



**KIRORI MAL COLLEGE**  
UNIVERSITY OF DELHI, DELHI -110007



**NIT for Balance works and rectification of defects at Library Building ,  
Kirori Mal College, Delhi University**

NIT no.. - KMC/

**BID DOCUMENT**



**NIT for Balance works and rectification of defects at Library Building ,  
Kirori Mal College, Delhi University**

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## INVITATION FOR BID

Kirori Mal College (**KMC**), University of Delhi, (hereinafter called KMC/Engineer/Employer) invites online bids on two bid system through e-procurement on prescribed form from firms/companies having requisite experience and financial capacity for execution of the following work:-

S. No.	IFB No.	Name of work & Location	Estimated cost put to Tender	Earnest Money	Period of completion	Last date & time of submission of bid	Time & date of opening of Technical bid	Period during which EMD and other documents shall be submitted by bidders
1	2	3	4	5	6	7	8	9
1	KMC/	NIT for Balance works and rectification of defects at Library Building at Kirori Mal College, Delhi University	Rs. 1.0 Cr. ( Approximate)	Rs. 2.0 Lakhs	6 (Six) Months	1500 Hrs on ----	1530 Hrs on ----	EMD in original shall be dropped in Tender box latest by 1500 Hrs on  Other documents in original as mentioned at para 15 of IFB shall be submitted by lowest bidder within 7 days after opening of Financial Bids.

**Date of release of tender through e-procurement solution: -----**

Eligibility of intending bidders shall be assessed by fulfilling the “**Qualifying Criteria**” as given in *Annexure-I*, Section-2 of bid document.



The intending bidder must read the terms and conditions of Bid document carefully. The bidders should only submit their bid if they consider them self eligible and are in possession of all the required documents.

Invitation for bid posted on website shall form part of bid document.

Complete bid document can be seen and downloaded from KMC website [kmcollege.ac.in](http://kmcollege.ac.in) and on CPPP site <https://eprocure.gov.in/eprocure/app> free of cost. Cost of tender Rs. 2000.0 have to be deposited along with EMD in the shape of DD in favour of ” **Kirori Mal College General Fund**” before the closing time of Bid.

But the bid can only be submitted after uploading the mandatory scanned documents such as Fixed Deposit Receipt (FDR) or Bank Guarantee in favour of College as mentioned in Bid Data Sheet (BDS) as Earnest Money Deposit (EMD) for the amount as specified in BDS and other documents as mentioned in para 15 below. Tenders shall be uploaded only on CPPP site <https://eprocure.gov.in/eprocure/app> .

The intending bidder must have valid class-III digital signature to submit the bid.

On opening date, the bidders can login and see the bid opening process. After opening of financial bids bidder may access the comparative statement on aforementioned website.

Bidders can upload documents in the form of **PDF** format.

Bidders must ensure to quote rates correctly.

The Technical bid shall be opened first on due date and time as mentioned above. The time and date for opening of financial bid of bidders qualifying the technical bid shall be informed automatically, through aforementioned web site.

Pre Bid conference shall be held at the location, date & time as mentioned in Bid Data Sheet (BDS) to clear the doubt of intending bidders, if any.

KMC reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified bidders to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion



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

Fixed Deposit Receipt/ Bank Guarantee of any Scheduled Bank against EMD in the form and favour of **“Kirori Mal College General Fund”** as mentioned in Bid Data Sheet (BDS) T

Form T-1 to T-13, section-2 of bid document along with supporting detail, duly filled, signed and stamped by the authorized signatory of the firm.

Certificate of Registration for GST and acknowledgement of up to date filed return,

Form of Bid, of section 6 of bid documents, duly filled, signed and stamped by authorized signatory of the firm.

The EMD shall be in the form of Fixed Deposit Receipt/ Bank Guarantee of any Scheduled bank in favour of the **“Kirori Mal College General Fund”** as mentioned in BDS. The original EMD shall be dropped into the “Tender Box” (in a sealed envelope duly marking the envelope as “EMD for (Name of work) and name of the bidder”) available at the office of Principal, KMC by all the bidders on or before scheduled time of submission of Bid. Bid of the bidder, whose original EMD is not received before scheduled time of submission of bid will not be opened.

The bid submitted shall become invalid if the bidder doesn't upload all the documents as stipulated above and if any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copy as submitted physically (within seven days from the date of opening of the financial bid) by the lowest bidders in the Office of the **Principal, KMC**



## Annexure-I

A general “FAQs (Frequently Asked Questions)” is enclosed herewith as Annexure-I for reference of intending bidders and better understanding of procurement process.

### Frequently Asked Questions (FAQs)

Please read this document before submitting your bid.

SI No	Question	Answer
1	Who is the “Employer” of the project?	Kirori Mal College, Through Principal , Kirori Mal College (KMC) is the Employer of the project.
2	What type of digital signature is required to submit the bid?	Bidder/Contractors are advised to follow the instructions provided in the ‘User Guide’ for the e- submission of the bids online through the e-Procurement Portal of <b>CPPP site</b> <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a>
3	What is the value of Bid Security/ Earnest Money Deposit (EMD) for the project?	Please refer Bid Data Sheet (BDS) of the Section-1- Instructions to Bidders.
4	What is the acceptable form for submitting Bid Security/ EMD	Bid Security/ EMD is acceptable only in the form of : Fixed Deposit Receipt issued by any Scheduled Indian Bank or a foreign Bank located in New Delhi, India approved by the Reserve Bank of India. Bank Guarantee from a Nationalized/ Scheduled Bank or a Foreign Bank located in New Delhi approved by Reserve Bank of India in the prescribed format given in Section-8 (Forms) of the bid document. Original EMD as stated above to be submitted on or before scheduled time (deadline) for bid submission at the address mentioned in the bid document.
5	What is the validity of the Bid Security/ EMD?	Bid Security should be valid up to 120 days from deadline ( last date) of submission of bid.



6	The Bid Security/EMD to be drawn in favour of?	Bid security should be in favour of " <b>Kirori Mal College General Fund</b> "
7	Whether Original / physical EMD to be submitted physically on or before scheduled time?	Yes. Original EMD to be submitted on or before scheduled time (deadline) for bid submission. Failing which will lead not to evaluate the submitted bid.
8	To whom original EMD shall be deposited?	Original EMD shall be deposited at Drop box placed at office of Principal, KMC
9	What are the list of Documents to be scanned and uploaded by the bidder?	Following are the documents to be scanned and uploaded: Fixed Deposit Receipt/ Bank Guarantee of any Scheduled Bank against EMD in the form and favour of the College as mentioned in Bid Data Sheet (BDS). Form T-1 to T-13 of section-2 along with supporting documents duly filled, signed and stamped by the authorized signatory of the firm. Certificate of Registration for GST and acknowledgement of up to date filed return. Form of Bid, of section 6 of bid documents, duly filled, signed and stamped by authorized signatory of the firm.





10	What are the Qualifying Criteria for technical qualification?	Please refer Annexure-1, Section 2 of bid document.
11	Whether any Particular Construction Experience is required for getting technically qualified ?	Yes. Please refer Clause 1.2 of Annexure-1 of Section 2- Qualification Information.
12	Whether Audited Balance sheets for the last three years (FY 2021-20, 2020-19 and 2019-18) need to be submitted along with duly filled Form T-3?	Yes. Audited Balance sheets & CA certificate are also required to be submitted along with duly filled Form T-3.
13	What certificate from Chartered Accountant (CA) is required?	A certificate from Chartered Accountant is required to be submitted containing: Turnover mentioned is from construction works only. The bidder has a positive net worth and not have incurred any loss in more than two years during available last five consecutive balance sheets.
14	Where is the format for solvency certificate and how much old it could be?	The format is available at Form T-10 of bid document. It is to be noted here that: Submitted solvency certificate, certified by a Banker, shall be of at least 40% of estimated cost put to tender. Solvency Certificate should not be more than six month old from one day before the date of submission of bid. The solvency certificate is not required, in case if the bidder is a Class-I (Civil) registered contractor of CPWD. Only self-attested copy of said certificate duly notarized is required to submit.
15	What is the threshold limit for Litigation value for technical qualification?	More than 50 % of the average net worth in last five financial years,
16	Can the bid be accepted if the name	No, the bid shall be accepted only if



	of the work on the Affidavit submitted mentioned wrong inadvertantly?	the affidavit is:- On the Non-judicial stamp paper of Rs10/- Dully notarized
17	Whether any assistance is available for site visit from KMC?	Yes, such assistance shall be provided by KMC at the risk and cost of the intending bidder.
18	What is the basis of rates considered for BOQ?	Rates are based on DSR 2016. Items which are not available in DSR 2016 are analysed based on prevailing Market Rates, as applicable.
19	Who is contact person for that in Principal, KMC?	The name & number of the Contact is as mentioned in Bid Data Sheet.
20	What is Structure Strengthening ?	Strengthening of structures means improvement of compressive & tensile strength of various structural members of existing buildings by application of high strength material internal / external to make the structure worth for sustaining the imposed & self load.
21	How is the Cost of tender to be deposited?	Non refundable Cost of tender Rs. 2000.0 have to be deposited along with EMD in the shape of DD in favour of ” <b>Kirori Mal College General Fund</b> ” before the closing time of Bid.

Disclaimer:

In case of any ambiguity, Content of the bid document will prevail over FAQ.



# **SECTION-1 INSTRUCTIONS TO BIDDERS**



## Section 1 - Instructions to Bidders

### A. General

#### 1. Scope of Bid

1.1 **Principal, KMC**(referred to as “Employer” in these documents) invites bids through e-procurement solution for the construction of works (as defined in these documents and referred to as “the works/ the project”) detailed in the table given in Bid Data Sheet (BDS).

1.2 The successful bidder will be expected to complete the works by the intended completion date specified in the BDS.

1.3 Throughout these bidding documents, the terms ‘bid’ and ‘tender’ and their derivatives (bidder/tender, bidding/tendering, etc.) are synonymous.

Throughout this Bidding Document:

the term “in writing” means communicated in written form or by paper mail, fax, facsimile or electronic mail;

except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and “day” means calendar day.

#### 3. Eligible Bidders

This invitation for Bid is open only to eligible competent Bidders with sound technical and financial capabilities and meeting the criteria as given in the Annexure-I of Section 2, Qualification Information.

Joint venture/ consortium shall be permitted as per Bid Data Sheet (BDS)

#### 4. Qualification of the Bidder

4.1 All bidders shall provide the information required as per forms in Section 2, Qualification Information, a preliminary description of the proposed work methodology, as necessary. The proposed methodology proposed to be adopted justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion.



The technical bid of the bidders received online shall be first evaluated to ascertain whether the bidder fulfills the requirements of evaluation criteria as indicated in bid document. The financial bids of only those bidders shall be opened who qualify through the set out parameters of Evaluation Criteria.

4.2 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have made misleading or false representations in the forms, statements and attachments submitted in the Bid Document.

4.3 Base year shall be taken as mentioned in BDS.

Enhancement factors have to be used for updating the cost of works executed to bring to a common base as mentioned in Annexure I of section 2: Applicant should incorporate the above enhancement factors to the actual amount of the works executed by them clearly indicating the calculations. In case the financial figure and value of completed works are in foreign currency, the above enhanced factors will not be applied. Instead, actual amount in the foreign currency shall have to be converted into equivalent Indian Rupees (INR) at the State Bank of India BC selling rate as on date 28 days prior to the last date of submission, clearly indicating the calculations.

- |    |                 |  |
|----|-----------------|--|
| 6. | Cost of Bidding | 6.1 The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.   |
| 7. | Site Visit      | 7.1 The Bidder, at the Bidder's own responsibility and risk is advised to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense. It will be presumed that the bidder has quoted his rates after getting himself acquainted with all the site conditions. |



## B. Bidding Document

### 8. Content of Bidding Documents

The set of bidding documents comprises the documents listed below, and addenda issued in accordance with Clause 10:

Section Particulars

Invitation for Bid.

Instructions To Bidder

Qualification Information

Conditions of Contract (General, Special & Additional Conditions of Contract)

Appendix to Bid

Technical Specifications

Form of Bid

Bill of Quantities

Forms

Drawings



8.2 The Bidder is expected to examine carefully all instructions, Conditions of Contract, Appendix to Bid, Forms, Technical Specifications, Bill of Quantities, Annexure and Drawings in the Bid Document. Failure to comply with the requirement of Bid Documents shall be at the bidder's own risk. Pursuant to clause

26 hereof, bids which are not substantially responsive to the requirements of the Bid Document shall be rejected.

8.3 Tender document can be downloaded from the website KMC website [kmcollege.ac.in](http://kmcollege.ac.in) and on **CPPP site** <https://eprocure.gov.in/eprocure/app> free of cost. Non refundable Cost of tender Rs. 2000.0 have to be deposited along with EMD in the shape of DD in favour of " **Kirori Mal College General Fund**" before the closing time of Bid.

. The works under this Contract shall be carried out in accordance with the bidding document constituting the contract and shall consist of various salient items as generally described in Section-2

9. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting

9.1 A prospective Bidder requiring any clarification of the Bidding Document may notify the Employer/Engineer in writing or by paper mail, telex, or electronic mail at the Employer's/Engineer's address indicated in the Bid Data Sheet (BDS). The Employer/Engineer will respond to any request for clarification, which he receives from a bidder within the specified time as mentioned in BDS. Copies of the Employer's/ Engineer's response will be posted on the website [kmcollege.ac.in](http://kmcollege.ac.in) and on **CPPP site** <https://eprocure.gov.in/eprocure/app> The bidders have to keep a vigil on the website for the same and they have no claim whatsoever for any ignorance in such case.

