



ALL INDIA INSTITUTE OF MEDICAL SCIENCES PATNA

(An Autonomous body under MoH&FW, Govt. of India)

TENDER ENQUIRY DOCUMENT

**(Supply installation testing and commissioning of 2 x 3500 KVA transformer in
substation no- 2 for AIIMS Patna.)**

Advertised Tender EnquiryNo. :**AIIMS/Pat/SE/147/148318**

Brief Description of Goods :**SITC of 3500 KVA transformer etc**

INDEX

Sl. No.	Description	Page No.
1.	Index	1
2.	Instructions for Online Bid Submission	2-5
3.	Section I - Information & Instructions to Bidders	6-9
4.	Section II - Information & General Instructions to bidders	10-16
5.	Section III – Criteria for evaluation for qualification	16
6.	Section IV - Forms for Qualification	
i)	Letter of Transmittal	17-18
ii)	Form “A”	21-22
iii)	Form “B”	23-24
iv)	Form “C”	25
v)	Form “D”	26
vi)	Form “E”	27
vii)	Form “F”	28
viii)	Form “G”	29
7.	Affidavit	30-31
8.	Pledge of Compliance	32
9.	Integrity Pact	33
10	Integrity Agreement	34-39
11	Form of Earnest Money Deposit (Bank Guarantee Bond)	40-41
12	Format of Agreement	42-43
13	Form 8	44
14	Schedule A : General Conditions of Contract	1 to 103
15	Schedule B : Special Conditions	1 to 22
16	Schedule C: Technical specification	1 to 67
17	Schedule D: Approved Make	1 to 11
18	Schedule E: Scope of work	1



ALL INDIA INSTITUTE OF MEDICAL SCIENCES

PATNA - 801507

(An Autonomous body under MoH&FW, Govt. of India)

Procurement Cell, Phulwarisharif, Patna-801507, Bihar.

No. AIIMS/PAT/SE/147/148318

Dated-/02/2024

Instructions for Online Bid Submission

The Director, AIIMS Patna, invites E-Bids in Two Bid System (i.e. Technical and Financial Bid) from eligible Manufacturers / Direct Importers online through E-procurement solution portal of <https://eprocure.gov.in/eprocure/app> on mutually agreed terms and conditions and satisfactory performance for the **Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS patna....** And supply of items as per the Specifications.

More information useful for submitting online bids on the CPP Portal may be obtained at <https://eprocure.gov.in/eprocure/app>

1.0 REGISTRATION

- 1.1 Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link “Online bidder Enrolment” on the CPP Portal which is free of charge.
- 1.2 As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 1.3 Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 1.4 Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.
- 1.5 Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- 1.6 Bidder then logs in to the site through the secured log-in by entering their user ID /password and the password of the DSC / e-Token.

2.0 SEARCHING FOR TENDER DOCUMENTS

- 2.1 There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.

- 2.2 Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- 2.3 The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

3.0 PREPARATION OF BIDS

- 3.1 Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- 3.2 Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with black and white option which helps in reducing size of the scanned document.
- 3.3 To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

4.0 CORRIGENDUM

- 4.1 Corrigendum in technical specification issued after pre-bid meeting will be final & no corrigendum will be issued thereafter.
- 4.2 Corrigendum will be notified through <https://eprocure.gov.in/eprocure/app> and website of AIIMS Patna.

5.0 SUBMISSION OF BIDS:

- 5.1 Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 5.2 The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 5.3 Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.
- 5.4 Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and **upload** it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

- 5.5 The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 5.6 All the documents being submitted by the bidders will be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology.
- 5.7 Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys.
- 5.8 The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 5.9 Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 5.10 The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

6.0 ASSISTANCE TO BIDDERS

- 6.1 Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- 6.2 Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be call directed to the 24x7 CPP Portal Helpdesk.

7. Guideline for submission of bid:

A. Technical Bid:

The following documents are to be uploaded using DSC by the bidder along with Technical Bid as per the tender document:

- (i) Signed and scanned copy of proof for payment of Tender fee & Earnest Money Deposit (EMD), No exemption allowed.
- (ii) Signed and scanned copy of PAN, valid electrical License.
- (iii) Signed and scanned copy of GST registration certificate, with up to date clearance certificate.
- (iv) Signed and scanned copy of Letter of Transmittal as per format attached in tender document
- (v) Signed and scanned copy of structure organization of bidder as per "form A"
- (vi) Signed and scanned copy of Certificate for sole ownership / partnership/ Certificate of Incorporation.
- (vii) Signed and scanned copy of Statements of turnover per year for last three successive years duly certified by the Chartered Accountants with UDIN no. (Minimum Average Annual Turnover must be **at least 50% of estimated cost** As per "form B" (with supporting documents).)
- (viii) Signed and Scanned copy of Tender Acceptance letter "Annexure-I"
- (ix) Signed and Scanned copy of Banker's Certificate, issued by a Scheduled Bank . The certificate should have been issued within 6 month from original last date of submission of tender as per " Form C"
- (x) Signed and scanned copy of proof of Status of Bidder: Bidder should have registration with Govt. / Semi Govt. organization like railways, CPWD, BRO, MES, State PWD whose jurisdiction defined to work in Bihar state in appropriate class are eligible to participate in tender and having experience in similar work.

- (xi) Signed and scanned copy of satisfactorily completed the similar works during the last five (5) years prior to the last stipulated date for submission of the bid as per “Form D” (with supporting documents)
- (xii) Signed and scanned copy of Power of Attorney as per “Annexure – II” in favour of person.
- (xiii) Signed and Scanned Copy of affidavit duly certified by the notary at the location of the Agencies/Headquarters that the bidder has never been black listed or punished by any court for any criminal offence/breach of contract and that no police/vigilance enquiry/criminal case is pending against either bidder legal entity or against individual Directors of the company or partners etc. of the firm etc.
- (xiv) Signed and scanned copy of ITR for last three years and Audit report of the last five years ending 31st March 2023 duly certified by the Chartered Accountant appending UDIN no, company should be financially sound and have suffered no loss till 31/03/2023.
- (xv) Signed and Scanned Copy of Integrity Pact as per Format attached in tender documents.

Note-

- Applications from Joint ventures or consortium of companies will not be accepted or considered for participation
- Bidders are requested to upload the clearly visible documents only other wise if not clearly visible then offer shall be liable for rejection without any further communication.

B. Price Bid / Financial Bid :

Schedule of price bid in the form of BOQ_XXXX.xls

- a. The Financial Proposal/Commercial bid format is provided as BOQ_XXXX.xls along with this tender document at <https://eprocure.gov.in/eprocure/app>. Bidders are advised to download this BOQ_XXXX.xls as it is and quote their offer/rates in the permitted column and upload the same in the commercial bid. Bidder shall not tamper/modify downloaded price bid template in any manner. In case if the same is found to be tampered / modified in any manner, tender will be completely rejected and EMD would be forfeited and tenderer is liable to be banned from doing business with AIIMS Patna.

Section 1:INFORMATION & INSTRUCTIONS TO BIDDERS

Item rate tender is invited on behalf of Director All India Institute of Medical Sciences Patna from experienced, Specialized Firms and Eligible contractor of reputed in single stage two bid systems for **Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS patna..**

NIT No.	Name of work & Location	Estimated Cost put to Tender	Earnest Money	Period of Competition	Last date & time of submission of Eligibility Documents & Financial bids	Period during which EMD and Eligibility documents shall be submitted Online	Time and date Time and date of opening of eligibility documents
AIIMS/PAT/SE/147/148318	Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS patna....	Rs. 4,97,50,038/-	Rs. 9,95,000/-	06 Months	Up to 15:00 Hrs on....02.2024	From02.2024 10:00 Hrs to....02.2024 15:00 Hrs	On02.2024 At 15.00 Hrs

The work shall be executed as per DSR 2021 rates i/c latest cost index (Civil, Electrical, Mechanical & horticulture) and non-schedule items rate shall be derived from prevailing market rate and the decision of Director shall be final and binding. GST, turnover tax, income tax, Labour Cess, etc. as applicable shall be paid by the Contractor himself and the AIIMS will not entertain any claim whatsoever in this respect. The bidder shall quote his rates considering all such Taxes. The AIIMS shall deduct from the running bills and final bill, the TDS, & Labour Cess as applicable. However in respect of GST, same shall be paid by the Contractor to the concerned department.

It will be obligatory on part of the Bidder to tender for all the component parts. The Institute reserves right to accept tender in full or in part. The Institute does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without assigning any reason. All bids in which any of the prescribed conditions is not fulfilled or any condition including that of conditional rebate is put forth by the Bidders shall be summarily rejected.

The tenderers are advised to visit the site before attending the Pre-bid conference, if any, for greater clarity on the existing building structures and space available for execution of the work.

The Institute Campus is targeted for 3/4 Star from GRIHA / LEED rating. In order to secure this rating, a high degree of responsibility and cooperation is necessary from the contractor. All materials and systems used in the project are intended to maximize energy efficiency for operation of Project throughout service life (substantial completion to ultimate disposition – reuse, recycling, or demolition) with an emphasis on top quality. Materials and systems are to maximize environmentally-benign construction techniques, including construction waste recycle, reusable delivery packaging, and reusability of selected materials. All vendors / contractors must adhere to best practices related to Green Buildings, and rates quoted take this into account. Nothing extra on this account shall be payable.

It is mandatory to sign the Integrity Pact by the Bidder failing which the Tenderer will stand disqualified from the tendering process and such Application would be summarily rejected.

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

Should have had a minimum average annual financial turnover (**Gross**) of 50% of estimated cost on similar works during the last three consecutive balance- sheets duly audited by a Chartered Accountant and appending UDIN no.

Should be financially sound and have incurred no loss till **31st March 2023**

Should have a minimum solvency of **Rs 1.99 Crore** certified by his bankers. The certificate should have been issued within 6 month from original last date of submission of tender.

The tender document consisting of plans, specifications, schedule of quantities of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be obtained from the office of **SE/All India Institute of Medical Sciences, Patna**. During the office hours on all working days except on, Sunday & Public holidays and also can be downloaded free of cost from website <https://www.AIIMS Patna.org> / <https://eprocure.gov.in/cppp/>

Bidders are advised to keep visiting the above mentioned web-sites from time to time (till the deadline for bid submission) for any updates in respect of the tender documents, if any. Failure to do so shall not absolve the Bidder of his liabilities to submit the tender complete in all respect including updates thereof, if any.

In case the lowest tendered amount (worked out on the basis of quoted rate of individual items) of two or more Bidders is the same, then such lowest Bidders may be asked to submit sealed revised offer quoting rate of each item of schedule of quantity for all sub sections/ sub heads as the case may be, but the revised quotes rate of each item of schedule of quantity for all sub sections / sub heads should not be higher than their respective original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis of revised offer.

If the revised tendered amount (worked out on the basis of quoted rate of individual items) of two or more Bidders received in revised offer is again found to be equal, then the lowest tender among such Bidders shall be decided by a draw of lots in the presence of lowest Bidders who have quoted equal amount of their tenders.

In case any of such lowest Bidders in his revised offer quotes rate of any item more than their respective original rate quoted already at the time of submission of tender, then such revised offer shall be treated as invalid. Such case of revised offer of the lowest firm/contractor or case of refusal to submit revised offer by the lowest Bidder shall be treated as withdrawal of his tender before acceptance and 50% of his earnest money shall be forfeited.

In case all the lowest Bidders those who have tendered amount (as a result of their quoted rates of individual items), refuses to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each lowest Bidder.

The tender for the works shall remain open for acceptance for a period of **One Hundred Twenty (120) days** from the date of opening of Eligibility Documents. In case the Tenderer withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the Institute, then the Institute shall, 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 re-tendering process of the work.

Bidder, whose earnest money is forfeited because of non-submission of revised offer, or quoting higher revised rate (s) of any item(s) than their respective original rate quoted already at the time of submission of his bid shall not be allowed to participate in the re-tendering process of the work.

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

The Successful Tenderer shall be required to submit a Performance Guarantee of 5% (Five Percent) of the agreement amount within 15 days of issue of letter of intent. This guarantee shall be in the form of Fixed Deposit Receipts or Bank Guarantee from any Scheduled Bank or the State Bank of India in accordance with the prescribed form. This period can be further extended by Engineer-in-Charge/Institute up to a maximum period of 7 days on the written request of the contractor, **however late fee will be charged @ 0.1% per day.**

The Tenderer whose tender is accepted (Successful Tenderer/Bidder or Contractor) will also be required to furnish by way of Security Deposit for the fulfilment of his contract, an amount equal to 5.0% of the tendered value of the work. The Security deposit will 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, will be treated as a part of the Security Deposit.

The Security amount will also be accepted as Fixed Deposit Receipt or Bank Guarantee of a Scheduled Bank or State Bank of India provided confirmatory advice is enclosed.

On acceptance of the tender, the name of the accredited representative(s) of the selected Contractor who would be responsible for taking instructions from the SE, AIIMS PATNA shall be communicated in writing to the AIIMS PATNA. The selected Contractor shall give a list of Institute employees related to him.

The Selected 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 Accepting Authority may in his discretion, without prejudice to any other right or remedy available in law, cancel the Contract. The Selected Contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

Agreement shall be drawn with the successful bidder as per the format forming part of the Tender Documents. This Notice Inviting Tender shall form a part of the contract document. The successful bidder / tenderer, on acceptance of his bid by the Accepting Authority shall within 15 days from the letter of acceptance, sign the agreement consisting of:

The Notice Inviting Tender, all the documents including special conditions, additional conditions, particular specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

SECTION II - INFORMATION & GENERAL INSTRUCTIONS TO BIDDERS

1. General

- 1.1 Information and Instruction for Contractors for tendering forming part of NIT and to be posted on website.
- 1.2 Information and instruction for Contractor will form part of NIT.
- 1.3 Late offers will not be accepted.
- 1.4 The bidders are requested to visit site and get familiarized with local condition before submission of tenders.
- 1.5 Right to issue and to accept or reject any or all tenders without assigning any reason thereof is reserved by the Competent Authority i.e. Director AIIMS Patna.
- 1.6 The bidder should be registered contracting firms under companies Act 1956, if applicable.
- 1.7 Bidders/contracting firms should have completed only in their own name & style, similar work.
- 1.8 All scaffolding shall be arrange by the agency/bidder itself. The bidders should quote their rates keeping in mind that scaffolding, ladder & staging shall be arranged by the bidder itself.
- 1.9 The bidder will take all the precaution not to damage any part of the building. Anyhow if damage is done, the same shall be restored to its original shape & size by the executing agency.
- 1.10 **Quoted rates deemed to be inclusive of all taxes including GST.**

- 1.11 **L1 shall be decided on composite basis i.e. total (A)**

- 1.12 Letter of transmittal and forms for qualification are given in Section III.
- 1.13 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, Reference to the same should be mentioned against the relevant column. Even if no information is to be provided in a column, a 'Nil' or 'No such case' entry should be made in that column. If any particulars/query is not applicable in case of the Bidder, it should be stated as 'not applicable'. The Bidders 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 Bidder being summarily disqualified. Submissions made by telegram, fax, email or telex and those received late will not be entertained.

- 1.14 The Application should be type written/downloaded.

- 1.15 **The Application along with required documents should be uploaded in Original** and each page should be serially numbered. All the pages should be duly signed in ink on each page & official seal stamped and should be uploaded online super scribbling with "Tender documents for **Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS Patna.**

Documents submitted in connection with this tender will be treated confidential and will not be returned.

- 1.17 Overwriting should be avoided. Correction, if any, shall be made by neatly crossing out, initialling, dating and rewriting.
- 1.18 References, information and certificates from the respective clients certifying suitability, technical knowledge or capability of the Bidder should be signed by an officer not below the rank of Executive Engineer or equivalent.
- 1.19 The Bidder is advised to attach any additional information which he thinks is necessary in regard to his capabilities to establish that the Bidder is capable to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information. No information shall be entertained after submission of Tender Application, unless it is called for by the Institute.
- 1.20 The credentials submitted in respect of Tender Application shall be verified before award of work. Any information furnished by the Bidder found to be incorrect either immediately or at a later date, would render him liable to be debarred from any work awarded and from tendering/taking up of any other work in the Institute. If such Bidder happens to be an enlisted contractor of any Govt. organization, his name shall also be recommended for removal from the approved list of contractors.

1.21 Tender fee and EMD fee has to be submitted. No exemption allowed.

2.0 Definitions

In this document the following words and expressions have the meaning hereby assigned to them.

2.1 Institute: means AIIMS PATNA, acting through Director, AIIMS PATNA

2.2 Bidder: means a legal entity in the form of a proprietary firm, firm in partnership, limited company (private or public) or corporation acting through its authorized signatory. Wherever the generic expression ‘he’ is used to refer to a Bidder, it will refer to any bidder irrespective of gender.

2.3 “Year” means “Financial Year” unless stated otherwise.

3.0 Method of Application:

3.1 If the Bidder is a Proprietary Firm, the application shall be signed by the proprietor, with his full typewritten name, and full name of his Firm with its current address.

3.2 If the Bidder is a Firm in partnership, the application shall be signed by all the partners of the firm with their full type written names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the latter case a certified copy of the power of attorney shall accompany the Application. A certified copy of the partnership deed and current address of all partners of the firm shall also accompany the Application.

3.3 If the Bidder is a Limited Company or a Corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application. In such a case, a certified copy of the power of attorney shall accompany the application. The Bidder should also furnish a copy of the Certificate of Incorporation,

3.4 In case of foreign entities, only entities having registered establishment in India for carrying out its operations for at least last 7 years and meeting all other eligibility criteria, as mentioned in this document, may also apply.

4.0 Final decision making authority:

The Institute 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 or incurring any liability to the Bidders unless such action is warranted by actions of any bidder(s).

5.0 Particulars provisional:

The particulars of the work given in Tender Documents are provisional. They are liable to change and must be considered only as information to assist the Bidder to tender for proposed work.

6.0 Site visit:

The site for the work is available. The Bidders are advised to visit the site of work and its surrounding and obtain for himself on his own responsibility, all information that may be necessary for preparing the Tender. The cost of visiting the site shall be at the Bidder's own expense.

7.0 Minimum Eligibility Criteria

7.1 The interested bidder should meet the following minimum qualifying criteria.

- a) **Contractor should have registration with central govt. / Semi govt. organization like railways, state PWD of Bihar, CPWD, BRO, MES etc. in appropriate class with experienced specialized firms and agency have experience in carrying out similar works.**
- b) **The bidder should have satisfactorily completed the works as mentioned below during the last five (5) years prior to the last stipulated date for submission of the bid.**
 - i. **At least three similar or completed works each of value not less than 40% of the estimated cost put to tender.**

OR

- ii. **At least two similar completed works each of values not less than 60% of the estimated cost put to tender.**

OR

- iii. **At least one similar completed works of values not less than 80% of the estimated cost put to tender.**
- c) **At least one similar work should have been completed in Ministers/ Department/ Autonomous/ Bodies/ public Sector Undertaking under Government of India or state Govt.**

A Similar work shall mean, works, completed in India, of:

Supply installation testing and commissioning of 3500 KVA Transformer for substation.

7.2 Components of works executed other than those include in definition of similar work shall be deducted while calculating cost of similar work. Bidder shall submit abstract of cost of work in support of this. 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 last date of receipt of Applications.

7.3 The Bidder must submit an undertaking that the bidder is not in default of payment of Statutory dues (other than disputed dues being contested by the Bidder) and that up to date tax returns have been filed along with the payment of due taxes, and submit copies of such returns submitted to the IT Department/Department of Trade and Taxes.

7.4 The Bidder should have incurred no loss till **31st March 2023**

.

- 7.5 The Bidder should have a minimum solvency of **Rs.1.99 Crore** certified by his Bankers after date of issue of these Tender documents.
- 7.6 Bidder should not have been blacklisted by any State/Central Government Department/Autonomous Bodies or PSU. The bidder must submit a duly notarized affidavit to this effect.
- 7.7 The Bidder should own machinery & equipment required for the proper and timely execution of the work.
- 7.8 The Bidder should have on his pay roll sufficient number of Technical and Administrative employees for the proper execution of the contract. The Bidder should Submit a list of these employees clearly stating how they would be involved in this work.
- 7.9 The bidder shall submit the supporting documents such as:
List of full-time technical staff (clearly mentioning regular/contract staff) proposed to be deployed for the work with name, qualification and experience, each along with complete CV, not exceeding 2 pages.
Attested copies of Degree/Diploma and experience certificate.
- 7.10 The Bidder's performance for each work completed in the **last Five years** and in hand should be certified by an officer not below the rank of Executive Engineer or equivalent.
- 7.11 The Bidder needs to make disclosure of any liquidated damages or penalties imposed on it by the clients towards delay in completion of project or for not meeting the contractual specifications, including issues relating to defects, workmanship and warranty obligations.
- 7.12 The Bidder will be required to give an undertaking that it would comply with all statutory laws and compliances, including those applicable to the sub-contractors appointed by him and indemnify the Institute of all implications and consequences resulting from any non-compliances due to any reasons whatsoever,

8.0 Evaluation Criteria for Qualification:

- 8.1 For the purpose of qualification, the details submitted by the Bidders will be evaluated in the following manner:
- 8.1.1 The criteria prescribed in para 7.1 to 7.12 above in respect of experience of similar class of works completed, solvency and financial turn over etc. will first be scrutinized and the Bidder's eligibility for the work to be determined.
- 8.1.2 The Bidders qualifying the criteria as set out in para 7.1 to 7.12 above will be shortlisted for opening of Financial Bids.

The Institute, however, reserves the right to modify the criteria or to restrict the list of such qualified Bidders to any number deemed suitable by it.

The Institute also reserves the right to appoint a committee or any consultants to complete any part of the selection process.

- 8.2 Even if a Bidder satisfies the above requirements, he may be liable to disqualification if he has:

- (a) Made misleading or false representation or deliberately suppressed the information in the forms, statements and enclosures required in the eligibility criteria document.

- (b) Record of poor performance such as abandoning work, not properly completing the contract, or financial failures/weaknesses etc.
- (c) If confidential inquiry reveals facts contrary to the information provided by the Bidder.

- (d) If confidential inquiry reveals unsatisfactory performance in any of the selection criteria
- (e) If inspection of works in progress or completed by the Bidder are not found satisfactory by the Institute.

9.0 Financial Information:

Bidder should furnish the following financial information:

Annual financial statement for the last five (5) years in (Form ‘B’). This should be supported by audited balance sheets and profit and loss accounts duly certified by the statutory auditor and copies of Income Tax Return filed with Income Tax Department.

Solvency certificate issued by a Scheduled Bank after date of issue of these Tender documents, in (Form ‘C’) Name and address of the bankers, identification of individuals familiar with the Bidder’s financial standing and a banker’s statement on availability of credit.

10.0 Experience in works highlighting experience in similar works:

10.1 Bidder should furnish the following:

List of all works of similar nature successfully completed during the last seven years in (Form ‘D’).

List of the projects under execution or awarded in (Form ‘E’).

10.2 Particulars of completed works and performance of the Bidder duly authenticated/certified by an officer not below the rank of Executive Engineer or equivalent should be furnished separately for each work completed or in progress. (Form ‘F’).

11.0 Organization Information:

Bidder is required to submit the information in respect of his organization in Form ‘A’ ‘G’.

12.0 Letter of Transmittal:

The Bidder should submit the letter of transmittal attached with the document.

13.0 Financial Bids:

After evaluation of Eligibility Documents, a list of the qualified Bidders will be prepared. Financial Bids of the qualified Bidders will be opened on a later date. Date for Financial Bid’s opening will be informed separately to the qualified Bidders.

14.0 Miscellaneous:

14.1 The Institute reserves the right, without being liable for any damages or obligation to inform the Bidders, to:

(a) Reject any or all the Tenders without assigning any reason.

14.2 Any effort on the part of the Bidder or his agent to influence or pressurize the Institute would result in rejection of his Tender. Canvassing of any kind is prohibited.

14.3 Work shall be executed according to General Conditions of Contract forming part of the Tender Documents. The Institute reserves the right to modify any of the conditions, to its specific requirements.

14.4 The Bidding process shall be governed by, and construed in accordance with, the laws of India and the Courts at PATNA shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Bidding process.

14.5 The Institute, in its sole discretion and without incurring any obligations or liability, reserves the right, at any time, to; Suspend and/or cancel the Tender process and/or amend and/or supplement the Tender process or modify the dates or other terms and conditions relating thereto;

Consult any Bidder in order to receive clarification or further information;

Qualify or not to qualify any Bidder and/or to consult any Bidder in order to receive clarification or further information;

Retain any information and/or evidence submitted to the Institute by, on behalf of, and/or in relation to any Bidder; and/or

Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Bidder;

Call for information from previous clients and evaluate the previous completed Projects regarding all submissions including litigations;

Undertake physical verification of completed projects and interact with clients;

Call for information from taxation authority or by financial auditor, banker, and chartered accountant Engaged by the Bidder.

14.6 It shall be deemed that by submitting the Tender, the Bidder agrees and releases the authority, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder and the Tender Documents, pursuant here to, and/or in connection with the Tender process, to the fullest extent permitted by applicable law, and raise any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or in future.

Section-IV
FORMS FOR QUALIFICATION

LETTER OF TRANSMITTAL

From:

(Full Address of Bidder)

To,

Director

All India Institute of medical sciences Phulwarisharif, Patna

Subject: Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS Patna.

Sir,

Having examined the details given in Notice Inviting Tender for the above work, I/We hereby submit the requisite documents and other relevant information.

I/We hereby certify that all the statements made and information supplied in the enclosed Forms 'A' to 'G' and accompanying statements are true and correct.

I/We have furnished all information and details necessary for selection of Contractor and have no further pertinent information to supply.

I/We submit the requisite certified solvency certificate and authorize the Director, AIIMSPATNA to approach the Bank issuing the solvency certificate to confirm the correctness thereof. I/We also authorize the Institute to approach individuals, employers, firms and corporations to verify our competence and general reputation.

I/We have not been blacklisted by any State/Central Government Department or PSU or Autonomous Bodies. I/We have submitted a duly notarized affidavit to this effect.

I/We undertake that I/we would comply with all statutory laws and compliances, including those applicable to the sub-contractors appointed by us and indemnify the Institute of all implications and consequences resulting from any non-compliances due to any reasons whatsoever.

I/We submit the certificates as per the Form 'D' in support of our suitability, technical knowledge and capability for having successfully completed the following works:

S. No.	Name of work	Amount	Contact particulars of certificate issuing authority
1.			
2.			
3.			

The Bidder shall furnish all contract information such as postal address, telephone and fax numbers, e-mail ids etc. Incomplete information will make the Application liable for rejection.

Following documents are submitted herewith

Document Checklist

Form 'A' - Structure & Organization of Bidder (with supporting documents)

Form 'B' - Financial Information (with supporting documents)

Form 'C' - Banker's Certificate

Form 'D' - Details of similar works completed (with supporting documents)

Form 'E' - Details of similar works in hand (with supporting documents)

Form 'F' - Performance reports of works

Form 'G' - Details of Technical & Administrative Personnel

Affidavit

Pledge of Compliance

Integrity Pact and Integrity Agreement

Demand Draft, Bank Guarantee from a Scheduled Bank towards Earnest Money Deposit.

Tender Acceptance letter

Demand Draft from a Scheduled Bank, ~~towards Tender Document Fee~~

Upload soft copy of the Tender document, duly signed on each page by authorized signatory.

Seal of Bidder:

Date of Submission:

Signature of Bidder

CHECK LIST FOR TERMS AND CONDITIONS

A. Checklist of documents to be submitted online:

S. No.	Terms & Conditions as per bidding document	Yes/ No	Page no
1	Signed and scanned copy of proof for payment of Tender fee & Earnest Money Deposit (EMD). No exemption allowed.		
2	Signed and scanned copy of PAN, valid electrical License.		
3	Signed and scanned copy of GST registration certificate, with up to date clearance certificate.		
4	Signed and scanned copy of Letter of Transmittal as per format attached in tender document		
5	Signed and scanned copy of structure organization of bidder as per "form A"		
6	Signed and scanned copy of Certificate for sole ownership / partnership/ Certificate of Incorporation.		
7	Signed and scanned copy of Statements of turnover per year for last three successive years duly certified by the Chartered Accountants with UDIN no. (Minimum Average Annual Turnover must be at least 50% of estimated cost As per "form B" (with supporting documents)."		
8	Signed and Scanned copy of Tender Acceptance letter "Annexure-I"		
9	Signed and Scanned copy of Banker's Certificate, issued by a Scheduled Bank . The certificate should have been issued within 6 month form original last date of submission of tender as per " Form C"of Rs 1.99 crore		
10	Signed and scanned copy of proof of Status of Bidder: Bidder should have registration with Govt. / Semi Govt. organization like railways, CPWD, BRO, MES, State PWD whose jurisdiction defined to work in Bihar state in appropriate class are eligible to participate in tender and having experience in similar work.		
11	Signed and scanned copy of satisfactorily completed the similar works during the last five (5) years prior to the last stipulated date for submission of the bid as per "Form D" (with supporting documents)		
12	Signed and scanned copy of Power of Attorney as per "Annexure – II" in favour of person.		
14	Signed and Scanned Copy of affidavit duly certified by the notary at the location of the Agencies/Headquarters that the bidder has never been black listed or punished by any court for any criminal offence/breach of contract and that no police/vigilance enquiry/criminal case is pending against either bidder legal entity or against individual Directors of the company or partners etc. of the firm etc.		
15	Signed and scanned copy of ITR for last three years and Audit report of the last five years ending 31st March 2023 duly certified by the Chartered Accountant appending UDIN no., company should be financially sound and have suffered no loss till 31/03/2023.		Page no-19
17	Signed and Scanned Copy of Integrity Pact as per Format attached in tender documents.		

B.Checklist of documents to be submitted online:

Price Bid /Financial Bid:

	BOQ.xls	
--	----------------	--

FORM – A
STRUCTURE & ORGANISATION

1	Name & complete address of the bidder	
2	Telephone no. /Telex no/Fax no.	
3	Legal status of the bidder (attach certified copies of original document defining the legal status)	(a) A proprietary firm (b) A firm in partnership (c) A limited company or Corporation
4	Details of incorporation/ commencement of business	
5	Date of commencement of business	
6	Income Tax Permanent Account No (PAN)	
7	Particulars of registration with various Government Bodies for Interior works (submit proof, duly attested by bidder)	
8	Name & designation of Directors & partners	
9	Name and designation of Authorized signatory authorized act for the Organization.	
10	Was the Bidder ever required to suspend work for a period of more than six months continuously, After he commenced the work? If so, give the name of the project and reasons of Suspension of work	
11	Has the Bidder, or any constituent partner in case of partnership firm, ever abandoned the Awarded work before its completion? If so, give name of the project and reasons for	

	Abandonment.	
	Has the Bidder, or any constituent partner in case of partnership firm, ever been debarred/black listed for tendering in any organization at any time? If so, give details.	
	Has the Bidder or any constituent partner in case of partnership firm, ever been convicted by a court of law? if so, give details.	
	Any other information considered necessary related to the Tender that has not been included above.	
	Name and address particulars of Chartered Accountant/Statutory Auditor verifying the financial information	
	Name and Complete Address particulars of the Bidder's Bankers	

Date:

Signature of the Bidder/
Authorized Signatory

Seal of Bidder

FORM 'B' FINANCIAL**INFORMATION**

Name of the Bidder :

Bankers Details	
Name of Bank	
Address	
City	
Pin Code	
Name & Designation	
Phone Nos. with STD Code	
E-mail Ids	
Fax No.	
Details of Chartered Accountant/Financial Auditors	
Name of Firm/CA	
Address	
City	
Pin Code	
Name & Designation	
Phone Nos. with STD Code	
E-mail Ids	
Fax No.	

I. Financial Analysis – Details to be furnished duly supported by figures in balance sheet/profit & loss account for the last three years duly certified by the Statutory Auditor.

SI No	Particulars	Financial Year (Fig. in Rs. Lakhs)			
		2020-21	2021-22	2022-23	Average annual turnover
	Mention whether records are audited	Yes/ No	Yes/ No	Yes/ No	
1	Gross Annual turnover				
2.	Profit (+)/ Loss (-)				
	Financial Position				
	Cash				
	Current Assets				
	Current Liabilities				
	Working capital (b-c)				
	Newt worth				
4.	Whether Audited	Yes/ No.			

II. Income Tax return for the last five years (to be attached)

Solvency certificate from bankers of bidder in the prescribed form 'C' issued after date of issue of these tender documents. (To be enclosed in a separate sealed envelope)

Date
Authorised Signatory

Signature of bidder/

Seal of bidder

Signature of Statutory Auditor/
Chartered Accountant with Seal

FORM ‘C’

FORM OF BANKER’s SOLVENCY CERTIFICATE FROM A SCHEDULED BANK

This is to certify that to the best of our knowledge & information, M/s having registered office at, a customer of our bank, is respectable & can be treated as good for any engagement up to a limit of Rs. Lakh (RupeesLakh).

This certificate is issued without any guarantee or responsibility on the bank or any of its officers.

SIGNATURE
(FOR BANK)

Note:

This certificate should have been issued within 6 month from original last date of submission of tender.

Banker's certificate should be on letter head of the Bank. Addressed to The Executive Director AIIMS, PATNA.

In case of partnership firm, certificate should include names of all partners as recorded with the bank.

FORM 'D'

**DETAILS OF ALL ELIGIBLE SIMILAR NATURE OF WORKS COMPLETED
DURING THE LAST FIVE YEARS ENDING ON 31.03.2023**

Note: Please attach attested copies of relevant Document/PO/Complete certificate etc.

* including gross amount claimed and amount awarded by the Arbitrator.

Date:

**Signature of the Bidder/
Authorised Signatory**

Seal of Bidder:

Signature of Statutory Auditor/
Chartered Accountant with Seal

FORM 'E'

PROJECTS UNDER EXECUTION OR AWARDED (As on 31.03.2023)

1	SI no.	2 Name of work/Project & location	3 Owner of sponsoring organization	4 Cost of Work in crores of rupees as per awarded letter	5 Date of commencement as per	6 Actual date of commencement	7 Stipulated date of completion	8 Up to date percentage progress of work.	9 Slow progress if any and reasons thereof	10 Name and address/telephone number of officer to whom reference may be	11 Remark

Note: Please attach attested copies of relevant Document/PO/Complete certificate etc.

Certified that the above list of works is complete and no work has been left out and that the information given is correct to the best of my knowledge and belief.

Date:

Signature of the Bidder/
Authorised Signatory

Seal of Bidder:

Signature of Statutory Auditor/
Chartered Accountant with Seal

FORM ‘F’

PERFORMANCE REPORT OF WORKS REFERRED TO IN FORMS “D” & “E”

Name of work/project & location

Name and address of the authority under whom the works executed:

Agreement No.

Estimated cost

Tendered cost

Gross amount of the work completed

Date of start

Date of completion

Stipulated date of completion

Actual date of completion

Amount of compensation levied for delayed completion, if any.

Amount of reduced rate items, if any

i) Did the contractor go for arbitration

If yes, total amount of claim

iii) Total amount awarded

Performance report

(1) Quality of work	Very Good/Good/Fair/Poor
(2) Financial soundness	Very Good/Good/Fair/Poor
(3) Technical Proficiency	Very Good/Good/Fair/Poor
(4) Resourcefulness	Very Good/Good/Fair/Poor
(5) General Behaviour	Very Good/Good/Fair/Poor

Dated:

Executive Engineer or Equivalent

FORM ‘G’

DETAILS OF TECHNICAL &ADMINISTRATIVE PERSONNEL TO BE EMPLOYED FOR THE WORK

S.I No	Name	Designation	Regular /Part time	Qualification	Experience in years		Role & Responsibilities	Projects involving	Deployment (Part-time/Full- time)
					Total	In present company			

Date:

Signature of the Bidder/
Authorised Signatory

Seal of Bidder:

Signature of Statutory Auditor /
Chartered Accountant with Seal

(TO BE SWORN ON A NON-JUDICIAL STAMP PAPER OF Rs.100/-)

AFFIDAVIT

*I/we authorized signatory
of..... (Mention name of firm/company and its complete
address).....do hereby
solemnly affirm and declare as under:-

That *I/we.....*am/are registered as (mention name of
*firm/company) vide registration No..... under the provisions
of.....(mention the name of the Act).

That*I/we.....have applied in response to the Tender Documents for Construction of various Buildings and other related structures and facility for **Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS patna..**

That the above named Bidder is eligible to submit the aforesaid Application , as neither the bidder nor any of its constituents have been barred by the Central Government and/or any State Government in India at any time prior to the date of submitting this affidavit.

That the above named Bidder during the last three years has neither failed to perform on any Agreement nor was expelled from any project or Agreement nor any Agreement was terminated for any breach by the bidder.

5. That the above named Bidder has not been blacklisted by any State/Central Government Department/Autonomous Bodies or PSU.

That the above named Bidder is not in default of payment of statutory dues (other than disputes being contested by the Bidder).

That the above named Bidder confirms that eligible similar work(s) have not been got executed through another contractor on back to back basis.

