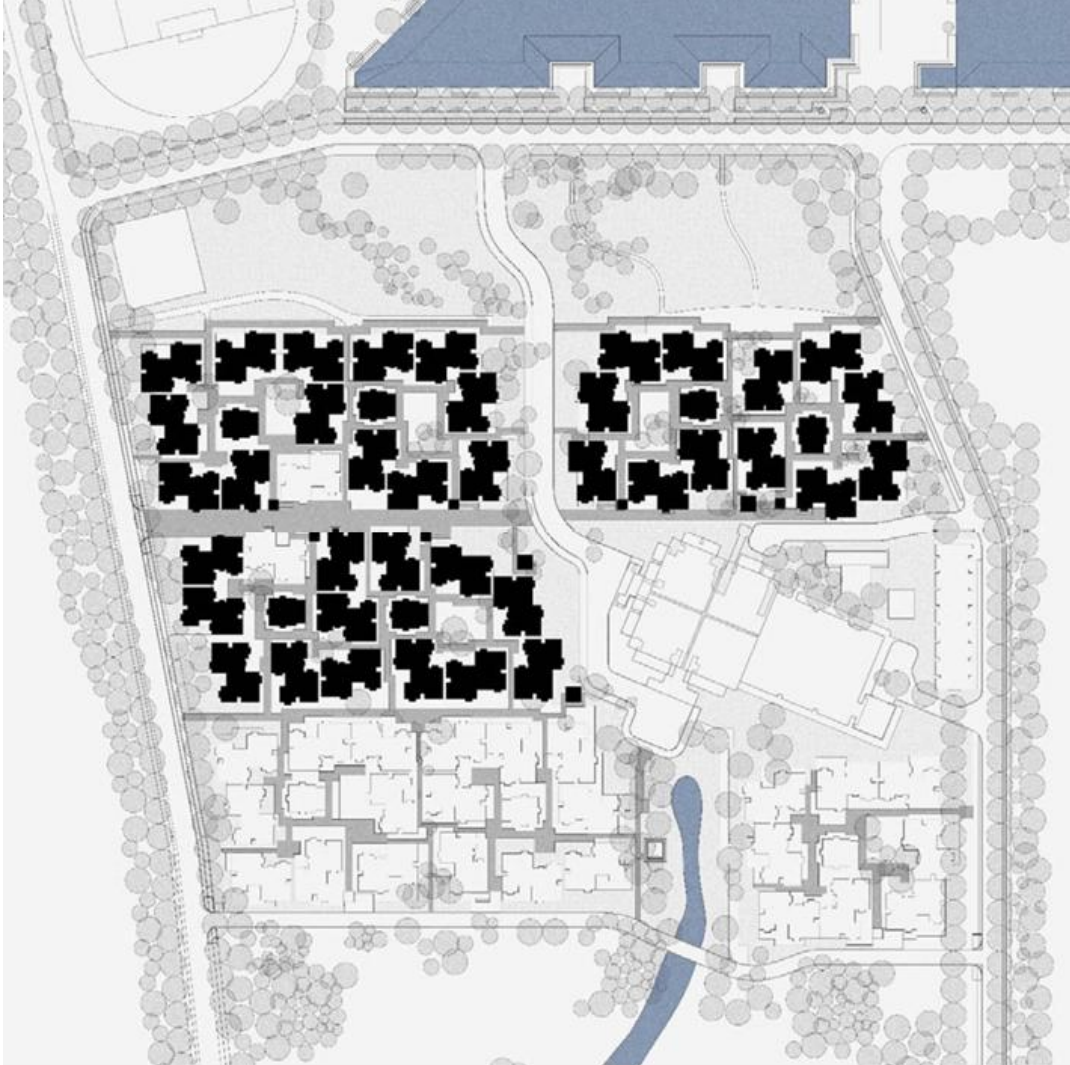


**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**TENDER FOR CONSTRUCTION AND DEVELOPMENT WORKS OF 38  
Nos. STUDENTS HOSTEL BUILDINGS AT**

**NALANDA UNIVERSITY, RAJGIR, BIHAR.**



**NALANDA UNIVERSITY, RAJGIR, BIHAR.**

Every care has been taken while preparing this document to cover all necessary information, matters, specifications, general conditions, special conditions & provisions for smooth and complete execution of works. However, in case of any omission in the tender/ contract document, the most recent version (as on 31<sup>st</sup> December 2025) of General Conditions of Contract (GCC) for CPWD Works, 2023 shall be the reference manual.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **Summary of Scope of work**

This tender is invited for the Construction of Hostel blocks of Nalanda University including necessary infrastructure development works (comprising all Civil, Structural, Finishing Work, all wired, piped services and Related Infrastructure Facilities, miscellaneous works), Rainwater collection system, Development of Internal Roads, Walkways areas etc. for Nalanda University (NU) Project.

Site is located along the Patna - Rajgir Highway and is well connected with the city of Rajgir, Bihar. Total area of the University Campus is 455 acres and the area of Hostel block site is approximately 6 acres ("Site").

The campus of Nalanda University is developed on a mostly flat terrain in the foot hill of Nalanda Hills. The site is located in Gangatic plains area of southern Bihar.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

TABLE OF CONTENTS

<u>SECTION 1</u>	7
<u>TECHNICAL PART</u>	7
INFORMATION & INSTRUCTIONS TO TENDERERS FOR E-TENDERING	8
NOTICE INVITING TENDER	10
INTEGRITY AGREEMENT	15
FORMAT OF BANK GUARANTEE FOR EARNEST MONEY	26
FORMAT OF AGREEMENT	27
PERCENTAGE RATE TENDER & CONTRACT FOR WORKS	29
FORMAT OF PERFORMANCE SECURITY (GUARANTEE) BANK GUARANTEE BOND	31
BRIEF PARTICULARS OF THE WORK	33
SCOPE OF WORKS UNDER THIS TENDER	34
GENERAL GUIDELINES FOR TENDERERS	37
CRITERIA FOR ELIGIBILITY (TECHNICAL TENDER)	40
<u>SECTION 2</u>	67
<u>PROFORMA OF SCHEDULES: A TO F</u>	71
<u>SECTION 3</u>	85
<u>GENERAL RULES &amp; DIRECTIONS</u>	87
General instructions for filling of Tender:	88
General instructions:	89
<u>SECTION 4</u>	92
<u>GENERAL CONDITIONS OF CONTRACT</u>	93
CLAUSE.4.1. EARNEST MONEY	97
CLAUSE.4.2. Performance Guarantee	98
CLAUSE.4.3. Security Deposit	99
CLAUSE.4.4. Compensation for Delay	100
CLAUSE.4.5. When Contract can be Determined	101
CLAUSE.4.6. Work cannot be Started Due to Reasons not Within the Control of the Contractor.	103
CLAUSE.4.7. Contractor Liable to Pay Compensation even if Action not taken as Clause (Work cannot be Started Due to Reasons not Within the Control of the Contractor.	103

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

CLAUSE.4.8.	Time and Extension for Delay	104
CLAUSE.4.9.	Measurement of Work Done	107
CLAUSE.4.10.	Computerized Measurement Book	108
CLAUSE.4.11.	Payment on intermediate Certificate to be regarded as Advances	110
CLAUSE.4.12.	Completion Certificate and completion plans	111
CLAUSE.4.13.	Contractor to keep site clean	112
CLAUSE.4.14.	Payment of final bill	112
CLAUSE.4.15.	Materials supplied by Owner	113
CLAUSE.4.16.	Materials to be provided by Contractor	113
CLAUSE.4.17.	Secured Advance on Non-perishable Materials	114
CLAUSE.4.18.	Mobilization Advance	115
CLAUSE.4.19.	Price Adjustments of Works	117
CLAUSE.4.20.	Dismantled Material Owner's Property	121
CLAUSE.4.21.	Work to be executed in Accordance with Specifications, Drawings, and Orders etc.	122
CLAUSE.4.22.	Deviations / Variations Extent and Pricing	122
CLAUSE.4.23.	Foreclosure of Contract due to Abandonment or Reduction in Scope of Work(s).	124
CLAUSE.4.24.	Carrying out part work at risk & cost of contractor.	125
CLAUSE.4.25.	Suspension of Work	127
CLAUSE.4.26.	Action in case work not done as per Specifications	128
CLAUSE.4.27.	Contractor Liable for Damages/ Defects during defects liability period	129
CLAUSE.4.28.	Contractor to provide tools & plants etc.	130
CLAUSE.4.29.	Recovery of Compensation paid to Workmen	130
CLAUSE.4.30.	Ensuring Payment and Amenities to Workers if Contractor fails	130
CLAUSE.4.31.	Labour Laws to be complied with, by the Contractor	131

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

CLAUSE 4.32.	Contribution to EPF & ESI	137
CLAUSE.4.33.	Minimum Wages Act to be complied with	137
CLAUSE.4.34.	Work not to be sublet Action in case of Insolvency	137
CLAUSE.4.35.	Compensation	138
CLAUSE.4.36.	Changes in firm's Constitution to be intimated	138
CLAUSE.4.37.	Works to be executed under the Contract	138
CLAUSE.4.38.	Settlement of disputes by Conciliation & Arbitration	138
CLAUSE.4.39.	Contractor to indemnify Owner against Patent Rights	141
CLAUSE.4.40.	Action where no Specifications are specified	141
CLAUSE.4.41.	Withholding and lien in respect of sum due from contractor	141
CLAUSE.4.42.	Lien in respect of claims in other Contracts	142
CLAUSE.4.43.	Unfiltered Water Supply	142
CLAUSE.4.44.	Electricity	143
CLAUSE 4.45	HIRE OF Plants & Machinery	144
CLAUSE.4.46.	Return of Surplus	144
CLAUSE.4.47.	Employment of technical Staff and employees	144
CLAUSE.4.48.	Levy/Taxes payable by Contractor	146
CLAUSE.4.49.	Termination of Contract on death of contractor	147
CLAUSE.4.50.	Compensation during warlike situations	147
CLAUSE.4.51.	Apprentices Act Provisions to be Complied With	147
CLAUSE.4.52.	Release Security Deposit after Labour Clearance	148
<u>SECTION 5</u>		149
<u>SPECIAL CONDITIONS OF CONTRACT</u>		149
CLAUSE.5.1.	Sub-Contractors	150
CLAUSE.5.2.	Nominated Sub-Contractors	151
CLAUSE.5.3.	Site office	151
CLAUSE.5.4.	Fossils:	151
CLAUSE.5.5.	Insurance	152

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

CLAUSE.5.6.	Good For Construction Drawings, Details and Clearance to Construct.	154
CLAUSE.5.7.	Protection of Persons, Works and Property	155
CLAUSE.5.8.	Site Security:	158
CLAUSE.5.9.	Warranty/Guarantee	159
CLAUSE.5.10.	Contractor's Responsibilities and Work Control	160
CLAUSE.5.11.	Co-operation with other contractors/specialized agencies/sub-contractors	166
CLAUSE.5.12.	RATES	168
CLAUSE.5.13.	Inspection and rectification of Works	170
CLAUSE.5.14.	Rejected Work	172
CLAUSE.5.15.	Limit of price Adjustment	173
CLAUSE.5.16.	Exemption from price Adjustment	173
CLAUSE.5.17.	SPECIFICATIONS	173
CLAUSE.5.18.	SETTING OUT	174
CLAUSE.5.19.	Contractor shall submit fabrication/ shop drawings for obtaining approval	176
CLAUSE.5.20.	QUALITY ASSURANCE	178
CLAUSE.5.21.	Special Conditions – Electrical Works	179
CLAUSE.5.22.	SPECIAL CONDITIONS - LOW VOLTAGE WORKS	193
CLAUSE.5.23.	SPECIAL CONDITIONS FOR PLUMBING WORKS	197
CLAUSE.5.24.	SPECIAL CONDITIONS FOR FIRE FIGHTING WORKS	217
CLAUSE.5.25.	SPECIAL CONDITIONS FOR HVAC WORKS	224
	<u>SECTION 6</u>	239
	<u>ADDITIONAL CONDITIONS FOR GREEN BUILDING PRACTICES</u>	240
	<u>SECTION 7</u>	250
	<u>SAFETY CODES AND RULES</u>	251
	<u>FORM- K CHECK LIST FOR TENDERER</u>	257

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**SECTION 1**

**TECHNICAL PART**

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**INFORMATION & INSTRUCTIONS TO TENDERERS FOR e-TENDERING**

**NAME OF WORK:** This tender is invited for Construction work of Proposed(38 nos.) Hotel Blocks (Phase II) for Nalanda University including all services Buildings & Structures including necessary infrastructure development works (comprising all Civil, Structural, Finishing Work, all wired, piped services and Related Infrastructure Facilities, miscellaneous works), Rain Water collection system in Hostel parcel Development of Internal Roads, Walkways areas as well etc. for Nalanda University (NU) Project.

Estimated Cost	Rs. 166.68 Crores
Earnest Money	Rs 177 Lakhs
Performance Guarantee	5% of Tendered Value.
Security Deposit	2.5% of Tendered Value
e-Tender Processing Fee	Rs. 15000 (Fifteen Thousand Only)
Time Allowed	15 Months
Date of Uploading Notice Inviting Tender	02.05.2026
Pre-bid Meeting	12.05.2026 at 11.30AM at NU Main Campus Rajgir.
Last Date of Submission of Tender Date & Time	23.05.2026 up to 3.00 PM
Date & Time of Opening of Technical Tender (Eligibility) Documents	23.05.2026 at 03:30 PM

**General Information:**

- 1) Pre-bid meeting shall be held with the prospective tenderers in the office of Nalanda University, at Rajgir, at 11.30 AM on 12.05.2026.

The Program of Pre Bid Meeting is as follows.

- a) Presentation of the Project Details by Vastu Shilpa Sangath LLP and their Associate Consultants regarding Design, Innovative Concepts being tried for this Monumental Project and the Scope the complete Project in General and regarding the works to be covered under the scope of Present Tender.
- b) Presentation and Discussions of Queries raised by the bidders.
- c) Interactive session between The Executives of Nalanda university, Representatives of the Vastu Shilpa Sangath LLP and the representatives of Prospective Bidders.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

2) Tenderers should send all their queries by email, at least Two days before pre - tender meeting, to the Executive Engineer, NU on [phase1.tender@nalandauniv.edu.in](mailto:phase1.tender@nalandauniv.edu.in) The tenderers' authorised representatives are advised to attend the pre-tender meeting. In response to the queries and clarifications sought by the tenderers during the pre-tender meeting, certain modifications/clarification may be issued to all tenderers by the project manager, as may be deemed necessary through an Addendum and not through the minutes of the pre-tender meeting and will be uploaded on website hosting the tender document. No separate communication in this regard shall be sent to the individual tenderers. Tenderers are advised to periodically check the website hosting the tender for any addendum until 2 days before the date of submission of the tender.

3) Technical tender (which essentially covers the eligibility criteria) shall be opened first on due date and time as mentioned above. The time and date of opening of financial tender of tenderer's qualifying the Technical tender shall be communicated to them at later date.

Tenderers are advised to ensure that they have submitted all requisite documents as per the list given in the table below. A checklist in this regard as per Form K is to be completed and signed and sealed and submitted along with the covering letter of the tender documents.

1	Check list of documents submitted by tenderer (Form K)	257
2	Affidavit declaring site visit (Form I)	64
3	Certificate of financial turnover (Form A)	49
4	Bank solvency certificate (Form B)	50
5	Certification of Net Worth from CA Form B-1)	51
5	Certificates of Works Experience (Form C, C1, C3, & D).	52,53,54,55
6	Structure & Organization (Form E).	57
7	Undertaking of Structural Stability (Form F)	59
8	Affidavit for "no back to back award of Work" (Form G).	60
9	Self evaluated marking statement of Eligibility for Short listing of Tenderers. (Form H).	61
9	Affidavit of Site Visit (Form I)	64
10	List of similar past Works and performance on such works	Separate Sheet
11	Calculation of tendering capacity.	Separate Sheet

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**NOTICE INVITING TENDER**

1. **Percentage rate** tenders (in e-tendering mode) are invited by the Nalanda University (NU/Owner) from the eligible contractors in two-tender system for **Construction and Development Works of 38 Nos. Students Hostel Buildings at Nalanda University, Rajgir, Bihar.**

**Name of the Work:** This tender is invited for the Construction Work of Proposed 38 nos. Student Hostel Buildings for Nalanda University including necessary infrastructure development works (comprising all Civil, Structural, Finishing Work, all wired, piped services and Related Infrastructure Facilities, miscellaneous works), Rain Water collection system, Development of Internal Roads, Walkways etc. for Nalanda University (NU) Project.

a) The estimated cost of Work is **Rs. 166.68 Crores (Rupees One hundred sixty six point sixty eight crores only).**

b) Intending tenderers are advised to ensure that they meet the minimum pre-qualification as well as technical eligibility criteria as per the detailed terms and evaluation parameters enumerated in this document before they submit their tender documents.

2. An agreement shall be executed by and between the NU and the successful tenderer for the "Construction work of Proposed 38 nos. Student Hotel Buildings for Nalanda university at Rajgir" in the given format as per the terms and conditions stipulated in the tender documents. *The rates* shall be quoted by the tenderer as per various terms and conditions of this document, which shall form part of the agreement.

3. The time allowed for carrying out the Work shall be **15 months** from the date of initiation as defined in Schedule -F or from the first date of handing over of the Site, whichever is later.

4. The Site shall be handed over to the successful tenderer at the time of award of contract on "as is where is" basis.

5. The tender documents consisting of drawings, specifications, schedule of quantities of the various classes of work to be done and the set of terms & conditions of contract to be complied with and other necessary documents can be seen on the website of NU: [www.nalandauniv.edu.in](http://www.nalandauniv.edu.in) , <https://eprocure.gov.in/epublish/app> and <https://nalandauniv.euniwizarde.com>

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

6. Intending tenderers are advised to obtain valid class-II (or appropriate) digital signature to participate in tendering.

7. While submitting the revised tender, contractor can revise the percentage rate offered one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.

a) **Earnest Money Deposit (EMD) shall be submitted through e-payment gateway of <https://nalandauniv.euniwizarde.com>. Alternatively, a part of the EMD is acceptable in the form of bank guarantee. In such case, **Rs 20,00,000.00** (Rupees Twenty Lakhs Only) of the EMD shall have to be deposited through e-payment gateway, and balance in the form of Bank Guarantee of any nationalized bank, which is to be scanned and uploaded by the intending tenderers and the original bank guarantee shall be physically submitted on or before the last date and time of receipt of tender.** The bank guarantee shall be in the format as prescribed in this document.

b) **Bank Details :**

i) **Name of the Bank :**

ii). **Name and Address of the Bank Branch:**

iii). **Branch Code :**

iv) **IFSC Code :**

c) Interested tenderers who wish to participate in the tender shall pay Rs. 15,000/ (Rupees Fifteen Thousand only) as e-Tender Processing Fee drawn in favour of Vice chancellor, Nalanda University, Rajgir, Bihar in the form of Demand Draft/Pay order or Banker`s Cheque of any nationalized bank, a copy of which shall have to be scanned and uploaded to the e-Tendering website before tender submission

8. The tender submitted shall become invalid if:

- i) The tenderers are found ineligible; or
- ii) The tenderers fail to upload all the documents (Including GST Registration/ Sales Tax Registration) as stipulated in this tender document.
- iii) EMD Not submitted.
- iv) If any discrepancy is noticed between the documents as uploaded at the time of submission of e-Tender and found misleading / forged upon enquiry.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

9. The tenderer whose tender is accepted, will be required to furnish performance guarantee for an amount equal to 5% (Five Percent) of the tendered amount within the period specified in Schedule F. The performance guarantee shall be in the form of Guarantee Bonds/Bank Guarantee of any nationalized bank in accordance with the format prescribed herein. In case the tenderer fails to deposit the requisite performance guarantee within the period as indicated in Schedule F including the extended period if any, the EMD furnished by the tenderer shall be forfeited without any further notice to the tenderer.
10. Intending tenderers must inspect and examine the Site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), form and nature of the Site, the means of access to the Site, the accommodation as may be required and in general, shall obtain all necessary information as to the risks involved, contingencies and other circumstances which may have a bearing or influence or affect the decision of submission of tender. A tenderer shall be deemed to have full knowledge of the Site whether or not an inspection has been undertaken by the tenderer or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed in the amount quoted in the tender. The tenderer shall be responsible for arranging and maintaining cost of all materials, tools & plants, water, electricity, access, facilities for workers and all other services required for executing the Work unless otherwise specifically provided for in this document and/or the agreement and/or any other letter, circular, notification issued or document released by **NU**. Submission of a tender by a tenderer implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the Work to be executed and of conditions and local conditions and other factors having a bearing on the execution of the Work. Tenderer shall submit the Affidavit for Site Visit in the form as prescribed **in FORM "I"**.
11. Owner is not bound to accept the lowest or any other tender and reserves to itself the right to reject any or all the tenders received without assigning any reason thereof. All tenders in which any of the prescribed conditions are not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be rejected summarily. Tenders subject to any conditions proposed by the tenderer shall not be accepted and shall be liable to be rejected.
12. Canvassing either directly or indirectly, in connection with tender is strictly prohibited and the tenders submitted by the tenderers who resort to canvassing shall be liable to be rejected.
13. Owner reserves the right of accepting the whole or any part of the tender and the tenderers shall be bound to perform the same at the quoted rate.
14. The tenderer shall intimate the names of persons who are or were working in any capacity with the tenderer or are subsequently employed by the tenderer and who are or have been an officer in **NU**.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

15. The tender for the Work shall remain open for acceptance for a period of **75 (Seventy five) days** from the date of opening of Technical tender. In case any tenderer withdraws its tender before the end of **seventy five days** or issue of letter of acceptance, whichever is earlier, or makes such modifications in the terms and conditions of the tender which are not acceptable to the Owner, then the Owner shall, without prejudice to any other right or remedy available under the contract or law, be at liberty to forfeit 50% of the EMD. Further, such tenderer shall be barred from participating in the re-tendering process of the Work.
16. This notice-inviting Tender shall form a part of the agreement and shall be read and construed accordingly. The successful tenderer, on acceptance of its tender by the Owner, shall within 15 days from the stipulated date of initiation of the Work, execute an agreement consisting of: -

The Notice Inviting Tender, all the documents including additional conditions, specifications, drawings and minutes of pre-tender meeting, addendums and corrigendum, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**Note: Integrity agreement shall be signed and sealed by the authorised representative of the bidder as per the format of the NIT on the letter head of the bidder initially. Formal agreement on the stamp paper shall be signed between the Nalanda University and the successful bidder at the time of signing of the agreement of the work.**

### **INTEGRITY AGREEMENT**

On account of the e-tendering process adopted by NU, the tenderer does not sign any document physically and entire tender document is submitted online through digital signature. However, the tenderer shall be required to physically submit a set of documents in the office of Vice chancellor, NU. In order to maintain transparency and integrity in the process of awarding contract, it is essential for NU and tenderers to agree and abide by certain principles and policies. NU and tenderers agree to following :

- i) NU shall remain committed to follow the principles of transparency, equity and competitiveness in public procurement;
- ii) The Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the tenderer shall sign the Integrity Agreement, which is an integral part of tender/tender documents, failing which the tenderer will stand disqualified from the tendering process and the tender of the tenderer shall be liable to be rejected summarily.
- iii) The tenderers agree and acknowledge that the NIT is an invitation to offer made on the condition that the tenderers shall sign an Integrity Agreement in the format as provided for in this document. Such Integrity Agreement shall form an integral part of the tender documents. Any failure on the part of any tenderer to execute the Integrity Agreement shall render such tenderer disqualified from the tendering process. The tenderer agrees and acknowledge that bidding for the Work as envisaged in this document shall be regarded as an unconditional and absolute acceptance of the condition of executing the Integrity Agreement.
- iv) The tenderers acknowledge, agree and confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the Integrity Agreement shall be separate and distinct from the main agreement, which shall come into existence once tender is finally accepted by NU. The tenderers acknowledge and accept the tenure of the Integrity Agreement, which shall be in the line with Article 1 of the format of Integrity Agreement as prescribed herein.

The tenderers acknowledge that in the event of failure to sign and accept the Integrity Agreement, while submitting the tender/tender documents, NU shall have unqualified, absolute and unfettered right to disqualify the tenderer and reject the tender in accordance with terms and conditions of the tender. In addition to other components of tender document, the Integrity Pact shall also be signed between The Vice chancellor, NU and successful tenderer after acceptance of tender.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

To,

.....,

.....,

Sub: NIT for the Construction work of Proposed 38 nos. Student Hostel Buildings of NU at Rajgir, Bihar.

Dear Sir,

It is here by declared that Vice chancellor on behalf of the NU is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Tenderer will sign the integrity Agreement, which is an integral part of tender/tender documents, failing which the tenderer will stand disqualified from the tendering process and the tender of the tenderer would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the NU.

Yours faithfully

Vice Chancellor, NU

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**INTEGRITY AGREEMENT**

To,

The Vice Chancellor,

Nalanda University, Rajgir, Bihar

Sub: Submission of Tender for **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS AT NALANDA UNIVERSITY, RAJGIR .**

Dear Sir,

I/We, -----(Name of The bidder)-----  
-----, acknowledge that Vice chancellor on behalf of the NU is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/tender document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that **THE MAKING OF THE TENDER SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE** of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender is finally accepted by NU. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/tender documents, NU shall have unqualified, absolute and unfettered right to disqualify the tenderer and reject the tender in accordance with terms and conditions of the tender.

Yours faithfully

(Duly authorized signatory of the Tenderer)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

To be signed by each tenderer and Vice chancellor, NU)

**INTEGRITY AGREEMENT**

**THIS INTEGRITY AGREEMENT** is made at ..... on this..... Day of .....2015

BETWEEN

The Vice chancellor, NU (hereinafter called "NU" or "Owner" which expression shall unless repugnant to the context or meaning thereof is deemed to include its successors & permitted assigns) of the FIRST PART:

AND

..... (Name and Address of the Individual/firm/Company) through..... (Hereinafter referred to as the (Details of duly authorized signatory) "Tenderer/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns) of the SECOND PART

Each of the NU/Owner and Tenderer/Contractor individually referred to as the "Party" and collectively referred to as the "Parties".

Preamble

WHEREAS the Owner floated a tender **for** Construction and development works of 38 nos. Student hostel buildings at Nalanda University, Rajgir ("Tender") and intends to award, under laid down organizational procedure, contract for .....(Name of Work) hereinafter referred to "Contract".

AND WHEREAS the Owner values full compliance with all applicable laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its tenderer(s) and contractor(s).

AND WHEREAS to meet the purpose aforesaid, the Parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "Integrity Pact" or "Pact"), the terms and conditions of which shall also be read as integral part and parcel of the tender documents and Contract between the Parties.

**In order to achieve these goals, the Owner will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned hereunder.**

**NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the Parties hereby agree as follows and this Pact witnesses as under:**

**Article 1: Commitment of the Owner**

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- 1) The Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:
  - (a) No employee of the Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - (b) The Owner will, during the tender process, treat all tenderer(s) with equity and reason. The Owner will, in particular, before and during the tender process, provide to all tenderer(s) the same information and will not provide to any tenderer(s) confidential/additional information through which the tenderer(s) could obtain an advantage in relation to the tender process or the Contract execution.
  - (c) The Owner shall endeavour to exclude from the tender process any person, whose conduct in the past has involved any bias of any nature.
- 2) If the Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal Code (IPC) or Prevention of Corruption Act, 1988 or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Owner will be at liberty to take appropriate disciplinary action or initiate disciplinary proceedings as per its internal policies and procedures.

### **Article 2: Commitment of the Tenderer(s)/Contractor(s)**

- 1) Each Tenderer/Contractor shall be required to (including their respective officers, employees and agents) adhere to the highest ethical standards and shall report to the Owner of any suspected acts of fraud or corruption or coercion or collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation and award of the Contract.
- 2) The Tenderer(s)/Contractor(s) commits themselves to take all measures essential to prevent any act of corruption. The Tenderers/Contractors commit themselves to observe the following principles during their participation in the Tender process and during the execution of the Contract:
  - a) The Tenderer(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the owner's employees involved in the Tender process or execution of the Contract, or to any third person any material or other benefit which such person is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender Process or during the execution of the Contract.
  - b) The Tenderer(s)/Contractor(s) shall not enter with other Tenderer(s) in to any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of tenders or any other actions to restrict competitiveness or to cartelize in the tendering process.
  - c) The Tenderer(s)/Contractor(s) will not commit any offence under the relevant Indian Penal Code (IPC)/PC Act. Further the Tenderer(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Owner as part of the business relationship regarding plans, technical

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

proposals and business details, including information contained or transmitted electronically or otherwise.

d) The Tenderer(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly, Tenderer(s)/Contractor(s) of Indian nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly can submit tender in the process of tender, but not both. In cases where an agent participates in the tender on behalf of one tenderer, such agent shall not be permitted to quote on behalf of any another tenderer along with the first manufacturer in a subsequent/parallel tender for the same item.

e) The Tenderer(s)/Contractor(s) will, when presenting tender, disclose any and all payments made, is committed to make or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

f) In order to achieve these goals, the Owner will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned hereunder.

- 3) The Tenderer(s)/Contractor(s) will not instigate any third person to commit offences mentioned above or be an accessory to such offences.
- 4) The Tenderer(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice means wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the interest of the Owner.
- 5) The Tenderer(s)/Contractor(s) will not, directly or through any other person or firm use coercive practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

### **Article 3: Consequences of Breach**

Without prejudice to any rights that may be available to the Owner under law or the Contract or the Contract or its established policies and laid down procedures, the Owner shall have the following rights in case of breach of this Integrity Pact by the Tenderer(s)/Contractor(s) and the Tenderer/ Contractor accepts and undertakes to respect and uphold the Owner's absolute right:

- 1) If the Tenderer(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Owner after giving 14 days' notice to the Tenderer/Contractor shall have the powers to disqualify the Tenderer(s)/Contractor(s) from the process of Tender or terminate/determine the Contract, if already executed or exclude the Tenderer/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Owner. Such exclusion may be forever or for a limited period as decided by the Owner.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- 2) **Forfeiture of EMD/Performance Guarantee/Security Deposit:** If the Owner has disqualified the Tenderer(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Owner apart from exercising any legal rights that may have accrued to the Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit rendered by the Tenderer/Contractor.
- 3) **Criminal Liability:** If the Owner obtains knowledge of conduct of a Tenderer or Contractor, or of an employee or a representative or an associate of a Tenderer or Contractor which constitutes corruption within the meaning of the Indian Penal Code (IPC) Act or if the Owner has substantive suspicion in this regard, the Owner will forthwith inform the same to any law enforcing agencies for further investigation.

### **Article 4: Previous Transgression**

- 1) The Tenderer/Contractor declares that no previous transgressions occurred in the last five (5) years with any other company in any country confirming to the anti-corruption approach or with the Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify its exclusion from the process of Tender.
- 2) If the Tenderer makes incorrect statement on this subject, he can be disqualified from the process of Tender or action can be taken for banning of business dealings/holiday listing of the Tenderer/Contractor as deemed fit by the Owner.
- 3) If the Tenderer/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system the Owner may, at its sole discretion, revoke the exclusion prematurely. .

### **Article 5: Equal Treatment of all Tenderers/Contractors/Subcontractors**

- 1) The Tenderer(s)/Contractor(s) undertake(s) to demand from all sub-contractors a commitment in conformity with this Integrity Pact. The Tenderer/Contractor shall be responsible for any violation(s) of this Integrity Pact by any of its subcontractors/sub-vendors.
- 2) The Owner will enter into such agreements or pacts on identical terms as this Integrity Pact with all Tenderers and Contractors.
- 3) The Owner will disqualify Tenderers, who do not submit the duly signed Integrity Pact between the owner and the Tenderer, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

### **Article 6- Duration of the Pact**

This Pact begins when both parties (the Owner and the Tenderer/Contractor) have legally signed it. It expires for the Contractor/Vendor twelve (12) months after the completion of work under the contract or till the continuation of defect liability period, **or last payment made under the contract**, whichever is more and for all other Tenderers, till the Contract has been awarded

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pact as specified above, unless it is discharged/determined by the Owner.

### **Article 7- Other Provisions**

- 1) This Integrity Pact is subject to Indian laws and the place of performance and jurisdiction is the place of office of the Owner/NU who has floated the Tender.
- 2) Any change, amendment, modification or supplement or addendum to the Integrity Pact **as well as termination notice need to be made in writing and** can only be brought into effect by way of mutual written agreement between the parties to the Integrity Pact.
- 3) If the Contractor is a partnership or a consortium, this Pact shall be signed by all the partners or by one or more partners holding power of attorney signed by all partners and consortium members. In case the contractor is a company, the Pact must be signed by a representative duly authorized by board resolution of such company.
- 4) Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of the Integrity Pact remains valid. In this case, the Parties will strive to come to an agreement to their original intentions.
- 5) **Issues like Warranty/Guarantee etc. shall be outside the purview of IEMs.**
- 6) It is agreed term and conditions that any dispute or difference arising between the Parties with regard to the terms of this Integrity Agreement/ Pact, any action taken by the Owner in accordance with this Integrity Agreement / Pact or interpretation thereof shall not be subject to arbitration.
- 7) **In view of the nature of integrity pact, the Integrity Pact is irrevocable and shall remain valid even if the main tender/contract is terminated till the currency of the integrity pact.**
- 8) **If any complaint regarding violation of IP is received directly by the Owner in respect of the contract, the same shall be referred to the IEM for comments/recommendations.**

### **Article 8 –Independent External Monitor (IEM)**

**The Owner appoints competent and credible Independent External Monitor for this Pact after approval by Central Vigilance Commission (Names and address of IEMs are as mentioned in Schedule-F). The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.**

2. **The Monitor is not subject to instructions by the representatives of the parties and performs his/her functions neutrally and independently. The Monitor would have access to all contract documents, whenever required. It will be obligatory for him/her to treat the information and documents of the Bidders / Contractors as confidential.**
3. **The Bidder(s)/Contractor(s) accepts that the IEM has the right to access without restriction to all project documentation of the Principal including that provided by the Contractor, The Contractor will also grant the IEM, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to sub- contractors.**

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

4. The IEM is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Sub-contractor(s) with confidentiality. The IEM has also signed 'Non-Disclosure of Confidential Information' and 'Absence of Conflict of Interest'. In case if any conflict of interest arising at a later date, the IEM shall inform the Engineer-in-Charge and recuse himself / herself from that case.
5. As soon as the IEM notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Owner and request the Management to discontinue or take corrective action, or to take other relevant action. The IEM can in this regard submit non-binding recommendations. Beyond this, the IEM has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
6. The IEM will submit a written report to the SDG/ADG concerned within 8 to 10 weeks from the date of reference or intimation to him by the Owner and, should the occasion arise, submit proposals for correcting problematic situations.
7. If the IEM has reported to the Owner, a substantiated suspicion of an offence under relevant IPC/PC Act, and the Owner has, within a reasonable time, not taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the IEM may also transmit this information directly to the Central Vigilance Commissioner.
8. The Owner will provide to the IEM sufficient information about all meetings among the parties related to the project provided such meetings could have impact on contractual relations between the Owner and the contractor. The parties will offer to the IEM the option to participate in such meetings.
9. The word IEM or monitor would include both singular and plural.

**Article 9- LEGAL AND PRIOR RIGHTS**

All rights and remedies of the Parties hereto shall be in addition to all the other legal rights and remedies belonging to such Parties under the contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact shall have precedence over the Tender/Contact documents with regard to any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the Parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses

.....

(For and on behalf of Owner)

.....

(For and on behalf of Tenderer/Contractor)

WITNESSES (Signature, name and address)

1 .....

2 .....

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

Place:

Dated:

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**FORM OF BANK GUARANTEE FOR EARNEST MONEY**

WHEREAS, contractor..... (Name of contractor)  
(herein under called "the Contractor") has submitted his tender dated.....  
(Date) for construction  
of..... (Name of work)  
(hereinunder called " the Tender")

KNOW ALL PEOPLE by these presents that We, \_\_\_\_\_ (name of bank) having  
our registered office at.....  
(hereinunder called "the Bank") are bound unto Vice chancellor, Nalanda University,  
Rajgir (hereinunder called "the Owner") in the sum of Rs..... (Rs. in  
words ..... ) for which  
payment well and truly to be made to the said Owner, the Bank binds itself, his  
successors and assigns by these presents.

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

The conditions of this obligation are :

- 1) If after opening of the Tender, the Contractor withdraws the Tender during the  
period of validity of Tender (including extended validity of the Tender) specified  
in the Form of Tender;
- 2) If the Contractor having been notified of the acceptance of his Tender by the  
Owner:
  - a. fails or refuses to execute the Form of Agreement in accordance with the  
instructions to contractor, if required;
  - or
  - b. fails or refuses to furnish the Performance Guarantee, in accordance with the  
provisions of the Notice Inviting Tender and instructions given to the Contractor;
  - or
  - c. fails or refuses to start the work, in accordance with the provisions of the  
Contract and instructions given to the Contractor;
  - or
  - d. fails or refuses to submit fresh Bank Guarantee of an equal amount of this Bank  
Guarantee against the Security Deposit after award of the Contract:
  - or
  - e. If the contractor withdraws his tender before the expiry of the validity period,  
or before the issue of letter of acceptance, whichever is earlier, or makes any  
modification in the terms and conditions of the tender, which are not acceptable  
to the NU.

We undertake to pay to the Owner, without any protest or demur, an amount equal  
to the amount specified in this Bank Guarantee or part thereof upon receipt of the

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

first written demand received from the Owner, without the Owner having to substantiate his demand, provided that in his demand the Owner will clearly note that the amount claimed by him is due to him owing to occurrence of one or any of the above conditions, specifying the occurred condition or conditions entitling the Owner to claim the amount under the present Bank Guarantee.

This Guarantee will remain in force up to and including the date -----(validity period of six months from the last date of receipt of the Tender) after the deadline for submission of tender as such deadline is stated in the Instructions to contractor or as it may be extended by the Owner, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE: .....

SIGNATURE OF THE BANK:

.

SEAL:

WITNESS: .....  
(SIGNATURE, NAME AND ADDRESS)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

***(To be executed by and between the Owner and the successful tenderer)***

**FORMAT OF AGREEMENT**

This agreement is executed at \_\_\_\_\_ (place of execution) on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

**BETWEEN**

\_\_\_\_\_  
\_\_\_\_\_, which expression shall mean and include its successors and assigns (name and address of the Owner) ("Owner") of the **FIRST PART**  
**AND**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_,  
(Name and address of the successful tenderer) ("Contractor") of the **SECOND PART**

The Owner and the Contractor shall be individually referred to as the "Party" and collectively referred to as the "Parties"

Whereas the Owner is desirous of Construction work of Proposed 38 nos. Student Hostel Buildings for Nalanda University at Rajgir and had invited tenders by issuing Notice Inviting Tender ("Tender") for selection of a contractor for constructing the said campus. The Contractor has submitted its bid pursuant to the issuing of the Tender by the Owner. WHEREAS the details of the work proposed to be executed by the Contractor is more particularly specified in the Tender for Construction work of Proposed 38 nos. Student Hostel Buildings for Nalanda University at Rajgir , ( name and identification number of Contract) ( "Works") and the Owner has accepted the Tender submitted by the Contractor for the execution and completion of the Works and the remedying of any defects therein, at a contract price of Rs.....  
..... (Rupees \_\_\_\_\_(in words))

WHEREAS the Owner is now desirous of laying down the terms and conditions governing the execution of the Works and has therefore, requested the Contractor to execute the present Agreement.

NOW THIS AGREEMENT WITNESSETH as under:

1. In this Agreement, words and expressions shall carry the same meanings as are ascribed to them in the Conditions of Contract as more particularly mentioned in the Tender. The Parties agree that the Tender shall form an integral part of this Agreement and shall be read and construed accordingly.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

2. In consideration of the payments to be made by the Owner to the Contractor as the consideration for execution of the Works ("Consideration"), the Contractor hereby covenants with the Owner to execute and complete the Works and remedy the defects therein in conformity in all aspects with the provisions of the Tender and this Agreement.

3. The Owner hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and in the remedying the defects wherein the Contract Price or such other sum as may become payable under the provisions of the Tender and this Agreement at the times and in the manner prescribed under the Tender.

4. The following documents shall be deemed to form and be read and construed as part of this Agreement:

- i) Letter of Acceptance;
- ii) Notice to proceed with the Works;
- iii) Contractor's Tender;
- iv) Contract Data;
- v) Conditions of Contract (including Special Conditions of Contract);
- vi) Specifications;
- vii) Drawings;
- viii) Bill of Quantities; and
- ix) Any other documents listed in the Contract Data as forming part of the Contract.

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

The \_\_\_\_\_ Common \_\_\_\_\_ Seal \_\_\_\_\_ of \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

was hereunto affixed in the presence of:

Signed \_\_\_\_\_ Sealed \_\_\_\_\_ and \_\_\_\_\_ Delivered \_\_\_\_\_ by \_\_\_\_\_ the \_\_\_\_\_ said \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Binding \_\_\_\_\_ Signature \_\_\_\_\_ of \_\_\_\_\_ Owner \_\_\_\_\_

Binding \_\_\_\_\_ Signature \_\_\_\_\_ of \_\_\_\_\_ Contractor \_\_\_\_\_

in \_\_\_\_\_ the \_\_\_\_\_ presence \_\_\_\_\_ of \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**Percentage Rate Tender & Contract for Works**

**(A) Tender for the work of:** - Construction and development works of 38 nos. Student hostel buildings at Nalanda University, Rajgir including necessary infrastructure development works (comprising all Civil, Structural, Finishing Work, all wired, piped services and Related Infrastructure Facilities, miscellaneous works), Rain Water collection system, Development of Internal Roads, Walkways areas etc. for Nalanda University (NU) Project.

**TENDER**

I/We have read and examined the notice inviting tender, bill of quantity, Specifications, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender to execute the work of NU mentioned above and detailed in the schedule of quantities within the time frame specified in Schedule F of the tender documents, and in accordance with the specifications, designs, drawing and instructions/orders of the engineer in charge meeting all the Conditions of Contract with such materials as are provided for In the drawings, technical specifications or the schedule of quantities.

I/We agree to keep the tender open and valid **for 75 (Seventy five )** days from the due date of opening of Technical tender and shall not make any modifications in its terms and conditions.

A sum of **Rs. 177 Lakhs** is hereby forwarded in the form of a Deposit at Call receipt/ a demand draft of a Nationalized Bank and a bank guarantee issued by a Nationalized Bank as earnest money. If I/We, fail to furnish the prescribed performance guarantee within prescribed period and form, I/We agree that NU shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that NU shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by Owner towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause Deviations/Variations Extent and Pricing of the tender form. Further, I/We agree that in case of forfeiture of Earnest Money & Performance Guarantee as aforesaid. I/We shall be debarred from participating in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back-to-back basis. Further that, if such a violation comes to the notice of Owner, then I/we shall be debarred for tendering in NU in future forever and shall be liable to legal and penal action as deemed

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

appropriate by the Owner. Also, if such a violation comes to the notice of the Owner before the date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/ Performance Guarantee.

I/We hereby declare that I/we shall treat the Tender Documents, drawings and other records connected with the Work as secret / confidential documents and shall not communicate nor use any information derived therefrom to any persons other than a person to whom I/we am/are authorized to communicate the same or use the information in any manner prejudicial to the interest of Nalanda University.

Dated \_\_\_\_\_ Signature of Contractor

Witness

Name .....

Name .....

Address .....

Address .....

Occupation .....

Telephone .....

**ACCEPTANCE**

The above offer is hereby accepted by me on behalf of The Nalanda University Rajgir, Bihar. For a sum of Rs. ----- (Rupees -----)

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

- (a)
- (b)
- (c)

Dated

For & on behalf of NU

Signature

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**Form of Performance Security (Guarantee) Bank Guarantee Bond**

In consideration of the Nalanda University (hereinafter called "the Owner") having offered to accept the terms and conditions of the proposed agreement between The vice chancellor, Nalanda university and ..... (hereinafter called "the said Contractor(s)") for the work..... (herein after called "the said agreement") having agreed to production of an irrevocable Bank Guarantee for Rs. .... (Rupees ..... only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We, ..... (Herein after referred to as "the Bank") hereby undertake to pay to the Owner an amount not exceeding Rs. .... (Rupees..... Only) on demand by the Owner.

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

3. We, the said bank further undertakes to pay to the Owner any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the Contractor(s) shall have no claim against us for making such payment.

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

5. We, ..... (indicate the name of the Bank) further agree with the Owner that the owner shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Owner against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act of omission on the part of the Owner or any indulgence by the Owner to the said Contractor(s) or

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

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

7. We, ..... (Indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Owner in writing.

8. This guarantee shall be valid up to .....unless extended on demand by the Owner. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs.

