbitrator

to the quality of the workmanship or materials used on the work or as to any other questions, claim to right matter or thing whatsoever in any way arising, of or relating to the contract, designs, drawings, specifications, estimates, instruction, orders to these conditions or otherwise concerning the work or the execution or failure the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitrator or the person appointed by the Director, Works and Plants of the work at the time of dispute. It will be no objection to any such appointment that the arbitrator so appointed is a University officer, that he had to deal with matters to which the contract relates and that in the course of his duties as University officer he had expressed view on all or any of the matters in dispute of difference. In the event of the arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any such reason. Director, Works and Plants at the time of such transfer, vacation of office or inability to act shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor. It is also a term of this contract that no person other than a person appointed by the Director, Works and Plants should act, as arbitrator and if for any reason that is not possible, matter is to be returned to arbitrator at all.

The arbitrator may from time to time with the consent of the parties enlarge the time for making and publishing the award Subject as aforesaid the provisions of the arbitration Act. 1940 or any statutory modification or re-enactment thereof and the rules made there under and for the time being the force shall apply to the arbitration proceeding under this clause.

Clause 35- In the case of any class of work for which there is no specification in the contract, such work shall be carried out in accordance with the detailed PWD specification and in the event of there being no detailed specifications for the same, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-charge.

Action where no specification is given

Clause 36- The additional and deductions on account of the percentage referred to at page 3 of the accepted tender will be calculated on the gross, and not the net, amount of the bills for the work done.

Contractor's percentage whether applied to net or gross amount of bills (strike out this clauses in the case of an item rate contract)

Clause 37- i) In every case in which by virtue of the provision of section 12, subsection (1) of the workman's Compensation Act, 1923, University is obliged to pay compensation to a workman employed by the contractor or by any sub-contractor from him in the execution of the said work. University will recover from the contractor the amount of the compensation so paid, and without prejudice to the rights of University under section-12- subsection (2) of the said Act University shall be at liberty to recover such amount or any part thereof by deducting it either from the security deposited by contractor to his credit under clause 1 of these conditions or from any other sum due to University from the contractor whether under his this contract or otherwise.

(ii) University shall not be bound to contest any claim made against it under section 12 subsection (1) of the said Act, except on the written request of the contractor and upon his giving to University full security for all costs for which University might become liable in consequence of contesting the claim.

Clause 38- No bricks for use on the work shall be manufactured within the limits of a municipality, cantonment or notified area by the Engineer-in-charge.

Clause 39- No earth for filling or for any other purpose shall be excavated within half a mile of the site of work except with the written permission of the Engineer-in-charge and then only on condition that the area, in which such excavation is made, shall be leveled and dressed by the contractor at his own expense in accordance with the instructions of the Engineer-in-charge and in such a manner as to prevent the formation of pools of stagnant water. If the contractor fails to comply with this condition the Engineer-in-charge may cause the ground to be leveled and dressed by other workman and deduct the expense (of which the certificate by the Engineer-in-charge shall be final) from any sums which may be due or may at any time thereafter become due to the contractor or from his security deposit, or from the proceeds of sale thereof.

F. SPECIAL CONDITION OF CONTRACT

1. LABOUR:

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

The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer may require.

2. COMPLIANCE WITH LABOUR REGULATIONS

During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notification / bye laws / Acts / Rules / regulations including amendments, if any, on the part of the Contractor, the Engineer / Employer shall have the right to deduct any money due to the Contractor including his amount of performance security. The Employer / Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK

- (a) **Workmen Compensation Act, 1923** :- The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- (b) **Payment of Gratuity Act 1972**:- Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more on death, the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- (c) **Employees P.F. and Miscellaneous Provision Act 1952**:- The Act Provides for monthly contributions by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are :

- (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in-harness of the worker.
 - (iii) Payment of P.F. accumulation on retirement / death etc.
- (d) **Maternity Benefit Act 1951:-** The Act provides for leave and some other benefits to women employee in case of confinement or miscarriage etc.
- (e) **Contract Labour (Regulation & Abolition) Act 1970:-** The Act provides for certain welfare measures to be provided by the contractor to contract labour and in case the contractor fails to provide, the same are required to be provided, by the Principal Employer by law. The Principal Employer is required to take Certificate to Registration land the Contractor is required to take license from the designated officer. The act is applicable to the establishments or Contractor of Principal Employer, if they employ 20 or more contract labour.
- (f) **Minimum Wages Act 1948:-** The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provision of the Act, if the employment is a scheduled employments. Construction of Buildings, Roads, Runways are scheduled employments.
- (g) **Payment of Wages Act 1936:-** It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- (h) **Equal Remuneration Act 1979:-** The Act provides for payments of equal wages for work of equal nature to male and female workers and for not making discrimination against female employees in the matters of transfers, training and promotions etc.
- (i) **Payment of Bonus Act 1965:-** The Act is applicable to all establishments employing 20 or more employees. The act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs. 3500/- per month or less. The bonus to be payment to employees getting Rs. 2500/- per month or above upto Rs. 3500/- per month shall be worked out by taking wages as Rs. 2500/- per month only. The act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances some of the State Govt. has reduced the Employment size from 20 to 10 for the purpose of applicability of this act.
- (j) **Industrial Disputes Act 1947:-** The Act lays down the machinery and procedure for resolution of industrial disputes, in what situation a strike or lack-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- (k) **Industrial Employment (Standing Orders) Act 1946:-** It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.
- (l) **Trade Union Act 1926:-** The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Union registered under the act have been given certain immunities from civil and criminal liabilities.