That the above named Bidder confirms and agrees that, if any such violation comes to the notice of AIIMS PATNA ("Owner") in the future, then the Owner shall be at liberty to initiate appropriate penal and legal action against the Tenderer and to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

DEPONENT

VERIFICATION

*I/we..... the above named deponent do hereby verify that the contents of the aforesaid paragraphs 1 to 8 are true and correct to the best of*my/our knowledge and belief and nothing is concealed there from.

Verified atthisday of

DEPONENT

* Strike out whichever is not applicable.

Pledge of Compliance

(To be given by the authorized signatory of the Bidder)

Name:

Designation:

Date:

DECLARATION

I,(name designation with company name), acting on behalf of(company name&address), which is an bidder for the Application **Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS patna..** hereby undertake that my Firm/company is fully conscious that if my Firm/company is selected for providing the services to AIIMS PATNA, at no point of time my Firm/company or its officials performing any responsibility on its behalf, or any associates sub-hired by us for executing any activity in the part of the project assigned to us, shall consciously or callously do anything to delay, obstruct or stall the progress of the project or any activities, decisions or actions related to the project, nor shall it refuse to cooperate or comply with any provisions of the Agreement or with any instructions issued by AIIMSPATNA, including its authorized representatives, officials, PM/PMC and/or MPD (Project Architect) for the stated or unstated reason that AIIMS PATNA's position, approach or assessment related to any elements or aspects of the Project is at variance with the position, approach or assessment of my company or its officials.

It is further undertaken that in the event of any breach of the above undertaking during the entire period of project implementation assigned to my Firm/company, the full responsibility of any losses incurred by AIIMS PATNA, including financial, time or reputation losses, as assessed by AIIMS PATNA, shall lie with my company and its officials and my company shall fully compensate AIIMS PATNAfor all such losses without resort to conciliation or arbitration processes.

Date:

Signature of the Bidder/
Authorised Signatory

Seal of Bidder:

Signature of Statutory Auditor /
Chartered Accountant with Seal

INTEGRITY PACT

To,
Director,
AIIMS PATNA
PATNA

Subject: Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS Patna.

Dear Sir,

I/We acknowledge that AIIMSPATNAis committed to following the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid 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 APPLICATION SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

/bid.

I/ we confirm acceptance and compliance with the integrity agreement, in letter and spirit and further agree integrity agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by AIIMS Patna. I/ We acknowledge and accept the duration of the integrity agreement, which shall be in 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/bid, AIIMS PATNA shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid in accordance with terms and conditions of the tender

Yours faithfully

Seal of bidder
Date:

Signature(s) of Bidder (s)
Name and Address

INTEGRITY AGREEMENT

This integrity Agreement is made at on this Day of2024

BETWEEN

AIIMS Patna represented through its Director.....
Hereinafter referred as the ‘Principal/Owner’ which expression shall unless repugnant to the meaning or context
hereof includes its successors and permitted assigns)
AND

.....
Through..... (Hereinafter referred to as the “Bidder / Contractor” and which
expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

WHEREAS the Principal/ Owner has floated the Tender (NIT No.....) (Hereinafter referred
to as “Tender /Bid”) and intends to award, under laid down organizational procedure,
Contract
for

..... (Name of the work) Hereinafter
referred to as the“contract”.

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

AND WHEREAS to meet the purpose aforesaid both 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/Bid documents and Contract between the parties.

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 Principal/Owner

The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the
following principles:

No employee of the Principal/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.

The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

The Principal/Owner shall endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Contractor(s)

It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the AIIMS PATNA all 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 or award of a contract.

2. The Bidder(s) /Contractors(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the contract execution.

a) The Bidder(s) /Contractors(s) will not, directly or through any other person or firm, offer, promise or give to any of the principal/Owner's employees involved in the Tender process or execution of the contract or to any third person any material or other benefit which he/she 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.

The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary

contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contract(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 Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and Addresses of agents/representatives in India, if any. Similarly, Bidder(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 could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

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

The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

The Bidder(s)/Contractor(s) will not, directly or through any other person or Firm indulge in fraudulent practice means a wilful misrepresentation or commission 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 Government interests.

The Bidder(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 Principal/Owner under law or the Contract or its established policies and laid down procedures, the

Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

If the Bidders /Contractors 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 Principal/Owner after giving 14 days' notice to the contractor shall have powers to disqualify the Bidders (s) /Contractors from the tender process or terminate / determine the contract, if already executed or exclude the bidder/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 Principal /Owner. Such exclusion may be forever or for a limited period as decided by the Principal / Owner.

2) Forfeiture of EMD/ Performance Guarantee/Security Deposit: If the Principal /Owner has disqualified the Bidder(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 Principal /Owner, apart from exercising any legal rights that may have accrued to the Principal /Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.

Criminal Liability: If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/Owner.

If the Bidder/Contractor can prove that he has resorted/recouped the damage caused

by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors

The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/sub-vendors.

The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.

The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, 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 the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

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

Article 7- Other Provisions

This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters of the Institute i.e. Principal/Owner, who has floated the Tender.

Changes and supplements need to be made in writing. Side agreements have not been made.

If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.

Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

It is agreed term and condition 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/Principal in accordance with this Integrity Agreement/Pact or interpretation thereof shall not be subject to arbitration.

Article 8- 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 will have precedence over the Tender/Contact documents with regard 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 Principal/Owner)

.....
(For and on behalf of Bidder/Contractor)

WITNESSES:

1.
(signature, name and address)

2.
(signature, name and address)

Place:

Dated :

Form of Earnest Money Deposit (Bank Guarantee Bond)

WHEREAS, Bidder..... (Name of Bidder) (Hereinafter called "the bidder") has submitted his tender dated (Date) for the construction of (Name of work) Hereinafter called "the tender")

KNOW all people by these presents that we..... registered office at(Hereinafter called "the Bank") are bound unto Director, AIIMS Patna of in the sum of Rs..... (Rs in words..... for which payment well and truly to be made to the said Director, AIIMS Patna, the Bank binds itself, his successors and assigns by these presents.

Sealed with the common seal of the said bank this Day of20..... THE CONDITIONS of this obligation are:

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

If the Bidder having been notified of the acceptance of his tender by the Director, AIIMS Patna

Fails or refuses to execute the form of Agreement in accordance with the instructions to the bidder, if required;

OR

Fails or refuses to furnish the performance Guarantee, in accordance with the provisions of tender document and instructions to the bidder,

We undertake to pay to the **Director, AIIMSPATNA**, either up to the above amount or part thereof upon receipt of his first written demand, without the **Director, AIIMS PATNA**, having to substantiates his demand, provided that in his demand the **Director, AIIMSPATNA**, will note that the amount claimed by him is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the **date** after the deadline for submission of tender as such deadline is stated in the Instructions to the Bidder or as it may be extended by the **Director, AIIMS PATNA**, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE

SIGNATURE OF THE BANK

WITNESS

SEAL

(SIGNATURE, NAME AND ADDRESS)

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

(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 _____, 2024 BETWEEN _____, which expression _____ shall mean AIIMS PATNA (“Owner”) and include its successors and assigns _____ 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 AIIMS PATNA(the Owner) is desirous of developing a permanent campus and 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 (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 has 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:

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.

In consideration of the payments to be made by AIIMS PATNA(the Owner) to the Contractor as the consideration for execution of the Works (“Consideration”), the Contractor hereby covenants with AIIMS PATNA(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.

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.

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

Contractor's Application and documents submitted for Selection
Letter of Acceptance;
Notice to proceed with the Works;
Contractor's Tender;
Contract Data;
Conditions of Contract (including Special Conditions of Contract);
Specifications;
Drawings;
Bill of Quantities; and
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 hereunder to affixed in the presence of:

Signed Sealed and Delivered by the said

Binding Signature of Owner

Binding Signature of Contractor

in the presence of

TENDER

I/We have read and examined the notice inviting tender, schedule, A, B, C, D, E & F Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work **Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS patna.** I/we hereby tender for the execution of the Work specified for Director AIIMS Patna, within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and directions and in Clause 11 of the Conditions of contract ad with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.

We agree to keep the tender open for 120 days from the date of opening of Eligibility Documents and not to make any modification in its terms and conditions.

A sum of Rs. _____ /- is hereby forwarded in demand draft/bank guarantee issued by a scheduled bank as earnest money. If I/We fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said Director, AIIMS Patna or his successors representatives, in office in office shall With

out 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 Director AIIMS PATNA or the successors representatives in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said the performance guarantee absolutely. The said performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the General Conditions of Contract. Further, I/We agree that in case of forfeiture of Earnest Money & Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

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

Dated:**.....

Signature of Contractor **

Witness: **

Address: **

Postal Address **

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for an on behalf of the AIIMS PATNA for a sum of Rs.....(Rupees.....).

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

*
*
*

For & on behalf of AIIMS Patna

Signature

Designation

Dated:

PROFORMA OF SCHEDULES

SCHEDULE 'A' As per BOQ

SCHEDULE 'B'

Schedule of materials to be issued to the contractor.

SL. No.	Description of item	Quantity	Rates in figures & words at Which the material will be charged to the contractor	Place of issue
NIL				

SCHEDULE 'C'

Tools and plants to be hired to the contractor

S. No.	Description	Hire charges per day	Place of Issue
NIL			

SCHEDULE 'D'

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

- Special Conditions of Contract
- Particular Specifications/CPWD specification
- Tender Drawings
- Guarantee Certificate
- General Sound Engineering Practice

SCHEDULE 'E'

Reference to General Conditions of Contract: General Conditions of Contract
With up to date correction slip

Name of work	Supply installation testing and commissioning of 2 x 3500 KVA transformer in substation no- 2 for AIIMS Patna.
---------------------	--

**ESTIMATED COST
OF WORK**

I.	Estimated Cost	Rs. 4,97,50,038/-
II.	Earnest Money	Rs. 9,95,000/-

I.	Performance Guarantee	5.00 % of tendered amount
II.	Security Deposit	5.00 % of tendered value(Will Be Deducted From RA Bills)

SCHEDULE 'F' (GENERAL RULES & DIRECTIONS)

OFFICER INVITING TENDER: Director, AIIMS PATNA
Definitions:

1.	Engineer-in-Charge	Superintending Engineer, or any other official designated to represent AIIMS Patna
2.	Accepting Authority	Director, AIIMS, PATNA or successor thereof.
3.	Percentage on cost of materials And Labour cover altogether overheads and profits	15.00 %
4.	Standard Schedule of Rates	DSR -2021 &Non-Schedule items based on MR, (Market Rate)
5.	Department	AIIMS PATNA
6.	Contract Form	Form 8, General Conditions of Contract

Clause 1

	Time allowed for submission of Performance Guarantee, Programme Chart (Time and Progress) and applicable labour licenses, registration with EPFO, ESIC, BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance	15(Fifteen) days
--	--	-------------------------

2. Maximum allowable extension **7 (Seven) days with late fee @ 0.1% per day of the PG** beyond the period provided in (i) **Amount.**

Above

Clause 2

Authority for fixing compensation under clause 2	Director, AIIMS Patna Or successor thereof.
--	--

Clause 2A

Whether Clause 2A shall be applicable	No
---------------------------------------	-----------

Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of Start	7 (Seventh) day or date of handing over of site whichever is later.
---	--

Mile stones for works

SI no.	Description of Milestone (Physical)	Time allowed in days (From date of Start)	Amount to be withheld in case of non-achievement of milestones
1	Supply & Approval	90	1.0% of contract amount
2	installation, testing & commissioning all complete in work.	90	1.25% of contract amount

Withheld amount shall be released if and when subsequent Milestone is achieved within respective time specified.

Time allowed for execution of work

06 Month (One hundred Eighty Days)

Authority to decide:

(i)	Extension of Time	Director, AIIMS Patna Or successor thereof.
(ii)	Rescheduling of milestone	Director, AIIMS Patna Or successor thereof.
(iii)	Shifting of date of start in case of delay in handing over of site.	Director, AIIMS Patna Or successor thereof.

Clause 6,6A

Clause applicable – (6 or 6A)	6A
-------------------------------	-----------

Clause 7

Gross work to be done together with net payment / adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	Rs. 20.00 Lakhs
--	------------------------

Clause 7A

Whether Clause 7A shall be applicable	YES
---------------------------------------	------------

Clause 10A**Nil****Clause 10B(ii)**

Whether Clauses 10 B (ii) shall be applicable	No
---	----

Clause 10 C

Component of labour expressed as percent Not applicable of value of work	NA
---	-----------

Clause 10CA: - Not Applicable**Clause 10CC: - Not Applicable****Clause 11**

Specifications to be followed for execution of work	CPWD Specification for works -20019 Vol I& II with up to date correction slips till last date of submission of tender and as detailed in nomenclature of items particular specification attached with the tender
---	--

Clause 12

Type of work	Project and original work.	
Maximum percentage for quantity of item work to be executed beyond which rates are to be determined in accordance with clauses 12.2, 12.3	Please refer below	

12.2, 12.3	Deviation limit beyond which clauses 12.2 & 12.3 shall apply for work	30% (Thirty percent) of quoted amount
---------------	---	---------------------------------------

Clause 16

Competent authority for deciding reduced rates	Director, AIIMS Patna or successor thereof
--	--

Clause 17

Defect Liability Period will be 36 months after recording completion certificates

Clause 25

Constitution of Dispute Redressal Committee:-

The Dispute Redressal Committee shall be constituted by Director, AIIMS PATNA, if required and deemed necessary. DRC shall constitute one chairman and two members.

Clause 36 (i): Requirement of Technical Representative(s) and recovery Rate

S/No	Minimum qualification of technical representative	Discipline	Designation (principal technical/technical representative)	Minimum Exp in Yrs	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i) per month	Figures	Words
1	Graduate Engineer	Civil	Principal Technical Representative	5 year	01	Rs 25,000/-	
2	Graduate Engineer Or Diploma Engineer	I.T./Electronics/Electrical	Project Planning / Site/Billing Engineer	5 year ...	01	Rs 25,000/-	...	

Note: Assistant Engineers, retired from Govt. services that are holding Diploma, will be treated at par with Graduate Engineers.

Diploma holders with minimum 10 years relevant experience with reputed construction co. can be treated at par with graduate engineers for the purpose of such deployment subject to the condition that such diploma holders not exceed 50 % of requirement of degree engineers.

Clause 42

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sl. No.	Description of item	Rates in figures and words at which recovery shall be made from the Contractor.	
		Excess beyond permissible variation	Less use beyond the permissible variation.
1.	Cement		
2.	Steel reinforcement	-----NIL-----	-----NIL-----
3.	Structural Sections		
4.	Bitumen issued free		
5.	Bitumen issued at stipulated fixed price		

SCHEDULE- A **GENERAL RULES & DIRECTIONS**

All work proposed for execution for contract will be notified in a form of invitation to tender pasted in public places and signed by the officer inviting tender or by publication in Newspapers as the case may be.

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

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 his behalf by a person holding a power of attorney authorizing him to do so, such power of attorney to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act, 1932.

Receipts for payment made on account of 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.

Application for Item Rate Tender only

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

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

In case the lowest tendered amount (worked out on the basis of quoted rate of individual items) of two or more contractors is same, then such lowest contractors

may be asked to submit sealed revised offer quoting rate of each item of the schedule of quantity for all sub sections/sub heads as the case may be, but the revised quoted rate of each item of schedule of quantity for all sub sections / sub heads should not be higher than their respective original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis of revised offer.

If the revised tendered amount (worked out on the basis of quoted rate of individual items) of two or more contractors received in revised offer is again found to be equal, then the lowest tender, among such contractors, shall be decided by draw of lots in the presence of Director AIIMS PATNA or his representative & the lowest contractors those have quoted equal amount of their tenders.

In case of any such lowest contractor in his revised offer quotes rate of any item more than their respective original rate quoted already at the time of submission of tender, then such revised offer shall be treated invalid. Such case of revised offer of the lowest contractor or case of refusal to submit revised offer by the lowest contractor shall be treated as withdrawal of his tender before acceptance and 50% of his earnest money shall be forfeited.

In case all the lowest contractors those have same tendered amount (as a result of their quoted rate of individual items), refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each lowest contractors.

Contractors, whose earnest money is forfeited because of non-submission of revised offer, or quoting higher revised rate(s) of any item(s) than their respective original rate quoted already at the time of submission of his bid shall not be allowed to participate in the re-tendering process of the work.

4A Applicable for Percentage Rate Tender only

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

The contractor does not quote percentage above/below on the total amount of tender or any section/sub head of the tender.

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

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

Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort including conditional rebates, will be summarily

rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.

- 4B. In case the lowest tendered amount (estimated cost + amount worked on the basis of percentage above/below) of two or more contractors is same, such lowest contractors will be asked to submit sealed revised offer in the form of letter mentioning percentage above/below on estimated cost of tender including all sub sections/sub heads as the case may be, but the revised percentage quoted above/below on tendered cost or on each sub section/sub head should not be higher than the percentage quoted at the time of submission of tender. The lowest tender shall be decided on the basis of revised offers.

In case any of such contractors refuses to submit revised offer, then it shall be treated as withdrawal of his tender before acceptance and 50% of earnest money shall be forfeited.

If the revised tendered amount of two or more contractors received in revised offer is again found to be equal, the lowest tender, among such contractors, shall be decided by draw of lots in the presence of Director AIIMS PATNA of his representative and the lowest contractors those have quoted equal amount of their tenders.

In case all the lowest contractors those have quoted same tendered amount, refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each contractor.

Contractor(s), whose earnest money is forfeited because of non-submission of revised offer, shall not be allowed to participate in the re-tendering process of the work.

The officer inviting tender or his duly authorized assistant 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 thereupon be given to the contractor who shall thereupon for the purpose of identification sign copies of the specifications and other documents mentioned in Rule-I. In the event of a tender being rejected, the earnest money shall thereupon be returned to the contractor remitting the same, without any interest.

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

The receipt of an accountant or clerk for any money paid by the contractor will not be

considered as any acknowledgment or payment to the officer inviting tender and the contractor shall be responsible for seeing that he procures a receipt signed by the officer inviting tender or a duly authorized Cashier.

The memorandum of work tendered for and the schedule of materials to be supplied by the department and their issue-rates, shall be filled and completed in the office of the officer inviting tender before the tender form is issued. If a form is issued to an intending tenderer without having been so filled in and incomplete, he shall request the officer to have this done before he completes and delivers his tender.

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 given to them. The unsuccessful tenderers shall return all the drawings given to them.

- 9A. Use of correcting fluid, anywhere in tender document is not permitted. Such tender is liable for rejection.

In the case of Item Rate Tenders, only rates quoted shall be considered. Any tender containing percentage below/above the rates quoted is liable to be rejected. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However, if a discrepancy is found, the rates which correspond with the amount worked out by the contractor shall unless otherwise proved be taken as correct. If the amount of an item is not worked out by the contractor or it does not correspond with the rates written either in figures or in words, then the rates quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally, but the amount is not worked out correctly, the rates quoted by the contractor will unless otherwise proved be taken as correct and not the amount. In event no rate has been quoted for any item(s), leaving space both in figure(s), word(s), and amount blank, it will be presumed that the contractor has included the cost of this/these item(s) in other items and rate for such item(s) will be considered as zero and work will be required to be executed accordingly. (Applicable for Item Rate Tender only). However, if a tenderer quotes nil rates against each item in item rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

- 10A. In case of Percentage Rate Tenders only percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the contractors in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy.

In the case of any tender where unit rate of any item/items appear unrealistic, such

tender will be considered as unbalanced and in case the tenderer is unable to provide satisfactory explanation, such a tender is liable to be disqualified and rejected.

All rates shall be quoted on the tender form. The amount for each item should be worked out and requisite totals given. Special care should be taken to write the rates in figures as well as in words and the amount in figures only, in such a way that interpolation is not possible. The total amount should be written both in 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 word 'Paise' should be written at the end. Unless the rate is in whole rupees and followed by the word 'only' it should invariably be upto two decimal places. While quoting the rate in schedule of quantities, the word 'only' should be written closely following the amount and it should not be written in the next line. (Applicable for Item Rate Tender only).

- 12A. In Percentage Rate Tender, the tenderer shall quote percentage below/above (in figures as well as in words) at which he will be willing to execute the work. He shall also work out the total amount of his offer and the same should be written in figures as well as in words in such a way that no interpolation is possible. In case of figures, the word 'Rs.' should be written before the figure of rupees and word 'P' after the decimal figures, e.g. 'Rs. 2.15P and in case of words, the word 'Rupees' should precede and the word 'Paisa' should be written at the end. (Applicable for Item Rate Tender only).
- (i) The Contractor whose tender is accepted, will be required to furnish performance guarantee of 5% (five percentage) of the tendered amount within the period specified in Schedule F. The guarantee This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10,000/-) or Deposit at call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form.
- (ii) The contractor whose tender is accepted will also be required to furnish by way of Security Deposit for the fulfillment of his contract, an amount equal to 5% of the tendered value of the work. The Security deposit will 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, will be treated as a part of the Security Deposit. The Security amount will also be accepted in cash or in the shape of Government Securities. Fixed Deposit Receipt of a Scheduled Bank or State Bank of India will also be accepted for this purpose provided confirmatory advice is enclosed.

On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from the Institute shall be communicated in writing to the Institute.

GST, purchase tax, turnover tax or any other tax applicable in respect of this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same. However, in respect of service tax, same shall be paid by the contractor to the concerned department on demand and it will be reimbursed to him by the AIIMS PATNA after satisfying that it has been actually and genuinely paid by the contractor. The applicable and eligible GST 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.

The contractor shall give a list of Institute's employees related to him.

The tender for the work shall not be witnessed by a contractor or contractors who himself/themselves has/have tendered or who may and has/have tendered for the same work. Failure to observe this condition would render, tenders of the contractors tendering, as well as witnessing the tender, liable to summary rejection.

The tender for composite work includes, in addition to building work, all other works such as sanitary and water supply installations drainage installation, electrical work, horticulture work, roads and paths etc. The tenderer apart from being a registered contractor (B&R) of appropriate class, must associate himself with agencies of appropriate class which are eligible to tender for sanitary and water supply drainage, electrical and horticulture works in the composite tender.

The contractor shall submit list of works which are in hand (progress) in the following form:

Name of work	Name and particulars of Divn. Where work is being executed	Value of work	Position of works in progress	Remarks

The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the contract and the Institute, may in his discretion, without

prejudice to any other right or remedy available in law, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

CONDITIONS OF CONTRACT

Definitions

1. **The Contract** means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority of AIIMS PATNA 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 Institute. 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:-

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

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

Contractor shall mean the individual, firm or company, whether 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.

Director means the Director, AIIMS PATNA and his successors.

AIIMS PATNA means AIIMS PATNA through Director or its assignees and successors or any other official/agency assigned by the Institute.

Government shall mean the Government of India may be.

Accepting Authority shall mean the Director, AIIMS PATNA.

- (viii) **Excepted Risk** are risks due to riots (other than those on account of contractor's employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the Accepting Authority.

Market Rate shall be the rate as decided by Director AIIMS PATNA on the basis of the cost of materials and labour at the site where the work is to be executed plus

the provisions to cover, all overheads and profits.

Schedule(s) referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard Schedule of Rates mentioned in Schedule 'F', hereunder, with the amendments thereto issued upto the date of receipt of the tender.

Institute means AIIMS PATNA which invites tenderson behalf of Director, AIIMS PATNA.

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

the date of start as specified in schedule 'F' or the first date of handing over of the site, whichever is later, in accordance with the phasing if any, as indicated in the tender document.

Scope and Performance

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

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

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

Works to be carried out

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

Sufficiency of Tender

The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices

quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.

Discrepancies and Adjustment of Errors

The several documents forming the Contact are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale

Drawing and figured dimensions in preference to scale and Special Conditions in preference to General Conditions.

- 8.1 In the case of discrepancy between the Schedule of Quantities, the Specifications and/ or the Drawings, the following order of preference shall be observed:-
 - Description of Schedule of Quantities.
 - Particular Specification and Special Conditions, if any.
 - Drawings
 - CPWD Specifications 2009
 - Indian Standard Specifications of B.I.S.
 - DSR 2016
- 8.2 If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.
- 8.3 Any error in description, quantity or rate in Schedule of Quantities or any omission therefrom shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the Contract.

Signing of Contract

The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of:-

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

Standard Form as mentioned in Schedule 'F' consisting of:

Various standard clauses with corrections up to the date stipulated in Schedule 'F' along with annexures thereto.

Safety Code.

Model Rules for the protection of health, sanitary arrangements for workers employed by Institute or its contractors.

Contractor's Labour Regulations.

List of Acts and omissions for which fines can be imposed.

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

CLAUSES OF CONTRACT

CLAUSE 1

Performance Guarantee

The contractor whose tender is accepted shall submit an irrevocable Performance Guarantee of 5% (Five percent) of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not notwithstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance. This period can be further extended by Institute up to a maximum period as specified in Schedule 'F' on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the Satisfaction of Institute. This guarantee shall be in the form of Demand Draft of any scheduled bank/Pay Order of any scheduled bank or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the form annexed hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to Institute as part of the performance guarantee 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 Institute to make good the deficit. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule F including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.

The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case the time for completion of work gets enlarged, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work. After recording of the completion certificate for the work by the Engineer-in-charge/ competent authority, the Performance Guarantee shall be returned to the contractor, without any interest. However, in case of contracts involving maintenance of building and services / any other work after construction of same building and services / other work, then 50% of Performance Guarantee shall be retained as Security Deposit. The same shall be returned yearwise proportionately.

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 Institute.

CLAUSE 1 A

Recovery of Security Deposit

The person/persons whose tender(s) may be accepted (hereinafter called the contractor) shall permit Institute at the time of making any payment to him for work done under the contract to deduct a sum at the rate of 5% (Five percent) of the gross amount of each running and final bill till the sum deducted will amount to security deposit of 5% (Five percent) of the tendered value of the work. Such deductions will be made and held by Institute by way of Security Deposit unless he/they has/have deposited the amount of Security at the rate mentioned above in cash or in the form of Government Securities or fixed deposit receipts. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Institute 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 Institute 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 therefrom, or from any sums which may be due to or may become due to the contractor by Institute on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within 10 days make good in DD or fixed deposit receipt tendered by the State Bank of India or by Scheduled Banks endorsed in favour of the Institute, 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 as deducted above can be released against bank guarantee issued by a scheduled bank, on its accumulations to a minimum of Rs. 5 lacs 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 shall be in conformity with provisions contained in clause 17 which shall be extended from time to time depending upon extension of contract granted under provisions of clause 2 and clause 5.

In case of contracts involving maintenance of building and services / any other work after construction of same building and services / other work, then 50% of Performance Guarantee shall be retained as Security Deposit. The same shall be returned year wise proportionately.

CLAUSE 2

Compensation for Delay

If the contractor fails to maintain the required progress in terms of Clause 5 or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to

the Institute 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 5 or that the work remains incomplete.

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

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the Institute. In case, the contractor does not achieve a particular milestone mentioned in schedule F, or the rescheduled milestone(s) in terms of Clause 5.4, the amount shown against that milestone shall be withheld, to be adjusted against 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 based on the decision of the Institute. 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.

The completion period of the entire work shall be as stipulated in Schedule F. The time limit specified above and as approved in writing by Institute shall be strictly adhered to and followed. 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. In case of delay, 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 AIIMS PATNA.

CLAUSE 2A

Incentive for early completion

In case, the contractor completes the work ahead of updated stipulated date of completion considering the effect of extra work (to be calculated on pro-rata basis as cost of extra work X

stipulated period / tendered cost), but excluding any hindrance whatsoever on the part of either party, a bonus shall be payable to the contractor by the following formula:

Where

B = Bonus payable to the contractor in Rs. subject to a maximum of 5 percent of the tendered value

Tv = Tendered value of the work in Rs

Ts = Time allowed for execution of work as mentioned in schedule F in number of days

Ta = Actual time taken to complete the entire work including deviations/ variations in the work and inclusive of all hindrances (for any reason whatsoever) in number of days

Fv = Value of gross work done as per final bill in Rs.

subject to a maximum limit of 5% (five per cent) of the tendered value. The amount of bonus, if payable, shall be paid along with final bill after completion of work. Provided always that provision of the Clause 2A shall be applicable only when so provided in 'Schedule F'. However, the quality of work completed shall be an important criterion before finalization of incentive, if any.

CLAUSE 3

When Contract can be Determined

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

If the contractor having been given by Institute 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 unworkman-like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.

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 Institute (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from Institute.

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

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 Institute.

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

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

If the contractor shall obtain a contract with Institute as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of integrity pact.

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

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

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

If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet

or otherwise parts with the entire works or any portion thereof without the prior written approval of Institute.

When the contractor has made himself liable for action under any of the cases aforesaid, the Accepting Authority on behalf of Institute shall have powers:

To determine the contract as aforesaid (of which termination notice in writing to the contractor under the hand of Institute 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 Institute.

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

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

CLAUSE 3A

In case, the work cannot be started due to reasons not within the control of the contractor within 1/8th of the stipulated time for completion of work or one month whichever is higher, either party may close the contract. In case contractor wants to close the contract, he shall give notice to the department stating the failure on the part of department. In such eventuality, the Performance Guarantee of the contractor shall be refunded within following time limits, but no payment on account of interest, loss of profit or damages etc. shall be payable at all:

- | | |
|--|-----------|
| (i) If the Tendered value of work is up toRs. 45 lac | : 15 days |
| (ii) If the Tendered value of work is more than 45 and uptoRs. 2.5 crore | : 21 days |
| (iii) If the Tendered value of work exceeds Rs. 2.5 crore | : 30 days |

CLAUSE 4

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

In any case in which any of the powers conferred upon Institute by Clause-3 thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of Institute 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 Institute 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 Institute) 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 Institute, 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, Institute 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 Institute 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 5

Time and Extension for Delay

The time allowed for execution of the Works as specified in the Schedule 'F' or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in schedule 'F' 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, Institute shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the Performance Guarantee absolutely.

- 5.1 The Contractor shall submit a Programme Chart (Time and Progress) for each mile stone Alongwith Performance Guarantee and get it approved by the Institute. 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 Institute 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 the mile stones given in Schedule 'F'.

Project Management shall be done by using project management software for works costing more than Rs. 5 Crore.

The Project Management shall be done using M.S. Project software for work costing more than Rs. 5 Crore and uptoRs. 20 Crore.

PROGRAMME CHART

The Contractor shall prepare an integrated programme chart in MS Project / Primavera software for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the programme within the stipulated period or earlier and submit the same for approval to the Institute within ten days of award of the contract. A recovery of Rs. 2500/- (for works costing uptoRs. 20 Crores / Rs. 5000/- (for works costing more than Rs. 20 crores) shall be made on per day basis in case of delay in submission of the above programme.

The programme chart should include the following:

Descriptive note explaining sequence of the various activities.

Network (PERT/CPM/BAR CHART).

Programme for procurement of materials by the contractor.

Programme of procurement of machinery / equipments having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor. In addition to above to achieve the progress of work as per programme, the contractor must bring at site adequate shuttering material required for cement concrete and R.C.C. works etc. for three floors within one month from the date of start of work till the completion of RCC work as per requirement of work. The contractor shall submit shuttering schedule adequate to complete structure work within laid down physical milestone.

If at any time, it appears to the Institute that the actual progress of work does not conform to the approved programme referred above or after rescheduling of milestone, the contractor shall produce a revised programme within 7 (seven) days, showing the modifications to the approved programme to ensure timely completion of the work. The modified schedule of programme shall be approved by the Institute. A recovery of Rs. 2500/- (for works costing uptoRs. 20 crores) / Rs. 5000/- (for works costing more than Rs. 20 crores) shall be made on per day basis in case of delay in submission of the modified programme.

The submission for approval by the Institute of such programme or such particulars shall not relieve the contractor of any of the duties or responsibilities under the contract. This is without prejudice to the right of Institute to take action against the contractor as per terms and conditions of the agreement.

The contractor shall submit the progress report using MS Project /Primavera software with base line programme referred above for the work done during previous month to the Institute on or before 5th day of each month failing which a recovery Rs. 2500/- (for works costing uptoRs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the monthly progress report.

5.2 If the work(s) be delayed by:-

- force majeure, or
- abnormally bad weather, or
- serious loss or damage by fire, or
- civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
- delay on the part of other contractors or tradesmen engaged by Institute in executing work not forming part of the Contract, or
- non-availability of stores, which are the responsibility of Institute to supply or
- (vii) non-availability or break down of tools and Plant to be supplied or supplied by Institute or any other cause which, in the absolute discretion of Institute 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 Schedule 'F' but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of Institute to proceed with the works.

5.3 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.

5.4 In any such case the authority as indicated in Schedule 'F' may give a fair and reasonable extension of time and reschedule the mile stones for completion of work. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in Schedule 'F' in writing, within 3 months or

4 weeks of the date of receipt of such request respectively. Non application by the contractor for extension of time/rescheduling of the milestones shall not be a bar for giving a fair and reasonable extension extension/rescheduling of the milestones by the authority as indicated in Schedule 'F' and this shall be binding on the contractor.

CLAUSE 6

Measurements of Work Done

Institute shall, except as otherwise provided, ascertain and determine by measurement, the value in accordance with the contract of work done.

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

All measurements and levels shall be taken jointly by Institute 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 Institute and the contractor or their representatives in token of their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.

If for any reason the contractor or his authorized representative is not available and the work of recording measurements is suspended by Institute or his representative, Institute shall not entertain any claim from 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 Institute or his representative shall be deemed to be accepted by the Contractor.

The contractor shall, without 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 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 Institute or his authorized representative 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 be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work

without consent in writing of Institute 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 measurements without such notice having been given or Institute'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.

Institute or his authorized representative may cause either themselves or through another representative 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, on account 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 6A

Computerized Measurement Book

Institute 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 (MB) having pages of A-4 size as per the format of the Institute 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 Institute or his authorized representative as per interval or program fixed in consultation with Institute or his authorized representative. After the necessary corrections made by Institute, the measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to Institute for the dated signatures by Institute 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 Institute 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 Institute a computerized measurement book, duly bound, and with its pages machine numbered. Institute 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 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 Institute. Thereafter, the MB shall be taken in the Institute records, and allotted a number as per the Register of Computerised MBs. This should be done before the corresponding bill is submitted to the Institute for payment. The contractor shall submit two spare copies of such computerized MBs for the purpose of reference and record by the various officers of the Institute.

The contractor shall also submit to the Institute 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 Institute 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 Institute 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 Institute 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 Institute 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 Institute'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.

Institute or his authorized representative may cause either themselves or through another representative 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 the contractor from liabilities from any over-measurement or defects noticed till completion of the defects liability period.

CLAUSE 7

Payment on Intermediate Certificate to be Regarded as Advances

No payment shall be made for work, estimated to cost Rs. Twenty Thousand or less, till after the whole of the work shall have been completed and certificate of completion given. For works estimated to cost over Rs. Twenty thousand, the interim or running account bills shall be submitted by the contractor for the work executed on the basis of such recorded measurements on the format of the Institute in triplicate on or before the date of every month fixed for the same by the Institute. 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 Rs. Twenty thousand in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved. Institute 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, Institute shall prepare or cause to be prepared such bills in which event no claim 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 Institute certifying the sum to which the contractor is considered entitled by way of interim payment at such rates as decided by the Institute. The amount admissible shall be paid by 10th working day after the day of presentation of the bill by the Contractor to the Institute together with the recovery/account of the material issued by the Institute and dismantled materials, if any.

Running account bills shall be submitted by the contractor for the work executed on the basis of such recorded measurements on the format of the Institute in triplicate on or before the date of every month fixed for the same by AIIMS PATNA. The contractor shall not be entitled to be paid any interim payment if the gross work done together with net payment/adjustment of advances, 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. AIIMSPATNA 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, AIIMS PATNA 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 AIIMS PATNA certifying the sum to which the contractor is considered entitled by way of interim payment at such rates as decided by AIIMS PATNA. The amount admissible shall be paid by 10th working day after the day of presentation of the bill by the Contractor to AIIMS PATNA together with the account of the material issued by the Institute, or dismantled materials, if any.

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 AIIMS PATNA 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 AIIMS PATNA under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.

Pending consideration of extension of date of completion, interim payments shall continue to be made as herein provided without prejudice to the right of the Institute 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.

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.

CLAUSE 7A

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

CLAUSE 8

Completion Certificate and Completion Plans

Within ten days of the completion of the work, the contractor shall give notice of such completion to Institute and within thirty days of the receipt of such notice, Institute 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 completely from all the places which he may have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by Institute.

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

CLAUSE 8A

Contractor to Keep Site Clean

The contractor is required to keep site clean. When any repair or maintenance of works are carried out, the splashes and droppings from white washing, color 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 8B

Completion Plan to be submitted by the Contractor

The contractor shall submit completion plan within thirty days of the completion of the work.

In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs. 15,000 (Rs.

Fifteen thousand only) as may be fixed by the Institute and in this respect the decision of the Institute shall be final and binding on the contractor.

The contractor shall submit completion plan for water, sewerage and drainage line plan within thirty days of the completion of the work.

In case, the contractor fails to submit the completion plan as aforesaid, the department will get it done through other agency at his cost and actual expenses incurred plus Rs. 15,000/- for the same shall be recovered from the contractor.