..... (Rupees .....) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the ..... day of .....for.....(Indicate the name of the Bank)

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

### **Brief Particulars of the Work**

Nalanda University was established in November 2010. It came into being by an Act of the Indian Parliament – a testimony to the important status that Nalanda University occupies in the Indian intellectual landscape. Nalanda is a standalone international university unlike any other established in the country. Located in the town of Rajgir, in the northern Indian State of Bihar, Nalanda University is mandated to be “an international institution for the pursuit of intellectual, philosophical, historical and spiritual studies”. This new university contains within it a memory of the ancient Nalanda University and is premised on the shared desire of Member States of the East Asia Summit countries to re-discover and strengthen “educational co-operation by tapping the East Asia Regions centres of excellence in education ... [and] to improve understanding and the appreciation of one another’s heritage and history”

The Nalnda University is located in the Nalanda district of Bihar and fronts the State Highway 71. The site for the University is on the South West outskirts of Rajgir town at a distance of 3.5 kms from the current urban edge of the town. Rajgir also happens to be the administrative sub division of Nalanda district.

The whole campus of Nalanda university is spread over 455 acres. The first phase of the Construction of the Campus comprising of Admin Buildings, Academic Buildings, Faculty and Staff Housing, Students’ Hostels, Library and allied Service buildings along with Campus Infrastructure was completed in the year 2021-22. It is proposed to Construct 38 Blocks of Students’ Hostel Buildings along with Common Amenities and allied services including development of Roads and Walkways areas in Phase II. The construction of the Hostel Buildings shall be of Load Bearing Confined Brick Masonry. The work of Foundation of Hostel blocks including and up to Plinth Beams are already Completed. In the present scope of work the contractor shall be required to do anchoring of new reinforcement and modifications in the RCC members at Ground level as per the Structural drawings. The work of Brick Masonry and other construction activities shall be carried out normally. Hostel blocks are spread over a land area of approximately 6 acres. Total Built up area of Construction of The Hostel Blocks shall be approximately 25500 Sqm.

Sr. No	Facilities	Structure	Area in Sqm.
1	Hostels	Load bearing structure in Confined Brick Masonry and exposed RCC	21600

# CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

## Scope of Works Under This Tender:

### 1. Civil works including Roads and Infrastructure works

The Present scope of the work includes Construction of 38 nos. Hostel Blocks for Nalanda University including necessary infrastructure development works (comprising all Civil, Structural, Finishing Work, all wired, piped services and Related Infrastructure Facilities, miscellaneous works), Rain Water collection, Development of Internal Roads, Walkways areas etc. for Nalanda University (NU) Project.

The contractor is expected to execute the work with respect to requirements of Green Building Certification by GRIHA and Net Zero Energy, Water and Waste Management strategies.

### 2. Scope of MEP work:

The scope under this contract shall include the MEP works installation for the project. This includes all components, equipment, and materials as per the MEP design specifications, schedules, BOQ, documents and drawings. The work to be carried out under this contract shall cover the supply, installation, testing and commissioning of works shown in the drawings and specifications.

In general, the work to be performed under this contract shall comprise, but not limited to, of the following:

- a) Supply, installation, testing & commissioning of all high side and low side mechanical equipment like, Cooling tower, Water cooled VRV, Inductions units, pumps, heat exchangers, expansion tanks, fans, fluid cooler, Indoor VRV units.
- b) SITC of all associated piping, valves and accessories
- c) SITC of all associated duct work, dampers, grilles and louvers
- d) Supply, installation, testing & commissioning of all high side and low side electrical equipment like, Power and control panels, distribution boards, sub main and point wiring including conducting, laying of raceways, cable trays, Lighting fixtures, cables, earthing, Lightning protection, switchgears.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

- e) Plumbing electrification works including Pump room works and external plumbing electrification works.
- f) HVAC electrification works as per Single line diagram, BOQ, Specification and any other project document.
- g) Civil works including excavation for earth pits, Pole erection, laying of Hume pipes in soft/hard soil.
- h) Electrification for landscape works.
- i) Liaise with the local supply or any other statutory authority for final approval of CEIG and produce and get approved all relevant documents, drawings as and when required.
- j) To maintain an inventory for the self-procured items as per the Bill of quantities/specifications and the whole sole responsibility of theft / damage loading and unloading of the said material shall lie with the concerning vendor.
- k) SITC of sanitary fixtures, water supply piping and accessories, sewer drainage piping, storm water drainage, pumps, heat exchangers, hot water system, water treatment plants.
- l) SITC of wastewater treatment system.
- m) SITC of Irrigation system.

Contractor shall carry out and complete the said work under this contract in every respect in conformity with the current rules and regulations of the local statutory authority. The contractor shall furnish all labour and install all materials, appliances, equipment (except those items which will be supplied by the Owner to the contractor at site), necessary for the complete provision and testing of the MEP works as specified herein and shown on the drawings. This also includes any materials, appliances, equipment not specifically mentioned herein or noted on the drawings as being furnished or installed but which are necessary and customary to make complete installation shown on the schedule and described herein, properly in working condition.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **3. Scope of ELV work:**

The scope of all items in LV sub-system is SITC supply, Installation, Testing and Commissioning.

- a) Lighting - flood lighting, street lighting, area lighting, focus lighting, building lighting, plant lighting, ambient lighting
- b) Rainwater harvesting system, site drains, swales (constructed, planted, gravel filled), saucer drains, percolation pits, rainwater channels

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**GENERAL GUIDELINES FOR TENDERERS**

**1. GENERAL:**

- 1.1 Letter of transmittal and forms, terms and conditions for deciding eligibility are given in this tender document.
- 1.2 All information called for in the enclosed forms should be furnished against the relevant columns in the forms. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. In case no information is to be provided in a particular column, "nil" or "no such case" or "not available" entry should be made in that column. If any particulars/query is not applicable in case of a tenderer, "not applicable" shall be mentioned against such particular/query. The tenderers are cautioned that not giving complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information may result in the tender being summarily disqualified and rejected entitling the Owner to forfeit the EMD and e-Tender Processing Fee without any further notice to the tenderer. Tenders made by telegram or telex and including those received late shall not be entertained and returned unaccepted.
- 1.3 References, information and certificates from the respective owners certifying suitability, technical knowledge or capability of the tenderer should be attested by the first-class judicial magistrate or equivalent or Group A Gazetted officer of Central or any State Government.
- 1.4 The tenderer may furnish any additional information, which he thinks is necessary to establish his capabilities to successfully complete the envisaged Work. Tenderers are, however, advised not to furnish any superfluous information. No information shall be entertained after uploading of eligibility criteria document unless it is called for by the Engineer-in-Charge.

It is desirable that the tenderer is not contesting or defending any legal proceeding before a court of law or tribunal or quasi-judicial or administrative authority ("Legal Proceedings"). The tenderer must submit information of all on-going Legal Proceedings and for the past seven (7) years. In the event the tenderer has not been subject to any such Legal Proceedings either in process or in the past seven (7) years, an affidavit to this effect, duly notarized shall be submitted in original.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- 1.5 Any information furnished by the tenderer found to be incorrect either immediately or at a later date, shall render such tenderer liable to be debarred from tendering/taking up of the Work.
- 1.6 The tenderer shall not have been black listed by any State/Central Government Department or Public Sector Undertaking or any autonomous body. The tenderer shall submit a duly notarized affidavit, stating on oath that the tenderer has not been blacklisted. Applications received without such affidavit in original shall stand automatically rejected. NU shall be entitled to forfeit the EMD and e-Tender Processing Fee on account of any such rejection.

### **2. DEFINITIONS:**

- 1.7 The **Contract** means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of the President of India 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 one another.

In this document the following words and expressions shall carry the meaning hereby assigned to them:

- 2.1 "Owner/Purchaser/Employer/NU" shall mean and refer to the Nalanda University, Rajgir, Bihar
- 2.2 "Vice Chancellor" shall mean and refer to the Vice Chancellor of NU
- 2.3 "Project Manager" shall mean and refer to the person/PMC nominated as Project Manager by NU and shall report to Engineer In Charge.
- 2.4 "Architect Consultants" shall mean and refer to the Consultants appointed by NU as Architect Consultants.
- 2.5 "Engineer in Charge" shall mean and refer to an authorized representative appointed by NU;
- 2.6 "Tenderer" shall mean and refer to an individual, proprietary firm, firm in partnership, limited company (private or public) or corporation but shall not include a joint venture and special purpose vehicle.
- 2.7 "Market Rate" shall be the rate as decided by the Engineer-in-Charge on the basis of the cost of materials and labour at the site where the work is to be

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

executed plus the percentage mentioned in Schedule 'F' to cover, all overheads and profits.

### **3. METHOD OF APPLICATION:**

- 3.1 If the tenderer is an individual, the application for submitting tender shall be signed by such individual above the full type written name and current address.
- 3.2 If the tenderer is a proprietary concern, the application for submitting tender shall be signed by the proprietor above full type written name and the full name of the proprietor firm with its current address.
- 3.3 If the tenderer is a partnership firm, the application for submitting tender shall be signed by all the partners of the partnership firm above their full typewritten names and current address, or, alternatively, by one or more partners holding power of attorney for the firm and/or other partners. A notarized copy of such power of attorney shall be submitted along with the application. The application shall also be accompanied with a notarized copy of the partnership deed.
- 3.4 If the tenderer is a limited company or a corporation, the application for submitting tender shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The tenderer shall also furnish a notarized copy of the Memorandum and Articles of Association of the company.

### **4. FINAL DECISION-MAKING AUTHORITY**

The NU reserves the right to accept or reject any tender and to annul the process and reject all tenders at any time without assigning any reason thereof or incurring any liability to the tenderers.

5. Particulars of the work given in Brief are to be considered Provisional. They are liable to change and must be considered only as advance information to assist the Tenderers.

### **SITE VISIT**

The tenderer shall visit the Site of Work, at his own cost, and examine the Site and its surroundings to satisfy himself and collect all information that may be considered

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

necessary for proper assessment of the scope of Work enumerated in the this tender document. Contact Person at Nalanda University for Coordination of Site Visit.

Mr. Joy Chowdhury,

Executive Engineer Civil, Nalanda University, Rajgir.

Email: [jchowdhury@nalandauniv.edu.in](mailto:jchowdhury@nalandauniv.edu.in)

### 6. CRITERIA FOR ELIGIBILITY (TECHNICAL TENDER)

7.1 The eligibility criteria applicable for the tenderers for the present tender in terms of the scope of Work shall be:

The tenderer should have satisfactorily completed **three** similar works each costing not less than Rs. 66.67 crores (Rupees Sixty-six point sixty seven crores only) or completed **two** similar works each costing not less than Rs. 100.01 crores (Rupees One hundred point one crores only) or completed **one** similar work costing not less than Rs. 133.34 crores (Rupees One hundred thirty three point three four crores only) during the last seven (7) years ending the last day of the Month previous to the month in which the NIT is published with a Central/State Government Department/Autonomous Body/Central Public Sector Undertaking/State Public Sector Undertaking/City Development Authority/Municipal Corporation of any City formed under any act by Central/State Government and Published in Central/State Gazette.

For the purpose of this clause, "similar work" shall mean any project for Development of Residences for Faculty/Staff/Students of an Institutional Campus of R.C.C. framed structure /load bearing structure buildings including internal water supply, sanitary installation, internal electrical installation, HVAC installation and external infrastructure of Roads, Pathways, Storm water drains, etc., all composite executed in India under one agreement.

The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to 2026.

7.2 The tenderer shall furnish an affidavit as under along with technical bid:

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

"I/We, \_\_\_\_\_, aged \_\_\_ years, having my/our office at \_\_\_\_\_, solemnly affirm on oath as under:

- a) I/We undertake and confirm that eligible similar work(s) has/have not been executed through another contractor on back-to-back basis.
  - b) I/We agree that in case I/We are found to be in violation of (a) above or the same comes to the notice of NU by any means whatsoever, then NU shall be entitled to take appropriate penal and legal action against me/us. If such a violation comes to the notice of NU before the date of initiation of work, the Engineer-in-Charge shall be free to forfeit the entire amount of EMD and the e-Tender Processing Fee.
- 7.3. The tenderer shall have minimum gross average annual financial turnover of **83.34 crores (Rupees Eighty-three point three four crores only) of building projects or on other construction works during the last three financial years ending**. The statement showing the gross average annual financial turnover duly audited by a chartered accountant shall be furnished by the tenderer.
- 7.4. A certificate from a chartered accountant duly certifying that, the tenderer have not incurred any loss in more than two (2) years during the immediate last five financial years shall be furnished by the tenderer.
- 7.5. The Tendering Capacity of the tenderer shall be equal to or more than the estimated cost of the Work put to tender. The tendering capacity shall be calculated on the basis of following formula:

**Tendering Capacity = (A\*N\*1.5)-B; where**

A= Maximum Turnover of construction works executed in any one year during the last Seven years taking into account the completed as well as works in progress; The Value of completed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to.

N= Number of years prescribed for completion of work for which tenders have been invited.

B= Value of existing commitments and on-going works to be completed during the period of completion of work for which tenders have been invited.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

The tenderer shall submit the calculation sheet of Tendering Capacity and also indicate the value of balance work in hand duly certified by a chartered accountant.

- 7.6. The tenderer shall furnish a solvency certificate as may be certified by its bankers for a value, which is not less than **Rs. 66.67 crores (Rupees Sixty-six point sixty-seven crores only)**. Such certificate shall not be of a date, which is more than six months prior to the date of submission of tender. Alternatively, the tenderer shall furnish Net Worth certificate from CA with Unique Document Identification Number (UDIN) of minimum 10% amount of ECPT. (Scanned copy of original to be Uploaded.)
- 7.7. A copy of certificate from respective Owner of work or his Authorised person, attested by first class judicial magistrate or equivalent or a Group A Gazetted officer of Central or any State Government certifying the performance for each work completed by the tenderer in the last seven (7) years and in hand.
- 7.8. The Intending Tenderer must have valid class- III digital signature certificate with encryption key (combo type) to perform any operations/transactions on e-tendering portal/website.
- 7.9. The tenderer shall own construction equipment as per the list required for proper and timely execution of the Work. In case the tenderer does not own such construction equipment, the tenderer shall submit a letter attested by itself that it shall be able to manage the construction equipment by hiring and shall also submit the list of firms from whom it proposes to hire. The list shall clearly specify the names of the firms from whom the equipment would be hired and shall not be an indicative list of firms.
- 7.10. The tenderer shall have sufficient number of technical and administrative employees for proper execution of the Work as per list. The tenderer shall submit a list of employees working with it and clearly state the roles and responsibilities of such employees for execution of the Work.

### **8. Evaluation Criteria for Eligibility (Technical Tender)**

- 8.1 The documents for ascertaining the eligibility submitted by the tenderers shall be evaluated in the following manner:
  - 8.1.1. The criteria for eligibility prescribed in para 7.1 to 7.7 above in respect of experience of similar class of works completed, Tendering Capacity and

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

financial turn over etc. shall be first scrutinized and the tenderer's eligibility for the work shall be determined. Only such tenderers who meet the eligibility criteria specified in para 7.1 to 7.7 above shall be eligible to qualify for evaluation under this section and all other applications shall automatically stand disqualified.

- 8.1.12. Physical inspection of completed projects of tenderers found eligible in terms of Clause 8.1.1 shall be conducted by an evaluation committee appointed by NU for evaluating the quality of work. The evaluation committee may visit the site where works have been executed by the tenderers in the past i.e., works pertaining to civil works, plumbing, electrical, firefighting, works. The exact number of the works to be visited shall be decided by NU.
- 8.1.13 A committee of experts constituted by NU shall undertake further evaluation. The Committee may, at its discretion, call for information from **owners of similar works** carried out or in progress by tenderers and evaluate the previous completed projects regarding all submission including litigations. The tenderers qualifying the eligibility criteria as set out in Para 7.1 to 7.7 above shall be evaluated for following criteria on the basis of details furnished by such tenderers:
- 8.1.4. The tenderer shall submit a self-certified self-evaluation calculation sheet for evaluation parameters mentioned in **Form H.**
- 8.1.5 To become eligible for short-listing, the tenderer shall secure at least 50% marks in each criteria A, B, C, and D, and 60% marks in aggregate as is mentioned hereunder:
- 8.1.6 Nalanda University reserves the right to restrict the list of such qualified contractors to any number deemed fit by it.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

<b>(A)</b>	<b>Financial strength (Form "A" and "B")</b> A Turn over B Solvency	<b>Maximum 20 marks</b> 16 4
<b>(B)</b>	<b>Experience of Work during last seven years.</b>	<b>Maximum 20 marks</b>
	B1 Experience in similar nature of work during last seven years	15 marks
	B2 Experience in project specific work during last seven years	5 marks
<b>(C)</b>	<b>Performance on Works (time Over run)</b>	<b>Maximum 20 marks</b>
<b>(D)</b>	<b>Performance on quality of similar works executed</b>	<b>Maximum 40 marks</b>
	<b>Completed works</b>	<b>25 marks</b>
	<b>Ongoing works</b>	<b>15 marks</b>
<b>Total</b>		<b>100 Marks</b>

8.2 Notwithstanding the fact of having been qualified under Clause 8.1, a tenderer shall be liable to be disqualified in case such tenderer:

8.2.1 Makes misleading, incorrect or false representation or deliberately suppresses the information in the forms, statements and enclosures required to be submitted as a part of the eligibility criteria document.

8.2.2. Has a record of poor performance such as abandoning work, not properly completing the contract, or financial failures / weaknesses etc.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **8. FINANCIAL INFORMATION**

The tenderer shall furnish the Annual Financial Statements for the preceding Five (5) years in **Form A** and Solvency Certificate in **Form B** or Net worth Certificate in **Form B-1**.

### **9. DISCLOSURE OF EXPERIENCE IN SIMILAR WORKS**

10.1 The tenderer shall furnish the following:

- a. List of all works of similar nature successfully completed during the preceding seven years in **Form C** and ongoing works as well in **Form C-1**.
- b. Tenderer shall submit, for the calculations of Bidding capacity, a list of existing commitments and ongoing works in **Form C-3**.
- c. Assessment of Quality of Completed as well as ongoing works (from respective Client) **Form D1**.

### **11 ORGANISATION INFORMATION**

The tenderer shall be required to submit the information in respect of its organization in **Form E**.

12. Undertaking on Structural Stability and Soundness of already completed buildings and infrastructure projects in **Form F**.

### **13. LETTER OF TRANSMITTAL**

The tenderer shall submit the Letter of Transmittal in the format as prescribed in this document.

### **14. OPENING OF THE FINANCIAL TENDER**

After evaluation of the eligibility documents, a list of short-listed tenderers qualified in eligibility criterion shall be prepared. Thereafter, the financial tenders of only the qualified and technically acceptable tenderers shall be opened at the notified time, date and place in the presence of the qualified tenderers or their representatives. The validity of the tenders shall be **75 (Seventy five )** days and shall be reckoned from the date of opening of the Technical Tender.

### **15. AWARD CRITERIA**

- 15.1 The Owner reserves the right, without being liable for any damages or any obligation to inform the tenderer, to:

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

15.1.1. Amend the scope and value of Work.

15.1.2. Reject any or all of the applications without assigning any reason.

15.2 Any effort on the part of the tenderer or his agent to exercise any influence or to pressurize the Owner shall result in rejection of his tender. The Owner clarifies that any kind of canvassing or any act of similar nature is expressly prohibited.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**INFORMATION REGARDING ELIGIBILITY CRITERION  
LETTER OF TRANSMITTAL**

From:

To

The **Vice chancellor,**  
**Nalanda University, Rajgir, Bihar.**

Dear Sir,

**Subject:** Construction work of proposed Hostel Blocks (Phase II) of Nalanda University including necessary infrastructure development works (comprising all Civil, Structural, Finishing Work, all wired, piped services and Related Infrastructure Facilities, miscellaneous works), Rain Water collection system, Development of Internal Roads, Walkways and Landscape areas etc. For Nalanda University (NU) Project.

Having examined the details given in Press –Notice and Technical Tender document for the above work in the subject hereinabove, I/we hereby submit the relevant information as hereunder:

- a. I/We hereby certify that all the statement made and information supplied in the enclosed Forms A to E and accompanying statement are true and correct.
- b. I/We have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
- c. I/We hereby submit the requisite certified solvency certificate and authorize the Vice chancellor, NU to approach the bank, issuing the solvency certificate to confirm the correctness and veracity thereof. I/We also authorize Vice chancellor, NU to approach individuals, owners, firms and corporations to verify my/our competence and general reputation.
- d. I/We submit the following certificates in support of my/our suitability, technical knowledge and capability for having successfully completed the following works:

Sr. No.	Name of Work	Certificate from

- e. I/We hereby submit undertaking on structural stability and soundness as per prescribed form F.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

Enclosures:

Seal of tenderer

Date of submission

SIGNATURE (S) OF TENDERER (S)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**FORM A**

**FINANCIAL INFORMATION**

Financial Analysis-Details to be furnished duly supported by figures in balance sheet/profit & loss account for the last **five (5)** years duly certified by the Statutory Auditors/ a-chartered accountant (in case the appointment of a statutory auditor is not applicable), as submitted by the tenderer to the Income Tax Department (copies of all the documents to be attached).

S. No.	Description	Years				
		2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
i)	Gross Annual turnover on construction work					
ii)	Profit/Loss (Standalone financial statement and consolidate financial statement both)					

i. Financial arrangements for carrying out the proposed work.

Signature of Chartered Accountant with Seal

SIGNATURE OF TENDERER (S)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**FORM B**

(FORM OF BANKER'S SOLVENCY CERTIFICATE FROM A COMMERCIAL BANK)

**SOLVENCY CERTIFICATE**

This is to certify that to the best of our knowledge and information that M/s. /Shri..... having marginally noted address, a customer of our bank are/is respectable and can be treated as good for any engagement up to a limit of Rs..... (Rupees.....).

This certificate has been issued at the specific request for limited purpose of submitting the Tender to the Nalanda University, Rajgir, Bihar and shall not be used for any other purpose whatsoever.

This certificate is issued without any guarantee or responsibility on the bank or any of our officers and employees.

(Signature)

For the Bank

**GENERAL INSTURCTIONS:**

- (1) Banker's Solvency Certificate must be on the letterhead of the bank issuing such certificate, sealed in a cover addressed to the Vice chancellor, NU.
- (2) In case the Solvency Certificate is issued at the request of a partnership firm, such certificate must include names of all partners as recorded with the Bank.
- (3) The Solvency Certificate shall not be more than 6 months old.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**FORM B-1**

**FORM FOR CERTIFICATE OF NET WORTH FROM CHARTERED ACCOUNTANT**

It is to certify that as per the audited balance sheet and profit and loss account during the financial year 2024-25 the net worth of M/s \_\_\_\_\_ (Name and Registered Address of the individual/firm/company) as on \_\_\_\_\_ (the relevant date) is Rs. \_\_\_\_\_ after considering all liabilities. It is further certified that the Net Worth of the company has not eroded by more than 30% in the last three years ending on \_\_\_\_\_ (relevant Date)

Unique Document Identification Number (UDNI) \_\_\_\_\_

Signature of Chartered Accountant \_\_\_\_\_

Name of Chartered Accountant \_\_\_\_\_

Membership No. of ICAI \_\_\_\_\_

Date and Seal \_\_\_\_\_

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**FORM C**

**DETAILS OF ALL WORKS OF SIMILAR NATURE COMPLETED & PROJECT SPECIFIC WORK DURING THE LAST SEVEN YEARS ENDING (previous day of last day of submission of the tender)**

A	B	C	D	E	F	G	H	I	J
Sr. No	Name of work/project and location	Owner or sponsoring organization	Cost of work in Crores of Rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation / arbitration cases pending / in progress with details* (Indicate gross amount claimed and amount awarded by the Arbitration Tribunal.	Name and address / telephone number of officer to whom reference may be made	Whether the work was done on back to back basis Yes/No.
1									
2									
3									

Certified that the above list of works is complete and no work has been left undisclosed and that the information furnished above is true, correct and not misleading to my/our knowledge and belief.

SIGNATURE OF TENDERER (S)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**FORM C-1**

**PROJECTS UNDER EXECUTION**

A	B	C	D	E	F	G	H	I	J
Sr.No	Name of work/project and location	Owner or sponsoring	Cost of work in Crores of Rupees	Date of commencement as per contract	Stipulated date of completion	Up to date percentage progress of work	Slow progress if any and reasons thereof	Name and address / telephone number of officer to whom reference may be made	Remarks.
1									
2									
3									

SIGNATURE OF TENDERER (S)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**FORM C-3**

**Calculation of Bidding Capacity**

**Details of Existing Commitments and Ongoing works**

	A	B	C	D	E	F		G	H	I
Sr. No	Name of work/ project and location	Owner or sponsoring organization	Contract Value in Crore of Rupees	Date of commencement as per contract	Stipulated date of completion	Up to date percentage progress of work	Remaining work in percentage (100-Column 7)	Existing commitment Column 4 x column 8/100	Name and address/ telephone number of officer In Charge of work from the client	Remarks
1	2	3	4	5	6	7	8	9	10	
1										

Total (B) =

Maximum turnover in last seven years = Rs. \_\_\_\_\_

Updated Value of Turnover (A) = Rs. \_\_\_\_\_

No. of Years (N) = \_\_\_\_\_

Bidding Capacity =  $\{(A \times N \times 1.5) - B\}$  = \_\_\_\_\_

Certified that the above list of works is complete and no work has been left undisclosed and that the information furnished above is true, correct and not misleading to my/our knowledge and belief.

SIGNATURE OF TENDERER (S)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**FORM D-1 Assessment of Quality for Completed as well as ongoing works**

Name of Work: -

Date of Inspection: -

Date of Submission of Report: -

A. General Observation & Operational Aspects		Yes/No
1.	Availability of approval from local bodies in case of construction of Private Buildings.	
2.	Availability of approved Structural drawings	
3.	Observation on seepage/leakage in Building	
4.	Whether Line & level Maintained	
5.	In case of basement, observation on seepage, if any	
6.	Any Structural defects/distress observed. If yes give details.	
7.	Whether safety measures adopted at site as per CPWD Safety Code and or govt. Guidelines are adequate or not.	
8.	Whether the Welfare facilities provided to labour as per Clause 19H of GCC for CPWD works and/or govt. guidelines are adequate or not	
9.	Whether AHU getting automatically switched off and fire damps closed in case of fire signal?	
10.	Whether thimbles used for termination of wires in DBs, EBDs, & Panels?	
B. Quality of Work		Marks Assessed
1.	Quality of plaster/finishing	
2.	Quality of RCC/CC work	
3.	Quality of Flooring	
4.	Quality of Wood work	
5.	Quality of Steel work/Aluminium Work	
6.	Quality of Plumbing and Sanitary Installation	
7.	Quality of Workmanship	
8.	Quality of Waterproofing	
9.	If cladding is done, observation on efficiency/quality of cladding/Brick work	
10.	Quality of Internal electrification work	
11.	Quality of DBs, EBDs, & Panels	
12.	Quality of E & M equipment, Panels & feeder pillar	
13.	Quality of fire alarm system/fire-fighting system	
14.	Quality of Air Conditioning work	
15.	Quality of Sub-station based on complete live diagram, capacitor panel, power factor, insulating Mat, cleanliness, cable termination, earthing pits, earthing of transformer	
16.	Any Other aspect (To be elaborated)	

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Average Marks (To be awarded out of 100marks based on average of marks assessed on each attribute mentioned at B above.)

Note: -

1. All the above parameters may be considered for assessing the overall quality of work executed by the contractor. Each attribute shall be assessed on maximum marks of 10 under B above.
2. In case any attribute is not applicable, the same may not be included in the assessment and mentioned are not applicable (N/A)
3. The works as assessed as above shall be converted on a scale of 25/15 marks for completed/ongoing works respectively.  
In case of eligible completed works being more than one the average marks assigned for eligible completed works shall be considered for marking purpose. Only one ongoing work to be assessed.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**FORM E**

**STRUCTURE & ORGANIZATION**

1	Name & Address of the tenderer		
2	Telephone No./Telex No./Fax No./e-mail address		
3	Legal status of the tenderer (attach copies of original document defining the legal status).		
	a)	A proprietary firm	
	b)	A firm in partnership	
	c)	A limited company or Corporation	
4	Particulars of registration with various Government bodies (attach attested photo-copy). (Company Registration, PAN no., GST and VAT Registration, , PF Registration, ESI Registration, Registration as a Contractor with CPWD/MES/State PWD etc. ant information about others) Scan and Upload attested photocopies.		
	ORGANIZATION/PLACE OF REGISTRATION		REGISTRATION No.
	1		
	2		
5	Names and Titles of Directors & Officers with designation to be deputed for the Works		

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

6	Designation of individuals authorized to act for the organization.	
7	Has the bidder, or any constituent partner in case of partnership firm, limited company/Joint Venture ever been convicted by the court of Law? If so, give details	
8		
9		
10		
11	In which Field of Civil Engineering Construction, the bidder has specialization or interest?	
12	Any other information considered necessary but not included above.	

Certified that the information mentioned above is complete and no information has been left undisclosed and that the information furnished above is true, correct and not misleading to my/our knowledge and belief.

SIGNATURE OF TENDERER (S)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**FORM F**

**UNDERTAKING ON STRUCTURAL STABILITY AND SOUNDNESS OF ALREADY COMPLETED BUILDINGS AND INFRASTRUCTURE PROJECTS.**

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

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

I/We also undertake that in addition to above, the Engineer In Charge shall be free to debar us forever from tendering for Nalanda University.

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

Signature of notary with seal.

**SIGNATURE OF TENDERER(S) WITH STAMP**

(Affidavit to be furnished on a 'non-judicial' stamp paper of Rs. 200/- (Scanned copy of the notarized affidavit to be uploaded at the time of submission of bid)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**FORM G**

**GENERAL INSTRUCTIONS FOR THE AFFIDAVIT:**

1. The affidavit shall be executed on appropriate non-judicial **stamp paper** of minimum value as applicable in the State of Bihar and notarized by a Notary Public;
2. Scanned copy of the affidavit shall be uploaded at the time of submission of the tender in soft copy.

**AFFIDAVIT**

I, \_\_\_\_\_, aged \_\_\_ years, son/daughter of \_\_\_\_\_, presently residing at \_\_\_\_\_ and authorized by \_\_\_\_\_ (name of tenderer) ("Tenderer") to solemn this affidavit on behalf of the Tenderer, solemnly affirm on oath as hereunder:

1. The Tenderer confirms that eligible similar works(s) have not been got executed through another contractor on back-to-back basis.
2. The Tenderer confirms and agrees that, if any such violation comes to the notice of Nalanda University, Rajgir, Bihar ("Owner"), then the Owner shall be at liberty to initiate appropriate penal and legal action against the Tenderer.
3. The Tenderer confirms and agrees that if such a violation comes to the notice of the Owner at any time before the date of start of Work, the engineer-in-charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

DEPONENT

VERIFICATION

I, \_\_\_\_\_, aged \_\_\_ years, son/daughter of \_\_\_\_\_, presently residing at \_\_\_\_\_ and authorized by Tenderer verify that the information mentioned above is true and correct to the best of my knowledge and belief.

DEPONENT

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**FORM H**

**CRITERIA FOR ELIGIBILITY CRITERION EVALUATION OF CONTRACTORS**

	<b>Attributes</b>	<b>Max. Marks</b>	<b>Min. qualifying marks</b>	<b>Marks Obtained By the Tenderer on Self-Assessment</b>	<b>Evaluation Criteria *1</b>	<b>Remarks</b>	
<b>A</b>	<b>Financial strength</b>	<b>20</b>	<b>10</b>		(i) 60% marks for minimum eligibility criteria		
1	Average annual turnover	16			(ii) 100% marks for twice the minimum eligibility criteria or more		
2	Solvency Certificate	4			In between (i) & (ii) - on pro-rata basis		
<b>B</b>	Experience in similar nature of work during last seven years	<b>20</b>	<b>10</b>		(i) 60% marks for minimum eligibility criteria  (ii) (ii) 100% marks for twice the minimum eligibility criteria or more  (iii) In between (i) & (ii) - on pro-rata basis		
<b>C</b>	<b>Performance on works (time over run)</b>	<b>20</b>	<b>10</b>				
	Parameter -				<b>SCORE</b>		
	Calculation for Points		If TOR =		1	2. 3.0 >3.5	Maximum Marks (20)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

1	Without levy of compensation				20	15	10	10	
2	With levy of compensation				20	5	0	-5	
3	Levy of compensation not decided				20	10	0	0	
TOR (Time Over Run) = AT/ST, where AT=Actual Time; ST=Stipulated Time.									
Note: Marks for value in between the stages indicated above is to be determined by straight line variation basis									
<b>D</b>	<b>Performance of works (Quality)</b>	<b>40</b>	<b>20</b>		<i>The evaluation will be done by the expert committee/jury nominated by the Nalanda University for the purpose based on documents submitted and/or other means as decided by the committee/jury who may include visit of the site of project referred to by the bidder or any other project deemed fit by Engineer In Charge. The tenderer must submit precise certificate given by the Owner/owner signed by an officer not below the rank of Executive Engineer or equivalent along with photographic evidence to support evaluation for</i>				<b>For this criterion, the tenderer may quote the quantity from ANY of the completed works in the last 7 years</b>

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

					<i>this category, in case of absence of such document Zero (0) marks shall be awarded for the specific category of evaluation.</i>	
	<b>Completed Works (max. 25 marks)</b>	<b>Ongoing Works (max. 15 marks)</b>	<b>Total Marks Assessed</b>			
	To become eligible for short listing the tenderer must secure at least 50% marks in each of the above categories <b>A, B, C and D</b> , and 60% marks in aggregate. The Institute reserves the right to restrict the list of qualified contractors to any number deemed suitable by it.					
	*1- Precise certificate given by the Owner signed by an officer not below the rank of Executive Engineer or equivalent shall be furnished along with photographic evidence to support evaluation for this category, in case of absence of such document Zero (0) marks shall be awarded for the specific category of evaluation.					

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**FORM I**

**GENERAL INSTRUCTIONS FOR THE AFFIDAVIT FOR SITE VISIT:**

- The affidavit shall be executed on appropriate non-judicial **stamp paper** of minimum value as applicable in the State of Bihar and notarized by a Notary Public;
- Scanned copy of the affidavit shall be uploaded at the time of submission of the tender in soft copy.

**AFFIDAVIT FOR SITE VISIT**

I, \_\_\_\_\_, aged \_\_\_ years, son/daughter of \_\_\_\_\_, presently residing at \_\_\_\_\_ and authorized by \_\_\_\_\_ (name of tenderer) ("Tenderer") to solemn this affidavit on behalf of the Tenderer, solemnly affirm on oath as hereunder:

1. The Tenderer confirms that the Tenderer has duly undertaken the visit of the proposed project site of Nalanda University, located at Rajgir, Bihar.
2. The Tenderer has inspected and examined its surroundings and has satisfied itself about the site conditions and site logistics. The Tenderer confirms that it is aware of the ground conditions and nature of the site, means of access to the site and the accommodation area required for establishing the labour camp. The Tenderer agrees and confirms it shall be solely responsible for arranging and maintaining the afore-mentioned at its own cost including all materials, tools & plants, water, electricity, access, facilities for workers and all other services required for executing the Work unless otherwise specifically provided for in the contract documents.
3. The Tenderer confirms and agrees that the submission of the tender implies that the requisite site visit has already been undertaken and that the Tenderer has acquainted itself with the local conditions and other factors having a bearing on the execution of the Work.

DEPONENT

VERIFICATION

I, \_\_\_\_\_, aged \_\_\_ years, son/daughter of \_\_\_\_\_, presently residing at \_\_\_\_\_ and authorized by Tenderer verify that the information mentioned above is true and correct to the best of my knowledge and belief.

DEPONENT

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**Requirement of technical Staff**

**Technical Staff**

The tenderer shall deploy sufficient number of technical and administrative employees for smooth execution of the Work. However Minimum Technical Staff to be deployed at site at all times during the execution of the work will be as per following table. The tenderer shall submit a list of employees stating clearly the responsibility to be assigned to each of such employees. Further, the tenderer shall have the capability and resources to arrange at least 250±10% numbers of skilled and 400±10% numbers of unskilled labourers per day continuously for various stages of the Work. The tenderer shall have to demonstrate the capability to arrange such workers and additional numbers as per the requirement assessed by the Engineer-in-Charge for timely completion of various stages of the Work. The capability as claimed by the tenderer shall be supported by the past performance and an undertaking.

Technical Staff	Requirement of Technical staff		Minimum experience of construction work (Years)
	Qualification	Number	
Civil Engineers	• Project Leader Graduate Engineer	1	20
	Deputy Project Manager Graduate Engineer	1	15
	• Site Mangers Graduate Engineer	1	5
	Or Diploma Engineer	1	10
	Iv. Foreman	2	6
	• Supervisors	5	8
PHE Engineers	Graduate Engineer	1	10
	Graduate Engineer	1	4
	Or Diploma Engineer	1	8

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

Electrical Engineers	Graduate Engineer	1	10
	Graduate Engineer	1	4
	Or Diploma Engineer	1	4
HVAC Engineers	Graduate Engineer	1	10
Quality Assurance/Quality Control	Graduate Engineer	1	8

CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS

**SECTION 2**

**PROFORMA OF SCHEDULES: A TO F**

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**SCHEDULE A  
SCHEDULE OF QUANTITIES**

As per Separate sheet Attached with this NIT

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**SCHEDULE B**

**Schedule of materials to be issued to the Contractor**

<b>Sr. No.</b>	<b>Description of item</b>	<b>Quantity</b>	<b>Rates in figures &amp; words at which the material will be charged to the contractor</b>	<b>Place of issue</b>
1	2	3	4	5
	NIL	NIL	NIL	NIL

**SCHEDULE C**

Tools and plants to be made available to the Contractor:

<b>Sr. No.</b>	<b>Description of item</b>	<b>Quantity</b>
1	2	3
	NIL	NIL

**SCHEDULE D**

Extra schedule for specific requirements / documents for the work if any.

The tenderer may give additional information other than sought for in the preceding paragraphs.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**SCHEDULE E**

**Reference to General Conditions of Contract.**

**Name of Work:** Construction and development works of 38 nos. Student hostel buildings at Nalanda University, Rajgir **including** all services Buildings & Structures including necessary infrastructure development works (comprising all Civil, Structural, Finishing Work, all wired, piped services and Related Infrastructure Facilities, miscellaneous works), Rain Water collection system in Hostel parcel Development of Internal Roads, Walkways areas as well etc. for Nalanda University (NU) Project.

Estimated cost of work: Rs.166.68 Crores

Earnest Money: Rs 177 lakhs

(ii) **Performance Guarantee: 5% (Five per cent) of tendered value**

(iii) **Security Deposit : 2.5% (Two point Five Per cent) of tendered value**

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**SCHEDULE F (GENERAL RULES & DIRECTIONS)**

1. **Authority Inviting Tender. - Vice chancellor, Nalanda University, Rajgir, Bihar.**
2. **Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses "Deviation, Extra items and pricing & Deviation submitted items and pricing"** Please refer below

**Definitions:**

Sr. No	DESCRIPTION	DETAILS
1	<b>Owner</b>	Nalanda University, Rajgir, Bihar
2	<b>Project Manager</b>	Nominated Person/PMC by NU
3	<b>Architect Consultants</b>	Consultants, appointed by NU as Architect Consultants.
4	<b>Engineer In charge</b>	Authorized representative appointed by Nalanda University RAJGIR, BIHAR
5	<b>Accepting Authority</b>	Vice chancellor, Nalanda University Rajgir, Bihar
6	<b>Percentage on cost of materials and Labour to cover all overheads and profits for Extra Items</b>	15%
7	<b>Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clause 4.23 "Deviation, Extra items and pricing &amp; Deviation submitted items and pricing"</b>	100% for works up to Plinth Level  30% for works above Plinth Level.
7	<b>Rates considered for Estimate</b>	DSR 2023 & Market Rates as applicable.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**CLAUSE 4.2: Performance Guarantee**

<b>1</b>	<b>Time allowed for submission of Performance Guarantee programme chart (Time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW welfare board or proof of applying thereof from the date of issue of letter of acceptance</b>	15 (Fifteen) Days
<b>2</b>	<b>Maximum allowable extension beyond the period provided in 1 above</b>	15 (Fifteen) Days with late fee @ 0.1% per day of the Performance Guarantee amount.

**CLAUSE 4.4: Compensation for Delay and Incentive for early completion**

<b>1</b>	<b>Authority for fixing compensation under its clause</b>	Nalanda University, Rajgir, Bihar
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**CLAUSE 4.8: Time and Extension for Delay**

<b>1</b>	<b>Number of days from the date of issue of letter of acceptance for reckoning date of start.</b>	30 (Thirty) days.
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<b>1</b>	<b>Total Time allowed for execution of work</b>	<b>15 (Fifteen) Months</b>
<b>2</b>	<b>Authority to decide Extension of Time</b>	Vice chancellor, Nalanda University, Rajgir, Bihar
<b>3</b>	<b>Rescheduling of Milestones</b>	Engineer In Charge, and the Rescheduling is to be approved by Vice chancellor, Nalanda University (NU)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**Milestone(s) as per table given below:-**

Though the overall time of completion is 36 months the contractor shall complete all the buildings/structures such that the buildings are ready for occupation in all respects, strictly conforming to the time limit specified for such items. Any delay in achieving specified timeline given in the Milestones (as mentioned below) of these building shall invite withholding of payments as indicated against each and every Milestone:

<b>Project Milestone Schedule:</b>			
Sr. No.	Description of Milestone (Physical)	Time allowed in Months (from date of start)	Amount to be with-held in case of non-achievement of milestone
<b>Milestone of Works (Time duration 15 Months)</b>			
1	Completion of structural work up to plinth level for all Buildings in the entire campus	3- Months	0.5% of tendered amount.
2	Preparation of Road Crust Up to WBM/WMM level for all internal Roads and pathways under the entire scope of this work and Construction and Lining, if any, for peripheral storm water drains.	9-Months	0.5% of tendered amount
3	Completion of one Hostel building including all finishing & internal services work for Mock up	6-Months	1.0 % of tendered amount
4	Completion of 38 nos. of blocks of Students housing clusters in all respect including commissioning of all services of Internal & and external Electrification, Water supply, Drainage, around the buildings etc. and to be handed over in <b>HABITABLE condition for occupation by user.</b>	15- Months	1.0% of tendered amount

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

5	Completion of all Walkways, external plumbing Services and finishing of External Paving, street lighting, Gates etc. complete	15 months	1.0% of tendered amount
6	Handing over of site including cleaning and removing contractor's equipment and his site establishments	15 months	1.0% of tendered amount

**Note: Withheld amount shall be released if and when subsequent milestone is achieved.**

**CLAUSE 4.11: Payment on Intermediate Certificate to be regarded as Advances**

<b>1</b>	<b>Gross work to be done together with net payment / adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment.</b>	Minimum Value shall be Rs. 8.0 Crores per Running Bill.
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**List of Testing Equipment.**

<b>1</b>	<b>List of Testing equipment to be provided by the contractor at site laboratory.</b>	As per (Table-1) of Annexure-1 attached.
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**CLAUSE 4.17 & 4.18: Secured Advance & Mobilization Advance.**

<b>1</b>	<b>Secured advance on Non-perishable materials &amp; Mobilization Advance.</b>	Applicable as per detailed relevant clauses of GCC and SCC.
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**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**Clause 4.19 Price Adjustments of Works**

Component of Labour - expressed as per cent of total value of work.

<b>Category of Work</b>	<b>Labour</b>
<b>Cement Component</b>	<b>5%</b>
<b>Labour Component</b>	<b>19%</b>
<b>Civil Component of other Materials</b>	<b>40%</b>
<b>E &amp; M (Electrical, ELV, Plumbing, FFTG and Mechanical) Component of Construction Materials</b>	<b>19%</b>
<b>POL (Diesel) Component</b>	<b>5%</b>
<b>Reinforcement Steel bars/TMT bars/Structural Steel (Including Strands &amp; Cables) Component</b>	<b>12%</b>
<b>Bitumen Component</b>	<b>0 %</b>

**CLAUSE 4.22: Work to be executed in accordance with Specifications, Drawings, and Orders etc.**

<b>1</b>	<b>Specifications</b>	Detailed Specifications and related IS codes.
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**CLAUSE 4.27**

**: Deviations/Variations/ Extent and Pricing**

<b>1</b>	<b>Deviation limit beyond clause 4.23 shall apply for all building work items</b>	100 % (Hundred per cent).
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**CLAUSE 4.28: Action in casework not done as per Specifications**

<b>1</b>	<b>Competent Authority for deciding reduced rates.</b>	Engineer in Charge
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**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**CLAUSE.4.29. Contractor Liable for Damages/ Defects during defects liability period**

<b>4</b>	<b>Defects Liability Period</b>	24 months from completion of the project as a whole.
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**CLAUSE 4.29: Contractors to Supply Tools & Plants etc.**

<b>1</b>	<b>List of machinery, tools &amp; plants to be deployed by the contractor at site</b>	Appendix-I but not limited to.
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**CLAUSE 4.38: Settlement of Disputes**

<b>1</b>	<b>Settlement of Disputes</b>	Committee appointed by NU
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**Employment of Technical Staff and employees**

Requirement of Technical Representative(s) in progressive manner in satisfaction of Project Manager & Engineer-In-Charge with its recovery Rate.