9.2 Deleted.

9.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer/Engineer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.



9.4 The Bidder's designated representative is invited to attend a pre- bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

9.5 The Bidder is requested, to submit any questions in writing, to reach the Engineer before or during the pre-bid meeting as per Clause 9.1.

9.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be posted on the website\_ [kmcollege.ac.in](http://kmcollege.ac.in) and on **CPPP site** <https://eprocure.gov.in/eprocure/app> .. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the Employer/Engineer exclusively through the issue of an addendum pursuant to ITB 10 and not through the minutes of the pre-bid meeting.

9.7 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

10. Amendment of Bidding Document 10.1 At any time prior to the deadline for online submission of bids, the Employer may amend the Bidding Document by issuing addenda/corrigenda.

10.2 Any addendum published on [kmcollege.ac.in](http://kmcollege.ac.in) and on **CPPP site** <https://eprocure.gov.in/eprocure/app> .website shall be part of the Bidding Document. The bidders have to keep a vigil on the aforesaid website for the same & they shall have no claim whatsoever for any ignorance in such case. Without prejudice to the order of preference as specified in bid document, the provisions in such addendum shall take priority over Invitation for Bid and Bid Document uploaded previously.

10.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer/Engineer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 20.2

#### C. Preparation of Bids

#### 11. Language of Bid

11.1 The Bid, as well as all correspondence and documents relating to the bid exchanged/uploaded by the Bidder and the Employer, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.





12. Documents  
Comprising the Bid
- As mentioned in Para-15 of Invitation for Bid (IFB).
13. Bid Prices
- 13.1 The contract shall be for the whole works as described in Sub- Clause 1.1, based on the priced Bill of Quantities submitted online by Bidder.
- 13.2 The Bidder shall submit a bid for the whole of the works described in ITB 1.1 by filling the rates inclusive of GST against all items given in Section 7 Bill of Quantities.
- 13.3 All duties, taxes and other levies payable by the contractor under the contract, or for any other cause shall be included in rates, prices and total Bid Price submitted by the Bidder.
- 13.4 Unless otherwise provided in the BDS and the Conditions of Contract, the prices quoted by the Bidder shall be fixed.
14. Currencies of Bid  
and Payment
- 14.1 The currency(ies) of the bid and payment shall be as specified in the BDS.
15. Period of  
Validity of Bids
- 15.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Employer. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.
- 15.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request that the bidder may extend the period of validity for a specified additional period. The request and the bidder's responses shall be made in writing. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with ITB 16 in all respects.
16. Bid Security
- All the bidder shall submit bid security in original, as part of his bid. The same shall be dropped into the "Tender Box" (in a sealed envelope duly marking the envelope as "EMD for (Name of work) and name of the bidder") available at office of the Principal, KMC, on or before the schedule (deadline) date and time of submission of bid and upload a scanned copy of the same for the amount as specified in BDS for this particular work. The bid security shall be as mentioned in BDS and may be in following forms:
- Fixed Deposit Receipt endorsed in favour of College as mentioned in BDS issued by any Scheduled Indian Bank or a foreign Bank located in New Delhi, India approved by the Reserve Bank of India.



b. Bank Guarantee from a Nationalized/ Scheduled Bank or a Foreign Bank located in New Delhi approved by Reserve Bank of India in the prescribed format enclosed,  
The bid security shall remain valid till 30 days beyond bid validity period.

16.2 Subject to confirmation of the Bid security by the issuing bank, the Technical Bid with already received valid Bid Security will be taken up for further evaluation. In case the Bank does not confirm the issuance of Bid Security, the Bid shall be considered as non- responsive.

16.3 Any bid without an acceptable Bid Security and not secured as indicated in ITB 16.1 above shall be rejected by the Employer/Engineer and will not be evaluated further.

16.4 The bid securities of the unsuccessful bidders shall be returned within 28 (Twenty Eight) days of the end of the bid validity period specified in ITB 15.1.

16.5 The Bid security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.

The Bid Security shall be forfeited;  
If the Bidder withdraws the Bid after Bid opening during the period of Bid validity;  
If the Bidder does not accept the correction of the Bid Price, pursuant to ITB 27;  
or  
in the case of a successful Bidder, if the Bidder fails within the specified time limit to;  
sign the Contract Agreement;  
furnish a performance security; or  
accept corrections of arithmetic errors.

17. Deleted

17.1 ----Deleted-----.

18. Format and Signing  
of Bid

The Bidder shall submit the requisite documents online as described in Para-15 of Invitation for Bid (IFB).  
The intending bidder must have valid class-III digital signature to submit the bid.  
Please consult the website.

D. Submission of Bids



19. Submission of Bids 19.1 The Bidder shall submit the Technical Bid and Financial bid online as per the Invitation for Bid (IFB) and Instructions to Bidders (ITB).

20. Deadline for Submission of Bids 20.1 Bids will be received by the Employer through e-procurement not later than the time and date as mentioned BDS and will be opened on the date and time as mentioned in BDS.

20.2 The Employer/Engineer may extend the deadline for submission of bids by issuing an amendment in accordance with ITB 10, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21. Deleted 21.1 ----deleted----

22. Modification and Withdrawal of Bids 22.1 Bidders may modify/resubmit or withdraw their bids before the deadline prescribed in ITB 20.

22.2 Bidders may resubmit & modify his bid any number of times before the deadline of submission of bid as per BDS.

#### E. Bid Opening and Evaluation

23. Bid Opening 23.1 Bid opening shall be carried out in two stages. Firstly, 'Technical Bid' of all the bids received online, shall be opened on the date and time, mentioned in Clause 20. 'Financial Bid' of only those bidders whose 'Technical Bid' has been determined to be substantially responsive shall be opened, at later date.

##### Opening of Technical Bids

The Employer will open the "Technical Bid", of all the bidders received pursuant to Clause 22, online. The response of receipt of bid can be seen on the aforementioned website. . In the event of specified date of bid opening being declared as a holiday for the Employer, the bids will be opened at the appointed time and location on the next working day.

##### Opening of Financial Bids

The Employer/Engineer will open the 'Financial bid' of those bidders whose Technical Bid has been determined to be substantially responsive in accordance with Clause 26 hereof, on the date which will be intimated to such bidders,



automatically, through e-procurement website. In the event of specified date of bid opening being declared a holiday for Employer, the 'Financial Bids' shall be opened at the appointed time on the next working day.

24. Process to be  
Confidential

24.1 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced.

24.2 Any attempt by a Bidder to influence the Employer/Engineer in the evaluation of the bids or Contract award decisions may result in the rejection of its Bid.

25. Clarification of Bids

25.1 To assist in the examination, evaluation, and comparison of Bids, the Employer/Engineer may, at his discretion, ask any Bidder for clarification of his Bid, including calculation of item rates. The request for clarification and the response shall be in writing, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer/Engineer in the evaluation of the Bids in accordance with Clause 27.

25.2 Subject to sub-clause 25.1, no Bidder shall contact the Employer/Engineer on any matter relating to its bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer/Engineer, he should do so in writing.

25.3 Any effort by the Bidder to influence the Employer/Engineer in the bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidder's bid. Provided that nothing in this section will prevent the Employer/Engineer from exploring possibility of arriving at reasonable rates in a manner considered suitable.



26. Deviations,  
Reservations, and  
Omissions

After opening of 'Technical Bid' in accordance with Clause 23.2 above, the Employer/Engineer will determine whether each bid has been digitally signed; (b) is complete (c) meets the eligibility and qualification criteria defined in Clauses 3 and 4; (d) is accompanied securities in accordance with Clause 16; and (e) is substantially responsive to the requirements of the 'Bidding Document'.

The technical bid of the bidders shall be first evaluated to ascertain whether the bidder fulfills the requirements of evaluation criteria as indicated in Annexure-1 of Section 2, Qualification Information of bid document. The financial bids of only those



bidders shall be opened who qualify through the set out parameters of Evaluation Criteria.

26.3 After opening of 'Financial Bid' in accordance with Clause 23.3, the Employer will determine whether each bid (a) has been digitally signed; and (b) is substantially responsive to the requirements of 'Bidding Documents'.

26.4 A substantially responsive Technical or Financial Bid is one which conforms to all the terms, conditions and specifications of the Bidding Document, without material deviation or reservation. A material deviation or reservation is (a) which affects in any substantial way the scope, quality or performance or Works; (b) which limits in any substantial way, inconsistent with the Bidding document, the Employer's rights or the Bidder's obligations under the contract; and (c) whose rectification would affect unfairly the competitive position of the Bidders presenting substantially responsive Bids.

26.5 If a 'Technical Bid' or 'Financial Bid' is not substantially responsive, the bid will be rejected by the Employer/Engineer and may not subsequently be made responsive by correction or withdrawal of non-conforming deviation or reservation.

26.6 The 'Financial Bid' of those bidders whose 'Technical Bid' has been determined to be **non-responsive** shall not be opened.

27. Correction of Errors 27.1 Bids determined to be substantially responsive will be checked by the Employer/Engineer for any arithmetic errors, if applicable.

27.2 The amount stated in the Bid will be adjusted by the Employer/Engineer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected, and the Bid security may be forfeited in accordance with Sub – Clause 16.6 (b).

28. Evaluation and Comparison of Bids 28.1 The Employer/Engineer will evaluate and compare only the Bids determined to be substantially **responsive** in accordance with Clause 26.



28.2 The Employer/Engineer reserves the right to accept or reject any variation, deviation or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the bidding document or otherwise result in unsolicited benefits for the Contractor shall not be taken into account in Bid evaluation.

28.3 If the bid of a successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the Employer/Engineer may request the bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices (taking into account prevailing market rates) with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer/Engineer may require that the amount of the performance security set forth in ITB 32 be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

28.4 A tender which contains several items in the Bill of Quantities which are unrealistically priced low and which cannot be substantiated satisfactorily by the bidder may be rejected as "non- responsive".

A technically acceptable and financially lowest evaluated bidder, whose offer is considered unreasonably high or other issues requiring negotiations/discussion/clarification, may be called upon for negotiations in respect of one or all rates and/or conditions to arrive at an acceptable offer.

#### F. Award of Contract

#### 29. Award Criteria

29.1 Subject to Clause 30, the Employer/Engineer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the Bidding document and who has offered the lowest evaluated and acceptable Bid Price, provided that such Bidder has been determined to be (a) eligible in accordance with the provisions of Clause 3, and (b) qualified in accordance with the provisions of Clause 4. Criteria for acceptability of rates/bid price shall not be revealed to the bidder(s).

#### 30. Employer's Right to Accept/Reject any or all Bids

30.1 Notwithstanding Clause 29, the Employer reserves the right to accept or reject any Bid/all Bids, and to cancel the Bidding process at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer's action.



31. Notification of Award  
and Signing of  
Agreement

31.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by registered letter or mail facsimile or electronic mail. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the 'Itemized rate' that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price/Contract Value").





31.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 32.

31.3 The successful bidder within number of days as specified in BDS of issue of Letter of Acceptance shall submit power of Attorney(s) and Board Resolution (In case of foreign bidders, to be duly notarized by notary public and stamped by the Indian Embassy/High Commission) in case of any change than submitted along with Bid submittals for signing of Contract Agreement.

31.4 After receipt of documents as per 31.3 and confirmation of issuance of performance security by the issuing bank, the Employer/Engineer will direct the successful bidder to attend Employer's office on a date determined by Employer/Engineer for signing the Contract Agreement.

31.5 Upon "Letter of Acceptance" being signed and returned by the successful Bidder as per clause 31.1, Employer/Engineer will promptly notify the unsuccessful Bidders and discharge/ return their Bid Securities.

#### 32. Performance Guarantee

32.1 Within number of days as specified in BDS of issue of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Guarantee (Security) in the form of a bank guarantee as per the format given in Section 8 or a Fixed Deposit Receipt in the name of Principal, Kirori Mal College for an amount equivalent to 5% of the Contract price as per the Conditions of Contract.

32.2 The performance guarantee (security) provided by the successful Bidder shall be issued by a Nationalized/Scheduled Indian Bank or a foreign Bank located in India and approved by Reserve Bank of India.

32.3 Failure of the successful Bidder to comply with the requirements of Sub-Clause 32.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security (Earnest Money Deposit).

#### 33. Advance Payment and Security

33.1 The Employer will provide an Advance Payment on the Contract Price as stipulated in the Conditions of Contract.

#### 34. Corrupt or Fraudulent Practices

34.1 The Employer/Engineer will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in



question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract with Employer  
34.2 If, at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contractor, or in execution.

“corrupt practice” means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and  
“fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non- competitive levels and to deprive Employer of the benefits of free and open competition.



BID DATA SHEET (BDS)  
General

ITB 1.1	The name of the Project is: NIT for Balance works and rectification of defects at Library Building ,  Brief scope of work is given in Annexure-2 of Section -2
ITB 1.2	The successful bidder will have to complete all work within 6 (Six) Months from the date of commencement of work as mentioned in the Letter of Acceptance.
ITB 3.2	No Joint Venture/ Consortium is permitted
ITB 4.3	The Base year shall be taken as 2020-21

Bidding Document

ITB 9.1	For clarification, the address is:  Office of Principal, KMC Delhi University, Delhi
ITB 9.4	A Pre-Bid meeting shall take place at the following date, time and place: Date: 12.02.2021      Time: 15:00 hrs Place:  Office of Principal, KMC Delhi University, Delhi  The prospective bidders shall submit their queries through E-mail / Fax / Courier addressed to Principal, Kirori Mal College New Delhi- 110006 and ensure that it reaches KMC office on or before the date of pre-bid meeting. KMC shall reply/ clarify their queries in the pre-bid conference. KMC will not be responsible for non-receipt or late receipt of any bidder's query.