CLAUSE 9

Payment of Final Bill

The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by Institute 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 Institute, will, as far as possible be made within the period specified herein under, the period being reckoned from the date of receipt of the bill by the Institute or his authorized

Engineer/PMC, complete with account of materials issued by the Department and dismantled materials.

- | | | |
|--|---|----------|
| (i) If the Tendered value of work is uptoRs. 45 lacs | : | 2 months |
| (ii) If the Tendered value of work is more than 45 and uptoRs. 2.5 Crore : | | 3 months |
| (iii) If the Tendered value of work exceeds Rs. 2.5 Crore | : | 6 months |

The final bill shall be accompanied by:

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

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.

Completion certificates for embedded and covered-up Works issued by the Engineer-in-Charge.

Certificates for tests carried out for various items of Work.

Manufacturer's operating and maintenance manuals as well as guarantee/warranty papers, commissioning and handing over reports for whatever equipment/Materials installed.

Security Deposit of 5% (Five percent) of the Contract Value in the form of bank guarantee valid for a Defect liability period from the date of certificate

CLAUSE 10

Materials supplied by Institute

Materials which Institute will supply are shown in Schedule 'B' which also stipulates quantum, place of issue and rate(s) to be charged in respect thereof. The contractor shall be bound to procure them from Institute.

As soon as the work is awarded, the contractor shall finalise the programme for the completion of work as per clause 5 of this contract and shall give his estimates of materials required on the basis of drawings/or schedule of quantities of the work. The Contractor shall give in writing his requirement to Institute which shall be issued to him keeping in view the progress of work as assessed by Institute, in accordance with the agreed phased programme of work indicating monthly requirements of various materials. The contractor shall place his indent in writing for issue of such materials at least 7 days in advance of his requirement.

Such materials shall be supplied for the purpose of the contract only and the value of the materials so supplied at the rates specified in the aforesaid schedule shall be set off or deducted, as and when materials are consumed in items of work (including normal wastage) for which payment is being made to the contractor, from any sum then due or which may therefore become due to the contractor under the contract or otherwise or from the security deposit. At the time of submission of bills, the contractor shall certify that balance of materials supplied is available at site in original good condition.

The contractor shall submit along with every running bill (on account or interim bill) material-wise reconciliation statements supported by complete calculations reconciling total issue, total consumption and certified balance (diameter/section-wise in the case of steel) and resulting variations and reasons therefore. Institute shall (whose decision shall be final and binding on the contractor) be within his rights to follow the procedure of recovery in clause 42 at any stage of the work if reconciliation is not found to be satisfactory.

The contractor shall bear the cost of getting the material issued, loading, transporting to site, unloading, storing under cover as required, cutting assembling and joining the several parts together as necessary. Notwithstanding anything to the contrary contained in any other clause of the contract and (or the CPWD Accounts Code) all stores/materials so supplied to the contractor or procured with the assistance of the Institute shall remain the absolute property of Institute and the contractor shall be the trustee of the

stores/materials, and the said stores/materials shall not be removed/disposed off from the site of the work on any account and shall be at all times open to inspection by Institute or his authorized agent. Any such stores/materials remaining unused shall be returned to Institute in as good a condition in which they were originally supplied at a place directed by him, at a place of issue or any other place specified by him as he shall require, but in case it is decided not to take back the stores/materials the contractor shall have no claim for compensation on any account of such stores/materials so supplied to him as aforesaid and not used by him or for any wastage in or damage to in such stores/materials.

On being required to return the stores/materials, the contractor shall hand over the stores/materials on being paid or credited such price as Institute shall determine, having due regard to the condition of the stores/materials. The price allowed for credit to the contractor, however, shall be at the prevailing market rate not exceeding the amount charged to him, excluding the storage charge, if any. The decision of Institute shall be final and conclusive. In the event of breach of the aforesaid condition, the contractor shall in addition to throwing himself open to account for contravention of the terms of the licences or permit and/or for criminal breach of trust, be liable to Institute for all advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach. Provided that the contractor shall in no case be entitled to any compensation or damages on account of any delay in supply or non-supply thereof all or any such materials and stores provided further that the contractor shall be bound to execute the entire work if the materials are supplied by the Institute within the original scheduled time for completion of the work plus 50% thereof or schedule time plus 6 months whichever is more if the time of completion of work exceeds 12 months, but if a part of the materials only has been supplied within the aforesaid period, then the contractor shall be bound to do so much of the work as may be possible with the materials and stores supplied in the aforesaid period. For the completion of the rest of the work, the contractor shall be entitled to such extension of time as may be determined by Institute whose decision in this regard shall be final and binding on the contractor.

The contractor shall see that only the required quantities of materials are got issued. Any such material remaining unused and in perfectly good/original condition at the time of completion or determination of the contract shall be returned to Institute at the stores from which it was issued or at a place directed by him by a notice in writing. The contractor shall not be entitled for loading, transporting, unloading and stacking of such unused material except for the extra lead, if any involved, beyond the original place of issue.

CLAUSE 10 A

Materials to be provided by the Contractor

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

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

The Contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by Institute. 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 Institute 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 Institute and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. Institute 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.

Institute shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, Institute 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. Institute shall also have full powers to require other proper materials to be substituted thereof and in case of default, Institute 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 in schedule F.

CLAUSE 10 B

Secured Advance on Non-perishable Material

The contractor, on signing an indenture in the form to be specified by the Institute, shall

be entitled to be paid during the progress of the execution of the work up to 90% of the assessed value of any materials which are in the opinion of the Institute non-perishable, non-fragile and non-combustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work, the amount of such advance shall be recovered/deducted from the next payment made under any of the clause or clauses of this contract.

Such secured advance shall also be payable on other items of perishable nature, fragile and combustible with the approval of the Institute provided the contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Institute 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.

Mobilization Advance

Mobilization advance (Interest Bearing) not exceeding 10% of the tendered value may be given, if requested by the contractor in writing within one month of the order to commence the work. Such advance shall be in two or more instalments to be determined by the Institute at his sole discretion. The first installment of such advance shall be released by the Institute to the contractor on a request made by the contractor to the Institute in this behalf. The second and subsequent installments shall be released by the Institute only after the contractor furnishes a proof of the satisfactory utilization of the earlier installment to the entire satisfaction of the Institute.

Before any installment of advance is released, the contractor shall execute a Bank Guarantee Bond from schedule bank for the amount equal to 110% of the amount of advance and valid for the contract period. This (Bank Guarantee from Scheduled Bank for the amount equal to 110% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of completed recovery, together with interest.

Plant Machinery & Shuttering Material Advance

An advance for plant, machinery & shuttering material required for the work and brought to site by the Contractor may be given if requested by the contractor in writing within one month of bringing such plant and machinery to site. Such advance shall be given on such expeditious execution of work and improve the quality of work. The amount of advance shall be restricted to 5% percent of the tender value. In the case of new plant and equipment to be purchased for the work, the advance shall be restricted to 90% of the price of such new plant and

equipment paid by the contractor for which the contractor shall produce evidence satisfactory to the Institute. In the case of second hand and used plants and equipment, the amount of such advance shall be limited to 50% of the depreciated value of plant and equipment as may be decided by the Institute. The contractor shall, if so required by the Institute, submit the statement of value of such old plant and equipment duly approved by a Registered Valuer recognized by the Central Board of Direct Taxes under the Income-Tax Act, 1961. No such advance shall be paid on any plant and equipment of perishable nature and on any plant and equipment of a value less than Rs. 50,000/- Seventy five per cent of such amount of advance shall be paid after the plant & equipment is brought to site and balance twenty five percent on successfully commissioning the same.

Leasing of equipment shall be considered at par with purchase of equipment and shall be covered by tripartite agreement with the following:

Leasing company which gives certificate of agreeing to lease equipment to the contractor.

Institute, and

The contractor.

This advance shall further be subject to the condition that such plant and equipment (a) are considered by the Institute to be necessary for the works; (b) and are in working order and are maintained in working order; (c) hypothecated to the Government as specified by the Institute before the payment of advance is released. The contractor shall not be permitted to remove from the site such hypothecated plant and equipment without the prior written permission of the Institute. The contractor shall be responsible for maintaining such plant and equipment in good working order during the entire period of hypothecation failing which such advance shall be entirely recovered in lump sum. For this purpose, steel scaffolding and form work shall be treated as plant and equipment.

The contractor shall insure the Plant and Machinery for which mobilization advance is sought and given, for a sum sufficient to provide for their replacement at site. Any amounts not recovered from the insurer will be borne by the contractor.

The mobilization advance and plant and machinery advance in (ii) & (iii) above bear simple interest at the rate of 10 percent 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 contractors 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 installment. However, in the event of determination of contract, the mobilization advance and plant and machinery advance will be treated as interest bearing advance and bear simple interest at the

rate of 10 per cent 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.

If the circumstances are considered reasonable by the Institute, the period mentioned in (ii) and (iii) for request by the contractor in writing for grant of mobilization advance and plant and equipment advance may be extended in the discretion of the Institute.

CLAUSE 10 C

Payment on Account of Increase in Prices / Wages due to Statutory Order(s)

If after submission of the tender, the price of any material incorporated in the works (excluding the materials covered under Clause 10CA and not being a material supplied from the Institute's stores in accordance with Clause 10 thereof) and/or wages of labour increases as a direct result of the coming into force of any fresh law, or statutory rule or order (but not due to any changes of rate in sales tax/VAT, Central/State Excise/Custom Duty) beyond the prices/wages prevailing at the time of the last stipulated date of receipt of tenders including extensions, if any, for the work during contract period including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, then the amount of the contract shall accordingly be varied and provided further that any such increase shall be limited to the price/wages prevailing at the time of stipulated date of completion or as prevailing for the period under consideration, whichever is less.

If after submission of the tender, the price of any material incorporated in the works (excluding the materials covered under Clause 10CA and not being a material supplied from the Institute's stores in accordance with Clause 10 thereof) and/or wages of labour as prevailing at the time of last stipulated date of receipt of tender including extensions, if any, is decreased as a direct result of the coming into force of any fresh law or statutory rules or order (but not due to any changes of rate in sales tax/VAT, Central/State Excise/Custom Duty), Government shall in respect of materials incorporated in the works (excluding the materials covered under Clause 10CA and not being material supplied from the Institute's stores in accordance with Clause 10 hereof) and/or labour engaged on the execution of the work after the date of coming into force of such law statutory rule or order be entitled to deduct from the dues of the contractor, such amount as shall be equivalent to the difference between the prices of the materials and/or wages as prevailed at the time of the last stipulated date for receipt of tenders including extensions if any for the work and the prices of materials and/or wages of labour on the coming into force of such law, statutory rule or order. This will be applicable for the contract period including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2.

Institute may call books of account and other relevant documents from the contractor to satisfy himself about reasonability of increase in prices of materials and wages.

The contractor shall, within a reasonable time of his becoming aware of any alteration in the

price of any such materials and/or wages of labour, give notice thereof to the Institute stating that the same is given pursuant to this condition together with all information relating thereto which he may be in position to supply.

For this purpose, the labour component of the work executed during period under consideration shall be the percentage as specified in Schedule F, of the value of work done during that period and the increase/decrease in labour shall be considered on the minimum daily wages in rupees of any unskilled adult male mazdoor, fixed under any law, statutory rule or order.

CLAUSE 10 CA

Payment due to variation in prices of materials after receipt of tender

If after submission of the tender, the price of materials specified in Schedule F increases/decreases beyond the base price(s) as indicated in Schedule F for the work, then the amount of the contract shall accordingly be varied and provided further that any such variations shall be effected for stipulated period of Contract including the justified period extended under the provisions of Clause 5 of the Contract without any action under Clause 2.

However for work done/during the justified period extended as above, it will be limited to indices prevailing at the time of updated stipulated date of completion considering the effect of extra work (to be calculated on pro-rata basis as cost of extra work x stipulated period / tendered cost).

The increase/decrease in prices of cement, steel reinforcement and structural steel shall be determined by the Price indices issued by the Director General, CPWD. For other items provided in the Schedule 'F', this shall be determined by the All India Wholesale Price Indices of materials as published by Economic Advisor to Government of India, Ministry of Commerce and Industry. Base price for cement, steel reinforcement and structural steel shall be as issued under the authority of Director General, CPWD applicable for Delhi including Noida, Gurgaon, Faridabad & Ghaziabad and for other places as issued under the authority of Zonal Chief Engineer, CPWD and base price of other materials issued by concerned Zonal chief Engineer and as indicated in Schedule 'F' as valid on the last stipulated date of receipt of tender, including extension if any and for the period under consideration. In case, price index of a particular material is not issued by Ministry of Commerce and Industry, then the price index of nearest similar material as indicated in Schedule 'F' shall be followed.

The amount of the contract shall accordingly be varied for all such materials and will be worked out as per the formula given below for individual material:-

Adjustment for component of individual material

$$V = P \times Q_x \frac{C_i - C_o}{C_o}$$

where,

V= Variation in material cost i.e. increase or decrease in the amount of rupees to be paid or recovered.

P = Base Price of material as issued under authority of DG, CPWD or concerned Zonal Chief Engineer and as indicated in Schedule 'F'.

For Projects and Original Works

Q= Quantity of material brought at site for bonafide use in the works since previous bill excluding any such quantity consumed in the deviated quantity of items beyond deviation limit and extra / substituted item, paid / to be paid at rates derived on the basis of market rate under Clause 12.2.

For Maintenance Works

Q= Quantity of material brought at site for bonafide use in the works since previous bill including any such quantity consumed in the deviated quantity of items beyond deviation limit paid at agreement rate and extra / substituted item being scheduled items, but excluding non-schedule extra/ substituted item paid / to be paid at market rate under Clause 12.2.

Note :

The date wise record of ready mix concrete shall be kept in a register and the cement consumption for the same shall be calculated accordingly.

If built-up steel items are brought at site from workshop, then the variation shall be paid for the structural steel up to the period when the built up item / finished product is brought at site.

C_{Io}= Price Index for cement, steel reinforcement bars and structural steel as issued by the DG, CPWD and corresponding to the time and base price of respective material indicated in Schedule 'F'. For other items, if any, provided in Schedule 'F'. All India Wholesale Price Index for the material as published by the Economic Advisor to Government of India, Ministry of Industry and Commerce and corresponding to the time of base price of respective material indicated in Schedule 'F'.

C_I= Price Index for cement, steel reinforcement bars and structural steel as issued under the authority of DG, CPWD for period under consideration. For other items, if any, provided in Schedule 'F'. All India Wholesale Price Index for the material for period under consideration as published by Economic Advisor as published by Economic Advisor to Government of India, Ministry of Industry and Commerce.

Note (i) In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the index prevailing at the time of stipulated date of completion or the prevailing index of the period under consideration, whichever is less, shall be considered.

Provided always that provisions of the preceding Clause 10C shall not be applicable in respect of Materials covered in this Clause.

If during progress of work or at the time of completion of work, it is noticed that any material brought at site is in excess of requirement, then amount of escalation if paid earlier on such excess quantity of material shall be recovered on the basis of cost indices as applied at the time of payment of escalation or as prevailing at the time of effecting recovery, whichever is higher.

Cement mentioned wherever in this clause includes Cement component used in RMC brought at site from outside approved RMC plants, if any.

S. No.	Materials covered under this clause	Nearest materials other than cement*, steel reinforcement bars and structural steel for which All India Wholesale Price Index to be followed	Base price and its corresponding period of all the materials covered under clause 10 CA**	Base Price	Corresponding Period

includes Cement component used in RMC brought at site from outside approved RMC plants, if any.

Base price and its corresponding period of all the materials covered under clause 10 CA is to be mentioned at the time of approval of NIT. In case of recall of tenders the base price may be modified by adopting latest base price, and its corresponding period.

CLAUSE 10 CC

Payment due to increase / decrease in Prices/Wages (excluding materials covered under Clause 10(CA) after Receipt of Tender for Works)

If the prices of materials (not being materials supplied or services rendered at fixed prices by the department in accordance with clause 10 & 34 thereof) 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 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 5 of the contract without any action under clause 2. However, for the work done during the justified period extended as above, the compensation as detailed below will be limited to prices/wages prevailing at the time of updated stipulated date of completion considering the effect of extra work (to be calculated on pro-rata basis as cost of extra work \times stipulated period / tendered cost). No such compensation shall be payable for a work for which the stipulated period of completion is equal to or less than the time as specified in Schedule F. Such compensation for escalation in the prices of materials and labour, when due, shall be worked out based on the following provisions:

The base date for working out such escalation shall be the last stipulated date of receipt of tenders including extension, if any.

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 (A-B) (C)
 - Full assessed value of Secured Advance (excluding materials)
 - Covered under Clause 10 CA) fresh paid in this quarter : (D)
 - Full assessed value of Secured Advance (excluding materials)
 - Covered under Clause 10 CA) recovered in this quarter : (E)
 - Full assessed value of Secured Advance for which escalation Payable in this quarter (D-E): (F)
 - (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)
 - Extra items/deviated quantities of items paid as per Clause 12
 - Based on prevailing market rates during this quarter: (J)
 - Then, $M = C+F+I-J$
 - $N = 0.85 M$
 - Less cost of material supplied by the department as per Clause 10 and recovered during the quarter (K)
 - Less cost of services rendered at fixed charges as per Clause 34 and recovered during the quarter (L)
 - Cost of work for which escalation is applicable:
- $$W = N - (K + L)$$

Components for materials (except cement, reinforcement bars, structural steel or other materials covered under clause 10 CA) labour, P.O.L., etc. shall be pre-determined for every work and incorporated in the conditions of contract attached to the tender papers included in Schedule 'F'. The decision of the Institute in working out such percentage shall be binding on the contractors.

The compensation for escalation for other materials (excluding cement, reinforcement bars, structural steel or other materials covered under clause 10 CA) and P.O.L. shall be worked as per the formula given below:-

Adjustment for civil component (except cement, structural steel, reinforcement bars and other materials covered under clause 10CA) / electrical component of construction 'Materials'

$$\frac{Vm}{W} = \frac{Xm}{100} - \frac{Ml - Mlo}{100}$$

Vm = Variation in material cost i.e. increase or decrease in the amount in rupees to be paid or recovered.

W = Cost of Work done worked out as indicated in sub-para (ii) of Clause 10CC.

Xm = Component of 'materials' (except cement, structural steel, reinforcement bars and other materials covered under clause 10CA) expressed as percent of the total value of work.

Ml = All India Wholesale Price Index for civil component/electrical component* of construction material as worked out on the basis of All India Wholesale Price Index for Individual Commodities/ Group Items for the period under consideration as published by Economic Advisor to Govt. of India, Ministry of Industry & Commerce and applying weightages to the Individual Commodities/Group Items. (In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the index prevailing at the time of stipulated date of completion or the prevailing index of the period under consideration, whichever is less, shall be considered.)

Mlo = All India Wholesale Price Index for civil component/electrical component* of construction material as worked out on the basis of All India Wholesale Price Index for Individual Commodities/ Group Items valid on the last stipulated date of receipt of tender including extension, if any, as published by the Economic Advisor to Govt. of India, Ministry of Industry & Commerce and applying weightages to the Individual Commodities/Group items.

*Note: relevant component only will be applicable.

(b) Adjustment for component of 'POL'

$$\frac{Vf}{Wx} = \frac{Z}{100} - \frac{F/ - F/o}{100}$$

Vf = Variation in cost of Fuel, Oil & Lubricant i.e. increase or decrease in the amount in rupees to be paid or recovered.

- W** = Cost of Work done worked out as indicated in sub-para (ii) of Clause 10CC.
- Z** = Component of Fuel, Oil & Lubricant expressed as percent of the total value of work.
- FI** = All India Wholesale Price Index for Fuel, Oil & Lubricant for the period under consideration as published by Economic Advisor to Govt. of India, Ministry of Industry & Commerce, New Delhi. (In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the index prevailing at the time of stipulated date of completion or the prevailing index of the period under consideration, whichever is less, shall be considered.)
- F_{Io}** = All India Wholesale Price Index for Fuel, Oil & Lubricant valid on the last stipulated date of receipt of tender including extension, if any.

The following principles shall be followed while working out the indices mentioned para (iii) above.

The compensation for escalation shall be worked out at quarterly intervals and shall be with respect to the cost of work done during the three calendar months of the said quarter. The dates of preparation of bills as finally entered in the Measurement Book by the Institute/date of submission of bill finally by the contractor to the department in case of computerized measurement books 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 tender was accepted) 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.

The index (MI/FI etc.) relevant to any quarter/period for which such compensation is paid shall be the arithmetical average of the indices relevant to the three calendar months. If the period up to date of completion after the quarter covered by the last such instalment of payment, is less than three months, the index MI and FI shall be the average of the indices for the months falling within that period.

The compensation for escalation for labour shall be worked out as per the formula given below:-

$$\frac{VL}{Wx} = \frac{L_f - L_i}{L_f}$$

VL : Variation in labour cost i.e. amount of increase or decrease in rupees to be paid or recovered.

W :	Value of work done, worked out as indicated in sub-para (ii) above.
Y :	Component of labour expressed as a percentage of the total value of the work.
L1 :	Minimum wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as applicable on the last date of the quarter previous to the one under consideration. (In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the minimum wage prevailing on the last date of quarter previous to the quarter pertaining to stipulated date of Completion or the minimum wage prevailing on the last date of the quarter previous to the one under consideration, whichever is less, shall be considered.)
Llo :	Minimum daily wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as on the last stipulated date of receipt of tender including extension, if any.

The following principles will be followed while working out the compensation as per sub-para (v) above.

The minimum wage of an unskilled male mazdoor mentioned in sub-para (vi) above 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.

The escalation for labour also shall be paid at the same quarterly intervals when escalation due to increase in cost of materials and/or P.O.L. 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;

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 adult male mazdoor alone shall form the basis for working out the escalation compensation payable on the labour component.

In the event the price of materials and/or wages of labour required for execution of the work decrease/s, 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 before stated under this Clause 10CC shall mutatis mutandis apply, provided that:

no such adjustment for the decrease in the price of materials and/or wages of labour aforementioned would be made in case of contracts in which the stipulated period of completion of the work is equal to or less than the time as specified in Schedule 'F'.

The escalation for labour also shall be paid at the same quarterly intervals when escalation due to increase in cost of materials and/or P.O.L. 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;

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 adult male mazdoor alone shall form the basis for working out the escalation compensation payable on the labour component.

In the event the price of materials and/or wages of labour required for execution of the work decrease/s, 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 before stated under this Clause 10CC shall mutatis mutandis apply, provided that:

no such adjustment for the decrease in the price of materials and/or wages of labour aforementioned would be made in case of contracts in which the stipulated period of completion of the work is equal to or less than the time as specified in Schedule 'F'.

the Institute shall otherwise be entitled to lay down the procedure by which the provision of this sub-clause shall be implemented from time to time and the decision of the Institute in this behalf shall be final and binding on the contractor.

Provided always that:-

Where provisions of clause 10CC are applicable, provisions of clause 10C will not be applicable but provisions of clause 10CA will be applicable.

Where provisions of clause 10CC are not applicable, provisions of clause 10C and 10CA will become applicable.

CLAUSE 10 D

Dismantled Material to be Institute's Property

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

CLAUSE 11

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

The contractor shall execute the whole and every part of the work in the most substantial and 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 in respect of the work signed by Institute.

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 MPD-PA 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 or any other official designated to represent AIIMSPATNATO get approval from Design Consultant if required for an approval of execution at-least fifteen days before the actual execution day.

CLAUSE 12

Deviations/Variations Extent and Pricing

Institute shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by Institute 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.

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

In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus
25% of the time calculated in (i) above or such further additional time as may be considered reasonable by Institute.

Deviation, Extra Items and Pricing

12.2 A. For Project and Original Works :

In the case of Extra item(s) (items that are completely new, and are in addition to the items contained in the contract), the contractor may within fifteen days of

receipt of order or occurrence of the item(s) claim rates, supported by proper analysis, for the work and Institute shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determined the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

For Maintenance works including works of up gradation, aesthetic, special repair, addition / alteration :

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

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

Deviation, Substituted Items, Pricing

A. For Project and Original Works :

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

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

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

For Maintenance works including works of up gradation, aesthetic, special repair, addition / alteration :

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

Payment of Substitute in case of non-scheduled items (Non-DSR items) shall be made as per the prevailing market rate.

Deviation Deviated Quantities, Pricing

A. For Project and Original Works :

In the case of contract items, substituted items, contract cum 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, Institute 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.

For Maintenance works including works of upgradation, aesthetic, special repair, addition /alternation :

In the case of contract items, which exceed the limits laid down in Schedule F, the contractor shall be paid rates specified in the schedule of quantities.

In prescribed time limits for finalizing rates for Extra Item(s), Substitute Item(s) and Deviated Quantities of contract items are as under:

- (i) If the Tendered value of work is uptoRs. 45 lacs :30 days
- (ii) If the Tendered value of work is more than 45 and uptoRs. 2.5 crore : 45 days
- (iii) If the Tendered value of work exceeds Rs. 2.5 crore : 60 days

12.3 A. For Project and Original Works:

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 Institute 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.

For Maintenance works including works of upgradation, aesthetic, special repair, addition /alternation :

In the case of decrease in the rates prevailing in the market of items for the work in excess of the limits laid down in Schedule F, the Institute 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.

12.4 The contractor shall send to Institute once every three months, an up to date accountgiving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by Institute which he has executed during the preceding quarter failing which the contractor shall be deemed to have waived his right. However, the Accepting Authority may authorise consideration of such claims on merits.

12.5 For the purpose of operation of Schedule "F", the following works shall be treated as works relating to foundation unless & otherwise defined in the contract:

For Buildings : All works up to 1.2 metres above ground level or up to floor 1 level whichever is lower.

For abutments, piers and well staining: All works up to 1.2 m above the bed level.

For retaining walls, wing walls, compound walls, chimneys, overhead reservoirs/tanks and other elevated structures: All works up to 1.2 metres above the ground level.

For reservoirs/tanks (other than overhead reservoirs/tanks) : All works up to 1.2 metres above the ground level.

For basement: All works up to 1.2 m above ground level or up to floor 1 level whichever is lower.

For Roads, all items of excavation and filling including treatment of sub base.

12.6 Any operation incidental to or necessarily has to be in contemplation of tenderer while filing 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 13

Foreclosure of Contract due to Abandonment or Reduction in Scope of Work

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

The contractor shall be paid at contract rates, full amount for works executed at site and, in

addition, a reasonable amount as certified by Institute for the items hereunder mentioned which could not be utilized on the work to the full extent in view of the foreclosure;

Any expenditure incurred on preliminary site work, e.g. temporary access roads, temporary labour huts, staff quarters and site office; storage accommodation and water storage tanks. Institute shall have the option to take over contractor's materials or any part thereof either brought to site or of which the contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work) provided. For materials taken over or to be taken over by Institute, cost of such materials as detailed by Institute 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.

If any materials supplied by Institute are rendered surplus, the same except normal wastage shall be returned by the contractor to Institute 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 Institute stores, if so required by Institute, shall be paid.

Reasonable compensation for transfer of T & P from site to contractor's permanent stores or to his other works, whichever is less. If T & P are not transported to either of the said places, no cost of transportation shall be payable.

Reasonable compensation for repatriation of contractor's site staff and imported labour to the extent necessary.

The contractor shall, if required by Institute, 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.

The reasonable amount of items on (i), (iv) and (v) above shall not be in excess of 2% of the cost of the work remaining incomplete on the date of closure, i.e. total stipulated cost of the work as per accepted tender less the cost of work actually executed under the contract and less the cost of contractor's materials at site taken over by Institute as per item (ii) above. Provided always that against any payments due to the contractor on this account or otherwise, Institute shall be entitled to recover or be credited with any outstanding balances due from the contractor for advance paid in respect of any tool, plants and materials and any other sums which at the date of termination were recoverable by the Government from the contractor under the terms of the contract.

A compensation for such eventuality, on account of damages etc. shall be payable @0.5% of cost of work remaining incomplete on date of closure i.e. total stipulated cost of the work less the cost of work actually executed under the contract shall be payable.

CLAUSE 14

Carrying out part work at risk & cost of contractor

If contractor:

At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from Institute; 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 even after a notice in writing is given in that behalf by Institute; or

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

Institute without invoking action under Clause 3 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to Institute, 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:

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

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

Institute 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 Institute because of action under this clause shall not exceed 10% of the tendered value of the work.

In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor. The certificate of Institute 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 Institute 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 Institute in completing the part work/part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by Institute as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to Institute in law or per as agreement be recovered from any money due to the contractor on any account, and if such money is insufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor fails to pay the required sum within the aforesaid period of 30 days, Institute 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 Institute, 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 15

Suspension of work

The contractor shall, on receipt of the order in writing of Institute, (whose Suspension of 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 Institute may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following reasons:

- 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 works to the extent necessary and carry out the instructions given in that behalf by Institute.

- (ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above:
the contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part, and;
- (b) If the total period of all such suspensions in respect of an item or group of items or work for which a separate period of completion is specified in the contract exceeds thirty days, the contractor shall, in addition, be entitled to such compensation as Institute 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, adding thereto 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to Institute within fifteen days of the expiry of the period of 30 days.

(iii) If the works or part thereof is suspended on the orders of Institute for more than three months at a time, except when suspension is ordered for reason (a) in sub-para above, the contractor may after receipt of such order serve a written notice on Institute requiring permission within fifteen days from receipt by Institute of the said notice, to proceed with the 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 intends to treat the suspension, where it affects only a part of the works as an omission of such part by Institute or where it affects whole of the works, as an abandonment of the works by Institute, shall within ten days of expiry of such period of 15 days give notice in writing of his intention to Institute. In the event of the contractor treating the suspension as an abandonment of the contract by Institute, 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 the work in full but which he could not derive in consequence of the abandonment. He shall, however, be entitled to such compensation, as Institute may consider reasonable, in respect of salaries and/or wages paid by him to his employees and labour at site, remaining idle in consequence adding to the total thereof 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to Institute within 30 days of the expiry of the period of 3 months.

CLAUSE 15A

The contractor shall not be entitled to claim any compensation from Institute for the loss suffered by him on account of delay by Institute in the supply of materials in schedule 'B' where such delay is covered by difficulties relating to the supply of wagons, force majeure including non-allotment of such materials by controlling authorities, Act of God, Acts of enemies of the State/country or any reasonable cause beyond the control of the Institute.

This Clause 15A will not be applicable for works where no material is stipulated.

CLAUSE 16

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 Institute, his authorized subordinates in charge of the work and all the superior officers, or any organization engaged by the Institute for Quality Assurance and of the Chief Technical Examiner's Office, and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

If it appears to Institute or to the officers of the organization engaged by the Institute for Quality Assurance or to the Chief Technical Examiner or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by the contractor for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within twelve months of the completion of the work from Institute specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in

part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by Institute in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under Clause 2 of the contract (for non-completion of the work in time) for this default.

In such case Institute may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the authority specified in schedule 'F' 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 removed and re-executed at the risk and cost of the contractor. Decision of Institute to be conveyed in writing in respect of the same will be final and binding on the contractor.

CLAUSE 17

Contractor Liable for Damages, defects during maintenance period

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

CLAUSE 18

Contractor to Supply Tools & Plants, etc.

The contractor shall provide at his own cost all materials (except such special materials, if any, as may in accordance with the contract be supplied from Institute's stores), 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 Institute 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 therefor 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 Institute 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 18A

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, Institute is obliged to pay compensation to a workman employed by the contractor, in execution of the works, Institute will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the Institute under sub-section (2) of Section 12, of the said Act, Institute shall be

at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by Institute to the contractor whether under this contract or otherwise. Institute shall not be bound to contest any claim made against it under sub-section (1) of Section 12, of the said Act, except on the written request of the contractor and upon his giving to Institute full security for all costs for which Government might become liable in consequence of contesting such claim.

CLAUSE 18B

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

CLAUSE 19

Labour Laws to be complied by the Contractor

The contractor shall obtain a valid licence under the Contract Labour (R&A) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The contractor shall also comply with provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979. 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 and any Rules frame thereunder.

Any failure to fulfil these requirements shall attract the penal provisions of this

contract arising out of the resultant non-execution of the work.

CLAUSE 19A

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

CLAUSE 19B

Payment of Wages

Payment of wages:

The contractor shall pay to labour employed by him either directly or through sub-contractors, 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.

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.

In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with the 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 unauthorizedly made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

(a) Institute 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, Institute 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 Institute concerned.

The contractor shall comply with the provisions of the Payment of Wages Act,

1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made thereunder from time to time.

The contractor shall indemnify and keep indemnified Institute against payments to be made under and for the observance of the laws aforesaid and the Contractor's Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors.

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.

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 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.

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.

CLAUSE 19C

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.200/- for each default and in addition, Institute shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

CLAUSE 19D

The contractor shall submit by the 4th and 19th of every month, to Institute, 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 labourers 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 19F and the amount paid to them.

Failing which the contractor shall be liable to pay to Institute, a sum not exceeding Rs. 200/- for each default or materially incorrect statement. The decision of Institute shall be final in deducting from any bill due to the contractor, the amount levied as fine and be binding

on the contractor.

CLAUSE 19E

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 Institute from time to time for the protection of health and sanitary arrangements for workers employed by the Institute and its contractors.

CLAUSE 19F

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

1. Leave :

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

Pay :

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

Conditions for the grant of Maternity Leave:

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

The contractor shall maintain a register of Maternity (Benefit) in the Prescribed Form as shown in Appendix -I and II, and the same shall be kept at the place of work.

CLAUSE 19G

In the event of the contractor(s) committing a default or breach of any of the provisions of the 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 Institute a sum not exceeding Rs.200/- 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.200/- 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 Institute shall be final and binding on the parties.

Should it appear to Institute that the contractor(s) is/are not properly observing and complying with the provisions of the 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") Institute 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, Institute 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, Institute shall have power to give notice in writing to the contractor(s) requiring that the said huts and sanitary arrangements be remodeled 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, Institute shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the contractor(s).

CLAUSE 19H

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 Institute.

(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 sq.m. (30 sq.ft.) for each member of the worker's family staying with the labourer.

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.

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

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.

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

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

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

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 Institute. Back to back construction will be allowed.

Water Supply - The contractor(s) shall provide adequate supply of water for the use of labourers. The provisions shall not be less than two gallons of pure and wholesome water per head per day for drinking purposes and three gallons of clean water per head per day for bathing and washing purposes. Where piped water supply is available, supply shall be at stand posts and where the supply is from wells or river, tanks which may be of metal or masonry, shall be provided. The contractor(s) shall also at his/their own cost make 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.

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

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 labourers 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.

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

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

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.

CLAUSE 19I

Institute 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 labourers, whether temporary or permanent and he shall be responsible for any untoward action on the part of such labour.

CLAUSE 19J

It shall be the responsibility of the contractor to see that the building under construction is not occupied by anybody unauthorizedly during construction, and is handed over to Institute with vacant possession of complete building. If such building though completed is occupied illegally, then Institute 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 upto 5% of tendered value of work may be imposed by the Accepting Authority whose decision shall be final both with regard to the justification and quantum and be binding on the contractor.

However, the Accepting Authority, through a notice, may require the contractor to remove the illegal occupation any time on or before construction and delivery.

CLAUSE 19K

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 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. 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 Institute 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 Institute. Failure on the part of contractor to obtain approval of Institute 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 Institute as to whether particular tradesman possesses requisite skill and amount of compensation in case of default shall be final and binding.

CLAUSE 19L

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 Institute to the contractor on actual basis. 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 20

Minimum Wages Act to be Complied with

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

CLAUSE 21

Work not to be sublet. Action in case of insolvency

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

CLAUSE 22

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

CLAUSE 23

Changes in firm's Constitution to be intimated

Where the contractor is a partnership firm, the previous approval in writing of Institute shall

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

CLAUSE 24

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

CLAUSE 25

Settlement of Disputes & Arbitration

Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in 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 relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter:

If the contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by Institute on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable, he shall promptly within 15 days request the Director, Institute in writing for written instruction or decision. Thereupon, the Director shall give his written instructions or decision within a period of one month from the receipt of the contractor's letter.

If the Director fails to give his instructions or decision in writing within the aforesaid period or if the contractor is dissatisfied with the instructions or decision of the Director, the contractor may within 30 days from the receipt of the Director's decision, appeal before the Dispute Redressal Committee (DRC) along with a list of disputes with amounts claimed in respect of each such dispute and giving reference to the rejection of his disputes by the Director. The Dispute Redressal Committee (DRC) shall give his decision within a period of 90 days from the receipt of Contractor's appeal. The constitution of Dispute Redressal Committee (DRC) shall be as indicated in Schedule 'F'. If the Dispute Redressal Committee (DRC) fails to give his decision within the aforesaid period or any party is dissatisfied with the decision of Dispute Redressal Committee (DRC), then either party may within a period of 30 days from the receipt of the decision of Dispute Redressal Committee (DRC),

give notice to the Director for appointment of arbitrator on prescribed proforma as per Appendix XV, failing which, the said decision shall be final binding and conclusive and not referable to adjudication by the arbitrator.