S. No.	Minimum Qualification of Technical Representative	Discipline	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause Figures
1	Project Manager with degree in Engineering	Civil	Twenty Years	One	Rs. 2,50,000/- p.m.
2.	Graduate Engineer	Civil	Fifteen Years	One	Rs. 2,00,000/- p.m.
3.	Graduate Engineer	Civil	Five Years		Rs. 75,000/- p.m.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

	or Diploma Engineer		Eight Years	One	Rs. 75,000/- p.m.	
4	Forman	Civil	Fifteen Years	Two	Rs. 50,000/- p.m.	
5	Supervisor	Civil	Ten Years	Five	Rs. 50,000/- p.m.	
6	Project Manager with degree in Engineering	PHE	Ten Years	One	Rs. 1,75,000/- p.m.	
7.	Graduate Engineer  or Diploma Engineer	PHE	Four Years  Eight Years	One	Rs. 1,00,000/- p.m.  Rs. 1,00,000/- p.m.	.
8	Project Manager with degree in Engineering	Electric	Ten Years	One	Rs. 1,75,000/- p.m.	
9.	Graduate Engineer  or Diploma Engineer	Electric	Four Years  Eight Years	One	Rs. 1,00,000/- p.m.  Rs. 1,00,000/-	.
10.	Project Manager with degree in Engineering	HVAC	Ten Years	One	Rs. 1,75,000/- p.m.	

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

12.	Graduate Engineer	Quality Assurance/ QC	Eight Years	One	Rs. 1,75,000/-	

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**ANNEXURE-1**

**(TABLE-1)**

**Equipment for Testing of Materials & Concrete at Site Laboratory**

All necessary equipment for conducting all necessary tests shall be provided at the site laboratory by the Contractor at its own cost. The following minimum laboratory equipment shall be set up at the Site office laboratory:

<b>Sl. No.</b>	<b>Equipment</b>	<b>Numbers Required (Minimum)</b>
1.	Automatic Cube testing machine (100MT capacity)	1
2.	Slump cone	2
3.	Vicats apparatus with Desk pot	1
4.	Megger & earth resistance tester	2
5.	Pumps and pressure gauges for hydraulic testing of pipes	2
6.	Weighing scale platform type 100 Kg capacity	4
7.	Graduated glass cylinder	As per requirement
8.	Sets of sieves for coarse aggregate [40; 20; 12.5, 10; 4.75mm]	2
9.	Sets of sieves for fine aggregate [4.75; 2.36; 1.18; 600; 300 & 150 micron]	2
10.	Sieve Brushes	2
11.	Cube moulds size 70mmx70mmx70mm	9
12.	Cube moulds size 150mmx150mmx150mm	27
13.	Ultrasonic Test Equipment (For concrete)	1
14.	Hot air oven temp. Range 50 <sup>o</sup> c to 300 <sup>o</sup> c	2
15.	Electronic balance 600gx0.1g. 10kg and 50 kg	3
16.	Physical balance weight up to 5 kg	1
17.	Digital thermometer up to 150 <sup>o</sup> c	1
18.	Air Content of concrete testing machine	1

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

19.	Measuring jars 100ml, 200ml, 500ml	3 Nos. each size
20.	Gauging trowels 100mm & 200mm with wooden handle	2 Nos. Each size
21.	Spatula 100mm & 200mm with long blade wooden handle	2 Nos. Each size
22.	Vernier callipers 12" & 6" size	2 each
23.	Digital PH meter least count 0.01mm	1
24.	Digital Micrometre least count. 0.01mm	1
25.	Digital paint thickness meter for steel 500 micron range	1
26.	GI tray 600x450x50mm, 450x300x40mm, 300x250x40mm	2 Each
27.	Electric Motor mixer 0.25 cum capacity	1
28.	Rebound hammer test digital rebound hammer	1
29.	Screw gauge 0.1mm-10mm, least count 0.05	1
30.	Water testing kit	1
31.	Motorized sieve shaker	1
32.	Pruning Rods 2 Kg weight length 40 cm and ramming face 25 mm <sup>2</sup>	4
33.	Extra Bottom plates for 15 cm cube mould	6
34.	Standard Vibration Table for gauging the cubes	1
35.	Pocket concrete penetrometer 0 to 50kg/sq.cm	1
36.	Concrete temperature measuring thermometer with Brass protection sheath 0- 100 degree centigrade	1
37.	Mortar Cube vibrator	1
38.	Dial type spring balance preferable with zero correction knob capacity 100 kgs reading to ½ kg.	1
39.	Counter scale capacity 1 kg and 10 kg	1 each

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

40.	Iron Weight of 5 kg, 2 kg, 1 kg, 500 gm, 200 gm, 100 gm	2 each
41.	Brass Weight of 50 gm, 20 gm, 10 gm, 5 gm, 2 gm, 1 gm	2 each
42.	Measuring cylinder TPX or Poly propylene capacity 100 ml, 500 ml, 250 ml, 100 ml	2 each
43.	Pyrex, corning or Borosil beakers with cover capacity 500 ml, 200 ml, 50 ml	2 each
44.	Wash Bottles capacity 500 ml	2 each
45.	Thermometers 1-100 degree centigrade/ max. and Min/ Dry and wet with table	1
46.	Set of box spanner ratchet	2
47.	Hammer 1lb & 2lb	2 each
48.	Rubber Hammer	4
49.	Hacksaw with 6 blades	1
50.	Measuring tape 2 Mtr	5
51.	Depth gauge 20cm	2
52.	Steel Foot Plate	2
53.	Shovels & Spade	6
54.	Steel plates 5 mm thick 75x75 cm	2
55.	Plastic or G.I. Buckets 15 ltr, 10 ltr, 5 ltr	2 each
56.	Wheel Barrow	3
57.	Floor Brushes, hair dusters, scrappers, wire brush, paint brushes, shutter steel plat oil, kerosene with stove etc.	3
58	Rapid moisture Meter as per IS : 2720(Part - 2) - 1973	1
59	Modified Proctor Density testing appa:ratus, as per IS : 2720 (part-8) -1983.	1
60	Apparatus for Grain Size Distribution of soil for both Sieve Analysis Hydrometer analysis, as per IS : 2720 (part-4) -1985.	1
61	Apparatus for Liquid Limit & Plastic Limit of soil, as per IS : 2720 (part-5) -1985.	1

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

62	Apparatus for Field Dry Density test of soil by Sand-Replacement method, as per IS : 2720 (part-28) -1974.	1
63	Apparatus for Relative Density test of sandy soil as per IS : 2720 (part-14) -1983	1
64	Apparatus for Free Swell Index Test as per IS : 2720 (part-40) -1977	1
65	Apparatus for Swelling Pressure Test as per IS : 2720 (part-41) -1977	1
66	All necessary accessories for the above.	
67.	Any other equipment for site tests as outlined in BIS and as directed by the Engineer-in-charge.	

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**(TABLE-2)**

**LIST OF MINIMUM REQUIREMENTS OF PLANT AND EQUIPMENT TO BE OWNED / TAKEN ON LEASE BY THE CONTRACTOR**

<b>Sl. No.</b>	<b>Equipment</b>	<b>Numbers (Minimum)</b>
1.	Power driven mobile roller pan mixer conforming to IS 2438. (Heavy duty mortar Mill)	1
2.	Automatic Concrete Batching plants, electrically operated with automatic load cell weigh batching system (minimum capacity 30 cum per hour).	1
4.	Excavator cum loader (JCB 3D model or equivalent).	2
5.	Heavy Duty Crawler Mounted Excavators	1
6.	Compressor machine minimum 200 cfm with rock breaker.	1
8.	DG set of minimum capacity 62.5 KVA.	1
9.	DG set of minimum capacity 10 KVA.	1
10.	Any other machinery required for completion of the work as per decision of Engineer-in-charge.	As per Actual requirement
11.	Mini batching plant (12 cum. /hr.).	2
12.	Transit mixer.	3
13.	Concrete pump (minimum capacity 30 cum/hr.).	1
14.	Needle Vibrators.	5
15.	Plate Vibrators.	3
16.	Dumper.	4
17.	Steel Shuttering Plates with Adequate numbers of Props, H Frames etc.	3500Smt.
18.	Reinforcement bending machine.	2
19.	Reinforcement cutting machine.	2

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

20.	Power driven earth rammer (Soil compactor).	2
21.	Vibratory Pneumatic Roller of 10 to 12 M.T. Capacity	- when required
22.	Motor Grader with 3.25 m Blade	when required
23.	Total station.	1
24.	Auto level & staff.	2
25.	Tractor with trolley.	3
26.	Water tanker.	1
27.	Welding machine 400 Ampere	2
28.	Screener for coarse sand and fine sand	2 nos each
29.	Centrifugal mono block water pump minimum capacity 1 or 2 HP	5
30.	Crawler Mounted, / Truck mounted telescopic boom, hydraulic pilling rig with necessary Rotary drill boring machine.	Set When required

Note: The above list is only indicative and not exhaustive. The Contractor is required to employ necessary Equipment for achieving the progress as per Mile stone schedule given in the preceding pages and the completion of Entire work within 36 months' time from start of the work.

CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS

**SECTION 3**

**GENERAL RULES & DIRECTIONS**

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

The Tender shall state the work to be carried out, the date for submitting and opening tenders and the time allowed for executing the Work, the amount of earnest money to be deposited with the tender, the amount of the security deposit and performance guarantee to be deposited by the successful tenderer and the percentage if any, to be deducted from the security deposit. Copies of the specifications, designs and drawings and any other documents required in connection with the Work signed for the purpose of identification by the officer inviting tender, shall also be open for inspection by the tenderer at the office of NU during office hours.

In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on behalf of such partner by a person holding a valid power of attorney from such absentee partner specifically for the purposes of the tender. Such power of attorney shall be produced along with the tender. Any firm submitting its bid pursuant to the tender shall be duly registered under the Indian Partnership Act, 1932.

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

1. Any person who submits a tender shall fill up the percentage above/below in the Schedule of quantities. Tenders, which propose any alteration in the Work specified in the Schedule of Quantities or in the time allowed for executing the Work or which contain any other conditions of any nature, including conditional rebates, shall be liable to be summarily rejected.

2. Being a **Percentage Rate Tender**, only percentage quoted above/below shall be considered. Percentage Rates quoted by the contractor in Percentage rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However, if a discrepancy is found, the rates which correspond with the amount worked out by the contractor shall unless otherwise proved, shall be taken as correct. If the amount is not worked out by the contractor or it does not correspond with the percentage rates written either in figures or in words, then the rates quoted by the contractor in words shall be taken as correct. Where the percentage rates quoted by the contractor in figures and in words tally, but the amount is not worked out correctly, the percentage rates quoted by the contractor will unless otherwise proved, shall be taken as correct and not the amount.

3. Percentage rates shall be quoted on the tender form. The total amount should be written both in figures and in words. In case of figures, the word 'Rs.' should be written before the figure of rupees and word 'P' after the decimal figures, e.g. 'Rs 2.15 P' and in case of words, the word, 'Rupees' should precede and the

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

word 'Paisa' should be written at the end. Unless the rate is in whole rupees and followed by the word 'only' it should invariably be up to two decimal places. While quoting the percentage rate in Schedule of Quantities, the word 'only' should be written closely following the amount and it should not be written in the next line.

4. The NU will open tenders in the presence of any intending contractors who may be present at the time, and will enter the amounts of the several tenders in a comparative statement in a suitable form. In the event of a tender being accepted, a receipt for the earnest money shall there upon be given to the contractor who shall thereupon for the purpose of identification sign copies of the specifications and other documents mentioned above. In the event of a tender being rejected, the earnest money shall thereupon be returned to the respective tenderers without any interest on such earnest money.

5. The NU shall have the right of rejecting all or any of the tenders and shall not be bound to accept the lowest or any other tender.

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

7. The receipt of an accountant or clerk for any money paid by the tenderer shall not be considered as an acknowledgment for payment to the NU and the tenderer shall be responsible for ensuring that a receipt signed by the NU or a duly authorized cashier is obtained for monies paid.

The tenderers shall sign a declaration under the Officials Secret Act, 1923, for maintaining secrecy of the tender documents, drawings or other records connected with the Work awarded to the tenderer. The unsuccessful tenderers shall return all the drawings shared during the course of the tender process.

9. Use of correcting fluid, anywhere in tender document shall not be permitted. Such tender shall be liable to be rejected.

a. The Contractor whose tender is accepted, shall be required to furnish performance guarantee of 5% (five per cent) of the tendered amount within the period specified herein. Such performance guarantee shall be in the form of Banker's cheque of any nationalized bank/demand draft of any nationalized bank/ fixed deposit receipts or guarantee bonds of any nationalized bank in accordance with the prescribed form.

b. The tenderer whose tender is accepted shall be required to furnish by way of Security Deposit for the fulfilment of the Contract, an amount equal to 2.5% of the tendered value of the work. The Security Deposit shall be collected by deductions from the running bills of the Contractor at the rates mentioned above and the earnest money deposited at the time of tenders, shall be treated

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

as a part of the Security Deposit. The Security Deposit shall also be furnished in form of bank guarantee.

10. Upon acceptance of the tender, the name of the accredited representative(s) of the tenderer, responsible for taking instructions from the Engineer-in-Charge, shall be communicated in writing to the Engineer-in-Charge/Architect Consultants with a copy to the Owner.

11. GST/VAT (), purchase tax, turnover tax, Excise duty, Entry Tax, Royalties, Labour Cess or any other tax applicable in respect of the Contract shall be payable by the Contractor and NU shall not entertain any claim whatsoever in respect of the same. Contractor will raise his bills including GST payable (To be shown separately) on the works.

12. The Tender for the Work shall not be witnessed by a tenderer (s) who are participating in the tender for the same Work. Failure to comply with this condition shall render the tenders of both the tenderer as well as the tender of witness liable to be summarily rejected.

13. The tender includes, in addition to building work, all other works such as sanitary, water supply installations, drainage installation, electrical work, external infrastructure, roads and paths etc.

14. The Contractor shall comply with the provisions of the Apprentices Act, 1961, and the rules and orders issued there under from time to time. Any failure to so shall amount to a breach of the Contract and the Owner may in its discretion, without prejudice to any other right or remedy available in law, cancel the Contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation under the provisions of the Apprentices Act, 1961.

### **General instructions for filling of Tender:**

The tender shall be written in English language. All other information such as documents and drawings supplied by the tenderer shall also be in English language only. Drawings and design shall be dimensioned according to the metric system of measurements. Tender shall be forwarded under cover or a letter typewritten on the tenderer's letterhead and duly signed by the tenderer. Signature must be in long hand, executed in ink by a duly authorized principal/representative of the tenderer. No oral, telegraphic or telephonic tenders or subsequent modifications thereto shall be entertained. If a tender is submitted on behalf of the firm, then all the partners shall sign the Tender or the Tender may be signed by one of the partners in whose favour all the remaining partners have given such signing partner a valid General Power of Attorney. In case of tender submitted by a company, the person who has been authorized by the Board of Directors of the company through a resolution shall sign the tender. Copy of power of attorney/resolution as the case may be, and the authority letter in favour of the person signing must accompany the tender.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

The Tenderer shall quote the rate both in words and in figures, with reference to each item for all the items shown in the attached Schedule of Quantities. Incomplete offer under the tender shall be liable for rejection. Quantities shown in the Schedule of Quantities are approximate and can increase or decrease (i.e. the rates are firm and are independent of quantity). No claim shall be entertained for any item of work due to variation in the quantities.

The tender shall be typed or written in indelible ink and shall be signed by the tenderer or a person(s) duly authorized to sign under a valid Power of Attorney/Board Resolution on behalf of the Tenderer. The person or persons signing the tender shall initial at all pages of the tender document and an initial shall be affixed at all such places where any insertions, corrections or amendments are made by hand.

The tenderer shall sign at the bottom right-hand corner of every page of the tender documents in token of acceptance of tender conditions and for the purpose of identification.

### **General instructions:**

The offer shall remain valid for acceptance for a period of **75 (Seventy five) days** from the date of opening of the Technical Tender.

The Contractor shall give his address for communication along with telephone/e-mail address and all communication made by **NU** to the said address by registered post acknowledgement due, speed post, courier or any other mode of service shall be deemed to have been affected provided that communication made by mobile, telephone or e-mail shall be followed by a written communication through courier/post. All correspondence addressed to **NU** shall be in the name of **Vice chancellor, NU at the Rajgir, Bihar.**

Submission of a tender by a tenderer implies that he has read all the terms and conditions contained in this document and all other contract documents and has acquainted himself of the nature, scope and specifications of the Works to be executed. The Contractor shall also be deemed to have acquainted himself of the local conditions and other factors, which might have a bearing on the execution of the Works. **NU** shall in no event be held liable for any loss/damage/harm for costs or otherwise caused to the Contractor due to such non-acquaintance.

Against the loss/damage/harm caused, **NU** shall not be liable for any act or omission of the act of the Contractor in so far as any violation of any of the aforementioned act.

Tenderers have to compulsorily submit the entire tender Contract Documents. Every Tenderer shall submit all documents issued to him for the purpose of this tender after duly filling the same in all respects. Tender Contracts, which are found to be vague, irrelevant and incomplete, shall be summarily rejected.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Unless otherwise stated, the contract shall be for the whole Work as described in the "Schedule of items of Works" and under the drawings. The Contractor shall be bound to complete the whole Work within such stipulated time as set out in the schedule of items of Works and the drawings, including such additional items as may be necessary, if any, as per drawings and instructions. The issuance of certificate of completion as issued by the Engineer-in-Charge and Architect Consultants shall be mandatory for indicating the successful completion of work and such certificate of completion will be conclusive proof of completion of Work.

The work to be carried out under the contract shall, except as otherwise provided in these conditions shall include all labour, materials, tools, plants, equipment, transport and royalties, taxes, labour cess etc., which may be required in preparation of the full and entire execution and completion of the Works. The descriptions given in the Schedule of Quantities shall, unless otherwise stated be held to include wastage of materials, carrying and all other labour necessary for the full and entire execution and completion of the Work as aforesaid in accordance with the specifications, good practice and recognized principles.

The Contractor shall be deemed to have satisfied itself before submission of the tender as to the correctness and sufficiency of the tender for the Works and of the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the Works. Under no circumstances shall the Contractor withdraw from the Contract once the tender is accepted. In an event of withdrawal or default by the Contractor, the deposit of earnest money made by the Contractor shall stand forfeited.

**No cost payable for preparing tender:** The tenderer shall not be entitled to claim any costs, charges, expenses in connection with preparation and submission and subsequent clarification of its tender in the event of withdrawal of the invitation of tenders by **NU**.

The Contractor shall comply with the provisions of the Apprentices Act, 1961, Minimum Wages Act, 1948, Workmen's Compensation Act, 1923, Contract Labour (Regulation and Abolition) Act, 1970, Payment of Wages Act, 1936, Owner's Liability Act, 1938, Maternity Benefits Act, 1961, and the Industrial Disputes Act, 1947 as may be applicable and the rules and regulations issued there under from time to time. The list of the statutes mentioned above is an indicative list and all enactments applicable for workmen shall be complied with by the tenderer. Any failure to comply with such statutes shall amount to breach of the Contract and the Engineer-in-Charge may, at his discretion, terminate the Contract without any prior notice being furnished to the Contractor. The Contractor shall also be liable for any pecuniary liability arising on account of violation of any of the said statutes and shall indemnify and keep the **NU** indemnified for any loss or damage arising on account of the same.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

The provisions in the Tender documents shall prevail over the contents of the above paragraphs if there is any contradiction or variation in the conditions mentioned hereinabove and those contained in the Contract Documents.

CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS

**SECTION 4**

**GENERAL CONDITIONS OF CONTRACT**

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **Definitions**

The Contract means the documents forming the tender and acceptance thereof and the formal 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 **NU** / Engineer-in- Charge / Architect Consultants and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

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

### **Work:**

The expression work or works shall, mean unless there be something either in the subject or context repugnant to such construction the context otherwise requires 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.

### **Site:**

The Site shall mean the land, adjacent land, path, street or other places, the exclusive right and/or the ownership of which vests with **NU** through which work is to be executed under the contract and which may be allotted or used for the purpose of carrying out the work(s) under the contract.

### **Contractor:**

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

### **Owner/ Owner:**

Owner shall mean NU. NU means Nalanda University RAJGIR, BIHAR.

### **Project Manager:**

Means nominated person appointed by NU.

### **Architect Consultants:**

Architect Consultants shall mean specialist architects, associate architects and their authorized consultants and Engineers appointed by the NU to design and monitoring the Architectural, Structural, Electrical, Plumbing, Acoustic, HVAC, Landscape and Infrastructure works and also to check quality, project scheduling, cost control, installation of systems and equipment in the Works and ensure that the same is done as per the drawings approved.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **Engineer-in-Charge:**

Engineer-in-Charge (EIC) shall mean the authorized representative appointed by NU, who shall supervise and be in charge of the work. Engineer-in-Charge will administer the contract with the assistance of his authorized subordinate Engineers.

### **Accepting Authority:**

Accepting Authority shall mean the authority mentioned in **Schedule 'F'**.

### **Excepted Risk:**

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

### **Market Rate:**

Market rate shall be the rate as decided by the Engineer-in-Charge in consultation with Architect Consultants on the basis of the cost of materials and labor at the site where the Work is to be executed plus the percentage mentioned in **Schedule 'F'** to cover all overheads and profits of the Contractor and approved by the NU.

### **Tendered value:**

Tendered value / Contract value means the value of, the entire Work as stipulated in the letter of award.

### **Date of commencement of work:**

The Date of commencement of work shall be the date when contract comes into existence i.e. the date of the Letter of Acceptance by NU is awarded or the first date of handing over of the site, whichever is later, in accordance with the phasing if any, as indicted in the tender document.

### **Nominated Sub-Contractor:**

Nominated Sub-Contractor shall mean any person or agency appointed by NU for the execution of any particular Work or providing any services under the Contract.

### **Samples and Mock ups:**

Samples are physical samples and full scale mock ups of various items of work, which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **Shop drawings:**

Shop drawings means those drawings or other documents which are specifically prepared by or on behalf of the Contractor to illustrate details of construction for the purpose of fabrication or installation or any other construction related works mentioned in the Tender which required by the Architect Consultants and are submitted to the Engineer In charge for the approval/suggestion/verification from Architect Consultants as the Contractor's intended method of achieving the end result required by the Contract Drawings and Specifications.

### **Submittals:**

Submittals includes progress schedules, setting out drawings, shop drawings, testing and inspection reports, and other information required by the Contract Documents to be submitted by the Contractor for information or approval by the Engineer in Charge.

### **Virtual Completion:**

Virtual Completion shall mean completion of the Works as per drawings and specifications to the entire satisfaction of Engineer in Charge/ Architect Consultants/ NU whose decision shall be final and binding on the parties in this regard and particularly the act of securing by the Contractor to get the virtual completion certificate from the Engineer in charge and submission of the same to the NU to start the Defect liability period of the contract.

### **Final Completion:**

Final Completion shall mean the completion of the Works and any necessary rectification directed to be carried out during the Defects Liability Period and any extension thereof by the Contractor and securing of such final completion certificate from the Engineer in Charge/ Architect Consultants/ NU, and also obtaining the final handing over of the Works to the NU, and the acceptance of the same.

### **Works to be carried out**

The Work to be carried out under the Contract shall, except as otherwise provided in these conditions shall include all labour, materials, tools and plants, equipment and transport to be provided at the cost and expense of the Contractor which may be required in preparation of and for and in the full and entire execution and completion of the Works. The descriptions given in the Schedule of Quantities shall unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary in and for the full and entire execution and completion of the Works as aforesaid in accordance with good practice and recognized principles.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **Sufficiency of Tender:**

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

### **Discrepancies and Adjustment of Errors:**

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

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

- I) Description of Schedule of Quantities.
- ii) Particular Specification and Special Condition, if any.
- iii) Drawings.
- iv) Specifications.
- v) Indian Standard Specifications of B.I.S.
- vi) Accepted good Engineering Practice based on experience of Foreign Countries' Codes.

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

Any error in description, quantity or rate in Schedule of Quantities or any Omission there from shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSES OF CONTRACT**

**CLAUSE. 4.1 EARNEST MONEY**

The earnest money is paid by each tenderer to enable the NU to ensure that a tenderer does not back out of his tender before its acceptance, or refuse to execute the work after it has been awarded to him.

**Deposit of earnest money**

Earnest Money can be paid in the form of a Receipt of Treasury Challan/Deposit at Call receipt/ Demand Draft or Pay order or Banker`s Cheque of any Nationalized Bank drawn in favor of Nalanda University Rajgir, Bihar along with Bank Guarantee of any Nationalized Bank wherever applicable. It shall be scanned and uploaded to the e-Tendering website within the period of tender submission and original should be deposited in office of NU.

A part of earnest money is acceptable in the form of bank guarantee also. In such case, **Rs 20.00 Lakhs** of earnest money will have to be deposited in the form of a Receipt of Treasury Challan/Deposit at Call receipt/Demand Draft or Pay order or Banker`s Cheque of any Nationalized Bank drawn in favour of Nalanda University Rajgir, Bihar and balance in the form of Bank Guarantee of any Nationalized bank, which is to be scanned and uploaded by the intending tenderers.

The intending tenderer has to fill all the details such as Banker's name, Demand Draft/Pay Order/ Banker's Cheque/Bank Guarantee number, amount and date.

The amount of EMD can be paid by multiple Demand Draft / Pay Order / Banker's Cheque / along with multiple Bank Guarantee of any Nationalized Bank.

The Earnest Money will be returned to the unsuccessful tenderers within a week from the date of award of tender. Entry of Demand Draft received as earnest money with the tenders may be kept in the Tender Opening Register, and these need not be deposited in the bank except for the successful tenderer. The Earnest Money will be returned to the successful tenderer after he furnishes Performance Guarantee and duly enters into the contract within such time as per Schedule-F, the successful tenderer shall furnish the required Performance Guarantee and attend the office of the NU for execution of the contract documents.

**Forfeiture of earnest money**

If any tenderer withdraws his tender before the expiry of the validity period, or before the issue of letter of acceptance, whichever is earlier, or makes any modification in the terms and conditions of the tender which are not acceptable to the NU, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the tenderer shall not be allowed to participate in the retendering process of the work.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

If contractor fails to furnish the prescribed performance guarantee within the prescribed period, the earnest money is absolutely forfeited automatically without any notice.

In case the tenderer fails to commence the work specified in Schedule-F or such time period as mentioned in letter of award, after the date on which the Engineer-in-charge issues written orders to commence the work, or from the date of handing over of the site, whichever is later, the NU shall, without prejudice to any other right or remedy, be at liberty to forfeit whole of the earnest money absolutely.

If only a part of the work as shown in the tender is awarded, and the contractor does not commence the work, the amount of the earnest money to be forfeited should be worked out with reference to the estimated cost of the work so awarded.

In case of forfeiture of earnest money as prescribed in above, the tenderer shall not be allowed to participate in the retendering process of the work.

### **CLAUSE.4.2 Performance Guarantee**

(i) The contractor whose tender is accepted will be required to furnish an **irrevocable performance guarantee of 5% (Five per cent)** of the tendered amount, in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within the period specified in Schedule-F. This guarantee shall be in the form of Guarantee Bonds of any Nationalized Bank in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.

(ii) The Performance Guarantee shall be submitted by the contractor on format as per Annexure \_\_\_\_ The Performance Guarantee shall be initially valid up to the stipulated date of completion plus Minimum 6 Months beyond that. In case the time for completion of work gets extended, the contractor shall get the validity of Performance Guarantee extended to cover such extended time for completion of work. After recording of the completion certificate for the work by the Engineer In charge, the performance guarantee shall be returned to the contractor, without any interest.

iii) The Engineer-in-Charge shall not make a claim under the performance guarantee except for amounts to which the NU is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

(a) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer-in-Charge may claim the full amount of the Performance Guarantee.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

(b) Failure by the contractor to pay NU any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer-in-Charge.

(iv) In the event of the contract being determined or rescinded under provision of any of the Clause/Condition of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the NU.

### **CLAUSE. 4.3. Security Deposit**

The person/persons whose tender(s) may be accepted (hereinafter called the contractor) shall permit NU, at the time of making any payment to him for work done under the contract to deduct a sum at the rate **2.5% (Two point Five per cent)** of the gross amount of each running bill, till the sum along with the sum already deposited as earnest money, will amount to security deposit of **2.5% (Two point Five per cent)** of the tendered value of the work. Earnest money shall be adjusted first in the security deposit and further recovery of security deposit shall commence only when the up-to-date amount of security deposit starts exceeding the earnest money. Such deductions will be made and held by NU by way of Security Deposit unless he/they has/have deposited the amount of Security at the rate mentioned above in the form of Government Securities. In case a fixed deposit receipt of any Bank is furnished by the contractor to the NU as part of the security deposit and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the NU to make good the deficit.

All compensations or the other sums of money payable by the contractor under the terms of this contract may be deducted from, or paid by the sale of a sufficient part of his security deposit or from the interest arising there from, or from any sums which may be due to or may be come due to the contract or by Owner on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the contract or shall within 10 days make good in fixed deposit receipt tendered by the State Bank of India or by Scheduled Banks or Government Securities (if deposited for more than 12 months) endorsed in favour of the NU, any sum or sums which may have been deducted from, or raised by sale of his security deposit or any part thereof. The security deposit shall be collected from the running bills of the contractor at the rates mentioned above and the Earnest money deposited at the time of tenders will be treated as part of the Security Deposit.

The security deposit as deducted above can be released against bank guarantee issued by a scheduled bank, on its accumulations to a minimum of Rs.5 lac subject to the condition that amount of such bank guarantee, except last one, shall not be less than Rs.5 lac. Provided further that the validity of bank guarantee, including the one given against the earnest money shall be in conformity with provisions contained in this clause which shall be extended from time to time depending upon extension of contract granted under provisions of Clause 4.8 (Time and Extension for delay).

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

No interest shall be paid on the amount retained as Security Deposit by NU.

### **Security deposit shall be released as follows:**

Security deposit shall be released after the completion of the Defects Liability period.

#### **CLAUSE. 4.4. Compensation for Delay**

If the contractor fails to maintain the required progress in terms of clause 4.8 (Time and Extension for delay) or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Owner on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the authority specified in schedule-F (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day/month (as applicable) that the progress remains below that specified in Clause (Time and Extension for delay) or that the work remains incomplete.

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

Compensation for delay of work @ 1.0 % per month of delay to be computed on per day basis.

Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% (Ten per cent) of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given.

In case no compensation has been decided by the authority in Schedule 'F' during the progress of work, this shall be no waiver of right to levy compensation by the said authority if the work remains incomplete on final justified extended date of completion. If the Engineer in Charge decides to give further extension of time allowing performance of work beyond the justified extended date, the contractor shall be liable to pay compensation for such extended period. If any variation in amount of contract takes place during such extended period beyond justified extended date and the contractor becomes entitled to additional time under clause 4.23 (Deviations/Variations Extent and pricing), the net period for such variation shall be accounted for while deciding the period for levy of compensation. However, during such further extended period beyond the justified extended period, if any delay occurs by events under sub clause 4.8 (Force Majure), the contractor shall be liable to pay compensation for such delay. This is without prejudice to right of action by the Engineer in Charge under clause 4.5 for delay in performance and claim of compensation under that clause

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the NU. In case, the contractor does not achieve a particular milestone mentioned in schedule F, or the re-scheduled milestone(s) in terms of Clause 4.8 (Time and Extension for delay), the amount shown against that milestone shall be withheld, to be adjusted against

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

the compensation levied at the final grant of Extension of Time. Withholding of this amount on failure to achieve a milestone shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.

In the event of any default of non-payment of such compensation by the Contractor, the Owner shall be fully authorized and entitled to recover such amount of compensation from the bill amounts due payable by the Owner to the Contractor.

The completion period of the entire work shall be as stipulated in the schedule. The time limit specified above and as approved in writing by NU, shall be strictly adhered to and followed. In case of delay, Liquidated Damages will be applicable, item wise and against item wise time schedules. Accordingly, the Damages will be based on the value of the Item for which delay has occurred.

The penalty shall be recoverable from the Security Deposit provided by the Contractor and if the Security Deposit is not sufficient, then from the Performance Bank Guarantee or any sum payable to the Contractor under this Contract with the NU.

### **CLAUSE. 4.5. When Contract can be Determined**

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

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

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

**(c)** If the contractor fails to complete the work or section of work with individual

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

date of completion on or before the stipulated or justified extended date, on or before such date of completion; and the Engineer in Charge without any prejudice to any other right or remedy under any other provision in the contract has given further reasonable time in a notice given in writing in that behalf as either mutually agreed or in absence of such mutual agreement by his own assessment making such time essence of contract and in the opinion of Engineer-in-Charge the contractor will be unable to complete the same or does not complete the same within the period specified

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

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

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

(vii) If the contractor shall obtain a contract with Owner as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of integrity agreement.

(viii) If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

arrangement for the benefit of his creditors or purport to do so, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors.

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

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

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

(xii) When the Contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge / Architect Consultants on behalf of the NU shall have powers.

(a) To determine the contract as aforesaid, so far as performance of work by the Contractor is concerned (of which termination notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination, the Earnest Money Deposit, Security Deposit already recovered and Performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the Owner.

(b) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof, as shall be un-executed out of his hands and to give it to another contractor to complete the work. The contractor, whose contract is determined as above, shall not be allowed to participate in the tendering process for the balance work. In the event of anyone or more of the above course(s) of action(s) being adopted by the Engineer-in-Charge the Contractor shall have no right to claim compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagement or made any advances on account or with a view to the execution of the Work or the performance of the contract. In the event action is taken under any of the provisions aforesaid, the Contractor shall neither be entitled to recover nor be paid any sum for any work thereof 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 the Contractor shall only be entitled to be paid the value so certified.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE. 4.6. Work cannot be Started Due to Reasons not Within the Control of the Contractor.**

In case, the work cannot be started due to reasons not within the control of the contractor within 1/8<sup>th</sup> of the stipulated time for completion of work, either party may close the contract by giving notice to the other party stating the reasons . In such eventuality, the Earnest Money Deposit and the Performance Guarantee of the contractor shall be refunded. Within 30 days. But no payment on account of interest, loss of profit or damages etc. shall be payable at all. Neither party shall claim any compensation for such eventuality. This clause is not applicable for any breach of the contract by either party.

**CLAUSE. 4.7. Contractor Liable to Pay Compensation even if Action not taken as Clause 4.5.**

In any case in which any of the powers conferred upon the Engineer-in-Charge by Clause 4.5 (when contract can be determined) thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

**CLAUSE. 4.8. Time and Extension for Delay**

The time allowed for execution of the Works as specified in the time frame or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

mentioned in tender or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, Owner shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee absolutely.

**4.8.1** As soon as possible after the Contract is concluded, but within 7 (seven) working days of award of work and in consideration of

- (a) Schedule of handing over of site as specified in the Schedule 'F'
- (b) Schedule of issue of designs as specified in the Schedule 'F'

1. the Contractor shall submit a Time and Progress Chart for each milestone and get it approved by the Engineer in charge. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Owner and the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per mile stones given in tender.
2. In case of non-submission of construction programme by the contractor, the program approved by the Engineer-in-Charge shall be deemed to be final.
3. The approval by the Engineer-in-Charge of such programme shall not relieve the contractor of any of the obligations under the contract.
4. The contractor shall submit the Time and Progress Chart and progress report using the mutually agreed software or in other format decided by Engineer-in-Charge for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery as per Schedule F to be decided by the NIT approving authority shall be made on per week or part basis in case of delay in submission of the monthly progress report

**4.8.2** If the work(s) were delayed by: -

- (i) Force majeure, or
- (ii) Abnormally bad weather, or
- (iii) Serious loss or damage by fire, or
- (iv) Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

(v) Delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract, or

(vi) Any other cause which, in the reasoned opinion of of the Engineer-in-Charge is beyond the Contractor's control.

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

The contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed above.

**4.8.3** In case the work is hindered in the opinion of the contractor, by the Department or for any reason / event, for which the Department is responsible, the authority as indicated in Schedule 'F' shall, if justified, give a fair and reasonable extension of time and reschedule the mile stones for completion of work. Such extension of time or rescheduling of milestone/s shall be without prejudice to any other right or remedy of the parties in contract or in law, provided further that for concurrent delays under this sub clause and **sub clause 4.8.2** to the extent the delay is covered under **sub clause 4.8.2** the contractor shall be entitled to only extension of time and no damages

**4.8.4** Request for rescheduling of Mile stones and extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed form to the authority as indicated in Schedule-F. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

**4.8.5** In any such case the authority as indicated in Schedule F may give a fair and reasonable extension of time and reschedule the milestones for completion of work. Such extension shall be communicated to the Contractor by the engineer in charge /authority as indicated in tender in writing, within 3 months of the date of receipt of such request. Non-application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the engineer in authority as indicated in Schedule-F and this shall be binding on the contractor.

**4.8.6** In case the work is delayed by any reasons, in the opinion of the Engineer-in-Charge, by the contractor for reasons beyond the events mentioned in **sub clause 4.8.2** or **clause 4.8.3** or **clause 4.8.4** and beyond the justified extended date, without prejudice to right to take action under Clause 3, the Engineer-in-Charge may grant extension of time required for completion of work without rescheduling of milestones. The contractor shall be liable for levy of compensation for delay for such extension of time.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE. 4.9. Measurement of Work Done**

Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of Work done.

All measurement of all items having financial value shall be entered in Measurement Book and/or level field-books complete record is obtained of all works performed under the contract.

All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the Contractor or his authorized representative from time to time during the progress of the Work and such measurements shall be signed and dated by the Engineer-in-Charge or their authorized representative and the Contractor or their authorized representatives in token of their acceptance. If the Contractor objects to any of the measurements recorded, a note shall be made to that effect along with reasons and signed by both the parties.

If for any reason whatsoever, the Contractor or his authorized representative is not available and the Work of recording measurements is suspended by the Engineer-in-Charge or his authorized representative, the Owner shall not entertain any claim from the Contractor for any loss or damages on this account. If the Contractor or his authorized representative does not remain present at the time of such measurements after the Contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to be accepted by the Contractor.

The Contractor shall, without any extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.

Except where any general or detailed description of the Work expressly shows to the contrary, measurements shall be taken Generally in accordance with the mode of Measurements stipulated in IS 1200 with their latest revision for all items of works and with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items, which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.

The Contractor shall give notice of not less than seven days in writing to the Engineer-in-Charge or his subordinate in-charge of the Work before covering up or otherwise placing beyond the reach of measurement any Work in order that the same may be measured and correct dimensions thereof may be taken before the same is so covered up or placed beyond the reach or measurement and shall not cover up any Work without the 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 be placed beyond the reach of measurement without such notice having been given or consent

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

obtained, the same shall be uncovered at Contractor's expense or in default thereof no payment or allowance shall be made for such Work or of the material with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the Authority to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

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

**CLAUSE. 4.10. Computerized Measurement Book**

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

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

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

The final, fair, computerized measurement book given by the contractor, duly bound, with its pages machine numbered, should be 100% correct, and no cutting or over-writing in the measurements would thereafter be allowed. If at all any error

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

is noticed, the contractor shall have to submit a fresh computerized MB with its pages duly machine numbered and bound, after getting the earlier MB cancelled by the Engineer in charge.

The contractor shall also submit to the Engineer in charge separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its pages machine numbered along with two spare copies of the "bill. Thereafter, this bill will be processed by the Engineer in Charge and allotted a number as per the computerized record in the same way as done for the measurement book meant for measurements.

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

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

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

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

It is also a term of this contract that checking and/or test checking the measurements of any item of work in the measurement book and/or its payment in the interim, on account of final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

**CLAUSE. 4.11. Payment on intermediate Certificate to be regarded as Advances**

The interim or running account bills shall be submitted by the contractor for the work executed on the basis of such recorded measurements on the format of the Engineer in charge in triplicate on or before the date of every month or as fixed for the same by the Owner. The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Schedule-F, in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved. Engineer-in-Charge shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work. In the event of the failure of the contractor to submit the bills, Engineer-in-Charge shall prepare or cause to be prepared such bills in which event no claims whatsoever due to delays on payment including that of interest shall be payable to the contractor. Payment on account of amount admissible shall be made by the Engineer-in-Charge certifying the sum to which the contractor is considered entitled by way of interim payment at such rates as decided by the Engineer-in-Charge. An amount of ad-hoc payment not less than 75% of the net amount of the bill under check, shall be made within 10 working days of submission of the bill by the Contractor to the Engineer-in-Charge or his Authorized Engineer together with the account of the material issued by the department, or dismantled materials, if any. The remaining payment is also to be made after final checking of the bill within 28 working days of submission of bill by the contractor. In case of delay in payment of intermediate bills after 45 days of submission of bill by the contractor, provided the bill submitted by the contractor found to be in order, a simple interest @ 5% (five percent) per annum shall be paid to the contractor from the date of expiry of prescribed time limit.

All such interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Engineer-in-Charge relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer-in-Charge under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

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

The Owner will normally on the basis of a certificate from the Engineer in Charge to the effect that the work has been completed up to the level in question make interim advance payments without detailed measurements against work done up to 75% of the running bill. The advance payments so allowed shall be adjusted in the subsequent interim bill by taking detailed measurements thereof. The balance amount shall be released within 15 (Fifteen) working days after the verification in detail by the Engineer-in-charge and getting certification for the quality of the Work(s) from the Architect Consultants for which the Contractor shall provide assistance to the Engineer-in-charge in accordance with their direction. All payment will be subject to statutory or permissible deductions to be made by the Owner prior to the release of the amount to the Contractor.

### **Each bill shall be accompanied by the following documents.**

Measurements and quantities of items of Work done since last bill.

Physical Progress Report along with relevant Photographs.

Copies of quality control tests in specified format covering the Work done since last bill.

Copies of instructions recorded in the site instruction book containing the instructions and compliance made thereof, covering the Work done since last bill.

No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge.

### **CLAUSE. 4.12. Completion Certificate and completion plans**

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

of the execution; thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

**Completion Plans & As Built Drawings :** The contractor shall submit completion plans for Internal and External Civil, Electrical and Mechanical Services within thirty days of the completion of the work, provided that the service plans having been issued for execution by the Engineer-in-Charge, unless the contractor, by virtue of any other provision in the contract, is required to prepare such plans.

In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum of 0.1 % (zero point one percent) of accepted Tendered Value or limit prescribed in Schedule F whichever is more as may be fixed by the authority as mentioned in Schedule F and in this respect the decision of the that authority shall be final and binding on the contractor.

### **CLAUSE. 4.13. Contractor to keep site clean**

When any repair or maintenance of works are carried out, the splashes and droppings from white washing, colour washing, painting etc., on walls, floor, windows, etc. shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, quarters or premises etc. where the work is done: without waiting for the actual completion of all the other items of work in the contract. In case the contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this work done at the cost of the contractor or through any other agency. Before taking such action, the Engineer-in-Charge shall give ten days' notice in writing to the contractor.

### **CLAUSE. 4.14. Payment of final bill**

The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-Charge, will, as far as possible be made within the period of 3 months, the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge,

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

complete with account of materials issued by the Owner and the dismantled materials.

The final bill shall be accompanied by:

All-technical documents on the basis of which the Work was carried out.

1. As-built drawings. Three sets of construction and installation drawings for all Works, including but not limited to, electrical, HVAC, Plumbing, Fire Systems and Site development, showing therein modifications, corrections and additions signed and confirmed by the Engineer-in-Charge to be "as built" drawings. The entire documentation shall be submitted in Compact Discs (CD), using latest version of AUTOCAD software.
2. Completion certificates for embedded and covered-up Works issued by the Engineer-in-Charge.
3. Certificates for tests carried out for various items of Work.
4. Manufacturer's operating and maintenance manuals as well as guarantee/warranty papers, commissioning and handing over reports for whatever equipment/Materials installed.
5. Security Deposit of 5% (Five per cent) of the Contract Value in the form of bank guarantee valid for a Defect liability period from the date of certificate.

### **CLAUSE. 4.15. Materials supplied by Owner**

No material is planned to be procured by the Owner for supply to the contractor however in case of any subsequent mutual understanding entered into between the Owner and the Contractor, it is decided that certain materials are to be supplied by the Owner to the Contractor in the best interest of the Project, the modalities for such Owner supplied material shall be as per mutual understanding between the Owner and the Contractor.