- (m) **Child Labour (Prohibition & Regulation) Act 1986:-** The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides of regulation of employments of children in all other occupation and processes. Employment of Child Labour is prohibited in Building and Construction Industry.
- (n) **Inter-State Migrant Workmen's (Regulation of Employment & Conditions of Service) Act 1979:-** The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The inter-state migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home upto the establishment and back, etc.
- (o) **The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996:-** All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this act. All such establishment are required to pay cess at the rate not exceeding 2% of the cost of construction as may modified by the Government. The employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as Canteens, First-Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.
- (p) **Factories Act 1948:-** The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

3. ARBITRATION (GCC Clause 25.3)

The procedure for arbitration will be as per GPW Form-9.

Signature of Contractor

Officer Issuing
Tender

Officer Opening
Tender

Officer Recommending
Tender

Officer Accepting
Tender

GENERAL CONDITIONS

1. Tender rates will not be entered in comparative statement unless the money deposited by the contractor is sufficient to cover the necessary amount of Earnest Money.
2. All entries in the tenders should be in ink. Erasures and overwriting are not permissible. All Cancellations and insertions should be signed by the tenders.
3. Rates should be written in figures as well as in words in rupees and paise. If rates quoted in words and figures differ, lowest of two will only be considered.
4. Quotations are liable to variations without entitling the contractor to any compensation. Any item of contract bond may be deleted altogether which will not entitle contractor for any claim.
5. In giving their rates tenderers are advised to take into account fluctuation of market rates. No claim will be entertained on this account during acceptance of the tender and currency of the contract rates should include lead of all material royalty where payable and water arrangements. The contractors' tendered rates shall also include, Sales Tax, Octroi and other municipal/Terminal taxes as may be levied by Government during the currency of contract.
6. Tenderers are advised to see site of work and acquaint themselves with locality and availability of labour and position of materials, conditions of contract. Drawing and specifications can be modified without entitling the contractor to any compensation due to changes made.
7. Conditional and un-witnessed tenders are liable to be rejected. Each page of the Bill of Quantities and specifications should be signed by the contractor (tenderers). Non compliance is likely to disqualify the tender.
8. Not more than one tender should be submitted by one contractor.
9. In case of the firm, tender must be signed by each partner or by the person holding power of attorney. Copy of power of attorney attested by Gazetted Officer must accompany the tender.
10. Rates tendered will hold good for acceptance for four months from the date of opening of the tender.
11. Units and rates shown in the bill of quantity should be carefully seen as rate once given by the Contractor shall remain unchanged and on no account will be entertained after tenders have been opened.
12. Contractor who are not in the University Approved lists are required to attach to their tenders testimonials showing that they have recently and satisfactorily executed work of the magnitude and general nature of that for which they are tendering.
13. Power is reserved to accept tender for part work only and in such case time for completion will be reduced to the extent considered reasonable by the accepting authority.
14. If required by the Engineer Incharge contractor shall provide at his own expenses suitable accommodation for his employees including adequate sanitary arrangement and suitable water supply.
15. While lime required for the work shall be brought to the site in unslacked condition and stacked properly on the work site after approval of sample by the Engineer I/C or his representative.
16. All building materials arranged by the contractor shall be subjected to the approval of the Engineer I/C, and rejected materials if any will have to be removed by the contractor within seven days from the site of work otherwise a penalty of Rs. 10/- (Rupees Ten) per day may be imposed.
17. Account of consumption of cement and steel etc. shall be maintained regularly and the materials shall be stored suitably to enable their being checked when required by the Engineer Incharge.
18. The materials supplied by the department will have to be stored at site of work and proper account of such stores will be maintained by the contractor.