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

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

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

It is also a term of this contract that if the contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 120 days of receiving the intimation from Institute that the final bill is ready for payment, the claim of the contractor shall be deemed to have been waived and absolutely barred and the Institute shall be discharged and released of all liabilities under the contract in respect of these claims.

The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 (Act 26 of 1996) or any statutory modifications or re-enactment thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceeding under this clause.

It is also a term of this contract that the arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and in all cases the arbitrator shall give reasons for the award.

It is also a term of the contract that if any fees are payable to the arbitrator, these shall be paid equally by both the parties. It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statement of claims and counter statement of claims. The venue of the arbitration shall be such place as may be fixed by the arbitrator

in his sole discretion. The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner, such costs or any part thereof shall be paid and fix or settle the amount of costs to be so paid.

CLAUSE 26

Contractor to Indemnify Institute against Patent Rights

The contractor shall fully indemnify and keep indemnified Institute 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 Institute in respect of any such matters as aforesaid, the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise therefrom, provided that the contractor shall not be liable to indemnify the Institute if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by Institute in this behalf.

CLAUSE 27

Lump sum Provisions in Tender

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

CLAUSE 28

Action where no Specifications are specified

In the case of any class of work for which there is no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per 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 Institute.

CLAUSE 29

Withholding and lien in respect of sum due from contractor

Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, Institute shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, Institute shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalisation 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, Institute shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with Institute or the Institute or any contracting person through Institute 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 Institute or Institute will be kept withheld or retained as such by Institute till the claim arising out of or under the contract is determined by the arbitrator (if the contract is governed by the arbitration clause) 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 account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, Institute shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company as the case may be, whether in his individual capacity or otherwise.

Institute 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 Institute 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 Institute to the contractor, without any interest thereon whatsoever.

Provided that the Institute 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 Institute on the one hand and the contractor on the other under

any term of the contract permitting payment for work after assessment by the Institute.

CLAUSE 29 A

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 Institute or any other contracting person or persons through Institute against any claim of Institute 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 Institute or with such other person or persons.

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

CLAUSE 30

Employment of Coal Mining or controlled area labour not permissible

The contractor shall not employ coal mining or controlled area labour falling under any category whatsoever on or in connection with the work or recruit labour from area within a radius of 32 km (20 miles) of the controlled area. Subject as above the contractor shall employ imported labour only i.e., deposit imported labour or labour imported by contractors from area, from which import is permitted.

Where ceiling price for imported labour has been fixed by State or Regional Labour Committees not more than that ceiling price shall be paid to the labour by the contractor. The contractor shall immediately remove any labourer who may be pointed out by the Institute as being a coal mining or controlled area labourer. Failure to do so shall render the contractor liable to pay to Government a sum calculated at the rate of Rs.10/- per day per labourer. The certificate of the Institute about the number of coal mining or controlled area labourer and the number of days for which they worked shall be final and binding upon all parties to this contract.

It is declared and agreed between the parties that the aforesaid stipulation in this clause is one in which the public are interested within the meaning of the exception in Section 74 of Indian Contract Act, 1872.

Explanation: - Controlled Area means the following areas:

Districts of Dhanbad, Hazaribagh, Jamtara - a Sub-Division under Santhal Pargana Commissionery, Districts of Bankura, Birbhum, Burdwan, District of Bilaspur.

Any other area which may be declared a Controlled Area by or with the approval of the

Central Government.

CLAUSE 31

Unfiltered water supply

The contractor(s) shall make his/their own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions.

- (i) That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of Institute.
- (ii) Institute 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 Institute, 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 31A

Departmental water supply if available

Water if available may be supplied to the contractor by the Institute subject to the following conditions:-

The water charges @ 1 % shall be recovered on gross amount of the work done.

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

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

CLAUSE 32

Alternate water arrangements

Where there is no piped water supply arrangement and the water is taken by the contractor from the wells or hand pump constructed by the Institute, no charge shall be recovered from the contractor on that account. The contractor shall, however, draw water at such hours of the day that it does not interfere with the normal use for which the hand pumps and wells are intended. He will also be responsible for all damage and abnormal repairs arising out of his use, the cost of which shall be recoverable from him. Institute shall be the final authority to determine the cost recoverable from the contractor on this account and his decision shall be binding on the contractor.

The contractor shall be allowed to construct temporary wells in Institute land for taking water for construction purposes only after he has got permission of Institute in writing. No charges shall be recovered from the contractor on this account, but the contractor shall be required to provide necessary safety arrangements to avoid any accidents or damage to adjacent buildings, roads and service lines and shall be

required to maintain the facility at his cost. He shall be responsible for any accidents or damage caused due to construction and subsequent maintenance of the wells and shall restore the ground to its original condition after the wells are dismantled on completion of the work.

CLAUSE 33

Return of Surplus materials

Notwithstanding anything contained to the contrary in this contract, where any materials for the execution of the contract are procured with the assistance of Institute either by issue from Institute's stocks or purchase made under orders or permits or licences issued by Institute, 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

Institute and return, if required by Institute, 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 Institute 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 Institute 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 licence or permit and/or for criminal breach of trust, be liable to Institute for all moneys, advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach.

CLAUSE 34

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 35

Condition relating to use of asphaltic materials

- The contractor undertakes to make arrangement for the supervision of the work by the firm supplying the tar or bitumen used.
- (ii) The contractor shall collect the total quantity of tar or bitumen required for the work as per standard formula, before the process of painting is started and shall hypothecate it to Institute. If any bitumen or tar remains unused on completion of the work on account of lesser use of materials in actual execution for reasons other than authorized changes of specifications and abandonment of portion of work, a corresponding deduction equivalent to the cost of unused materials as determined by Institute shall be made and the material returned to the contractors. Although the materials are hypothecated to Institute, the contractor undertakes the responsibility for their proper watch, safe custody and protection against all risks. The materials shall not be removed from site of work without the consent of Institute in writing. The contractor shall be responsible for rectifying defects noticed within a year from the date of completion of the work and the portion of the security deposit relating to asphaltic work shall be refunded after the expiry of this period.

CLAUSE 36

Employment of Technical staff and employees

Contractors Superintendence, Supervision, Technical Staff & Employees

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 Institute, 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'. Institute 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 tender accepting authority 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 the approval from Institute 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 Institute 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 the decision of Institute 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, Institute 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) alongwith every on-account bill/ final bill and shall produce evidence if at any time so required by Institute at site fully during all stages of execution of work, during recording/checking/test checking of measurements of works and whenever so required by Institute and shall also note down instructions conveyed by the Institute 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. Substitutes, duly approved by Institute 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 Institute, 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 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) (in the form of copy of Form-16 or CPF deduction issued to the Engineers employed by him) along with every account bill/final bill and shall produce evidence if at any times so required by the Institute.

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

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

Institute 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 Institute to be undesirable. Such person shall not be employed again at works site without the written permission of Institute and the persons so removed shall be replaced as soon as possible by the competent substitute.

CLAUSE 37

Levy/Taxes payable by Contractor

Welfare Cess or any other tax or Cess in respect of this contract shall be payable by the contractor and Institute 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 Institute after satisfying that it has been actually and genuinely paid by the contractor.

The contractor shall deposit royalty and obtain necessary permit for supply of the red bajri, stone, kankar, etc. from local authorities.

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

CLAUSE 38

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

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

- (ii) The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the Institute and shall also furnish such other information/document as Institute may require from time to time.
- The contractor shall, within a period of 30 days of the imposition of any such further tax or levy or cess, give a written notice thereof to Institute that the same is given pursuant

to this condition, together with all necessary information relating thereto.

CLAUSE 39

Termination of Contract on death of contractor

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Director of Institute on behalf of Institute shall have the option of terminating the contract without compensation to the contractor. However, if the contractor is succeeded by his legal heir or legally assigned successors who are willing to continue the work under the same terms and conditions as in the original contract, Institute shall have the option to continue the work with such heirs or successors with the same obligations to the heirs or successors as with the original contractor. The decision of Institute in this regard shall be final and binding.

CLAUSE 40

If relative working in Institute then the contractor not allowed to tender

The contractor shall not be permitted to tender for works, if any of his near relative(s) is in the employment of the Institute or its agent/representative. He shall also intimate the names of persons who are working with him or are subsequently employed by him and who are near relatives to any of the employee of Institute. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Institute. If however the contractor is registered in any other department, he shall be debarred from tendering in the Institute for any breach of this condition.

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

CLAUSE 41

No Gazetted Engineer to work as contractor within one year of retirement

No engineer of gazetted rank or other gazetted officer employed in engineering or administrative duties in an engineering department of the Government of India or Govt of Haryana shall work as a contractor or employee of a contractor for a period of one year after his retirement from government service without the previous permission of respective Government in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of Government as aforesaid, before submission of the tender or engagement in the contractor's service, as the case may be.

CLAUSE 42

Return of material & recovery for excess material used

After completion of the work and also at any intermediate stage in the event of

non-reconciliation of materials issued, consumed and in balance - (see Clause 10), theoretical quantity of materials issued by the Institute for use in the work shall be calculated on the basis and method given hereunder:-

Quantity of cement & bitumen shall be calculated on the basis of quantity of cement & bitumen required for different items of work as shown in the Schedule of Rates mentioned in Schedule 'F'. In case any item is executed for which standard constants for the consumption of cement or bitumen are not available in the above mentioned schedule/statement or cannot be derived from the same shall be calculated on the basis of standard formula to be laid down by Institute.

Theoretical quantity of steel reinforcement or structural steel sections shall be taken as the quantity required as per design or as authorized by Institute, including authorized lappages, chairs etc. plus 3% wastage due to cutting into pieces, such theoretical quantity being determined and compared with the actual issues each diameter wise, section wise and category wise separately.

Theoretical quantity of G.I. & C.I. or other pipes, conduits, wires and cables, pig lead and G.I./M.S. sheets shall be taken as quantity actually required and measured plus 5% for wastage due to cutting into pieces (except in the case of G.I./M.S. sheets it shall be 10%), such determination & comparison being made diameter wise & category wise.

For any other material as per actual requirements.

Over the theoretical quantities of materials so computed a variation shall be allowed as specified in Schedule 'F'. The difference in the net quantities of material actually issued to the contractor and the theoretical quantities including such authorized variation, if not returned by the contractor or if not fully reconciled to the satisfaction of Institute within fifteen days of the issue of written notice by Institute to this effect shall be recovered at the rates specified in Schedule 'F', without prejudice to the provision of the relevant conditions regarding return of materials governing the contract. Decision of Institute in regard to theoretical quantities of materials, which should have been actually used as per the Annexure of the standard schedule of rates and recovery at rates specified in Schedule 'F', shall be final & binding on the contractor. For non-scheduled items, the decision of Institute regarding theoretical quantities of materials which should have been actually used, shall be final and binding on the contractor. The said action under this clause is without prejudice to the right of the Institute to take action against the contractor under any other conditions of contract for not doing the work according to the prescribed specifications.

CLAUSE 43

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 Institute 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 Institute 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 Institute, such payments being in addition to compensation upto 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 Director, Institute. 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 Institute 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 A.R.P. Officers or Institute (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 Director.

CLAUSE 44

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 thereunder from time to time. If he fails to do so, his failure will be a breach of the contract and the Director, Institute may, in his discretion, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

CLAUSE 45

Release of Security Deposit of the work shall not be refunded till the contractor produces a clearance certificate from the Labour Officer. As soon as the work is virtually complete the contractor shall apply for the clearance certificate to the Labour Officer under intimation to Institute. Institute, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in

respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Security Deposit will be released if otherwise due.

SAFETY CODES

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 guard rail 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 thereof 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.

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.

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.)

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. ($11\frac{1}{2}$ "') for ladder upto 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.

a. 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. (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.

Safety Measures for digging bore holes:

If the bore well is successful, it should be safely capped to avoid caving and collapse of the bore well. The failed and the abandoned ones should be completely refilled to avoid caving and collapse;

During drilling, sign boards should be erected near the site with the address of the drilling contractor and the Institute of the work;

Suitable fencing should be erected around the well during the drilling and after the installation of the rig on the point of drilling, flags shall be put 50 m alround the point of drilling to avoid entry of people;

After drilling the borewell, a cement platform (0.50 m x 0.50 m x 1.20 m) 0.60 m above ground level and 0.60 m below ground level should be constructed around the well casing;

After the completion of the borewell, the contractor should cap the bore well properly by welding steel plate, cover the bore well with the drilled wet soil and fix thorny shrubs over the soil. This should be done even while repairing the pump;

After the borewell is drilled the entire site should be brought to the ground level.

Demolition - Before any demolition work is commenced and also during the progress of the work,

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

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.

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.

All necessary personal safety equipment as considered adequate by Institute 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.

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

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.

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

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

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 atleast 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 :-

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

- b) At least 5 to 6 manholes upstream and 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.

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.

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.

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.

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.

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

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.

Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. Institute may decide the time up to which a worker may be allowed to work continuously inside the manhole.

Gas masks with Oxygen Cylinder should be kept at site for use in emergency. Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at least 2 metres 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.

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

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.

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.

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.

The extent to which these precautions are to be taken depend on individual situation but the decision of Institute 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:-

No paint containing lead or lead products shall be used except in the form of paste or ready made paint.

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.

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.

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

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.

Measures shall be taken, wherever required in order to prevent danger arising from

the application of a paint in the form of spray.

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

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

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

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

Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed.

Institute may require, when necessary medical examination of workers.

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

When the work is done near any place where there is risk of drowning, all necessary equipment's 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.

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

(a) These shall be of good mechanical construction, sound materials and adequate.

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.

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.

In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load.

In case of a hoisting machine having a variable safe working load each safe working load and the condition under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

(iv) In case of departmental machines, the safe working load shall be notified by the Electrical Institute. As regards contractor's machines the contractors shall notify the safe working load of the machine to Institute whenever he

brings any machinery to site of work and get it verified by the Electrical Engineer concerned.

Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating 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.

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.

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

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

MODEL RULES TO BE FOLLOWED BY CONTRACTORS FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS OF WORKERS EMPLOYED

1. APPLICATION

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

2. DEFINITION

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

FIRST-AID FACILITIES

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

The first-aid box shall be distinctly marked with a red cross on white background and shall contain

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

Each first-aid box shall contain the following equipment's :-

6 small sterilized dressings.

3 medium size sterilized dressings.

3 large size sterilized dressings.

3 large sterilized burn dressings.

1 (30 ml.) bottle containing a two per cent alcoholic solution of iodine.

1 (30 ml.) bottle containing salvo volatile having the dose and mode of administration indicated on the label.

1 snakebite lancet.

1 (30 gms.) bottle of potassium permanganate crystals.

1 pair scissors.

1 copy of the first-aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.

1 bottle containing 100 tablets (each of 5 gms.) of aspirin.

Ointment for burns.

A bottle of suitable surgical antiseptic solution.

For work places in which the number of contract labour exceed 50. Each first-aid box shall contain the following equipment's.

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

Adequate arrangements shall be made for immediate recoulement of the equipment when necessary.

Nothing except the prescribed contents shall be kept in the First-aid box.

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

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

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

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

DRINKING WATER

In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for

drinking.

Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.

Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust and waterproof.

A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

WASHING FACILITIES

In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of contract labour employed therein.

Separate and adequate cleaning facilities shall be provided for the use of male and female workers.

Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

LATRINES AND URINALS

Latrines shall be provided in every work place on the following scale namely :-

Where female are employed, there shall be at least one latrine for every 25 females.

Where males are employed, there shall be at least one latrine for every 25 males.

Provided that, where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females as the case may be upto the first 100, and one for every 50 thereafter.

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

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

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

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

There shall be at least one urinal for male workers upto 50 and one for female workers upto fifty employed at a time, provided that where the number of

male or female workmen, as the case may be exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females upto the first 500 and one for every 100 or part thereafter.

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

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

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

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

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

PROVISION OF SHELTER DURING REST

At every place there shall be provided, free of cost, four suitable sheds, two for meals and the other two for rest separately for the use of men and women labour. The height of each shelter shall not be less than 3 metres (10 ft.) from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sq.m. (6 sqft) per head.

CRECHES

At every work place, at which 20 or more women worker are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One room shall be used as a play room for the children and the other as their bedroom. The rooms shall be constructed with specifications as per clause 19H (ii) a, b & c.

The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.

The contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the bed room.

The contractor shall provide one ayaa to look after the children in the creche when the number of women workers does not exceed 50 and two when the number of women workers exceed 50.

The use of the rooms earmarked as creches shall be restricted to children, their attendants and mothers of the children.

CANTEENS

In every work place where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour numbering one hundred or more is ordinarily employed, an adequate canteen shall be provided by the contractor for the use of such contract labour.

The canteen shall be maintained by the contractor in an efficient manner.

The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places separately for workers and utensils.

The canteen shall be sufficiently lighted at all times when any person has access to it.

The floor shall be made of smooth and impervious materials and inside walls shall be lime-washed or colour washed at least once in each year.

Provided that the inside walls of the kitchen shall be lime-washed every four months.

The premises of the canteen shall be maintained in a clean and sanitary condition.

Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.

Suitable arrangements shall be made for the collection and disposal of garbage.

The dining hall shall accommodate at a time 30 per cent of the contract labour working at a time.

The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs shall not be less than one square metre (10 sqft) per diner to be accommodated as prescribed in sub-Rule 9.

- (xi) (a) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number.

Washing places for women shall be separate and screened to secure privacy.

Sufficient tables stools, chair or benches shall be available for the number of diners to be accommodated as prescribed in sub-Rule 9.

- (a) 1. There shall be provided and maintained sufficient utensils crockery,

furniture and any other equipment's necessary for the efficient running of the canteen.

The furniture utensils and other equipment shall be maintained in a clean and hygienic condition.

1. Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.

A service counter, if provided, shall have top of smooth and impervious material.

Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment's.

The food stuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.

The charges for food stuffs, beverages and any other items served in the canteen shall be based on 'No profit, No loss' and shall be conspicuously displayed in the canteen.

In arriving at the price of foodstuffs, and other article served in the canteen, the following items shall not be taken into consideration as expenditure namely:-

The rent of land and building.

The depreciation and maintenance charges for the building and equipment's provided for the canteen.

The cost of purchase, repairs and replacement of equipment's including furniture, crockery, cutlery and utensils.

The water charges and other charges incurred for lighting and ventilation.

The interest and amounts spent on the provision and maintenance of equipments provided for the canteen.

The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors.

ANTI-MALARIAL PRECAUTIONS

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

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

AMENDMENTS

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

CONTRACTOR'S LABOUR REGULATIONS

SHORT TITLE

These regulations may be called the Contractors Labour Regulations.

DEFINITIONS

Workmen means any person employed by contractor directly or indirectly

through a subcontractor to do any skilled, semiskilled or unskilled manual, supervisory, technical or clerical work for hire or reward, whether the terms of employment are expressed or implied but does not include any person:-

Who is employed mainly in a managerial or administrative capacity : or

Who, being employed in a supervisory capacity draws wages exceeding five hundred rupees per mensem or exercises either by the nature of the duties attached to the office or by reason of powers vested in him, functions mainly of managerial nature: or

Who is an out worker, that is to say, person to whom any article or materials are given out by or on behalf of the principal employers to be made up cleaned, washed, altered, ornamental finished, repaired adopted or otherwise processed for sale for the purpose of the trade or business of the principal employers and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of the principal employer.

No person below the age of 14 years shall be employed to act as a workman.

Fair Wages means wages whether for time or piece work fixed and notified under the provisions of the Minimum Wages Act from time to time.

Contractors shall include every person who undertakes to produce a given result other than a mere supply of goods or articles of manufacture through contract labour or who supplies contract labour for any work and includes a subcontractor.

Wages shall have the same meaning as defined in the Payment of Wages Act.

- i) Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.
When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week, he shall be paid overtime for the extra hours put in by him at double the ordinary rate of wages.
- iii) a) Every worker shall be given a weekly holiday normally on a Sunday, in accordance with the provisions of the Minimum Wages (Central) Rules 1960

as amended from time to time irrespective of whether such worker is governed by the Minimum Wages Act or not.

Where the minimum wages prescribed by the Government under the Minimum Wages Act are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same contractor for a continuous period of not less than 6 days.

Where a contractor is permitted by Institute to allow a worker to work on a normal weekly holiday, he shall grant a substituted holiday to him for the whole day on one of the five days immediately before or after the normal weekly holiday and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

DISPLAY OF NOTICE REGARDING WAGES ETC.

The contractor shall before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain in a clear and legible condition in conspicuous places on the work, notices in English and in the local Indian languages spoken by the majority of the workers giving the minimum rates of wages fixed under Minimum Wages Act, the actual wages being paid, the hours of work for which such wage are earned, wages periods, dates of payments of wages and other relevant information as per Appendix 'III'.

PAYMENT OF WAGES

The contractor shall fix wage periods in respect of which wages shall be payable. No wage period shall exceed one month.

The wages of every person employed as contract labour in an establishment or by a contractor where less than one thousand such persons are employed shall be paid before the expiry of seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.

Where the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.

All payment of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.

Wages due to every worker shall be paid to him direct by contractor through Bank or ECS or online transfer to his bank account.

All wages shall be paid through Bank or ECS or online transfer.

Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf

or permissible under the Payment of Wages Act 1956.

- ix) A notice showing the wages period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the contractor to Institute under acknowledgment.

It shall be the duty of the contractor to ensure the disbursement of wages through bank account of labour.

The contractor shall obtain from the Junior Engineer or any other authorized representative of Institute as the case may be, a certificate under his signature at the end of the entries in the "Register of Wages" or the "Wage-cum-Muster Roll" as the case may be in the following form:-

"Certified that the amount shown in column No has been paid to the workman concerned through bank account of labour on at "

FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES

The wages of a worker shall be paid to him without any deduction of any kind except the following :-

Fines

Deductions for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.

Deduction for damage to or loss of goods expressly entrusted to the employed person for custody, or for loss of money or any other deduction which he is required to account, where such damage or loss is directly attributable to his neglect or default.

Deduction for recovery of advances or for adjustment of overpayment of wages, advances granted shall be entered in a register.

Any other deduction which the Central Government may from time to time allow.

No fines should be imposed on any worker save in respect of such acts and omissions on his part as have been approved of by the Chief Labour Commissioner.

Note :- An approved list of Acts and Omissions for which fines can be imposed is enclosed at Appendix-X

No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.

- (iv) The total amount of fine which may be imposed in any one wage period on a worker shall not exceed an amount equal to three paise in a rupee of the total wages, payable to him in respect of that wage period.

No fine imposed on any worker shall be recovered from him by instalment, or after the expiry of sixty days from the date on which it was imposed.

Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

LABOUR RECORDS

- (i) The contractor shall maintain a Register of persons employed on work on contract in Form XIII of the CL (R&A) Central Rules 1971 (Appendix IV)
The contractor shall maintain a Muster Roll register in respect of all workmen employed by him on the work under Contract in Form XVI of the CL (R&A) Rules 1971 (Appendix V).
- (ii) The contractor shall maintain a Wage Register in respect of all workmen employed by him on the work under contract in Form XVII of the CL (R&A) Rules 1971 (Appendix VI).
Register of accident - The contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:
 - Full particulars of the labourers who met with accident.
 - Rate of Wages.
 - Sex
 - Age
 - Nature of accident and cause of accident.
- (v) The contractor shall maintain a Register of Fines in the Form XII of the CL (R&A) Rules 1971 (Appendix-XI)
The contractor shall display in a good condition and in a conspicuous place of work the approved list of acts and omissions for which fines can be imposed (Appendix-X).
The contractor shall maintain a Register of deductions for damage or loss in Form XX of the CL (R&A) Rules 1971 (Appendix-XII)
- (vii) The contractor shall maintain a Register of Advances in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIII)
The contractor shall maintain a Register of Overtime in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIV)

ATTENDANCE CARD-CUM-WAGE SLIP

The contractor shall issue an Attendance card-cum-wage slip to each workman employed by him in the specimen form (Appendix-VII)

The card shall be valid for each wage period.

The contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.

The card shall remain in possession of the worker during the wage period under reference.

The contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.

The contractor shall obtain the signature or thumb impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself.

EMPLOYMENT CARD

The contractor shall issue an Employment Card in Form XIV of the CL (R&A) Central Rules 1971 to each worker within three days of the employment of the worker (Appendix-VIII).

SERVICE CERTIFICATE

On termination of employment for any reason whatsoever the contractor shall issue to the workman whose services have been terminated, a Service certificate in Form XV of the CL (R&A) Central Rules 1971 (Appendix-IX)

PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulations Nos. 6 & 7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by Institute or Labour Officer or any other officers authorized by the Ministry of Urban Development in this behalf.

POWER OF LABOUR OFFICER TO MAKE INVESTIGATIONS OR ENQUIRY

The Labour Officer or any person authorized by Central Government on their behalf shall have power to make enquires with a view to ascertaining and enforcing due and proper observance of Fair Wage Clauses and the Provisions of these Regulations. He shall investigate into any complaint regarding the default made by the contractor or subcontractor in regard to such provision.

REPORT OF LABOUR OFFICER

The Labour Officer or other persons authorized as aforesaid shall submit a report of result of his investigation or enquiry to the Institute indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractor's bill be made and the wages and other dues be paid to the labourers concerned. In case an appeal is made by the contractor under Clause 13 of these regulations, actual payment to labourers will be made by Institute after his decision on such appeal.

Institute shall arrange payments to the labour concerned within 45 days from the receipt of the report from the Labour Officer.

PROHIBITION REGARDING REPRESENTATION THROUGH LAWYER

A workman shall be entitled to be represented in any investigation or enquiry under these regulations by:-

An officer of a registered trade union of which he is a member.

An officer of a federation of trade unions to which the trade union referred to in clause (a) is affiliated.

Where the employer is not a member of any registered trade union, by an officer of a registered trade union, connected with the industry in which the worker is employed or by any other workman employed in the industry in which the worker is employed.

An employer shall be entitled to be represented in any investigation or enquiry under these regulations by :-

An officer of an association of employers of which he is a member.

An officer of a federation of associations of employers to which association referred to in clause (a) is affiliated.

Where the employers is not a member of any association of employers, by an officer of association of employer connected with the industry in which the employer is engaged or by any other employer, engaged in the industry in which the employer is engaged.

No party shall be entitled to be represented by a legal practitioner in any investigation or enquiry under these regulations.

INSPECTION OF BOOKS AND SLIPS

The contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Officer or any other person, authorized by the Central Government on his behalf.

SUBMISSIONS OF RETURNS

The contractor shall submit periodical returns as may be specified from time to time.

AMENDMENTS

The Central Government may from time to time add to or amend the regulations and on any question as to the application/Interpretation or effect of those regulations the decision of the Superintending Engineer concerned shall be final.

Appendix-'I'

REGISTER OF MEDICAL BENEFITS

Name and address of the contractor

Name and location of the work

Name of the employee	Father's/Husband's Name	Nature of Employment	Period of actual employment	Date on which notice of confinement given
1	2	3	4	5

Date on which maternity leave commenced and ended

Date of delivery / miscarriage	In case of delivery		In case of miscarriage	
	Commenced	Ended	Commenced	Ended
6	7	8	9	10

Leave pay paid to the employee

In case of delivery		In case of miscarriage		Remarks
Rate of leave pay	Amount paid	Rate of leave pay	Amount Paid	
11	12	13	14	15

Appendix 'II'

**SPECIMEN FORM OF THE REGISTER, REGARDING MATERNITY BENEFIT
ADMISSIBLE TO THE CONTRACTOR'S LABOUR**

Name and address of the contractor.....

Name and location of the work

Name of the woman and her husband's name.

Designation

Date of appointment.

Date with months and years in which she is employed.

Date of discharged/dismissal, if any.

Date of production of certificates in respect of pregnancy.

Date on which the woman informs about the expected delivery.

Date of delivery/miscarriage/death.

Date of production of certificate in respect of delivery/miscarriage.

Date with the amount of maternity/death benefit paid in advance of expected delivery.

Date with amount of subsequent payment of maternity benefit.

Name of the person nominated by the woman to receive the payment of the maternity benefit after her death.

If the woman dies, the date of her death, the name of the person to whom maternity benefit amount was paid, the month thereof and the date of payment.

Signature of the contractor authenticating entries in the register.

Remarks column for the use of Inspecting Officer.

Appendix 'III'

Labour Board

Name of work

Name of Contractor

Address of Contractor

Name of Labour Enforcement Officer

Address of Labour Enforcement Officer

Sl. No.	Category	Minimum Wage fixed	Actual Wage paid	Number present	Remarks

Weekly holiday

Wage period

Date of payment of wages

Working hours

Rest interval

Appendix 'IV' FORM
XIII (See Rule 75)
Register of workmen Employed by Contractor

Name and address of contractor

Name and address of establishment under which contact is carried on

Nature and location of work

Name and address of Principal Employer

Sl. No.	Name and Surname of workman	Age and Sex	Father's/ Husband's Name	Nature of employment/ Designation	Permanent home address of the workman (Village and Tehsil, Taluk and District)	Local Address	Date commencement of employment	Signature or Thumb impression of the workman	Date of termination of employment	Reasons for termination	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

FORM XVI (See Rule 78(2)(a))
Muster Roll

Name and address of contractor

Name and address of establishment under which contact is carried on

Nature and location of work

Name and address of Principal Employer for the month of fortnight

Sl. No.	Name of workman	Sex	Father's / Husband's Name	Dates					Remarks
				1	2	3	4	5	
				1	2	3	4	5	

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix 'VI'

FORM XVII (See Rule 78(2)(a)

Register of Wages

Name and address of contractor

Name and address of establishment under which contact is carried on

Nature and location of work

Name and address of Principal Employer Wages Period Monthly / Fortnight

Sl. No.	Name of workman	Serial no. in theregisterofworkman	Designation/natureofworkd one	No. of days worked	Units of work done	Daily rate of wages/piece-rate	Amount of wages earned					Deductions if any(indicatenature)	Net amount paid	Signature/thumb impression of the workman	Initial of contractor or its representative
							Basic Wages	Dearness Allowan- ces	Overtime	Other cashpay- ments(in decimal amt)	Total				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Appendix 'VII'

WAGE CARD

Wage Card no.

Name and Address of the Contractor Date of Issue

Name and location of work Designation

Name of workman Month / Fortnight

Rate of wages

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Amount	Rate
Morning																																
Evening																																
Initial																																

..... the sum of Rs.on account of my wages

Received from

The Wage Card is valid for one month from the date of issue

Signature

WAGES SLIP

Name and Address of contractor

Name and Father's/husband's name of workman

Nature and location of work

For the Week/Fortnight/Month ending

No. of days worked

No. of units worked in case of piece rate workers.....

Rate of daily wages/piece rate

Amount of overtime wages.....

Gross wages payable.....

Deduction, if any.....

Net amount of wages paid

Initials of the contractor or his representative

Appendix 'VIII'

Form-XIV

EMPLOYMENT CARD

Name and Address of contractor

Name and address of establishment under which contract is carried on

Name of work and location of work

Name and address of Principal Employer

1. Name of the workman

2. Sl. No. in the register of workman employed

3. Nature of employment/designation

4. Wage rate (with particulars of unit in case of piece work)

5. Wage period

6. Tenure of employment

7. Remarks

Signature of contractor

Appendix 'IX'**FORM XV (See Rule 77)**
Service Certificate

Name and Address of contractor

Name of work and location of work

Name and address of workman.....

Age or Date of Birth

Identification Marks

Father's / Husband's Name

Name and address of establishment in under which contract is carried on

Name and address of the Principal Employer

Sl. No.	Total period for which employed		Nature of work done	Rate of wages (with particulars of unit in case of piece work)	Remarks
	From	To			
1	2	3	4	5	6

Appendix 'X'

LIST OF ACTS AND OMISSIONS FOR WHICH FINES CAN BE IMPOSED

In accordance with rule 7(v) of the Contractor's Labour Regulations to be displayed prominently at the site of work both in English and local Language.

- Willful insubordination or disobedience, whether alone or in combination with other.
- Theft fraud or dishonesty in connection with the contractors or property of Institute.
- Taking or giving bribes or any illegal gratifications.
- Habitual late attendance.
- Drunkenness lighting, riotous or disorderly or indifferent behaviour.
- Habitual negligence.
- Smoking near or around the area where combustible or other materials are locked.
- Habitual indiscipline.
- Causing damage to work in the progress or to property of Institute or of the contractor.
- Sleeping on duty.
- Malingering or slowing down work.
- Giving of false information regarding name, age father's name, etc.,
- Habitual loss of wage cards supplied by the employers.
- Unauthorised use of employer's property.
- Bad workmanship in construction and maintenance by skilled workers which is not approved by the Department and for which the contractors are compelled to undertake rectifications.
- Making false complaints and/or misleading statements.
- Engaging on trade within the premises of the establishments.
- Any unauthorised divulgence of business affairs of the employees.
- Collection or canvassing for the collection of any money authorised by the employer.
- Holding meeting inside the premises without previous sanction of the employers.
- Threatening or intimidating any workman or employer during the working hours within the premises.

FORM XII (See Rule 78(2)(d)
Register of Fines

Name and Address of contractor

Name and address of establishment in under which contract is carried on

Nature and location of work

Name and address of Principal Employer

Sl. No.	Name of workman	Father's/Husband's name	Designation/Nature of employment	Act Omission for which fine imposed	Date of Offence	Whether workman has been segregated or not	Name of person who imposed the fine	Wage period and wages payable	Amount of fine imposed	Date on which fine realized	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

FORM XX (See Rule 78(2)(d)
Register of Deduction for Damage or Loss

Name and Address of contractor

Name and address of establishment in under which contract is carried on

Nature and location of work

Name and address of Principal Employer

Sl. No.	Name of workman	Father's/Husband's name	Designation/Nature of employment	Particulars of damage or loss	Date of damage or loss	Whether workman has been against deduction	Name of person in whose presence employee's explanation was	Amount of deduction imposed	No. of installments	Date of recovery		Remarks
										First install- ment	Last install- ment	
1	2	3	4	5	6	7	8	9	10	11	12	13

FORM XXII (See Rule 78(2)(d)
Register of Advances

Name and Address of contractor

Name and address of establishment in under which contract is carried on

Nature and location of work

Name and address of Principal Employer

S. No.	Name of workman	Father's/ Husband's name	Designation/nature of employment	Wage period and wages payable	Date and amount of advance given	Purpose(s) for which advance made	Number of installments by which advance to be repaid	Date and amount of each installment paid	Date and which last installment was paid	Remarks
1	2	3	4	5	6	7	8	9	10	11

Appendix 'XIV'

FORM XXIII (See Rule 78(2)(e)
Register of Overtime

Name and Address of contractor

Name and address of establishment in under which contract is carried on

Nature and location of work

Name and address of Principal Employer

Sl. No.	Name of workman	Father's / Husband's name	Sex	Designation / nature of employment	Date on which overtime worked	Total overtime worked or production in case of piece rate	Normal rate of wages	Overtime rate of wages	Overtime earning	Rate on which overtime paid	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

Appendix XV

Notice for appointment of Arbitrator [Refer Clause 25]

To
Director,
AIIMS PATNA
PATNA

Dear Sir,

In terms of clause 25 of the agreement, particulars of which are given below, I/we hereby give notice to you to appoint an arbitrator for settlement of disputes mentioned below:

Name of applicant

Whether applicant is Individual/Prop. Firm/Partnership Firm/Ltd. Co.

Full address of the applicant

Name of the work and contract number in which arbitration sought

Contract/Agreement No

Contract amount in the work

Date of contract

Date of contract Date of initiation of work

Stipulated date of completion of work

Actual date of completion of work (if completed)

Total number of claims made

Total amount claimed

Date of intimation of final bill (if work is completed)

Date of payment of final bill (if work is completed)

Amount of final bill (if work is completed)

Date of request made to Director for decision

Date of receipt of Director's decision

Specimen signatures of the applicant (only the person/authority
who signed the contract should sign)

I/We certify that the information given above is true to the best of my/our knowledge. I/We enclose following documents.

Statement of claims with amount of claims.

Yours faithfully,

(Signatures)

FORM OF PERFORMANCE SECURITY (GUARANTEE)
BANK GUARANTEE BOND

In consideration of the Director, AIIMS PATNA (hereinafter called "The Institute") having offered to accept the terms and conditions of the proposed agreement between.....and(hereinafter called "the said Contractor(s)") for the work.....(hereinafter 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.

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

We,(indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Institute 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. (Rupeesonly).

We, the said bank further undertake to pay the Institute 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.

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 Institute under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Institute on behalf of the Institute 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.

We,(indicate the name of the Bank) further agree with

the Institute that the Institute 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 Institute 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 Institute or any indulgence by the Institute 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 change in the constitution of the Bank or the Contractor(s).