### **CLAUSE. 4.16. Materials to be provided by Contractor**

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

The contractor shall, at his own expense and without delay, submit to the Engineer-in-Charge samples of materials to be used on the work and shall get these approved in advance from Architect Consultants. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply. The Engineer-in-Charge shall within ten days of submission of samples or within such further period as he may require, intimate to the Contractor in writing whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Engineer-in-Charge for his approval, fresh

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

samples complying with the specifications laid down in the contract. When materials are required to be tested in accordance with specifications, approval of the Engineer-in-Charge shall be issued after the test results are received.

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

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

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

The contractor shall at his own expense, provide a material-testing lab at the site for conducting routine field tests. The lab shall be equipped at least with the testing equipment as specified.

### **CLAUSE. 4.17. Secured Advance on Non-perishable Materials**

(I)The contractor, on signing an indenture in the form to be specified by the Engineer-in- Charge, shall be entitled to be paid during the progress of the execution of the work up to 75% (Seventy Five per cent) of the assessed value of any materials which are in the opinion of the Engineer in- Charge non-perishable, non-fragile and non-combustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

of which an advance has been made under this sub-clause are incorporated in the work, the amount of such advance shall be recovered/deducted from the next payment made under any of the clause or clauses of this contract.

(ii) Such secured advance shall also be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer-in-Charge provided the contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer-in-Charge shall be final and binding on the contractor in this matter. No secured advance, shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.

### **CLAUSE. 4.18. Mobilization Advance**

Mobilization advance not exceeding 10% (Ten per cent) of the tendered value may be given, if requested by the contractor in writing within 1[One] month of the order to commence the work. Such advance shall be in two or more instalments as decided by the Engineer In Charge. The amount of any instalment shall not exceed 5% of the tendered amount of the work. The first instalment of such advance shall be released by the Owner/Engineer-in-charge to the contractor on a request made by the contractor to the Owner/Engineer-in-Charge in this regard. The second instalment shall be released by the Owner /Engineer-in-Charge only after the contractor furnishes a proof of the satisfactory utilization for mobilization of the earlier instalment to the entire satisfaction of the Engineer-in-Charge.

- The mobilization advance will be utilized for the following:
- Establishment of site office for contractor and CPWD staff, testing lab, labour camps & basic amenities services for labour/staff, cement godown, reinforcement yard, stores etc.
- For purchase/mobilization of any type of tool, plant and machinery required for execution of work such as concrete batch mix plant, mixtures, transit mixtures, loader, excavators dumpers, DG sets, vibrators, hot mix bitumen plant, paver, rollers, testing lab equipment's etc.
- Barricading of site and procurement of centering / shuttering / staging material etc.
- Any other item as mentioned in NIT by the NIT approving authority.
- 90% of the price of new items and 50% of the depreciated price of old items will be considered for assessing the utilized amount of mobilization advance.
- Expenditure incurred on items/materials which are measurable and payable under agreement/extra items as well as materials eligible for secured advance will be excluded from utilized amount of mobilization advance, if any.
- The assessment of Engineer-in-Charge in this respect shall be final and binding.

Before any instalment of advance is released, the contractor shall execute a Bank guarantee Bond (As per the draft given below) from scheduled Bank for the amount equal to 110% of advance & valid for the contract period. This shall be kept renewed

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

from time to time to cover the balance amount and likely period of complete recovery, together with interest.

The mobilization advance above bear simple interest at the rate of 10% per annum and shall be calculated from the date of payment to the date of recovery, both days inclusive, on the outstanding amount of advance. Recovery of such sums advanced shall be made by the deduction from the contractor's bills commencing after first ten per cent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time eighty per cent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the instalment.

**Draft of Bank Guarantee for Mobilization Advance**

In consideration of the Vice Chancellor, Nalanda University, Rajgir, Bihar (hereinafter called "The NU") having offered to accept the terms and conditions of the agreement No. \_\_\_\_\_ dated \_\_\_\_\_ between Nalanda University, Rajgir, Bihar and M/s. \_\_\_\_\_ (hereinafter called "the said Contractor(s)") for Construction of Proposed(38 nos.) Hotel Blocks (Phase II) for Nalanda University (hereinafter called "the said Agreement") having agreed to production of an irrevocable Bank Guarantee for Rs..... (Rupees.....only) as a guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement, in connection with the said Contractor's request for Mobilization Advance of Rs. \_\_\_\_\_ for utilizing it for the purpose of the said Agreement.

We, (hereinafter referred to as "the Bank") hereby undertake to pay to the NU an amount not exceeding Rs. (Rupees. Only) on demand by the NU.

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

We, the said bank further undertakes to pay The NU any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

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

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

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

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

This guarantee will not be discharged due to the charge in the constitution of the Bank or the Contractor(s).

We..... (Indicate the name of the Bank) Agree that in case of encashment of this bank Guarantee, the requisite amount shall be drawn in favor of "Nalanda University, Rajgir, Bihar, Or Any other authority as demanded by Him and shall be payable by Demand Draft at location specified by him at such time.

We, (indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of The NU in writing.

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

Date the .....day of .....for ..... (Indicate the name of the Bank)

**CLAUSE. 4.19. Price adjustment for works**

If the prices of materials and/or wages of labour required for execution of the work increase, the contractor shall be compensated for such increase as per provisions detailed below and the amount of the contract shall accordingly be varied, subject

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

to the condition that such compensation for escalation in prices and wages shall be available only for the work done during the stipulated period of the contract including the justified period extended under the provisions of **clause 4.8** of the contract without any action under **clause 4.4**. Such compensation for escalation in the prices of materials and labour, when due, shall be worked out based on the following provisions:

- (ii) The base date for working out such escalation shall be the last stipulated date of receipt of tenders including extension, if any.
- (iii) The cost of work on which escalation will be payable shall be reckoned as below :
  - (a) Gross value of work done up to this quarter : (A)
  - (b) Gross value of work done up to the last quarter : (B)
  - (c) Gross value of work done since previous quarter (C) = (A-B)
  - (d) Full assessed value of Secured Advance fresh paid in this quarter : (D)
  - (e) Full assessed value of Secured Advance recovered in this quarter : (E)
  - (f) Full assessed value of Secured Advance for which escalation Payable in this quarter, (F) = (D-E)
  - (g) Advance payment made during this quarter: (G)
  - (h) Advance payment recovered during this quarter: (H)
  - (i) Advance payment for which escalation is payable in this Quarter (I) = (G-H)
  - (j) Amount paid based on prevailing market rates due to deviations/variations as per clause 12 during this quarter: (J)

Then,  $M = C+F+I-J$

Cost of work for which escalation is applicable (W) = 0.85M

Components for materials, labour, etc. shall be pre-determined for every work and incorporated in the conditions of contract attached to the tender documents included in Schedule 'F'. The decision of the Engineer-in-Charge in working out such percentage shall be binding on the contractors.

- (iii) The following principles shall be followed while working out the payment/recovery on account of variation of prices of materials and/ or wages of labour.
  - (a) The compensation for escalation shall be worked out at quarterly intervals and shall be with respect to the cost of work done as per bills paid during the three calendar months of the said quarter. The date of submission of bill by the contractor to the department shall be the guiding factor to decide the bills relevant to the quarterly interval. The first such payment shall be made at the end of three months after the month (excluding the month in which the letter of

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

commencement of work is issued by the Engineer-in-Charge) and thereafter at three months' interval. At the time of completion of the work, the last period for payment might become less than 3 months, depending on the actual date of completion.

- (b) The indices as defined below (excluding LI) relevant to any quarter/period for which such compensation is to be paid shall be the arithmetical average of the indices relevant to the three calendar months. If the period up to the date of completion after the quarter covered by the last such instalment of payment, is less than three months, the indices shall be the average of the indices for the months falling within that period.
- (c) The minimum wage of an unskilled Mazdoor shall be the higher of the wage notified by Government of India, Ministry of Labour and that notified by the local administration both relevant to the place of work and the period of reckoning.
- (d) The escalation for labour also shall be paid at the same quarterly intervals when escalation due to increase in cost of materials is paid under this clause. If such revision of minimum wages takes place during any such quarterly intervals, the escalation compensation shall be payable at revised rates only for work done in subsequent quarters;
- (e) Irrespective of variations in minimum wages of any category of labour, for the purpose of this clause, the variation in the rate for an unskilled Mazdoor alone shall form the basis for working out the escalation compensation payable on the labour component.
- (iv) In the event the price of materials and/or wages of labour required for execution of the work decreases, there shall be a downward adjustment of the cost of work so that such price of materials and/or wages of labour shall be deductible from the cost of work under this contract and in this regard the formula herein stated below under this Clause 10CC shall mutatis mutandis apply.
- (v) The contract price shall be adjusted for increase or decrease in rates and prices of labour, cement, steel reinforcement bar, fuel and lubricants and other input materials as per percentage of materials/labour specified in schedule F and in accordance with the principles, procedures and formulae specified below:
  - (a) Price adjustment for change in cost shall be paid in accordance with the following formulae:

### **(i) For Construction period of this work:**

$$VW = W*(1/100)*[CP *(CI -CO )/CO + LP * (LI -LO )/LO +CMP *(CMI - CMO )/ CMO +EMP *(EMI -EMO )/EMO +FP * (FI -FO )/FO +SP * (SI - SO )/SO + Bp *(BI - Bo )/BO ]$$

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

(ii) For Maintenance period of this work:

$$VW = W * (1/100) * [LP * (LI - LO) / LO + CMP * (CMI - CMO) / CMO + EMP * (EMI - EMO) / EMO + Bp * (BI - Bo) / BO] \quad (* \text{ means multiplication})$$

Where, W=cost of work done as per para (ii) above.

VW (Variation of cost of Work) = Increase or decrease in the cost of works during the period under consideration due to change in the rates for relevant components

Percentage components of materials & labour as specified in the schedule F are defined as under:-

CP - Cement component,

LP - Labour component,

CMP - Civil component of other construction materials,

EMP - E & M component of construction materials

FP - POL (Diesel) component

SP - Reinforcement steel bars/TMT bars/structural steel (including strands and cables) component

BP - Bitumen component

Indices for various components of materials & labour to be used for the purpose of this Clause are defined as under:

CO = Wholesale Price Index for Pozzolana Cement published by office of the Economic Adviser, Ministry of Industry & Commerce valid for the month of last date of receipt of tender including extension, if any.

CI = Wholesale Price Index for Pozzolana Cement published by office of the Economic Adviser, Ministry of Industry & Commerce for the period under consideration.

LO = Minimum daily wage in rupees of an unskilled adult mazdoor, fixed under any law, statutory rule or order as on the last date of receipt of tender including extension, if any. LI = Minimum wage in rupees of an unskilled adult mazdoor, fixed under any law, statutory rule or order as applicable on the last date of the quarter previous to the one under consideration.

CMO = Price Index for civil components of other construction materials valid for the month of the last date of receipt of

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

tender including extension, if any, as issued by the office of CE CSQ (Civil) or successor.

CMI = Price Index for civil components of other construction materials for the period under consideration and as issued by the office of CE CSQ (Civil) or successor.

EMO = Price Index for E & M components of construction materials valid for the month of the last date of receipt of tender including extension, if any, as issued by the office of CE CSQ (Electrical) or successor.

EMI = Price Index for E & M components of construction materials for the period under consideration and as issued by the office of CE CSQ (Electrical) or successor.

FO = Wholesale Price Index of HSD (High Speed Diesel) published by office of the Economic Adviser, Ministry of Industry & Commerce valid for the month of the last date of receipt of tender including extension, if any

FI = Wholesale Price Index of HSD (High Speed Diesel) published by office of the Economic Adviser, Ministry of Industry & Commerce for the period under consideration.

SO = Wholesale Price Index of Mild Steel-long products published by office of the Economic Adviser, Ministry of Industry & Commerce valid for the month of the last date of receipt of tender including extension, if any

SI = Wholesale Price Index of Mild Steel-long products published by office of the Economic Adviser, Ministry of Industry & Commerce for the period under consideration.

BO = Wholesale Price Index of Bitumen published by office of the Economic Adviser, Ministry of Industry & Commerce valid for the month of the last date of receipt of tender including extension, if any

BI = Wholesale Price Index of Bitumen published by office of the Economic Adviser, Ministry of Industry & Commerce for the period under consideration.

(vi) Provided always that: (a) Where provisions of this clause 4.19 are applicable, provisions of price variation under any other clause will not be applicable.

### **CLAUSE. 4.20. Dismantled Material Owner's Property**

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

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE. 4.21. Work to be executed in Accordance with Specifications, Drawings, and Orders etc.**

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

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

The contractor shall have to produce and take an approval of the required shop drawings to execute the work. The Architect Consultants as per requirements will give the conceptual drawing in AutoCAD format to the contractor to produce the detailed shop drawings. Contractor has to plan a schedule in advance for the necessary Shop Drawing and has to submit to the Engineer-In-Charge to get approval from Architect Consultants if required for an approval of execution at-least fifteen days before the actual execution day.

**CLAUSE. 4.22. Deviations / Variations Extent and Pricing**

The Owner/Engineer in charge/Architect Consultants shall have power

(I) To make alteration in, omissions from, additions to or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the Work, and

(II) To omit a part of the Work(s) in case of non-availability of a portion of the site or for any reasons, and Contractor shall be bound to carry out the Works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted Work which the Contractor may be directed to do in the manner specified above as part of the Works, shall be carried out by the Contractor on the same conditions in all respects including price on which he agreed to do the main Work except as hereafter provided.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**4.22.1.** The time for completion of the Works shall in the event of any deviations resulting in additional cost over the Tendered Value of the sum being ordered, be extended/enhanced, if requested by the Contractor, as follows:

(I) in the proportion which the additional cost of the altered, additional or substituted Work, bears to the original Tendered Value plus

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

**4.22.2. Deviation, Extra items and Pricing**

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

**4.22.3. Deviation, Deviated Quantities, Pricing**

A. In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in Schedule-F, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within prescribed time limit of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

B. The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Schedule-F, and the Engineer in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.

**4.22.4.** The contractor shall send to the Engineer-in-Charge once every three months, an up-to-date account giving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by the Engineer-in-Charge which he has executed during the preceding quarter failing which the contractor shall be deemed to have waived his right. However, the Owner may authorize consideration of such claims on merits.

**4.22.5.** For the purpose of operation of Schedule-F the following works shall be treated as works relating to work up to plinth level.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- (a) For buildings and basements: All works up to respective plinth level or up to floor 1 level.
- (b) For abutments, piers and well staining: all works up to 1.2 m above the bed level:
- (c) For retaining wall, wing walls, compound walls, chimneys, overhead reservoirs/ tanks and other elevated structures: All works up to 1.2 meter above the formation ground level
- (d) For reservoirs/ tanks (other than overhead reservoirs/ tanks): All works up to 1.2 meters above the formation ground level:
- (e) For Roads, all items of Excavation and filling including treatment of Sub base.

**4.22.6.** Any operation incidental to or necessarily has to be in contemplation of tenderer while filling tender, or necessary for proper execution of the item included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations.

### **CLAUSE.4.23. Foreclosure of Contract due to Abandonment or Reduction in Scope of Work(s).**

If at any time after acceptance of the tender, the Owner decides to abandon or reduce the scope of the Work(s) for any reason whatsoever and hence not require the whole or any part of the works to be carried out, the Engineer in-Charge shall give notice in writing to that effect to the Contractor and the Contractor shall act accordingly in the matter. The Contractor shall have no claim to any payment of compensation or otherwise whatsoever on account of any profit or advantage which he might have derived from the execution of the Works in full but which he did not derive in consequence of the foreclosure of the whole or part of the Works.

The Contractor shall be paid at contract rates for the full amount for Work(s) executed at site and, in addition, a reasonable amount as certified by the Engineer-in-Charge for the items hereunder mentioned which could not be utilized on the Work to the full extent in view of the foreclosures:

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

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

ii) If any materials supplied by Owner are rendered surplus, the same except normal wastage shall be returned by the contractor to Owner at rates not exceeding those at which these were originally issued, less allowance for any deterioration or damage which may have been caused whilst the materials were in the custody of the contractor. In addition, cost of transporting such materials from site to Owner stores, if so required by Owner, shall be paid.

The Contractor shall, if required by the Engineer-in-Charge, furnish to him books of account, wage books, time sheets and other relevant documents and evidence as may be necessary to enable him to certify the reasonable amount payable under this condition.

**CLAUSE.4.24. Carrying out part work at risk & cost of contractor.**

If Contractor

- At any time makes default in processing the Work(s) or any part of the Work with the due diligence and continues to do so after a notice in writing of 7 days from the Owner/Engineer-in-Charge; or
- Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Owner/Engineer-in-Charge; or
- Fails to complete the Work(s) or items of Work, with individual dates of completion, on or before the date(s) of completion assigned to them, and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge.

The Engineer- in-Charge without invoking action under clause (when Contract can be determined) may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to Owner, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to:

- a) Take possession of the site and any materials, constructional plant, implements, stores, etc. thereon and/or
- b) Carry out the part work/ part incomplete Work of any item(s) by any means at the risk and cost of the Contractor.

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

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

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

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

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

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

Where the Contract is rescinded, the security deposit shall be forfeited and the Performance Guarantee shall be encashed and balance work shall be got done independently without risk and cost of the failed contractor. The failed contractor shall be debarred from participating in the tender for executing balance work and any other work for NU.

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

**Where the Contract is rescinded, the security deposit shall be forfeited and the Performance Guarantee shall be encashed and balance work shall be got done independently without risk and cost of the failed contractor. The failed contractor shall be debarred from participating in the tender for executing balance work and any other work for NU.**

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

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

**CLAUSE.4.25. Suspension of Work**

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

- On account of any default on the part of the Contractor or;
- For proper execution of the Works or part thereof for reasons other than the default of the Contractor; or
- For safety of the Works or part thereof.  
The Contractor shall, during such suspension, properly protect and secure the Work(s) to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-Charge.

(ii) If the suspension is ordered for reasons as per (b) and (c) of para (i) above;

- The Contractor shall be entitled to an extension of time equal to the period of every such suspension plus 25% for completion of the item or group of items of Work(s) for which a separate period of completion is specified in the contract and of which the suspended Work forms a part, and;
- If the total period of all such suspensions in respect of an item or group of items or Work(s) for- which a separate period of completion is specified in the contract exceeds thirty days, the Contractor shall, in addition to the compensation payable under the Contract be entitled to such compensation as the Engineer-in-Charge may consider reasonable in respect of salaries and/or wages paid by the Contractor to his employees and labour at site, remaining idle during the period of suspension by adding thereto 2% to such compensation payable to cover indirect expenses of the Contractor; provided the Contractor submits his claim supported by details to the Engineer-in-Charge within fifteen days of the expiry of the period of 30 days.

(iii) If the Work(s) or part thereof is suspended on the orders of the Engineer-in-Charge for more than three months at a time, except when suspension is ordered for reason as per para (i) (a) above, the Contractor may after receipt of such order serve a written notice on the Engineer-in-Charge requiring permission within fifteen days from receipt by the Engineer-in-Charge of the said notice, to proceed with the

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

Work or part thereof in regard to which progress has been suspended and if such permission is not granted within that time the Contractor, if he intended to treat the suspension, where it affects only a part of the Works as an omission of such part by the Owner or where it affects whole of the Works, as an abandonment of the Works by the Owner, shall within ten days of expiry of such period of 15 days give notice in writing of his intention to the Engineer-in-Charge. In the event of the Contractor treating the suspension as an abandonment of the contract by the Owner, he shall have no claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of Work in full, but which he could not derive in consequence of the abandonment. The Contractor shall, however, be entitled to such compensation, as the Engineer-in-charge may consider reasonable in respect of salaries and or wages paid to his employees and labour at site remaining idle in consequence by adding 2% to the total thereof to cover indirect expenses of the Contractor provided the Contractor submits his claim supported by details to the Engineer-in-Charge within 15 days of the expiry of the period of 3 months.

Provided, further, that the Contractor shall not be entitled to claim any compensation from NU for the loss suffered by him on account of delay by NU in the supply of materials where such delay is covered by difficulties relating to the supply of wagons, force majeure including non-allotment of such materials by controlling authorities, acts of God, acts of enemies of the state/country or any reasonable cause beyond the control of the Owner.

**CLAUSE.4.26. Action in case work not done as per Specifications**

All Works under or in course of execution or executed in pursuance of the Contract shall at all times be open and accessible to the inspection and supervision of the Engineer-in-charge, their authorized subordinates in charge of the Work and the Contractor shall at all times during the usual working hours and at all other times prior to a reasonable notice of the visit of such officers has been given to the Contractor either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractors agent shall be considered to have the same force as if they had been given to the Contractor himself.

If it shall appear to the Engineer-In-Charge or their authorized subordinates in charge of the Work(s), that any Work(s) has been executed with unsound, imperfect, or unskilful workmanship, or with materials or articles of inferior quality, to those contracted, the Contractor shall on demand in writing, which shall be made within six months of the completion of the Work by the Engineer-in-Charge, remove and reconstruct Work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper Contractor and suitable materials or articles at his own charge and cost. In the event of failing to do so within a period specified by the Engineer-in charge in his demand aforesaid, then the Contractor shall be liable to pay

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

compensation at the same rate as under clause of the Contract (for non-completion of the work in time) for such default.

In such case the Engineer-in Charge may not accept the item of Work at the rates applicable under the contract, but may accept such items at reduced rates as the Engineer-in-Charge may consider reasonable during the preparation of on account bills or final bill, if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or remove and re-executed at the risk and cost of the same will be final and binding on the contractor.

### **CLAUSE.4.27. Contractor Liable for Damages/ Defects during defects liability period**

In the event the Contractor or his working people or servants shall break, deface injure or destroy any part of building in which they may be working, or any building road, road curb, fence, enclosure, water pipe, cables, drains, electric or wires, trees, grass or grassland, or cultivated ground contiguous to the premises on which the Work any part is being executed, or if any damage shall happen to the Work while in progress, from any cause whatsoever, or if any defect, shrinkage or other faults appear in the Work within **24 (Twenty Four) months** after a certificate final or otherwise of its completion has been given by the Engineer-in charge as aforesaid arising out of defect or improper materials or workmanship, the Contractor shall upon receipt of a notice in writing on that behalf by the Engineer-in-Charge make the same good at his own expense. In default of the Contractor to make such payments, the Engineer-in Charge shall cause the same to be made good by other workmen and deduct the expense incurred from any sums that may be due and payable to the Contractor either from the bills due and payable to the Contractor or from his security deposit. The security deposit of the contractor shall not be refunded before the expiry of twelve months after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later.

Provided that in the case of road work, if in the opinion of the Engineer-in-Charge, half of the security deposit is sufficient, to meet all liabilities of the contractor under this contract, half of the security deposit will be refundable after six months and the remaining half after twelve months of the issue of the said certificate of completion or till the final bill has been prepared and passed whichever is later.

In case of Maintenance and Operation works of E&M services, the security deposit deducted from contractors shall be refunded within one month from the date of final payment or within one month from the date of completion of the maintenance contract whichever is earlier.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.4.28. Contractor to provide tools & plants etc.**

The contractor shall provide at his own cost all materials (except such special materials, if any, as may in accordance with the contract be supplied from the Owner), machinery, tools & plants as specified in **Schedule-F**. In addition to this, appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of 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 therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials.

Failing his so doing, the same may be provided by the Engineer-in-Charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

**CLAUSE.4.29. Recovery of Compensation paid to Workmen**

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

**CLAUSE.4.31. Ensuring Payment and Amenities to Workers if Contractor fails**

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, Owner is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H or under the C.P.W.D. Contractor's Labour

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by C.P.W.D. Contractors, Owner will recover from the contractor, the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to the rights of the Owner under sub-section(2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, Owner shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by Owner to the contractor whether under this contract or otherwise. Owner shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the Owner full security for all costs for which Owner might become liable in contesting such claim.

### **CLAUSE.4.31. Labour Laws to be complied with, by the Contractor**

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

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

The contractor shall make provision for crèche for children of labors working at site. Sufficient no of toys and play facilities along with required no of attendants shall be made available.

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

### **Child Labour:**

No labour below the age of fourteen years shall be employed on the work.

Payment of wages:

(i) The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as defined in the Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

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

(iii) In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

with or cause to be complied with the Central Public Works Authority contractor's Labour Regulations made by Government from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorized made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

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

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

(v) The contractor shall comply with all the Central, State Laws & other statutory and regulatory provisions and Rules including but not limited to the provisions of the Payment of Wages Act, 1936, Minimum Wages Act 1948, Minimum Wages (Central) Rules, 1950, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, Child Labour (Prohibition and Regulation) Act, 1986 and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.

(vi) The contractor shall indemnify and keep indemnified Owner against payments to be made under and for the observance of the laws aforesaid.

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

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

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

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

In respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall at his own expense arrange for the safety provisions as per Safety Code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangement and provide necessary facilities as aforesaid, he shall be liable to pay a penalty of **Rs.1000/-** for each default and in addition, the Engineer-in- Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

The contractor shall submit of every month, to the Engineer-in-Charge, a true statement showing in respect of the second half of the preceding month and the first half of the current month respectively:-

The number of laborers employed by him on the work,

Their working hours,

The wages paid to them,

The accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them, and

The number of female workers who have been allowed maternity benefit according to Clause and the amount paid to them.

Failing which the contractor shall be liable to pay to Owner, a sum not exceeding **Rs.1000/-** for each default or materially incorrect statement. The decision of the Engineer in Charge shall be final in deducting from any bill due to the contractor; the amount levied as fine and is binding on the contractor.

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

In the event of the contractor(s) committing a default or breach of any of the provisions of the Central Public Works Authority, Contractor's Labour Regulations and Model Rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and' Rules which is materially incorrect, he/they shall, without prejudice to any other liability, pay to the Owner a sum not exceeding **Rs.1000/-** for every default, breach or furnishing, making, submitting, filing such materially incorrect statements and in the event of the contractor(s) defaulting continuously in this respect, the penalty may be enhanced to **Rs.5000/-** per day for each day of default subject to a maximum of 5 per cent 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.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

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

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

- (i) (a) The minimum height of each hut at the eaves level shall be 2.10m (7 ft.) and the floor area to be provided will be at the rate of 2.7 sqm. (30 sq. ft.) For each member of the worker's family staying with the laborer.
  - (b) The contractor(s) shall in addition construct suitable cooking places having a minimum area of 1.80m x 1.50m (6'x5') adjacent to the hut for each family.
  - (c) The contractor(s) shall also construct temporary latrines and urinals for the use of the laborers each on the scale of not less than four per each one hundred of the total strength, separate latrines and urinals being provided for women.
  - (d) The contractor(s) shall construct sufficient number of bathing and washing places, one unit for every 25 persons residing in the camp. These bathing and washing places shall be suitably screened.
- (ii) (a) all the huts shall have walls of sun-dried or burnt-bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in-Charge. In case of sun-dried bricks, the walls should be plastered with mud gobi on both

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

sides. The floor may be kutchra but plastered with mud gobi and shall be at least 15 cm (6") above the surrounding ground. The roofs shall be laid with thatch or any other materials as may be approved by the Engineer-in-Charge and the contractor shall ensure that throughout the period of their occupation, the roofs remain watertight.

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

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

(d) There shall be kept an open space of at least 7.2m (8 yards) between the rows of huts which may be reduced to 6m (20 ft.) according to the availability of site with the approval of the Engineer-in-Charge. Back to back construction will be allowed.

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

(iv) The site selected for the camp shall be high ground, removed from jungle.

(v) Disposal of Excreta - The contractor(s) 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(s) shall make arrangements for the removal of the excreta through the Municipal Committee/authority and inform it about the number of laborers employed so that arrangements may be made by such Committee/authority for the removal of 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 of dry system.

(vi) Drainage - The contractor(s) shall provide package type STP plant of required capacity approved by engineer in charge for treating the sewage water and supply to the Owner free of cost for the use of gardening. The contractor will carry out maintenance of STP at his own cost. Contractor will keep the camp neat and tidy.

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

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

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

The Engineer-in-Charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractors' employ upon the work who may be incompetent or misconduct himself and the contractor shall forthwith comply with such requirements. In respect of maintenance/repair or renovation works etc. where the labour have an easy access to the individual houses, the contractor shall issue identity cards to the laborers, whether temporary or permanent and he shall be responsible for any untoward action on the part of such labour. Engineer in charge will display a list of contractors working in the colony/Blocks on the notice board in the colony and also at the service center, to apprise the residents about the same.

### **Removal of Contractor's Employee from Site.**

The Engineer-in-Charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractors' employ upon the work who may be incompetent or misconduct himself and the contractor shall forthwith comply with such requirements. In respect of maintenance/repair or renovation works etc. where the labour have an easy access to the individual houses, the contractor shall issue identity cards to the laborers, whether temporary or permanent and he shall be responsible for any untoward action on the part of such labour. Engineer in charge will display a list of contractors working in the colony/Blocks on the notice board in the colony and also at the service center, to apprise the residents about the same.

### **Occupation of Buildings by Unauthorized persons**

It shall be the responsibility of the contractor to see that the building under construction is not occupied by anybody unauthorized during construction, and is handed over to the Engineer-in-Charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Engineer-in-Charge shall have the option to refuse to accept the said building/buildings in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay, a levy up to 5% of tendered value of work may be imposed by the Engineer in charge whose decision shall be final both with regard to the justification and quantum and be binding on the contractor. However, the Engineer in charge through a notice may require the contractor to remove the illegal occupation any time on or before construction and delivery.

### **Employment of skilled/semi-skilled workers**

The contractor shall, at all stages of work, deploy skilled/semi-skilled tradesmen who are qualified and possess certificate in particular trade from Training Institute/Industrial Training Institute/National Institute of construction Management and Research (NICMAR)/ National Academy of Construction, CIDC or any similar reputed and recognized Institute managed/ certified by State/Central Government. The number of such qualified tradesmen shall not be less than 20% of total skilled/semi-skilled workers required in each trade at any stage of work.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

The contractor shall submit number of man days required in respect of each trade, its scheduling and the list of qualified tradesmen along with requisite certificate from recognized Institute to Engineer in charge for approval. Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the contractor shall substitute such tradesmen within two days of written notice from Engineer in-Charge. Failure on the part of contractor to obtain approval of Engineer-in-Charge or failure to deploy qualified tradesmen will attract a compensation to be paid by contractor at the rate of Rs. 100 per such tradesman per day. Decision of Engineer in Charge as to whether particular tradesman possesses requisite skill and amount of compensation in case of default shall be final and binding.

### **Clause 4.32. Contribution of EPF and ESI**

The ESI and EPF contributions on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of the employer paid by the contractor shall be reimbursed by the Engineer-in-charge to the contractor on actual basis. The verification of deployment labour will be done through biometric attendance system or any other suitable method by the Engineer in Charge. The applicable and eligible amount of EPF & ESI shall be reimbursed preferably within 7 days but not later than 30 days of submission of documentary proof of payment provided same are in order

### **CLAUSE.4.33. Minimum Wages Act to be complied with**

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

### **CLAUSE.4.34. Work not to be sublet Action in case of insolvency**

The contract shall not be assigned or sublet without the written approval of the NU. And if the contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor, or any of his servants or agent to any officer or person in the employ of Owner or any of its formally appointed consultants in any way relating to their office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Engineer-in-Charge on behalf of the NU shall have power to adopt the course specified in Clause 4.5 (when contract can be determined) hereof in the interest of Owner and in the event of such course being adopted, the consequences specified in the said Clause shall ensue.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.4.35. Compensation**

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 Owner without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

**CLAUSE.4.36. Changes in firm's Constitution to be intimated**

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

**CLAUSE.4.37. Works to be executed under the Contract**

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

**CLAUSE.4.38. Settlement of disputes by Conciliation and Arbitration**

Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the Work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or in relation to the contract, design, drawings, specification, estimates, instructions, orders or these conditions or otherwise concerning the Work or the execution or failure to execute the same whether arising during the progress of the Work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter

**4.38.1 Conciliation:** If the contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawing, record or decision given in writing by the Engineer-in-Charge; or if the Engineer-in-Charge considers any act or decision of the contractor on any matter in connection with or arising out of the contract or carrying out of the work to be unacceptable and disputed; such party may promptly refer such disputes and

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

amount claimed for each dispute to the Conciliator appointed by NU in the proforma **prescribed in Appendix XVII mentioned in Schedule F,** under intimation to the other party. The Conciliator may then request each party to submit to him a brief written statement describing the disputes and the points at issue. Each party shall send a copy of such statement to the other party. At any stage of the conciliation proceedings, the Conciliator may request a party to submit to him such additional information as he deems appropriate. When it appears to the Conciliator that there exist elements of a settlement which may be acceptable to the parties, he shall formulate the terms of a possible settlement and submit them to the parties for their observations. After receiving the observations of the parties, he may re-formulate the terms of a possible settlement in the light of such observations. If the parties reach agreement on a settlement of the disputes, they may draw up and sign a written settlement agreement on non-judicial stamp paper as per Stamp Act. The Conciliator shall authenticate the settlement agreement and furnish a copy thereof to each party. The termination of conciliation proceedings shall be in accordance with Section 76 of The Arbitration and Conciliation Act, 1996. No party shall be represented before the said Conciliator by an advocate or legal counsel. The conciliation proceedings shall be completed within 45 days from the receipt of reference. This time may be enlarged by 15 days by the Conciliator. The conciliation proceedings shall be deemed to have been terminated at the end of 60 days from the receipt of reference.

**4.38.2. Arbitration:** If the aforesaid conciliation proceedings fail or the Conciliator fails to give proposal for settlement within the aforesaid period, either party may promptly give notice in the proforma prescribed in Appendix XVIII, under intimation to the other party, to the Chief Engineer or the Superintending Engineer concerned with the work (as applicable), hereinafter referred to as the Arbitrator Appointing Authority as indicated in Schedule F, for appointment of Arbitrator.

However, a party may seek appointment of Arbitrator without taking recourse to the process of conciliation mentioned in sub-clause 4.38.1 above. In the event of either party giving a notice to the Arbitrator Appointing Authority for appointment of Arbitrator, the said Authority shall appoint Arbitrator as per the procedure given below and refer such disputes to arbitration.

(a) Number of Arbitrators: Since the contract amount is more than Rs.100 crore the disputes shall be referred to an Arbitral Tribunal of three Arbitrators.

(b) Qualification of Arbitrators: It is a term of this contract that each member of the Arbitral Tribunal shall be Graduate Engineer with experience in execution of public works engineering contracts, and he should have worked earlier at a level not lower than the Chief Engineer (equivalent to level of Joint Secretary to the Government of India). The aforesaid educational qualification and work experience shall be mandatory for appointment as Arbitrator. The age of Arbitrator at the time of appointment shall not exceed 75 years. An Arbitrator

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

may be appointed notwithstanding the total number of active arbitration cases with him.

© Parties to select Arbitrator: Based on the criteria specified above, a list of empanelled Arbitrators has been prepared in CPWD, and the parties shall have option to select an Arbitrator from the list sent to them.

### **4.38.3 Appointment of Arbitral Tribunal of three Arbitrators:**

The Arbitrator Appointing Authority shall prepare two separate lists of five Arbitrators each from the list of CPWD Empanelled Arbitrators, and send one to the party seeking arbitration and other to the responding party, within 15 days of the receipt of notice. The parties will then choose any one Arbitrator from the list provided to them within 15 days of receipt of the list. The Arbitrator Appointing Authority shall then appoint those chosen by the respective parties as Arbitrators and also a third Arbitrator from the list of CPWD Empanelled Arbitrators to act as presiding Arbitrator, within 15 days of receipt of choice from both the parties.

It is a term of this arbitration agreement that if the parties fail to select, within the period prescribed above, an Arbitrator of their choice from the list of CPWD Empanelled Arbitrators forwarded to them, the Arbitrator Appointing Authority shall himself select and appoint Arbitrator from the said list.

### **4.38.4 Applicable Law:**

The provisions of the Arbitration and Conciliation Act, 1996 (Act 26 of 1996) and any further statutory modification or re-enactment thereof shall be applicable. Further, the fast-track procedure for arbitration contained in Section 29B of the said Act shall apply.

### **4.38.5 Fee payable to Arbitrator(s):**

The fee payable to the arbitral tribunal shall be as per CPWD OM No.2/2006/SE(TLC)/CSQ/137 dated 19.11.2019 (or latest amendment), and shall be shared equally by both the parties.

### **4.38.6 Place of Arbitration:**

The venue of arbitration shall be Rajgir, Bihar or The Arbitral Tribunal may decide the place in consultation with both the parties.

### **4.38.7 Terms of Reference**

The Arbitral Tribunal shall adjudicate on only such disputes as are referred to them and shall give separate award against each dispute and claim referred to them, and shall give reasons for the award in all cases where the total amount of the claims by any party exceeds Rs.1, 00,000/-.

### **4.38.8 Interest on Arbitration award:**

It is also a term of this arbitration agreement that where the Arbitral award against any dispute is for the payment of money, no pre-suit and pendent elite interest shall be payable on any part of the Arbitral award.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.4.39. Contractor to indemnify Owner against Patent Rights**

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

**CLAUSE.4.40. Action where no Specifications are specified**

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

**CLAUSE.4.41. Withholding and lien in respect of sum due from contractor**

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

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Owner will be kept withheld or retained as such by the Owner till the claim arising out of or under the contract is determined by the arbitrator or by the competent court, as the case may be and that the contractor will have no claim for interest or damages whatsoever on any

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor.

(ii) Owner shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc., to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for Owner to recover the same from him in the manner prescribed in sub-clause (i) of this clause or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by Owner to the contractor, without any interest thereon whatsoever.

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

### **CLAUSE.4.42. Lien in respect of claims in other Contracts**

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

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

### **CLAUSE.4.43. Unfiltered Water Supply**

Contractor shall make his/their own arrangements for water supply and storage at site(s)/ location(s) required for all purposes i.e. for construction, drinking, washing, domestic requirement for workers etc. at no cost to owner. This will be subject to the following conditions.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the Engineer-in-Charge.

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

The Contractor shall permit all Sub-Contractors to use his water storage and distribution facilities for their respective Work. Any additional or special arrangements needed by Sub-Contractors shall be made by them at their own cost.

Upon completion of the Works, the Contractor shall remove temporary storage tanks, piping network built or installed on the site so as to restore the site back to its original condition.

Insufficiency or non-availability of water shall not be cited by the Contractor as an excuse for delays, or deficiencies in the Work or a reason for claiming extra payments.

The Contractor shall, in all eventualities incorporate in his costing for making arrangements with necessary approval from relevant authority if any for the water requirements to be used for construction at his own cost at the time of tendering.

### **CLAUSE.4.44. Electricity**

The Owner shall not provide electrical power. Contractor has to arrange with necessary permission from relevant authority if any at his own cost electrical power for construction or for general lighting and other usage

The Contractor shall, at his own cost, provide approved temporary electrical connections, cables, distribution boards and related equipment for construction, as required by the Engineer-in-Charge.

The Contractor shall permit and enable all sub-Contractors to use his power & distribution facilities. The Sub-Contractor shall pay such amount for the use of power & distribution facilities as may be determined between the Contractors.

The Contractor shall, at his own cost and in order to prevent interruption of the Work(s) due to power failures, provide for stand-by diesel generators of sufficient capacity as per the requirements to supply adequate electricity for the Works and for other uses.

Disruptions in power supply, whether due to power failures, load shedding, generator breakdowns, non-availability of Electric Supply or any other reason, shall not be accepted as a valid reason for delays and deficiencies in the Work or for claims for additional payments.

The Contractor shall, at his own cost supply the required electrical power supplies to the Site offices of the Owner as directed by the Engineer-In-Charge.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE 4.45 Hire of Plant & Machinery**

The contractor shall arrange at his own expense all tools, plant, machinery and equipment (hereinafter referred to as T&P) required for execution of the work.

**CLAUSE.4.46. Return of Surplus materials**

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

**CLAUSE.4.47. Employment of technical Staff and employees**

Contractors Superintendence, Supervision, Technical Staff & Employees

(i) The contractor shall provide all necessary superintendence during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

The contractor shall immediately after receiving letter of acceptance of the tender and before commencement of the work, intimate in writing to the Engineer-in-Charge, the name(s), qualifications, experience, age, address(s) and other particulars along with certificates, of the principal technical representative to be in charge of the work and other technical representative(s) who will be supervising the work. Minimum requirement of such technical representative(s) and their qualifications and experience shall not be lower than specified in Schedule-F. The Engineer-in-Charge shall within 3 days of receipt of such communication intimate in writing his approval or otherwise of such a representative(s) to the contractor. Any such approval may at any time be withdrawn and in case of such withdrawal, the contractor shall appoint another such representative(s) according to the provisions of this clause. Decision of the Engineer-in-Charge shall be final and binding on the contractor in this respect. Such a principal technical representative and other technical representative(s) shall be appointed by the contractor soon after receipt of

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

the approval from Engineer-in-charge and shall be available at site before start of work.

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

If the Engineer-in-Charge, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative(s) is/are effectively appointed or is/are effectively attending or fulfilling the provision of this clause, a recovery (non-refundable) shall be effected from the contractor as specified in Schedule 'F' and decision of the Engineer-in-Charge as recorded in the site order book and measurement recorded checked/test checked in Measurement Books shall be final and binding on the contractor.

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

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

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

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

### **CLAUSE.4.48. Levy/Taxes payable by Contractor**

(i) All statutory taxes, duties, Cess or any other payment or deduction due to be paid to any of the central, state or local authority including but not limited to Sales Tax/VAT (except Service Tax), Building and other Construction Workers Welfare Cess or any other tax or Cess in respect of this contract shall be payable by the contractor and Owner shall not entertain any claim whatsoever in this respect. However, in respect of service tax, same shall be paid by the contractor to the concerned department on demand and it will be reimbursed to him by the Owner after satisfying that it has been actually and genuinely paid by the contractor.

(ii) The contractor shall deposit royalty and obtain necessary permit for supply of the all kind of stone required for the project from local authorities.

### **Reimbursement of levy/taxes payable by Contractor:-**

- a) All Tendered rates under the Contract shall be inclusive of all taxes and levies payable under respective statutes. However, pursuant to the Constitution (46th Amendment) Act, 1982, if any further tax or levy is imposed by statute after the last stipulated date for the receipt of tender including extensions, if any and the Contractor thereupon necessarily and properly pays such taxes/levies, the Contractor shall be reimbursed the amount so paid, provided such payments, if any, is not in the opinion of the Engineer-in-Charge (whose decision shall be final and binding on the Contractor) attributable to delay in execution of Work within the control of the Contractor.
- b) The Contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and required, and shall allow inspection of the same by a duly authorized representative of the Owner and further shall furnish such other information/document as the Engineer-in-Charge may require from time to time.
- c) The Contractor shall, within a period of 20 days of the imposition of any such further tax or levy, give a written notice thereof to the Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.4.49. Termination of Contract on death of contractor**

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Engineer in Charge on behalf of the Owner shall have the option of terminating the contract without compensation to the contractor if there is no legal heir or successor of the contractor capable of completing the remaining work. The decision of the Engineer In charge in this regard shall be final and binding.

**CLAUSE.4.50. Compensation during warlike situations**

The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the Engineer-in-Charge and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the contractor shall when ordered (in writing) by the Engineer-in-Charge to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Engineer-in-Charge, such payments being in addition to compensation up to the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for, the compensation shall be assessed by the Engineer in Charge. The contractor shall be paid for the damages/destruction suffered and for restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract. The certificate of the Engineer-in-Charge regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on all parties to this contract.

Provided always that no compensation shall be payable for any loss in consequence of hostilities or warlike operations (a) unless the contractor had taken all such precautions against air raid as are deemed necessary by the Engineer-in-Charge (b) for any material etc. not on the site of the work or for any tools, plant, machinery, scaffolding, temporary building and other things not intended for the work.

In the event of the contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered reasonable by the Engineer in Charge.