	A site visit may be arranged by Employer/Engineer on prior intimation. However the cost of site visit will be wholly borne by the contractor including any risks.
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#### Preparation of Bids

ITB 11.1	The language of the bid is: <b>English</b>
ITB 13.4	The price quoted by the bidder shall be subject to adjustment only as per provisions of General/Special Conditions of Contract
ITB 14.1	The currency of the bidder and any payment under the contract shall be in Indian Rupees.
ITB 15.1	The bid validity period shall be 90 days from the last (deadline) date of submission of bid.
ITB 16.1	<b>EMD : Rs. 2.0 lacs (Rupees two point zero lacs) In favour of: " Kirori Mal College General Fund"</b>

#### Important dates

ITB 20.1	<p>The NIT shall be available for download from CPPP portal from 4<sup>th</sup> Feb.2021 to 15<sup>th</sup> Feb.2021 12.00 noon.</p> <p>Pre bid meeting shall be held on 12<sup>th</sup> Feb.2021 at 3.0 P.M.</p> <p>The deadline for bid submission is Date: 15<sup>th</sup> Feb. 2021 Time: 1500 hrs</p> <p>Opening of Technical Bids: Date: 16<sup>th</sup> Feb.2021 Time: 1530 hrs</p> <p>Intimation of shortfall documents on the CPPP portal 18<sup>th</sup> Feb 2021 3.00 PM</p> <p>Last date for upload on CPPP portal of shortfall documents 21<sup>st</sup> Feb 2021 3.00 PM</p> <p>Result of technical bid on CPPP portal 22<sup>nd</sup> Feb. 2021 3.00 PM</p> <p>Opening of Financial Bid 23<sup>rd</sup> Feb 2021 Bids: Date: Time: 1530 hrs</p>
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#### F. Award of Contract

ITB 31.3	The successful bidder shall submit power of Attorney(s) and Board of Resolution:- Within 7 days of issue of Letter of Acceptance
ITB 32.1	Performance Guarantee (Security) in prescribed form shall be submitted by successful bidder:- Within 15 days of issue of Letter of Acceptance



## SECTION-2 QUALIFICATION INFORMATION



SECTION 2 QUALIFICATION INFORMATION

FORM T-1

GENERAL INFORMATION

All Bidders are requested to complete the information in this form. Nationality information to be provided for all owners or Bidders who are partnerships or individually owned firms.

Nationality of Owners (*)		
Name	Nationality	
1.		
2.		
3.		

(\*) To be completed by all owners of partnerships or individually owned firms.

1.	Name of firm	
2.	Head office Address	
3.	Telephone	Contact
4.	Fax	E-mail
5.	Place of incorporation / registration	Year of incorporation registration



**FORM T-2**

**STRUCTURE & ORGANISATION**

1.	Name & Address of the Bidder	
2.	Telephone No. /Telex No. /Fax No.	
3.	Permanent Account No. (Attached Copy of PAN.)	
4.	Employees Provident Fund  Account No.	
5.	Legal status of the Bidder ( <u>Attached copies of original Document defining the legal status</u> ).	
a)	An Individual	
b)	A proprietary firm	
c)	A firm in partnership	
d)	A limited company or Corporation	
6.	Particulars of registration with various Government bodies ( <b>attach attested photo-copy</b> ).	
	Organization/Place of registration No.	Registration No. & Date
7.	Names and Titles of Directors & Officers with designation to be concerned with this work.	
8.	Designation of individuals authorized to act for the organization.	
9.	Has the bidder worked with KMC earlier? Please give details	



10.	Whether the Bidder or any of his partners or shareholders is / are members of the Indian Parliament or any State Legislature or relative of any of officers in KMC. If Yes, name and particulars of such officer along with the relationship to the Bidder / partner.	
11.	Name of partners with their respective shares in the firms (attested copy of partnership deed to be enclosed) and affidavit of sole proprietorship in case of individual Bidder.	
12.	Was the Bidder ever required to suspend construction for a period of more than six months continuously after you commenced the construction? If so, give the name of the project, Duration and reasons of suspension of work.	
13.	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, year and reasons for abandonment.	
14.	Has the Bidder or any of his constituent partners or shareholders has ever been black- listed or removed from the approved list of contractors, or demoted to a lower class or orders passed banning / suspending business with the applicant etc. by any Govt. Department/Public Sector Undertaking in the past. If so give details including year.	
15.	In which field of Civil Engineering construction the Bidder has specialization and interest?	
16.	Number of years in the construction Industry.	
17.	Any other information considered necessary but not included above.	
18.	Whether the Bidder or his constituent partners or shareholders are in any capacity near relatives (*) of any employee in KMC. If Yes, name and designation of officer in KMC to whom the Bidder or his constituent partners or shareholder is a near relative.	





19	Whether the Bidder or any office partners/Directors retired as an Engineer of Gazetted rank or as any Gazetted Officer employed in Engineering /Administrative duties in the Engineering Departments of the Govt. of NCT of Delhi/Govt. of India during the last one year. If Yes, name of such partners/Directors including last designation held.	
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(\* ) That includes wife, husband, parents, grand-parents, children, grand-children, brothers, sisters, uncles, aunts, cousins, and their corresponding in-laws.



**Name of Bidder:**

ANNUAL FINANCIALDATA

Financial Details (in Indian Rupees)	Financial Year				
	2020-21	2019-20	2018-19	2017-18	2016-17
Turnover from Construction work only					
Net worth					
Profit/loss					

**Note:**

The audited balance sheets for the last three years shall be submitted. In case the balance sheet does not clearly show the turnover from construction works only, a certificate from Chartered Accountant certifying turnover from construction works out of total turnover shall be submitted.

In case of turnovers in foreign currency, the figures are to be given in relevant currency and Figures in INR may be worked out as per SBI BC selling rates prevalent at that time, clearly indicating the calculations.

The bidder should not have incurred any loss in more than two years during available last five consecutive balance sheets, duly certified and audited by the Chartered Accountant.



## FORM T-4

Details of Contracts of Similar Nature and Complexity Completed during last seven years ending previous day of last date of submission of tenders

Name of Bidder.

Bidder should provide information to demonstrate that they meet the requirements stated in the Qualification/Evaluation Criteria.

Use separate sheet(s) for each Contract as per following format.

1.	Contract Number of Contract	
	Name of Contract	
	Country	
2.	Name of Employer	
3.	Employer's address (Give telephone and fax no.)	
4.	Nature of works and special features relevant to the Contract for which the Applicant wishes to Bid	
5.	Work executed as:(tick one)	
	Prime contractor	Partner in a Joint Venture
6. a)	Value of the total contract	
b)	Amount of work sub-contracted by the firm	
7.	Value of similar work, if the similar work, as described in bid document, is only a part of a bigger project : Certificate from Employer indicating the cost of similar work out of the total project cost of bigger project.	
8.	Date of award	
9.	Scheduled Date of Completion	
10.	Contract duration (years and months)	
	-----	years          months
11.	Actual Date of Completion	
12.	Narrative Description of Project: Type of project, details of Finishes/flooring/electrification works, details of escalators/lifts, if any; Any other feature/detail, if any.	
13.	Time Overrun, if any and whether without levy of compensation/penalty with levy of compensation/penalty or levy of compensation/penalty not decided	



14	Name , Address, Contact No. of any officer of Employer(not below the rank of Executive Engineer/Project Manager) to whom any reference may be made
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**NOTE:**

Experience/Completion certificate from Employer(issued by an officer not below the rank of Executive Engineer or equivalent), covering the above details i.e. incorporating clearly the name of Contractor, name of the work, Contract value, billing amount, date of commencement of works, scheduled date of completion, actual date of completion, satisfactory performance of the Contractor, Quality of works executed(Very Good/Good/Fair/Poor), Time overrun if any(whether without levy of compensation/penalty, with levy of compensation/penalty or levy of compensation/penalty not decided), brief details of items of work executed etc. and other relevant information must be submitted. Further, documentary proof in form of copy of agreement, completion certificate etc. in support of information given above must be submitted for each project. Otherwise the project experience shall not be considered for evaluation.



**FORM T-5**

Summary Sheet: Current Contract commitments / works in progress Name of Bidder  
Bidder should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, final completion certificate has yet to be issued.

S.	Name of the contract, Location and Nature of the work	Contract No. & Date /Date of Start	Percentage and amount of participation of firm in the project	Percentage and amount sub-contracted by the firm	Name and Address of Client /Employer (incl. Tel./ Fa no.)	Contract value	*	**	***	Estimated completion date
1	2	3	4	5	6	7	8	9	10	11
1										
2										
3										
4										
5										
--										

\*Stipulated date of completion

\*\* Value of outstanding work

\*\*\* Value of outstanding work to be completed during next 1(one) year starting from Date of opening of technical bid

Note:

. Certificate from Employer, covering the above details must be furnished. Further, documentary proof in form of copy of agreement, value of work executed etc., in support of information given above must be submitted for each project.



## FORM T-6

### RESOURCES PROPOSED FOR THE PROJECT – PERSONNEL

The figures indicated below are the minimum number of Project- Personnel required

#### LIST OF MINIMUM KEY PERSONNEL

S.No.	Sector	Minimum no. of Project- Personnel required	Min. Educational Requirement/ Experience *
1.	Project Manager	1	BE(Civil) + 7 years relevant experience
2.	Quality Control Engineer	1	BE/ Diploma(Civil) + 5/7 years relevant experience
3.	Site Engineer (Civil)	1	BE/ Diploma(Civil) + 3/5 years relevant experience
4.	Electrical Engineer	1	BE/Diploma(Electrical) + 5/8 years relevant experience

**Remark:-** Relevant experience shall be considered if experience in Project construction of industrial shed, Real estate or any building Projects of minimum 1.0 Crores value.

\* A Diploma in Engineering with 10 years of relevant experience shall be equivalent to Degree in engineering.

We confirm to deploy project-personnel as per the above mentioned minimum requirement and also confirm to deploy manpower over and above the minimum numbers indicated above, as required for timely implementation of project.

### Signature of Bidder

Name of Firm

Date



**FORM T-7 RESOURCES PROPOSED FOR THE PROJECT- PLANTS & EQUIPMENTS**

The figures indicated below are the minimum number of equipment required.

S. No.	Type of equipment required for the work	Minimum No. of Units of equipment required for the work
a)	Hydraulic excavator	1
b)	Concrete Pumps/ Placers	1
c)	Auto Level	1
d)	Emergency Vehicle	1
e)	Lab Testing equipment's-fully equipped for site tests.	As per requirement
f)	Steel shuttering and scaffolding	As per requirement
g)	Structural Steel Fabrication Equipment	As per requirement
h)	Tower Wagon	As per requirement

We confirm to deploy resources as per the above mentioned minimum requirement (either owned or through hire/lease) and also confirm to deploy plants & equipment's over and above the minimum numbers indicated above, for timely implementation of the project as per technical specifications.

**Signature of Bidder**

Name of Firm

Date



FORM T-8

PROPOSED SITE ORGANISATION

SITE ORGANISATION CHART

NARRATIVE DESCRIPTION OF SITE ORGANISATION CHART

DESCRIPTION OF RELATIONSHIP BETWEEN HEAD-OFFICE AND \*SITE MANAGEMENT

\* Indicate clearly distribution of College and responsibility between Head Office and Site Management.





FORM T-09

## **TECHNICAL PROPOSAL**

UNDERSTANDING AND COMPREHENSION OF THE WORK INVOLVED (The Bidder shall give a brief on these items)

GENERAL APPROACH AND METHODOLOGY INCLUDING SUCH DETAILED INFORMATION AS DEEMED RELEVANT.  
(The Bidder shall give a brief on these items)



FORM T-10

### **SOLVENCY CERTIFICATE FROM A SCHEDULED BANK**

This is to certify that to the best of our knowledge and information that M/s \_\_\_\_\_ or Shri \_\_\_\_\_ a customer of our Bank is respectable and can be treated as good for any engagement up to a limit of Rs. \_\_\_\_ (Rupees \_\_\_\_\_).  
This certificate is issued without any guarantee or responsibility on the Bank or any of its Officers.

(Signature) for the Bank.

Note:

This certificate may be issued on the letterhead of the Bank and should not more than six month old from one day before the last date of submission of bid.  
The solvency certificate is not required, if the bidder is a Class-I (Civil) registered contractor of CPWD. Only copy of Class-I registration certificate of CPWD duly notarized is required to submit.



FORM T-11

Litigation/Arbitration History

**Name of Bidder**

Bidder, should provide information on any history of litigation or arbitration resulting from contracts executed in the last seven years or currently under execution

Year	Award FOR or AGAINST Bidder	Name of Project	Name of client, cause of litigation/ Arbitration and matter in dispute	Disputed amount (current value)	Actual Awarded Amount

Note: 1. In case of amounts in foreign currency, the figures are to be given in relevant currency and Figures in INR may be worked out as per SBI BC selling rates prevalent at that time.



**FORM T-12 INFORMATION REGARDING CURRENT LITIGATION, DEBARRING /  
EXPELLING**

**OF BIDDER OR ABANDONMENT OF WORK BY BIDDER**

(a) Does the Bidder has consistent history of litigation/ .....Yes/No arbitration awarded  
against him.

If yes, give details

(a) Has the Bidder been debarred/blacklisted by any .....Yes/No Govt.  
Department/Public Sector Undertaking in India

as on the date of application, except on account of reasons other than non-performance, such as  
rescinding of joint venture due to most experienced partner of joint venture pulling out, court  
directions

leading to breaking up of a joint venture before start of work.