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

This guarantee shall be valid up tounless extended on demand by the Institute. 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 theday offor.....(indicate the name of the Bank)

SCHEDULE - B **SPECIAL CONDITIONS**

GENERAL

- 1.1 The Contractors are advised to inspect and examine the site and its surroundings and satisfy themselves with the nature of site, the means of access to the site, the constraints of space for stacking material / machinery, labour etc. constraints put by local regulations, if any, weather conditions at site, or any other circumstances which may affect or influence their tenders. The site shall be made available for work in parts as finishing work of other area on every floor is in progress by the other agency. No claims, whatsoever, shall be entertained at a later date for any errors found, on plea that the information supplied by the Department in the tender is insufficient or is at variance with the actual site conditions.
- 1.2 The Contractor shall, if required by him, before submission of the tender, inspect the drawings in the Office of the Director, AIIMS PATNA.. The Department shall not bear any responsibility for the lack of knowledge and also the consequences, thereof to the Contractor. The information and data shown in the drawings and mentioned in the tender documents have been furnished, in good faith, for general information and guidance only. The Engineer-in-Charge, in no case, shall be held responsible for the accuracy thereof and/or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor. No claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in tender document is different or in-correct otherwise or actual working drawings are at variance with the drawings available for inspection or attached to the tender documents. It is presumed that the Contractor shall satisfy himself for all possible contingencies, incidental charges, wastages, bottlenecks etc. likely during execution of work and acts of coordination, which may be required between different agencies. Nothing extra shall be payable on this account.
- 1.3 The nomenclature of the item given in the schedule of quantities gives in general the work content but is not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and/or described in the specifications, provided that the same can be reasonably inferred there from may be several incidental works, which are not mentioned in the nomenclature of each item but will be necessary to complete the item in all respect. All these incidental works / costs which are not mentioned in item nomenclature but are necessary to complete the item shall be deemed to have been included in the rates quoted by the contractor for various items in the schedule of quantities. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Engineer-in-Charge. Nothing extra shall be payable on this account.
- 1.4 The work covered under the scope of this tender document is to be executed in the building already under construction by some other contractor and accordingly, the

Successful bidder will have to ensure proper and effective coordination with the construction agency already working at site. In execution of the present scope of the work. The successful bidder has plan his activities in a manner so as not to cause any disturbance and / or any hindrance to the work being executed and also not to cause any damage to the work executed by the other construction agency. Also, there is no open space available within the plot of land of building for stacking of material or any other required establishment of the contractor. Limited space in the area of the building could be made available if so desired by the contractor, for which the contractor shall submit his request along with detailed sketch drawing clearly showing area required with the purpose of use etc. it is not obligatory on the part of the Institute to provide any space for any such activities other than the areas for execution of the work as per scope of the work covered under this bid document. Decision of the Engineer-in-charge in this regard shall be final and binds on the contractor.

- 1.5 The Contractor(s) shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night. In case of any accident of labours/ contractual staffs the entire responsibility will rest on the part of the contractor and any compensation under such circumstances, if becomes payable, shall be entirely borne by the contractor.
- 1.6 The work shall generally be carried out in accordance with the "CPWD Specifications 2009 Vol. I & II" with up to date correction slips, additional/Particular Specifications, architectural/Structural drawings and as per instructions of Engineer-in-Charge. Any additional item of the work, if taken up subsequently, shall also confirm to the relevant CPWD specifications as mentioned above.
- 1.7 The several documents forming the tender are to be taken as mutually complementary to one another. Detailed drawings shall be followed in preference to small scale drawings and figured dimensions in preference to scale dimensions.
- 1.8 There be any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and B.I.S. Codes etc., the following order of preference shall be observed.
 - Description of items as given in Schedule of quantities
 - Particular specifications
 - Special conditions
 - Tender drawings attached
 - (VI) CPWD Specifications including correction slips issued up to previous day of the last date of Uploading/ submission of tender.
 - (VII) General Conditions of Contract for CPWD works including correction slips issued up to previous day of last date of uploading/ submission of tender.
 - (VIII) Indian Standards Specifications of B.I.S.
 - (IX) ASTM, BS, or other foreign origin code mentioned in tender document.
Manufacturer's specifications and as decided by the Engineer-in-Charge.
 - (XI) Sound Engineering practices or well established local construction practices.

- 1.9 The works to be governed by this contract shall cover manufacturing, supply, delivery and transportation up to destination, safe custody at site, insurance, installation

The works to be undertaken by the contractor shall inter-alia include the following:

Preparation of detailed SHOP drawings - Contractor shall provide all the shop drawings or layout drawings for all the coordinated services before starting any work or placing any order of any of the services etc. These shop drawings/layout drawings shall be got approved from Engineer-in-charge before implementation and this shall be binding on the contractor. The contractor shall submit material submittals along with material sample for approval of Engineer-in-Charge prior to delivery of material at site

Preparation of AS BUILT drawings wherever applicable.

Obtaining of Statutory permissions where-ever applicable and required.

Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.

Warranty obligation for the equipment's and / or fittings/fixtures supplied by the contractor..

- 1.10 The work shall be carried out in accordance with the approved architectural drawings and building services drawings to be issued from time to time, by the Engineer-in-Charge. Before commencement of any item of work the contractor shall correlate all the relevant architectural and structural drawings, nomenclature of items and specifications etc. issued for the work and satisfy himself that the information available from there is complete and unambiguous. The figure and written dimension of the drawings shall be superseding the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in- charge before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and or incomplete information and no claim whatsoever shall be entertained by the department on this account.
- 1.11 Unless otherwise provided in the Schedule of quantities, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing extra shall be payable to him on this account.
- 1.12 The Contractor(s) shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place.
- 1.13 Wherever required, The contractor shall install the items through the manufacturer or their authorized dealer of approved make as per direction of Engineer-in-charge.
- 1.14 The Contractor shall bear all incidental charges for cartage, storage and safe custody of materials, if any, issued by Institute as well as to those materials also arranged by the contractor.

1.15 The contractor shall give performance test of the entire installation(s) as per the specifications in the presence of the Engineer-in-charge or his authorized representative before the work is finally accepted and nothing extra what-so-ever shall be payable to the contractor for such test.

1.16 PREVENTION OF NUISANCE AND POLLUTION CONTROL

The contractor shall take all necessary precautions to prevent any nuisance or inconvenience from pollutants like smoke, dust, noise. The contractor shall use such methodology and equipment so as to cause minimum environmental pollution of any kind. The contractor shall make good at his cost and to the satisfaction of the Engineer-in-Charge, any damage to existing buildings and its services, 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. All waste or superfluous materials shall be carried away by the contractor, without any reservation, entirely to the satisfaction of the Engineer-in-Charge.

1.17 Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the nearby occupants/users of building(s)/other agencies if any.

1.18 SECURITY AND TRAFFIC ARRANGEMENTS

In the event of any restrictions being imposed by the Security agency ,AIIMS Patna, Traffic or any other authority having jurisdiction in the area on the working or movement of labour /material, the contractor shall strictly follow such restrictions and nothing extra shall be payable to the contractor on such accounts. The loss of time on these accounts, if any, shall have to be made up by augmenting additional resources whatever required.

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

1.20 No payment shall be made for any damage caused by rain, snowfall, flood or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the govt. property and the work for which payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him.

- 1.21 The contractor shall construct suitable godowns, yard work for storing all other materials so as to be safe against damage by sun, rain, damages, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost.
- 1.22 All materials obtained from contractor shall be got checked by the representative of Engineer-in-Charge on receipt of the same at site before use.
- 1.23 The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including all equipment's, services provided by him against pilferage and breakage during the period of Installations and thereafter till the work is physically handed over to Institute. No extra payment shall be made on this account and no claim shall be admissible on this account.
- 1.24 The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by Collector and any other statutory bodies shall be adhered to, by the contractor, during the execution of work. He shall protect and indemnify the Department and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts. The fee payable to statutory authorities for obtaining the various permanent service connections and Occupancy Certificate for the building shall be borne by the Department.

1.25 INTEGRATED SERVICE DRAWINGS

Before taking up the work, the contractor shall be provided with integrated drawings for various civil services showing details of lay out plan including sectional elevations and contractor shall plan and mobilize his resources as per the Integrated drawings and as per the site conditions to facilitate convenient execution, installation as well as maintenance of these services. Nothing extra shall be payable on this account.

1.26 TOOLS AND PLANTS

The bidder should have own constructions equipment required for the proper and timely execution of the work. Nothing extra shall be paid on this account. No tools and plants including any special T&P etc. shall be supplied by the Department and the Contractor shall have to make his own arrangements at his own cost. No claim of hindrance (or any other claim) shall be entertained on this account.

1.27 SCAFFOLDING

Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the Contractor. It shall be provided strictly with steel double

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

- 1.28 The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion. The agency to deploy adequate equipment, machinery and labour as required for the completion of the entire work within the stipulated period specified. Also ancillary facilities shall be provided by contractor commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this account. Adequate number/sets of equipment in working condition, along with adequate stand-by arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipment, Tools & Plants, machineries etc. provided by him are maintained in proper working conditions at all times during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipment and machineries provided by the Contractor, on site of work or his workshop for this work, shall be exclusively intended for use in the construction of this work and they shall not be shifted/ removed from site without the permission of the Engineer-in-Charge.

1.29 RESPONSIBILITY

The Contractor shall protect and indemnify the Institute and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts.

The fee payable to statutory authorities for obtaining the various permanent service connections and Building Use Certificate for the building shall be borne by the Institute.

The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the Department from any and all damages and claims that may arise on any account. The Contractor shall indemnify the Department against all claims in respect of patent rights, royalties, design, trademarks- of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify the Department in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.

1.30 SUPERVISION OF WORK

The Contractor shall depute Site Engineer & skilled workers as required for the work. He shall submit organization chart along with details of Engineers and supervisory staff. It shall be ensured that all decision making powers shall be available to the representatives of the Contractor at site of work itself to avoid any likely delays on this account. The Contractor shall also furnish list of persons for

specialized works to be executed for various items of work. The Contractor shall identify and deploy key persons having qualifications and experience in the similar and other major works, as per the field of their expertise. If during the course of execution of work, the Engineer-in-Charge is of the opinion that the deployed staff is not sufficient or not well experienced; the Contractor shall deploy more staff or better-experienced staff at site to complete the work with quality and in stipulated time limit. Principle Technical representative of the Contractor having minimum experience in similar nature of work as mentioned in the clause 36 of the General Conditions of the Contract, shall always be available at the site during the actual execution of the work. The recovery shall be made from the contractor bill in the event of not fulfilling this provision as mentioned in clause 36 of schedule 'F'.

1.31 RATES

The rates quoted by the bidders', shall be firm and inclusive of all taxes and levies (including works contract tax but excluding service tax).

No foreign exchange shall be made available by the Department for importing (purchase) of equipment, plants, machinery, materials of any kind or any other items required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained from the Contractor, on account of variation in the foreign exchange rate.

For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason, to the labourers 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.

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.

The bidder has to ensure the minimum basic rate of material mentioned in the Schedules of Quantities of items of approved sample and same material shall be supplied and fixed at site. In case minimum basic rate of material is minus/ Less than the minimum basic rate of material, the difference shall be recovered after adding 1% water charge and 15% contractor profit. If in the opinion of Institute, a material with basic rate in excess of minimum rate mentioned in the Schedule of Quantities is to be used, the excess after adding 1% water charge and 15% contractor profit shall be paid to the Contractor.

1.32 SAFETY PRACTICES

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.

Necessary protective and safety equipment's shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and to be used at site.

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.

1.33 QUALITY ASSURANCE

The proposed building 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.

The work shall commence only after the manufacturing facility of the Contractor is got approved from the Institute. Such factory approval shall be obtained within 15 days of the award of work. Any delay in such approval shall not be treated as hindrance of work. All expenses in connection with the inspection and approval of manufacturing facility shall be borne by the contractor. The Institute, in its wisdom, may undertake periodic inspections of the manufacturing facility and the contractor shall extend all assistance and cooperation in this regard.

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 Institute, the Consultants deployed by the AIIMS shall also be carrying out regular and periodic inspection of the ongoing activities in the work and deficiencies, shortcomings, inferior workmanship pointed out by them shall be communicated by Institute to the contractor. Upon receipt of instructions from Engineer in Charge these are also to be made good by necessary improvement, rectification, replacement upto his complete satisfaction. Special attention shall be paid towards line and level,

accurate joinery work in wood work protection of scratches over flooring by impounding layer of plaster of Paris. Protection of carpet roll flooring after laying from damage protection of scratch on compactors by providing suitable covering, etc. to achieve an Institution of International standards and up keeping of quality assurance shall be of paramount importance, as such.

All materials and fittings brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-charge which shall be preserved till the completion of the work. If a particular brand of material is specified in the item of work in Schedule of Quantity, the same shall be used after getting the same approved from Engineer-In-Charge. Wherever brand / quality of material is not specified in the item of work, the contractor shall submit the samples as per suggested list of brand names given in the tender document / particular specifications for approval of Engineer-In-Charge. For all other items, materials and fittings of ISI Marked shall be used with the approval of Engineer-In-Charge. Wherever ISI Marked material / fittings are not available, the contractor shall submit samples of materials / fittings manufactured by firms of repute conforming to relevant specifications or IS codes and use the same only after getting the approval of Engineer-In-Charge.

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.

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.

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.

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.

All the testing charges shall be borne by the contractor/ department in the manner indicated below:

By the contractor, if the results show that the material does not confirm to relevant specifications and BIS codes or any other relevant code for which confirmatory test is carried out.

By the department, if the results show that the material confirms to relevant specifications and BIS codes or any other relevant code for which confirmatory test is carried out.

All the hidden items 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.

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.

1.34 SUBMISSION AND DOCUMENTATION

The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc under various labour laws and other regulations applicable to the works, at his site office. He should also keep at site at least one set of BIS Codes and other relevant codes at site and produce the same if asked for by Engineer-In-Charge. In case of non compliance, these codes will be purchased from the Market and actual cost of purchase will be recovered from the next RA Bill of the Contractor.

The Performance Guarantee shall not be released to the contractor until the aforesaid drawings are submitted to the Engineer-in-Charge

The contractor will submit computerized measurement sheet for the work carried out by him for making payment as per Clause - 6A of the CPWD General Conditions of Contract 2014 (with correction slips upto the previous last day of submission of tender). Hidden and other items, corrected and duly test checked measurement sheets shall be deposited with Engineer in charge or his authorized representative, before covering of hidden items. The delay in submission of corrected and duly checked measurement sheet may delay in execution of other item for which no hindrance shall be recorded.

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

1.35 Program Chart:

The Contractor shall prepare an integrated program chart within ten days of issue of award letter including civil for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfilment of the program within the stipulated period and submit the same for approval of the Engineer-In-Charge within ten days of the award of the work. These shall be submitted by the contractor through electronic media besides forwarding hard copies of the same. The integrated program chart so submitted should not have any discrepancy with the physical milestones attached in the contract agreement. The program chart should include the following: -

Descriptive note explaining sequence of various activities.

Program for procurement of materials by the contractor.

Program for arranging and deployment of manpower both skilled and unskilled so as to achieve targeted progress.

Program of procurement of machinery/equipment having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor.

Program for achieving fortnightly micro milestones and periodic milestones.

If at any time, it appears to the Engineer-In-Charge that the actual progress of work does not conform to the approved program referred above, the contractor shall produce a revised program showing the modifications to the approved program by additional inputs to ensure completion of the work within the stipulated time.

The submission for approval by the Engineer-In-Charge of such program or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibilities under the contract. This is without prejudice to the right of Engineer-In-Charge to take action against the contractor as per terms and conditions of the agreement.

Apart from the above integrated program chart, the contractor shall be required to submit fortnightly progress report of the work in a computerized form on 1st and 16th of every month. The progress report shall contain the following, apart from whatever else may be required as specified above:

Construction schedule of the various components of the work through a bar chart for the next two fortnights (or as may be specified), showing the micro-milestone/milestones, targeted tasks (including material and labour requirement) and up to date progress. Atleast 10 digital photographs showing all the parts of construction site along with atleast 5 minutes video of executions of different items in soft copy has to be submitted in every fortnightly progress report.

Progress chart of the various components of the work that are planned and achieved, for the fortnight as well as cumulative up to the fortnight under reckoning, with reason for deviations, if any in a tabular format.

Plant and machinery statement, indicating those deployed in the work.

Man-power statement indicating:

Individually the names of all the staff deployed on the work, along with their designations.

No. of skilled workers (trade wise) and total no. of unskilled workers deployed on the work and their location of deployment i.e. blocks.

Financial statement, indicating the broad details of all the running account payment received up to date, such as gross value of work done, advances taken, recoveries effected, amount withheld, net payments details of cheque payment received, extra/substituted/deviation items if any, etc.

In case of non compliance / delay in compliance in submission of fortnightly reports, a penalty @ Rs. 1000/- per fortnightly report will be imposed which will be recovered from the immediate next R/A Bill of the Contractor.

1.36 INSPECTION OF WORK

In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by Senior Officers of Institute & the representative of the Consultants .The contractor shall at times during the usual working hours and at all times at which reasonable notices of the intention of the Engineer-in-charge or other officers as stated above to visit the works shall have been given to the contractor, either himself be present to receive the orders and instructions or have a responsible representative duly accredited in writing, to be present for that purpose.

Inspection of the work by Consultant appointed by the Institute.

The consultant appointed by Institute, shall be inspecting the works including workshops and fabrication factory to ensure that the works are in general being executed according to the design, drawings and specifications laid down in the contract.

Senior Officers of Institute, Dignitaries from Central Ministry / Department shall be inspecting the on-going work at site at any time with or without prior intimation. The contractor shall, therefore, keep updated the following requirements and detailing.

- Display Board showing detail of work, weekly progress achieved with respect to targets, reason of shortfall, status of manpower, wages being paid for different categories of workers.
- Entrance and area surrounding to be kept cleaned.
- Display layout plan key plan, Building drawings including plans, elevations and sections.
- Upto date displays of Bar chart, CPM and PERT etc.
- Keep details of quantities executed, balance quantities, deviations, possible Extra item, substituted Item etc.
- Keep plastic / cloth mounted one sets of building drawings.
- Set of Helmets and safety shoes for exclusive use for officers/dignitaries visiting at site.

1.37 DEFECT LIABILITY PERIOD (REFUND OF SECURITY DEPOSIT)

1.37.1 Defects liability period shall be taken as **thirty six (36) months** from the date of completion of the work for building as a whole, wherein all the defects shall be rectified by the contractor at his own cost.

1.37.2 Defects of serious nature causing inconvenience such as leakage, reverse floor slopes affecting the drainage (ponding of water), warping and opening of joints in doors and window shutters etc shall be undertaken by the contractor immediately on receipt of the complaint but not exceeding one week time, failing which the defects will be got removed at his risk and cost plus 25% as supervision and establishment charges.

1.37.3 All other defects notified to the contractor during the DLP shall be rectified to the entire satisfaction of Engineer-in-Charge or item replaced as soon as possible but not later than one month in any case. Failure to do so in a reasonable period the Engineer-in-Charge shall get it done at his cost plus 25% as supervision and establishment charges after final notice of 10 days. The decision of Engineer-in-Charge regarding a defect being of serious nature or otherwise shall be final and binding.

1.37.4 The scope of the defect liability will be as under:

S.No	Description	Defect Liability
(i)	Concrete work	<p>(a) Rectification of structural / superficial/ non-structural cracks.</p> <p>(b) Rectification of dampness/leakages/seepage in roof slab/junctions & sunken portion, depressed portion, through RCC slab, vertical ties, bands, walls, base slab, junction of RCC walls with base slab and construction joints of RCC water tanks.</p> <p>(c) Rectification of cracks in girders, beam, slab, column, lintels, vertical ties, plinth bands, lintel bands etc.</p>
(ii)	Brick Work/AAC work	<p>(a) Rectification of cracks in confined masonry panel wall/partition wall in full length or in part portion.</p> <p>(b) Cracks / settlement of main wall, partition wall or dwarf walls.</p> <p>(c) Rectification of efflorescence, dampness.</p>
(iii)	Woodwork & Joinery	<p>(a) Replacement of warped / bent / weather affected joinery,</p> <p>termite & borer affected joinery of wooden door / window shutters and frames.</p> <p>(b) Cracks in panels, bars / rails / styles of wooden door / Window shutters etc.</p>
		Page 13

(iv)	Builders	(a) Repairs / Replacement of loosened / premature failure of fittings including lever mechanics in door locks, hydraulic door closers, handles, tower blots, cupboard locks etc.
	Hardware	(b) Tightening / Replacement of sag in mosquito proofing SS net
(v)	Steel & iron work	(a) Rectification / Replacement of defective part of girders, gate, shutter, etc.
		(b) Redoing of defective portion in fabrication / welding including painting thereon.
		(c) Structural steel work and SS railing.
		(d) Windows, grills, gates etc. - Defects to be rectified.
(vi)	Roof treatment	(a) Rectification of leakage / seepage in roof slab, expansion/ seismic joints, floor junctions, inadequate/ faulty slope, drain outlets, including covering at junction till guarantee period.
(vii)	Finishing work	(a) Rectification of structural / superficial cracks.
		(b) Rectification of protruding / peeling off plaster.
		(c) Rectification of efflorescence, dampness appeared. (d) Undulation / unevenness in plaster.
		(e) Paint & polishing.
(viii)	Flooring work	(a) Rectification of sunken / deflected / depressed portion of plinth protection, flooring in rooms, toilets, entrance foyer, staircase and other locations.
		(b) Rectification / Replacement of settled floors.
		(c) Settlement of foundation & floors and resultant undulation of door finishes.
		(d) Rectification / Replacement of floor tiles which are sunken / uneven / undulating at joints / different in color, texture, etc.
(ix)	Aluminum work	Rectification / Replacement of defective part of Aluminum frame / shutters.

Note: The above list is illustrative for civil work and not exhaustive. The rectification will include all Civil and Electromechanical works including internal and external services without any exclusion.

1.38 DEALING WITH INCONSISTENT RATES

The Contractors shall quote same rates for the identical items which may inadvertently appear in more than one place if different rates are quoted by the bidders' for such identical items, the same shall be rationalized by considering the lowest quoted rate for such items, for evaluation and acceptance of tender.

Wherever any reference to any Indian Standards occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued thereto or revisions thereof, if any, up to the date of receipt of tenders.

Unless otherwise specified in the schedule of quantities, the rates for all items of work shall be considered, as inclusive of pumping out or bailing out water, if required throughout the construction period for which no extra payment shall be made. This shall also include water encountered from any source such as rains, floods, sub soil water table being high and/or due to any other cause whatsoever.

The rates for all items of work, shall unless clearly specified otherwise, include cost of all operations and all inputs of labour, material, T & P, scaffolding, wastages, watch and ward, other inputs, all incidental charges, all taxes, cess, VAT, duties, levies etc. required for execution of the work.

1.39 INSURANCE POLICIES

Before commencing the execution of work, the Contractor shall, without in any way limiting his obligations and liabilities, insure at his own cost and expense against any damage or loss or injury, which may be caused to any person or property, at site of work. The Contractor shall obtain and submit to the Engineer-in-Charge proper Contractor All Risk Insurance Policy for an amount 1.25 times the contract amount for this work, with Engineer-in-Charge as the first beneficiary. The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). Also, he shall indemnify the Department from any liability during the execution of the work. Further, he shall obtain and submit to the Engineer-in-Charge, a third party insurance policy for maximum Rs.10 lakh for each accident, with the Engineer-in-Charge as the first beneficiary. The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). The Contractor shall, from time to time, provide documentary evidence as regards payment of premium for all the Insurance Policies for keeping them valid till the completion of the work. The Contractor shall ensure that Insurance Policies are also taken for the workers of his Sub-Contractors / specialized agencies also. Without prejudice to any of its obligations and responsibilities specified above, the Contractor shall within 10 days from the date of letter of acceptance of the tender and thereafter at the end of each quarter submit a report to the Department giving details of the Insurance Policies along with Certificate of these insurance policies being valid, along with documentary evidences as required by the Engineer-in-Charge. No work shall be commenced by the Contractor unless he obtains the Insurance Policies as mentioned above. Also, no payment shall be made to the Contractor on expiry of insurance policies unless renewed by the Contractor. Nothing extra shall be payable on this account. No claim of hindrance (or any other claim) shall be entertained from the contractor on these accounts.

SPECIAL CONDITIONS FOR GREEN BUILDING

The building is proposed to be registered for obtaining GRIHA Rating from GRIHA Secretariat under MNRE scheme to obtain minimum 3 star rating. The contractor is required to execute the work in a befitting manner to obtain the targeted GRIHA rating.

Special conditions for GRIHA rating:-

- 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 as per advice of Green Building Consultant of main Consultant.
- 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.
- 2.3 All the mandatory criteria of GRIHA and additional conditions for Green Building practices are to be necessarily followed for entire academic parcel.
- 2.4 The contractor shall comply with NBC norms on construction safety, health and sanitation as per criterion 8.
- 2.5 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.
- 2.6 The contractor shall comply with all the instructions and schemes for execution of green building.
- 2.7 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.
- 2.8 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 equipments 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.

- 2.9 Construction Stage
Construction Wastes Disposal
 - The pre-identified dump locations will be a part of solid waste management plan to be prepared by the Contractor in consultation with 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 off in any municipality solid waste collection bins.

2.10 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 Tyres 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 tyre 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.

2.11 Water Pollution

- (i) The Contractor shall take all precautionary measures to prevent the wastewater during construction to accumulate anywhere.
- (ii) The wastewater arising from the project is to be disposed off in the manner that is acceptable to the Engineer -in-charge.

2.12 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.

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 Equipments, 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.

2.13 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.
- Welder's protective eye-shields to workers who are engaged in welding works.
- Safety helmet and Safety harness/ belt 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 equipments 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.
 - First aid facility should also be provided.
 - 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. Provide safety net of adequate strength to arrest falling material down below.
 - 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 equipments 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 (BIS2005).
- 2.14 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. Nothing extra will be payable for this.
- 2.15 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.

- 2.16 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 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.
- 2.17 Ensure that water spraying is carried out by wetting the surface by spraying water on:
- Any dusty material.
 - Areas where demolition work is carried out.
 - Any unpaved main-haul road and.
 - Areas where excavation or earth moving activities are to be carried out.
- 2.18 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.
- 2.19 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).
- 2.20 Provide sheet covering/barricading of site of not less than 3m height along the site boundary, next to a road or other public area. Nothing extra will be paid for this.
- 2.21 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.
- 2.22 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 off to Municipal Corporation/local bodies dump yard and landfill sites.

- 2.23 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 slopes greater than 10%. 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.
- 2.24 The Contractor should follow the construction plan as proposed by the Engineer-in-charge / landscape consultant to minimize the site disturbance such as soil pollution due to spilling. Use staging and spill prevention and control plan to restrict the spilling of the contaminating material on site.
- 2.25 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.
- 2.26 A soil Erosion and Sedimentation Control Plan (ESCP) should be prepared prior to construction and should be applied effectively.
- 2.27 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.
- 2.28 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).
- 2.29 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 otherwise.
- 2.30 All paints, adhesives and sealants should comply with the VOC limits prescribed by

GRIHA, as follows:

Table 1- VOC limits for paints, adhesives and sealants

Non-flat paints	150	Wood flooring adhesive	100
Flat (Mat) paints	50	Tile Adhesive	65
Anti-corrosive/antirust paints	250	Indoor Carpet Adhesive	50
Varnish	350	Wood	30
Lacquer	550	Stains Water proofing sealer	250

- 2.31 All the building materials and systems used on site must be as per the specifications and approved makes by the Engineer-In-Charge.
- 2.32 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.
- 2.33 Water saving measures as suggested by the consultants need to be followed on site.
- 2.34 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. Contractor will be penalized @ Rs. 500 per day of delay on non-submission of SMP beyond due date to be recovered from next RA bill.
- 2.35 Any other site management measures suggested by the Engineer-in-charge / green building consultant shall be followed on site.
- 2.36 The contractor shall submit to the Engineer -in-Charge after construction of the buildings, a detailed as built quantification of the following within 10 days of recording of completion. Contractor will be penalized @ Rs. 500 per day of delay on non-submission of SMP beyond due date to be recovered from the Final bill:
 - Total materials used
 - Total waste generated,
 - Total waste reused,
 - Total water used,
 - Total electricity consumed, and
 - Total diesel consumed.

- 2.37 Evidence for the implementation of all the above required measures shall be provided to the green building consultant in the form of photographs and templates as required which is required for the submission to the green building rating authority (GRIHA).
- 2.38 Nothing extra shall be payable for above provisions unless otherwise specified in Schedule of Quantity

SCHEDULE- C
TECHNICAL SPECIFICATIONS

FOR Civil WORKS

1. AAC BLOCK WORK: The AAC block shall conform to grade I of IS : 2185 part 3 (1984).The precast AAC blocks shall be procured from approved manufactures only and shall not be permitted to be cast at site.

Acceptance criteria- The Blocks shall be of grade I confirming to S.No. (ii) or S.No (iii) of table No.1 of IS 2185 Part-3. Drying shrinkage shall not be more than 0.05 %. The maximum variation in the length of the units shall not be more than \pm 5mm for length and \pm 3mm for width.

(2).Roofing Sheet:

a) RAW MATERIAL

Base Steel: The steel base material of sheet shall be manufactured from 0.45 mm (nominal) base metal thickness with minimum 550 MPa Yield Strength. The steel manufacturer's test certificate for the Chemical and mechanical properties of steel must be concerned authority prior to installation.

Metallic Coating: The sheets shall have a hot dip metallic Aluminum-Zinc alloy coating of Aluminium (55%) & Zinc (45 %) with total mass coating of 150 gms/sq.mt on both sides as ZINCALUME® AZ150 or equivalent coating as per AS 1397.

b) PROFILE: The profile sheet shall have 1015 mm effective cover width, nominal 25-30 mm deep ribs with subtle square fluting in the five pans at nominal 203 mm centre to centre. The end rib shall be designed for anti-capillary action, to avoid any seepage of water through the lateral overlap.

c). TRIMS & GUTTERS: Roof flashing and trims (parapet flashing, transition trims, expansion joint trims and ridge caps) shall be manufactured from same color, finish and thickness as roof panels (or manufacturer's recommendation). Gutters and downspouts are manufactured from same color, finish and thickness as roof panels (or as desired by Engineer in charge). (Note: The shape and girths shall be as per design requirement and shall be approved by the concerned authority.)

d). ACCESSORIES:
i) Fasteners: The steel sheet shall be fastened with min. 40 μ m zinc coated or min. 20 μ m Zinc-Tin alloy coated, Hex head, self-drilling screw as per AS 3566 Class 3 fasteners with EPDM washer on each crest of sheets for connecting with purlin (or as per design) perpendicular to the sheeting and in the centre of the corrugation or rib. The fastener size shall be calculated as per the design requirement.

ii) In-fill strips: The infill strips are manufactured from closed cell polyethylene foam. This material should have uniform compressibility, waterproof, weather resistance, UV resistance, chemical resistance, non toxic, odorless and environment friendly to meet installation requirement in accordance with AS 2424-4 3 A & B or equivalent and approved by engineer-in-charge.

iii) Sealant: It should be acid free neutral curing silicone rubber sealant of approved make. It shall be applied at all end laps as per manufacturer's recommendation and approval by engineer-in-charge.

e.) INSTALLATION -- ERECTION AND FIXING

The installation shall be done in accordance to the standard practices as specified by the manufacturer and as approved by the Engineer in charge. All sheets and accessories must be stored and finally erected without any damage.

Page-23

f.) Fastening sheet to support: The sheet installation has to be done by using AS3566 class 3 fasteners with EPDM washer. In case of roof, it shall be placed at each crest of sheets connecting with Purlin (or as per design) perpendicular to the sheeting and in the centre of the corrugation or rib. Fasteners shall not be placed less than 25 mm from ends of sheets.

g.) End Lap: All the sheet end lap (roof) shall have an overlap of 150 mm to 250 mm for a slope more than 15 degree (1 in 4) and 200 mm to 300 mm for slope less than 15 degree. The silicon sealant shall be applied at both the ends of the sheet at the overlap with stitch fasteners as per manufacturer's recommendations and conforming to AS 3566-2002 Class 3.

h.) Side lap: The edge of roofing sheet with the anti-capillary groove is always the underlap. It is preferred to use fasteners alongside-laps however, when cladding is supported as indicated in maximum support spacing, side-lap fasteners are not usually needed for strength.

i.) Other preferred practices or recommendation of manufacturer shall be followed for good installation.

j.) Measurement: The CPWD specification 2009 with upto date correction slips for measurement of corrugated GI sheets and its accessories shall be followed except where specifically provided otherwise in the schedule of quantity.

k.) Rate: As per the CPWD specification 2009 with upto date correction slips for measurement of corrugated GI sheets and its accessories shall be followed except where specifically provided otherwise in the schedule of quantity.

(3). SUPPLY, FABRICATION, TRANSPORTATION, ERECTION SPECIFICATIONS OF PRE- ENGINEERED BUILDING (PEB) STRUCTURAL STEEL:

Structural Steelwork-Specifications- General Scope of Specification. This specification covers the general scope of work of PEB structural steel works, submittals by the Contractor, applicable codes of practice for structural steel work and the specifications for the materials to be used, including steel, bolts & nuts, washers etc and the storage thereof.

The scope of work for the contractor in respect of structural steel work shall cover, but shall not be limited to the following:

A. Preparation of complete detailed shop fabrication drawings based on the design drawings for approvals, required for all the permanent structures.

B. Submission of revised design, with calculations and detailed fabrication drawings, in case any substitution of the designed sections is required.

C. Submission and getting approval of details for casting of deck slab in the erected —PEB Steel Structure.

D. Procurement and testing of all raw structural steel materials in lots for fabrication taking into account wastage margin etc., including storage and upkeep of the materials.

E. Providing all materials, labour, tools & plant and equipment's and all types of consumables required for fabrication using Metal Arc welding or as mentioned in approved fabrication drawing including all necessary bolts, nuts, washers with wastage margins.

F. Fabrication of the PEB steel works in accordance with the approved fabrication drawings,

including all shop assembling, matching and marking. Design, manufacture/fabrication and provision of all jigs, fixings, manipulators etc. required for the fabrication are included in item.

G. Suitably marking, bundling and packing for transport of all fabricated materials.

H. Preparing and furnishing detailed bill of materials, drawing Office dispatch lists, Bolts Lists and any other lists of bought out items as applicable and desired by Engineer-in charge required in connection with the fabrication of the PEB steelwork.

I. Loading and transporting all fabricated steelwork and field connection materials including site unloading and erection of PEB structure in final position with all bolts, nuts, insert plate etc.

J. To submit the methodology & procedure for erection of PEB structure compatible with the details of fabrication. Also complete drawings & phase wise instructions for all the activities required to erect PEB steel structure in final position, shall be submitted.

K. The contractor shall provide general assistance during complete erection for solving any problem related to fabrication or site assembling of the structural steelwork. The contractor shall ensure the presence of the qualified and experienced site Engineer during complete erection work at site.

L. All major/ minor modifications of the fabricated steel structures, as directed by the Engineer-incharge, including butnotlimited to thefollowing:

- i) Removal of bends, kinks, twists etc. for parts damaged during transportation and handling.
- ii) Cutting, chipping, filling, grinding etc. if required or preparation and finishing of site connections.
- iii) Reaming of holes for use of higher size bolt if required.
- iv) Re-fabrication of parts damaged beyond repair during transport and handling or re-fabrication ofparts which are incorrectly fabricated.
- v) Fabrication of parts omitted during fabrications by error, or subsequently found necessary.
Drilling of holes which are either not drilled at all or are drilled in incorrect location
duringfabrication.
- vi) Carry out tests in accordance with the related Specification which will be inspected by Engineer-in-charge.
- vii) Details of erection equipment machinery including capacity & specifications, tools, tackles etc.to be used for erection purpose.
- viii) All procedures and tests on welds as per specifications and welded parts to ensure the strengthrequirements of joints.

Submittals

A. On commencement of the work pertaining to steel structure, the Contractor shall submit the following in four sets:

- i) Prior to the technical submittals, the contractor shall submit detailed baseline program &

methodology indicating the proposed overall schedule for documentation such as calculations, material procurement schedule based on availability with approved suppliers, shop/working drawings, plan/ procedures and records. Submission of samples, inspection by Engineer-in Charge, process offfabrication/deliverytositestorageyard/erctionsitefortheapprovaloftheEngineer-in-charge.

ii) Complete fabrication drawings, Bill of materials, cutting lists, bolt lists, welding schedules and Quality Assurance schedules, based on the concept drawing furnished to him and in accordance with the approved schedule. It is highlighted that structural steel member dimensions indicated in tender drawings are tentative only, and may be modified during final design stage.

iii) Results of any tests, as and when conducted and as required by the Engineer-in-charge.

iv) Manufacturer's mill test reports/certificates in respect of steel materials, bolts, nuts and electrodes, wires as may be applicable.

v) A detailed list of all constructional Plant & Equipment, such as hydra, derricks, winches, welding sets, etc. he will employ on the job to maintain the progress of work in accordance with the contract.

vi) Complete scheme with drawings for the erection of steel structures.

B. The contractor shall submit complete design calculations for any alternative sections proposed by him, for approval of the Engineer-in-charge. Use of any alternative section shall be subject to approval of the Engineer-in-charge. However, no extra payment will be entertained on this account.

Furnishing of Information

A. Concept drawings shall be furnished to the contractor and all such drawings shall form part of these Specifications. The availability of structural member mentioned in the drawings may be checked and if not available may be brought under notice of Engineer in charge.