**CLAUSE 4.51 Apprentices Act provisions to be complied with**

The contractor shall comply with the provisions of the Apprentices Act, 1961 and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the Owner on recommendation of Engineer in Charge may, in his discretion, cancel the contract. The contractor shall also be

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

**CLAUSE 4.52 Release of Security deposit after labour clearance**

The Security Deposit of the work shall be refunded if no labour complaint has been received from the labour officer till the due date of its payment. If a labour complaint is received during this period, the Engineer-in-Charge shall, after issue of notice in this regard to the contractor, deduct the amount required

CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS

**SECTION 5**

**SPECIAL CONDITIONS OF CONTRACT**

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.5.1. Sub-Contractors**

Where and when the appointment of Sub-Contractors for specialized job (in the opinion of Engineer In Charge) is indicated, such Sub-Contractors shall be appointed only with the prior written approval of the Owner upon recommendation of Engineer-in-Charge/PMC/Architect Consultants on the following conditions:

- a) The Contractor shall enter into written agreements with Sub-Contractors and ensure that the Sub-Contractors perform their Work in accordance with and subject to the terms and conditions of these Contract Documents. A copy of each such Agreement shall be furnished to the Engineer-in-Charge and the Owner.
- b) The Contractor shall remain fully responsible to the Owner for the performance and workmanship and all actions of all sub-Contractors and persons directly or indirectly employed by them.
- c) The Contractor shall supply and permit all Sub-Contractors to avail of site facilities and services to enable them to complete their Work safely and without hindrance or delay and conducive to produce the highest quality of Work required.
- d) The Contractor shall upon receipt of instruction from the Engineer-in-Charge, terminate and remove from site forthwith such Sub-Contractor or their person who's Work may be considered unsatisfactory.
- e) The Contractor shall make regular and prompt payment to each Sub-Contractor not later than one week after receipt of payment from Owner for their measured Works certified by the Engineer-in-Charge. If the Contractor fails to make payments to Sub-Contractors as aforesaid, the Owner may, without any obligation or prejudice to its rights and with prior intimation to the Contractor may make direct payments to Sub-Contractors for and on behalf and from the account of the Contractor and recover such sums from the account of the Contractor out of the amounts due and payable under the bills raised by the Contractor. Such direct payments to Sub-Contractors shall be on behalf of the Contractor and shall in no way relieve the Contractor of his responsibilities or create a contractual relationship between the Owner and Sub-Contractor.
- f) Any Subcontractor that has been approved by the Owner shall neither be removed nor replaced without the prior written consent of the Owner.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.5.2. Nominated Sub-Contractors**

The Owner shall be entitled to nominate to the Contractor selected Sub-Contractors for carrying out certain sections of the Work or to replace terminated Sub-Contractors. Such nominated Sub-Contractors shall receive the same assistance and co-operation from the Contractor as other Sub-Contractors appointed by the Contractor, and the Contractor shall be equally responsible and liable for their Work as is liable for the Works of the other Sub-Contractors. Nominated Sub-Contractors shall enter into direct agreements with the Owner and shall receive direct payments from the Owner. For the site facilities and services made available by the Contractor at his cost to the nominated Sub-Contractors including free water, electricity, insurance, staging, scaffolding, etc. the Contractor shall be entitled to receive 3% on the cost of the nominated Sub-Contractors' Work.

Nothing shall absolve the Contractor, including the approval/ termination/ nomination of Sub-Contractors by the Owner of his overall responsibility under the Contract to closely supervise the Work of the Sub-Contractor whether on or off the site and to ensure adherence to the Specifications and Schedules.

**CLAUSE.5.3. Site office**

The Contractor shall at his cost provide a watertight, air-conditioned, lockable site office with necessary communication facilities at a suitable location as approved by the Engineer-in-charge for the purpose and use by the Owner, Architect Consultants, Project Management Consultant and/or their authorized representative(s). The site-office shall be reasonably well furnished and to the preference and tastes of the Owner along with electricity and a telephone connection, Internet Connections at no extra cost payable to the Contractor by the Owner in this regard.

**CLAUSE.5.4. Fossils:**

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site shall, as between the Owner and the Contractor, be deemed to be the absolute property of the Owner. The Contractor shall take reasonable precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall, immediately upon discovery thereof and before removal, acquaint the Engineer of

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

such discovery and carry out the Engineer's instructions for dealing with the same. If, by reason of such instructions, the Contractor suffers delay and/or incurs costs then the Engineer shall, after due consultation with the Owner and the Contractor, determine:

### **CLAUSE.5.5. Insurance**

The Contractor shall at his own expense arrange for all insurance policies, including workmen compensation policy and Contractor's All Risk policy (CAR Policy) in the amount of the Contract effective from the date of commencement of Work(s) and until final completion of the Work(s) also taking into consideration the defects liability period, against all of the following risks.

- a) Injuries and damage of persons, property, machinery, equipment, vehicles, animals or things, within or outside the site, arising out of his operations or of any sub-Contractors, nominated or otherwise, or out of any actions of his employees, agents or representatives, limited to Rs. 50,00,000 (Rupees Fifty Lakhs) per accident
- b) Injuries to his or any Sub-Contractor's employees.
- c) Damage to or loss of the property, equipment, and materials at site, of the Owner, Contractor and all Sub-Contractors, as a result of natural causes such as lightning, storm, flood, rain, fire, earthquake, explosion, landslide, etc.
- d) Damage and injuries to persons, property and materials arising out of riot and civil commotion, theft, sabotage malicious acts, terrorist activities, flood, water logging etc.

The insurance policy or policies to cover risks of every nature shall be in the joint names of the Owner and Contractor, and the original of such policy/ policies shall be lodged with the Engineer-in-Charge. The Contractor shall also lodge the premium receipts with the Engineer-in-Charge, such standing jointly in the names of the Owner and the Contractor.

If the Contractor fails to arrange the requisite insurance or fails to renew the policies, the Owner shall arrange for obtaining the requisite insurance policies and or renew them and recover the cost of all premiums from the Contractor and/or subsequently deduct such amount from the payments due and payable by the Owner to the Contractor from the bills raised by the Contractor in respect of the Work(s) executed.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

No certificate of payment shall be issued by the Engineer-in-Charge whether for an interim or of the final bill raised by the Contractor if the Contractor fails to arrange for total insurance cover.

The Contractor shall reinstate in a manner approved by the Engineer-in-Charge all damage of every sort caused entirely at his cost so as to deliver up to the Owner the whole of the Work(s) complete and perfect in all respects, and so certified by the Engineer-in-Charge and also make good or otherwise satisfy all claims for damage to property of third parties.

The Contractor shall be responsible for anything within his control and for all risks and consequences, which are not included in the purview of the insurance policies.

The insurance cover shall stand extended until final completion of the Works and the contract and shall also cover the defects liability period.

The Contractor undertakes not to cancel any insurance policy nor reduce its scope without the written consent of the Engineer-in-Charge.

The Contractor undertakes to file necessary insurance claims jointly with the Owner and also to join the Owner in filing any claim the Owner chooses to.

Payments against all insurance claims shall be received in the name of the Owner and commensurate adjustments shall be made in accounts with the Contractor.

The aforesaid insurance policy/policies shall not be cancelled till the Engineer-in-Charge has agreed to their cancellation.

The Contractor shall prove to the Engineer-in-Charge from time to time that it has taken out all insurance policies referred to above and has paid the necessary premium for keeping the policies alive till the end of the defects liability period.

The Contractor shall ensure that similar insurance policies are taken out by his Sub-Contractor (if any) and shall be responsible for any claims of losses to the Owner resulting from their failure to obtain adequate insurance protections in connection thereof. The Contractor shall also obtain the originals of the policies and the premium receipts from the Sub-Contractor and shall lodge the same with the Engineer-in-Charge.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.5.6. Good For Construction Drawings, Details and Clearance to Construct.**

After the acceptance of the Letter of Intent, issued by the Owner – Nalanda University, The contractor will be issued “Good for construction” drawings for works up to plinth levels for majority of the buildings, water bodies and Road works in general. The contractor will arrange to mobilize his resources in very positive and judicious manner to start work on maximum possible fronts. The contractor will submit a detailed Construction Plan in the form of Bar Chart/PERET chart, for the entire project based on the Tendered drawings and initial GFC drawings. This Construction Plan will be discussed with Project Management Consultants, Architect Consultants and NU in detail and will be finalized subject to changes, if any, and will be agreed to by all the stake holders. The subsequent “Good for Construction” drawings will be issued in progressive manner as the work progresses as per the detailed construction plan to be submitted by the contractor. All GFC drawings shall be issued at least one month in advance of scheduled start date of the particular activity as per the agreed construction plan. If the contractor fail to show reasonable progress for the works for which the drawings and details are already available, Then the Owner Nalanda University, through the Engineer In Charge, will take suitable punitive action like withholding the payments due to contractor, which is equivalent to the amount to be withheld for completion of nearest mile stone as per this Notice Inviting Tender. The withheld amount will be released as soon as the corrective action is taken by the Contractor, for making up the time lost due to delay.

The contractor on receipt of detailed drawings for construction, will be required to prepare the mock ups for various items of work, as soon as possible, and get the same approved from the Owner- Nalanda University and the Architect Consultants. Only after the approval of the mock up, the work of the same item will be taken up at large scale. The Contractor is expected to execute entire work of similar nature, exactly similar to the mock up work in terms of materials used and workmanship desired. The work not matching

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

to the above criteria will be removed and redone to the entire satisfaction of the Owner and the Architect Consultants.

**CLAUSE.5.7. Protection of Persons, Works and Property**

**Accident or Injury to Workmen**

The Owner shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or any Subcontractor, other than death or injury resulting from any act or default of the Owner, his agents or servants.

**Accident Prevention:**

a) General:

In performing this contract, the Contractor shall provide for protecting the lives and health of employees and other persons preventing damage to or theft or loss of property, materials, supplies, and equipment; and avoiding Work interruptions. For these purposes, the Contractor shall- Provide appropriate safety barricades, signs, and signal lights.

Comply with the standards issued by any statutory bodies having jurisdiction over occupational health and safety and Ensure that any additional measures as required by the Engineer-in-Charge for this purpose.

b) Records.

The Contractor shall maintain an accurate record of exposure data on all accidents taken place incidental to performance of Work(s) under this contract resulting in death, traumatic injury, occupational disease, or damage to or theft / loss of property, materials, supplies, or equipment. The Contractor shall report this data in the manner prescribed by the Engineer-in-Charge.

c) Sub-Contractors:

The Sub-Contractors shall be bound to comply with the clause in the same manner as complied with by the Contractor. In the event of non-compliance by the Sub-Contractor of such clause, the Contractor shall be responsible for compliance of the Sub-Contractor.

d) Written program:

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Before commencing the Work, the Contractor shall submit to the Engineer-in-Charge a written proposal for implementing this clause,

### **Hazardous Material Identification.**

a) Notification:

The Contractor shall notify the Engineer-in-Charge in writing of all hazardous material 5 days before delivery of the material. This obligation applies to all materials delivered under this contract, which will involve exposure to hazardous materials or items containing these materials.

b) Responsibility of Contractor:

Neither the requirement of this clause nor any act or failure to act by the Owner shall relieve the Contractor of any responsibility or liability for the safety of Owner, Contractor, or Sub-Contractor's personnel or property.

c) Compliance with laws:

The Contractor shall comply with applicable laws, including the Public Liability Insurance Act 1991, Fatal Accident Act 1855, codes, ordinances, and regulations (Including the obtaining of licenses and permits) in connection with hazardous materials. Contractor shall pay fees and other expenses for obtaining such permission or licenses.

d) Sub-Contractors:

The Contractor shall insert these above clauses, relating to hazardous material, with appropriate changes on entering into contracts or agreements with Sub-Contractors and the sub-contractors shall be bound and be liable to comply with the same, and in the event of non-compliance of the same, the Contractor shall be held liable for damages or otherwise on the acts of the Sub-Contractor in this regard.

### **Protection of Property**

a) Vegetation, structures and equipment:

The Contractor shall preserve and protect all structures, equipment, and vegetation on or adjacent to the Work site, and which do not unreasonably interfere with the Work required under this contract and shall not be removed by the Contractor. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

b) Utilities and improvements:

The Contractor shall protect from damage and have all existing improvements and utilities at or near the Work site and on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall be liable to repair any damage caused to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the Work. If the Contractor fails or refuses to repair the damage promptly, the Engineer-in-Charge may have the necessary Work performed and charge the cost to the Contractor or reduce such amounts from the bills of the Contractor due and payable by the Owner.

c) Contractor shall be required to work within specified areas and they shall be allowed to use only those areas around the works under their scope, for storage of their materials, construction of site offices, erection of batching plant etc. at predetermined locations as shown on the plans. The area so demarcated, shall be barricaded in such a way that the construction activities or the moving vehicular traffic involved in carriage of construction materials/ construction waste etc. do not create interference with any other areas within the premises or activities of the Institute or the activities of other contractor/s working within the premises.

d) The contractor shall provide suitable barricading approximately 5.0 m high, with suitably painted with G.I. Sheets nailed or bolted with M.S. Angles/pipes spaced 3 meter apart. The poles will be embedded in e earth/pcc for giving stable support as per direction of the Engineer-in-charge. All management (including watch and ward) of barricades shall be the full responsibility of the contractor. The barricades shall be removed only after completion of the work or part of the work. The contractor's rate shall include all above items of work and nothing extra shall be paid to the contractor over and above his quoted rates.

e) The positioning of barricading will be reviewed from time to time and necessary shifting barricading as directed by Engineer - in - charges shall be done forthwith by the contractor. Payment of initial erection of barricading and the shifting thereof at a later date as per requirement shall be made under relevant tender items

f) Contractor will make his own arrangements for making temporary roads and approaches to various locations of work under their scope and up to

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

disposal sites marked on the drawing. These internal approaches and temporary roads shall be made in such a way that they do not affect construction activities of permanent roads within the premises at any time.

### **Watchmen and Security**

The Contractor shall provide sufficient personnel and materials to provide adequate protection to the property and personnel at the site, in transit and stored goods/materials including but not limited to measures specifically required by and under the Contract Documents and any security requirements under this contract.

### **Corrective Action**

#### a) Authority to Stop Work:

The Engineer-in-Charge shall notify the Contractor of any non-compliance with the safety and property protection measures as required under this contract of which the Engineer-in-Charge becomes aware and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's authorized representative at the site of the Work shall be deemed sufficient notice of non-compliance and corrective action required. After receiving the notice, the Contractor shall immediately take necessary steps to correct the action. If the Contractor fails or refuses to take corrective action promptly, the Engineer-in-Charge shall at his discretion after due consultation with the Owner may issue an order stopping all or part of the Work(s) until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop Work order issued under these circumstances.

#### b) Rectification:

The Contractor shall be solely responsible to make good at his cost any damage to the Works, property of the Owner and/or any adjacent property, to the satisfaction of the Engineer-in-Charge. In case the contractor fails to do so within a reasonable time the Engineer-in-Charge shall get the same executed at the risk & cost of the contractor & deduct the same from his due payments.

### **CLAUSE.5.8. Site Security:**

The Contractor shall be deemed to be in possession of the Works site and shall be responsible for its total security, and shall ensure that all materials, sheds,

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

equipment, plant, tools, etc.; whether his own or belonging to any Sub-Contractor, are well protected.

a) The Contractor shall at his own cost install and maintain sufficient security fences and gates and employ full time round-the-clock security personnel to prevent the Works site from and against the intrusion of the public or any other unauthorized persons or vehicles.

b) Total security of the site, property, and materials shall be the sole responsibility of the Contractor. The presence of his consultants representatives, or the NU 's security personnel shall in no way relieve or absolve the Contractor of his responsibilities in ensuring the security and protection of the site and everything stored or lying thereon

### **CLAUSE.5.9. Warranty/Guarantee**

The Contractor shall be responsible for the proper performance of the Work(s), including installations and systems, as specified under the Contract Documents.

Subject to Clause the Contractor shall, at his own cost and in the shortest possible time, repair and remove any defect or deficiency in the Works, which may appear prior to or during the defect liability period, to the satisfaction of the Engineer-in-Charge.

A guarantee will be given by the Contractor for the complete installation of the Works including its functioning, replacement of parts etc. as specified under the Contract Documents.

All the Guarantees referred above shall commence from the date of Completion Certificate.

### **GUARANTEE FOR WATER PROOFING TREATMENT**

The contractor shall be fully responsible for and shall guarantee proper performance of the entire water proofing system for a period of 7(Seven) years from the final completion of works. In addition, specific 7 years written guarantee (to be furnished in a non-judicial stamp paper of value not less than Rs.100/-) in approved Performa shall be submitted for the performance of the system, before final payment and shall not in any way limit any other rights the Owner may have under the contract.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Guarantee for waterproofing and anti-termite treatment shall comprise of all the items described in particular specification.

All waterproofing work and anti-termite treatment shall be carried out through approved specialist agency as per method of working approved by the Engineer-in-charge. However the Contractors shall be solely responsible for waterproofing and anti-termite treatment until the expiry of the above guarantee period.

Seven years guarantee in prescribed Performa attached shall be given by the contractor for the waterproofing treatment. In addition 10 % (ten percent) of the cost of those items of waterproofing under this subhead shall be retained as guarantee to watch the performance of the work executed. However, half of this amount (withheld) would be released after five years from the date of completion of the work, if the performance of the waterproofing work is satisfactory. The remaining withheld amount shall be released after completion of ten years from the date of completion of work, if the performance of the waterproofing work is satisfactory. If any defect is noticed during the guarantee period, it should be rectified by the contractor within seven days of issuing notice by the Engineer-in-Charge and, if not attended to, the same shall be got done through the agency at the risk and cost of the contractor and recovery shall be effected from the amount retained towards guarantee. In any case, the contractor and the specialist agency, during the guarantee period, shall inspect and examine the treatment once in every year and make good any defect observed and confirm the same in writing. The security deposit can be released in full, if bank guarantee of equivalent amount, valid for the duration of guarantee period, is produced and deposited with the Owner.

### **CLAUSE.5.10. Contractor's Responsibilities and Work Control**

The Contractor shall have complete control of the Works and shall effectively and diligently control, direct and supervise his employees, supervisors, subordinates and Sub-Contractor(s) so as to ensure timely completion of the Works in order and in conformity with the Contract Documents. It shall be the sole responsibility of the Contractor for construction means, methods, techniques, sequences and procedures, and for coordinating the various parts of the Work, whether carried out by the Contractor or any Sub-Contractor.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

The Contractor shall provide adequate, qualified and experienced personnel for the proper superintendence and execution of the Works until completion. The category and strength of such personnel shall be determined by the Engineer-in-Charge, and such approved site organization strength shall be maintained by the Contractor at all times until completion of Work(s), and also during defects liability period and as may be decided by the Engineer-in-Charge.

The Contractor shall be responsible for the design, erection, operation, maintenance and removal of temporary structures and other facilities at his own cost during completion of the Works. Any approval sought, given or implied, regarding sufficiency, stability and safety of temporary staging and facilities, shall in any way not relieve the Contractor of his responsibility.

a) The Contractor shall study all Contract Documents and promptly report to the Engineer-in-Charge any non-conformity, discrepancy, inconsistency or omission he may discover in the same. In the event of such discovery, the Contractor shall not proceed with the affected Works until he has received due corrections and clearances from the Engineer-in-Charge.

b) The Contractor shall be deemed to have thoroughly studied and satisfied himself regarding Contract Documents and particularly all drawings before commencement of the Work(s). Should any discrepancy or error be discovered during execution of parts of the Work(s) necessitating demolition, repairs or reconstruction, all such remedial measures shall be carried out only with the approval of the Engineer-in-Charge and entirely at the cost of the Contractor. In such an event the Contractor shall neither claim any extra payment nor any extension of time for any delay caused by virtue of such demolition, repairs and reconstruction.

Any instructions given to the Contractor's supervisory staff by the Engineer-in-Charge shall be deemed to have been given to the Contractor. Instructions that involve any variations in design or specifications and which may have a bearing on time and cost shall be through a written Change Order by the Engineer-in-Charge and at rates agreed in writing prior to implementation

The Contractor shall at his own cost, obtain any permits or authorizations necessary for the execution of the Work and obtaining any permits or approvals for the works executed by him, from all concerned statutory and Owner

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Authorities/Authority's, including but not limited to Municipal bodies, Electrical Authority, Fire Service Authorities etc.,

The Contractor shall not be entitled to claim additional sums on account of having to work overtime in order to complete an operation that cannot be interrupted, for working in extended shifts / night shifts /holidays.

In the event the Contractor chooses to work overtime, in extended night shifts as and by way of overtime either by working extended/night shifts or morning or holidays in order to complete the Work(s) within the specified period or on holidays, he shall do so by obtaining prior written approval from the Engineer-in-Charge at least twenty-four hours in advance. The Contractor moreover shall ensure that in any of the above circumstances he maintains the full-agreed strength of his supervisory staff.

The Contractor shall take all necessary precautions to protect the site and Works, materials, plant and equipment, whether his own or belonging to the Owner or any Sub-Contractors, against hazards of fire, rains, floods, landslides, underground water, accidents, etc.

The Contractor shall not be permitted to replace nor remove his Project Manager/Project Engineer / Site Engineer etc. from the site without the prior written approval of the Engineer-in-Charge.

### **Submittals**

a) "Shop drawings" means those drawings or other documents, which are specifically prepared by or on behalf of the Contractor to illustrate details of construction for the purpose of fabrication or installation and are submitted to the Owner to indicate the Contractor's intended method of achieving the end result required by the Contract Drawings and Specifications.

b) "Project data" includes standard drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the Work required by the Contract.

c) "Samples" are physical examples, which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

d) "Other submittals" includes progress schedules, setting drawings, testing and inspection reports, and other information required by the Contract Documents to be submitted by the Contractor for information or approval by the Owner.

### **Schedules of Submittals**

Promptly after contract award the Contractor shall submit to the Engineer-in-Charge the submittal schedule showing when shop drawings, product data, samples and other submittals required by and under the Tender Documents would be submitted for the approval of the Engineer-in-Charge.

### **Review and approval of submittals by Contractor**

The Contractor shall co-ordinate and compile all submittals required by and under the Contract Documents, and thoroughly check them for accuracy, completeness, and compliance in accordance with contract requirements and shall indicate his approval thereon in the form required by the Contract Documents as evidence of such co-ordination and checking. Submittals to the Engineer-in-Charge without the approval of the Contractor shall be returned by the Engineer-in-Charge for resubmission. Submission of shop drawings, product data or samples shall constitute a representation that the Contractor has agreed to, asserted and guaranteed that the assemblies, products or materials indicated therein will be available in a timely manner and in the quantities required for the project as set out under the Contract Documents.

### **Submission**

All submittals shall be in English language, and any system of dimensions (i.e.; English or metric) shown shall be consistent with that used in the Contract Documents. The Contractor shall submit all Submittals in the form and number required by the Contract Documents within required time limits and sufficiently in advance of construction requirements to permit adequate review by the Owner for correction, approval and resubmission if required. No extension of time shall be allowed on account of any delay by the Owner in approving such submittals, if the Contractor has failed to act promptly and responsively in making his submissions. Each submittal shall be identified as required by the Contract Documents.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **Action on Submittals**

The Engineer-in-Charge will indicate an approval or disapproval of the Submittals for and on behalf of the Owner requiring approval by the Owner and if not approved as submitted shall indicate the Owner's reasons thereof. Approval by the Engineer-in-Charge shall not relieve the Contractor from responsibility for any errors or omissions in his submittals, nor from responsibility for complying with the requirements of this contract, except with respect to variations described by the Contractor and approved in accordance with "Variations in Submittals" Clause. The approval of the Engineer-in-Charge on the submittals will be for general compliance with the intent of the Contract Documents and with the information given therein, and shall not be construed

- a) As permitting any departure from the contract requirements
- b) As relieving the Contractor of responsibilities for any error including details, dimensions, materials, etc. and
- c) As approving departures from details appearing on Contract 'Drawings and Specifications.

Where approval of Submittals is required, the Contractor shall perform the Work in accordance with such approved Submittals. Any Work performed by the Contractor prior to such approval by the Engineer-in-Charge shall be at the sole risk and liability of the Contractor.

### **Variation in Submittals**

If Submittals contain any variations from the contract requirements, other than those requested on previous submittals, the Contractor shall specifically describe such variations in writing and the reasons thereof to the Engineer-in-Charge. If the approval of any such variation affects the Contract Price or the Completion time of the Contract, the Engineer-in-Charge shall issue an appropriate Contract modification. Otherwise, the variation may be approved by the Engineer-in-Charge, only by specific reference thereto in writing. The Contractor shall not be entitled to rely on general approval of a submittal as an approval of variations of requirements of the Contractor. If the Contractor fails to describe such variations and shall not be relieved from the responsibilities of executing the Work in accordance with the contract, notwithstanding a general approval of such submittals. Nothing contained herein shall relieve the Contractor of the responsibility of notifying the Engineer-in-

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Charge of any part of the Contract Drawings or Specifications, which the Contractor knows or reasonably should have known which could result in defects under construction.

### **Use of submittals**

The Owner may duplicate, use, and disclose in any manner and for any purpose shop drawings, product data and other submittals delivered under this contract.

### **Placement of Orders**

The Contractor shall place orders for items requiring a sample or product data submittal promptly after receiving the written approval of the submittal by the Engineer-in-Charge. No such materials or products shall be ordered or used in the Work until such written approval by the Engineer-in-Charge has been given. In the event such materials or products pre ordered or used in the Works without the written approval of the Engineer-in-Charge, the same shall be at the risks, consequences, liability and costs of the Contractor.

### **Use and testing of samples**

a) Use:

Approved samples not destroyed in testing will be sent to Engineer-in-Charge. Those samples, which are in good condition, will be marked for identification and may be used in the Works. Materials and equipment incorporated in the Work shall match the approved samples within any specified tolerances. Other samples not destroyed in testing nor approved will be returned to the Contractor at the expense of the Contractor if so requested at the time of submission.

b) Failure of samples to pass specified tests:

Failure of any material to pass the specified tests will be sufficient cause for refusal to consider, under this contract, any further samples of the same brand or make of that material or equipment which previously has proved unsatisfactory in service.

c) Taking and testing of samples:

Samples of various materials or equipment delivered on the site or in place may be taken by the Engineer-in-Charge for additional testing by the Owner outside of those found not to have met contract requirements, unless the Engineer-in-Charge

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

determines it to be in the Owner's interest to accept the non-conforming materials or equipment with an appropriate adjustment of the Contract Price/Value as determined by the Engineer-in-Charge.

d) Cost of additional testing:

Unless otherwise specified, when additional tests are made, only one test of each set of sample proposed for use will be made at the expense of the Contractor. Samples, which do not meet contract requirements, will be rejected. Further testing of additional samples, if required, will be made at the expense and costs of the Contractor.

**CLAUSE.5.11. Co-operation with other contractors/specialized agencies/sub-contractors**

1) The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The Contractor shall use such methodology and equipment for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer in Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the Contractor shall take all precautions to attendee by the environmental related restrictions imposed by Govt. of Bihar as well as prevent any pollution of streams, ravines, river bed and waterways. All waste or superfluous materials shall be transported by the Contractor, entirely to the satisfaction of the Engineer-in-Charge. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints, inadequate availability of skilled, semi-skilled or unskilled workers in the near vicinity, non-availability of construction machinery

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

spare parts and any other constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Tenderers are advised to visit site and get first-hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

2) The Contractor shall cooperate with and provide the facilities to the sub-Contractors and other agencies working at site for smooth execution of the work. The contractor shall indemnify the Owner against any claim(s) arising out of such disputes. The Contractor shall:

3) Allow use of scaffolding, toilets, sheds etc.

4) Properly co-ordinate their work with the work of other Contractors.

5) Provide control lines and benchmarks to his Sub-Contractors and the other Contractors.

6) Provide electricity and water at mutually agreed rates.

7) Provide hoist and crane facilities for lifting material at mutually agreed rates.

8) Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.

9) Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other Contractors to suit the overall schedule completion.

10) Resolve the disputes with other Contractors/ sub-contractors amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator.

11) The work should be planned in a systematic manner so as to ensure proper co-ordination of various disciplines viz. sanitary & water supply, drainage, rain water harvesting, electrical, and firefighting, information technology, communication & electronics and any other services.

12) Other agencies will also simultaneously execute and install the works of sub-station / generating sets, air-conditioning, lifts, etc. for the work and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings trenches etc. as may be required for such related works (for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall be supplied free of cost by the Owner unless otherwise specifically mentioned) and the

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

contractor shall fix the same at time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.

13) The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-In-Charge and shall as far as possible arrange his work and shall place and dispose of the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and in a proper co-ordination manner and shall perform it in proper sequence to the complete satisfaction of others.

### **Specialized Agencies**

1) The composite tender comprises of two main components: viz. civil work and Electrical works. The tenderer shall select one of the approved Specialized Agencies for the specified items of the Civil work and for each E & M package for executing the work and furnish the name of Specialized Agencies for various works at the time of submission of tender. The Specialized Agencies selected by the tenderer may attend the pre-tender meeting, after careful study of contract conditions, specifications, drawings & schedule of quantities for different Packages of work for meaningful discussion in the meeting.

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

### **CLAUSE.5.12. RATES**

(A) The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work, profile, setting lay out on ground, establishment of reference bench mark(s), installing various signage, taking spot levels, survey with total station, construction of all safety and protection devices, compulsory use of

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

helmet and safety shoes, and other appropriate safety gadgets by workers, imparting continuous training for all the workers, barriers, preparatory works, construction of clean, hygienic and well ventilated workers housings in sufficient numbers as per drawing supplied by Engineer in charge, working during monsoon or odd season, working beyond normal hours, working at all depths, height, lead, lift, levels and location etc. and any other unforeseen but essential incidental works required to complete this work. Nothing extra shall be payable on this account and no extension of time for completion of work shall be granted on these accounts.

(B) The rates quoted by the tenderer, shall be firm and inclusive of all taxes and levies as applicable (including works contract tax but excluding service tax). Labour cess applicable as per relevant Central/State laws will be deducted from every bill of the contractor and deposited to respective Government department. TDS for Income-tax and Works Contract tax as applicable will be deducted from contractors' bills and deposited to respective Government department.

(C) No foreign exchange shall be made available by the Owner for importing (purchase) of equipment, plants, machinery, materials of any kind or any other items required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained from the Contractor, on account of variation in the foreign exchange rate.

(D) All ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at the basement level, temporary structure for plants and machineries, water storage tanks, installation and consumption charges of temporary electricity, telephone, water etc. required for execution of the work, liaison and pursuing for obtaining various No Objection Certificates, completion certificates from local bodies etc., protection works, testing facilities / laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in-Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts. Before start of the work, the Contractor shall submit to the Engineer-in-Charge, a site / construction yard layout, specifying areas for construction, site office, positioning of machinery, material yard, cement and other storage, steel fabrication yard, site laboratory, water tank, etc.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

(E) For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, notwithstanding the fact that the Contractor may have to pay extra amounts for any reason, to the laborers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.

(F) All material shall only be brought at site as per program finalized with the Engineer-in-Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.

(G) Rate shall including of Liaison work required, if any, in this regard with the local bodies. Nothing extra shall be payable on this account. Statutory charges, fees etc. required to be paid to the local bodies in this connection shall only be payable by the Owner or shall be reimbursable to the contractor on production of proof of actual payment made by him.

(H) It is clarified that the contractor shall be responsible for obtaining all No-objection certificate (NOCs) and relevant licenses for services like lift installation, electrical installation, fire installation and like. Nothing extra shall be payable on this account.

**CLAUSE.5.13. Inspection and rectification of Works**

**Access:**

The Owner and their authorized agents and representatives shall at all times have access to the site and other locations where parts of the Work are under preparation.

**Contractor tests:**

The Contractor shall notify the Engineer-in-Charge well in advance, of tests and inspections to be carried out, and shall obtain his written approval wherever so stipulated before proceeding with the Works.

**Inspections:**

The Contractor shall maintain an adequate inspection system and perform such inspections from time to time as will ensure that the Work called for by this contract conforms to contract requirements and does not result in any deviation. The Contractor shall maintain complete inspection records and make them available to

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

the Owner. All Work shall be conducted under the general direction of the Contractor and is subject to Owner's inspection and test at all places and at all reasonable times before final completion and acceptance with a view to ensure strict compliance with the terms and conditions of the contract.

### **Owner's inspections and tests:**

Inspections and tests conducted by or on behalf of the Owner are for the sole benefit of the Owner and do not: -

- (A) Relieve the Contractor of responsibility for providing adequate quality control measures,
- (B) Relieve the Contractor of responsibility for damage to or loss of the material before final completion and acceptance of the Work;
- (C) Constitute or imply acceptance. Or.
- (D) Affect the continuing rights of the Owner after acceptance of completed Work.

### **Owner inspectors:**

The presence or absence of an Owner's inspector does not relieve the Contractor from any of the obligations under the contract nor is the inspector authorized to change any term or condition of the contract.

Performance of inspections and tests:

The Contractor shall promptly furnish, without an additional charge all facilities, labour, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Engineer-in-Charge as per the terms of the Contract. The Owner may charge to the Contractor any additional cost of inspection or testing when work is not ready at the time specified by the Contractor for inspection or testing, when prior rejection makes re inspection or retesting necessary. The Owner shall perform all its inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the Contract Documents.

The Contractor shall be solely responsible for the protection of all finished surfaces and Works so as to avoid any repairs and shall deliver to the Owner upon final completion the Works free of any blemish, defect or damage.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

(E) In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by the other agency as and when required by NU in addition of the Engineer-in-charge and his authorized representative. The contractor shall at times during the usual working hours and at all times at which reasonable notices of the intention of the Engineer-in-charge to visit the works shall have been given to the contractor, either himself be present to receive the orders and instructions or have a responsible representative duly accredited in writing, to be present for that purpose.

(F) Inspection of the work by Architect Consultants appointed by the NU.

(i)The Architect Consultants appointed by NU shall be inspecting the works frequently to ensure that the works are in general being executed according to the design, drawings and specifications laid down in the contract.

(ii)The Architect Consultants appointed by NU shall certify on completion of particular building that it has been constructed according to the approved drawings design and specifications.

**CLAUSE.5.14. Rejected Work**

The Architect Consultants and/or Engineer-in-Charge/or Owner shall be authorized to reject any Work, which in their/his opinion is not in conformity to the specifications set out in the Contract Documents. The decision of the Architect Consultants /Engineer-in-Charge in this regard shall be final and binding on the Contractor.

Defective Work whether caused due to poor workmanship, use of sub-standard materials, or on account of damage or for any other reason whatsoever, whether caused by the Contractor and/or the Sub-Contractor may be rejected by the Architect Consultants/Engineer-in-Charge and shall be demolished by the Contractor and removed promptly from the site and replaced or re-executed expeditiously by the Contractor at his own cost. The Owner, Architect Consultants and the Engineer-in-Charge shall in no event be responsible to bear any costs/liability arising on account of such defective workmanship.

If in the opinion of the Engineer-in-Charge/ Architect Consultants, it is not expedient nor feasible to correct the defective Work, the Owner shall be entitled to deduct from monies due to the Contractor, the difference in value between the executed Work and that required under the Contract, such amount of which shall be determined by the Engineer-in-Charge in due consultation with the Owner.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.5.15. Limit of price Adjustment**

Provided that, in determining all such price adjustment in accordance with the aforesaid sub-clauses:

- (a) No account will be taken of any amount by which any cost incurred by the contractor has been increased by default or negligence of the contractor.
- (b) If the contractor fails to complete the work within time for completion, increase or decrease of cost of specified materials shall be made using either the indices or prices relating to prescribed time for completion, or the current indices or prices, relating to prescribed time for completion, or the current indices or prices, whichever is more favourable to the Owner, provided that if an extension of time is granted, the above position shall apply to the adjustment made after expiry of such extension of time.
- (c) On completion of the works and before final payment the contractor shall give a certificate that he has made full and complete disclosure to the Engineer-in-Charge of every increase or decrease in price obtained by him on materials affected by this clause.

**CLAUSE.5.16. Exemption from price Adjustment**

The following items shall not be included in the price adjustment calculation:

- (A) Liquidated damages:
- (B) Retention withheld and released:
- (C) Advance payments in the form of loans and their repayments:
- (D) The value of any additional or varied work valued at current prices:

**CLAUSE.5.17. SPECIFICATIONS**

In the case of any class of work for which there is no such specifications as referred to in detailed specification, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers' specifications, if not available then as per C.P.W.D. /District/ state P.W.D. / Specifications. In case there are no such specifications as required above, the work

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge. Specifications for a type of work are not covered by the detailed specifications/State P.W.D. specifications/I.S.I specifications or particular specifications, the same shall be decided by the engineer-in-charge and shall be binding on the contractor.

The engineer-in-charge shall have the power to insist upon the contractor to purchase and use such materials of particular approved make which may in this opinion be necessary for proper and reasonable compliance with the specifications and execution of work.

In the event of any variation/discrepancy in the drawings, specification and tender documents, the decision of the Engineer In charge shall be final, binding and conclusive on the contractor.

(A) As required by the Engineer-in-charge, the contractor shall provide all facilities at site or at manufactures work or an approved laboratory for testing of materials and/or workmanship, all the expenditure in respect of this shall be borne by the contractor unless specified otherwise in the contract. The contractor shall when required to do so by the engineer-in-charge submit that the materials have been tested in accordance with requirements of the specifications.

(B) Neither the confirmation by the engineer-in-charge not to test the materials nor the production of manufacturer(s) certificate etc. as aforesaid shall affect the right of the engineer-in-charge to reject, after delivery; the materials found not in accordance with the specifications.

### **CLAUSE.5.18. SETTING OUT**

The Contractor shall carry out survey of the work area and it's surrounding with spot levels of the existing ground at every 2.0 mt interval before starting of any work on ground. Contractor has to submit a soft copy of the drawing in CAD format showing the spot levels and contour at every 0.5 mt interval with three set of Hard copy in the same scale of the issued drawing for setting out at his own cost. Contractor has to carry out setting out the layout of building in consultation with the Engineer-in-Charge & proceed further for the approval of Architect Consultants. Any discrepancy between the architectural drawings and actual layout at site shall be brought to the notice of the Engineer-in-charge. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Total station survey instruments etc. shall be used

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

for layout, fixing boundaries, and centrelines, etc. Nothing extra shall be payable on this account.

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

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

Though the site levels are indicated in the drawings the Contractor shall ascertain and confirm the site levels with respect to benchmark from the concerned authorities. If required, contractor will have to make his own temporary/permanent benchmark to carry out further work at site. The Contractor shall protect and maintain temporary/permanent benchmarks at the site of work throughout the execution of work. The Engineer-in-Charge or his authorized representatives shall check these benchmarks. The work at different stages shall be checked with reference to benchmarks maintained for the said purpose. Nothing extra shall be payable on this account.

The approval by the Engineer-in-Charge, of the setting out by the Contractor, shall not relieve the Contractor of any of his responsibilities and obligation to rectify the errors/ defects, if any, which may be found at any stage during the progress of the work or after the completion of the work.

The Contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge.

The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work (including marking of reference points, center lines of buildings), construction and maintenance of reference bench mark(s), taking spot levels,

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

construction of all safety and protection devices, barriers, barricading, signage, labour safety, labour welfare and labour training measures, preparatory works, working during monsoon, working at all depths, height and location etc. and any other incidental works like making temporary approaches to the place of work required to complete this work. Nothing extra shall be payable on this account.

### **CLAUSE.5.19. Contractor shall submit fabrication/ shop drawings for obtaining approval**

The contractor shall submit fabrication drawing based on GA drawings and design parameters given by the Architect Consultants, in triplicate for obtaining preliminary approval of the Engineer-in-Charge for all design drawing of structural steel element already issued to him. One copy of this drawing duly corrected and signed wherever necessary by Architect Consultants will be returned to the contractor for preparing and resubmitting drawing after incorporating the said corrections again in triplicate for final approval. Along with the completion and approval of each fabrication drawing the contractor shall also submit the materials list for checking and approval to the Engineer-in-charge. No drawing shall be approved finally without material list. Once the drawing, if finally approved no request for any alternative section will be entertained. The contractor shall submit to Engineer in Charge 6 copies of all approved drawings out of which 3 copies will be issued back to the contractor for the execution of work. The contractor shall also submit copies of design calculations for the designs of joints. All joints shall be designed for full strength of members, unless otherwise specified. Approval of fabrication drawings however will not absolve the contractor of his responsibility for the safety and correctness of the fabrication.

### **CLAUSE.5.20. QUALITY ASSURANCE**

(A) The proposed project is a prestigious project and quality of work is of paramount importance. Contractor shall have to engage well-experienced skilled labour and deploy modern T&P and other equipment to execute the work. Many items like double slab structure with exposed finish form works, coarse rubble stone masonry specialized flooring work, Polysulphide sealant and backer rod fixing in expansion joints, factory made door- window shutters, proper slope maintaining in toilet units, sanitary- water supply installation, textured finishing, water proofing treatment with APP, Extruded Polystyrene insulation boards, China mosaic on terrace

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

and chemical treatment in toilet drops will specially require engagement of skilled workers having experience particularly in execution of such items.

(B) The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-charge & contractor shall be bound to replace / remove such sub-standard / defective work immediately. If any material, even though approved by Engineer-In-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost.

In addition to the supervision of work by project management consultants, the Architect Consultants appointed by the NU shall also be carrying out regular and periodic inspection of the on-going activities in the work and deficiencies, shortcomings, inferior workmanship pointed out by them shall be communicated by engineer in charge to the contractor. Upon receipt of instructions from Engineer in Charge these are also to be made good by necessary improvement, rectification, replacement up to his complete satisfaction. Special attention shall be paid towards line and level of internal and external finishing, exposed smooth surface of RCC members by providing fresh shuttering plates, rubberized linings to all the shuttering joints, accurate joinery work in wooden doors and windows, thinnest joints in stone/ tiling / cladding work, non-hollowness in floor and dado tiles work, protection of scratches over flooring by impounding layer of plaster of Paris, water tight pipe linings, proper compaction of filled up earth etc. to achieve an Institution of International standards and up keeping of quality assurance shall be of paramount importance, as such.

(C) The Contractor shall submit, within 20 days after the date of award of work, a detailed and complete method statement for the execution, testing and Quality Assurance, of such items of works, as directed by the Engineer-in-Charge. All the materials to be used in the work, to give the finished work complete in all respects, shall comply with the requirements of the Specifications and shall pass all the tests required as per specifications as applicable or such specifications / standards as directed by the Engineer-in-Charge. However, keeping the Quality Assurance in mind, the Contractor shall submit, on request from the Engineer-in-Charge, his own Quality Assurance procedures for basic materials and such items, to be followed during the execution of the work, for approval of the Engineer-in-Charge.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

(D) The Contractor shall procure and provide all the materials from the manufacturers / suppliers as per the list attached with the tender documents, as per the item description and particular specifications for the work. The equivalent brand for any item shall be permitted to be used in the work, only when the specified make is not available. This is, however, subject to documentary evidence produced by the contractor for non-availability of the brand specified and also subject to independent verification by the Engineer-in-Charge. In exceptional cases, where such approval is required, the decision of Engineer-in-Charge as regards equivalent make of the material shall be final and binding on the Contractor. No claim, whatsoever, of any kind shall be entertained from the Contractor on this account. Nothing extra shall be payable on this account. Also, the material shall be procured only after written approval of the Engineer-in-Charge. All materials shall be got checked by the Engineer-in-Charge or his authorized supervisory staff on receipt of the same at site before use.

(E) The tests, as necessary, shall be conducted in the laboratory approved by the Engineer-in-Charge. The samples shall be taken for carrying out all or any of the tests stipulated in the particular specifications and as directed by the Engineer-in-Charge or his authorized representative.

(F) The Contractor shall at his own risk and cost make all arrangements and shall provide all such facilities including material and labour, the Engineer-in-Charge may require for collecting, preparing, forwarding the required number of samples for testing as per the frequency of test stipulated in the contract specifications or as considered necessary by the engineer-in-Charge, at such time and to such places, as directed by the Engineer-in-Charge. Nothing extra shall be payable for the above.

(G) The Contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate him, the result of such tests and consequences thereon shall be binding on the Contractor. The Contractor or his authorized representative shall remain in contact with the Engineer-in-Charge or his authorized representative associated for all such operations. No claim of payment or claim of any other kind, whatsoever, shall be entertained from the Contractor.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

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

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

(J) The Contractor shall maintain all the work in good condition till the completion of entire work. The Contractor shall be responsible for and shall make good, all damages and repairs, rendered necessary due to fire, rain, traffic, floods or any other causes. The Engineer-in- Charge shall not be responsible for any claims for injuries to person/workmen or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the Contractor or of any other of his representatives, in his employment during the execution of the work. The compensation, if any, shall be paid directly to the Department / authority / persons concerned, by the Contractor at his own cost.

### **CLAUSE.5.21. Special Conditions – Electrical Works**

#### **1. Scope of work:**

1.1 The contractor's scope of work covers supply, installation, commissioning and testing of the complete Electrical installation as specified in technical specifications, drawings and schedule of quantities.

#### **2.0 Location:**

2.1 The works are to be carried out inside the campus/premises of Nalanda university At Ragir, Bihar. All electrical equipment and gear shall be designed for an average ambient of minimum 40°C with a peak of 45°C and relative humidity 100% or as per site location, whichever is higher.

#### **3.0 Drawings, Specifications & Deviations:**

3.1 The drawings and specifications lay down minimum standards of equipment and workmanship. Should the tenderer wish to depart from the provisions of the specifications and drawings either on account of manufacturing practice or for any other reasons, they should clearly draw attention in their tender to the proposed points of departures and submit such complete information, drawings and specifications as will enable the relative merits of the

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

deviations to be fully appreciated. In the absence of any deviations, it will be deemed that the tenderer is fully satisfied with the intents of the specifications and drawings and their compliance with the statutory provisions and local codes.