If yes, give details

(a) Has the Bidder abandoned any contract work in .....Yes/No India

If yes, give details

(a) Has the Bidder ever been declared bankrupt during the last  
years .....Yes/No

(b) If yes, give details, including present status

5. Has the Bidder been debarred by ....Yes/No Government or Semi Government Organization  
as on the  
date of application

Note: If any information in this schedule is found to be incorrect or concealed, Bid will summarily be  
rejected.



## FORM T-13

### AFFIDAVIT\*

I, \_\_\_\_\_ S/o Sh. \_\_\_\_\_ authorized representative of M/s  
\_\_\_\_\_ with its office at \_\_\_\_\_ solemnly affirm and declare as under on behalf of the firm:-  
I/We is/are submitting Bid for \_\_\_\_\_ (Name of Work)

I/We, the undersigned, do hereby certify that all the statements as contained in the Bid and annexure thereto are true and correct.

I/We, the undersigned, also hereby certify that neither our firm M/s \_\_\_\_\_ nor any of its constituent partners have abandoned any work/ contract awarded to us for which the reasons are attributable to the non- performance of the contractor.

I/We, the undersigned, also hereby certify that no criminal proceedings are pending/ ongoing in any court of law regarding any project executed by our firm.

I/We, the undersigned, also hereby certify that our firm has not been debarred/ blacklisted by any Government or Semi Government Organization.

The undersigned hereby authorize(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by Employer/Engineer to verify this statement or regarding my (our) competence and general reputation.

I/We, the undersigned, understand and agree that further qualifying information may be requested, and agrees to furnish any such information at the request of Employer/Engineer.

[Deponent] Signed by an Authorized Officer of the Bidder  
Title of Officer Name of Bidder  
Date

### VERIFICATION

I/We, the above named deponent do hereby solemnly affirm that the information contained in para 1 to 7 above are true and correct as per my knowledge and records and nothing material has been concealed there from.

Verified on \_\_\_\_\_, 2021 at \_\_\_\_\_.

[Deponent]

**\* To be given on Non-judicial stamp paper of Rs.10/- duly notarized.**



Annexure -1

## QUALIFYING CRITERIA

The evaluation of Technical Bid will be based on Bidders meeting all the following minimum pass/fail criteria regarding their particular experience, financial position, personnel and equipment capabilities and other relevant information furnished by the Bidder:

### **Experience**

#### General Experience

The Bidder shall provide documentary evidence that it has been in the business of civil construction during the last 7 years in the role of prime contractor or partner in joint venture.

#### **Particular Construction Experience**

The Bidder shall provide documentary evidence that it has successfully/satisfactorily completed (without levy of liquidated damages):

At least one work of similar nature costing at least 80% of the estimated cost of work put to tender or two works of similar nature costing at least 60% of the estimated cost of work put to tender or three works of similar nature costing at least 40% of the Estimated Cost of work put to tender during the financial year 2020-21 or last seven years ending previous day of last date of submission of tenders, for this purpose, 'cost of work' shall mean gross value of the completed work including the cost of materials supplied by the Employer /Client, but excluding those supplied free of cost.

Similar work means building work and/or Renovation of building work and/ or site development works and/or Reinforced Cement Concrete underground/overhead water tanks and/or Cement concrete pavement works and/or structural strengthening works for RCC frame / load bearing structure, or carbon wrapping & water proofing of existing / new structures, street lighting works etc.)

The bidder may associate with electrical contractor / agency having valid Electrical License issued by Electrical Inspector, Govt. of NCT of Delhi, for electrical works. Credentials of such electrical contractor / agency along with copy of valid Electrical License issued by Electrical Inspector, Govt. of NCT of Delhi, shall be submitted before taking up the electrical works at site.

The bidder may also be associated with specialized agency of repute pertaining to the structural strengthening of the existing RCC frame / load bearing structures [specifically the buildings]. The successful bidder is required to submit the documentary evidence [in original] to this aspect within 7 days after opening of Financial bid to the o/o Principal, Kirori Mal College along with the other requisite documents.



For these, the certificate of satisfactory completion from Employer shall be submitted along with the application incorporating clearly the name of Contractor, name of the work, Contract value, billing amount, date of commencement of works, scheduled date of completion, actual date of completion, satisfactory performance of the Contractor, Quality of works executed (Very Good/Good/Fair/Poor), Time overrun if any (whether without levy of compensation /penalty, with levy of compensation/penalty or levy of compensation/penalty not decided).

The works may have been executed by the Applicant as prime contractor or as member of joint venture or as sub-contractor. In case a project has been executed as Joint Venture by two or more firms, weightage towards experience in the project would be given to JV partners in proportion to their participation in the Joint Venture. In case the partnership in JV is not substantial (i.e. <26%) no weightage shall be considered.

In case the similar work, as described above, is only a part of a composite/bigger project, the certificate from Employer should also indicate the cost of similar work out of the total project cost of composite/bigger project

#### Base Year and Escalation

The following enhancement factors have to be used for updating the cost of works executed to bring to a common base:

Year before	Multiplying Factor	Base year	1.00
One	1.07		
Two	1.14		
Three	1.23		
Four	1.31		
Five	1.40		
Six	1.50		
Seven	1.61		

Applicant should incorporate the above enhancement factors to the actual amount of the works executed by them clearly indicating the calculations.

In case the financial figure and value of completed works are in foreign currency, the above enhanced factors will not be applied. Instead, actual amount in the foreign currency shall have to be converted into equivalent Indian Rupees (INR) at the State Bank of India BC selling rate as on the date two weeks prior to the last date of submission, clearly indicating the calculations.

#### **Turnover**

The Bidder shall have achieved, during last three years (years to be considered shall be 2020-21, 2019-20 & 2018-15) a financial average updated annual construction turnover of at least 50% of the estimated cost of work put to tender.



The audited balance sheets for the last three years shall be submitted. The Bidder must demonstrate the current soundness of the Bidder's financial position, and indicate its prospective long-term profitability. If deemed necessary, KMC shall have the College to make inquiries with the Bidder's bankers. In case the balance sheet does not clearly show the turnover from civil construction works only, a certificate from Chartered Accountant certifying turnover from civil construction works out of total turnover shall also be submitted.

### **Financial capability**

#### **Solvency**

The Bidder should submit a solvency certificate, certified by his Bankers, of at least 40% of estimated cost of work put to tender. Solvency Certificate from the Bankers shall be submitted as per FORM-T-10. Solvency Certificate should not be more than six month old from one day before the date of submission of bid. The solvency certificate is not required, if the bidder is a Class-I (Civil) registered contractor of CPWD. Only self-attested copy of Class-I registration certificate of CPWD duly notarized is required to submit.

### **Net Worth**

The bidder should have positive net worth and should not have incurred any loss in more than two years during available last five consecutive balance sheets i.e. 2012-13, 2013-14, 2014-15, 2015-16 & 2016-17 duly certified and audited by the Chartered Accountant

### **Personnel capabilities**

The Bidder shall supply general information on the management structure of the firm and shall make provision for suitably qualified personnel to fill the key positions/support staff/office staff as required during contract period for timely implementation of works.

Requirement of minimum Key personnel with qualification and experience is given in FORM T-6 of "Instructions to Bidders". The Bidder shall give an undertaking (in the FORMAT of FORM T-6) to provide personnel for these positions satisfying the qualification and experience requirements.

### **Equipment capabilities**

The Bidder is required to own or have assured access through hire or lease to the key items of equipment required during contract period for timely implementation of works.

A general list of minimum requirement of major plant and machinery required for the project is given in form T-7 of "Instructions to Bidders". The Bidder shall give an undertaking (in the FORMAT of FORM T-7) to provide all the plant and machinery required for timely implementation of project.

### **Litigation History**

The Bidder should provide accurate information about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last





Seven years. If the total value of litigation or Arbitration is more than 50 % of the average net worth in last five financial year, the bid shall not be considered as qualifying

**Disqualification**

Even though the Bidder meets the above criteria, he is subject to be disqualified if Bidder has: made misleading or false representation in the forms, statements and attachments submitted;

or  
any criminal proceedings are pending/ ongoing in any court of law regarding any project executed by the Bidder.

has been debarred/blacklisted by KMC or any Government or Semi Government Organization.  
records of poor performance such as abandoning the work, rescinding of contract for which the reasons are attributable to the non-performance of the Bidder, inordinate delays in completion, consistent history of litigation / arbitration awarded against the Bidder or any of its constituents or financial failure due to bankruptcy, etc.

had shown poor performance in any of the works of Principal, KMC present commitments/works in progress as mentioned in Form T-5 is more than 1.25 times of last financial year (base year) turnover from civil construction works.

any near relative posted in KMC in any capacity (any breach of this condition by the bidder would render him liable to be debarred for taking up works in KMC). The near relatives include wife, husband, partners, grand-parents, children, grandchildren, brothers, sisters, uncles, aunts, cousins, and their corresponding in-laws.

Is under a declaration of ineligibility for corrupt or fraudulent practice



## **Annexure -2**

### **SCOPE OF WORK**

The work under this contract shall be carried out in accordance with the various documents constituting the contract and shall consist of various salient items as generally described below:  
The scope of work includes but not limited to:-

Rectification of defects, Balance works and repair of existing Library buildings including Civil, electrical , plumbing, air-conditioning, fire fighting and allied services.

The above scope of work is indicative and may vary as per actual site condition during execution or due to administrative reasons. No extra claim, what so ever, is permitted on this account.



## SECTION 3 CONDITIONS OF CONTRACT



## GENERAL CONDITIONS OF CONTRACT

### Definitions

The **Contract** means the documents forming the tender and acceptance thereof and the formal agreement executed between ,KMC, Delhi University and the Contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-in- Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to 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 contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

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

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

**Employer** shall mean Principal, Kirori Mal College, Delhi University, Delhi),

The **Project Manager/Engineer/Engineer-in-Charge** shall mean authorized representative or representatives of Principal, Kirori Mal College, Delhi University, Delhi (KMC) who shall supervise and be in-charge of the work.

**Government** shall mean the Government of National Capital Territory of Delhi or Government of India as the case may be.

Deleted

**Accepting Authority** shall mean Kirori Mal College , acting through its Principal or duly authorized representatives.



**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 College or causes solely due to use or occupation by Government of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to Engineer-in-Charge's/Employer's faulty design of works.

**Market Rate** shall be the rate as decided by the Engineer-in-Charge on the basis of the cost of materials and labour at the site where the work is to be executed plus the percentage mentioned in Appendix to Bid to cover, all overheads and profits.

**Department** means , Principal, Kirori Mal College, Delhi University, Delhi

**Tendered Value / Tender Price / Contract Value / Contract Price** means the value of the entire work as stipulated in the letter of acceptance.

**Date of Commencement of work:** The date of commencement of work shall be the date of commencement as specified in **Appendix to Bid**.

### 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 to be taken into consideration in the interpretation or construction thereof or of the contract.

The Contractor shall be furnished, free of cost, one copy of Contract agreement. None of the documents forming part of Contract 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 Bill of Quantities shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labour 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 bidding as to the correctness and sufficiency of his bid for the works and of the rates and prices quoted in the Bill 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 Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions.

In the case of ambiguities or discrepancies, the priority of the documents forming the contract shall be as follows:

- The Contract Agreement
- The Letter of Acceptance
- Priced Bill of Quantities
- Technical Specifications
- Drawings
- Appendix to Bid
- Special/Additional Conditions of Contract
- General Conditions of Contract
- Any other document forming part of contract as may be specified in the contract agreement

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

Any error in description, quantity or rate in Bill of Quantities (BOQ) 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 Bidder, after being notified of acceptance of his bid by the Accepting College shall, within 15 days from the stipulated date of start of work, sign the Contract Agreement consisting of:

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

and including but not limited to the following:



Instructions to Bidders (ITB)  
Qualification Information  
Conditions of Contract  
Special/Additional Conditions of Contract  
Technical Specifications  
Contractor's Bid  
Bill of Quantities  
Securities and Other Forms  
Drawings  
Forms & Documents furnished by the bidder

**No payment for the work done will be made unless the Contract Agreement is signed by the contractor.**



## CLAUSES OF CONTRACT

### CLAUSE 1

#### Performance Guarantee

The contractor shall submit an irrevocable Performance Guarantee of 5% (Five percent) of the Contract Price in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement (not withstanding and/or without prejudice to any other provisions in the contract) within period as specified in Appendix to Bid from the date of issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge upto a maximum period as specified in Appendix to Bid on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of the Engineer-in-Charge. 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/Bankers 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 form annexed hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Employer 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 the Employer to make good the deficit.

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 competent College, the performance guarantee shall be returned to the contractor; without any interest.

The Employer shall not make a claim under the performance guarantee except for amounts to





which the Employer is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Employer may claim the full amount of the Performance Guarantee.

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

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

#### CLAUSE 1A

##### Recovery of Security Deposit

The successful bidder (hereinafter called the contractor) shall permit Employer/Engineer-in-Charge at the time of making any payment to him for work done under the contract to deduct a sum at the rate of 2.5% the gross amount of each running bill and final bill till the sum deducted will amount to security deposit of 2.5% of the contract value of the work.

Such deductions will be made and held by Employer/Engineer-in-Charge by way of Security Deposit unless the Contractor has deposited the amount of Security at the rate mentioned above in cash or in the form of Government Securities or fixed deposit receipts endorsed in the favour of Employer. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Employer/Engineer-in-Charge as part of the security deposit and the Bank is unable 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 Employer/Engineer-in-



Charge to make good the deficit.