B. The Engineer-in-charge reserves the right to make changes in the design drawings even after release for preparation of shop drawings to reflect addition, omission & modifications in data/details and requirements. Contractor shall consider such changes as part of these Specifications and the contract, and no extra claims shall be entertained on this account.

C. The design drawings submitted by the contractor will show as appropriate the salient dimensions, design loads, sizes of members and welding location of and other necessary information required for the preparation of fabrication drawings, designs and erection details.

page-26

D. It shall be clearly understood that the drawings submitted to the contractor will be concept drawings. The typical details of connection, cuts, gusset plate shapes notches, bends, etc. where shown in the drawings are only for general guidance of the contractor. The contractor shall develop all such details based on these drawings.

E. In case of variations in drawings and specifications, the decision of the Engineer-in-charge shall

be final. Should the contractor, find any discrepancy in the information furnished to him, same shall be immediately brought to the notice of Engineer-in-charge for resolution. The contractor shall obtain clarifications on discrepancies from Engineer-in-charge before proceeding with the work.

F. No detailed shop drawings will be accepted for examination by the Engineer-in-charge unless these have first been completely checked by the contractor's qualified structural engineer. The contractor shall check and ensure that detailing of connections is carefully planned to obtain ease in erection of structures, including field bolting or field connection of temporary structure to permanent structure. Any temporary structure which is used for erection or launching purpose and required to be welded to permanent structural works shall be accounted for in fabrication drawings. Permission shall be obtained before welding or holing is done in permanent structures other than as shown in design drawings or approved fabrication drawings. In case of field bolted connection between temporary structure and permanent structural works, all necessary holes provision shall be left during fabrication in shop.

G. No fabrication work shall be started by the contractor without approval of Engineer-in-charge on the relevant drawings. Approval by the Engineer-in-charge of any of the drawings shall not relieve the contractor of his responsibility of workmanship, fit of parts, details, materials and errors or omissions of any work.

H. The contractor shall furnish adequate prints of shop drawings as advance drawing (for approval) and adequate prints of all approved final shop drawings along with soft copy on CD for field use and record purpose.

I. The Contractor shall specify the name of workshop where he intends to get the fabrication work carried out. The fabrication shop shall consists of at least sub-merged arc/metal arc welding machine, shearing machine, CNC plasma machine, pug mill, flame cutting machine, grinders, equipments etc.

J. The drawings prepared by the Contractor, and all subsequent revisions thereof shall be at the cost of the Contractor, and no separate payments shall be made for the same. Revisions shall incorporate all modifications, field changes, substitutions etc. effected. The rates/prices quoted for steel work item shall be deemed to include the cost of such drawing work.

K. The Contractor shall give due consideration to the need of trial assemblage at shop, weight and size limitation of elements for transportation from shop to site storage yard/Erection site, temperature variation of 25 degree centigrade between the fabrication shop and site, site measurements of as-built dimensions and position of pockets etc. for bolts and avoidance of site welding except for fixtures. All the drawings shall be prepared in metric units. The drawings should preferably be of A-1 standard size, and the details shown therein shall be clear and legible.

These drawings shall include but shall not be limited to the following:

- i)** Assembly drawings, giving exact sizes of the sections to be used and identification marks of the various sections members.
- ii)** Dimensional drawings of base plans, anchorage detail of bearing bolts location etc.
- iii)** Complete Bills of Materials and detailed drawings of all sections including their billing weights.

- iv) Detailed shop drawings for proper co-ordination with the concrete components to which the steel members shall be connected, as required.
- v) Any other drawings or calculations that may be required for proper completion of the works and clarification of the works or substituted parts thereof.
- vi) All 'as-built' drawings in adequate prints and on CD.

Applicable Codes of Practice

The following specifications, standards and codes of practice are included as part of this Specification. All Standards, specifications, codes of practice including all correction slips/ Amendments current on the date of signing of agreement and referred to herein shall be applicable. In case of discrepancy between this Specification and those referred to herein, this specification shall govern. In case of discrepancy between Contract drawings and this specification, the Contract drawings shall govern.

1. IS: 226 Structural Steel (Standard Quality)
2. IS: 800 (1984) Code of Practice for General Construction in Steel.
3. IS: 808 (1989) Dimensions for Hot Rolled Steel Beam, Column, Channel and Angle Sections.
4. IS: 813 Scheme of Symbols for Welding
5. IS: 814 (1991) Covered Electrodes for Manual Metal Arc Welding of Carbon &Carbon -Manganese Steel.
6. IS: 815 Classification Coding of Covered Electrodes for Metal Arc

Welding of Structural Steel

7. IS: 816 (1969) Code of Practice for Use of Metal Arc Welding for General Construction in Mild Steel.
8. IS: 817 (1969) Code of Practice for Training and Testing of Metal Arc Welders.
9. IS: 822 Inspection of Welded Connection
10. IS: 823 Specification for Workmanship of Steel Structure
11. IS: 919 (1993) ISO System of Limits & Fits (Part 1 & Part 2)
12. IS: 961 Structural Steel (High Tensile)
13. IS: 1024 Code of Practice for use of Welding in Bridges and Structures

Subject to Dynamic Loading

14. IS: 1148 (1982) Hot Rolled Rivet Bars (upto 40mm) for Structural Purposes.
15. IS: 1161 Steel Tubes for Structural Purposes
16. IS: 1182 (1983) Recommended Practice for Radio Graphic Examination of Fusion Welded Butt Joints in Steel Plates.
17. IS: 1363 (1992) Hexagon Head Bolts, Screws and Nuts of Product grade C. (Part 1 to Part 3)
18. IS: 1364 (1992) Hexagon Head Bolts, Screws and Nuts of Product Grades A &B(Part 1 to 5)
19. IS: 1367 (1991) Technical Supply Conditions for Threaded Steel Fasteners.
20. IS: 1852 (1985) Rolling & Cutting Tolerances for Hot-Rolled Steel Product.
21. IS: 1977 (1975) Structural Steel (Ordinary Quality).
22. IS: 2016 (1967) Plain Washers.**page-28**
23. IS: 2062 (1992) Steel for General Structural Purposes.
24. IS: 2595 (1978) Code of Practice for Radio Graphic Testing.
25. IS: 3600 (1985) Methods of Testing Fusion Welded Joints. (Part 1 to Part 9)
26. IS: 3613 (1974) Acceptance Tests for Wire Flux Combinations for Submerged Arc Welding.
27. IS: 3658 (1981) Code of Practice for Liquid Penetrant Flow Detection.
28. IS: 3757 (1985) High Strength Friction Grip Bolts

29. IS:4000 (1992) High Strength Friction Grip Bolts in Steel Structures-Code of

Practice

30. IS: 4353 (1967) Recommendations for Submerged Arc Welding of Mild Steel and Low AlloySteel.
31. IS: 4923 Hollow Steel Sections for Structural Use
32. IS: 4943 (1968) Assessment of Butt and Fillet Fusion Welds in Steel Sheet, Plate and Pipe.
33. IS: 5334 (1981) Code of Practice for Magnetic Particle Flow Detection of Welds
34. IS: 5369, 5370 General Requirements for Plain Washers and Lock Washers. (1975)
35. IS: 5372 (1975) Taper Washers for Channels
36. IS: 6610 Heavy Washers for Steel Structures
37. IS: 5374 (1975) Taper Washers for I Beams.
38. IS: 6227 Code of Practice for Use of Metal Arc Welding in Tabular Sections
39. IS: 6623 (1985) Specification for High Strength Structural nuts
40. IS:6649 (1985) Specifications for hardening and tempering washers for high strength structural nuts
41. IS: 6755 (1980) Double Coil Helical Spring Washers.
42. IS: 7215 (1974) Tolerances for Fabrication of Steel Structure.
43. IS: 7205, 7273, Safety Requirements for Steel Construction
44. IS: 7269, 7293 Handling of materials &Equipments for Safe Working
45. IS: 7307 (Part I) Destructive & Non-Destructive Test of Welds
46. IS: 7318 (1974) (Part I) Approval Tests for Welders When Welding Procedure Approval is not required fusion Welding of Steel.
47. IS:8500 (1991) Structural steel -Micro alloyed (Medium and High Strength Qualities) .
48. IS: 8613 Wise Flux Combinations for Welded Joints
49. IS:8910 (1978) General requirements of Supply of Weldable Structural Steel.

50. IS: 9595 (1980) Recommendations for Metal Arc Welding of Carbon & Carbon-Manganese Steels.
51. IS: 12843 Tolerances for Erection of Structural Steel Works
52. IRC: 24: Section V Standard Specifications and code of Practice for Road Bridges:

Steel Road Bridges

53 IRC:22-1986 Standard specification for road bridges

Section VI – Composite construction

PRODUCTSMaterials

- A. All materials to be supplied by the Contractor shall conform to relevant Indian Standards as approved by the Engineer-in-charge.

- B. Steel materials required for the work shall be free from imperfections, mill scales, slag intrusions, laminations, pittings, rusts etc. that may impair strength, durability and appearance. All materials shall be of tested quality only. Test Certificates in respect of each consignment shall be submitted to Engineer-in-charge before use in work. Whenever the materials are permitted for procurement

page-29

from identified stocks, a random sample shall be tested at an approved laboratory, as directed by the Engineer-in-charge.

Structural Steel

- A. Structural steel conforming to IS: 2062: Grade BR (yield strength=350MPa) shall be used for main members of girder structures, cross girder members, bracings, gussets plates etc unless

specifically provided in the drawings otherwise.

Bolts and Nuts

Unless otherwise specified all anchor bolts shall be of property class of 8.8 (and size M20 or as specified) and shall conform to IS: 1363 (1992), IS:1364 (1992) and IS:1367, as applicable, and unless specified otherwise, head shall be hexagonal. All nuts shall conform to property class compatible with the property class of the bolt used.

Washers

Unless otherwise specified on drawings washer for HSFG bolts shall be conforming to IS:6649.

Also plain washers shall be conforming to IS:5369 , unless otherwise specified. One washer shall be supplied with each bolt and, in case of special types of bolts, more than one washer as needed for the purpose shall be supplied.

STORAGE OF MATERIALS

General

All materials shall be so stored as to prevent deterioration, and to ensure the preservation of their quality and fitness for the work. If required by the Engineer-in-charge, the materials shall be stored under cover and suitably painted for the protection against weather condition. Any material, which has deteriorated or has been damaged shall be removed from site and replaced by new members, as directed by the Engineer-in-charge at no extra cost and time.

A. The steel to be used in fabrication shall be stored in a separate stack clear of the ground section wise and lengthwise.

B. The storage area shall be kept clean and properly drained. Structural steel shall be so stored and handled in such a manner that members are not subjected to excessive stresses and damage. Girders and beams shall be placed in upright position. Long members shall be supported on closely spaced skids to avoid unacceptable deflection.

C. The Contractor shall have a suitable shop storage yard at his own premises for storing the fabricated steel structures and other materials. The yard shall have proper facilities such as drainage and lighting including access for cranes, trailers and other heavy equipments.

D. All Shop / field connection materials, shop paints etc. shall be stored on racks and platforms, off the ground in a properly covered building by the contractor.

page-30

STRUCTURAL STEELWORK SPECIFICATION FOR WELDED STRUCTURE

General

Scope of Specification

This Specification covers the supply, fabrication transportation and erection at Site of welded structural steelwork, including the supply of approved consumables, electrodes, wires and other materials required for fabrication and field connections of all structural steelwork covered under

the scope of the Specification. The shear connectors studs (if specified) in the drawing shall also be welded in the shop.

Execution Workmanship General

All workmanship shall be in accordance with the best practices in modern structural shops. Greatest accuracy shall be maintained in the manufacture of every part of the work and similar parts shall be strictly interchangeable. The contractor shall not proceed with any welding until the Engineer-in-charge has approved his welding plan, which shall include.

- All information's on welding procedures, equipment, additives and preheating during welding operation.
- Details of nondestructive testing methods
- Precautions with regard to welding shrinkage
- Possible treatment of completed welds by grinding
- Procedure and programme of welding sequence

Templates

Templates used throughout the work shall be of steel. In cases where actual materials have been used as templates for drilling similar pieces, the Engineer-in-charge shall decide whether such materials are fit to be used as parts of the finished structure.

Straightening

All materials shall be straight and free from twists, and if necessary, before being worked, shall be straightened and/or flattened by pressure, unless required to be of curvilinear form.

Clearance

The clearance between fraying surface of bolted connections shall not be greater than 1mm at each end. If separation is between 1 to 3mm, the surface should be tapered to eliminate the separation. Separation of 3mm or more shall be filled with filler plates / washers. Such situations may be avoided and if situations are more, the correction may be carried out by the contractor as per the direction of the Engineer-in -charge.

Shearing, Cutting and Planning

Cutting shall be done automatically. Cutting by shearing machine may be used for plates not exceeding 10 mm in thickness provided that the plate edges be fully enclosed in a weld. For Plates above 10mm, CNC plasma cutting shall be used provided a smooth and regular surface free from cracks and notches is secured.

1. Chipping of edges of plates, wherever necessary, shall be done without damaging the parent metal. Chipped edges shall be ground to a neat finish and sharp corners and hammered rough faces shall be rounded off.

page-31

2. The edges and ends of all cut/sheared plates shall be planed/ground. Edge preparation for welding may be done by machine controlled flame cutting, with edges free from burrs should be clean and straight.

3. The butting surfaces at all joints of girders shall be planed so as to butt in close contact throughout the finished joint.

Assembly

1. All parts assembled for welding shall be in as close contact as practicable over the whole surface.
- 2 The component parts shall be so assembled that they are neither twisted nor otherwise damaged. Specified cambers, if any, shall be provided.
3. All parts of bolted and welded members shall be held firmly in position by means of jigs or clamps while bolting or welding. No drifting of holes shall be permitted, except to draw the parts together and no drift used shall be larger than the nominal diameter of the bolt. Drifting done during assembling shall not distort the metal or enlarge the holes.
4. Trial assemblies shall be carried out at the fabrication stage to ensure trial assemblies, accuracy of workmanship. These checks shall be witnessed by the Engineer-in-charge and such trial assemblies shall be at the cost of the Contractor. Nothing extra is to be paid for.

Welding

General

The welding shall conform to code, IS: 816 and IS: 9595 and other applicable codes and standards, unless otherwise specified. As much work as possible shall be welded in shops and the layout and sequence of operations shall be so arranged as to eliminate distortion and shrinkage stresses.

Electrodes/Wires / Flux

All electrodes/ wires / flux shall be kept under dry conditions. Any electrode / wires /flux damaged by moisture shall not be used unless it is guaranteed by the manufacturer that, when it is properly dried, there will be no detrimental effect. Any electrode, which has part of its flux coating broken away or is otherwise damaged, shall be rejected. Any electrode /wires/ flux older than six (6) months from the date of manufacture shall not be used. Batch certificates for electrodes/ wires /flux shall be submitted by the Contractor.

Preparation of Joints

1. The edges shall be prepared, with an automatically controlled flame cutting torch, correctly to the shape, size and dimensions of the groove, prescribed in the design and fabrication drawings. In case of U-groove joints, the edges shall be prepared with an automatic false cutting torch in two phases, following a bevel out with a gouging pass, or by machining.
2. The welding surfaces shall be smooth, uniform and free from fins, tears, notches or any other defects, which may adversely affect welding, and shall be free of loose scale, slag, rust, grease, paint, moisture or any other foreign material.

page-32

Welding Procedure

1. All welding procedures shall be submitted to the Engineer-in-charge for approval, well before starting fabrication.
2. The welding procedures shall be arranged by the Contractor to suit the details of the joints, as indicated in the drawings, and the position at which welding has to be carried out. Welding

procedure shall cover the following:

- a. Type and size of electrodes
- b. Current and (for automatic submerged arc welding) arc voltage
- c. Length of run per electrode; or (for automatic welding) speed of travel
- d. Number and arrangement of runs in multi run welds
- e. Position of welding
- f. Preparation and set-up of parts
- g. Welding sequence
- h. Pre or post heating
- i. Any other relevant information.

3. The welding procedures shall be so arranged that distortion and shrinkage stresses are reduced to the minimum.

4. Any weld found defective shall be removed, by using either chipping hammer or gouging torch, in such a manner that parent material is not injured in any way.

5. Welding shall not be carried out when temperature is below 10 degrees Celsius or surface is wet or during periods of strong winds unless the work and the welder is adequately protected.

Fusion Faces and Surrounding Surfaces

1. Fusion faces and the surrounding surfaces within 50mm of the welds shall be free from all mill scale and free from oil, paint or any substance which might affect the quality of the welds or impede the quality/progress of welding. These shall be free from irregularities, which would interfere with the deposition of the specified size of weld or be the cause of defects.

2. All mill scale within 50mm of welds shall be removed prior to welding, either by pickling followed by thorough power wire brushing, or by other approved methods.

3 If preparation or cutting of the fusion faces is necessary, the same shall be carried out by shearing, chipping, gas cutting or flame gouging.

4 Where hand gas cutting or hand gouging is employed, the blowpipe or gouging blowpipe shall be properly guided.

Assembly for Welding

Parts to be welded shall be properly assembled and held firmly in position by means of jigs and clamps prior to and during welding.

page-33

Plate Construction

Automatic metal arc welding shall be employed for fabrication of all members. Metal Inert gas welding may be done for short length where access to the location of the weld does not permit metal arc welding subject to approval of Engineer-in-charge.

Accuracy of Fit-Up

Parts to be fillet welded shall be brought into as close contact as practicable, and the gap due to faulty workmanship or incorrect fit-up shall not exceed 1.5mm. If greater separation occurs at any position, the size of fillet weld shall be increased at such positions by the amount of the gap.

Jigs and Manipulators

Jigs and manipulators shall be used, where practicable, and shall be designed to facilitate welding and to ensure that all welds are easily accessible to the operators.

Ends of Butt Welded Joints

The ends of butt joints shall be welded so as to provide full throat thickness. This may be done by the use of extension pieces, cross-runs or other approved means.

Weld Face and Reinforcement of Butt welds

The weld face shall, at all places, be deposited projecting the surface of the parent metal. Where a flush surface is required, the surplus metal shall be dressed off.

Testing of Butt Welds

Butt-welded joints are to be 25% radio graphically tested (or Phased Array ultrasonic Testing) by the Contractor at his own cost in the presence of the engineer in charge or his authorized representative, if desired by the engineer in charge. If such tests indicate the joints to be defective, the cost of rectification of defective welds shall also be borne by the Contractor. The agency for testing of welds shall be specified for approval by engineer-in-charge.

Minimum Leg Length & Throat Thickness in Fillet Welds

The minimum leg length of a fillet weld as deposited shall be not less than the specified size as per codal provisions. In no case shall a concave weld be deposited, unless specifically permitted. Where permitted, the leg length shall be increased above that specified length, so that the resultant throat thickness is as great as would have been obtained by the deposition of a flat-faced weld of the specified leg length.

Dislodging

After making each run of welding, all slag shall be thoroughly removed and the surface cleaned.

page-34

Quality of Welds

The weld metal, as deposited (including tack welds), shall be free from-cracks, slag inclusions, porosity, cavities and other deposition faults. The weld metal shall be properly fused with the parent metal without under cutting or overlapping at the toes of the weld. The surface of the weld shall have a uniform consistent contour and regular appearance.

Weather Conditions

Welding shall not be done under weather conditions, which might adversely affect the efficiency of welding.

Qualification and Testing of Welders

The Contractor shall satisfy the Engineer-in-charge that the welders are suitable for the work for which they will be employed, and shall produce evidence to the effect that welders, have satisfactorily completed appropriate tests, as described in IS:817 Part I. The Engineer-in-charge may, at his own discretion, order periodic tests of the welders and/or of the welds produced by them. Such tests shall be at the expense of the Contractor.

Supervision

The Contractor shall employ competent welding supervisors to ensure that the standard of workmanship and the quality of the materials comply with the requirements laid down in this document.

Machining of Butts and Bases

Splices and butt joints of compression members, depending on contact for stress transmission, shall be accurately machined over the whole section. In column bases, the ends of shafts together with the attached gussets, angles, channels etc., after bolting and/or welding together as the case may be, shall be accurately machined so that the parts connected butt over the entire surface of contact. Care shall be taken that connecting angles or channels are fixed with such accuracy that they are not reduced in thickness by machining by more than 0.8mm.

Requirement of Welded Joints

Apart from the requirements of welding specified under the above sub clauses, sections above, the Contractor shall ensure the following requirements in the welded joints.

- i) Strength-quality with parent metal.
- ii) Absence of defects
- iii) Corrosion resistance of the weld shall not be less than that of parent material in an aggressive environment.

Studs

Studs (if shown on the drawings) shall be used at interface of in-situ deck slab and its supporting plate beam to transfer the longitudinal shear. Unless otherwise specified the material used shall

have characteristic yield strength of 385 MPa, minimum elongation of 18% and characteristic tensile strength of 495 Mpa.

page-35

Welding of stud shear connectors

Unless otherwise provided the stud shear connectors shall be fusion welded to the plate girder

using stud welding machine as per the manufacturer's instructions. No other type of welding shall be permitted.

The stud and the surface to which studs are welded shall be free from scale, moisture, rust and other foreign material. The stud base shall not be painted, galvanised or cadmium plated prior to welding.

Welding shall not be carried out when temperature is below 10 degrees Celsius or surface is wet or during periods of strong winds unless the work and the welder is adequately protected.

The welds shall be visually free from cracks and shall be capable of developing at least the nominal ultimate strength of studs.

The procedural trial for welding the stud shall be carried out when specified by the Engineer-incharge.

Shop Assembly

1. The steelwork shall be temporarily shop assembled, as necessary, so that the accuracy of fit may be checked before dispatch. The parts shall be shop assembled with a sufficient number of parallel drifts to bring and keep the parts in place
2. Since parts drilled or punched, with templates having steel bushes shall be similar and, as such, interchangeable, such steelwork may be shop erected in part only, as agreed by the Engineer-incharge.

ErectionMarking

1. Each fabricated member, whether assembled prior to dispatch or not so assembled, shall bear an erection mark, which will help to identify the member and its position in respect of the whole structure, to facilitate re-erection at site.
2. These erection marks shall be suitably incorporated in the shop detail and erection drawings.

FIELD INSPECTIONS

Field inspections shall be done as per clause 1905.7 of MORTH Specification- 2001.

page-36

STRUCTURAL STEEL WORK - QUALITY CONTROL & TESTING REQUIREMENTS

General

Scope of Specification

The scope of work of these specifications is to establish the norms for ensuring the required

Quality Control through established testing norms of the welded structural steelwork by Engineer-in-charge.

Codes / Standards

Tests and Standards of Acceptance:

The materials shall be tested in accordance with relevant IS specifications and necessary test certificates shall be furnished. The cost of these tests shall be borne by the contractor. Additional tests if required by the engineer in charge shall be got carried out from the approved testing laboratory. The cost of such additional tests shall be borne by the contractor if the test indicates failure and shall be borne by the department if the test indicates all satisfactory results.

The fabrication, furnishing, erecting and painting of structural steel work shall be in accordance with these specifications.

Submittals

The Contractor shall submit the following:

1. Proposed overall schedule for documentation of shop drawings, plan/procedures and records, procurement of materials from approved suppliers, submission of procedure of fabrication and erection.
2. The contractor shall himself inspect all materials and shop work to satisfy the specified tolerance limits and Quality norms before the same are inspected by Engineer-in-charge or his authorized representative.

Field Inspection

General

All materials, equipment and work of erection shall be subject to the inspection of the Engineer in charge who shall be provided with all facilities including labour and tools required at all reasonable times. Any work found defective is liable to be rejected.

No protective treatment shall be applied to the work until the appropriate inspection and testing has been carried out. The stage inspection shall be carried out for all operations so as to ensure the correctness of fabrication and good quality. Structural member dimensions and camber, if any, shall not be finally checked until all welding and heating operations are completed and the member has cooled to a uniform temperature.

page-37

Testing of material

Structural steel shall be tested for mechanical and chemical properties as per various IS codes as may be applicable and shall conform to requirements specified in IS:226, IS:2062, IS:11587, IS:1977, IS:8500 and IS:961 etc.

Rivets, bolts, nuts, washers, welding consumables, steel forging, casting and stainless steel shall be tested for mechanical and chemical properties in the appropriate IS Code.

Rolling and cutting tolerance shall be as per IS: 1852. The thickness check measurements for the plate and rolled sections shall be taken at not less than 15 mm from edge.

For plates thicker than 25mm, Check for laminations in plates shall be carried out by ultra-sonic testing or any other specified methods.

Steelwork shall be inspected for surface defects and exposed edge laminations during fabrication and blast cleaning. Significant edge laminations found shall be reported to the Engineer in charge for his decision.

Chipping, grinding, machining or ultrasonic testing shall be used to determine depth of imperfection.

Bolted connections:

Bolts and bolted connection joints with high strength bolts shall be inspected and tested according to IS: 4000. The alignment of plates at all bolted splice joints and welded butt joints shall be checked for compliance with codal requirements.

Welding and welding consumables:

Welding procedure, welded connection and testing shall be in compliance with codal requirements. All facilities necessary for stage inspection during welding and on completion shall be provided to the Engineer in Charge or his authorized representatives.

Adequate means of identification either by identification mark or other record shall be provided to enable each weld to be traced to the welder(s) by whom it was carried out.

ExecutionTolerances

The contractor shall through appropriate planning and continuous measurements in the workshop and the erection at site, ensure that the tolerance specified below are strictly adhered to.

Tolerances in dimensions of components of fabricated structural steel work shall be specified on the drawings and shall be subject to the approval of the Engineer before fabrication. Unless specified, all parts of an assembly shall fit together accurately within tolerances specified in Table 1900-2 of MORT&H specifications.

A machined bearing surface, where specified by the Engineer, shall be machined within a deviation of 0.25 mm for surfaces that can be inscribed within a square of side 0.5 m.

Dimensional & Weight Tolerance

The dimensional and weight tolerance for rolled shapes shall be in accordance with IS: 1852, 808 etc. The acceptable limits of straightness for rolled or fabricated members as per IS: 7215
Quality Control:

page-38

The steel shall comply in all respects with the requirements of approved drawings and relevant codes and specifications and shall be procured from approved manufacturers only. It may be noted that quality of raw steel used for fabrication shall be essence of the contract & shall be strictly conforming to specified standard. Steel sections to be supplied by the manufacturers shall be tested as per codal provisions at the manufacturer's premises before dispatch. The contractor on receipt of supply in his approved fabrication shop shall carry out necessary control tests including ultrasonic testing as per codal requirements and verify them with the list received from

manufacturers. The rejected lot shall not be used and rejected lot shall be immediately removed from fabrication shop. Only steel passed in all tests as per codal requirement shall be used for fabrication.

The contractor shall supply information in the technical package regarding source / manufacturers from where procurement of steel is proposed.

In order to exercise proper control of the quality of the welding, Contractor shall enforce methods of control as tabulated below:

Tests & Testing Procedures

Fabricator agency shall have in house facilities for all testing of weld, as detailed in this tender document.

Visual Examination

The contractor shall conduct visual examination and measurement of the external dimensions of the weld for all joints. Before examining the welded joints, areas close to it on both sides of the weld for a width not less than 20 mm shall be cleaned of slag and other impurities. Examination

shall be done by a magnifying glass which has a magnification power of ten (10) and measuring instrument which has an accuracy of + 0.1 mm or by weld gauges. Welded joints shall be examined from both sides. The contractor shall examine the following during the visual checks.

- i) Correctness and shape of the welded joints
- ii) Incomplete penetration of weld metal.
- iii) Influx
- iv) Burns
- v) Unwelded craters
- vi) Undercuts
- vii) Cracks in welded spots and heat affected zones
- viii) Porosity in welds and spot welds
- ix) Compression in welded joints as a result of electrode impact while carrying out contact welding
- x) Displacement of welded element

The contractor shall, document all data as per sound practices.

Mechanical Test

The Contractor shall carry out various mechanical tests to determine weldability, metalalloyability, nature of break, correct size and type of electrodes, degree of pre-heat and post-heattreatment. The type, scope and sample of various mechanical tests shall be determined inagreement

page-39

with the purchaser. The number of tests conducted shall depend on the result obtained to satisfy the Engineer-in-charge that the correct type and size of electrode, degree of pre-heating and post-heating and weldability of metal are being followed.

Dye Penetration Test

All welds shall be tested by —Dye Penetration test|| as per current practices.

Radiography Test

Radiography test shall be conducted by the contractor to determine gas inclusion (blow holes, hollows) slag inclusion, shallow welds and cracks for 25% lengths all butt joints.

Before conducting the examination the welded joints shall be cleaned of slag and scales and visually examined. The welds shall be marked into separate portions depending on the length of photograph. The length of photograph shall be such as to ensure that there are no distortions and shall reveal the defect correctly. The length shall not be more than 0.75 of the focal distance and the width of the photograph would depend on the width of the welded joint plus 20 mm on either side of the weld. The cassette with film shall be protected by sheet of lead or equivalent of proper thickness against incidental, diffused and secondary radiation.

The direction of the ray with relation to the film shall be as specified hereunder.

Welds of butt joints without edge slopes with edge processing shall be examined by central ray directed at right angles to the weld.

In special cases examination of welds with inclined rays directed along edge slopes may be permitted by the Engineer-in-charge.

Lap joints shall be examined by directing rays at 45 degree to the bottom plate. Welds in T-joints without any edge preparation shall be examined by rays directed at 45 degree to the weld. Angle welds in lap and tee-joints shall be examined by the rays in opposite direction i.e. the film will be on the side of the weld. Weld in angle joints shall be checked by directing ray along the bisector of the angle between the welded elements. Opposite direction of the ray and location of the film may also be permitted by the Employer.

For detail testing method refer relevant IS codes.

Phased Array Ultrasonic Test

This test shall be conducted at the discretion of the engineer in charge if the Radiography Test is waived off by the engineer in charge.

For detail testing method refer relevant IS codes.

Ultrasonic Test

Ultrasonic test shall be conducted by the contractor to detect gas inclusion (pores), slag inclusion, shallow welds, cracks, lamination and friability etc. Prior to starting of ultrasonic test the welded joint shall be thoroughly cleaned of slag and other material. Surface of the basic metal adjacent to welded joint on both sides shall be mechanically cleaned by the grinder or a metal brush to **page-40** provide the contact of the whole ultrasonic probe surface with surface of basic metal. The width of the clean surface shall be as directed by the Engineer-in-charge. The welded joint then shall be covered with a thin coat of transformer oil, turbine or machine oil to ensure acoustic contact. The joints so treated shall be marked and the marks shall be entered into the documentation, subsequent to this, ultrasonic test shall be carried out as directed by the Engineer-in-charge. At least 50% of weld shall be tested by ultrasonic testing.

For detail testing method refer relevant IS codes.

Erection of Steel Structures

General

Scope of Specification

The scope of work of these specifications is to establish the norms for ensuring the required safety procedures methods etc. for erection of steel structures.

Submittals

The methodology shall be submitted by contractor for approval by Engineer-in-charge well before the arrival of material for erection.

Erection

General

The Contractor shall erect the structural steel, remove the temporary construction, and do all the work required to complete the, construction included in the contract in accordance with the drawings and the specifications and to the entire satisfaction of the Engineer.

Organisation and Equipment

The Contractor shall submit erection plans prepared by the fabricator, showing a method and procedure of erection, compatible with the details of fabrication.

A detailed scheme must be prepared showing stage-wise activities, with complete drawings and working phasewise instructions. This should be based on detailed stagewise calculation and take into account specifications and capacity of erection equipment machinery, tools, tackles to be used and temporary working loads as per Codal provisions.

The scheme should be based on site conditions e.g. hydrology, rainfall intensity, soil and sub-soil conditions, temperature and climatic conditions and available working space, etc.

The scheme should indicate precisely the type of temporary fasteners to be used as also the minimum percentage of permanent fasteners to be fitted during the stage erection. The working drawings should give clearly the temporary jigs, fixtures, clamps, spacer supports, etc.
The contractor shall supply and erect all necessary false work and staging and shall supply all labour, tools, erection plant and other materials necessary to carry out the work complete in all respects.

page-41

The Contractor shall supply all bolts, nuts, washers, etc. required to complete erection at site with an allowance for wastage, etc., of 10% or a minimum of five number of each item.

Prior to actual commencement of erection all equipment, machinery, tools, tackles, ropes, etc. need to be tested to ensure their efficient working. Frequent visual inspection is essential in vulnerable areas to detect displacements, distress, drainages, etc.

Deflection and vibratory tests shall be conducted in respect of supporting structures, launching

truss, cranes etc. as also the structure under erection and unusual observations reviewed, looseness of fittings are to be noted.

For welded structures, welders' qualifications and skill are to be checked as per standard norms. Non-destructive tests of joints as per Engineer in charge's directives are to be carried out.

Precision non-destructive testing instruments available in the market should be used for noting various important parameters of the structures frequently and systematic record is to be kept.

Safety requirements should conform to IS:7205, IS:7273 and IS:7269 as applicable and should be a consideration of safety, economy and rapidity.

Erection work should start with complete resources mobilised as per latest approved drawings and after a thorough survey of foundations and other related structural work. In case of work of magnitude, maximum mechanisation is to be adopted.

The structure should be divided into erectorable modules as per the scheme. This should be preassembled in a suitable yard/platform and its matching with members of the adjacent module checked by trial assembly before erection.

The structure shall be set out to the required lines and levels. The stocks and masses are to be carefully preserved. The steelwork should be erected, adjusted and completed in the required position to the specified line and levels with sufficient drifts and bolts. Packing materials are to be available to maintain this condition. Organised —Quality Surveillance|| checks need to be exercised frequently.

Before starting work, the Contractor shall obtain necessary approval of the Engineer as to the method adopted for erection, the number and character of tools and plants. The approval of the Engineer shall not relieve the Contractor of his responsibility for the safety of his method or equipment or from carrying out the work fully in accordance with the drawings and specifications.

During the progress of work, the Contractor shall have a competent Engineer or foreman in charge of the work, who shall be adequately experienced in steel erection and acceptable to the Engineer in Charge.

page-42

Handling and Storing of Materials

Suitable area for storage of structures and components shall be located near the site of work. The access road should be free from water logging during the working period and the storage area should be on levelled and firm ground.

The store should be provided with adequate handling equipments e.g. road mobile crane, gantries, derricks, chain pulley blocks, winch of capacity as required. Stacking area should be planned and

have racks, stands sleeper, access tracks, etc., and properly lighted.

Storage should be planned to suit erection work sequence and avoid damage or distortion. Excessively rusted, bent or damaged steel shall be rejected. Methods of storage and handling steel, whether fabricated or not shall be subject to the approval of the Engineer in charge.

Fabricated materials are to be stored with erection marks visible, such as not to come into contact with earth surface or water and should be accessible to handling equipment.

Small fitting hand tools are to be kept in containers in covered stores.

All materials, consumables, including raw steel or fabricated material shall be stored specification-wise and size-wise above the ground upon platforms, skids or other supports. It shall be kept free from dirt and other foreign matter and shall be protected as far as possible from corrosion and distortion. The electrodes shall be stored specification-wise and shall be kept in dry warm condition in properly designed racks. The bolts, nuts, washers and other fasteners shall be stored on racks above the ground with protective oil coating in gunny bags. The paint shall be stored under cover in air-tight containers.

IS:7293 and IS:7969 dealing with handling of materials and equipments for safe working should be followed. Safety nuts and bolts as directed are to be used while working. The Contractor shall be held responsible for loss or damage to any material provided by the Department while in his care or for any damage to such material resulting from his work.

Formwork

The formwork shall be properly designed, substantially built and maintained for all anticipated loads. The Contractor, if required, shall submit plans for approval to the Engineer in Charge. Approval of the plans, however, shall not relieve the Contractor of his responsibility.

Straightening Bent Material

The straightening of plates, angles and other shapes shall be done by methods not likely to produce fracture or any injury. The metal shall not be heated unless permitted by the Engineer for special cases, when the heating shall not be to a temperature higher than that producing a dark —cherry red|| colour, followed by as slow cooling as possible. Following the straightening of a bend or buckle the surface shall be carefully investigated for evidence of fracture. Sharp kinks and bends may be the cause for rejection of material.

Assembling Steel

The parts shall be accurately assembled as shown on the drawings and match marks shall be followed. The material shall be carefully handled so that no parts will be bent, broken or otherwise damaged.

page-43

Hammering which will injure or distort the members shall not be done. Bearing surface or surfaces to be in permanent contact shall be cleaned, before the members are assembled. The truss spans shall be erected on blocking, so placed as to give the proper camber. The blocking shall be left in place until the tendon chord splices are fully riveted and all other truss connections pinned and bolted. Bolts in splices of butt joints of compression members and bolts in railings shall not be driven until the span has been swung.

All joint surface for bolted connections including bolts, nuts, washers shall be free from scale, dirt, burrs, other foreign materials and defects that would prevent solid seating of parts. The slope of surface of bolted parts in contact with bolt head and nut shall not exceed 1 in 20, plane normal to bolt axis, otherwise suitable tapered washer shall be used.

All fasteners shall have a washer under nut or bolt head whichever is turned in tightening.