- 3.2 In case of any difference or discrepancy between specifications & the description of Schedule of Quantities, Schedule of Quantities shall take precedence. In case of any difference or discrepancy between specification and drawings, the drawings shall take precedence. In case any difference or discrepancy between the specifications for civil works and specification for Electrical works, specifications for civil works shall take precedence.
- 3.3 The Contractor shall prepare fabrication and working drawings and all work shall be as per the approved working drawings. Approval of drawings does not relieve the Contractor of his responsibility to meet with the intents of the specifications. All such drawings for approval shall be in duplicate.
- 3.4 Equipment data shall be submitted along with the filled tender if any. The contractor shall be responsible for any unfilled data of the data sheets and the same shall be executed according to the requirements of the Engineer in charge / Consultant without any extra cost.
- 3.5 All sundry fittings, assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections as required, and all other sundry items which are useful and necessary for proper assembly and efficient working of the various components of the work shall be deemed to have been included in the tender, whether such items are specifically mentioned in the tender documents or not.

### **4.0 Tools and Spare Parts:**

- 4.1 All the tools, tackle, scaffolding and staging require for erection and assembly of the equipment and installation covered by the contract shall be obtained and maintained by the contractor himself. All other materials such as foundation bolts, nuts, anchor fasteners etc. required for the installation of the project shall also be supplied and included in the contract.
- 4.2 Tenderer should submit the spares recommended by him for two years operation of each type of equipment covered by these specifications on completion of work.

### **5.0 Tools and tackles**

- 5.1 All required tools and tackles for execution of work is required to be arranged by contractor without any extra cost. A necessary ladder, scaffolding etc are also to be arranged by contractor.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

The contractor shall provide and maintain in working order power driven machines like welding, drilling machine, zarrri cutters, meggar, multimeter, continuity tester etc. till the completion of work.

### **6.0 Testing:**

6.1 The contractor shall carry out tests on different equipment as specified in various sections in the presence of representatives of clients, Architects and Consulting Engineers in order to enable them to determine whether the equipment and installation in general comply with the specifications.

6.2 All equipment shall be tested after carrying out necessary adjustments and balancing to establish equipment ratings and all other design conditions. At least six sets of readings shall be taken for each item tested and submitted.

6.3 A full set of properly calibrated testing equipment like megger, clamp-on meter, lux meter etc. are required to be made available throughout the project.

### **7.0 Performance guarantee:**

7.1 All electrical equipment/items shall be suitable for Seismic Zone as applicable. All equipment and the entire installation shall be guaranteed to yield the specified ratings and design conditions plus/minus 3% tolerance. Any equipment found short of the specified ratings by more than the allowable tolerance as determined by the test readings shall be rejected.

### **8.0 Defects Liability:**

8.1 All equipment and the entire installation shall be guaranteed against defective materials and workmanship for a period of 12 months reckoned after the project is commissioned and handed over to the clients along with the 6 sets of completion documents. During the defects liability period, the contractor shall rectify, repair or replace defective parts and components free of cost.

### **9.0 Statutory Inspections and Approvals from Authorities:**

9.1 The contractor shall be fully responsible for meeting all the statutory obligations pertaining to the works carried out by them. The contractor should prepare all working drawings and obtain approval of competent authorities and also have the equipment and installation inspected and got approved. All statutory fees will be paid by the clients directly against demand in writing from the appropriate authority if any and all other expenses for submission and approval of the various and relevant statutory/bodies shall be embodied in the tender prices.

### **10.0 Preparing necessary drawing submitting to authorities, getting their approval / sanction and final certificate to energize the sub-station**

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**equipment's and entire electrical works. Scope includes filling the necessary application to supply co. and following up for getting the power supply. Scope also includes filling the necessary test report to the supply co. All official / statutory fees shall be paid by clients on submission of documentary proof. This includes approval from all applicable departments as necessary i.e. Chief Fire office, Supply company, Electrical inspector, CCOE or any other authorities as appropriate and as applicable at the time of completion.**

**11.0 Payment to civil contractor.**

11.1 The electrical contractor will have to pay to the civil contractor for any work done on behalf of the electrical contractor like laying of pipes, filling of zarries etc.

**12.0 Quantity Measurements**

The quantity for measurement will be actual quantity used in electrification:

- I) The contractor shall bear all incidental charges for the storage and safe custody of the materials at site at his own responsibility.
- II) The contractor shall make arrangement at the site of works for safe custody of materials to protect from damage by rain, dampness, fire, theft etc.
- III) In case any materials get damaged the contractor shall replace the same at his own cost.
- IV) The contractor shall furnish to Engineer-in-Charge sufficiently in advance a statement showing his requirements of quantities of materials to be supplied by Owner if any and the time when he will require the same reconciliation statement to be provided by contractor.
- V) A day-to-day account of the material supplied by Owner/Contractor shall be maintained by the contractor in the agreed Performa.

**13.0 Temporary wiring**

13.1 Whenever any temporary wiring is done, it has to be done so that all precaution for safety is taken and temporary wiring shall be also done so that, it is not hazardous to anybody. Any accidents happen because of temporary or permanent installation; it will be entire responsibility of contractor for all compensation to concern parties.

Employer, engineer in charge, consultants shall not be responsible for such accidents, mistake etc.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **14.0 GA Drawings**

14.1 Successful tenderer shall submit General Arrangement drawings for all electrical items i.e. HT/LT panels, transformers, panels, cable tray, DG set, Distribution boards, SFPs, Junction box, Raceway etc. for approval of Engineer In Charge /consultant before manufacturing of any part of equipment. Contractor has to submit all these drawings soft copy and hard copies to the scale. All GA drawings are required to be submitted with minimum following information however not limited to this only.

1. Power wiring
2. Control wiring
3. Calculation for busbar sizing, battery sizing etc.
4. Dimensional details
5. Product/parts technical details
6. 3<sup>rd</sup> party test certificates
7. Compliance against tender items.

### **15.0 Shop Drawings**

15.1 Contractor have to submit following drawings for each building/area, however not limited to this only. Successful tenderer is required to submit complete list of shop drawings to engineer in charge for review and approval. Contractor has to submit all these drawings in editable soft and four sets of hard copy too the scale. Following minimum shop drawings are required to be submitted by contractor however not limited to this only.

1. Slab conduit Layout (based on lighting layout)
2. Floor conduit Layout (based on point layouts)
3. Cable tray layout with Installation detail
4. Electrical room panel arrangement detail as per GA drawing.
5. Typical detail for light fixture fixing
6. Lightning protection system
7. Earthing scheme and riser detail
8. Junction boxes, supports, clamps etc detail
9. Any other drawing required for execution work.

### **16.0 Mock up and sampling**

16.1 Contractor have to do Mock-up and sampling as required and as directed by Architect/ Consultant/Engineer in Charge without any extra cost. The

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

materials used in the mock-up may be reused in the works if found undamaged.

- 16.2 This mock-up/Sampling may include all electrical work for one complete typical internal area. Electrical external Light pole, Internal Light fixtures, floor junction box installation, Cable tray installation etc and any other area/application required by Architect/Engineer in-charge/consultant.
- 16.3 Contractor has to arrange all material required for Mock-up/sampling. If any damage accrues during sampling by contractor, no payment shall be admissible for such repairs.

**17.0 Works to be done by the Contractor**

- 17.1 Successful contractor to perform following key activities during execution and at the time of completion however not limited to this only. At no extra cost.
- 17.2 The contractor shall also furnish the required sets of detailed installation, operation and maintenance manuals of manufacturers for all items of equipment together with all relevant data sheet, spare parts catalogues, repairs, assembly and adjustment procedure etc.
- 17.3 The contractor shall furnish facilities as necessary for factory inspection of the equipment before dispatch at the manufacturer's works and also for witnessing such tests, at the works, if so required by employer/consultant.
- 17.4 Copies of all documents for routine, acceptance and type test certificates of the equipment carried out at the manufacturers premise shall be furnished to the employer along with supply of equipment.
- 17.5 The contractor shall coordinate their work and cooperate with other agencies by exchange of all technical information like details of foundation, weight, overall dimensions, clearances and other technical data required for successful and proper completion of his portion of the work in relation to the work of others without any reservation.
- 17.6 Care shall be taken, while handling/installing the equipment to avoid damage to the building as well as equipment. On completion of installation, the contractor shall arrange to repair all damages to the building and equipment caused during installation so as to bring to the original condition without any extra cost.

**18.0 Testing and commissioning of complete installation.**

- 18.1 All tools and tackles required for handling of equipment and material at site of work as well as for their assembly and erection and also necessary test instruments shall be the responsibility of the contractor.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

- 18.2 The contractor shall co-ordinate with all other agencies involved in the building work so that the building work is not hampered due to delay in his work. Recessed conduit and other works, which directly affect the progress of building work, should be given priority.
- 18.3 No structural member in the building shall be damaged / altered, without prior approval. All openings provided by others for electrical services shall be grouted / filled by the contractor after installing the cables/conduits etc. as the case may be, by any suitable means as approved by the engineer in charge without any extra cost. All chases required in connection with the electrical works shall be provided and filled by the contractor at his own cost as per instruction of architect to the original architectural finish of the building.
- 18.4 All the electrical works shall be carried out in accordance with the provisions of applicable codes and standard as amended up to date at the time of execution. All components shall conform to relevant Indian standard specifications, wherever existing, amended up to date.
- 18.5 For all kind of fabricated equipment, the contractor will first submit dimensional detailed drawings for approval before fabrication is taken up in the factory. Suitable stage inspection at factory also will be made to ensure proper use of materials, workmanship and quality control.
- 18.6 All tests prescribed in specification, to be done before, during and after installation, shall be carried out, and the test results shall be submitted to the engineer in charge in prescribed Performa, forming part of the completion certificate.
- 18.7 Completion plan (AS BUILT) drawn to the scale to be submitted for each building with location of main switch board, distribution boards, panels, circuit diagram, conduit layouts, points, outlets, light fixtures etc complete in all respect as per instruction of engineer in charge in soft editable mother files and required nos. of hard copies as well.
- 18.9 Engineer In charge/Employer will provide operative instructions on regular basis related to project during contract execution period, which are not covered in this tender document. Contractor and his staff at site shall comply all these instructions.
- 18.10 Engineer in-charge approval will be final in all concerned matters.
- 18.11 All correspondences between contractor and architect will be through client/PMC.
- 18.12 The Electrical contractor must be licensed Electrical contractor.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

- 18.13 The Electrical contractor must have available all kind of necessary equipment at site.
- 18.14 The Electrical contractor should get approval prior to appoint any sub agencies for specialized jobs. Client /Consultant/Architect have right to reject any contractor at any stage of project.
- 18.15 It is required that all insurance formalities & workman's compensation policy should be followed by the contractor.
- 18.16 The contractor will have to provide senior Electrical site engineer during the execution of work
- 18.17 All wiring person must be in possession of wireman license.

**19.0 HT/LT Relay setting and Co-ordination Analysis**

- 19.1 Successful vendor to prepare coordination time-current characteristic curves to determine the required settings/sizes of the protective devices to maximize selectivity. The utility upstream protective device feeding the facility shall be maintained as the upper limit for coordination.
- 19.2 The scope includes to provide total discrimination settings of the entire electrical system from source to every breakers. This scope includes to coordinate with supply company and collecting their source level data including the fault level. Accordingly, to provide complete setting chart for entire electrical distribution system including all HT breaker, transformer, DG, UPS, LT panels etc as necessary.
- 19.3 The coordination curves shall be prepared on log-log paper and illustrate adequate clearing times between series devices. The curves shall be created using the study software Package (E-Tap or equivalent). The entire report must be prepared as per the recommendations of OEM and with OEM suggested software only. OEM needs to validate and approve the same based on their standard curve for respective products.
- 19.4 Adequate time-current curves shall be generated to depict coordination. In addition, protective device characteristics should be suitably determined to reflect calculated short-circuit levels at the location.
- 19.5 Key Minimum Deliverables:
  - a) Calculation of Relay Settings, Analysis of required Protection each feeder wise.
  - b) Relay Setting Report.
  - c) Co-ordination Curves to show time gradation between protective devices with proper discrimination from HT source to LT incoming breaker of each panel.
  - d) Conclusion & Recommendation based on Report.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

- e) Above reports are required to be generated through OEM recommended software only. OEM needs to validate and approve the same based on their standard curve for respective products.

**20.0 Guarantee**

20.1 The contractor shall guarantee the entire installation as per specifications. All equipment shall be guaranteed for minimum one year from the date of acceptance against unsatisfactory performance or break down due to defective design, manufacture and installation. The installation shall be covered by the conditions that whole installation or any part there of found defective within one year from the date of taking over shall be replaced or repaired by the contractor free of charge.

**21.0 After sales services**

21.1 The contractor shall ensure adequate and prompt after sales services in the form of maintenance personnel and spares as and when required with a view to minimizing the break down period. Particular attention shall be given to ensure that all spares are easily available during the normal life of installation.

**22.0 Completion Drawing/ Handing over:**

- 22.1 Detailed equipment data as approved by the Engineer In Charge.
- 22.2 Contractor shall submit one complete set of as built drawings in editable soft copy and Six hard prints of 'as built' drawings to the Engineer in Charge.
- 22.3 Contractor shall provide four sets of catalogues, performance data and list of spare parts together with the name and address of the manufacturer for all electrical equipment provided by them.
- 22.4 All original 'warranty cards' given by the manufacturers shall be handed over to the Engineer in Charge.
- 22.5 Contractor shall provide Operation and Maintenance manual of all major equipment.
- 22.6 All original test certificates of materials & testing at manufacturer works shall be submitted to Engineer in Charge.
- 22.7 All site performance test certificates approved by Engineer in charge shall be submitted in one set of hard copy.
- 22.8 List of recommended spares.
- 22.9 All drawings / documents, that the Engineer-in-charge may deem fit as required for the project, shall be submitted in one set hard copy.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Submission of the above documentation shall form a precondition for the final acceptance of the project and installation and final payment.

### **23.0 Minimum Eligibility Criteria for selecting Electrical Sub contractor.**

- 23.1 Principal contractor has to take prior approval from consultant/engineer in charge prior to finalization of any sub-contractor/vendor.
- 23.2 The contractor must be government approved as "Class A" / Class - 1 licensed Electrical contractor.
- 23.3 The Electrical contractor must have completed following kind of jobs under one project head in last 7 years.
- Supply Installation Testing and Commissioning Transformers, stabilizers, UPS etc
  - Supply Installation Testing and Commissioning HV/MV/LV panels, busduct, cable tray, raceway, Cabling, termination work etc.
  - Internal wiring with PPI (Per Phase Isolation) type Distribution Boards.
  - SITC of external lighting like poles, cables, Timers, cable trenches, underground pipe network etc.
  - Equipotential earthing and structural Lightning protection works
  - SITC of complete internal wiring including various light, fan, plug point etc.
  - SITC of DG with chimney, diesel storage, bulk diesel storage, synchronous/AMF panels etc.
- 23.4 The Electrical contractor shall get approval prior to appoint any sub agencies for specialized jobs. Employer /Consultant/Engineer in charge has right to reject any contractor at any stage of project.
- 23.5 The contractor will have to provide full time dedicated following staff during execution:
- Minimum one senior Electrical site engineer B.E. with more than 5 years' experience.
  - Minimum one senior wireman with more than 5 years' experience.
  - All wiring person must be a supervisor level grade.
- 23.6 Emphasis shall be given to the sub-contractor who has already completed similar kind & Magnitude of projects and has worked with renowned Employer / Consultant.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**SPECIAL CONDITIONS FOR ELECTRICAL WORKS**

1. Main contractor shall have to associate with electrical contractor of appropriate class and category for the electrical works for the purpose of submitting technical/commercial/and execution of job as part of the contract.
2. In case of Main contractor himself having the Valid License and intend to execute the work may need not associate separate agency for the specific electrical component.
3. Main contractor shall have to submit credentials of the proposed associated agencies for verification and approval of the Engineer in charge in proforma at Annexure I. Consent letter of such selected agencies for association shall also be enclosed in the prescribed format (Annexure- II). Main contractor may propose up to three names of eligible associates with tender document to Engineer-in-charge for electrical works.
4. After obtaining concurrence of Engineer In charge for such association, the main Contractor shall finalize one associate for execution of the electrical component of the work.
5. All technical discussions need to be attended by the associate electrical contractor with the main contractor. Commercial/Technical submissions for the electrical works shall be signed and submitted by the associate electrical contractor along with the main contractor.
6. Main contractor has to enter in to agreement with his associate electrical contractor for the complete electrical work contained in the agreement. Verified/Attested copy of such agreement shall be supplied to the Engineer in charge within one month of the award of work or date of start of electrical works whichever is earlier. The agreement shall clearly depict rates of each item of work mutually agreed upon by the main contractor and associate electrical contractor.
7. The main contractor shall be entirely responsible and answerable for all the works done by his associated electrical contractor regarding their quality, adherence to the laid down specification, terms and conditions, warranty/guarantee etc and he shall be liable to bear any compensation that may be levied by the Engineer In charge under any of the clauses of the agreement.
8. The main contractor shall also give necessary general power of attorney under the contract to the associated electrical contractor to enable him to receive instructions from Engineer In charge at site, sign the site order book, bills MBs for acceptance of measurement and receive stipulated materials etc.
9. In case the main contractor wants to change the associate electrical contractor during the currency of the contract he shall obtain prior permission of the Engineer-In-Charge. The substitute should fulfil the requisite qualification as given above.
10. In the event of the concerned electrical contractor not performing satisfactory or not completing the work, the Engineer In charge can also direct the main contractor to remove the electrical contractor deployed on the work and ask him to deploy another associate electrical contractor who

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

fulfils the eligibility conditions. The new associate contractor will be bound to execute the leftover work without any loss of time or variation in cost. Such associate shall also submit its details as per above and after approval of the Engineer-In- Charge shall enter into a memorandum of understanding as in earlier case.

11. The main contractor shall be responsible for coordinating the activities of all the works and will ensure progress of all works as per the laid down program. The main contractor shall also arrange for proper storage of the electrical accessories at site and will be responsible for their watch and ward.
12. The successful tenderer will have to supply the makes as per approved make list in tender in consultation with the Engineer in charge without any extra cost.
13. As far as possible, the successful tenderer will have to place order directly to the manufacturer OR it's authorized dealer after obtaining approval from Design consultants through Engineer in charge. The Engineer in charge has right to check the Challan of supplier.
14. Make of components required to be used by contractor to complete the installation, if not mentioned anywhere, shall be required to GET IT APPROVED by Design Consultant through Engineer in charge before installation in writing.
15. Within 4 week after receipt of work order, the contractor shall submit the sample of each item / component of approved make for the approval of the Owner and Design Consultant through Engineer in charge.
16. The contractor must have ETAP or equivalent software support for design.

Following rates shall be considered as basic rates for arriving at the tender rates by the bidder.

SR NO.	TYPE OF LIGHT FIXTURE	BASIC RATE	PRICE RANGE
1	Internal Light Fixtures Type A	Rs. 1000/- per No.	Up to Rs.1000
2	Internal Light Fixtures Type B	Rs. 2000/- per No.	Above Rs. 1000 & Up to Rs. 3500
3	Internal Light Fixtures Type C	Rs. 4000/-per No.	Above Rs. 3500 & Up to Rs. 5500
4	Internal Light Fixtures Type D	Rs. 7000/-per No.	Above Rs. 5500 & Up to Rs. 8500
5	Internal Light Fixtures Type E	Rs. 11000/- per No.	Above Rs. 8500 & Up to Rs. 14000

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

6	Internal Light Fixtures Type F	Rs. 40000/- per No.	Above Rs. 14000
7	External Light Fixtures Type G	Rs. 5000/- per No.	Up to Rs.9000
8	External Light Fixtures Type H	Rs. 11000/- per No.	Above Rs. 9000 & Up to Rs. 15000
9	External Light Fixtures Type I	Rs. 15000/- per No.	Above Rs. 15000

The above basic rates are inclusive of all types of taxes, levies, loading, transit insurance, transportation, unloading and delivery at site.

Contractor shall inform and get approval of the employer in writing about the purchase rates and source of supply of the items listed under basic rate before placing the order. Material shall be purchased directly from manufacturer or their authorized main stockiest / supplier. The contractor shall get approval of such rates from engineer in charge at least minimum one month in advance of placing the order of the relevant material. Employer reserves the right to negotiate and finalize the rates of the items listed under basic rate items directly with the supplier / authorized dealer.

The approved rates shall be termed as negotiated rates (inclusive of all types of taxes, levies, loading, transit insurance, transportation, unloading and delivery at site) and the same shall be binding to the contractor for further process of execution. Contractor shall execute the relevant item considering the negotiated rates as final rate. The contractor shall prepare and submit the statement of basic rate difference for all relevant items (Performa of the statement is given below) with each running bills and final bill. The supporting documents like approved rate quotation, delivered quantities, invoice received from supplier, payment details etc. as required by engineer in charge shall be attached with this statement for Employer's verification and record. The amount of basic rate difference shall be claimed in every running bill. Final adjustment can be made during final bill after proper reconciliation of total executed quantities and material supplied quantities.

No other component of cost as stated in the Performa below shall be considered for payment or recovery of material listed under basic rate item. Refer table below for deriving amount of basic rate difference payable or recoverable.

Electrical contractor should quote considering only Installation, Testing &

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Commissioning charges in addition of basic rate for Supply.

Sample Calculations is as under.

Sr. No	Item	Unit	Basic Rate as per tender (a)	Negotiated rates (b)	Quoted Rate (c) (assumed)	Rate Difference (d) = b-a	% difference with basic rate (e) = d / a	Deduction in QR f= c x e	Final payable amount g=c+f
Example									
1	Internal	No	4000	3200	4800	-800	- 20.00%	-960	3840
2	internal	No	4000	5000	6000	+1000	+ 25.00%	NA	7000 (c+d)

**MODE OF PAYMENT**

The following payment will be made after deducting retention money.  
Payment for various items shall be made as follows:

1.	Light, Fan, Plug, Bell, Telephone, TV, Computer point Etc. (Part payment of plug on Board will not be considered)	20 % when conduits are laid in slab & Boxes are fixed
		40 % when wires are drawn in above conduits.
		30 % when switches are fitted and testing is done.
		10 % after completion of the job.
2.	Distribution Boards Cable Trench, Cables, Bus Duct, Server, EPABX	70 % for erection. . 30 % after testing and commissioning
3.	Earthing	70 % after earthing is complete. 30 % after testing and commissioning.
4.	Light fixture and Fans	70 % for erection. 30 % after testing and commissioning.

**Special Notes:**

- NO PAYMENT SHALL BE MADE AGAINST THE MATERIAL, WHICH IS NOT GOING TO CONSUME IN NEXT 2 MONTHS.
- THE FINAL CERTIFICATE SHALL BE GIVEN ONLY AFTER THE CONTRACTOR SUBMITES FOUR SETS OF AS BUILT DRAWING BOTH HARD COPY AS WELL AS SOFT COPY DULY APPROVED BY CLIENTS' ENGINEER AND CONSULTANT.
- FOR THE VIRTUAL COMPLETION AND FINAL CERTIFICATES CONTRACTOR WILL HAVE TO PRODUCE NO OBJECTION CERTIFICATE FROM CLIENTS.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.5.22. SPECIAL CONDITIONS - LOW VOLTAGE WORKS**

- The scope of all items in LV sub-system is SITC – Supply, Installation, Testing and Commissioning.
- The agency that is bidding for the total project shall be called as “LV Integrator”.
- All and entire responsibility towards the successful execution of the LV sub-systems of the project shall remain with the LV Integrator.
- The entire SITC scope of all items falling under LV sub-systems shall be executed by a single LV Integrator.
- The LV Integrator shall be certified and authorized to supply, commission and provide services at site as may be required, including warranty and post-warranty support, as being the Original Equipment Manufacturer’s authorized partner for the project. The LV Integrator shall have to formally submit the Manufacturer’s Authorization as per the prescribed format annexed to this specification before commencement of the work.
- The OEMs whose products are getting commissioned should have service centers for service and support of their respective products, preferably with toll-free nos. The OEMs whose products are getting commissioned by LV Integrator shall be direct manufacturers having their manufacturing facility.
- The passive components of fibre optic cables and fibre optic components, options and accessories shall be from a single manufacturer / make / brand.
- The passive cabling system consisting of fibre optic cables and accessories, the active networking components, i.e., networking switches and other such equipment’s, the Pbx/communication systems shall be installed by a manufacturer’s certified partner.
- The fibre optics cabling system shall be duly certified with test reports submitted by the manufacturer or their authorized partners for a period of 25 years minimum.
- The active components of networking and distribution such as networking switches, their options and modules shall be also from a single manufacturer/make/brand, to ensure that software and firmware images and functionality is identical. The upgrades or enhancement of core/operating software images and firmware & management applications for switches, options and modules shall be free (without any extra cost) to the client for the entire life cycle of these switches.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- For all LV systems, the core software, operating software, application software and GUI etc. shall be of the latest versions. The upgrades and enhancements of the software images, core software and firmware for all network or networkable devices - such as controllers, interfaces, network camera, ip telephones, pabx, fire alarm panels, PA main units etc. – shall be free (without any extra cost) to the client for the entire life cycle of these products.
- The LV Integrator carrying out the SITC of Works shall provide defects-free supply, commissioning and operation of goods supplied by them for a period of 12 months from the date of hand-over, to be called as Warranty Period. During this period any goods and items supplied by them developing defects or becoming non-operational and downgraded in service shall be replaced free of any cost to the client. Such items shall include goods, software and applications and any other such items becoming a part of total solution.
- At the end of execution or at the time of hand-over, for all equipment's that are covered in SITC, the integrator shall transfer all warranties and guaranties from OEM – original equipment's manufacturer – to the client. The respective OEMs shall be bound to honour any and all warranties, guaranties and support commitments as agreed and committed by the LV Integrator.
- The LV Integrator is advised to provide technical datasheets and specification sheets for approval for all items prior to initiating any supply. Any items having deviations, in absence of specific approval from Client / Architect / Consultant shall be returned whether installed or uninstalled at the risk, liability and expense of the LV Integrator.
- The LV Integrator is advised to inform the Client / Architect / Consultant of any specific requirements for equipment's such as heat dissipation, earthing, ventilation etc. before supply so as to incorporate the same at site by other agencies.
- At the time of project hand-over, the Client shall nominate personnel for O&M of LV systems. The LV Integrator shall depute a qualified and well-trained engineer to impart proper training to client personnel on all aspects of operation, use, programming, administration and management of items under SITC scope.
- The LV Integrator shall operate in complete cooperation with other agencies and contractors or their sub-contractors to achieve harmony of work and maintaining the overall functionality of each systems and aesthetics.
- The LV Integrator is advised to specifically use items only from the make list and provide information on compliance of performance specifications.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- The LV Integrator shall not use any unknown or local items as a substitute for listed brands and makes that may degrade system performance.
- Make of components required to be used by LV Integrator to complete the installation, if not mentioned anywhere, shall be required to be GET APPROVED from Client / Architect / Consultant in writing before installation.
- Within 4 weeks of work order, the LV Integrator shall submit the sample of each item / component of above mentioned approved make for the approval of the Client / Architect / Consultant.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**MANUFACTURER'S AUTHORIZATION (MAF)**

**MAF Letter Format (On OEM Letter head with seal)**

Date: \_\_\_\_\_

To,

\_\_\_\_\_ <<< NAME OF CLIENT/ORGANIZATION >> \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Subject:** Manufacturer's Authorization Certificate

**Tender Ref.:** << PLEASE SPECIFY SPECIFIC TENDER REF.NO.>>

Dear Sirs,

This is with reference to the above mentioned Tender.

We hereby authorize <<NAME AND ADDRESS OF INTEGRATOR>> to offer our range of product in their tender bids. Being authorized <<NAME AND ADDRESS OF INTEGRATOR>> may make techno-commercial and commercial proposal for this tender.

Upon being awarded the work <<NAME AND ADDRESS OF INTEGRATOR>> are authorized to install and commission our range of products falling under <<SECTION/PRODUCT CATEGORY>> of this tender.

We as Original Electronic Manufacturers will provide all the techno-commercial and service support necessary to <<NAME AND ADDRESS OF INTEGRATOR>> for this project during the commissioning phase of the equipment's and until hand-over.

We also confirm that the items would be serviceable during the warranty period of 12 months and for at least five years thereafter.

Thanking and assuring best of our services at all times.

Yours faithfully

(Seal & Signature)

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**CLAUSE.5.23. SPECIAL CONDITIONS FOR PLUMBING**

**WORK**

**GENERAL**

These special conditions are intended to amplify the General Conditions of Contract and shall be read in conjunction with the same. For any discrepancies between the General Conditions, BOQ and these Special Conditions, the more stringent shall apply.

**1. SCOPE OF WORK**

The general character and the scope of work to be carried out under this contract is illustrated in Drawings, Specifications and Schedule of Quantities. The Contractor shall carry out and complete the said work under this contract in every respect in conformity with the contract documents and with the direction of and to the satisfaction of the Owner's site representative. The contractor shall furnish all labour, materials and equipment (except those to be supplied by the owner) as listed under Schedule of Quantities and specified otherwise, transportation and incidental necessary for supply, installation, testing and commissioning of the complete Plumbing system as described in the Specifications and as shown in the drawings. This also includes any material, equipment, appliances and incidental work not specifically mentioned herein or noted on the Drawings/Documents as being furnished or installed, but which are necessary and customary to be performed under this contract. The Plumbing System shall comprise of following:

- a) Sanitary Fixtures and Fittings.
- b) Cold Water Supply and Hot Water Supply
- c) Internal drainage
- d) External Drainage
- e) Civil and Miscellaneous items
- f) Plumbing pumps, equipment and electrical panel including connection to the various equipment.
- g) Water Treatment Plant
- h) Chilled Drinking Water system
- i) Wiring & Earthing from MCC panels to various plumbing, control wiring & interlocking.
- j) Other Miscellaneous Items.
- k) Cutting holes, chases & like through all types of walls /floors and finishing for all services crossings, including sealing, framework, fire proofing, providing sleeve, cover plates, making good structure and finishes to an approved standard.
- l) Balancing, testing & commissioning of the entire plumbing system.
- m) Test reports, list of recommended spares, as-installed drawings, operation & maintenance manual for the entire plumbing system.
- n) Training of Owner's staff.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **2. ASSOCIATED CIVIL WORKS**

Following civil works associated with Plumbing installation are excluded from the scope of this contract. These shall be executed by other agencies in accordance with approved shop drawings of, and under direct supervision of the Plumbing contractor.

- i. RCC foundation for machines, pumps & large equipment with angle iron frame work at the edges to protect these from damage.
- ii. RCC work for water tanks
- iii. PCC foundation blocks with angle iron framework edging for all motor control centre.
- iv. Water proofing of floors.
- v. Masonry drain channels and sumps in plant room.

### **3. ASSOCIATED SERVICES WORKS**

All associated ELECTRICAL WORKS listed below are excluded from the scope of this contract. These shall be installed by other agencies in accordance with approved shop drawings of, and under direct supervision of the Plumbing contractor.

Providing power supply with earthing at the incoming of control panel in plant room.

### **4. BUILDING AUTOMATION SYSTEM**

The scope of Plumbing Contractor shall include the following for the interface to Building Automation System, and no additional cost shall be paid for providing the interface feasibility.

- i. Stop/Manual/ Auto switches along with potential free contacts for monitoring the manual operation status, to be provided for those equipment whose start / stop is controlled by Building Automation System.
- ii. Potential free 'NO' contacts for monitoring 'Run' status of equipment wherever required.
- iii. Necessary contactor with potential free contacts and Stop/Manual/ Auto switches to be provided for all 1-phase equipment wherever the starter is not provided and which requires starting / stopping through Building Automation System.
- iv. Sockets /Nipples including shut-off valve for mounting sensors/transmitters on pipelines.
- v. The space provision in all the equipment panel (MCC) for mounting Current/ Potential transformers & transducers and power supply to the transducer shall be provided by the Plumbing contractor. Separate current transformers shall be provided by Plumbing contractor for monitoring current / KWH (wherever required) through BAS.
- vi. The installation of current transformer & Transducer along with wiring between Current Transformer & Transducer up to the terminal block shall be provided by the Plumbing contractor. All transducers shall be supplied by BAS contractor.
- vii. The low voltage BAS Cables shall be brought upto the electric panel by BAS contractor and all terminations into the electrical panels shall be made by Plumbing contractor after satisfying himself of the wiring

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

system. It is to be clearly understood that the final responsibility for the sufficiency, adequacy and conformity to the contract requirements of the Plumbing system, lies solely with the contractor.

- viii. All necessary Hardware/ Software shall be made available by the Plumbing Contractor on the Microprocessor based panel for the integration of such panel to Building Automation System for remote monitoring / controlling of marking / equipment thru BAS.

### **5. IMPORTED EQUIPMENT**

The successful tenderer shall submit upon award the following to facilitate the Owner in their application for concessional duty for equipment/material proposed to be directly purchased and imported by them.

- a. Four copies of proforma invoice from Manufacturer/Supplier drawn in the name of Owner identifying FOB price from the country of origin and Freight cum Insurance up to site.
- b. Four sets of Technical, Literature, high lighting model number and all technical details of the actual equipment/material offered by them.
- c. Successful bidder shall indicate packing specification for imported equipment / material.
- d. Successful bidder shall furnish undertaking from local agents for all imported equipment that they will provide all technical data & engineering information on the product through their principles, all back-up services during detailed engineering testing and commissioning and service during and after the defect's liability period.

### **6. PROJECT EXECUTION AND MANAGEMENT**

The Contractor shall ensure that senior planning and erection personnel from his organization are assigned exclusively for this project. They shall have minimum 10 years experience in this type of installation. The Contractor shall appoint one Project Director holding senior management position in the organization. He shall be assisted on full time basis by a minimum of one erection engineers & two senior supervisors. The entire staff shall be posted at site on full time basis.

The project management shall be through modern technique. The Contractor's office at site shall be fully equipped with modem, computers, plotter and photocopier. Erection engineers and supervisors shall be provided with mobile communication system so that they can always be reached.

For quality control & monitoring of workmanship, contractors shall assign at least one full- time engineer who would be exclusively responsible for ensuring strict quality control, adherence to specifications and ensuring top class workmanship for the installation.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

The Contractor shall arrange to have mechanized & modern facilities of transporting material to place of installation for speedy execution of work.

### **7. PERFORMANCE GUARANTEE**

The contractor shall carry out the work in accordance with the Drawings, Specifications, Schedule of Quantities and other documents forming part of the Contract.

The contractor shall be fully responsible for the performance of the selected equipment (installed by him) at the specified parameters and for the efficiency of the installation to deliver the required end result.

The contractor shall guarantee that the Plumbing system as installed shall maintain the design conditions as described under "Basis of Design" and relevant clauses in the specifications. The guarantee shall be submitted in the proforma given in Appendix-I.

Complete set of architectural drawings is available in the Architect/Consultant's office and reference may be made to same for any details or information. The contractor shall also guarantee that the performance of various equipment individually shall not be less than the quoted capacity; also, actual power consumption shall not exceed the quoted rating, during testing and commissioning, handing over and guarantee period.

### **8. BYE-LAWS AND REGULATIONS**

The installation shall be in conformity with the Bye-laws, Regulations and Standards of the local authorities concerned, in so far as these become applicable to the installation. But if these Specifications and Drawings call for a higher standard of materials and / or workmanship than those required by any of the above regulations and standards, then these Specifications and Drawings shall take precedence over the said regulations and standards. However, if the Drawings and specifications require something which violates the Bye-laws and Regulations, then the Bye-laws and Regulations shall govern the requirement of this installation.

### **9. FEES AND PERMITS**

The contractor shall obtain all permits/ licenses and pay for any and all fees required for the inspection, approval and commissioning of their installation.

### **10. SPECIFICATIONS**

The detailed specifications given hereinafter are for the items of works described in the schedule of quantities attached herein, and shall be guidance for proper execution of work to the required standards. It may also be noted that the specifications are of generalized nature and these

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

shall be read in conjunction with the description of item in schedule of quantities and drawings.

Work under this contract shall be carried out strictly in accordance with specifications attached with the tender.

Item not covered under these specifications due to any ambiguity or misprints, or additional works, the work shall be carried out as per specifications of the latest applicable standards with latest amendments as applicable in the contract or as directed by Engineer in Charge.

Works not covered under Para 2.1 and 2.2 shall be carried out as per relevant Indian standards specifications or codes of practice.

Unless specifically otherwise mentioned, all the applicable codes and standards published by the Indian Standard Institution and all other standards which may be published by them before the date of receipt of tenders, shall govern in all respects of design, workmanship, quality and properties of materials and methods of testing, method of measurements etc.

Wherever any reference to any Indian Standard Specification occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued there to or revisions thereof, if any, up to the date of receipt of tenders. In case there is no I.S.I. specification for the particular work, such work shall be carried out in accordance with the instructions in all respects and requirements of the Engineer-in-Charge.

For the items not covered under any of the specifications stated above, the work shall be executed as per manufacturers specifications/ General good engineering practice/ or as per direction of Engineer in charge and shall be carried out in a manner complying in all respects with the requirement of relevant byelaws of municipal corporation/ Development Authority etc. under the jurisdiction of which the work is to be carried out.

In case of any difference or discrepancy between specifications & the description of Schedule of Quantities, Schedule of Quantities shall take precedence. In case of any difference or discrepancy between specification and drawings, the drawings shall take precedence. In case any difference or discrepancy between the specifications for civil works and specification for Public Health Engineering works, specifications for civil works shall take precedence.

In case of any dispute arising out of the interpretation of any tender condition, the decision of Engineer-In-Charge shall be final and binding on the contractor.

Detail specifications for Sanitary & CP fittings like model/ makes shall be selected by Architect/ Owner and the same shall be binding for execution.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

All electrical installation shall comply with the requirements of relevant Indian Standards, Indian Electricity rules & Indian Electricity Act amended up to date & local bye laws.

### **11. CONTRACTOR'S RATES**

Rates quoted in this tender shall be inclusive of cost of materials, labour, supervision, erection, tools, plant, scaffolding, service connections, transport to site, taxes, octroi and levies, breakage, wastage, excavation, refilling, bedding, encasing, transportation of lifts/leads and all such expenses as may be necessary and required to completely do all the items of work and put them in a working condition.

Rates quoted are for all heights and depths required for this work.

All rates quoted must be for complete items inclusive of all such accessories, fixtures and fixing arrangements, nuts, bolts, hangers as are a standard part of the particular item except where specially mentioned otherwise.

All rates quoted are inclusive of cutting holes and chases in walls and floors and making good the same with cement mortar/ concrete of appropriate mix and strength as directed by Architect/ Engineer in Charge.

Rates quoted shall be inclusive of cost incurred in testing, commissioning of work and materials.

Rates quoted shall be inclusive of any rework to be carried on in the installation system due to the instructions given by Statutory/ Approval authority.

For all the items/ equipment's supplied free of cost by the Owner, the contractor's rate shall take care of transportation to the site, storage at site, installation, testing & commissioning of those items/equipment's.

All rates quoted by the contractor under this contract shall include bailing or pumping out of all the water which may accumulate during the progress of work either through seepage, springs, rain or any other cause.

All rates quoted by the contractor shall include all miscellaneous civil work related to Plumbing work like excavation, refilling, timbering, bedding, encasing, etc. required as per actual site condition.

All water and electricity charges for testing and commissioning of the system shall be borne by the contractor.

In case of discrepancy/ calculation error between rate & amount quoted by the contractor, the quoted rate shall be considered as final to derive the amount.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **12. DRAWINGS**

The Plumbing Drawings, which may be issued with tenders, are diagrammatic only and indicate arrangement of various systems and the extent of work covered in the contract. These Drawings indicate the points of supply and of termination of services and broadly suggest the routes to be followed. Under no circumstances shall dimensions be scaled from these Drawings. The architectural/interiors drawings and details shall be examined for exact location of equipment and water supply / drainage piping etc.

The contractor shall follow the tender drawings in preparation of his shop drawings, and for subsequent installation work. He shall check the drawings of other trades to verify spaces in which his work will be installed.

Maximum headroom shall be maintained at all points. Where headroom appears inadequate, the contractor shall notify the Architect/Consultant/Owner's site representative before proceeding with the installation. In case installation is carried out without notifying, the work shall be rejected and contractor shall rectify the same at his own cost.

The contractor shall examine all architectural, structural, plumbing, electrical and other services drawings and check the as-built works before starting the work, report to the Owner's site representative any discrepancies and obtain clarification. Any changes found essential to coordinate installation of his work with other services and trades, shall be made with prior approval of the Architect/Consultant/Owner's site representative without additional cost to the Owner. The data given in the Drawings and Specifications is as exact as could be procured, but its accuracy is not guaranteed.

### **13. TECHNICAL DATA**

Each tenderer shall submit along with his tender, the technical data for all items listed in Appendix in the indicated format. Failure to furnish complete technical data with tenders may result in summary rejection of the tender.

### **14. REFERENCE DRAWINGS**

The contractor shall maintain one set of all construction drawings issued to him as reference drawings. These shall not be used on site.

All corrections, deviations and changes made on the site shall be shown on these reference drawings for final incorporation in the completion (as built) drawings. All changes to be made shall be initialed by the Engineer in charge.

One complete set of construction drawings shall be made available to the execution engineer & shall be maintained in good condition throughout the execution activities.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**15. SHOP DRAWINGS**

All the shop drawings shall be prepared on computer through Autocad System based on Architectural Drawings, site measurements and Interior Designer's Drawings. Within four weeks of the award of the contract, contractor shall furnish, for the approval of the Architect/Consultant, two sets of detailed shop drawings of all equipment and materials including layouts for Plant room, Pump room, Typical toilets drawings showing exact location of supports, flanges, bends, tee connections, reducers, detailed piping drawings showing exact location and type of supports, valves, fittings etc; external insulation details for pipe insulation etc; electrical panels inside/outside views, power and control wiring schematics, cable trays, supports and terminations. These shop drawings shall contain all information required to complete the Project as per specifications and as required by the Architect/Consultant/Owner's site representative. These Drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity of all items of equipment, also the details of all related items of work by other contractors. Each shop drawing shall contain tabulation of all measurable items of equipment/materials/works and progressive cumulative totals from other related drawings to arrive at a variation-in-quantity statement at the completion of all shop drawings. Minimum 12 sets of drawings shall be submitted after final approval along with CD.

Each item of equipment/material proposed shall be a standard catalogue product of an established manufacturer strictly from the manufacturers listed in Appendix-II and quoted by the tenderer in technical data part of Appendix-III.

When the Architect/Consultant makes any amendments in the above drawings, the contractor shall supply two fresh sets of drawings with the amendments duly incorporated along with check prints, for approval. The contractor shall submit further twelve sets of shop drawings to the Owner's site representative for the exclusive use by the Owner's site representative and all other agencies. No material or equipment may be delivered or installed at the job site until the contractor has in his possession, the approved shop drawing for the particular material/equipment/ installation.

Shop drawings shall be submitted for approval four weeks in advance of planned delivery and installation of any material to allow Architect/Consultant ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to his failure to produce shop drawings at the right time, in accordance with the approved program.

Manufacturers drawings, catalogues, pamphlets and other documents submitted for approval shall be in four sets. Each item in each set shall be properly labelled, indicating the specific services for which material or equipment is to be used, giving reference to the governing section

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

and clause number and clearly identifying in ink the items and the operating characteristics. Data of general nature shall not be accepted.

Samples of all materials like valves, pipes, insulation, control wires etc shall be submitted to the Owner's site representative prior to procurement. These will be submitted in two sets for approval and retention by Owner's site representative and shall be kept in their site office for reference and verification till the completion of the Project. Wherever directed a mockup or sample installation shall be carried out for approval before proceeding for further installation.

Approval of shop drawings shall not be considered as a guarantee of measurements or of building dimensions. Where drawings are approved, said approval does not mean that the drawings supercede the contract requirements, nor does it in any way relieve the contractor of the responsibility or requirement to furnish material and perform work as required by the contract.

Where the contractor proposes to use an item of equipment, other than that specified or detailed on the drawings, which requires any redesign of the structure, partitions, foundation, piping, wiring or any other part of the mechanical, electrical or architectural layouts; all such re-design, and all new drawings and detailing required therefore, shall be prepared by the contractor at his own expense and gotten approved by the Architect/Consultant/ Owner's site representative. Any delay on such account shall be at the cost of and consequence of the Contractor.

Plumbing Contractor shall prepare coordinated services shop drawings based on the drawings prepared by Electrical, HVAC, Fire protection & Low Voltage Contractors to ensure adequate clearances are available for installation of services for each trade.