19. On completion the site of work will be dressed and cleaned of all rubbish and waste materials etc. before final payment is made.
 20. No extra claims for any ornamental work covered by drawings and detailed P.W.D. specifications for the items concerned will be entertained and the rates will be for ever all items completed in all respects.
 21. Measurement of B.W. shall be taken in half brick thickness i.e. multiple of 4½ rounded to nearest cm. No claim will be entertained for any extra thickness due to variation in sizes of bricks but in case where bricks are not supplied by department deduction shall be made if thickness of walls is lesser than that specified and shall be paid in actual measurements.
 22. An order book will be kept at site of work in which instructions shall be recorded by the Engineer I/C or his representative. The contractor or his authorised agent will be required to sign on order book daily as acknowledge of instructions.
 23. Department is not responsible to arrange for wagons for contractors.
 24. The contractor will be bound to provide all shuttering as designed by the University and in case he is found slack the same may be purchased by the University and debited to the contractor.
 25. The contractor should also arrange sufficient lorries to transport the material required to be carted by him. In case he has no lorries he will have to make his own transport arrangement from the existing sources available. The University will not be responsible in getting permit for the cartage work.
 26. Sanitary, electric and water installations, doors, shutters and floor work will be taken in hand when the building work has sufficiently advanced. The building contractor will have to offer all facilities to other contractors for the above installation, and work in a manner that entire work may proceed smoothly. No compensation will be allowed on this account. In case if any dispute of difference between different contractors at one site of work the decision on the Deputy Director Works & Plants, will be final and binding on all parties.
 27. All receipts given by the contractor's authorised agent whose names have been intimated to the Engineer Incharge in writing, will be conclusive proof of the delivery of materials.
 28. Conditions of contract, prepared by the University, attached to the bound, will be binding to the contractor.
 29. The contractor shall keep a responsible representative at site who should be able to take orders for executing the work to the satisfaction of the Engineer Incharge.
 30. Electric charges at the following rates shall be deducted from each bill of the work.
 - (i) All new construction work and M&R road @ 0.5% of the gross value of work done.
 - (ii) All other M&R and A/A works @ 1% of the gross value of the work done.
- Note : 1.** Electric connection on the request of the contractor may be provided by the University where possible and feasible against security of Rs. 1000/-. In cases where electric connection is provided by the University, recovery of the electric charges, shall be made on actual meter reading or on percentage basis of work done as mentioned above whichever is more.
- Note : 2.** In cases where tempering of the electric meter provided at site of work is detected during checking, a fine of Rs. 5000/- shall be imposed on contractor for each such tempering and will be recovered from the bill of the contractor.
31. When hand mixing is allowed, the contractor shall use 10% extra cement in reinforced concrete work without entitling him for any payment.
 32. Hook and authorised overlays will be measured and paid in re-forcement.
 33. On consumption of material following variation on standard yard stick will be allowed.
Steel 2%, Cement 2%, Brick 5%.

If the material consumed is less than that calculated as per yard stick full cost of materials thus calculated as per yard stick will be deducted.

34. Brick will be supplied at the site of work within 60 metres of any extremity, if provided in Schedule C.
35. Steel shuttering plates will be issued on rental basis @ 0.20 (Paise 20) per sq. ft. per month, if available with the department.
36. If desired by the department the contractor may be asked to appoint an Engineer (with degree) for the work more than Rs. 1.00 lac. and an Engineer (with Diploma) for the work below Rs. 1.00 lac.
37. All R.C.C. work will have to be done with the help of Mixer and Vibrator. The same will be provided by the University, if available, on fixed hire charges. The contractor will have to cast the Mixer/Vibrator to place from where it was issued or to Central Store. If so required by the department after the same is no more required by him.
38. Half brick thick walls in case M.S. flat or Kounds are provided, the brick will be measured against the item of ordinary brick work and it will not be treated as reinforced brick work. Separate payment will be made for M.S. flat or round in relevant item.
39. 1st class brick to be used shall be sound, hard uniform deep red or copper colour, regular in shape and size, homogenous texture free from cracks, chips, flaws and emit a clear ringing sound on being struck. These shall have a maximum crushing strength of 150 kg/sqm. The brick shall not absorb water more than 10% of their own dry weight after 24 hour immersion in cold water.
40. Water charges @ 1% will be recovered from the contractor on all items where contractor uses ground water. If the water connection is provided by the Water Division, water charges @ 2% will be deducted from contractor on gross value.
41. "If electrical work is also a part of contract, the contractor will execute the electrical work through approved 'A' Class licensed electrical contractor and will intimate the license no. and name of the electrical contractor before starting the electrical work. The contractor will furnish B&L form for completion of electrical work, prior approval of the Director Works & Plants shall be obtained as specified under clause-26 of conditions of contract.

Contractor

Officer Incharge Tender

Officer Accepting Tender