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

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 lakh subject to the condition that amount of such bank guarantee, except last one, shall not be less than Rs. 5 lacs.

Provided further that the validity of bank guarantee including the one given against the earnest money shall be in conformity with provisions contained in clause 17 which shall be extended from time to time depending upon extension of contract granted under provision of clause 2 and clause 5.

**Note-1:** Government papers tendered as security will be taken at 5% (five per cent) below its market price or at its face value, whichever is less. The market price of Government paper would be ascertained by the Employer/Engineer-in-Charge at the time of collection of interest and the amount of interest to the extent of deficiency in value of the Government paper will be withheld if necessary.

**Note-2:** Government Securities will include all forms of Securities mentioned in Rule No. 274 of the G.F. Rules except fidelity bond. This will be subject to the observance of the condition mentioned under the



rule against each form of security.

**Note-3:**Note 1 & 2 above shall be applicable for both clause 1 and 1A.

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 Employer/Engineer-in-Charge on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the Engineer-in-Charge (whose decision in writing shall be final and binding) may decide on the amount of contract price 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.

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

(I) Compensation @1.5 % per month of delay for delay of work to be computed on per day basis

Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Contract Value of work or of the Contract 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 Employer. In case, the contractor does not achieve a particular milestone mentioned in the Appendix to Bid or the re-scheduled 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. With- holding of this amount on failure to achieve a milestone shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released.



In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.

CLAUSE 2A

Incentive for early completion    Not applicable.

CLAUSE 3



When Contract can be  
Determined

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

If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or 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 the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-in-ChargeEmployer.

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 the Engineer-in- Charge/Employer.

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

If the contractor shall offer or give or agree to give to any person in Government 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 Employer.

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

If the contractor shall obtain a contract with Employer/Government as a result of wrong tendering or other non-bonafide methods of competitive tendering.

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

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 piecework basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Engineer-in- Charge/Employer.

When the contractor has made himself liable for action under any of the cases aforesaid, the Employer, on its own or after specific recommendations by Engineer-in- Charge/Employer shall have powers:

To determine the contract as aforesaid (of which termination notice in writing to the contractor under the hand of the Engineer-in- Charge/Employer shall be conclusive evidence). Upon such determination, the Bid Security, 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 Employer

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

#### CLAUSE 3A

In case, the work cannot be started due to reasons not within the control of the contractor within 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:

If the Tendered value of work is upto Rs. 45 Lac: 15 days.  
If the Tendered value of work is more than Rs. 45 Lac and upto Rs. 2.5 Crore : 21 days.  
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 the Employer/Engineer-in-Charge by Clause-3 thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case, of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Employer/Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of or (at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor, clerk of the works, foreman or other authorised agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.



## CLAUSE 5

**Time and Extension for Delay** The time allowed for execution of the Works as specified in the Appendix to Bid or the 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 Appendix to Bid 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, Employer/Engineer-in-Charge shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the bid security & performance guarantee absolutely.

5.1 As soon as possible after the Contract is concluded, the Contractor shall submit a Time and Progress Chart for each mile stone and get it approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge 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 program has been agreed upon) complete the work as per mile stones given in Appendix to Bid.

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

(i) force majeure, or

(ii) abnormally bad weather, or

(iii) serious loss or damage by fire, or

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

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



non-availability of stores, which are the responsibility of Employer to supply or  
non-availability or break down of tools and Plant to be supplied or supplied by Employer or  
any other cause which, in the absolute discretion of the Engineer-in-Charge is beyond the  
Contractor's control.

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

5.3 Request for rescheduling of Mile stones and extension of time, to be eligible for consideration,  
shall be made by the Contractor to Engineer-in- Charge in writing within fourteen days of the  
happening of the event causing delay on the prescribed form. 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 Engineer-in-Charge may give a fair and reasonable extension of time and  
reschedule the mile stones for completion of work. Such extension shall be communicated to the  
Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such  
request. Non application by the contractor for extension of time shall not be a bar for giving a fair  
and reasonable extension by the Engineer-in Charge and this "shall be binding on thecontractor.

#### CLAUSE 6

Deleted to be replaced by Clause 6 A



All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the contractor or his authorized representative from time to time during the progress of the work and such measurements shall be signed and dated by the Engineer-in-Charge 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 the Engineer-in-Charge or his representative, the Engineer-in-Charge and the Employer 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 the Engineer-in-Charge or his representative shall be deemed to be accepted by the Contractor.

The contractor shall without extra charge, provide all assistance with every application, 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 the Engineer-in-Charge 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 the Engineer- in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing, the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another representative of the Engineer-in- Charge/Employer 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

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

All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement book in Excel format



having pages of A-4 size as per the format of the Engineer-in-Charge so that a complete record is obtained of all the items of works performed under the contract.

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

Whenever bill is due for payment the contractor would initially submit draft computerized, measurement sheets and these measurements would be got checked/test checked from the Engineer-in-Charge and/or his authorized representative. The contractor will, thereafter incorporate such changes as may be done during these checks/test checks in his draft computerized measurements, and submit to the Engineer-in-Charge a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer-in-Charge and/or his authorised 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 Engineer-in-Charge. Thereafter the MB shall be taken in the records, and allotted a number as per the Register of Computerized MBs. This should be done before the corresponding bill is submitted for payment. The contractor shall submit two spare copies of such computerized MB for the



purpose of reference and record by the various officers of the Engineer-in-Charge.

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

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

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

The contractor shall give not less than seven days' notice to the Engineer-in-Charge or his authorized representative in charge of the work before covering up or otherwise placing beyond the reach of checking *and/or* test checking the measurement *of any work* in *order* that the same may be checked *and/or* test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of checking *and/or* test checking measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorised representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of checking *and/or* test checking measurements without such notice having





been given or the Engineer-in-Charge's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorised representative may cause either themselves or through another officer of the department 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 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 Engineer-in-Charge/Employer in triplicate on or before the date of every month fixed for the same by the Engineer-in Charge. The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last payment is less than the amount specified in Appendix to Bid, in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved. Engineer-in- charge shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work. In the event of the failure of the contractor to submit the bills, Engineer-in-Charge shall prepare or cause



to be prepared such bills in which event no claims whatsoever due to delays on payment including that of interest shall be payable to the contractor. Payment on account of amount admissible shall be made by the Engineer-in-Charge certifying the sum to which the contractor is considered entitled by way of interim payment at such rates as decided by the Engineer-in-Charge. The amount admissible shall be paid by 10<sup>th</sup> working day after the day of presentation of the bill by the Contractor to the Engineer-in-Charge together with the account of the material issued by the department, or dismantled materials, if any. In the case of works outside the headquarters of the Engineer-in-Charge, the period of ten working days will be extended to fifteen working days.

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

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 Employer/Engineer-in-Charge 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 Engineer-in-Charge.

The Engineer-in-Charge in his sole discretion on the basis of a certificate from his authorized representatives to the effect that the work has been completed upto the level in question make



interim advance payments without detailed measurements for work done (other than foundations, items to be *covered* under finishing items) upto lintel level (including sun shade etc.) and slab level, for each floor working out at 75% of the assessed value. The advance payments so allowed shall be adjusted in the subsequent interim bill by taking detailed measurements thereof.

#### CLAUSE 8

#### Completion Certificate and Completion Plans

Within ten days of the completion of the work the contractor shall *give* notice of such completion to the Engineer-in-Charge with a copy to Employer and within fifteen days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion with a copy to Employer, 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 workpeople on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all *wood* work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution, thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as



aforesaid except *for* any sum actually realized by the sale thereof.

#### CLAUSE 8A

##### Contractor to Keep Site Clean

When the annual repairs and maintenance of works are carried out, the splashes and droppings from white washing, colour washing, painting etc., on walls, floor, windows, etc shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, quarters or premises etc. where the work is done without waiting for the actual completion of all the other items of work in the contract. In case the contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this work done at the cost of the contractor 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 Plans to be Submitted by the Contractor

The contractor shall submit completion plan as required vide General Specifications for Electrical works (Part-I Internal) 2005 and (Part-II External) 1994 as applicable 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 Engineer-in-Charge concerned and in this respect the decision of the Engineer-in-Charge shall be final and binding on 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 the Engineer-in-Charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of



which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer- in-Charge, will, as far as possible be made by Engineer-in-Charge within the period specified herein under, the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his authorized representative, complete with account of materials issued by the Employer and dismantled materials.

If the Contract value of work is upto Rs.45 lacs: 2 months.

If the contract value of work is more than Rs. 45 Lac and upto Rs. 2.5 crore: 3 months.

If the Contract value of work exceeds Rs. 2.5 Crore: 6 months.

CLAUSE 9A



Payment of Contractor's Bills to  
Banks

Payments due to the contractor may, if so desired by him, be made to his bank, registered financial, co-operative or thrift societies or recognised financial institutions instead of direct to him provided that the contractor furnishes to the Engineer-in-Charge (1) an authorisation in the form of a legally valid document such as a power of attorney conferring College on the bank: registered financial, co-operative or thrift societies or recognised financial institutions to receive payments and (2) his own acceptance of the correctness of the amount made out as being due to him by Employer or his signature on the bill or other claim preferred against Employer before settlement by the Engineer-in-Charge of the account or claim by payment to the bank, registered financial co-operative or thrift societies or recognised financial institutions. While the receipt given by such banks; registered financial, co-operative or thrift societies or recognised financial institutions shall constitute a full and sufficient discharge for the payment, the contractor shall whenever possible present his bills duly receipted and discharged through his bank, registered financial, co-operative or thrift societies or recognised financial institutions.

Nothing herein contained shall operate to create in favour of the bank, registered financial, co- operative or thrift societies or recognised financial



institutions any rights or equities vis-a-vis the Employer/Engineer-in-Charge.

CLAUSE 10

Materials supplied by Employer No material shall be supplied to Contractor.







#### CLAUSE 10A

Materials to be provided by the Contractor

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

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



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

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

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

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



attend such removal and substitution shall be borne by the Contractor.

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

#### CLAUSE 10B

##### Secured Advance on Non-perishable Materials

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

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

##### Mobilisation Advance

(ii) Mobilization advance not exceeding 10% of the contract 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 installments to be determined by the Engineer-in-Charge at his sole discretion. The first installment of such advance shall be released by the Engineer-in- charge to the contractor on a request made by the



contractor to the Engineer-in-Charge in this behalf. The second and subsequent installments shall be released by the Engineer-in-Charge only after the contractor furnishes a proof of the satisfactory utilization of the earlier installment to the entire satisfaction of the Engineer-in-Charge.

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

Provided always that provision of Clause 10 B (ii) shall be applicable only when so provided in Appendix to Bid.

#### Interest & Recovery

(iv) The mobilization advance a 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 percent of the gross value of the work is executed & 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 percent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount upto the date of recovery



of the installment.

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

(vi) –deleted–

CLAUSE 10C



Payment on Account of Increase in Not applicable  
Prices/ wages due to Statutory  
Order(s)



CLAUSE 10CA

Payment due to variation in prices of materials after receipt of bid Not applicable







CLAUSE 10CC

Payment due to Increase/  
Decrease in

Not applicable



#### CLAUSE 10D

Dismantled Material Employer's  
Property

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

#### CLAUSE 11

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

The contractor shall execute the whole and every part of the work in the most substantial and 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 issued by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications of Central Public Works Department specified in Appendix to Bid or in any Bureau of Indian Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.

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



## CLAUSE 12

Deviations/ Variations Extent and Pricing

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



12.3 The time for completion of the works shall, in the event of any deviations resulting in additional cost over the contract 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 contract value plus

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

Deviations, Extra Items and Pricing

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

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 aforesaid para.



Deviations, Extra Items and Pricing

If the market rate for the substituted item 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).



Deviations, Deviated  
Quantities, Pricing

In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in Appendix to Bid , the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within one month 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.

12.5The 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 Appendix to Bid, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.



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

2.7 For the purpose of operation of contract provisions, the following works shall be treated as works relating to foundation:

For buildings : All works upto 1.2 meters above ground level or upto floor 1 level, whichever is lower.

For abutments, piers and well steining : All works upto 1.2 meters above bed level

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

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

For Basement: All works up to 1.2 meters 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.

2.8 Any operation incidental to or necessarily has to be in contemplation of bidder while filing bid, 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 bidder 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, Employer/Engineer-in-Charge 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, the Engineer-in-Charge shall give notice in writing to that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

The contractor shall be paid at contract rates for full amount for works executed at site and, in addition, a reasonable amount as certified by the Engineer-in-Charge for the items hereunder mentioned which could not be utilized on the work to the full extent in the view of the foreclosure:

(i) 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. Employer/Engineer-in-Charge shall have the option to take over contractor's materials or any part thereof either brought to site or of which the contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work) provided, however Employer/Engineer-in-Charge shall be bound to take over the materials or such portions thereof as the contractor does not desire to retain. For materials taken over or to be taken over by Employer/Engineer-in-Charge, cost of such materials as detailed by Engineer-in-Charge shall be paid. The cost shall, however, take into account purchase price, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the contractor. If any materials supplied by Employer are rendered surplus, the same except normal wastage shall be returned by the contractor to Employer 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 Employer's stores, if so required by Employer, 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 the Engineer- in- Charge, furnish to him, books of account, wage books, time sheets and other relevant documents and evidence as may be necessary to enable him to certify the reasonable amount payable under this condition.