Where the work of the contractor has to be installed in close proximity to, or will interfere with work of other trades, he shall assist in working out space conditions to make a satisfactory adjustment. If so, directed by the Owner's site representative, the contractor shall prepare composite working drawings and sections at a suitable scale, not less than 1:50, clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordinating with other trades, or so as to cause any interference with work of other trades, he shall make all the necessary changes without extra cost to the Owner.

Within four weeks of approval of all the relevant shop drawings, the contractor shall submit four copies of a comprehensive variation in quantity statement, and itemized price list of recommended (by manufacturers) imported and local spare parts and tools, covering all equipment and materials in this contract. The Project Manager shall make recommendation to Owner for acceptance of anticipated variation in contract amounts and also advise Owner to initiate action for procurement of spare parts and tools at the completion of project.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**16. QUIET OPERATION AND VIBRATION ISOLATION**

All equipment shall operate under all conditions of load without any sound or vibration which is objectionable in the opinion of the Owner's site representative. In case of rotating machinery sound or vibration noticeable outside the room in which it is installed, or annoyingly noticeable inside its own room, shall be considered objectionable. Such conditions shall be corrected by the Contractor at his own expense. The contractor shall guarantee that the equipment installed shall maintain the desired NC levels.

**17. ACCESSIBILITY**

The Contractor shall verify the sufficiency of the size of the shaft openings, clearances in cavity walls and suspended ceilings for proper installation of his piping and other ancillaries. His failure to communicate insufficiency of any of the above, shall constitute his acceptance of sufficiency of the same. The Contractor shall locate all equipment which must be serviced, operated or maintained in fully accessible positions. The exact location and size of all access panels, required for each concealed, valves or other devices requiring attendance, shall be finalized and communicated in sufficient time, to be provided in the normal course of work. Failing this, the Contractor shall make all the necessary repairs and changes at his own expense. Access panel shall be standardized for each piece of equipment / device / accessory and shall be clearly nomenclature / marked.

**18. MATERIALS AND EQUIPMENT**

All materials and equipment shall conform to the relevant Indian Standards and shall be of the approved make and design. Makes shall be in conformity with list of approved manufacturers as per Appendix - III.

**19. MANUFACTURE INSTRUCTIONS**

Where manufacturer has furnished specific instructions, relating to the material and equipment used in this project, covering points not specifically mentioned in these documents, such instructions shall be followed in all cases.

**20. EXECUTION OF WORK**

The contractor must get acquainted with the proposed site for the work and study specifications and conditions carefully before execution.

The work shall be carried out in conformity with the plumbing drawings and within the requirements of Architectural, HVAC, Electrical, Structural and other specialized services drawings.

On award of the work, contractor shall submit a program of construction in the form of a pert chart or bar chart for approval of the Architect/

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Engineer in Charge. All dates and time schedule agreed upon shall be strictly adhered to, within the stipulated time of completion/ commissioning along with the specified phasing, if any.

The work shall be executed as per program approved by the Architect/Engineer in Charge. If part of site is not available for any reason or there is some unavoidable delay in supply of materials stipulated by the owner/ or due to any other issue not pertaining to the contractor, the contractor shall draw attention to the owner & as per the mutual agreement, the program of construction shall be modified accordingly and the contractor shall have no claim for any extras or compensation on this account. Here Owner means the authorized person/ agency representing Owner/Client.

The contractor shall cooperate with all trades and agencies working on the site. The contractor shall ensure that all inserts, pipelines embedded in structural members, sleeves, cutouts, etc. are placed in position in coordination with civil work as and when required. All holes, sleeves, cutouts shall be filled with best quality sealant to make leak proof joint. Location & size of core cutting of the floor slabs in case of suspended plumbing shall be coordinated with civil contractor. However, core cutting work is to be carried out by Civil Contractor or any other agency.

The contractor shall take instructions from the Engineer In charge regarding collection and stacking of material in any place with lockable arrangement. For damage/ theft of any material, Contractor shall be hold responsible. No Excavated earth or Building material shall be stacked on areas where other buildings, roads, services, compound walls, etc are to be constructed.

The contractor shall maintain in perfect condition all work executed till the completion of the entire work allotted to him. Where Phased delivery is contemplated, this provision shall apply to each phase.

The installation of the sanitary fixtures and fittings shall be as per the shop drawings approved by the Architect/ Engineer in Charge/ Consultant. The fixtures in the trial assembly can be re-used for final installation without any additional payments for fixing or dismantling of the fixtures.

All gaps between wall/ floor and sanitary vessels shall be filled with sanitary grade sealant. CP Brass or SS screws shall be used for fixing sanitary fixtures and accessories in toilet, bath, pantry and kitchen area.

While carrying out pipeline work, in case the contractor encounters any Interference with other services, such as cable, conduits, etc. he shall take sufficient precautions in order to prevent any damage to them. If any damage occurs it shall be rectified to its original condition at his own cost to the satisfaction of Engineer-In-Charge.

The contractor carrying out the construction work shall take effective measures to carefully open out all existing channels, culverts, bridges,

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

pipelines, conduits, water courses, sewer, drains, electrical cables, transmission lines and their supports and all works buried or otherwise where such services have to be interfered with the purpose of the construction of the works. He shall provide and arrange all necessary temporary supports and diversions, if necessary, across/ under/ even through along sides of the trenches and all other parts of construction work for all such channels, culverts, bridges, pipelines, conduit

The contractor shall arrange to carry out all works with least interference practicable with public footpath and vehicular traffic and with existing waste water or storm water drainage arrangements and provide all necessary road barriers, fences, notices, lights, gangways, access crossings, diversions for traffic, temporary drains, dewatering channels, chutes pumping or water lifting arrangements and all other facilities for the proper execution of the works to the approval and satisfaction in all respects of the Engineer-in-Charge. Any work carried out by the contractor in this connection shall be deemed as temporary works incidental to the construction work.

For any free issue items by Owner, the contractor shall maintain the same properly & install as per good engineering practice.

No structural member shall be chased or cut without the written permission of the Architect/ Engineer in charge.

The work shall be executed in a manner complying in all respects with requirements of relevant bye-laws of the municipal corporation/Development Authority/ Applicable Statutory Authority, the jurisdiction of which the work is to be executed or as directed by the Engineer-In-Charge.

All plumbing services shall be handed over to Engineer-In-Charge complete in all respects. Incomplete work will not be taken over. Any loss or damage to these services due to any reasons by anybody whatsoever before handing over will be at contractors' risk and cost, Any damage to any structural, finishing work done during the testing or rectification shall be made good by the contractor at his own cost and risk.

### **21. MATERIALS & WORKMANSHIP**

All materials used in the works shall conform to the list of approved vendors in tender specifications. The approved samples shall be maintained at site till the completion of work.

As far as possible materials bearing I.S. certification marks shall be used with the approval of the Architect/ Engineer in Charge/ Engineer in charge.

Unless otherwise specified and expressly approved in writing by the Architect/ Engineer in Charge, materials of makes and specifications mentioned with tender shall be used. In case of any items, list of

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

approved vendors is not given; the contractor shall submit his recommendation to Engineer in charge with proper technical back up justifying the selection.

Workmanship and general finish shall be of first-class quality and in accordance with best workshop practice. All similar items of the Plant and their component parts shall be completely interchangeable.

Spare parts shall be manufactured from the same materials as the originals and shall fit all similar items.

Machining fits on renewable parts shall be accurate and to specified tolerances so that replacements made to may be readily installed.

All equipment shall operate without excessive vibration and with minimum noise.

All revolving parts shall be truly balanced both statically and dynamically so that when running at normal speeds at any load up to the maximum there shall be no vibration due to lack of balance.

All parts which can be worn or damaged by dust shall be totally enclosed in dust proof housings

All materials selected in the work shall be most suitable for duty concerned, free from imperfections, selected for long life and minimum maintenance.

All necessary accessories required for satisfactory and safe operation of the Plant shall be supplied by the Contractor unless it is specifically excluded from his scope.

All valves shall be closing on clockwise rotation of the hand wheel. The effort required to close/ open under all operating conditions shall be limited to 7 kg. The direction of opening/ closing shall be cast on the hand wheel.

All flanges shall be drilled in accordance with requirements of IS: 1538. All flanges shall be full or spot faces on the back side. The flange thickness shall be uniform throughout. Flange outside periphery shall be concentric with the bore. Flanges shall be finished smooth on periphery also Castings and fabricated materials shall be finished smooth all over.

### **22. INSPECTION AND TESTING OF MATERIALS**

Contractor shall be required, if requested, to produce manufacturers test certificate for the particular batch of materials supplied to him. The tests carried out shall be as per the relevant Indian standards.

Testing charges including incidental charge and cost of sample for testing shall be borne by the contractors for all mandatory tests.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Testing charges for optional tests shall be paid by the Dept. However, the incidental charges and cost of sample for testing shall be borne by the contractor.

In case of non-I.S. materials, it shall be the responsibility of the contractor to establish the conformity of material with relevant I.S. specification by carrying out necessary tests. Testing charges including incidental charge and cost of sample for testing shall be borne by the contractors for such tests.

The materials should pass all tests and tolerance in dimensional, chemical, physical properties should be within the limit as stipulated in relevant I.S. for acceptance. Such materials will be accepted as standard.

Payments shall be restricted to standard unit mass, or as specified in the schedule, without making any cost adjustment towards mass or any other properties provided the material pass all the tests and tolerance are within the specified limit.

For examination and testing of materials and works at the site contractor shall provide all testing and gauging equipment necessary but not limited to the followings:

a) Theodolite b) Dumpy level c) Steel tapes d) Weighing machine e) Plumb bobs, spirit levels, Hammers f) Micrometers g) Thermometers, Stoves h) Hydraulic test machine i) Smoke test machine.

All such equipment shall be tested for calibration at any approved laboratory, if required by the Architect/Engineer in Charge.

All testing equipment should be preferably located in special room meant for the purpose.

### **23. MOCK UP**

The contractor shall install all pipes, fixtures, clamps and accessories and fixing devices in mock-up shaft and room so constructed as directed by Architect/ Engineer in Charge without any cost. The materials used in the mock-up may be reused in the works if found undamaged.

The contractor shall have to assemble at least one set of each type of sanitary fixtures and CP fittings in order to determine precisely the required supply and disposal connections. Relevant instructions from manufacturers shall be followed as applicable. This trial assembly shall be developed to determine the location of puncture holes, holding devices etc. which will be required for final installation of all sanitary fixtures and fittings. The above assembly shall be subject to final approval by the Architect/ Engineer in Charge/ Engineer In charge.

Any tiles or finished surfaces or floors damaged by the contractor while doing his work shall be made good with new tiles or other finishing material. No payment shall be admissible for such repairs. The Architect

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

/ Engineer in Charge may, at his discretion get the damaged work repairs to the contractor.

### **24. REFERENCE POINTS**

Contractor shall provide permanent benchmarks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of the work.

All such reference points shall be in relation to the levels and locations given in the Architect/ Engineer in Charge and plumbing drawings.

### **25. ELECTRICAL INSTALLATION**

The electrical work related to Plumbing services, shall be carried out in full knowledge of, and with the complete coordination of the contractor. The electrical installation shall be in total conformity with the control wiring drawings prepared by the contractor and approved by the Architect/Consultant. All equipment shall be connected and tested in the presence of an authorized representative of the contractor.

The Plumbing system shall be commissioned only after the contractor has certified in writing that the electrical installation work for Plumbing services has been thoroughly checked, tested and found to be totally satisfactory and in full conformity with the contract Drawings, Specifications and manufacturer's instructions. It is to be clearly understood that the final responsibility for the sufficiency, adequacy and conformity to the contract requirements, of the electrical installation work for Plumbing services, lies solely with the contractor.

### **26. COMPLETION CERTIFICATE**

On completion of the Electrical installation for Plumbing system, a certificate shall be furnished by the contractor, counter signed by the licensed supervisor, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local authority.

The contractor shall be responsible for getting the entire electrical installation for Plumbing system duly approved by the local authorities concerned, and shall bear expenses if any, in connection with the same.

### **27. SITE CLEARANCE AND CLEANUP**

The contractor shall, from time to time clear away all debris and excess materials accumulated at the site.

After the fixtures, equipment and appliances have been installed and commissioned, contractor shall clean-up the same and remove all plaster, paints stains, stickers and other foreign matter of discoloration leaving the same in a ready to use condition.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

On completion of all works, contractor shall demolish all stores, remove all surplus materials and leave the site in a broom clean condition, failing which the same shall be done at contractors risk and cost.

### **28. BALANCING, TESTING AND COMMISSIONING**

Piping and drainage works shall be tested as specified under the relevant clauses of the specifications.

Tests shall be performed in the presence of the Engineer in Charge. The engineer in charge shall issue a certificate for approved testing of all systems duly signed & stamped.

All materials and equipment found defective shall be replaced and whole work tested to meet the requirements of the specifications.

Contractor shall perform all such tests as may be necessary and required by the local authorities to meet Municipal or other bye-laws in force.

Contractor shall provide all labour, equipment and materials for the performance of the test.

After completion of work and during the maintenance liability period of contract, the work shall be subjected to "Post construction and testing". In case, if the materials incorporated in the work are found to be inferior, though the sample collected from the materials might have been passed at the time of execution, it shall be the responsibility of the contractor to replace the same without any cost to the Owner failing which the Owner may rectify the same at the risk and cost of the contractor or the Owner may accept the same as substandard, and cost be adjusted from the outstanding security deposit as per the terms and condition of the contract for the work.

Balancing of all water systems and all tests as called for the Specifications shall be carried out by the contractor through a specialist group, in accordance with the Specifications and ASPE / ASHRAE Guidelines and Standards. Performance test shall consist of three days of 10 hour each operation of system for each season. Cost of performance witness test of major equipment such as pumps, equipment, panels etc. at factory with two personnel from Owners / Consultant shall be included.

The installation shall be tested again after removal of defects and shall be commissioned only after approval by the Owner's site representative. All tests shall be carried out in the presence of the representatives of the Architect/Consultant and Owner's site representative.

### **29. COMPLETION DRAWINGS**

Contractor shall periodically submit completion drawings as and when work in all respects is completed in a particular area. These drawings shall be submitted in the form of two sets of CD's and four portfolios

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

(300 x 450 mm) each containing complete set of drawings on approved scale indicating the work as - installed. These drawings shall clearly indicate complete plant room layouts, piping layouts, location of wiring and sequencing of automatic controls, location of all concealed piping, valves, controls, wiring and other services. Each portfolio shall also contain consolidated control diagrams and technical literature on all controls. The contractor shall frame under glass, in the plant room, one set of these consolidated control diagrams.

### **30. OPERATING INSTRUCTION & MAINTENANCE MANUAL**

Upon completion and commissioning of part Plumbing system the contractor shall submit a draft copy of comprehensive operating instructions, maintenance schedule and log sheets for all systems and equipment included in this contract. This shall be supplementary to manufacturer's operating and maintenance manuals. Upon approval of the draft, the contractor shall submit four (4) complete bound sets of typewritten operating instructions and maintenance manuals; one each for retention by Consultant and Owner's site representative and two for Owners Operating Personnel. These manuals shall also include basis of design, detailed technical data for each piece of equipment as installed, spare parts manual and recommended spares for 4-year period of maintenance of each equipment.

"Preventive Maintenance Schedule for each equipment / panel shall be submitted along with Operation and Maintenance Manual".

### **31. ON SITE TRAINING**

Upon completion of all work and all tests, the Contractor shall furnish necessary operators, labour and helpers for operating the entire installation for a period of fifteen (15) working days of ten (10) hours each, to enable the Owner's staff to get acquainted with the operation of the system. During this period, the contractor shall train the Owner's personnel in the operation, adjustment and maintenance of all equipment installed.

### **32. MAINTENANCE DURING DEFECTS LIABILITY PERIOD**

#### **24.1 Complaints**

The Contractor shall receive calls for any and all problems experienced in the operation of the system under this contract, attend to these within 10 hours of receiving the complaints and shall take steps to immediately correct any deficiencies that may exist.

#### **24.2 Repairs**

All equipment that requires repairing shall be immediately serviced and repaired. Since the period of Mechanical Maintenance runs concurrently

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

with the defect's liability period, all replacement parts and labour shall be supplied promptly free-of- charge to the Owner.

### **33. UPTIME GUARANTEE**

The contractor shall guarantee for the installed system an up time of 98%. In case of shortfall in any month during the defects liability period, the Defects Liability period shall get extended by a month for every month having shortfall. In case of shortfall beyond the defects liability period, the contract for Operation and Maintenance shall get extended by a month for every month having the shortfall and no reimbursement shall be made for the extended period.

The Contractor shall provide log in the form of diskettes and bound printed comprehensive logbook containing tables for daily record of all pressures, power consumption. starting and stopping times for various equipment, daily services rendered for the system alarms, maintenance and record of unusual observations etc. Contractor shall also submit preventive maintenance schedule.

Each tenderer shall submit along with the tender, a detailed operation assistance proposal for the Owner's site representatives/Consultant's review. This shall include the type of service planned to be offered during Defects Liability Period and beyond. The operation assistance proposal shall give the details of the proposed monthly reports to the Management.

The tenderer shall include a list of other projects where such an Operation Assistance has been provided.

### **34. MAINTENANCE**

Contractor may be required to carry out the maintenance of the Plumbing installation for the defect's liability period. Further, he may also be required to carry out all-inclusive maintenance of the entire system.

## **1.0 HANDING OVER DOCUMENTS**

On completion of work, contractor shall submit one complete set of as built drawings in editable soft copy and two hard prints of 'as built' drawings to the Engineer in Charge. These drawings shall have the following information:

- Run of all piping & diameters on all floors, terrace and vertical stacks.
- Ground and invert levels of all drainage pipes together with location of all manhole and connections up to outfall.
- Run of all water supply lines with diameters, locations, of control valves, access panels inside the utilities.
- Location of all mechanical equipment with layout and piping connections & location of electrical panel for the same.
- Location & capacity of Underground / Overhead tanks
- Location of water & sewage treatment plant with layout
- Location of rainwater harvesting structures with detail drawings

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Contractor shall provide four sets of catalogues, performance data and list of spare parts together with the name and address of the manufacturer for all electrical and mechanical equipment provided by him.

All 'warranty cards' given by the manufacturers shall be handed over to the Architect/Engineer in Charge.

Contractor shall provide Operation and Maintenance manual of all major Electro-mechanical equipment.

All test certificates of materials & testing at manufacturer works shall be submitted in one set of hard copies.

All site performance test certificates approved by Engineer in charge shall be submitted in one set of hard copy.

### **35. PARTIAL ORDERING**

Owner through the Architect/Consultant/ Owner's site representative reserves the right to order equipment and material from any and all alternates, and /or to order high side and /or low side equipment and materials or parts thereof from one or more tenderers.

### **36. LIST OF MAIN DOCUMENTS AND SUBMITTALS**

<b>S. No.</b>	<b>Item</b>
<b>1.0</b>	4- sets of Technical Literature Packing Specifications.
<b>2.0</b>	Performance Guarantee
<b>3.0</b>	All Permits / Licenses
<b>4.0</b>	Technical Data
<b>5.0</b>	Manufacturer's Drawings, Catalogues & Pamphlets & Other Documents
<b>6.0</b>	Electrical Installation Certificate.
<b>7.0</b>	Operating Instructions & Maintenance Manual
<b>8.0</b>	Soft water & Power Requirement
<b>9.0</b>	Appendix - III
<b>10.0</b>	Testing, Adjusting and Balancing

**Note:** The above list is only for guidelines of the contractor. The contractor shall thoroughly check all documents and submittals required as per the tender document and submit them in time as per the requirement.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**APPENDIX – I GUARANTEE PROFORMA**

**GUARANTEE FOR PLUMBING INSTALLATION**

We hereby guarantee the year round Plumbing system which we have installed In The Complex Described Below :

Building : Nalanda University  
*Location* : *Rajgir (Bihar)*

For a period of --- Months from the date of acceptance of the total installation, WE AGREE TO repair or replace to the satisfaction of the Owner, any or all such work that may prove defective in workmanship, equipment or materials within that period, ordinary wear and tear and unusual abuse or neglect excluded, together with any other work, which may be damaged or displaced in so doing. In the event of our failure to comply with the above-mentioned conditions within a reasonable time, after being notified in writing, we are collectively and separately, do hereby authorize the Owner to proceed to have the defects repaired and made good at our expense, and we shall pay the cost and charges thereof, immediately upon demand.

We also hereby undertake to test the entire installation in first summer, winter and monsoon on following the completion of the installation, to check and do everything necessary to ensure that the specified design conditions and functional requirement are met, that all water, sewage, air pollution control systems are properly balanced, that all controls are calibrated accurately, and that all units are functioning satisfactorily.

*SIGNATURE OF CONTRACTOR*  
for PLUMBING SYSTEM

DATE SEAL

# CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

## CLAUSE.5.24. SPECIAL CONDITIONS FOR FFTG WORK

### 1.0 GENERAL:

These special conditions are meant to amplify the specifications and General Conditions of Contract. If any discrepancy is noticed between General Conditions of contract, specification, Bill of Quantity and Drawings, the most stringent of the above shall apply.

The scope of this section is to describe materials and systems for firefighting installations within the building / periphery of the building which form together with the project documents, a complete volume of work and quality description.

All firefighting installations shall be of high quality, safe, complete and fully operational including all necessary items and accessories whether or not specified in details. All firefighting works shall be completed in accordance with the regulations and standard to the specification OWNER, the general provisions, special provisions and general requirements apply to all items of this specification.

The work shall be carried out simultaneously with building work, civil work, etc. and shall be continued till it is completed satisfactorily along with the completion of essential portions of the building works.

**During the progress of work, completed portion of the building may be occupied and be put to use by OWNER but the contractor will remain fully responsible for the maintenance of Fire Protection System installations till the entire work covered by this contract is satisfactorily completed by him and handed over to OWNER.**

### 2.0 ACCOMPANIMENT TO TENDER:

The tendered will attach to the Tender, at the time of submission, a statement containing information on the following points on separate pro forma.

List of all the confirmation of materials to be used as per specification along with manufacturer's name, catalogue and other technical details. Any deviation from the specifications shall be separately pointed out.

### 3.0 INTENT:

It is the intention of the specification and drawings to call for finished work, tested and ready for operation, whenever the words "Supply" or "Provide" are used. It shall mean delivery of material as specified in an assembled manner, ready for installation. Any apparatus, material or work not shown on drawings but mentioned in the specification or vice versa, or any incidental accessories necessary to make the work complete and perfect in all respects and ready for operation, even if not particularly specified, shall be furnished, delivered and installed by the contractor without additional expenses to OWNER. Minor details not usually shown or specified, but necessary for the proper installation and operation, shall be included in the work and in the contract.

### 4.0 INTERPRETATION OF PROJECT DOCUMENTS:

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

The Specification, Drawings, and Bill of quantity shall be interpreted in accordance with good installation practice defined in the appropriate regulations and standards whether specifically referred to or not. If there is any discrepancy or shortfall in the application of the regulations to any aspect of this contract or the contractor considers there is anything detrimental to the standards or inconsistent with his obligations and guarantees, OWNER shall be informed prior to signing the contract and shall thereafter inform the contractor in writing the course to be followed. Where the drawings are to a small scale or are expressed in symbolic terms or are in the form of a diagram, then exact location of items shall not be inferred and in all cases, the work shall be fully integrated with the work of other trades and with the fabric of the building. The contractor shall appraise the duties of all plants and equipment taking account of any additions or variations and shall inform the OWNER of any matters which may affect the design. In all cases the equipment installed shall be of appropriate rating for the duty it performs.

The Specifications and Bill of quantity shall be considered as part of this contract and any work or material shown on BOQ and not called for in the specification or vice versa, shall be executed as if specifically called for in both. The Drawings indicate the extent and general arrangement of the Fire Pumps, Fire Hydrants layout etc. and are essentially diagrammatic.

The work shall be installed as indicated on the drawings, however, any minor changes found essential to coordinate the installations of this work with other services shall be made without any additional cost to the owner. The drawings are for the guidance of the contractor, exact locations, distances and levels will be governed by the building. The contractor shall examine all structural and Fire Protection system drawings before starting the work, and report to OWNER or its representative, any discrepancies which in his opinion appear on them, and get them clarified.

### **5.0 SCOPE OF WORK:**

The work to be carried out under this contract comprises of the Fire Fighting work for the project called for in the documents. The work covered under this contract comprises of supply (wherever called for), installation, connection, testing, commissioning of the Fire Fighting work commencing from point of fire brigade inlet or fire water storage within the project/site as per specifications, relevant to NBC, Indian standards, Local Fire Rules and Code of practice.

**The contractor shall carry out and complete the said work under this contract in every respect and in conformity with the current rules and regulations of the local Fire Authority, the Indian Standards and with the directions of and to the satisfaction of the Consultant and Owner. The Contractor shall furnish all labour and install all materials, appliances, equipment (except those items which will be supplied by the Owner to the contractor at site ), necessary for complete provision and testing of the whole firefighting installation as specified herein and shown on the drawings. This also includes any material, appliances, equipment not specifically mentioned herein or noted on the drawing as being furnished or installed but which are necessary and customary to make complete installation and to make the firefighting system shown in the schedule or described herein, properly connected and in working order.**

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

The work shall include all incidental jobs connected with Fire Fighting installation such as foundation block for pump-motor sets, excavation for pipe trenches and back filling, cutting/drilling holes through walls/floors and grouting, necessary civil work , supports & hangers for hydrant / pipes, etc.

In general, the work to be performed under this contract shall comprise of supply, installation, testing & commissioning of the following work: -

**For Cluster A, B, C, D, E & F**

Internal Hose reel and Accessories
Portable Fire Extinguisher
Isolation valves
Signages
Fire Pumps, U.G Tank
System Pipes with all fittings, Flanges, valves, Hangers, Supports.
Fire Safety Certificate after completion of work (Fire NOC), If require

All qualities mentioned in the Bill of quantity are approximate and the contractor shall not be eligible for any claim due to any variation in / or omission of any item.

Any extra item shall be calculated on the rate analysis basis approved by OWNER.

It is the responsibility of the contractor to co-ordinate with Local Fire Authority, Fire Officer and fulfils all the documents, drawings & any other requirement of them at no extra cost.

**6.0 MODE OF MEASUREMENTS:**

M.S. pipes (H) shall be measured as per linear meter of the finished length and shall include all fittings, welding, jointing, clamps for fixing to walls or hangers, anchor fasteners and testing.

Sluice valves, check valves, butterfly valves shall be measured by numbers and shall include all items necessary and required for mixing and as given in the Specifications/Bill of Quantities.

Hydrant valves, hose cabinets, rubberized fabric linen fire hose pipes, First-aid fire Hose reels, S.S. branch pipes shall be measured by numbers and shall include all items necessary and required for fixing as given in the Specifications/Bill of Quantities.

Suction and delivery headers shall be measured per linear meter of finished length and shall include all items as given in the Bill of Quantities. Painting shall be included in the rate of headers. Painting of pipes shall be included in the rate for pipes and no separate payment shall be made.

No additional payment shall be admissible for cutting holes or chases in walls or floors, making connections to pumps, equipment and appliances.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**7.0 MODE OF PAYMENT:**

The following payment will be made after deducting retention money.

Payment for various items shall be made as follows:

Fire Fighting system	60 % against the material supply at site
	20% against executed work at site
	20% against completion of work / Fire Safety Certificate

Special Notes:

No payment shall be made against the material, which is not going to consume in next 2 months.

The final certificate shall be given only after the contractor submits four sets of as built drawing both hard copy as well as soft copy duly approved by clients engineer and consultant.

For the virtual completion and final certificates contractor will have to produce no objection certificate from clients.

Final payment will be done after getting the final Fire Safety Certificate from the fire department.

**8.0 FEES, PERMITS AND TESTS:**

The Contractor shall pay for any and all fees and obtain permits required for the firefighting work. On completion of the work the contractor shall obtain and deliver to the OWNER, certificates of **final inspection** and **approval/ fire safety certificate** by the local fire authority and the Fire inspector.

**9.0 UTILITY SUPPLY:**

It is the responsibility of the contractor to co-ordinate with various utility agencies, the exact location of such Hook-Up Point and mode of connection. Further the contractor shall co-ordinate with such utility agencies to provide necessary drawings, documents, get their approval, make the necessary arrangement for the payments and arrange the utilities supply at no extra cost.

**10.0 ACTUAL ROUTE OF PIPE:**

The locations of the Hydrant pipes are only indicative; therefore, the actual route may differ from the plans according to the details of the building construction and the conditions of executions of the installations.

The contractor shall supply and install at his expense all secondary materials and special fittings found necessary to overcome the interference and to supply the modifications on the route of pipe and fittings that are found necessary during the work, to the complete satisfaction of the owner's representative.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **11.0 MATERIAL AND EQUIPMENT:**

All material and equipment shall conform to the relevant standards and shall be of the approved make and design. The materials and equipment shall conform to relevant Indian Standards. The Contractor shall be responsible for the safe custody of all the materials and shall insure them against theft, damage by fire, earthquake etc. A list of items of materials and equipment, together with sample of each shall be submitted to the OWNER within 10 days of the award of the contract. Any item which is proposed as a substitute, shall be accompanied by all technical detail giving sizes, particulars of materials and the manufacturer's name and shall be submitted along with the tender or bid offer. At the time of the submission of proposed substitute the Contractor shall state the credit, if any due to the owner. In the event the substitution is approved, all changes and substitutions shall be requested in writing and approvals obtained in writing from OWNER. Owner's decision in the matter shall be final.

All materials of the same kind of service shall be identical and made by the same manufacturers. Any deviation to this rule shall be approved by the Consultant. Top priority shall be given to the products that have a permanent agent providing spare parts and maintenance facilities in the same city where the project is situated.

The make of fire equipment, components, accessories, etc. has been mentioned in the tender. In case if the make is not given for the equipment / component / accessories, the contractor shall get approval for sample of that particular equipment / component / accessories from the Client / Consultants before any procurement.

### **12.0 MANUFACTURERS:**

Where manufacturers have furnished specific instructions relating to the materials used in this job, covering points not specifically mentioned in these documents, these instructions shall be followed in all cases.

Where manufacturer's names and/or catalogue numbers are given, this is an indication of the quality, standards and performance required.

When interfacing occurs, equipment shall be mutually compatible in all respects.

### **13.0 RATING:**

Rating of all items shall be appropriate for the conditions on the particular site on which the items will be used. All the equipment shall be fit for continuous work under the worst conditions of site and shall be rated for the following ambient condition.

- Outdoor temperature 50° C.
- Corrosive and humid

### **14.0 INSPECTION AND TESTING:**

OWNER'S representative reserves the right to request inspection and testing at manufacturer's works at all reasonable times during manufacture of items for this contract. Tests on site of completed works shall demonstrate, among other things:

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

That the equipment installed complies with specification in all particulars and is of the correct rating for the duty and site conditions.

That all items operate efficiently and quietly to meet the specified requirements.

That all circuits are correctly fused and protected and that protective devices are properly coordinated.

That all non-current carrying metal work is properly and safely grounded in accordance with the specifications.

The contractor shall provide all necessary instruments and labour for testing, shall make adequate records of test procedures and readings, shall repeat any tests requested by the OWNER and shall provide **test certificates/ Fire Safety Certificate** signed by a properly authorized person. Such test certificates shall cover all works.

If tests fail to demonstrate the satisfactory nature of the installation or any part thereof then no claims for the extra cost of modifications, replacements or retesting will be considered. Owner's decision as to what constitutes a satisfactory test shall be final.

The above general requirements as to testing shall be read in conjunction with any particular requirements specified elsewhere.

### **15.0 PRICE DETAILS:**

At any time and at the request of OWNER, the contract shall provide details or breakdown of costs and prices of any part or parts of the works.

### **16.0 TEST CERTIFICATES:**

The contractor shall submit test certificates for all the material/system installed. These shall be issued by a **government recognized inspection office** certifying that all equipment, materials, construction and functions are in agreement with the requirements of these specifications, ISI and when ISI is not applicable other approved certifying agencies.

### **17.0 INSTRUCTION MANUAL:**

The contractor shall prepare and produce instruction, operation and maintenance manuals in English for the use, operation and maintenance of the supplied equipment and installations, and submit 3 sets to OWNER, at the time of handing over.

### **18.0 SAMPLES AND CATALOGUES:**

Before ordering the material necessary for this work, the contractor shall submit to OWNER for approval, a sample along with the catalogues.

For big items such as Pump, Prime Mover, Valves, Hydrants, Pipe the submission of catalogues shall be enough. Prior to ordering any firefighting equipment/material/system, the contractor shall submit to OWNER, the

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

catalogues, along with the samples, at least from three different manufacturers. After the selection of manufacturer by OWNER, the contractor shall arrange inspection and testing at the manufacturer's factory or assembly shop for final approval. No material shall be procured prior to the approval of the OWNER.

### **19.0 SHOP DRAWINGS & AS BUILT DRAWINGS:**

The contractor shall prepare and submit two sets of detailed drawings before starting the execution work for approval.

#### **AS BUILT DRAWINGS:**

At the completion of work and before issuance of certificate of virtual completion the contractor shall submit to OWNER, three sets of layout drawing drawn at appropriate scale indicating the complete Fire Protection system "as installed". These drawings must provide (in plan, elevation and section)

Location and details of Fire Pumps, Prime Movers and Panels,  
Location of hydrant, Fire Extinguisher & Signages.  
Location of Fire Brigade inlets & Fire Storage Tank.

### **20.0 CIVIL SCOPE EXCLUSION:**

- Pedestal support for piping
- Foundation of pumps
- R.C.C Hume pipe for underground pipes.
- Contractor must provide details for pump foundation / pedestal supports to civil contractor.

### **21.0 GUARANTEE:**

At the close of the work and before issuance of final certificate of virtual completion by OWNER, the contractor shall furnish written guarantee indemnifying OWNER against defective materials and workmanship for a period of one year after completion. The contractor shall hold himself fully responsible for reinstallation or replacement, free of cost to OWNER, the following:

Any defective work or material supplied by the contractor.

Any material or equipment supplied by OWNER which is damaged or destroyed as a result of defective workmanship by the contractor.

Any material or equipment damaged or destroyed as a result of defective workmanship by the contractor.

### **22.0 SAFETY OF MATERIALS:**

The contractor shall provide proper and adequate, storage facilities to protect all the materials and equipment including those issued by OWNER against damage from any cause whatsoever.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

### **23.0 COMPLETION CERTIFICATE:**

On completion of the Fire Protection System installation (or an extension to an installation) a certificate shall be furnished by the contractor countersigned by the licensed supervisor, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local supply authority. The contractor shall be responsible for getting the approval by the local concerned authorities.

### **24.0 DEFECTS LIABILITY:**

Defects liability period shall mean 12 calendar months after OWNER have issued certificate of completion of the whole work. The certificate of completion shall be issued after the necessary tests have been carried out to the satisfaction of OWNER and the required drawings are submitted.

The contractor shall make good at his own cost and to the satisfaction of OWNER, all defects or other faults arising in the opinion of OWNER out of bad workmanship or faulty materials not in accordance with the drawings, NBC and the Rules and Regulations under which it may appear within twelve months after completion of the work.

### **25.0 STAFF:**

The contractor shall employ a competent fully licensed qualified, full time erection engineer to direct the work of erection in accordance with the drawings and specifications. The engineer shall be available all times at site to receive instructions from OWNER, in the day to day activities throughout the duration of contract. The engineer shall correlate the progress of the work in conjunction with all the relevant requirements of the supply authority.

### **26.0 REINSTATING AND FINISHING OF CIVIL DAMAGES:**

For erection of equipment / cables etc., if any civil structure is required to be broken, the same shall be done, restated and finished as original by the tendered without any extra cost.

## **CLAUSE.5.25. SPECIAL CONDITIONS FOR HVAC WORK**

### **PRE-QUALIFICATION**

Either OEMs or exclusively approved system integrators of makes recommended under 5.0 Appendix E later shall be acceptable for supply / installation of the said system; the integrator should have exposure of minimum 5 years in the field with minimum 10 installations working satisfactorily within India at-least since last 3 years. Bidder to enclose list of successful installations with client details in their bid.

The System integrator shall be supported by the OEM back-to-back for system performance related issues till FIVE satisfactory performance years of the system. A letter to this effect will be enclosed in case of bids submitted by system integrators.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Bidder shall provide equipment's / products that shall be comprehensive manufacturing / testing / sales and services facility within India.

### **1) Prices**

The prices to be quoted by the tenderer shall include the Design, supply, installation, Testing & commissioning at the site, of all component, ancillary material and other items whatsoever required for carrying out the job to fulfil the intent and purposes as laid down in the specifications and / or the drawings.

The bidders' price shall be deemed to include all accessories and miscellaneous items, components panels, nuts, bolts, clamps, supports etc. as required for proper fixing and / or grouting of equipment's and ancillary items. Except for the item where the price is separately indicated. Whether specifically mentioned or not the contractor shall also include, in his price, all taxes duties or other levies (viz. Excise duty, Customs duty, works contract tax, service tax, sales tax, Octroi etc.) which are legally leviable on equipment. Failure to include all leviable taxes and duties will not entitle the contractor to any extra claims from the Owner.

### **2) Scope of work**

The general nature and the scope of work to be carried out under this contract is indicated in Specifications, Drawings and Schedule of Quantities. The contractor shall carry out and complete the said work under this contract in every respect in conformity with the contract documents and with the direction of and to the satisfaction of the Owners site representative. The contractor shall furnish all labour, materials and equipment (except those to be supplied by the owner) as listed under schedule of quantities and specified otherwise, transportation and incidentals necessary for supply, installation, testing and commissioning of the complete work for HVAC system as described in the specifications and as shown on the drawings and as per site conditions.

This also includes any material, equipment, appliances and incidental work not specifically mentioned herein or noted on the drawings / documents as being furnished or installed, but which are necessary to be performed under this contract. The HVAC system shall comprise of Design supply, installation, testing, commissioning of the following:

- 2.1 Toilet Ventilation systems with fans along with vibration isolators as per SOQ
- 2.2 Air Conditioning system.
- 2.3 Kitchen Ventilation System
- 2.4 Balancing, testing and commissioning of the entire associated Air Conditioning & Toilet Ventilation systems.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- 2.5 Test reports, list of recommended spares, As-built drawings, operation and maintenance manual for the entire works carried out. (3 Sets and a Soft Copy in C.D.)
- 2.6 Training of Owners staff.
- 2.7 Sufficient quantity of steel channels / angle iron supports shall be provided for supports, piping, Ducting, cable trays etc as required, as approved by Engineer in charge / Consultant as per site conditions.
- 2.8 The bidder should visit the site and familiarize with site conditions.

### **3) Service Works Excluded**

- 3.1 Providing power supply with earthing at the incoming of respective Ventilation Unit Starter Panel.
- 3.2 Any kind of civil work.

### **4) Project Execution and Management**

The contractor shall ensure that senior planning and erection personnel from his organization are assigned exclusively for this project. They shall have minimum 5 years' experience in this type of installation and shall ensure at least one full time engineer who would be exclusively responsible for ensuring strict quality control, adherence to specifications and ensuring top class workmanship for the air conditioning installation including electrical works and controls. The names and details of the engineers proposed to be deployed should be indicated along with their qualifications and experience.

The contractor shall arrange to have mechanized & modern facilities of transporting material to place of installation for speedy execution of work.

### **5) Performance Guarantee**

- 5.1 The contractor shall carry out the work in accordance with the Drawings, specifications, schedule of quantities and other documents forming part of the contract as well as site conditions.
- 5.2 The contractor shall be fully responsible for the performance of the selected equipment (installed by them) at the specified parameters and for the efficiency of the installation to deliver the required end result.
- 5.3 The contractor shall guarantee the air conditioning & Ventilation units as installed. The guarantee shall be submitted in the proforma given in Annexure I.
- 5.4 Complete set of architectural drawings is available in the Architect / Consultant's office and reference may be made to same for any details or information. The contractor shall also guarantee that the performance of various equipment's - individually, shall not be less than the

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

guaranteed capacity, also actual power consumption shall not exceed the guaranteed figure, while handing over and during the guarantee period.

### 6) **Bye – Laws and Regulations**

The installation shall be in conformity with the bye-laws, regulations and standards of the local authorities concerned; in so far these become applicable to the installation. But if these specifications and drawings call for a higher standard of materials and / or workmanship than those required by any of the above regulations and standards, then these specifications and drawings shall take precedence over the said regulations and standards. However, if the drawings and specifications require something which violates the bye-laws and regulations, then the bye-laws and regulations shall govern the requirement of this installation.

### 7) **Fees and Permits**

The contractor shall obtain all permits / licenses and pay for any and all fees required for the inspection, approval and commissioning of their installation if required.

### 8) **Tender Drawings**

The HVAC systems drawings listed in this Tender, which may be issued with the tenders, are diagrammatic and indicate arrangement of various systems and the extent of work covered in the contract. These drawings indicate the points of supply and of termination of services and broadly suggest the feasible scheme and routes to be followed.

Contractor shall visit site prior to start-up of work to ensure that the layouts meet and match the structural openings and paths for smooth execution.

All such changes shall however be subjected to the Architect / Consultant approval. **These drawings are not working drawings.** Under no circumstances shall dimensions be scaled from these drawings. The Architectural / Interiors drawings and details shall be examined for exact location of equipment, controls.

If required, the contractor shall follow the tender drawings in preparation of his shop drawings, and for subsequent installation work. All works of execution should only commence after receipt of the signed & stamped approval of the consultant / client.

Maximum headroom shall be maintained at all points. Where headroom appears inadequate, the contractor shall notify the Architect / Consultant / Owner's site representative any discrepancies and obtain clarification. Any changes found essential to coordinate installation of their work with other services and trades, shall be made with prior approval of the Architect / Consultant / Owners site representative without additional cost to the Owner. The data given in the drawings and specifications is as exact as could be procured, but its accuracy is not guaranteed.

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

### 9) Technical Data

Each tenderer shall submit along with his tender, the technical data, list of makes and data sheets for all items / equipment's offered by them. **Failure to furnish complete technical data with tenders may result in summary rejection of the tender.**

### 10) Shop Drawings

All the shop drawings shall be prepared on computer through AutoCAD System based on Architectural drawings, site measurements and interior designer's drawings. Within **One** week of the award of the contract, contractor shall furnish, for the approval of the Architect / Consultant, three sets of detailed shop drawings of all equipment and materials including schematic & HVAC layouts for tee connections, reducers, detailed air distribution layouts with registers, and type of supports, etc. and external insulation details for ducts etc; electrical panels inside / outside views, power and control wiring schematics, cable trays, supports and terminations. These shop drawings shall contain all information required to complete the project as per specifications and as required by the Architect / Consultant / Owner's site representative. These drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity of all items of equipment, also the details of all related items of work by other Contractors.

Each shop drawing shall contain tabulation of all measurable items of equipment / materials / works and progressive cumulative totals from other related drawings to arrive at a variation – in – quantity statement at the completion of all shop drawings. Minimum 3 sets of drawings shall be submitted after final approval along with softcopy.

Each item of equipment / material proposed shall be from a standard catalogue product of an established manufacturer strictly from the manufacturers listed in Approved Makes and quoted by the tenderer in technical data.

When the Architect / Consultant make any amendments in the above drawings, the contractor shall supply two fresh sets of drawings with the amendments duly incorporated along with check prints, for approval. The contractor shall submit further four sets of shop drawings to the owners' site representative for the exclusive use by the Owners site representative and all other agencies. No material or equipment may be delivered or installed at the job site until the contractor has in his possession, the approved shop drawings for the particular material / equipment / installation.

### 11) Assembly and Inspection

- i. Shop assembly of all component parts shall be made to ensure that all parts are properly fitted to minimize installation problems.
- ii. The Owners reserve the right to inspect any machinery, material and component (herein after collectively called "Equipment") finished or used by the contractor under this contract and may reject which is defective in

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

workmanship or design or otherwise unsuitable for the use and purpose intended or which is not in accordance with the intent of this contract.