Any connection to be bolted shall be secured in close contact with service bolts or with a sufficient number of permanent bolts before the rivets are driven or before the connections are finally bolted. Joints shall normally be made by filling not less than 50 percent of holes with service bolts and barrel drifts in the ratio 4:1. The service bolts are to be fully tightened up as soon as the joint is assembled. Connections to be made by close tolerance bolts shall be completed as soon as practicable after assembly.

Transportation & Handling

- A. Before the shop assembling is dismantled, all members and sections shall be appropriately marked with paint or grooved with their identification numbers as detailed in shop drawings.
- B. The Contractor shall transport the fabricated structural steel materials to work site, with all necessary field connection materials, in such sequence as will permit the most efficient and economical performance of the erection work. As per scheduled programme, the Engineer-in-charge may, at his discretion prescribe or control the sequence of delivery of materials.

- C. Fabricated parts shall be handled in such a way that no damage is caused to the components. Measures shall be taken to minimize damage to the protective treatment on the steelwork. All work shall be protected from damage in transit. Particular care shall be taken to stiffen free ends, prevent permanent distortion and adequately protect all machined surfaces. All bolts, nuts, washers, screws, small plates and articles generally shall be suitably packed and identified.

Field Bolts

- 1. Field bolts nuts and washers shall be furnished by the Contractor in excess of the nominal numbers required. He shall supply the full number of bolts, nuts and washers and other necessary fittings required completing the work, together with the additional bolts, nuts and washers totaling to 10% of the requirement subject to minimum of 10 Nos. Only structural bolts of class 8.8 shall be used.

- 2. At the time of assembly, the surfaces in contact shall be free of paint or any other applied finish, oil, dirt, loose rust, loose scale, burrs and other defects which would prevent solid seating of the parts or would interfere with the development of friction between them.
- 3. If any other surface condition, including a machined surface, is specified, it shall be the responsibility of the Contractor to work within the slip factor specified for the particular case.
- 4. Each bolt and nut shall be assembled with washers of appropriate shape, quality and number in cases where plane parallel surfaces are involved. Such washers shall be placed under the bolt head or the nut, whichever is to be rotated during the tightening operation. **Page-44**
The rotated nut or bolthead shall be tightened against a surface normal to the bolt axis, and the appropriate tapered washer shall be used when the surfaces are not parallel. The angle between the bolt axis and the surface under the non-rotating component (i.e. the bolt head or the nut) shall be 90 + 3 degree. For angles outside these limits, a tapered washer shall be placed under the non-rotating component. Tapered washers shall be correctly positioned.

- 5. No gasket or other flexible material shall be placed between the holes. The holes in parts to be joined shall be sufficiently well aligned to permit bolts to be freely placed in position. Driving of

bolts is not permitted. The nuts shall be placed so that the identification marks are clearly visible after tightening. Nut and bolts shall always be tightened in a staggered pattern and where there are more than four bolts in any one joint, they shall be tightened from the centre of the joint outwards.

6. If, after final tightening, a nut or bolt is slackened off for any reason, the bolt, nut and washer or washers shall be discarded and not used again.

Tightening of bolts

Bolted connection joints with high strength friction grip bolts shall be inspected for compliance of codal requirements.

The Engineer shall observe the installation and tightening of bolts to ensure that correct tightening procedure is used and shall determine that all bolts are tightened. Regardless of tightening method used, tightening of bolts in a joint should commence at the most rigidly fixed or stiffest point and progress towards the free edges, both in initial snuggering and in final tightening.

The tightness of bolts in connection shall be checked by inspection wrench, which can be torque wrench, power wrench or calibrated wrench. Tightness of 10 per cent bolts, but not less than two bolts, selected at random in each connection shall be checked by applying inspection torque. If no nut or bolt head is turned by this application, connection can be accepted as properly tightened, but if any nut or head has turned all bolts shall be checked and, if necessary, re-tightened.

Painting at Site

Surfaces which will be inaccessible after site assembly shall receive the full specified protective treatment before assembly. Surfaces which will be in contact after site assembly shall receive a coat of paint (in addition to any shop primer) and shall be brought together while the paint is still wet. Damaged or deteriorated paint surfaces shall be first made good with the same type of coat as the shop coat. Where steel has received a metal coating in the shop, this coating shall be completed on site so as to be continuous over any welds, bolts and site rivets. Specified protective final painting treatment shall be completed after erection.

page-45

2. ALUMINIUM GLAZED PARTITION / DOORS / WINDOWS:

2.1. General specification, materials & erection.

Anodised tubular aluminum sections for doors, windows partition frames shall be of INDAL/JINDAL or approved equivalent make and shall be of size and design as per relevant drawings.

All moving and fixing frames shall be manufactured from Aluminum alloy conforming to IS IIE 9 WP. The alternate vertical frames shall be taken up beyond false ceiling up to main RCC ceiling/beam and shall take up beyond false ceiling up to main RCC ceiling/beam and shall be properly screwed with main RCC ceiling/beam by way of raw/plugs/flats/deatsetc completed.

The door shutter section shall be 5.5 mm thick plain glass fixed with necessary gasket and snap fit aluminum beading strip. The glazing for shutters shall be 5.5 mm thick laminated safety glass or as specified.

The door shall be provided with one security 6 lever lock. The shutters shall be provided with anodized aluminum butterfly door handles inside and outside.

The average thickness of anodized coating shall not be less than 15 microns (IS:1968) or as specified. The glazed partition frames shall be provided with approved anchors @ 90 cm c/c maximum for fixing. The bottom rail shall be fixed by way of bolts/screws to the false flooring.

2.2. Payment.

Payment including cost of labour, materials, taxes, carriages etc. shall be made on square meter basis of finished work. Fixed glazed partition shall be measured deducting the shutter within it and up to false ceiling only. Nothing extra shall be paid for taking vertical fame members upto main ceiling/RCC slab or beam. Door shutter shall be paid extra on square meter basis. Only clear opening or area for open able shutter left within the glazed partition shall be measured for payment.

STANDARD TECHICAL SPECIFICATIONS FOR PAINTING JOB

1. PAINTING.

1.1. Materials

Paint, oils varnishes etc of approved brand and manufacturer shall be used synthetic enamel paint as received from the manufacturer without any admixture shall be used. (Conforming to IS: 2932)

Approved paints, oil or varnishes shall be brought to the site of work by the contractor in their original containers in sealed condition. The empty tins shall not be removed from the site of work till the relevant item of work has been completed and obtained from the Engineer-in-charge.

1.2. Commencing Work

1.3. Painting shall not be started until the Engineer-in-charge has inspected the items of work to be painted, satisfied himself about their proper quality can give his approval to commence the painting work.

page-46

1.4. Preparation of Surface

The surface shall be thoroughly cleaned and dusted. All rust, dirt scales, smoke and grease shall be thoroughly removed before painting is started. The prepared surface shall have received the approval of the Engineer-in-charge after inspection.

1.5. Application

Before pouring into smaller containers for use, the paint shall be continuously stirred in the small containers so that its consistency is kept uniform.

The painting shall be laid on evenly and smoothly by means of crossing and laying off, the later in the direction of the grain of wood. The crossing and lying off consists of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternately in opposite direction, two or three times and then finally brushing alternately in opposite direction, two or three times and then finally

brushing lightly in a direction at right angles to the same. In this process no brush marks shall be left after laying off is finished. The full process of crossing and laying off will constitute one coat.

Where so stipulated, the painting shall be done with spray, spray machine used may be high pressure type of or a low pressure type, depending on the nature and location of work to be carried out. Skilled and experienced workmen shall be employed for this class of work. Paint used shall be brought to the requisite consistency by adding a suitable thinner as recommended by the paint manufacturers.

Spraying shall be done only when dry condition prevails.

Each coat shall be allowed to dry out thoroughly and rubbed smooth before the next coat is applied.

Each coat except the last coat, shall be lightly rubbed down with sand paper or fine pumice stone and cleaned off dust before the next coat is laid.

No left over paint shall be put back into the stock tins.

No hair marks from the brush or elegging of paint particle in the concern of panels, angles of molding etc. shall be left on the work.

In painting steel work, special care shall be taken while painting over bolts, nuts, rivets, overlaps etc.

The additional specification for primer and other coats of paints shall be as according to the detailed specifications under the respective headings.

1.6. Brush and Containers

1.7 After work, the brushes shall be completely cleaned from paint and linseed oil by rising with turpentine. The containers, when not in use, shall be kept closed.

1.8. Measurement

page-47

The units of measurement for painting except where otherwise stated shall be given in "Sq meter" painting of rain water, soil, waste, vent pipes, etc shall also be measured in "Sq meter".

1.9.1 Precautions

All furniture, fixtures, glazing, floors etc shall be protected by covering and stains, smear, splashing if any shall be removed and damage done shall made good by the contractor at his cost.

1.10 Rate

Rate shall include cost of all labour and materials, taxes, carrying, cleaning of surface after painting involved in all the operation described above and in the particular specifications given under the several items. It shall also include cost of scaffolding.

1.11 PAINTING PRIMING COAT ON WOOD, IRON SURFACE

2.1.1 Materials

The priming coat for woodwork or iron work shall be as specified in the description of the item. It shall be ready made primer of approved brand and manufacture. IT shall be brought to site in their original packings in sealed condition.

2.2 Preparation of Surface

2.2.1. Wood work

The woodwork to be painted shall be dry and free from moisture.

The surface shall be thoroughly cleaned. All unevenness shall be rubbed down smooth with sand paper and shall be well dusted. Knots, if any, shall cover with preparation of red lead made by grinding red lead in water and mixing with strong glue size and used hot.

The surface treated for knotted shall be dry before painting is applied. After the priming coat is applied, the holes and identifications on the surface shall be stopped with glazier's putty or wood putty. Stopping shall be done before the priming coat is applied.

2.2.2 Iron and steel work

All rust and seals shall be removed by scrapping or by brushing with steel wire brushes. Hard skin or oxide formed on the surface of wrought iron during rolling which becomes loose by rusting, shall be removed.

All dust and dirt shall be thoroughly wiped away from the surface. If the surface is wet, it shall be dried before priming coat is undertaken.

2.2.3 Application

The paint shall be applied with brushes, worked well into the surface and spread even and smooth. The painting shall be done by crossing and laying off described.

page-48

3 PAINTING WITH SUPERIOR QUALITY SYNTHETIC ENAMEL PAINT

3.1.1 MATERIAL

a) Wood Work

- The superior synthetic enamel paint of the following brand and manufacture shall only be used.
- a)" Luxol High gloss Synthetic Enamel" of Berger Paints.
 - b)" Apcolite" of Asian Paints (India) Limited.

3.1.2 PREPARATION OF SURFACE

a) Wood Work

The surface shall be cleaned and all unevenness removed as in para 2.2.1. Knots if visible, shall be covered with a preparation of red lead as in para 3.2.1. Holes and indentation on the surface shall be filled in and surface prepared as in 2.2.1.

b) Iron and Steel work

The priming coats shall have dried up completely before painting is started. Dust and scaling shall be carefully removed by scrapping or by brushing with steel wire thoroughly wiped.

3.3. APPLICATION

The number of coats shall be as stipulated in the item. One coat of the specified paint shall be applied and allow to dry overnight. It shall be rubbed next day with the finest grade of wet adhesive paper to ensure a lose particles dusted off.

Next coats shall be applied after the first coat is thoroughly dry. Additional coats shall be applied if found necessary to ensure properly uniform glossy surface, free from streaks, blistered etc in all the cases paint manufacturer's instruction shall be followed melenously.

4 PAINTING WITH WALL PAINT

4.1.1 The wall paint shall be of following brand and manufacturer:

- a) LUXOL" Silk Acrylic Emulsion paints of Berger paints or approved equivalent. The paint shall be of approved shade.

4.1.2 "Preparation of Surfaces"

The surface shall be thoroughly cleaned of dust, old white or colour wash or other wall finish by washing with water and scrubbing such removal of white wash, colour washing etc. will be paid for separately. The surface shall then be sand papered to give a smooth and even surface.

Scratches, holes etc shall be made good by applying putty, made of plaster of paris mixed with water on the surface and then sand papering the same after it is dry.

The wall surface which will be painted with wall paint shall be made smooth by applying a putty made of plaster of paris mixed with water on the entire surface including filling up the undulations and then sand papering the same after it is dry such application of plaster of paris will not be paid separately.

page-49

4.2 Material.

Cement primer of approved brand and manufacture shall be used.

4.3 Application

On properly prepared and primer surface, wall paint shall be applied in the usual manner with brush or roller.

The number of coat shall be as stipulated in the item.

When painting inside a wall ventilated room, the second coat can be applied one hour after the first.

The thinning of paint is to be done with water. The quantity of thinner to be added for first and second coat shall be as per manufacturer's instructions.

The surface on finishing shall present a flat velvety smooth finish and uniform appearance. If necessary more coats will be applied till the surface present, uniform appearance. In all cases the manufacturer's instructions shall be followed meticulously.

4.4 Other details these shall be as per specification for painting (general) as for they are applicable.

5 French Spirit Polishing.

5.1 Pure shellac varying from pale orange to lemon yellow colour, free from resin or dire shall be dissolved in methylated spirit. Suitable pigment shall be added to get the required shade.

5.2 The surface shall be cleaned. All unevenness shall be rubbed down smooth with sand paper well dusted. Knots of visible shall be covered with a preparation of red lead and glue size laid on while hot. Holes and indentations on the surface shall be stopped with glazier's putty. The surface shall then be given coat of wood filler made by mixing whiting in methylated spirit at the rate of 1:5 kg of whiting per liter of spirit. The surface shall again be rubbed down perfectly smooth with glass paper and wiped clean.

5.2.1 The number of coats of polish to be applied shall be as desrcied in the item a pad of woolen cloth covered by a fine cloth shall be used to apply the polish. The pad shall be moistened with the polish and rubbed hard on the wood, in a series of overlapping circles applying the mixture sparingly but uniformly over the entire area to give an level surface. A trace of linseed oil on the face of the pad facilities this operation. The surface shall be allowed to dry and the remaining coats applied in the same way. To finish off, the pad shall be covered with a fresh piece of clean fine cloth, slightly and quickly with methylated spirit and rubbed lightly and quickly with circular motions. The finished surface shall have a uniform texture of high gloss.

Other details shall be as per the specification for painting (general) as for as they are practicable.

6.0 VITRIFIED FLOOR TILES

6.1 Work included the tenderer shall furnish materials, labour. Plant, equipment and tools to complete the work as specified and or as shown in the drawing.

page-50

6.2 Materials

- a) Vitrified tiles shall be flat and unglazed on the top surface. They shall be generally 600 X 600 mm in size with a thickness as approved by the Engineer. They shall conform to IS: 15622 of approved make and colour. The tenderer shall submit to the Engineer for his approval samples of tiles which he proposes to use in the work and all tiles used shall be similar to the approved samples. Water absorption's less than 0.08% of above quality of tiles.
- b) Ordinary or White Portland Cement:
- c) Cement: Ordinary Portland Cement shall conform to IS: 8112
- d) White Portland Cement: White Portland Cement shall conform to IS: 8042
- e) Sand: The sand used shall be of approved river or pit sand, conforming to IS: 383-1970
- f) Water: Water used shall be clean and potable quality as per clause 4.3 of IS: 456-2000

6.3 Workmanship

Tiles shall be laid on 20 mm thick cement morter1 : 4 (1 Cement: 4 Coarse sand) including grouting the points with white cement and matching pigments as approved by Engineer. The fixing shall be done from bottom upwards. Each tile shall be fixed as close as possible to the one adjoining and any thickness of the tiles

shall be evened out in the cushioning mortar so that all the tiles faces are set in conformity with one another. After finishing above job surface shall be cleaned and cured.

Page No. 51

ELECTRICAL TECHNICAL SPECIFICATIONS

1.0 SPECIFICATION OF WORK, MATERIALS, TOOLS AND EQUIPMENT:

The Contractor shall supply all materials, tools, plants and instruments necessary for the efficient execution of the work to complete within the stipulated time.

The materials specified in the schedule of Rates will only be used, other than the specified make written approval from Engineer-in-Charge is to be taken for issuing these materials. And a copy of the approval is to be furnished to Technical Services Department before using these materials.

All materials brought to site shall be approved by Engineer-in-Charge. Materials which are sub-standard shall be rejected. The substandard materials brought to site or used in the work shall be removed by the Contractor within 24 hours on receipt of the notice to that effect from the Site Engineer. Decision of the Engineer-in-Charge in regard to quality of materials will be final & binding.

- i) Indian Electrical Act. 1910.
- ii) Indian Electricity Rules 1956 and regulations framed there under.
- iii) The rules and bye laws of the local Electric supply Authorities.

iv) Standards & Practices maintain by Indian Oil.

Good and skilled workmanship is as essential as the good quality of materials. Where the workmanship is not considered to be approved standard, the work should be dismantled and redone as directed by the Engineer-in-Charge or by the Site Engineer. This will, however, be decided during the progress of work or within one month from the date of completion of the work. The of the Engineer-in-Charge will be final.

1.1 GENERAL

Work under this contract shall be executed as given in this tender document and as required at site whether specifically shown or not. The contractor shall carry out and complete the work under this contract in every respect in conformity with the contract documents and as per directions of and to the satisfaction of the engineer –in –charge / owners.

1.2 SYSTEM

All equipment to be supplied as a part of contract and the installation works shall be suitable for 415V, 3 ph, 4 wire system, as specified.

1.3 SITE CONDITIONS

All equipment shall be suitable for satisfactory operation at the following site conditions Ambient Conditions

Max 46 deg C 92% relative Humidity.
Min 05 deg C 92% relative Humidity

Page No. 52

2.0 POINT WIRING

2.1 General

Technical specifications in this section cover the internal wiring installation comprising of:

- Point wiring for lights,
- Point wiring socket outlets etc. including circuit wiring in concealed / surface conduit as mentioned in drawings.
- Point wiring for telephone outlets
- Sub-main wiring in concealed / surface conduits
- Supply, installation of the light fixtures
- Supply, installation of the distribution boards and the final sub distribution board for the entire building.
- Marking earth stations.

2.2 Standards and Codes

All equipment, components, materials and entire work shall be carried out in conformity with applicable and relevant Bureau of Indian Standards and codes of practice, as amended up to date and as below. In addition, relevant clauses of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 as amended

up to date shall also apply. Wherever appropriate Indian Standards are not available, relevant British and / or IEC Standards shall be applicable.

Equipments certified by Bureau of Indian standards shall be submitted, as required.

It is to be noted that updates and current standards shall be applicable irrespective of dates mentioned along with ISS's in the tender documents.

2.3 CONDUITING

2.3.1 PVC Conduits

All conduits used in the contract shall be ISI embossed. The conduits shall have perfectly circular and smooth tubing.

2.3.2 Sheet metal outlet / draw / inspection / junction boxes

Outlet boxes shall be of required sizes and shall be fabricated from 1.6mm thick MS sheets excepting ceiling fan outlet boxes which shall be fabricated from minimum 2 mm thick sheets. Outlet boxes shall be provided with minimum 16 mm projected threaded collars. The outlet boxes shall be of approved quality, finish and manufacture. All outlet boxes shall be provided with an earth stud. The boxes shall be protected from rust by zinc phosphate primer process. For concealed conduit work, boxes with primer only could be embedded. For surface conduit work, the boxes shall be finished with minimum one coat of enamel paint of approved colour. Alternatively these boxes could be galvanized and painted if so stipulated. The outlet boxes shall be so protected at the time of fixing that no mortar finds its way inside during concrete filling or plastering. For concealed conduit work, outlet boxes shall be completely embedded in walls / ceilings leaving edges flush with finished wall / ceiling surface.

Page No. 53

2.3.4.1 Outlet boxes for light fittings

This shall be minimum 75mm X 75mm deep and provided with one or two threaded collars of conduit entry as required. For ceiling mounted fluorescent fittings, the boxes shall be provided 300 mm off center for a 1200 mm fitting and 150 mm off center for a 600mm fitting so that the wiring is taken directly to the down rod. 3mm thick Perspex / hylem sheet cover of matching colour shall be provided.

2.3.4.2 Ceiling fan outlet boxes

Outlet boxes for ceiling fans shall be fabricated from min. 2mm thick ms sheet steel. The boxes shall be hexagonal in shape of min. 100mm depth and 60mm sides. Each box shall be provided with one U shaped 15mm dia rod tied to the top reinforcement of the concrete slab for a length of min. 150mm on either side. 3mm thick hylem sheet cover of matching colour shall be provided.

2.3.4.3 Switch boxes

Switch boxes suitable to house plate type switches of required rating and fan regulator as required shall be provided. In case of no. of switches in one box is not tallying with that available in standard manufacturer, the box accommodating the next higher no. of switches shall be provided without any extra cost. In case fan regulator / regulators is / are to be provided at a later date, suitable provision for

accommodating such regulator shall be made in the switch boxes and are blank off covers shall be provided without any extra cost..

Switch boxes shall be so designed that accessories are mounted on a grid plate with tapped holes for brass machine screws leaving ample space at the back and on the sides for accommodating conductors, check nuts and brass brushes at conduit entries. The grid plate and ms boxes shall be fitted with a brass earth terminal. Boxes shall be attached to conduits by means of check nuts on either side of their walls. No timber shall be used for any supports. Switch boxes shall be located with bottom at 1200 mm above floor level unless otherwise indicated.

2.3.4.4 Socket outlet boxes

Outlet boxes shall be suitable for housing switch socket outlets, telephone outlets and any other outlet as required. These shall be so designed that accessories are mounted on a grid plate with tapped holes for brass machine screws leaving ample space at the back and on the side for accommodating conductor, check nuts and brass bushes at conduit entries. The grid plate and ms boxes shall be fitted with brass earth terminal. These shall be attached to conduits by means of check nuts on either side of their walls. No timber shall be used for any supports. Boxes shall be located with bottom at 1200 mm above floor level unless otherwise indicated.

2.3.4.5 Draw boxes

Draw boxes of minimum 75mm X 75mm X 50mm Deep of larger as required shall be provided at convenient location to facilitate drawing of long runs of conductors / wires. These shall have screwed covers of 3mm thick hylem sheet.

Page No. 54

2.3.4.6 Inspection boxes / junction boxes

Inspection boxes of minimum 75mm X 75mm X 50mm of larger as required shall be provide at suitable location in conduit runs to permit inspection and maintenance. These shall have screwed covers of 3mm thick hylem sheet

2.3.5 Cross Section

The conduit shall be of ample sectional area to facilitate simultaneous drawing of wires. In no case shall the total cross section of wires measured overall be more than half the area of conduit. Max. no. of wires permissible in various sizes of conduits shall be as below.

As per IS

Size of Wire Cu. Conductor Diameter of conduits

Size of Wire Cu. Conductor	19	25
1.5 sq.mm	5	10
2.5 sq.mm	5	8
4.0 sq.mm	4	6
6.0 sq.mm	3	5
10.0sq.mm	2	3

2.3.6 Laying of conduits

Conduits shall be laid either concealed in walls and ceiling or on surface on walls and ceiling or partly concealed and partly on surface as required. The surface of the wall must be finished and painted to match the other part of the room in case of conceal wiring, PATCH MARKS MUST NOT BE VISIBLE. For surface Conduiting the works to be performed in highly professional manner with high quality of workmanship to maintain the aesthetic look of the conduit with sufficient no.s of 16 SWG GI saddles with bases. No Flexible conduits will be acceptable in Conduiting works. In case it becomes necessary to use flexible conduits then only flexible GI conduits or Wire Centered PVC conduits are acceptable that too with prior approval of Site Engineer. All the conduits must be threaded at the end and tightly fixed with boxes, conduits, bends, nipples etc. with proper check nuts/ coupler.

Same rate shall apply for concealed and surface conduiting in this contract.

2.3.6.1 Concealed Conduiting

Concealed conduits in concrete members shall be laid before casting in the upper portion of slab or otherwise as may be instructed so as to embed the entire run of conduits and ceiling outlet boxes with a cover of min. 12 mm concrete. Conduit shall be adequately tied to the reinforcement to prevent displacement during casting at interval of max. 1 min. No reinforcement shall be cut to fix the conduits. Suitable flexible joints shall be provided at all locations where conduits cross expansion joints in the building.

2.3.6.2 Surface Conduiting

Wherever so desired, conduit shall be laid in surface over finished concrete and / or plaster brick works suitable cast aluminum spacer saddles of approved make and finish shall be fixed to the finished structural surface along the conduit route at interval not exceeding 600 mm. Holes in the concrete or brick works the saddles shall be made neatly by electric drills. Conduit shall be fixed on the saddles by means of good quality heavy duty ms clamps screwed to the saddles.

Page No. 55

2.3.6.3 Painting of conduits and boxes

All draw/switch/junction/fan hook boxes shall be galvanized/CD plated/painted with red oxide in their manufactured form. All ungalvanised/ unplated boxes shall be again painted with red oxide paint as required before fixing. Boxes fixed on surface shall, in addition, be painted with finished paint of approved color and finish. Before laying conduits shall be painted at such places where paint has been damaged.

2.3.6.4 Protection of conduits

To safeguards against filling up with mortar/plaster etc.. All the outlets and switch boxes shall be provided with temporary covers and plugs which shall be replaced by sheet/plate cover as required. All screwed and socketed joints shall be made fully water tight with white lead paste.

CLEANING OF CONDUITS RUNS

The entire conduit system including outlets and boxes shall be thoroughly cleaned after completion of erection and before drawing in of cables.

2.3.6.5 Earthing

Continuous of wires shall be provided for all points, outlets. Earthing terminal shall be provided inside all switch boxes, outlet boxes and draw boxes etc. Earth wire for concealed conduits shall in variably be provided by means of bare copper wire draw inside the conduit and connected to earth stud of all outlet

boxes, switch boxes and draw boxes etc. Earth wire for surface conduit shall be by means of bare wire as for concealed conduit or bare copper earth wire taken outside the conduit as per schedule of quantities. Connection with conduit shall be made by suitable screwed clamp, paint or conduit being removed for making effective electrical connection.

2.4

WIRING

Wiring shall be carried out with PVC insulated 660V grade unsheathed single core wires with electrolytic annealed stranded copper (unless otherwise stated) conductors and conforming to IS 694 / 1990. All wires shall be ISI embossed. All wires shall bear manufacturer's label and shall be brought to site in new and original packages. Manufacturer's certificate, certifying that wires brought to site are of their manufacturer shall be furnished as required. All the wires must be FRLS type.

Final connection to light fitting / appliance from termination of point wiring in ceiling / wall light outlet boxes shall be made with 660V grade stranded Cu. Conductor unsheathed PVC flexible cords conforming to IS 694/1990 and having a cross-sectional area not less than 0.75 sq.mm

2.4.1

Bunching of wires

Wires carrying current shall be so bunched in conduits that the outgoing and return wire are drawn into the same conduit. Wires originating from two different phases shall not be run in the same conduit.

2.4.2

Drawing of wires

The drawing of wires shall be done with due regard to the following precautions:

No wires shall be drawn into any conduit until all work of any nature that may cause injury to wire is completed. Care shall be taken in pulling the wire so that no damage occurs to the insulation of the wire. Screwed buses shall be provided at conduit terminations. Before the wires are drawn into the conduits, conduits shall be thoroughly cleaned of moisture, dust, dirt or any other obstruction by forcing compressed air through the conduits if necessary.

2.4.2

Termination / jointing of wires

Sub circuit wiring shall be carried out in loping system. Joints shall be made only at distribution board terminals, switches / buzzers and at ceiling roses / connectors / lamp holders terminals for lights / fans / socket outlets. No joints shall be made inside conduits or junction / draw /

Page No 56

inspection boxes. Switches controlling lights, fans or socket outlets shall be connected in the phase wire of the final sub circuit only. Switches shall never be connected in the neutral wire.

Wiring conductors shall be continuous from outlet to outlet. Joints where unavoidable, due to any special reason shall be made by approved connectors. Specific prior permission from Engineer-in-charge in writing shall be obtained before making such joint.

Insulation shall be shaved off for a length of 15 mm at the end of wire like sharpening of a pencil and it shall not be removed by cutting it square or wringing.

Standards of wires shall not be cut for connecting terminals. All stands of wires shall be soldered at the end before connection.

Ends of PVC insulated aluminum conductor wire ends before connection shall be properly soldered (at least 15 mm length) with suitable soldering material.

Conductors having normal cross sectional area exceeding 4 sq. mm shall always be provided with crimping sockets.

At all bolted terminals, brass flat washer of large area and approved steel spring washers shall be used.

Brass nuts and bolts shall be used for all connections.

The pressure applied to tighten terminal screws shall be just adequate, neither too much nor too less.

Switches controlling lights, fans, socket outlets etc. shall be connected to the phase wire of circuits only.

Only certified wiremen shall be employed to do wiring / jointing work.

2.4.4 LOAD BALANCING

Balancing of circuits in three-phase installation shall be planned before the commencement of wiring and shall be strictly adhered to.

2.4.5 COLOUR CODE OF CONDUCTORS

Colour code shall be maintained for the entire wiring installation – red, yellow, blue for three phases, black for neutral and green for earth.

2.5 SWITCHES AND ACCESSORIES

2.5.1 SWITCHES

All 6 and 16 amps switches shall be of the modular flush mounting type unless otherwise stated, suitable for 250 volt AC supply, best quality and of approved make. The switch moving and fixed contacts shall be of silver nickel and silver graphite alloy and contact tips coated with silver. Housing of switches shall be made from high impact resistant, flame retarding and ultra violet stabilized engineering plastic material.

Page No. 57

2.5.2 FAN REGULATORS

Fan regulators shall be fixed inside the switch boxes on grid plates with tapped holes and brass machine screws unless otherwise stated, leaving ample space at the back and sides for accommodating wires. If fan regulator is to be fixed at the later date by Owners, provision for such fixing in the switchbox shall be provided and a blank of plate over the space meant for regulator shall be provided without any extra cost.

2.5.3 SOCKET OUTLETS

6/16 amps socket outlets shall be of modular flush mounting type, unless otherwise stated, and shall be switched, three pin type and fitted with automatic linear safety shutters to ensure safety from prying fingers. Un switched 6/16 amp socket outlets where called for shall also be of three pin type socket outlets shall be made from high impact resistant, flame retarding and ultra violet stabilized engineering plastic material.

Switches and sockets shall be located in the same plate. Plates for 6 amp switched / un switched power and telephone outlets shall be of the same size and shape.

An earth wire shall be provided along the wires feeding socket outlets for electrical appliances. The earth wire shall be connected to the earthing terminal screw inside the box. The earth terminal of the socket shall be connected to the earth terminal provided inside the box.

2.5.4 FLUSH PLATES

Switches, socket outlets, receptacles, and telephone outlets etc. in walls shall be provided with moulded cover plates of approved colour, shape and size made from high impact resistant, flame retarding and ultra violet stabilized engineering plastic material, and secured to the box with counter sunk / round head chromium plated brass screws unless otherwise stated. Where two or more switches are installed together, they shall be provided with one common switch cover plate as described above with notches to accommodate all switches either in one, two or three rows.

One and two gang switch cover plate, telephone outlet cover plate, 6 and 16 amps switched / un switched outlet plates, shall have the same shape and size. Three and four gang switch cover plates shall have the same shape and size. Six and eight gang switch cover plates shall have the same shape and size. Nine and twelve switch cover plates shall have the same shape and size. Whenever five switches, seven switches, ten switches and eleven switches are to be fixed the next higher size of gang switch cover plate to be used and extra openings shall be provided with blank-offs.

2.5.5 OUTDOOR SWITCHES

Switches located outdoors shall be, of required size, type and rating and shall be provided in weather proof enclosures, with weather proof gasket covers. The MCS's/ uses for all outdoor switches shall be separate and of required rating.

2.5.6 LIGHTING FIXTURES, FANS AND EXHAUST FANS

Light fixtures and fittings shall be assemble and installed complete as required and make ready for service, in accordance with drawings, instructions and as offered by Engineer-in-charge.

Wires brought out from junction boxes shall be encased in flexible conduits of make and quality approved by Engineer-in-charge for connecting to fixtures concealed in suspended ceilings. Flexible conduits shall be provided with a check nuts at both ends.

Pendant fixtures specified with overall lengths are subject to change and shall be checked with site conditions and installed as required.

Page No. 58

All suspended fixtures shall mounted rigid and fixed in position in accordance with drawings, instructions and as approved by Engineer-in-charge.

Fixtures shall be suspended true to alignment, plumb, level and capable of resisting all lateral and vertical force.

All suspended light fixtures, fans etc. shall be provided with concealed suspension arrangement in the concrete slab / roof members. Making adequate provision for such arrangements at the appropriate stage of construction is deemed to be included in Contractors' scope.

Exhaust fans shall be fixed and locations shown on the drawings. They shall be wired to a plug socket at a convenient location near the fan in flexible conduits.

All switch and outlet boxes, and fan regulators shall be bonded to earth with bare copper wire or equivalent as required.

Wires shall be connected to all fixtures through connector blocks.

Down rods of ceiling fans shall be minimum 19 mm dia class B GI pipes. These shall be rigidly connected to the ceiling fan in an approved manner and shall be connected to the concealed hook in the ceiling by means of standard shackle arrangement as approved by Engineer-in-charge.

2.6 MEASUREMENT AND PAYMENT OF WIRING

Wiring for lights, fans, socket outlets, telephone outlets etc., carried out as per tender specifications shall be measured and paid on point basis only unless otherwise specifically stipulated. The point wiring basis shall assume average wiring length and average conduit length per point base on parameters stipulated in paragraph below. The average wiring length and average conducting length forming the basis of point wiring payment, shall take the electrical layouts of the entire project into consideration. Tenderers are advised to seek clarifications, if they so desire, on this aspect before submitting their tenders. No claim for extra payment on account of electrical layouts in parts of the project requiring larger average wiring and conduit length per point whether specifically shown in tender drawings or not shall be entertained after the award of contract.

2.6.1 POINT WIRING

Point wiring shall be carried out as per following parameter.
In concealed / surface conduit system unless otherwise stipulated.
Only looping system of wiring shall be adopted throughout.

All accessories shall be flush types unless otherwise stated.
For estimation of load, following loads per point shall be assumed.

Light points	100 Watts
6 amps socket outlet points	100 watts
Fan points	60 watts
Exhaust fan points	300 Watts or as specified
16-amp socket outlet points	1000 watts.

Light points, fan points and 6 amp socket outlet points may be wired on a common final such circuit. Such circuit shall not normally have more than a total of ten light, fan or socket outlets or a load of 800 watts. Wiring from DB to the first switch in each first sub-circuit is defined as circuit wiring which shall be wired with one size higher wire.

Power circuits shall normally have maximum one 16 amps socket outlet unless otherwise stated. Separate circuit shall be run for each geyser, kitchen equipment, window air conditioners and similar appliances.

Page No 59

Point wiring rates shall include painting of conduits and other accessories as required. Point wiring rates shall include cleaning of dust, splashes of colour wash or paint from all fixtures, fans, fittings etc. at the time of taking over of the installation.

2.6.2 LIGHT POINT

Light point wiring shall commence at the distribution board terminals and shall terminate at the terminate at the ceiling rose/connector in ceiling box/lamp holder via the control switch. Rates quoted shall be deemed to be inclusive of the cost of entire materials and labour required for completion of point wiring thus defined including: a) concealed/surface conducting system complete with all accessories, junction/draw/inspection boxes, screwed brass bushes, check nuts etc complete as required, b) wiring with stranded copper(unless otherwise stated) PVC insulated 660Volt grade wires for point wiring including circuit wiring(wiring from distribution board terminals to the first switch in the circuit) and terminals etc. complete as required), control switch with switch box and cover plate of specified type including fixing screws, earth terminal etc. complete as required) loop earthing with bare copper wires.

2.6.3 CEILING FAN POINT

Point wiring for ceiling fan points shall be same as for light points in para 6.3 above and shall in addition, include ceiling outlet box with recessed fan hoods and provision in the switch box for mounting the fan regulator.

Switch socket shall be earthed with bare copper wires as required.

2.6.4 EXHAUST FAN POINT

Point wiring for exhaust fan point shall be same as for light point above and shall in addition include socket outlet near the exhaust fan and control switch with regulator at a convenient location complete as required.

Point wiring for lighting convenience socket outlet points shall be same as for light points above and shall in addition include 3 pin 5 a control switch of specified type mounted in a ms box with cover as required and 3rd pin earthed with bare Cu wire as specified

3 PINS 16 AMPS SOCKET OUTLET POINT (POWER)

Point wiring for lighting convenience socket outlet points shall be same as for light points above and shall in addition include 3 pin 5 a control switch of specified type mounted in a ms box with cover as required and 3rd pin earthed with bare Cu wire as specified

2.6.5 CIRCUIT WIRING

Wiring from DB to the first switch in any sub circuit is defined as circuit wiring min. size of PVC insulated Cu conductor wires for all circuit wiring for light, exhaust fan, ceiling fan, and lighting convenience outlet point shall be 2.5sq.mm unless otherwise specified. Circuit wiring shall not be separately measured and paid for point wiring rates shall include the cost of providing circuit wiring as required.

SUB MAIN WIRING

Sub main wiring shall comprise of stranded Cu conductor PVC insulated 660V grade wires in ms conduits including loop earthing, termination etc complete as required. Sizes of conduits, no. / type / size of wires and loop earthing shall be as stipulated in the schedule of quantities and / or drawings.