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 the Employer/Engineer-in-Charge as per item (ii) above. Provided always that against any payments due to the contractor on this account or otherwise, the Engineer-in-Charge 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 Employer/Engineer-in-Charge from the contractor under the terms of the contract

#### CLAUSE 14

Deleted (Merged with Clause 3)

#### CLAUSE 15



Suspension of Work

(i) The contractor shall, on receipt of the order in writing of the Engineer-in-Charge, (whose decision shall be final and binding on the contractor) suspend the progress of the works or any part thereof for



such time and in such manner as the Engineer-in- Charge may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following 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 the Engineer-in-Charge.

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;

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 the Engineer-in-Charge may consider reasonable in respect of salaries and/or wages paid by the contractor to his employees and labour at site, remaining idle during the period of suspension, adding thereto 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to the Engineer-in-Charge within fifteen days of the expiry of the period of 30 days.

If the works or part thereof is suspended on the orders of the Engineer-in-Charge for more than three months at a time, except when suspension is ordered for reason (a) in subpara (i) above, the contractor may after receipt of such order serve a written notice on the Engineer-in-Charge requiring permission within fifteen days from receipt by the Engineer-in-Charge of the said notice, to proceed with the 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 Employer/Engineer-in- Charge or where it affects whole of the works, as an abandonment of the works by Employer/Engineer- in-Charge, shall within ten days of expiry of such period of 15 days give notice in writing of his intention to the Engineer-in-Charge. In the event of the contractor treating the suspension as an abandonment of the contract by Employer/Engineer-in-Charge, 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 the Engineer-in-Charge 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 the Engineer-in- Charge within 30 days of the expiry of the period of 3 months.

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

#### 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 the Employer/Engineer-in- Charge & their representatives/in charge of the work or any organization engaged by Employer/Engineer-in- Charge 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 shall appear, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by 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 (six months in the case of work costing Rs. 10 Lac and below except road work) of the completion of the work from the Engineer-in- Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under clause 2 of the contract (for non-completion of the work in time) for this default.

In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates which he 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 the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

#### CLAUSE 17

Contractor Liable for Damages,  
defects during

If the contractor or his working people or servants shall break,  
deface, injure or destroy any part of



maintenance period

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 (six months in the case of work costing Rs. Ten lacs and below except road work) after a certificate final or otherwise of its completion shall have been given by the Engineer-in-Charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The security deposit of the contractor shall not be refunded before the expiry of twelve months (six months in the case of work costing Rs. Ten lacs and below except road work) after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later. Provided that in the case of road work, if in the opinion of the Engineer-in-Charge, half of the security deposit is sufficient, to meet all liabilities of the contractor under this contract, half of the security deposit will be refundable after six months and the remaining half after twelve months of the issue of the said certificate of completion or till the final bill has been prepared and passed whichever is later.

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

#### CLAUSE 18

Contractor to Supply Tools & Plants etc.

The contractor shall provide at his own cost all materials (except such special materials, if any, as may in accordance with the contract be supplied



from the Employer's stores as specified in Appendix to Bid)), machinery, tools & plants for proper & timely execution of work. In addition to this, the Contractor shall supply appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials. Failing his so doing, the same may be provided by the Engineer- in-Charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

#### CLAUSE 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, Employer/Engineer-in- Charge is obliged to pay compensation to a workman employed by the contractor, in execution of the works, Employer/Engineer-in-Charge will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the Employer/Engineer-in-Charge under sub-section (2) of Section 12, of the said Act, Employer/Engineer-in-Charge 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 Employer/Engineer-in-Charge to the contractor whether under this contract or otherwise. Employer/Engineer-in-Charge 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 Employer/Engineer-in-Charge full security for all costs for which Employer/Engineer-in-Charge 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, Employer/Engineer-in-Charge is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by Contractors, Employer/Engineer-in-Charge 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 Employer/Engineer-in-Charge under sub-section(2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, Employer/Engineer-in-Charge 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 Employer/Engineer-in-Charge to the contractor whether under this contract or otherwise. Employer/Engineer-in-Charge shall not be bound to contest any claim made against it under subsection (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 Employer/Engineer-in-Charge full security for all costs for which Employer/Engineer-in-Charge might become liable in contesting such claim.

#### CLAUSE 19

Labour Laws to be complied by the Contractor

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



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

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

#### CLAUSE 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 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 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.

iv)

The Engineer-in-Charge shall have the right to



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

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

In the case of Union Territory of Delhi, however, as the all inclusive minimum daily wages fixed under Notification of the Delhi Administration No.F.12(162)MWO/ DAB/43884-91, dated 31-12-1979 as amended from time to time are inclusive of wages for the weekly day of rest, the question of extra payment for weekly holiday would not arise.

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 Employer/Engineer-in-Charge against payments to be made under and for the observance of the laws aforesaid 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.

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

#### 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 the provisions in the contract document and other rules/regulations framed from time to time and shall at his make arrangement and provide necessary facilities as aforesaid, he shall be liable to pay a penalty of Rs.200/- for each default and in addition the Engineer-in- Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

#### CLAUSE 19D

The contractor shall submit by the 4th and 19th of every month, to the Engineer-in-Charge a true statement showing in respect of the second half of the preceding month and the first half of the current month respectively:-

the number of 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 Employer/Engineer-in-Charge, a sum not exceeding Rs.200/- for each default or materially incorrect statement. The decision of the Engineer- in-Charge shall be final in deducting from any bill due to the contractor; the amount levied as fine and 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 as per provision in contract document and rules/regulations framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by the Contractor.



## CLAUSE 19F

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

### 1. Leave:

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.

### 2. 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 format prescribed by Engineer-in-Charge, 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 in the Contract and rules/regulations framed by Government from time to time 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 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 bid. The decision of the Engineer-in- Charge shall be final and binding on the parties.

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



## **CLAUSE 19H**

No labour accommodation shall be allowed in the College premises.



**Water Supply** - The contractor(s) shall provide adequate supply of water for the use of labourers.

**Disposal of Excreta** - The contractor(s) shall make necessary arrangements for the disposal of excreta from the latrines by joining them to nearest manhole after taking permission from College.



**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

The Engineer-in-Charge/Employer 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 misconducts 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/premises, 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. The representatives of Engineer-in- Charge will display a list of Contractors working in the colony/blocks on the notice board in the colony and also at the service centre, to apprise the residents about the same.

#### CLAUSE 19J

It shall be the responsibility of the contractor to see that the building under construction is not occupied by anybody unauthorisedly during construction, and is handed over to the Employer/Engineer-in-Charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Employer/Engineer-in-Charge shall have the option to refuse to accept the said building/buildings in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay, a levy upto 5% of contract value of work maybe imposed by the Employer/Engineer- in-Charge whose decision shall be final both with regard to the justification and quantum and be binding on the contractor.

However, the Employer/Engineer-in-Charge, through a notice, may require the contractor to remove the illegal occupation anytime on or before construction and delivery.



#### CLAUSE 19K

The contractor shall, at all stages of work deploy skilled/semi-skilled tradesmen who are qualified and possess certificate in particular trade from CPWD Training Institute/Industrial Training Institute/National Institute of construction Management and Research (NICMAR), National Academy of Construction, CIDC or any similar reputed and recognized Institute managed/certified by State/Central Government. 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 Engineer-in-Charge for approval. Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the contractor shall substitute such tradesmen within two days of written notice from Engineer-in-Charge. Failure on the part of contractor to obtain approval of Engineer- in-Charge or failure to deploy qualified tradesmen will attract a compensation to be paid by contractor at the rate of Rs. 100 per such tradesman per day. Decision of Engineer in Charge as to whether particular tradesman possesses requisite skill and amount of compensation in case of default shall be final and binding.

Provided always, that the provisions of this clause, shall not be applicable for works with estimated cost put to tender being less than Rs. 5 crores.

#### 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 Engineer-in-Charge 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 a 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 Government in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Employer shall have power to adopt the course specified in Clause 3 hereof in the interest of Employer 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 **Employer** without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

#### CLAUSE 23

Changes in firm's Constitution to be intimated

Where the contractor is a partnership firm, the previous approval in writing of the Engineer-in- Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern, such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement whereunder 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 the Engineer-in-Charge who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

#### CLAUSE 25





### Settlement of Disputes & Arbitration

Except where otherwise provided in the contract, all 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:

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

If the Engineer-in-Charge 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 Engineer-in-Charge, the contractor may, within 15 days of the receipt of Engineer-in-Charge decision, appeal to the Employer who shall afford an opportunity to the contractor to be heard, if the latter so desires, and to offer evidence in support of his appeal. The



Employer shall give his decision within 30 days of receipt of contractor's appeal. If the contractor is dissatisfied with this decision, the contractor shall within a period of 30 days from receipt of the decision, give notice to the Employer for appointment of arbitrator failing which the said decision shall be final binding and conclusive and not referable to adjudication by the arbitrator.

ii. Except where the decision has become final, binding and conclusive in terms of Sub Para (i) above, disputes or difference shall be referred for adjudication through arbitration by a sole arbitrator appointed by the Employer. 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 Employer of the appeal.

It is also a term of this contract that no person, other than a person appointed by Employer, as aforesaid, should act as arbitrator and 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 the Employer 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 Employer 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 (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 College and give separate award against each dispute and claim referred to him and in all cases where the total amount of the claims by any party exceeds Rs. 1,00,000/-, 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 Employer  
against Patent Rights

The contractor shall fully indemnify and keep indemnified the Employer/Engineer-in-Charge 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 Employer/Engineer-in-Charge in respect of any such matters as aforesaid, the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the Employer/Engineer-in-



Charge if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Employer/Engineer-in- Charge 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 the Engineer-in- Charge payable of measurement, the Engineer-in- Charge may at his discretion pay the lump-sum amount entered in the estimate, and the certificate in writing of the Engineer-in-Charge shall be final and conclusive against the contractor with regard to any sum or sums payable to him under the provisions of the clause.

#### CLAUSE 28

**Action where no 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 the Engineer-in-Charge.

#### CLAUSE 29

**With-holding and lien in respect of** i. Whenever any claim or claims for payment of a sum of money sums due from contractor arises out of or under the contract or against the contractor, the Engineer-in-Charge or the Employer shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, the



Engineer-in-Charge or the Employer shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the Engineer-in-Charge or the Employer shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with the Engineer-in-Charge or the Employer or any contracting person through the Engineer-in-Charge pending finalization of adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Employer will be kept withheld or retained as such by the Engineer-in-Charge or Employer 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, the Engineer-in-Charge or the Employer 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.

(ii) Employer 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 Engineer-in- Charge/Employer 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 Engineer-in-Charge Employer to the contractor, without any interest thereon whatsoever.

Provided that the Employer/Engineer-in-Charge 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 Employer/Engineer-in- Charge on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the Employer/Engineer-in-Charge.

#### CLAUSE 29A

Lien in respect of claims in other  
Contracts

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or the Employer or any other contracting person or persons through Engineer-in-Charge against any claim of the Engineer-in-Charge or Employer or such other person or persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer- in-Charge or the Employer 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 the Engineer-in-Charge or the Employer will be kept withheld or retained as such by the Engineer-in- Charge or the Employer 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 labor 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 32km (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 Engineer-- in-Charge as being a coal mining or controlled area labourer. Failure to do so shall render the contractor liable to pay to **Employer** a sum calculated at the rate of Rs.10/- per day per labourer. The certificate of the Engineer-in-Charge 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 Bankuara, Birbhum, Burdwan, Distnct 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.

That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the Engineer-in-Charge. The Engineer-in-Charge shall make alternative arrangements for supply of water at the risk and cost of contractor(s) if the arrangements made by the contractor(s) for procurement of water are in the opinion of the Engineer-in-Charge, unsatisfactory.

#### CLAUSE 31A

Departmental water supply, if available

Water if available may be supplied to the contractor by the Engineer-in-Charge/**Employer** subject to the following supply, if available, 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 Engineer-in-Charge/Employer 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 Government 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

(i) 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 Employer, 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. The Engineer-in-Charge shall be the final College to determine the cost recoverable from the contractor on this account and his decision shall be binding on the contractor.

(ii) The contractor shall be allowed to construct temporary wells in Employer's land for taking water for construction purposes only after he has got permission of the Engineer-in-Charge 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. 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 Employer either by issue from Employer's stocks or purchase made under orders or permits or licenses issued by Employer, 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 Employer and return, if required by the Engineer-in-Charge, all surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination for any reason whatsoever on being paid or credited such price as the Engineer-in-Charge shall determine having due regard to the condition of the materials. The price allowed to the contractor however shall not exceed the amount charged to him excluding the element of storage charges. The decision of the Engineer-in-Charge shall be final and conclusive. In the event of breach of the aforesaid condition, the contractor shall in addition to throwing himself open to action for contravention of the terms of the license or permit and/or for criminal breach of trust, be liable to Employer 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 except for the Plant & Machinery listed in Appendix to Bid and stipulated for issue to the contractor. If the contractor requires any item of T&P on hire from the T&P available with the Employer over and above the T&P stipulated for issue, the Employer will, if such item is available, hire it to the contractor at rates to be agreed upon between him and the Engineer-in-Charge. In such a case, all the conditions hereunder for issue of T&P shall also be applicable to such T&P as is agreed to be issued.

Plant and Machinery when supplied on hire charges shown in Appendix to Bid shall be made over and taken back at the Employer's equipment yard/shed shown in Appendix to Bid and the contractor shall bear the cost of carriage from the place of issue to the site of work and back. The contractor shall be responsible to return the plant and machinery with condition in which it was handed over to him, and he shall be responsible for all damage caused to the said plant and machinery at the site of work or elsewhere in operation and otherwise during transit including damage to or loss of plant and for all losses due to his failure to return the same soon after the completion of the work for which it was issued. The Engineer-in-Charge shall be the sole judge to determine the liability of the contractor and its extent in this regard and his decision shall be final and binding on the contractor.