- iii. The contractor shall on demand by the Owners, remedy / replace at his own expense any such defective or unsuitable equipment. The contractor shall advise the Owners in advance when equipment is ready for inspection in the contractor's workshop and / or in his sub supplier's workshop.
- iv. The Owners Representative shall at all times have access to all parts of shops where equipment are being manufactured and also shall be provided with all reasonable facilities by the contractor and his sub supplier. None of the equipment to be furnished or used in connection with this contract will be supplied until shop inspection and performance testing, wherever possible, satisfactory to the Owners Representative has been made.
- v. Such shop inspection of the equipment shall not however, relieve the contractor from full responsibility for furnishing the equipment confirming to the requirements of this contract not prejudice any claim, right or privilege which the Owners may have because of the supply of defective or unsatisfactory equipment. Should the Owners waive the right to inspect any equipment, such waiver shall not relieve the contractor from his obligation under this contract.
- vi. Manufacturer's drawings, catalogues, pamphlets and other documents submitted for approval shall be in three sets. Each item in each set shall be properly labelled, indicating the specific services for which material or equipment is to be used, giving reference to the governing section and clause number and clearly identifying in link the items and the operating characteristics. Data of general nature shall not be accepted.
- vii. Samples of all materials like Grilles for supply air & Fresh air, insulation, pipe section, control wires etc. shall be submitted to the Owners site representative prior to procurement. These will be submitted in two sets for approval and retention by Owners site representative and shall be kept in their site office for reference and verification till the completion of the project. Wherever directed a mock-up or sample installation shall be carried out for approval before proceeding for further installation.
- viii. Approval of shop drawings shall not be considered as a guarantee of measurement or of building dimensions. Where drawings are approved, said approval does not mean that the drawings supersede the contract requirements, nor does it in any way relieve the contractor of the responsibility or requirement to furnish material and perform work as required by the contract.
- ix. Where the contractor proposes to use an item of equipment, other than that specified or detailed on the drawings, which requires any redesign of the structure, partitions, foundation, piping, wiring or any part of the mechanical, electrical or architectural layouts; all such redesign and all new drawings and detailing required therefore, shall be prepared by the contractor at his own expense and gotten approved by the Architect /

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

Consultant / Owners site representative. Any delay on such account shall be at the cost of and consequence of the contractor.

- x. Contractor shall prepare coordinated services shop drawings based on the drawings prepared by Electrical, Plumbing contractors to ensure adequate clearances are available for installation of services for each trade.
- xi. Where the work of the contractor has to be installed in close proximity to, or will interfere with work of other trades, he shall assist in working out space conditions to make a satisfactory adjustment. If so directed by the Owners site representative, the contractor shall prepare composite working drawings and sections at a suitable scale, not less than 1:50, clearly showing how his work is to be installed in relation to the work of other trades.
- xii. If the contractor installs his work before coordinating with other trades, or so as to cause any interference with work of other trades, they shall make all the necessary changes without extra cost to the owner.
- xiii. Within **One week** of approval of all the relevant shop drawings, the contractor shall submit three copies of a comprehensive variation in quantity statement and itemized price list of recommended (by Manufacturers) imported and local spare parts and tools, covering all equipment and materials in this contract. The project manager shall make and also advise owner to initiate action for procurement of spare parts and tools at the completion of project.
- xiv. The following Shop drawings shall be prepared and submitted for approval within **One week**.
  - o Air Conditioning & Ventilation layout, Ducting layout - including Grilles, diffusers, duct dampers, fire dampers with support details, insulation details where required.
  - o Schematic Drawings, G.A. Drawings, etc., for Electrical Panel, Sub Panel, Control Panel, Power & Control wiring, etc if required.
  - o Foundation details of all equipment.
  - o Any other drawings as required by Owner / Consultant necessary for the project.

### **12) Erection and Commissioning**

The contractor shall carry out the complete erection and commissioning of the work specified under this contract. All the materials shall be moved from their place of storage into the area of installation by the contractor. The contractor shall make their own arrangement to off load materials received at site and to store all material received at site. The Owners shall provide clear storage and working space only. All erection tools and tackles to suit the erection programme shall be provided by the contractor.

All consumables required for erections such as cotton waste, kerosene, oil, emery paper, coil string, bamboos and planks for scaffolding etc. as well as necessary welding / brazing rods, gases etc. shall be provided by the contractor. Protective and finish painting shall be carried out by the contractor.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Carbon steel surface shall be thoroughly cleaned before painting. The contractor shall indicate the electricity requirements during erection. The contractor shall remove all the waste material or rubbish from and about the work site and leave the job thoroughly cleaned up and ready for use.

### **13) Quiet Operation and Vibration Isolation**

All equipment shall operate under all conditions of load without any sound or vibration which is objectionable in the opinion of the Owners site representative. In case of rotating machinery sound or vibration noticeable outside the room in which it is installed, or annoyingly noticeable inside its own room shall be considered objectionable. Such conditions shall be corrected by the contractor at their own expense. The contractor shall guarantee that the equipment installed shall maintain the specified Noise levels.

### **14) Accessibility**

The contractor shall verify the sufficiency of the size of the shaft opening, clearances in cavity walls and suspended ceilings for proper installation of his ducting and piping. His failure to communicate in sufficiency of any of the above shall constitute his acceptance of sufficiency of the same. The contractor shall locate all equipment which must be serviced, operated or maintained in fully accessible positions shall be finalized and communicated in sufficient time, to be provided in the normal course of work. Failing this, the contractor shall make all the necessary repairs and changes at his own expense.

### **15) Materials and Equipment**

All materials and equipment shall conform to the relevant Indian Standards and shall be of the approved make and design. Makes shall be strictly in conformity with the list of approved manufacturers as per Approved make list of this tender.

### **16) Manufacturer's Instructions**

Where manufacturer has furnished specific instructions, relating to the material and equipment to be used in this project, not specifically mentioned in these documents, such instructions shall be followed in all cases.

### **17) Electrical installation**

The electrical work related to HVAC, shall be carried out in full coordination and in total conformity with the control wiring drawings as required and approved by the Architect / Consultant. All HVAC equipment shall be connected and tested in the presence of an authorized representative of the Owner / Consultant. It shall meet the local Electricity board codes and standards.

### **18) Balancing, Testing and Commissioning**

- a. The Balancing and Testing of the HVAC System shall be carried out in details as per guidelines provided in the Specifications under Appendix E of this tender; broadly it shall be as under:

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

- i. Balancing of air systems and all tests as called for the specifications shall be carried out by the contractor through a specialist group, in accordance with the specifications and ASHRAE / ISHRAE / NBC / NFPA guidelines and standards and as approved by Engineer-in-Charge.
- ii. All types of routines and type tests as required shall be carried out at the works of the contractor or the manufacturers of the components. The Project Managers / Consultants shall be free to witness any or all tests if they so desire.
- iii. On the completion of the installation, the contractor shall arrange to carry out various initial tests as detailed below, in the presence of and to the complete satisfaction of the Project Managers / Consultants, or their representatives. Any defects or shortcomings found during the tests shall be speedily rectified or made good by the contractor at his own expenses.
- iv. The initial tests shall include but not limited to the following:
  - a. To operate and check the proper functioning of all electrically operated components viz., compressor motor (supplied by owner), pumps (if applicable), as well as other electrical motors and controls.
  - b. To test and check the switchgears, safety, and other controls to ensure their proper functioning.
  - c. To check and adjust the air flow in the ducts and individual branches through anemometers and duct dampers / Volume Control Dampers, so that the rate of flow is as per the design through the ducting up to the last grille / diffuser.
  - d. To check the systems against leaks in different circuits, alignment of motor, 'V' belt adjustment.
  - e. To check control settings and all such other tests which are essential for smooth functioning of the system.
- v. Daily records should be maintained of hourly readings for suction temperatures and pressures for each unit and the current drawn and voltage of each machine. Any other readings shall be taken which may subsequently be specified by Engineer-in-charge / consultant.
- vi. The above tests and procedures are mentioned herein, for general guidance and information only, but not by way of limitation to the provisions of tender conditions of contract and specifications. The date of commencement of all tests listed above shall be subject to approval of the Engineer In-charge and in accordance with the requirements of this specification.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

- vii. The contractor shall supply the skilled staff and all necessary instruments and carry out any test of any kind on a piece of equipment, part of system or on a complete system, if the Engineer In-charge requests such a test for determining specified or guaranteed data, as given in the specification or on the drawings.
- viii. Any damage resulting from the tests shall be repaired and / or damaged material replaced, to the satisfaction of the Engineer In-charge. In the event of any repair or any adjustment having to be made, other than normal running adjustment, the tests shall be void and shall be recommended after the adjustment or repairs have been completed.
- ix. The contractor must inform the Engineer In-charge when such tests are to be made, giving sufficient notice, in order that the Engineer In-charge or his nominated representative may be present. (All tests should be carried out in the presence of Engineer-in-charge / their Representative). Complete records of all tests must be kept and 3 copies of these and location drawings must be furnished to Engineer In-charge as well as the consultant.
- x. Performance test shall consist of two days of 36-hour continuous operation of system for endurance testing. Testing of major equipment at factory in the presence of two personnel from Owners / consultant shall be included, if found necessary, and as required by engineer in charge / consultant.
- xi. Three copies of the certified manufacturers' performance curves for each piece of equipment, high lighting operational parameters for the project, shall be submitted along with the test certificates. Contractor shall also provide four copies of record of all safety and automatic control settings for the entire installation.
- xii. The installation shall be tested again after removal of defects and shall be commissioned only after approval by the Owners site representative. All tests shall be carried out in the presence of the representatives of the architect / consultant and Owners site representative.
- xiii. Rejection of Defective System
- If on test any portion of the plant, equipment or components are found to be defective or not fulfilling the intent or the meaning of the specifications, the same shall be replaced or repaired to the entire satisfaction of the Project Managers / Consultants.
  - In case the contractor fails to remove the defects, within a period considered reasonable, the Owner reserves the right to take necessary remedial measures through other agencies and all expenses thus incurred would be recovered from the contractor.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- The Owner reserves the right to operate all the equipment and complete system whether or not the plant is taken over after the initial test and commissioning. Any defects found during the initial or running tests shall be removed at a suitable time as decided upon by the Owner and / or their Project manager / Consultants.

### **19) Completeness of the plant & completion certificate**

- i. The contractor shall provide all the required materials, equipment, ancillary items etc. to install a complete and satisfactory HVAC system capable of fulfilling the intent and purpose of the contract whether or not each and every item is mentioned in the specifications and / or drawings. Any shortcomings noticed at any stage shall be made good at no extra cost.
- ii. On completion of the Electrical installation for HVAC, a certificate shall be furnished by the contractor, counter signed by the licensed supervisor, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by Engineer-in-Charge.
- iii. On satisfactory completion of all Balancing, testing, commissioning and Performance test, the plant / system shall be considered to be virtually complete for the purpose of taking over by the owner.
- iv. The contractor shall be also responsible for getting the entire electrical installation for HVAC system for their scope of work - duly approved by the local authorities concerned, if required and shall bear all expenses, if any, in connection with the same.

### **20) Completion Drawings**

Contractor shall periodically submit completion drawings as and when work in all respects is completed in a particular area. These drawings shall be submitted in the form of two sets of CDs and three portfolios in A1 size (595 x 840mm) each containing complete set of drawings on approved scale indicating the work as built. These drawings shall clearly indicate complete HVAC layouts & ducting layouts, location of wiring and sequencing of automatic controls, locations of all concealed piping, valves, controls, wiring and other services. Each portfolio shall also contain consolidated control diagrams and technical literature on all controls. The contractor shall frame under glass, in the air conditioning system, one set of these consolidated control diagrams.

### **21) Operating instruction & maintenance manual**

Upon completion and commissioning of part HVAC system the contractor shall submit a draft copy of comprehensive operating instructions, maintenance schedule and log sheets for all systems and equipment included in this contract.

This shall be supplementary to manufacturers operating and maintenance manuals.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Upon approval of the draft, the contractor shall submit three (4) complete bound sets of typewritten operating instructions and maintenance manuals; one each for retention by consultant and owners site representative and two for owners operating personnel. These manuals shall also include basis of design, detailed technical data for each piece of equipment as installed, spare parts manual and recommended spares for 3 years period of maintenance of each equipment.

### **22) Onsite training**

Upon completion of all work and all tests, the contractor shall furnish necessary operators, labour and helpers for operating the entire installation for a period of seven (07) working days of eight (8) hours each, to enable the owner's staff to get acquainted with the operation of the system. During this period, the contractor shall train the owners personnel in the operation adjustment and maintenance of all equipment installed.

### **23) Maintenance during defects liability period**

#### **23.1 Complaints**

The contractor shall receive calls for any and all problems experienced in the operation of the system under this contract, attend to these within 12 hours of receiving the complaints and shall take steps to immediately correct any deficiency that may exist.

#### **23.2 Repairs**

All equipment that requires repairing shall be immediately serviced and repaired. Since the period of Mechanical maintenance runs for two years concurrently with the defects liability period, all replacement parts and labour and consumables shall be supplied promptly free of charge to the owner.

### **24) Uptime Guarantee**

The contractor shall guarantee for the installed system an uptime of 99 %. In case of shortfall in any month during the defects liability period, the defects liability period shall be get extended by a month for every month having shortfall. In case of shortfall beyond the defects liability period, the contract for operation and maintenance shall get extended by a month for every month having shortfall and no reimbursement shall be made for the extended period.

The contractor shall provide log in the form of diskettes and bound printed comprehensive log book containing tables for daily record of all temperatures, pressures, power consumption, starting and stopping times for various equipment, daily services rendered for the system alarms, maintenance and record of unusual observations etc. contractor shall also submit preventive maintenance schedule.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Each tenderer shall submit along with the tender a detailed operation assistance proposal for the owners site representatives / consultant's review. This shall include the type of service planned to be offered during defects liability period and beyond.

### **xi. Power requirement**

The contractor shall submit with their tender, their requirements of power at each of their equipment / system wise.

### **xii.Necessary Insurance Coverage For :**

- i. Third Party
- ii. CIF Value + Custom Duty Paid By The Owner To Cover Mishaps
- iii. Worker Insurance, Provident Fund etc. should be taken up and included in the cost.

### **xiii.Safe custody and storage**

Safe custody of all equipment supplied by the contractor shall be their own responsibility till the final taking over by the owner. They should therefore, employ sufficient staff for watch and ward at his own expenses. The owner may however, allow the contractors to use the plant room / weather maker / rooms / service area etc. for temporary storage of their equipment if such spaces are ready and available.

## **25) Variations in Quantities and Tender Drawings**

The quantities for the item of works given in the schedule and / or in drawings are for the guidance of the tenderer. The contractor shall be paid on the basis of actual quantities of works carried out. However the contractor shall check these quantities before quoting and will bring to the notice of Consultants / Engineer-In charge for any major variation. HVAC system drawings issued with the tender are diagrammatic only and indicate the general arrangement only. The data given in the drawings and specifications is as exact as could be secured but, its accuracy is not guaranteed. Contractor shall carry out their own computations and provide all such equipment, as required to achieve the specified conditions. The contract shall be on works contract basis and the Owner reserves the right to add / delete any items of work during the currency of contract.

## **26) Safety Codes**

The following IS codes shall be followed.

1. Safety code for scaffolds and ladders IS 3696
2. Code of practice for fire precaution in welding & cutting operations  
IS 3016
3. Code for safety procedures & practices in electrical works IS 5216
4. Code of practice for safety & health requirements in electrical & gas welding &

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

cutting operations IS 3696

**Design, installation, Testing, Commissioning, and balancing of the system shall be carried out broadly as per following codes.**

INTERNATIONAL / NATIONAL CODES AND STANDARDS APPLICABLE

### **i. AIR CONDITIONING**

1. ANSI/ASHRAE / 111-1988 : Practices for measurement, testing and balancing of building, Heating, Ventilation & Air Conditioning System.
2. SMACNA : HVAC Systems- Testing, adjusting and balancing.

### **ii. ELECTRICALS**

1. IS 694 -1977 Part I & Part II : PVC Insulated cables for voltage up to 1100V with Copper & Aluminium conductors respectively.
2. IS 3043 -1966 : Code of practice for earthing.

### **iii. SHEET METAL WORK**

1. IS 277 – 1992 : Galvanised Steel sheet (5th rev., Amendment 2)
2. IS 655 – 1991 : Metal air ducts (revised) (Amendment – 3)
3. IS 1977 – 1992 : Structural steel (ordinary quality)

*Note: In case of a conflict in national and international codes, the stringent of the two shall apply*

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**GUARANTEE PROFORMA ANNEXURE 1**

**PERFORMANCE GUARANTEE FOR COMPLETE HVAC SYSTEMS**

We hereby guarantee the year-round performance air conditioning system which we have installed in the complex described below:

COMPLETE HVAC SYSTEM FOR 38 NOS. STUDENT HOSTEL BUILDINGS AT  
NALANDA UNIVERSITY, RAJGIR

For a period of **1 years (One year)** from the date of acceptance of the total installation, WE AGREE TO repair or replace free of cost to the satisfaction of the owner, any or all such work that may prove defective in workmanship, equipment or materials within that period, ordinary wear and tear and unusual abuse or neglect excluded, together with any other work, which may be damaged or displaced in so doing. In the event of our failure to comply with the above mentioned conditions within a reasonable time, after being notified in writing, we collectively and separately, do hereby authorize the owner to proceed to have the defects repaired and made good at our expense, and we shall pay the cost and charges thereof, immediately upon demand and also authorize them to deduct from the security deposit kept with the owner. (the guarantee stand extended for further period of 2 years from the date of failure, if the duration of failure is more than 1 week)

SIGNATURE OF CONTRACTOR

DATE

SEAL

CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS

**SECTION 6**

**ADDITIONAL CONDITIONS FOR GREEN  
BUILDING PRACTICES**

## CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS

### **ADDITIONAL CONDITIONS FOR GREEN BUILDING PRACTICES**

**6.1** The campus is proposed to be registered for obtaining GRIHA LD Rating from GRIHA Secretariat under MNRE scheme. The contractor is required to execute the work in a befitting manner to obtain the targeted GRIHA rating by Owner.

#### **6.2 Special conditions for GRIHA rating:-**

**6.2.1** The contractor shall prepare scheme for the approval of Engineer-in-charge for obtaining GRIHA rating in the criteria relevant to the execution of work.

**6.2.2** The contractor shall plan and execute the work in a manner to preserve and protect the landscape during construction and shall arrange the materials/equipment and follow the procedure as per criterion 2 of the GRIHA rating as applicable.

**6.2.3** The contractor shall appoint/engage consultant/ consultancies to provide technical guidance and supervise the work, pertaining to the criterion related to the execution of work, so that it finally achieves the targeted GRIHA rating.

The contractor shall preserve the topsoil layer for supporting vegetative growth as per the guidelines given in chapter 4, Section 1, Part 10, NBC 2005.

The contractor shall comply with NBC norms on construction safety, health and sanitation as per criterion.

The construction activity shall be done in a befitting manner and the contractor shall adopt measures to prevent air pollution at site in compliance with criterion 9 of GRIHA rating as applicable.

The contractor shall comply with all the instructions and schemes for execution of green building.

Nothing shall be paid extra for fulfilment of all these conditions except for the items existing in the schedule of quantities. For such items work done shall be paid on the basis of the agreement rates.

#### **6.3 Pre- construction stage**

##### **Construction Vehicles, Equipment and Machinery**

All vehicles, equipment and machinery to be procured for construction shall conform to the relevant Bureau of India Standard (BIS) norms.

Emission from the vehicles must conform to environmental norms.

Dust produced from the vehicular movement and other site activities is to be mitigated by sprinkling of water. Noise limits for construction equipment shall not exceed 75 dB(A), measured at one meter from the edge of the equipment in free area, as specified in the Environment Protection Act,1986, schedule VI part E, as amended on 9th May,1993. The maximum noise levels near the construction site should be limited to 65 dB (A) Leq (5 min) in project area. Contractor has to make a

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

confined boundary to restrict construction activities within it. Contractor is required to prepare the Construction waste management plan for segregation, storage and safe disposal of construction waste for the approval of engineer in charge.

### **6.4 Construction Stage**

#### **6.4.1 Construction Wastes Disposal**

The pre-identified dump locations will be a part of solid waste management plan OR construction waste management plan or safe handling, storage and recycling of construction waste to be prepared by the Contractor in consultation with Engineer-in-charge. Contractor needs to designate the area for construction waste storage. Inert and hazardous waste should be collected and stored separately on site.

The other construction waste should be either reused on site or safely dispose them off to designed agencies for recycling. The procedure of waste disposal either on-site reuse or selling for recycling purpose should be documented by photographs / log books / receipt copies and evidences needs to be submitted to the Engineer In charge. Contractor shall get approved the location of disposal site prior to commencement of the excavation on any section of the project location.

Contractor shall ensure that any spoils of material will not be disposed of in any municipality solid waste collection bins.

#### **6.4.2 Procurement of Construction Materials**

All vehicles delivering construction materials to the site shall be covered to avoid spillage of materials and maintain cleanliness of the roads.

Wheel Tires of all vehicles used by of the contractor, or any of his sub-contractor or materials supplies shall be cleaned and washed clear of all dust/mud before leaving the project premises. This shall be done by routing the vehicles through tire washing tracks.

Contractor shall arrange for regular water sprinkling at least twice a day (i.e. morning and evening) for dust suppression of the construction sites and unpaved roads used by his construction vehicles.

#### **6.4.3 Water Pollution**

The Contractor shall take all precautionary measures to prevent the wastewater during construction to accumulate anywhere. The wastewater arising from the project is to be disposed of in the manner that is acceptable to the Engineer-in-charge.

#### **6.4.4 Air and Noise Pollution**

Contractor shall use dust screens and sprinkle water around the construction site to arrest spreading of dust in the air and surrounding areas.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Contractor shall ensure that all vehicles, equipment and machinery used for construction are regularly maintained and confirm that emission levels comply with environmental emission standards/norms.

For controlling the noise from Vehicles, Plants and Equipment, the Contractor shall confirm the following:

All vehicles and equipment used in construction will be fitted with exhaust silencers.

Servicing of all construction vehicles and machinery will be done regularly and during routine servicing operations, the effectiveness of exhaust silencers will be checked and if found defective will be replaced.

Noise emission from compactors (rollers) front loaders, concrete mixers, cranes (movable), vibrators and saws should be less than 75 dB(A).

As per the standards/guidelines for control of Noise Pollution from Stationary Diesel Generator (DG) sets, noise emission in dB(A) from DG Set (15-500 KVA) should be less than  $94 + 10 \log_{10} (\text{KVA})$ . The standards also suggest construction of acoustic enclosure around the DG Set and provision of proper exhaust muffler with insertion loss of minimum 25 dB (A) as mandatory.

### **6.4.5 Personal Safety Measures for Labour**

Contractor will provide the following items for safety of workers employed by contractor and associate agencies:

Protective footwear and gloves to all workers employed for the work on mixing, cement, lime mortars, concrete etc. and openings in water pipeline/sewer line.

Welders' protective eye-shields for all workers who are engaged in welding works. Safety helmet and Safety harness/ belt.

### **6.5 The following provisions shall be maintained by the contractor at site:**

-

**6.5.1** Provide adequate sanitation/safety facilities for construction workers to ensure the health and safety of the workers during construction, with effective provisions for the basic facilities such as sanitation, drinking water and safety equipment or machinery.

All the workers should be wearing helmet and shoes all the time on site.

Masks and gloves should be worn whenever and wherever required.

Adequate drinking water facility should be provided at site, adequate number of decentralized latrines and urinals to be provided for construction workers.

Full time workers residing on site should be provided with clean and adequate temporary hutment. Crèche/Day-care facility should be provided to young children of laborers residing on site. Child labour should be banned on site.

First aid facility should also be provided.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Overhead lifting of heavy materials should be avoided. Barrow wheel and hand-lift boxes should be used to transport materials onsite.

Tobacco and cigarette smoking should be prohibited onsite.

All dangerous parts of machinery are well guarded and all precautions for working on machinery are taken.

Maintain hoists and lifts, lifting machines, chains, ropes and other lifting tackles in good condition.

Use of durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.

Ensure that walking surfaces or boards at height are of sound construction and are provided with safety rails and belts. Provide protective equipment such as helmets.

Provide measure to prevent fire. Fire extinguisher and buckets of sand to be provided in fire-prone area and elsewhere.

Provide sufficient and suitable light for working during night.

Ensure that measures to protect workers from materials of construction, transportation, storage and other dangers and health hazards are taken.

Ensure that the construction firm/division/company have sound safety policies.

Comply with the safety procedure, norms and guidelines (as applicable) as outlined in NBC 2005 (BIS 2005c).

Adopt additional best practices and prescribed norms as in NBC 2005 (BIS 2005).

**6.5.2** Identify roads on-site that would be used for vehicular traffic. Update vehicular roads (if these are unpaved) by increasing the surface strength by improving particle size, shape and mineral type that make up the surface base. Add surface gravel to reduce source of dust emission. Limit amount of fine particles (smaller than 0.075mm) to 10-20%. Limit vehicular speed on site 10km/h.

**6.5.3** All material storages should be adequately covered and contained so that they are not exposed to situations where winds on site could lead to dust/particulate emissions.

**6.5.4** Spills of dirt or dusty materials shall be cleaned up promptly so the spilled material does not become a source of fugitive dust and also to prevent of seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean-up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained/cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.

**6.5.5** Ensure that water spraying is carried out by wetting the surface by spraying water on:

Any dusty material.

Areas where demolition works is carried out.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Any unpaved main-haul road and.

Areas where excavation or earth moving activities is to be carried out.

### **6.6 The contractor shall ensure the following:**

Cover and enclose the site by providing dust screen, sheeting or netting to scaffold along the perimeter of a building.

Covering stockpiles of dusty material with impervious sheeting.

Covering dusty load on vehicles by impervious sheeting before they leave the site.

Transferring, handling/storing dry loose materials like bulk cement and dry pulverized fly ash inside a totally enclosed system.

Spills of dirt or dusty materials shall be cleaned up promptly so that the spilled material does not become a source of fugitive dust and also to prevent seepage of pollutant-laden water into the ground aquifers. When cleaning up the spill, ensure that the clean-up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained/cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.

Clear vegetation only from areas where work will start right away.

Vegetate/mulch areas where vehicles do not ply.

Apply gravel/landscaping rock to the areas where mulching/paving is impractical.

**6.6.1** Adopt measures to prevent air pollution in the vicinity of the site due to construction activities. There is no standard reference for this. The best practices should be followed (as adopted from international best practice documents and codes).

**6.6.2** Provide hoardings of not less than 3m height along the site boundary, next to a road or other public area.

**6.6.3** The contractor shall provide experienced personnel with suitable training to ensure that these methods are implemented. Prior to the commencement of any work, the method of working, plant equipment and air pollution control system to be used on-site should be made available for the inspection and approval of the Engineer-in-Charge to ensure that these are suitable for the project.

**6.6.4** Employ measures to segregate the waste on-site into inert, chemical or hazardous wastes. Recycle the unused chemical/hazardous wastes such as oil, paint, batteries and asbestos. The inert waste is to be disposed of to Municipal Corporation/local bodies dump yard and landfill sites.

### **6.7 Preserve and protect landscape during construction**

**6.7.1** Following provisions shall be made at site by the contractor to preserve and protect landscape. Nothing shall be paid on this account unless specifically provided for in the schedule of quantities.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**6.7.2** To preserve the existing landscape and protect it from degradation during the process of construction. Select proper timing for construction activity to minimize the disturbance such as soil pollution due to spilling of the construction material and its mixing with rainwater. The construction management plan including soil erosion control management plan shall be prepared accordingly for each month. The application of erosion control measures includes construction of gravel pits and tyre washing bays of approved size and specification for all vehicular site entry/ exits, protection of steep slopes. Sedimentation Collection System and run-off diversion systems shall be in place before the commencement of construction activity. Preserve and protect the existing vegetation by not disturbing or damaging to specified site areas during construction. The trees that are identified to be retained on site are protected during the construction period using the following measures:

The damage to roots is prevented during trenching, placing backfill, driving or parking heavy equipment. The dumping of trash, oil, paint and other material is detrimental to plant health. These activities should be restricted to the areas outside of the canopy of the trees.

The trees are not used for support; their trunks should not be damaged by cutting and carving by nailing posters and advertisements or in any other way.

The lighting of fires or carrying out heat or gas emitting construction activity within the ground covered by canopy of the trees is not permitted.

The young trees of saplings identified for preservation within the construction site must be protected using tree guards of approved specification.

The grades of soil should be maintained around existing vegetation. Lowering or raising the levels around the vegetation should not be allowed unless specifically directed by the Engineer –in – Charge.

Maintenance activities should be performed, as and when needed, to ensure that vegetation remain healthy.

**6.8** Staging is dividing a construction area into two or more sections to minimize the area of soil that will be exposed at any given time. Staging should be done to separate undisturbed land from land disturbed by construction activity and material storage. A vector drawing plan to be submitted identifying the areas of sites, which shall be disturbed for the construction activity and apart from these other areas on site should not be disturbed. Measures should be followed for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels and perimeter dike/swale should be constructed to carry the pollutant-laden water directly to the treatment device or facility (municipal sewer line). The plan should indicate how the above was accomplished on site well in advance of the commencement of the construction activity.

**6.8.1** The Contractor should follow the construction plan as proposed by the Architect Consultants/landscape consultant to minimize the site disturbance such as soil pollution due to spilling. Use staging and spill prevention and control plan to restrict

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

the spilling of the contaminating material on site. Protect top soil from erosion by collection storage and reapplication of top soil, constructing sediment basin, contour trenching, mulching etc.

**6.8.2** Spill prevention and control plans should clearly state measures to stop the source of the spill. Measures to contain the spill and measures to dispose the contaminated material and hazardous wastes. It should also state the designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners and petroleum products.

**6.9** A soil Erosion and Sedimentation Control Plan (ESCP) should be prepared prior to construction and should be applied effectively. Measures for prevention of top soil are given below:

**6.9.1** Top Soil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas and external services. It should be stockpiled to a maximum height of 40 cm in designated areas and reapplied during plantation of the proposed vegetation. The topsoil should be separated from the sub soil debris and stones larger than 50 mm in diameter. The stored topsoil may be used as finished grade for planting areas post construction or cordoned off undisturbed areas on site. Stockpiled topsoil should not be compacted to help process of aeration. It should be stabilized on the top by temporary seeding or plastic sheets to avoid wind and water erosion. During construction period contractor has to preserve and protect existing nalas or natural drainage channel at site of work.

**6.9.2** Sedimentation basin, a temporary dam or basin at the lowest convenient point of the site should be constructed for collecting, trapping and storing sediment produced by the construction activities. A flow detention facility must also be constructed for reducing peak run-off rates. This would also allow most of the sediments to settle before the run-off is directed towards the outfall.

**6.9.3** Contour trenching is to be provided which an earth embankment or ridge-and-channel arrangement constructed parallel to the contours, along the face of the slope, at regular intervals on the lengths and steep slopes. They are used for reducing run-off velocity, increasing the distance of overland run-off flow. They are also used to hold moisture and minimize sediment loading of surface run-off.

**6.10** Prepare the list of trees to be felled with reference to the tree survey, Compensate the loss of vegetation (trees) due to the construction activity by compensatory plantation. Replant same native and/or non-invasive species, which existed on the site before elimination, in the proportion of 1:3 (as per the suggestion of the landscape consultant).

**6.11** The contractor shall prepare and submit 'Spill prevention and control plans' before the start of construction, clearly stating measures to stop the source of the spill, to contain the spill, to dispose the contaminated material and hazardous wastes, and stating designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners, and petroleum products.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

**6.12** The contractor shall ensure that no construction leaches (Ex: cement slurry) is allowed to percolate into the ground. Adequate precautions are to be taken to safeguard against this including reduction of wasteful curing processes, collection, basic filtering and reuse. The contractor shall follow requisite measures for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels, perimeter dike/swale, etc. shall be constructed to carry the pollutant-laden water directly to the treatment device or facility (municipal sewer line).

**6.13** All lighting installed by the contractor around the site and at the labour quarters during construction shall be CFL bulbs of the appropriate illumination levels. This condition is a must, unless specifically prescribed.

**6.14** All paints, adhesives and sealants should comply with the VOC limits prescribed by GRIHA, as follows:

**6.15** All the building materials and systems used on site must be as per the specifications and approved makes by the consultants.

**6.16** All required certificates explaining the properties of the building material/system needs to be obtained from the manufacturer/vendor as required by the green building rating authority.

The final certificates would be produced after the approval of green building consultant with necessary due diligence.

The purchase orders of all the materials made with the manufacturers/authorized vendors should be maintained and shall be provided for the process with due diligence upon request.

**6.17** Water saving measures as suggested by the consultants need to be followed on site.

**6.18** The contractor / subcontractor shall prepare and submit a Site Management Plan (SMP) within 10 days of start, for approval by the Engineer-in-charge. This SMP shall indicate the locations of godown, stockpiles, barricading, waste storage, offices, vehicular movement routes etc. In short this SMP would comprehensively represent how the site activities shall be managed conforming to GRIHA guidelines.

**6.19** Any other site management measures suggested by the Engineer-in-charge / green building consultant shall be followed on site.

**6.20** The contractor shall submit to the Engineer-in-Charge after construction of the buildings, a detailed as built quantification of the following:

Total materials used,

Total top soil stacked and total reused,

Total earth excavated,

Total waste generated,

Total waste reused,

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

Total water used,

Total electricity consumed, and

Total diesel consumed.

**6.21** The contractor shall submit to the engineer-in-charge, before the start of construction, a site plan along with a narrative to demarcate areas on site from which top soil has to be gathered, designate area where it will be stored, measures adopted for top soil preservation and indicate areas where it will be reapplied after construction is complete.

**6.22** Evidence for the implementation of the all the above required measures shall be provided to the green building consultant in the form of photographs and templates (as provided), which is required for the submission to the green building rating authority (GRIHA).

**6.23** Nothing extra shall be payable for above provisions unless otherwise specified in Schedule of Quantities.

### **6.24 SPECIAL CONDITIONS FOR ENVIRONMENT MANAGEMET PLAN**

**A.** The contractor shall obtain approval for laying electrical lines from the concerned SE of BEREC/BSPHCL/SBPDCL and comply with the provisions as per Terms and condition for determination of Tariff Regulation, 2007 of for construction purpose as well as for final connection.

**B.** The contractor shall ensure taking necessary steps on urgent basis to improve the living conditions of the labour at site and provide necessary facility to the labour.

**C.** Contractor has to construct housing colony for labour within the site with all necessary infrastructure and facilities such as health facility, sanitation facility, and fuel for cooking, along with safe drinking water, medical camps, and toilets for women, crèche for infants. The housing may be in the form of temporary structures to be removed after the completion of the project. Details of provisions should be submitted to Engineer In charge for them to submit it to Bihar State Pollution Control Board at the time of obtaining Consent to Establish.

**D.** During construction period mobile STP of capacity 60 & 20 KLD shall be provided by the contractor for the labour colony. The drains should be of adequate capacity and be lined till the final disposal points. Provision for disinfection of wastewater after treatment and before reuse to be ensured by the contractor.

**E.** All required sanitary and hygienic measures shall be in place before starting construction activities. The safe disposal of wastewater and solid waste generated during the Construction phase shall be ensured.

**F.** All the laborers engaged for construction shall be screened for health and adequately treated before engaging them to work at the site.

**G.** All the topsoil excavated during the construction shall be stored for use in horticulture/landscape development within the project site.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- H.** Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people only in approved sites with approve competent authority.
- I.** The contractor to ascertain that, there is no threat to the ground water quality by leaching of heavy metals and other toxic contaminants during construction will test soil and ground water samples.
- J.** Construction spoils, including bituminous material and other hazardous materials must not be allowed to contaminate water courses and the dump sites for such material must be secured so that they do not leach into the ground water.
- K.** The diesel generator sets to be used during construction phase shall be of low-sulphur- diesel type and shall conform to Environment (Protection) Rules for air and noise emission standards.
- L.** Vehicles hired for bringing construction material and laborers to the site shall be in good conditions and shall conform to applicable air and noise emission standards and shall be operated during non-peak/approved hours.
- M.** Ambient noise levels shall conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase.
- N.** NOC shall be obtained from National State Disaster Management Authority, wherever applicable.
- O.** Water demand during construction shall be reduced by the use of pre-mixed concrete, curing agents and other best practices.
- P.** Total domestic water requirement shall not exceed 94 KLD during construction stage.
- Q.** Adequate measures shall be taken to reduce air and noise pollution during construction as per CPCB norms.
- R.** A First Aid Room should be provided at the project site during construction phase of the project.
- S.** Any hazardous waste generated during construction phase shall be disposed of as per applicable rules and norms with necessary authorization of the BSPCB.
- T.** Regular supervision of the above and other measures for monitoring shall be done by Engineer In charge throughout the construction phase, so as to avoid nuisance to the surroundings.

CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS

**SECTION 7**

**SAFETY CODES AND RULES**

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

**SAFETY CODES AND RULES**

- 1.** Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and hand-hold shall be provided on the ladder and the ladder shall be given an inclination not steeper than  $\frac{1}{4}$  to 1 ( $\frac{1}{4}$  horizontal and 1 vertical.)
- 2.** Scaffolding of staging more than 3.6 m (12ft.) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guardrail properly attached or bolted, braced and otherwise secured at least 90 cm. (3ft.) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends there of with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- 3.** Working platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6 m (12ft.) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in (2) above.
- 4.** Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90 cm. (3ft.)
- 5.** Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30ft.) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (11½") for ladder up to and including 3 m. (10 ft.) in length. For longer ladders, this width should be increased at least  $\frac{1}{4}$ " for each additional 30 cm. (1 foot) of length. Uniform step spacing of not more than 30 cm shall be kept. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defence of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit; action or proceedings to any such person or which may, with the consent of the contractor, be paid to compensate any claim by any such person.
- 6.** Excavation and Trenching - All trenches 1.2 m. (4ft.) or more in depth, shall at all times be supplied with at least one ladder for each 30 m. (100 ft.) in length or fraction thereof, Ladder shall extend from bottom of the trench to at least 90 cm. (3ft.) above the surface of the ground. The side of the trenches which are 1.5 m.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

(5ft.) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m. (5ft.) of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances, undermining or undercutting shall be done.

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

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

(ii) No electric cable or apparatus which is liable to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged. (iii) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

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

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

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

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

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

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

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

b) At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- c) Before entry, presence of Toxic gases should be tested by inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.
- d) Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.
- e) Safety belt with rope should be provided to the workers. While working inside the manholes, such rope should be handled by two men standing outside to enable him to be pulled out during emergency.
- f) The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.
- g) No smoking or open flames shall be allowed near the blocked manhole being cleaned.
- h) The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.
- i) Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.
- j) Gas masks with Oxygen Cylinder should be kept at site for use in emergency.
- k) Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non-sparking gas engines also could be used but they should be placed at least 2metres away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.
- l) The workers engaged for cleaning the manholes/sewers should be properly trained before allowing to work in the manhole.
- m) The workers shall be provided with Gumboots or non sparking shoes bump helmets and gloves non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.
- n) Workmen descending a manhole shall try each ladder stop or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

- o) If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.
- p) The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.
- vi) The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precaution should be taken:-
  - a) No paint containing lead or lead products shall be used except in the form of paste or ready made paint.
  - b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.
  - c) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.
- 9.** The Contractor shall not employ women and men below the age of 18 on the work of painting with product containing lead in any form, wherever men above the age of 18 are employed on the work of lead painting, the following principles must be observed for such use :
  - i) White lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.
  - ii) Measures shall be taken, wherever required in order to prevent danger arising from the application of a paint in the form of spray.
  - iii) Measures shall be taken, wherever practicable, to prevent danger arising out of from dust caused by dry rubbing down and scraping.
  - iv) Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.
  - v) Overall shall be worn by working painters during the whole of working period.
  - vi) Suitable arrangement shall be made to prevent clothing put off during working hours being spoiled by painting materials.
  - vii) Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed by competent authority.
  - viii) Competent authority may require, when necessary medical examination of workers.
  - ix) Instructions with regard to special hygienic precautions to be taken in the painting trade shall be distributed to working painters.

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

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

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

i) (a) These shall be of good mechanical construction, sound materials and adequate.

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

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

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

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

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

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

## **CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

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

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

**16.** WARNING/ CAUTION BOARDS: All temporary warning / caution boards / glow signage display such as "Construction Work in Progress", "Keep Away", "No Parking", Diversions & protective Barricades etc. shall be provided and displayed during day time by the Contractor, wherever required and as directed by the Engineer-in-Charge. These glow signage and red lights shall be suitably illuminated during night also. The Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work. This signage shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer – in – Charge. Nothing extra shall be payable on this account.

**17.** SIGN BOARDS: The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in-Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, Owner / owner, architects, structural consultants, Department etc. besides providing space for names of other Contractors, Sub-Contractors and specialized agencies. Nothing extra shall be payable on this account. Necessary protective and safety equipment shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and to be used at site. No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules / instructions issued by the relevant authorities and as per the direction of Engineer -in- Charge in this regard. Also all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.

**18.** The PMC of the project has prepared an EHS manual and exhaustive process and guidelines for the EHS implementation plan at site. The documents and the manual containing these process and guidelines are enclosed separately with the tender documents as "EHS Manual". Contractors are expected to go through all the provisions of this EHS manual and apprise themselves of these requirements before submitting their tenders as they would be required during the execution of the project to strictly adhere to those guidelines, provisions and processes.

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

<b><u>Form- K CHECK LIST FOR TENDERER</u></b>			
<b>Sr.No.</b>	<b>Check Item</b>	<b>Yes/No</b>	<b>No of Pages</b>
	<b>Received and studied the following documents</b>		
	Main Tender Document including the NIT, General Conditions of Contract, Special Conditions of Contract, Technical Specifications and Tender Forms & Formats in the soft copy .pdf form containing a total number of ----- pages excluding the cover page		
	Bill of Quantities in the. xlsx format containing ..... Work sheets in one workbook. The last row number with relevant data in various sheets in the work book are .....		
	Total number of tender drawings received and studied are -----		
	Cover letter is complete on the company letterhead and signed by the authorized signatory and stamped with company seal.		
	The tender being filled is in total compliance with the terms specified and there is no assumption of any special condition in addition to what has been specified in the tender documents by the owners		
<b>Envelope 1: Earnest Money and E Tender processing fee</b>			
	EMD for the total amount		
	Demand Draft for E-Tender Processing Fee		
	Envelope marked as Envelope 1 on Top and titled as "Earnest Money and E Tender processing fee"		
	Envelop 1 is sealed and signed		

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

	Envelope 2 will contain the following documents in three separate envelopes A, B & C and will be titled "Eligibility Documents"		
	<b>Envelope A: Pre-Qualification Documents</b>		
	Documents certified by a chartered accountant in support of Average Annual Financial Turnover during the last 3 years, ending 31 <sup>st</sup> March of the previous financial year has been submitted and the average annual financial turnover is more than or equal to 100% of the estimated cost		
	Documents in support of having successfully completed similar works during last 7 years as mentioned below  Three similar completed works costing not less than the amount equal to 40% of the estimated cost or two similar completed works costing not less than the amount equal to 60% of the estimated cost or one similar completed work costing not less than the amount equal to 80% of the estimated cost.		
	Proof of having completed at least one Building work with allied facility costing not less than 40% of the estimated project cost with some Central/State Government Department/ Autonomous Body/Central Public Sector Undertaking/ State Public Sector Under taking or any other project which has been funded more than 50% by a fund of public nature		
	Solvency Certificate for at least 40% of the estimated value of the work		
	Envelope marked as Envelope A on Top and titled as "Eligibility Documents"		
	Envelop A is sealed and signed		
	<b>Envelope B: Technical Eligibility Documents</b>		
	Form A to J completed, signed, stamped and put together in envelope B		

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL BUILDINGS**

	Envelope marked as Envelope B on Top and titled as "Technical eligibility documents"		
	Envelop B is sealed and signed		
	Scanned copy of the Technical eligibility documents uploaded on the e-tendering portal		
	<b>Envelope C Other Documents</b>		
	Signed and stamped all the pages in Volume 1 of the tender document (NIT, summary of the tender, Instructions to tenderers, GCC and SCC)		
	Signed and stamped all the pages in Volume 2 of the tender documents (Pre-amble, technical specifications)		
	Signed and stamped all the drawings		
	All these documents put together in envelope C and Envelope marked as Envelope C on Top and titled as "Other Documents"		
	Envelop C is sealed, signed and stamped		
	<b>ENVELOPE FOR TECHNICAL TENDER:</b>		
	Tender documents for development of Permanent Campus for NU Rajgir, Bihar  The main envelope containing all the documents		
	Envelope 1 and 2 put together in Envelope for Technical Tender and Envelope marked as Technical Tender Document for the "Construction and development works of 38 nos. Student hostel buildings at Nalanda University, Rajgir		
	Envelope for Technical Tender is sealed, signed and stamped		
	<b>ENVELOPE FOR FINANCIAL TENDER</b>		

**CONSTRUCTION AND DEVELOPMENT WORKS OF 38 NOS. STUDENT HOSTEL  
BUILDINGS**

	Rates for all the items in the Bill of Quantities filled in hard copy of the same with signature and seal on all the pages is being submitted in envelope Tenderer must submit a soft copy of BOQ with rates and amounts in editable Format on a CD also in the envelop.		
	Envelope marked as Envelope for Financial Tender on Top and titled as "Financial Tender" for the "Tender for Construction and development works of 38 nos. student hostel buildings at Nalanda University, Rajgir "		
	Envelop is sealed, signed and stamped		