Page No 60

Wires shall be drawn in the concealed or surface conduits as required, without being damaged. For this purpose draw boxes shall be located at convenient locations.

Every sub mains shall run in an independent conduit with an independent earth wire of bare Cu as specified running along the entire run of conduit. For 1 Ph. One earth wire and for 3 ph. 2 earth wire shall run.

Necessary provision of wire lengths entering and emerging from the conduit shall be made for connection. Measurement shall be taken of the actual conduit run containing the wires from one point to another.

3.0 MEDIUM VOLTAGE CABLES

Specifications for cables will be as per enclosed.ES: 8160

4.0 MEDIUM VOLTAGE FINAL DISTRIBUTION BOARDS

STANDARDS AND CODES

Indian Standard Specifications and codes of practice will apply to the equipment and the work covered by the scope of this contract. In addition the relevant clauses of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 as amended upto date shall apply.

MINIATURE CIRCUIT BREAKER

The MCB's shall be of the completely moulded design suitable for operation at 240 / 415 V 50Hz system. The MCB's shall have a rupturing capacity of 10 KA at 0.5 pf. The MCB's shall have inverse time delayed thermal overload and instantaneous magnetic short circuit protection. Type test certificates from independent authorities shall be submitted with the tender.

FINAL DISTRIBUTION BOARDS

Final distribution boards shall be flush mounting, today enclosed, dust and vermin proof and shall comprise of miniature circuit breakers, earth leakage circuit breakers neutral link etc. as detailed in the schedule of quantities. The distribution equipment forming a part of the distribution board shall comply with the relevant standards and codes of the bureau of Indian Standards and as per detailed specification included in this tender document. The board shall be fabricated from 14 gauge CRCA sheet steel and shall have a hinged lockable spring loaded cover. All cutouts and cover shall be provided with synthetic rubber

gaskets. The entire construction shall have IP54 degree of protection. The bus bar shall be of Cu having a maximum current density of 1.6 A / sq.mm and PVC insulated throughout the length. All the internal connection shall be with either solid Cu PVC insulated or Cu conductor PVC insulated wires of adequate rating. All the internal connection shall be concealed by providing a hinged protective panel to avoid accidental contact with live points. All outgoing equipment shall be concealed direct to the bus bar on the live side. The equipment shall be mounted on a frame work for easy removal and maintenance. The sheet steel work shall undergo a rigorous rust proofing process, two coats of filter oxide primer and final powder coated paint finish. All the circuit shall have an independent neutral insulated wire, one per circuit, and shall be numbered and marked as required by the Engineer –in-charge. A sample of the completed board is to be got approved by the Engineer-in-charge before commencement of supply and erection.

SHEET STEEL TREATMENT AND PAINTING

Sheet steel materials used in the construction of these units should have undergone a rigorous rust proofing process comprising of alkaline degreasing, de-scaling in dilute sulphuric acid and recognized phosphate process. The steel work shall receive two coats of oxide filler primer before final painting. All the sheet steel shall after metal treatment is given powder coating finish painted with two coats of shade 692 of IS-5 on the outside and white in the inside. Each coat of the paint shall be **properly stove** and paint thickness shall not be less than 50 micron.

Page No 61

NAME PLATES AND LABELS

Suitable engraved white on black nameplate and identification labels of metal for all switch board shall be provided. These shall indicate the feeder no. and feeder designation.

5.0 MEDIUM VOLTAGE SWITCHBOARD

Specifications for switchboard will be as per enclosed **ES :8060**

6.0 ADDRESABLE FIRE ALARM DETECTION SYSTEM

Supply, installation& commissioningof addressable low-profile photoelectric smoke detector with base(make Honeywell or equivalent as per direction of EIC), low-profile photoelectric heat detector with base(make Honeywell or equivalent as per direction of EIC), addressable manual call point(make Honeywell or equivalent as per direction of EIC), addressable loop isolation module(make Honeywell or equivalent as per direction of EIC), addressable intelligent wall mounted strobe cum sound recorder of (make Honeywell or equivalent as per direction of EIC), supply of necessary 2x1.5 sqm (should FR type & make of polycab or equivalent) cable for wiring of necessary sensing device to the addressable standalone fire alarm control panel with adequate size PVC casing/pipe with all sort of fixing materials and accessories required to complete this job in all respect. Supply , installation & commissioning of addressable stand alone fire alarm control panel, 198 points (99 detectors & 99 devices), intelligent 80-character LCD display with backlighting , detector sensitivity test capability (NFPA 72 complaint) history file with 1000- event capacity with facility of maintenance alert. Entire system should be integrated with existing system and commissioning to be done in all respect.

Wiring for fire detection and alarm system shall comprise of connecting main fire alarm system in existing fire station building with fire alarm and annunciation panel in the renovated canteen building, complete wiring for smoke detectors , heat detectors, response indicators, manual call points, electronic hooters etc. inside the building including supply, erection , installation , testing and commissioning the system. Incoming supply from main fire alarm panel to 10 zone fire alarm and annunciation panel in the canteen building should be done with 6 core X 2.5 sq.mm. PVC insulated armoured Cu cable. Internal wiring for fire detection system inside the new building shall be done with 2 C X 1.5 sq.mm. PVC insulated Cu wire laid in Heavy duty 16 SWG MS conduits. This wiring shall include interconnection of smoke detectors, heat detectors response indicators manual call points, electronic hooters and 10 zone fire alarm panel. Smoke detectors shall be Ionisation type complete with LED indicators and mounting base.

Heat detector shall be ROR cum fixed temperature type with LED indicator complete with mounting base. Response indicators shall be with Red LEDs and complete with MS housing and anodized Aluminium cover plate etc. Manual call points shall be of glass break type complete with MS housing, Hammer and chain arrangement. Electronic hooters shall be dual tone type. Fire alarm and annunciation panel shall be 10 zone type panel with window type annunciation to indicate fire and fault through suitable indicator, audio alarm unit complete with push buttons for acknowledge / test / reset with main power supply block backed

by 24 V 60 AH battery backup including built in battery charger. Complete installation shall be done as shown in the GA drawing.

The Fire detection & Alarm System shall be a system comprising of automatic sensor e.g. smoke & heat detectors, main panel, zonal panel, hooter, battery charger and other hardware. The system shall be designed to provide audio-visual indication at the main panel to be located in fire station and zonal panel in control rooms.

Electrical siren shall be provided to cover entire plant area.

Hooters and exit lights shall be provided at required location in the buildings.

Page No. 62

Panel design and component selection shall be done for future extension up to 10% of specified zone or one zone, whichever is maximum in each panel. The design of common facility and hardware shall be provided for future extension of zones.

Annunciation with accept/reset push button is to be provided in control room/panel.

Area wise grouping shall be done in parallel connection of each smoke detector contacts of particular.

It should meet with standard fire code of the India.

Fire alarm system employing intrinsically safe circuit and shall operate a 24 V DC supply.

8.0 EARTHING

General

All non-current carrying metal parts of electrical installation shall be earthed properly. All metal conduits, trunking, cablesheaths, switchgears, distribution fuse boards, light fittings and all other parts made of metal shall be bonded together and connected by means of specified earthing conductors to an efficient earthing system. All earthing shall be in conformity with Indian Electricity Rules.

The earthing system shall comprise of-

- a)Earth electrode
- b)Earthing leads
- c)earth conductor

All three-phase equipment shall have two separate and distinct body earth and single phase equipment shall have single body earth.

EARTHING MATERIAL

Materials of which the protective system is composed shall be resistant to corrosion or be adequately protected against corrosion. The material shall be as specified in the schedule of quantities and shall comply with the following requirements:

1. Copper – When solid or stranded copper wire is used it shall be of the grade ordinarily required for commercial electrical work generally designated as being of 98% conductivity when annealed, conforming to Indian standard specifications.
2. Galvanised Steel – Galvanised steel used shall be thoroughly protected against corrosion by hot dipped Zinc coating. The material coating shall withstand the test specified in IS2309: 1969.
3. The strips to be used shall be in maximum lengths available as manufactured normally avoiding unnecessary joints.

EARTHING CONDUCTORS

Earthing conductors shall form the earthing network throughout the installation for earthing of all non-carrying metal parts.

CONNECTION OF EARTHING CONDUCTORS

Main earthing conductors shall be taken from the earth connections at the main switch boards to all distribution boards in the network.

Metal conduits, cable sheathing and armouring shall be earthed at the ends adjacent to switch boards at which they originate, or otherwise at the commencement of run by an earthing conductor in effective electrical contact with cable sheathing, Switches, accessories, lighting fitting etc. shall be effectively connected to the loop Earthing conductors. These through rigidly secured in effective electrical contact with a run of metallic conduit shall not be considered earthed, even though the run of metallic conduit is earthed.

Page No. 63

EARTHING CURRENT INSTALLATION

The earthing conductors inside the building wherever exposed shall be properly protected from mechanical injury by running the same in GI pipe of adequate size.

Joints shall be reverted and brazed in approved manner.

Sweated lugs of adequate size shall be used for termination. Lugs shall be bolted to the equipment body to be earthed after the metal body is cleaned of paint and other only substances and properly tinned.

PROHIBITED CONNECTION

Neutral conductor, pipes conveying water, gas or inflammable liquid, structural steel work, metallic enclosures, metallic conduits and lighting protection system conductors shall not be used as a means of earthing an installation or even as a link in an earthing system.

RESISTANCE TO EARTH

No earth electrode shall have a greater ohmic resistance 3ohms as measured by an approved earth testing apparatus. In rocky soil, the resistance may be up to 1 ohm. The electrical resistance measured between earth connection at the main switch board and any other point on the completed installation shall be low enough to permit the passage of current necessary to operate fuses or circuit breakers and shall not exceed 1 ohm.

9.0 ROUTING AND COMPLETION TESTS

INSTALLATION COMPLETION TESTS

At the completion of the work, the entire installation shall be subject to the following tests—

1. Wiring continuity test
2. IR test
3. Earth continuity test
4. Earth resistivity test

Besides the above any other test specified by the local authority shall be carried out. All tested and calibrated instruments for testing, labour, materials and incidentals necessary to conduct the above tests shall be provided by the contractor at his own costs.

Wiring Continuity Test

All wiring systems shall be tested for continuity of circuits, short circuits and earthing after wiring is completed and before installation is energized.

Insulation Resistance Test

The insulation resistance shall be measured between earth and the whole system conductors, or any section thereof with all fuses in place and all switches closed and except in concentric wiring all lamps in position of both poles of the installation otherwise electrically connected together, a direct current pressure of not less than twice the working pressure provided that it does not exceed 660 volts for medium voltage circuits. Where the supply is derived from AC three phase system, the neutral pole of which is connected to earth, either direct or through added resistance, pressure shall be deemed to be that which is maintained between the phase conductor and the neutral. The insulation resistance measured as above shall not be less than 50 megohms divided by the number of points provided on the circuit the whole installation shall not have an insulation resistance lower than one megohm.

Page no 64

The insulation resistance shall also be measured between all conductors connected to one phase conductor of the supply and shall be carried out after removing all metallic connections between the two poles of the installation and in those circumstances the insulation shall not be less than that specified above.

The insulation resistance between the frame work of housing of power appliances and all live parts of each appliance shall not be less than that specified in the relevant Standard specification or where there is no such specification, shall not be less than half a megohm or when PVC insulated cables are used for wiring 12.5 megohms divided by the number of outlets. Where a whole installation is being tested a lower value than that given by the above formula subject to minimum of 1 Megohms is acceptable.

Testing of Earth Continuity Path

The earth continuity conductor including metal conduits and metallic envelopes of cable in all cases shall be tested for electric continuity and the electrical resistance of the same alongwith the earthing lead but excluding any added resistance of earth leakage circuit breaker measured from the connection with the earth electrode to any point in the earth continuity conductor in the completed installation shall not exceed one ohm.

Testing of Polarity of non-linked Single Pole Switches

In a two-wire installation, a test shall be made to verify that all non-linked single pole switches have been connected to the same conductor throughout, and such conductor shall be labeled or marked for connection to an outer or phase conductor or to the non-earthed conductor of the supply. In the three or four-wire installation, a test shall be made to verify that every non-linked single pole switch is fitted to one of the outer or phase conductor of the supply. The entire electrical installation shall be subject to the final acceptance of the Engineer-in-charge as well as the local authorities.

Earth Resistivity Test

Earth resistivity test shall be carried out in accordance with IS Code of Practice for earthing IS 3043.

Performance

Should the above tests not comply with the limits and requirements as above the contractor shall rectify the faults until the required results are obtained. The contractor shall be responsible for providing the necessary instruments and subsidiary earths for carrying out the tests. The above tests are to be carried out by the contractor without any extra charge.

Tests and Test Reports

The contractor shall furnish test reports and preliminary drawings for the equipment to the Engineer-in-charge for approval before commencing supply of the equipment. The Contractor should intimate with

the tender the equipment intended to be supplied with its technical particulars. Any test certificates etc., required by the local Inspectors or any other Authorities would be supplied by the Contractor without any extra charge.

10.0 LICENCED SUPERVISOR AND WORKMAN :

It is obligatory under the IE Rules that all electrical installation works shall be executed under qualified electrical Supervisor holding Electrical Supervisor's Certificate of Competency, granted by the State Licensing Board. The Contractor will decide in consultation with the Engineer-in-Charge on the number of Electrical Licensed Supervisors to be engaged on the job. If the volume of work is such that it requires more than one such supervisor, and than employ such number.

Page no 65

The Contractor may employ artisans and wiremen but must also have sufficient number of highly skilled licensed electricians and workmen for the installation of switch fuses, distribution board, HT & LT switch gears, under ground cable work etc.

The Contractor will remove any such workmen from the site of work who in the opinion of the Site Engineer is not sufficiently efficient or otherwise unsuitable for any reason whatsoever, upon receipt of intimation in writing by Engineer-in-Charge. The decision of Engineer-in-Charge shall be final.

11.0 INFORMATION TO BE FURNISHED BY TENDERER:

The tenderer shall furnish the following information along with the tender:

1. Contractor's License Number and :
next date of renewal.
2. Name of Electrical Supervisor with :
registration Number.
3. Parts in which Electrical supervisor's :
certificate of Company has been issued
by the Licensing Board.
4. Next Date of renewal of supervisor's :
certificate.

The owner in case the above information is not furnished may reject the tender without assigning any reason whatsoever.

12.0 TEST REPORT AND BILLS:

Within 15 days from the date of completion of prior to the date of final measurement of work, whichever is earlier the Contractor will furnish the installation test report, of which all tests must be carried out in presence of the Site Engineer and Contractor's Supervisor and signed by both of them. First and final bill shall not be paid to the Contractor unless a complete and satisfactory test report is received by the Engineer-in-Charge on the installation.

13.0 TESTING AND COMMISSIONING OF INSTALLATION:

After satisfactory completion of the job, the contractor should apply to the AT&T or networking Contractor of IOCL for approving the networking work. The owner will assist the Contractor for get the installation approved before commissioning the installation.

14.0 COMPLETION TEST:

On completion of wiring (or an extension to an installation) a certificate will be furnished by the Contractor in a prescribed form duly signed by the certified supervisor under whose direct supervision of the installation was carried out. The certificate will obtain the following main points.

- a) Continuity test for each circuit.
- b) Physical verification for ferruling, numbering and no damage.
- c) Megger value of all cables, circuits etc.
- d) Earth resistance value of earth stations.
- e) Any other routine test specified by the engineer in charge.

Page No 66

The contractor will be supplied with one copy of the drawing. On completion of the work, he will submit the drawing therein:

- a) Circuit routes and points.
- b) Schedule of wires.
- c) DB details.
- d) Schedule of DBs.
- e) All drawing as required by the Engineer in charge after completion.

Part- D
Approved Make List
SCHEDULE OF APPROVED MAKE FOR AIIMS, PATNA

All material specified in this tender document must confirm to the brand name and be of the first quality. Samples of all materials to be used must be submitted and got approved from the Engineer in charge before procurement and use.

CIVIL & INTERIOR WORKS

	Material description	Approved Manufacturer / Brand Name
1	TMT bars – Fe 500D	SAIL, Tata Steel Ltd, RINL, Jindal Steel & Power Ltd, JSW Ltd
2	Structural Steel Plates/ISMB/Structural sections	TATA, SAIL, JSPL, JSW, RINL
3	Cement (PPC)	A.C.C., Jaypee Cement, Ultratech, Vikram, Shri cement, Ambuja, Century Cement & J.K. Cement
4	Ceramic/glazed Tiles	RAK, Johnson, Nitco, Kajaria of approved design, color and shade.
5	White Cement & white cement based putty	Birla White, J.K white, Papers (Sanjay & Sons Paint Co) or equivalent
6	Primers, distemper, all types of paints (Low VOC) (i/c water proofing cement paint) etc but excluding fire resistant paint	Nerolac, Asian, Berger, ICI-Dulux
7	Roofing sheet of Zincalume	Tata Blue Scope, JSW, Kirby, Everest, Lloyds
8	Wash Basin and WC Pan & CP Brass fittings & accessories	As specified in item of schedule. When not specified then Jaquar, Kohler, Grohe, Roca.
9	Clear glass, float glass, heat reflective glass	Saint Gobain, ASAHI, Modi Guard, AIS/Glaverbel, Pilkington
10	G.I. pipes and accessories	Tata, Jindal-Hissar, Prakash Surya, NVR
11	Centrifugally Cast Iron Spun Pipes & fittings	NECO, HEPCO, SKF, RIF
12	Flush valves	As specified in item of schedule. When not specified then Jaquar, Kohler, Grohe, Kingston
13	Cement Admixture/Plasticizer	FOSROC, SIKKA, PIDILITE, CICO, BASF
14	Aluminium sections (Anodised/ Powder coated by approved anodizing/powder coating firm)	Hindalco, Jindal, Indian Aluminium Co., NALCO

	&hinges	
15	Water proofing compound	WEBER, FOSROC, Pidiproof, CICO, BASF,SIKA
16	Stainless steel sink	Neelkanth, Nirali, PRAYAG, Parryware
17	Particle board i/c laminated	BHUTAN, ECO BOARD, MERINO
18	Plywood/ Blockboard/ Ply Board	Greenply/Century/ Kitply/ Greenlam/ Novapan/ Marrino
19	Laminates	Century/ Greenlam/ Decolam/Jayna/ Merino / Kitply/ kutty
20	PVC tanks	Sintex, Plasto, Supreme, Astral
21	Mirrors	Saint Gobain, Modi Guard, AIS, Pilkington
22	Calcium Silicate Tiles	Hilux, Aerolite, Gyproc
23	Vitrified tiles Floor Tiles (Vitrified tiles to be doubly charged)	First quality of RAK, Johnson, Rustile, Nitco, Kajaria of approved design, color and shade.
24	Acrylic Exterior Paint	Asian Paint, Berger, ICI Dulux, Nerolac
25	AAC blocks	Max Blocks, Biltech, AEROCON, MAGICRETE, JK Lakshmi Cement Ltd., ECOLITE
26	Dash Fasteners/Anchor Fasteners	Hilti/ Fischer/ Bosch/ Canon
27	Anti - Termite Treatment	Osolin, ESSAR- CHLORO, DURSBAN, GIBRALTOR or Equivalent.
28	Adhesive For Door Work	Fevicol/Vamicol/Dunlop
29	Stainless Steel Hardware (other than fire rated)	Dorma, GEZE, Hafele, Guardian, Godrej
30	Flush Door Shutters	Greenply/Century/Kutty/Jayna/Kitply/National
31	Thermal insulation for water pipe	M/s Lloyd Insulations India Limited, Armacell, Thermaflex or equivalent
32	Thermal insulation/Rockwool/ glass wool/Mineral wool/Puf	Twiga, M/s Lloyd Insulations India Limited, equivalent
33	Deleted	Deleted

34	Stainless Steel Friction/Spring Hinges	Ebco /Dorma/ Hettich/GEZE/Guardian
35	Deleted	Deleted
36	Gypsum False Ceiling/Gypsum board/tiles	India Gypsum/ Laffarge(LAGYP) / Saint Gobain (Gyproc)
37	Deleted	Deleted
38	Door Closer / Floor Spring	Dorma/GEZE/Hafele/Guardian
39	Glass Fibre Acoustical Tiles	Twiga/ Ecophon / Armstrong
40	Acoustical Wall And Ceiling System	Gyproc, USB boral, or Equivalent
41	UPVC pipes & fittings conforming to IS : 13592	Supreme / Finolex / Kisan/Astral
42	Ductile iron pipes (IS:8329)	Electrosteel/Kesoram/Jindal/Tata
43	Ductile iron fittings (IS:9523)	Electrosteel/Kesoram/Jindal/ Tata Kartar
44	Gypsum Plaster	Gyproc, Ultratech,Ferrouscrete
45	CPVC pipes & fittings	Astral / Supreme/ Flow Guard
46	Deleted	Deleted
47	Deleted	Deleted
48	Hermetically sealed performance glass,Toughened glass, DGU,SGU, toughened laminated glass	Authorized Tougheners of (Modi Guard, Saint Gobain,ASAHI,AIS/Glaverbel,Pilkington)
49	Deleted	Deleted
50	EPDM Gasket	Hanu,Osaka,Alps
51	Deleted	Deleted
52	Deleted	Deleted
53	Crystalline water proofing admixture and compound	Penetron, Kryton, Pidilite, Fosroc
54	Floor Hardener	IRONITE,FERROK,HARDONATE

ELECTRICAL ITEMS:

S.No.	Items	Makes
1	MS Conduit (ISI marked)	BEC/AKG/NIC/Steel craft/ M-Key, SK (E.R.W)
2	PVC Conduit and accessories	Polycab/AKG/Asian
3	PVC/XLPE insulated aluminium/Copper conductor armoured/Unarmoured MV Cable upto 1100 V	Havells/Finolex/KEI/Grandlay/ Gloster
4	FRLS PVC insulated copper conductor stranded flexible wire i/c control cables	Havells/Finolex/KEI/Grandlay/RR Kabel/ Gloster
5	Cable Raceway floor/wall mounted and accessories	Schenider/Legrand/Cooper
6	Modular Switch & Socket	Legrand (Myrus)/M.K. (Element)/Schneider (Zencelo India)/Havells/ ABB
7	Metal clad Industrial Socket	Legrand/Siemens/Schneider/C&S/ABB
8	Cat-6 Cable	Beldon/Siemon/Legrand/Penduit (Pannet)
9	Cable Glands	Dowells/Commet/Gripwell/Raychem
10	Crimp Patch Cord	Beldon/Siemon/Legrand/Penuit (Pannet)
11	Protection Device (MCB/RCCB/DB/ELCB)	Siemens (Betagard)/Hager/Schneider (Acti9)/ Legrand (DX 3) / C&S / ABB
12	MCCBs	Siemens (3VA)/L&T (MNX)/Schneider(NSX)/ Legrand (DPX 3) / C&S / ABB
13	Power contactor	Siemens (Sicop),L&T (MNX) / Schneider

		(Tesys) / Legrand (CTX 3) / ABB (Ax) / C&S
14	Surge Protection Devices	Siemens/L&T/Schneider (Acti 9) / Legrand
15	Panel Accessories	Siemens /L&T/Schneider / Legrand/Tecnic / ABB/ C&S
16	Selector Switch	Salzer/Seimens /BCH/ Kacce
17	Auxiliary Relays	Siemens/L&T/Schneider/Legrand/ABB
18	LED/Metal Halide/Fluorescent Internal Lighting Fixture	Philips/ Vipro/Havells/Crompton/Decon
19	External Lighting Fixture	Philips/ Wipro/Havells/Crompton
20	Emergency Lighting/ Exit Sign boards	Philips/Havells/Lighting Technologies/Trilux/Prolite
21	Ceiling Fan (ISI marked & BEE rated 5 star)	Havells/Almonard/Orient/Usha/Bajaj
22	Paint	Nerolac/Asian/Berger
23	Advance Lighting Protection System (Early Streamer Emission Type)	LPI (Australia)-by allied power/SGI (Duval Messien/satellite (France)- by SGI/Bradley (USA)- by JMV/Erico (USA)-by security shoppe/ABB
24	GI Pipe	Tata/Jindal/SAIL
25	IEC 61439 Part-I & II compliance Design verified assembly type Electrical Panels	Schneider (Blokset)/Legrand (XL 3) / Siemens (Sepan)/ L&T (Ti) /ABB (ArTu)/C&S The components used in the panel shall be of the same make which were used for getting the test certificate of IEC 61439, the same shall be provided for which no separate permission is required from the engineer in charge.
26	Non Design verified assembly type Electrical Paels	Tricolite, Delhi /Siemens / Schneider/ Milestone/ Neptune
27	Air Circuit Breaker	Siemens (3 WL-ETU 45B)/ Schneider (Master Pact NW- 7.0A)/L&T (U power omega- MTX

		3.5)/Legrand(DMX 3 MP4 LSIG)/ C&S/ABB
28	Surge Voltage Protection	Siemens /Schneider/L&T/Legrand/ABB
29	Earth fault module	Siemens/Schneider/L&T/Legrand
30	Protection relays	Siemens/Areva/L&T/Legrand
31	C.Ts and PTs	Kappa/AE/Matrix
32	Digital Meters	Siemens (PAC)/ Schneider/ (conzerv) / Secure Enersol / L&T
33	Change Over Switch	L&T/Havells /Socomec/ABB/C&S
34	Indicating lamps	ESBEE/Schneider/Siemens/Vaishno
35	Power capacitors	Epcos/ Neptune / Legrand /ABB
36	Automatic Power factor correction relay/controller	Epcos/Siemens (PAC) /Schneider (Conzerv)/L&T/Neptune
37	Sealed Maintenance Free Batteries	Exide/Panasonic/Hitachi/Shinkobe
38	Battery charger	Caldyne/Chhabi Electricals/Statcon/Max Power
39	Cable Trays (Factory Fabricated/Overhead & Floor Raceways	Legrand/MEM/OBO
40	HDPE underground cable duct	Rex Polyextrusion/Tirpura/Plasomatics/Duraline
41	Insulation Mats	DL Miller & Co. Ltd.?PremierPolyfilm Ltd./RMG Polyvinyl India Ltd/Jyoti
42	Smoke/Heat detectors	Apollo/ System Sensor/ Agni
43	Manual Call point	PRD/System-Tek/ Simplex/ System Sensor/Agni
44	Response indicators	PRD/System-Tek/ Simplex/ System Sensor/Agni
45	Fire Exit Signs	System-Tek/ Simplex/ Agni

46	Fire Control Panel	System-Tek/ Morley /Agni
47	Speaker / Hooter	System-Tek/ Philips /Agni
48	Occupancy Sensors/ Movement Sensor	Legrand/ Philips/ Wipro
49	Flush type switch /socket	Anchor/ Kinjal/ SSK/ Havells Reo
50	Fuse switches unit / switch fuse unit /HRC fuse	L&T / Siemens/ Havells/ C&S
51	Exhaust fan	Almonard/ Alstom/ Crompton
52	XLPE insulated HT cables	/Gloster KEI/Havells
53	Cable lug	Ascon (Heavy gauge) JainsonDowells
54	Lamp Holder (Brass)	Kay/SSK/Kinjal
55	Telephone wires/Telephone Cable / jelly filled telephone cables	Finolex /Delton/Havell's /R.R. Kabel
56	Telephone tag blocks	Krone/ Pouyet
57	Telephone outlet	MK Electric /Legrand (Mosaic)/Crabtree (Piccadilly)
59	GI raceways	Milestone Engineering /Legrand/MDS/Neptune Systems Pvt. Ltd./MK
60	PVC raceways	Legrand/ MK
61	Electronic ballast	Philips /Wipro/Bajaj/Decon/Crompton/Havells
62	DLP plastic trunking	Legrand/MK
63	Geysers	Recold /Venus /Usha Lexus /Sphere hot
64	Tower Light	Ligman/Simes/Bega
65	HT/LT transformers	ABB/Schneider /CGL (Crompton Greaves Ltd.)
66	HT SF-6 circuit	Siemens /ABB/CGL

	breakers/VCB	
67	Programmable Logic Controller(PLC)	Siemens/Allen-Bradley/Schneider
68	Earthing (Chemical Earthing) Plate Earthing	JMV/As per CPWD Norms
69	Octagonal Pole	Bajaj/Crompton/Phillips
70	11 kV HT panel I/c relay	CGL/Schneider/ABB
71	Control Relay Panel	CGL/Schneider/ABB
72	Lightning Arrestor	ABB/Alltec/JMV
73	Temp. Gauge	Guru
74	Gate Valve	Leader/Sant
75	Electrical Backup	Spare hot/ Racold
76	PVC Tank	Syntex/ Polycon
77	Thermostat	ISI Marked
78	Flat Collector Plate	Solocrome/ Tata BP/ Racold
79	S.S Sheet	Jindal / National
80	HT/LT cable joints (Straight through/outdoor/indoor)	3M/ Denson/ GSeal
81	Alternator	STAMFORD
82	DG Set	Sterling & Wilson /Caterpillar/Commins Power Generation

FIRE FIGHTING

SL NO.	MATERIAL	BRAND NAME
1	Single-ended Reflected Type Beam Smoke Detector with mounting kit. (M-Beam1224)	System Sensor / Apollo/ GST
2	Break glass type manual call box with all accessories.	Agni / Reavel/ System Sensor
3	Electronics hooter with all accessories.	Agni / Reavel/ System Sensor
4	02 Zone Conventional Fire panel with display & standard battery backup	Agni / Reavel/ System Sensor
5	2 x 1.5 mm ² FRLS copper Armoured	Havels/Nicco / Polycab
6	ABC type Fire Extinguisher refilling with ISI Marked ABC powder Cap. 6 kg.	Safeguard / Safepro Fire/ Guards

HVAC ITEMS:

Sl No	Detail of Equipment / Material	Make/Manufacturer
1	Propeller Fans	Crompton/ Khaitan/ Alstom/ Bajaj/GE
2	Thermostat /Humidistat	Honeywell / Johnson / Siemens /Schneider
3	Purge Valve/ Drain Valve	Audco/Advance / Anergy/Zoloto
4	PVC /uPVC pipe	Polypack/Supreme/Astral/Finolex
5	Room Thermostat	Honeywell/ Johnson/ Siemens/ Schneider
6	Laminar Flow HEPA tent	Systemair/TROX/American Air Filter/ Conaire/ Thermadyne/ Airtech
7	Expanded Polystyrene Insulation	Styrene Packing/MetturBeardsell/ Toshiba/Trocillin/ Thermobreak
8	XLPE Insulation	Supreme/ Vidoflex/ Trocellene
9	Nitrile Rubber /EPDM Insulation with antimicrobial	K-Flex/Superlon/Armacell/Supreme
10	Polyurethane Foam (PUF) Insulation	Styrene Packaging & Insulations/Lloyd Insulations/Supreme
11	Pre insulated Ducts	Pal/Zeco/ ALP/ Kingspan/ Spiro / UP Twiga
12	Inline Fans	Kruger / Nicotra/ Greenheck/ Ostberg
13	Humidifier	KEPL / Rapid cool/ Emerald /Enmax
14	GI/ MS Piping (chilled/condenser/drain/hot)	Jindal-Hissar/TATA/SAIL
15	Flexible Duct Connection	Airflow/Pyrogard / Rolastar/ UP Twiga

16	Fire Damper Actuator	Belimo/Siemens/Danfoss/Honeywell
17	Fire Dampers / Smoke Dampers	Trox/ Greenheck/Ruskin Titus/Systemair
18	Filters -Pre/ Fine/ Hepa& BIBO	Thermadyne / Spectrum/ Camfil/ American Air Filter
19	Fan Coil Units with Fans	VTS/Flaktwood/Daikin/Carrier/Johnson Control
20	Factory Fabricated Duct & Flanges	Rolastar / Zeco / Ductofab / Technofab/GPS Spiro
21	Duct Dampers/ Grills/ Diffuser/ VCD/ Collar Damper etc.	Caryaire / Systemair/ Conaire/ Dynacraft /Airflow
22	Aluminium Sheet for Ducts	Jindal/ Hindalco/ Indal
23	Axial Flow Fans	Kruger / Systemair /Greenheck/ Wolter/Nicotra
24	Air Distribution (Ducting) - GI/GSS Sheets	SAIL / TATA Steel/ Jindal-Hissar
25	Air Handling Units with Coils etc.	Zeco/ Edgetech/VTS/ Waves/Flaktwood
26	Adhesives for Insulation	Pidilite/Superlon / Armacell
27	Split AC	Carrier/ O-general/ Toshiba/ Daikin/ Hitachi/ Bluestar/ Mitsubishi

SPECIFICATION (SCHEDULE OF REQUIREMENT OF LIFT)

PASSENGER LIFT

1.	Capacity / Weight	:	15 Persons (1020 Kg) / of adequate capacity for shaft size mentioned below
2.	Quantity	:	1 No.
3.	Speed	:	1 MPS / as suggested by Agency
4.	Type of Drive	:	Micro Processor Based VVVF-Closed loop/ As suggested by Agency
5.	Type of Lift	:	GENERAL-PASSENGER
6.	Travel	:	11.70 Meters (approx.)
7.	Serving	:	Ground + 3 Floors.
8.	Floors	:	4 floors (4 stops and 4 openings On same side).
9.	Well Size / Shaft Size	:	2150mm x 2560 mm
10.	Handicapped Requirement	:	Yes
11.	Car Enclosure	:	Stainless steel
12.	Electric Light	:	Compact fluorescent light- 2 no's
13.	Fan	:	300 mm sweep twin blower
14.	No. of Car Entrance	:	One location front centered

15.	Car & Hoist way Entrance Door	:	Central opening, stainless steel as per ARCH, Approval.
16.	Operation	:	Automatic
17.	Control	:	Duplex with 16 bit microprocessor with or without Attendant.
18.	Indicator (Car & Landing) & Features	:	<ul style="list-style-type: none"> ▪ Digital direction and position. ▪ Signal Fixture in SS finish– As/Arch. Approval ▪ Inverter based emergency light. ▪ System capable of with standing +10% to -10% supply voltage fluctuation. ▪ Fireman switch. ▪ VF door operator. ▪ Inverter based emergency alarm. ▪ Hall Lantern & Gong - As/Arch. Approval ▪ Inverter based, press & speak intercom. ▪ Self-leveling accuracy of +/- 5 mm. ▪ Full Ht. car operating panel. ▪ Adjustable guide shoes ▪ In-built Voltage Stabilizer, Pressure Limit Switch, Ladder, facia plate, car top railing.
19.	Hand Rail	:	A hand rail not less than 600 mm. long at 900 mm. above floor level to be fixed adjacent to control panel in the lift car.
20	Machine Location/Type		Machine roomless-Gearless

Note:

The installation shall be carried out as per rules & regulation of local bodies and IS Codes that governs the requirement of installation of the lift. The voltage and frequency of the supply shall subject to variation permissible under Indian Electricity Act and Rules.

Lift Well, Car Size, Lift Pit Depth, Overhead, and Clear Entrance Width & Height dimensions shall conform to NBC 2016 or OEM Standards/ recommendations. All lifts shall be Gearless Type with Machine room & Centre Opening.

Passenger Lift Speed: for building height upto G+3 - 1 mtr/sec

Anti-skid SS Chequered plate flooring of suitable thickness shall be provided in all the lifts.

Car enclosure & doors shall be made out of SS 304 sheet of required thickness.

All lift shall have necessary provisions & door opening as required for physically challenged person.

Power supply to each elevator shall be connected with dual source. One elevator from each bank of elevators shall be key operated to be used as fireman's lift as per code.

SCHEDULE- E **Scope of Work**

The Contractor/ vendor shall have to Execute following Work.

1. Dismantling, cutting, cleaning of debris stacking, disposing etc. all complete shall be done as per direction of engineer in charge by the successful contractor.
2. The successful vendor has to submit GFC drawing of construction plan to the client for approval before executing the work at his own cost. And nothing shall be paid extra in this regards.
3. The successful vendor shall have to get approval of the sample of item before executing work and after getting the approval from competent authority/ engineer in charge. The sample may be used for execution purpose.
4. The vendor is advised to use only approved make of items as per CPWD approved make list, in case of non – availability of material of approved make, prior approval from Engineer- in – charge shall be obtained for other make
5. The work shall be executed as per standards of CPWD, specification, GCC & SCC norms.
6. Supply installation, testing and commissioning of Transformer 2 no's of 3500 kva capacity in substation no- 2 at AIIMS Patna.
7. The vendor shall maintain the inventory of critical spare parts for the connective and preventive maintenance during DLP period.
8. If any malfunctionality occur in future the same parts/ items should be replaced or same alternative arrangement must be done with immediate effect.
9. The guarantee of work shall be up to 3years.
10. The successful vendor has to submit the PERT/CPM- chart to client to achieve the desired milestone with in stipulated date of completion through Bar chart, failing which the necessary deduction in RA bill shall be done as per Mile stone chart mentioned in Tender documents.
11. The contractor shall have to submit the necessary test report as per approved govt. Norms/BIS.
12. Quantity mentioned in BOQ may increase or decreases as per site requirement.