The plant and machinery as stipulated above will be issued as and when available and ii required by the contractor. The contractor shall arrange net program of work according to the availability of the plant and machinery and no claim, whatsoever, will be entertained from him for any delay in supply by the Employer.

The hire charges shall be recovered at the prescribed rates from and inclusive of the date the plant and machinery made over upto and inclusive



of the date of the return in good order even though the same may not have been working for any cause except major breakdown due to no fault of the contractor or faulty use requiring more than three working days continuously (excluding intervening holidays and Sundays) for bringing the plant in order. The contractor shall immediately intimate in writing to the Engineer-in-Charge when any plant or machinery gets out of order requiring major repairs as aforesaid. The Engineer-in-Charge shall record the date and time of receipt of such intimation in the log sheet of the plant or machinery. Based on this if the breakdown before lunch period or major breakdown will be computed considering half a day's breakdown on the day of complaint. If the breakdown occurs in the post lunch period of major breakdown will be computed starting from the next working day. In case of any dispute under this clause, the decision of the Engineer-in-Charge shall be final and binding on the contractor.

The hire charges shown above are for each day of 8 hours (inclusive of the one hour lunch break) or part thereof.

Hire charges will include service of operating staff as required and also supply of lubricating oil and stores for cleaning purposes. Power fuel of approved type, firewood, kerosene oil etc. for running the plant and machinery and also the full time chowkidar for guarding the plant and machinery against any loss or damage shall be arranged by the contractor who shall be fully responsible for the safeguard and security of plant and machinery. The contractor shall on or before the supply of plant and machinery sign an agreement indemnifying the Employer against any loss or damage caused to the plant and machinery either during transit or at site of work.

Ordinarily, no plant and machinery shall work for more than 8 hours a day inclusive of one hour lunch break. In case of an urgent work however, the Engineer-in-Charge may, at his discretion, allow the plant and machinery to be worked for more than normal period of 8 hours a day. In that case, the hourly hire charges for overtime to be borne by the contractor shall be 50% more than the normal proportionate hourly charges (1/8th of the dairy charges) subject to a minimum of half day's normal



charges on any particular day. For working out hire charges for over time, a period of half an hour and above will be charged as one hour and a period of less than half an hour will be ignored.

The contractor shall release the plant and machinery every seventh day for periodical servicing and/or wash out which may take about three to four hours or more. Hire charges for full day shall be recovered from the contractor for the day of servicing/wash out irrespective of the period employed in servicing.

The plant and machinery once issued to the contractor shall not be returned by him on account of lack of arrangements of labour and materials etc. on his part, the same will be returned only when they are required for major repairs or when in the opinion of the Engineer-in-Charge, the work or a portion of work for which the same was issued is completed.

Log Book for recording the hours of daily work for each of the plant and machinery supplied to the contractor will be maintained by the Engineer-in-Charge and will be countersigned by the contractor or his authorised agent daily. In case the contractor contests the correctness of the entries and/or fails to sign the Log Book, the decision of the Engineer-in-Charge shall be final and binding on him. Hire charges will be calculated according to the entries in the Log Book and will be binding on the contractor. Recovery on account of hire charges for road rollers shall be made for the minimum number of days worked out on the assumption that a roller can consolidate per day and maximum quantity of materials or area surfacing as noted against each in the annexed statement (see attached annexure).

In the case of concrete mixers, the contractors shall arrange to get the hopper cleaned and the drum washed at the close of the work each day or each occasion.

In case rollers for consolidation are employed by the contractor himself, log book for such rollers shall be maintained in the same manner as is done in case of departmental rollers, maximum quantity of any items to be consolidated for each roller-day shall also be same as in Annexure to Clause 34(x). For



less use of rollers, recovery for the less roller days shall be made at the stipulated issue rate.

The contractor shall be responsible to return the plant and machinery in the condition in which it was handed over to him and he shall be responsible for all damage caused to the said plant and machinery at the site of work or elsewhere in operation or otherwise or during transit including damage to or loss of parts, and for all losses due to his failure to return the same soon after the completion of the work for which it was issued. The Engineer-in- Charge shall be the sole judge to determine the liability of the contractor and its extent in this regard and his decision shall be final and binding on the contractor.

The contractor will be exempted from levy of any hire charges for the number of days he is called upon in writing by the Engineer-in-Charge to suspend execution of the work, provided Employer's plant and machinery in question have, in fact, remained idle with the contractor because of the suspension.

In the event of the contractor not requiring any item of plant and machinery issued by Employer though not stipulated for issue in Appendix to Bid any time after taking delivery at the place of issue, he may return it after two days written notice or at any time without notice if he agrees to pay hire charges for two additional days without, in any way affecting the right of the Engineer-in-Charge to use the said plant and machinery during the said period of two days as he likes including hiring out to a third party.

#### 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.

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 the Engineer-in-Charge. 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 authorised



changes of specifications and abandonment of portion of work, a corresponding deduction equivalent to the cost of unused materials as determined by the Engineer-in-Charge shall be made and the material return to the contractors. Although the materials are hypothecated to Government, 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 the Engineer-in-Charge in writing.

(iii) 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

(i) The contractor shall provide all necessary superintendence during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

The contractor shall immediately after receiving letter of acceptance of the tender and before commencement of the work, intimate in writing to the Engineer-in-Charge, the name(s) qualifications, experience, age, address(s) and other particulars along with certificates, of the principal technical representative to be in charge of the work and other technical representative(s) who will be supervising the, work. Minimum requirement of such technical representative(s) and their qualifications and experience shall not be fewer than specified in bid documents. The Engineer-in-Charge shall within 3 days of receipt of such communication intimate in writing his approval or otherwise of such a representative(s) to the contractor. Any such approval may at any time be withdrawn and in case of such withdrawal, the contractor shall appoint another such representative(s) according to the provisions of this clause. Decision of the Engineer- in-Charge shall be final and binding on the contractor in this respect. Such a principal technical representative and other technical representative(s)



shall be appointed by the contractor soon after receipt of the approval from Engineer-in-charge and shall be available at site before start of work.

All the provisions applicable to the principal technical representative under the Clause will also be applicable to other technical representative(s) The principal technical representative and other technical representative(s) shall be present at the site of work for supervision at all times when any construction activity is in progress and also present himself/themselves, as required, to the Engineer-in- Charge and/or his designated representative to take instructions. Instructions given to the principal technical representative or other technical representative(s) shall be deemed to have the same force as if these have been given to the contractor. The principal technical representative and other technical representative(s) shall be actually available at site fully during all stages of execution of work, during recording/checking/test checking of measurements of works and whenever so required by the Engineer-in-Charge and shall also note down instructions conveyed by the Engineer-in- Charge or his designated representative(s) in the site order book and shall affix his/their signature in token of noting down the instructions and in token of acceptance of measurements/ checked measurements/ test checked measurements. The representative(s) shall not look after any other work. Substitutes, duly approved by Engineer-in-Charge of the work in similar manner as aforesaid shall be provided in event of absence of any of the representative(s) by more than two days.

If the Engineer-in-Charge, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative(s) is/are effectively appointed or is/are effectively attending or fulfilling the provision of this clause, a recovery (non-refundable) shall be effected from the contractor as specified in Appendix to Bid and the decision of the Engineer-in-Charge as recorded in the site order book and measurement recorded checked/test checked in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to appoint suitable Principal technical representative and/or other technical representative(s) and if such appointed persons are not effectively present or are absent by more than



two days without duly approved substitute or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as suitable other technical representative(s) is/are appointed and the contractor shall be held responsible for the delay so caused to the work. The contractor shall submit a certificate of employment of the technical representative(s) along with every on account bill/final bill and shall produce evidence if at any time so required by the Engineer-in- Charge.

(ii) The contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper supervision to the work. The contractor shall provide and employ skilled, semiskilled and unskilled labour as is necessary for proper and timely execution of the work.

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

#### CLAUSE 37

Levy/Taxes payable by  
Contractor

Contractor will quote price including of GST and nothing shall be paid extra.  
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 Employer and does not any time become payable by the contractor to the 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 Employer/Engineer-in-Charge 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 GST payable under respective statutes. However, pursuant to the Constitution (46th Amendment Act, 1982, if any new tax or levy is imposed by Statute, after the last stipulated date for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes/levies, the contractor shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of the Engineer-in-Charge (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor

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 authorised representative of the Government and/or the Engineer-in-Charge and further shall furnish such other information/document as the Engineer-in-Charge 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, pursuant to the Constitution (Forty Sixth Amendment) Act 1982, give a written notice thereof to the Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

#### CLAUSE 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 Employer shall have the option of terminating the contract without compensation to the contractor.

#### CLAUSE 40



If near relative working with Employer/Engineer-in- Charge then the contractor not allowed to bid

The contractor shall not be permitted to bid for works of Employer/Engineer-in-Charge (responsible for award and execution of contracts) if he has any near relative working with Employer/Engineer-in-Charge in any capacity. Any breach of this condition by the bidder would render him liable to be debarred for taking up works with



Employer/Engineer-in-Charge.

NOTE: The term "near relatives" means wife, husband, parents and grand-parents, children and grand-children, brothers and sisters, uncles, aunts and cousins and their corresponding in-laws.

#### CLAUSE 41

No Gazetted Engineer 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/Govt. of NCT of Delhi 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 Government of India/Govt. of NCT of Delhi 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 of India/Govt. of NCT of Delhi as aforesaid, before submission of the bid or engagement in the contractor's service, as the case may be.

#### CLAUSE 42



Return of material & recovery for excess material issued 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 Employer 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 Appendix to Bid. 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 the Engineer-in-Charge.

Theoretical quantity of steel reinforcement or structural steel sections shall be taken as the quantity requires as per design or as authorized by



Engineer-in- Charge including authorized lap, 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 Appendix to Bid. 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 the Engineer-in- Charge within fifteen days of the issue of written notice by the Engineer-in-charge to this effect shall be recovered at the rates specified in Appendix to Bid, without prejudice to the provision of the relevant conditions regarding return of materials governing the contract. Decision of Engineer-in-Charge 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 Appendix to Bid shall be final & binding on the contractor.

For non-scheduled items, the decision of the Engineer-in-Charge 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 Employer/Engineer-in- Charge 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

The work (whether fully constructed or not) and all



warlike situations

materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the Engineer-in-Charge and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the contractor shall when ordered (in writing) by the Engineer-in-Charge to remove any debris from the site, collect and property stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Engineer-in-Charge, such payments being in addition to compensation up to the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for, the compensation shall be assessed by the Engineer-in-Charge. The contractor shall be paid for the damages/destruction suffered and for restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract. The certificate of the Engineer-in-Charge regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on all parties to this contract.

Provided always that no compensation shall be payable for any loss in consequence of hostilities or warlike operations (a) unless the contractor had taken all such precautions against air raid as are deemed necessary by the A.R.P. Officers or the Engineer-in-Charge (b) for any material etc. not on the site of the work or for any tools, plant, machinery, scaffolding, temporary building and other things not intended for the work.

In the event of the contractor having to carry out reconstruction as aforesaid. he shall be allowed such extension of time for its completion as is considered reasonable by the Engineer-in-Charge.



#### CLAUSE 44

Apprentices Act provisions to be compiled 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 Employer 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 after labour clearance

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 the Engineer-in-Charge. The Engineer- in-Charge, 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.



## **Special/Additional Conditions of Contract**

This section contains special and additional conditions of contract applicable for the contract. The special conditions of contract are amendments and additions to the General Conditions of Contract. The additional conditions of contract are conditions which are either not covered in the General & Special Conditions of Contract or are supplementary to the corresponding provisions in General & Special Conditions of Contract.

Wherever there is a conflict or inconsistency or ambiguities between the General Conditions of Contract & Special Conditions of Contract, the provisions in Special Conditions of Contract shall prevail over the provisions in General Conditions of Contract.

Similarly, if there is a conflict or inconsistency or ambiguities between the provisions in General Conditions of Contract & Special Conditions of Contract on one hand and provisions in Additional Conditions of Contract on the other hand, the provisions in Additional Conditions of Contract shall prevail.

## **Special Conditions of Contract**

The clause numbers mentioned hereinafter refer to the corresponding clauses of the General Conditions of Contract to which a special condition relates:

### **CLAUSE 1**

Replace sub para (i) & (ii) by the following:

“(i) The contractor shall submit an irrevocable Performance Guarantee of 5% (Five percent) of the Contract Price in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Appendix to Bid from the date of issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge up to a maximum period as specified in Appendix to Bid on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of the Engineer-in-Charge. This guarantee shall be in the form of Bank Guarantee or a Fixed Deposit Receipt in the name of Principal, Kirori Mal College from any Nationalized/Scheduled Indian Bank or a foreign bank located in India and approved by Reserve Bank of India. The format of Bank Guarantee shall be in accordance with the format of Performance Security as provided in the bid document”.

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 competent College, the performance guarantee shall be returned to the contractor; without any interest. To maintain the defect liability period for the structural strengthening work a Performance bank Guarantee @ 2.5% of total value of structural strengthening work, valid for 62 months after completion of work, shall be submitted at the time of release of Performance Guarantee for main work/full contract. The same shall be released after 60 days of successful completion of defect liability period [60 month] for the Structural strengthening work.

### **CLAUSE 1A**

Replace the contents of this clause by the following:

The successful bidder (hereinafter called the contractor) shall permit Employer/Engineer-in-Charge at the time of making any payment to him for work done under the contract to deduct a sum at the rate of 3% the gross amount of each running bill till the sum deposited reaches the 2.5% of the contract value of the work. Such deductions will be made and held by Employer/Engineer-in-Charge by way of Security Deposit.

All compensations or the other sums of money payable by the contractor under the terms of this contract may be deducted from his security deposit or from any sums which may be due to or may become due to the contractor by Employer/Engineer-in-Charge 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 or replenish any sum or sums which may have been deducted.

The security deposit as deducted above can be released once during currency of the contract against irrevocable bank guarantee in the format prescribed by Employer/Engineer-in-Charge) issued by a scheduled bank, on its accumulation to an amount equivalent to 1.25 % of the contract price.

### **CLAUSE 5**

Delete sub paras (vi) & (vii) of sub-clause 5.2.

### **CLAUSE 6**

This clause is deleted and provisions of this clause shall not be applicable for this contract.

#### **CLAUSE 6A**

Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by



measurement the value *of work done* in accordance with the contract.

All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement book having pages of A- 4 size as per the format of the Engineer-in-Charge so that a complete record is obtained of all the items of works performed under the contract.

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

Whenever bill is due for payment the contractor would initially submit draft computerized, measurement sheets and these measurements would be got checked/test checked from the Engineer-in-Charge and/or his authorized representative. The contractor will, thereafter incorporate such changes as may be done during these checks/test checks in his draft computerized measurements, and submit to the Engineer-in-Charge a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer-in-Charge and/or his authorised 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 Engineer-in-Charge. Thereafter the MB shall be taken in the records, and allotted a number as per the Register of Computerized MBs. This should be done before the corresponding bill is submitted for payment. The contractor shall submit two spare copies of such computerized MB for the purpose of reference and record by the various officers of the Engineer-in-Charge.

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

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

Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the



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

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

Engineer-in-Charge or his authorised representative may cause either themselves or through another officer of the department 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 detects liability period.

## **CLAUSE 7**

Replace the contents of the 1<sup>st</sup>para of this clause by the following:

“The interim *or* running account bills shall be submitted by the contractor for the work executed on the basis of recorded measurements on the format of the Engineer-in- Charge/Employer in triplicate on or before the date of every month fixed for the same by the Engineer-in Charge. The contractor shall not be entitled to be paid any such interim payment if the gross work done value since last bill is less than the amount specified in Appendix to Bid, in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved, this can be relaxed by the Engineer-in-Charge in case the reasons for less progress in a particular period are reasonable in his opinion). Engineer-in-charge shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work.

After the submission of bill by the Contractor, the Engineer-in-Charge shall process the



same within 15 days indicating the certified bill stating the amount of admissible payment to the Contractor which the Engineer-in-Charge considers due and payable. The certified bill shall contain details of the security deposit to be deducted and such other deductions which may have become due and payable by the Contractor. After processing of bill by the Employer, within the time period as stated above, the payment shall be made to Contractor within next fifteen days.”

#### **CLAUSE 7**

Delete last para of this clause i.e. delete “The Engineer-in-Charge in his sole discretion \_\_\_\_\_ shall be adjusted in the subsequent interim bill by taking detailed measurements thereof.

#### **CLAUSE 8B**

Replace the contents of this clause by the following:

“The contractor shall submit completion plans (as built drawings) for all components of the work executed within thirty days of the completion of the work.

In case, the contractor fails to submit the completion plans as aforesaid, he shall be liable to pay a sum of Rs1,00,000/-(Rs. One Lacs only) or 1% of contract value whichever is more and in this respect the decision of Engineer-in-Charge shall be final and binding on the contractor.

#### **CLAUSE 9A**

This clause is deleted

#### **CLAUSE 10**

“No material of any kind shall be supplied/issued/made available by the Employer/Engineer-in-Charge”

#### **CLAUSE 10B (i)**

Replace the contents of this sub-clause by the following:

The contractor, on signing an indenture in the form to be specified by Engineer-in- Charge, shall be entitled to be paid during the progress of the execution of the work up to 75 % of the assessed value of any materials which are in the opinion of Engineer-in- Charge non-perishable, non-fragile & non-combustible, are required for the work, 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. Further, secured advance for any material lying unutilized, after 3 months of release of secured advance, shall be recovered from the next bill.

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

### **CLAUSE 10B (ii)**

Replace the contents of this sub-clause by the following:

If requested by Contractor in writing, an interest bearing advance payment not exceeding 10% of the contract price(in two equal installments) shall be made to Contractor exclusively for mobilization for works. The first installment of such advance shall be released by Engineer-in-Charge to the Contractor on a written request after signing of agreement. The second installment shall be released by Engineer-in-Charge only after the Contractor furnishes the proof of the satisfactory utilization of the earlier installment to the entire satisfaction of Engineer-in-Charge. All withdrawals under mobilization advance should be affected before the gross value of work done reaches 10% of contract amount or 30 days from the date of commencement of works whichever is earlier.

The contractor shall submit bank guarantees (in the format given in bid documents) from a scheduled bank for the 110% of amount of mobilization advance before such advance is released. The bank guarantees for advances shall be made for the 110% of amount of advances and shall be valid for the contract period, and be kept renewed from time to time to cover the balance amount and likely period of complete recovery together with interest.

Provided always that provision of this clause shall be applicable only when so provided for in Appendix to Bid.

### **CLAUSE 10B (iii)**

Not applicable





### **CLAUSE 10B (iv)**

Replace the contents of this sub-clause by the following:

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 percent of the gross value of the work is executed & paid, and shall be recovered at the rate 15% on the gross value of interim payments in such a way that the entire advance is recovered by the time eighty percent 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.

### **CLAUSE 10C**

This clause is deleted and provisions of this clause shall not be applicable for this contract.

### **CLAUSE 10CC**

This clause is deleted and provisions of this clause shall not be applicable for this contract.

### **CLAUSE 11**

Replace the contents of this clause by the following:

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 contract technical specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions issued by Engineer-in-Charge in writing in respect of the work.

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

### **CLAUSE 12**

Insert the following sub clause 12.4(A) between sub clauses 12.4 & 12.5:  
Any variations beyond 25% in any individual item of the bill of quantities shall have to



be approved by Engineer-in-Charge. In case of total variations exceeding 15% of Contract Value, Concurrence of the Employer shall be mandatory.

Sub clauses 12.5 is deleted.

### **CLAUSE 17**

Replace the contents of this clause by the following:

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 the period specified in Appendix to Bid(hereinafter called defects liability period) after a certificate final or otherwise of its completion shall have been given by the Engineer-in-Charge as aforesaid arising out of defect or improper materials or workmanship, the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default, the Engineer-in-Charge shall 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 defects 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.

The Contract shall not be considered to be completed until the Performance Certificate has been issued by Engineer-in-Charge, with copy to Employer, after the end of defects liability period and delivered to the Contractor, stating the date on which the Contractor completed his obligations under defects liability period to Engineer-in-Charge's satisfaction. Only the Performance Certificate shall be deemed to constitute approval of the Works.

After the Performance Certificate has been issued, the Contractor and the Employer shall remain liable for the fulfillment of any obligation, which remains unperformed at that time. For the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force.

### **CLAUSE 18**

Replace the contents of this clause by the following:

The contractor shall provide at his own cost all materials, tools & plants for proper execution of work. 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 Employer/Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials. Failing his so doing, the same may be provided by Employer/Engineer-in-Charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

### **CLAUSE 18A**

Replace the contents of this clause by the following:

During continuance of the contract, the Contractor and his Subcontractors shall abide at all times by all existing labour enactments and rules made thereunder, regulations, notifications and bye laws of State or Central Government or local College and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local College. The Contractor shall keep Employer/Engineer-in-Charge indemnified in case any action is taken against Employer/Engineer-in-Charge by the competent College on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications / bye-laws / acts / rules / regulations including amendments, if any, on the part of the Contractor, Employer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by Employer.

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

List of some major Labour Laws applicable to establishments engaged in construction works are given in Annexure A-1 of Special/Additional Conditions of Contract for reference purpose. However, the said list is merely indicative and the Contractor shall also comply with all/any other law that may be applicable.

The contractor and sub-contractors shall comply with the provisions related to welfare, safety, health & environmental protection as given elsewhere in Annexure A-II of Special/Additional Conditions of Contract and other contract documents.



Compliance with the applicable labour laws and the provisions related to welfare, safety, health & environmental protection shall be incidental to work and, unless specifically provided for in the contract, no payment shall be made to the Contractor for the same.

In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Workmen's Compensation Act, 1923, Employer is obliged to pay compensation to a workman employed by the contractor, in execution of the works, Employer will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the Employer under sub-section (2) of Section 12, of the said Act, Employer 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 Employer to the contractor whether under this contract or otherwise. Employer 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 Employer full security for all costs for which Employer might become liable in consequence of contesting such claim.

### **CLAUSE 18B**

Replace the contents of this clause by the following:

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, Employer is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by Contractors, Employer 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 Employer under sub-section(2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, Employer 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 Employer to the contractor whether under this contract or otherwise. Employer shall not be bound to contest any claim made against it under subsection (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 Employer full security for all costs for which Employer might become liable in contesting such claim.

### **CLAUSE 19C**

Replace the contents of this clause by the following:



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 the provisions in the contract document and other rules/regulations framed from time to time and shall at his own make arrangement and provide necessary facilities as aforesaid, failing which he shall be liable to pay a penalty as per provisions of clause 25 of additional conditions of contract and in addition the Engineer-in- Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

### **CLAUSE 19D**

Replace the contents of this clause by the following:

The contractor shall submit by the 4th of every month, to the Engineer-in-Charge a true statement showing in respect of the preceding month:-

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 a penalty as per provisions of clause 25 of additional conditions of contract, for each default or materially incorrect statement. The decision of the Engineer-in-Charge shall be final in deducting from any bill due to the contractor; the amount levied as fine and be binding on the contractor.

### **CLAUSE 19G**

Replace the contents of first para of this clause by the following:

In the event of the contractor(s) committing a default or breach of any of the provisions in the Contract and rules/regulations framed by Government from time to time 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 a penalty as per provisions of clause 25 of additional conditions of contract for every default, breach or furnishing, making, submitting, filing such materially incorrect statements. The decision of the Engineer-in- Charge shall be final and binding on the parties.

### **CLAUSE 21**

Replace the contents of this clause by the following:



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

The sub-contracting shall be generally limited to 50% of the contract price.

It will be obligatory on the part of the Contractor to obtain consent of Engineer-in-Charge to the identity of the sub-contractor. Not less than 28 days before the intended date of each Sub-contractor commencing work, the Contractor shall notify Engineer-in-Charge of such intention. Engineer-in-Charge will give his consent after assessing and satisfying itself of the capability, experience and equipment resources of the sub-contractor. In case Engineer-in-Charge intends to withhold its consent, it should inform the Contractor within 15 days to enable him to make alternative arrangements to fulfill his works program.

The Contractor shall not be required to obtain consent for purchases of Materials which are in accordance with the standards specified in the Contract or provisions of labour or for the sub-contracts for which the Sub-contractor is named in the Contract;

The provision of labour and material and for petty Contractors / piece Works under direct supervision of Contractor's Representatives shall not come under the preview of this clause.

The value of a sub-contract as and when awarded, should be intimated by the Contractor to Engineer-in-Charge and it should also be certified that the cumulative value of the sub-contracts awarded so far is within the aforesaid limit of 50%. A copy of the contract between the Contractor and Sub-Contractor shall be given to Engineer-in-Charge within 15 days of signing and in any case 7 days before the Sub Contractor starts the Work and thereafter the Contractor shall not carry any modification without the consent in writing of Engineer-in-Charge. The terms and conditions of sub-contracts and the payments that have to be made to the sub-contractors shall be the sole responsibility of the Contractor.

The Contractor shall provide sufficient superintendence, whether on the site or elsewhere, to ensure that the work to be carried out by a sub-contractor complies with the requirements of the Contract.

In the case of sub-contracts for electrical and mechanical works, which the Contractor intends to procure, the Contractor shall, prior to inviting tenders from sub-contractors, submit such documents to Engineer-in-Charge for review.

The proposed sub-contract terms and conditions shall impose on the sub-contractor



such terms of the Contract as are applicable and appropriate to the part of the Works to be sub-contracted, to enable the Contractor to comply with his obligations under the Contract.

Notwithstanding any consent to sub-contract given by Engineer-in-Charge, if in his opinion he considers it necessary, the Engineer-in-Charge shall have full power to order the removal of any sub-contractor from the Site or off-Site place of manufacture or storage, which power shall not be exercised unreasonably.

The Contractor shall be responsible for observance by all Sub-contractors of all the provisions of the Contract. The Contractor shall be responsible for the acts or defaults of any Sub-contractor, his representatives or employees, as fully as if they were the acts or defaults of the Contractor, his representatives or employees.

## **CLAUSE 25**

Replace the contents of this clause by the following:

### **Settlement of Disputes & Arbitration**

#### Amicable Resolution

Save where expressly stated to the contrary in this Agreement, any dispute, difference or controversy of whatever nature between the Parties, howsoever arising under, out of or in relation to this Agreement (the "Dispute") shall in the first instance be attempted to be resolved amicably in accordance with the procedure set forth in clause (b) below.

The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at any other location acceptable to the Engineer.

No action at law concerning or arising out of any Dispute shall be commenced unless and until all applicable Dispute resolution procedures set out in Clauses 25.1 & 25.2 shall have been finally exhausted in relation to that Dispute or any Dispute out of which that Dispute shall have arisen with which it may be or may have been connected.

If either party considers any action of other party to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing 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 refer the matter to the Principal, KMC or his nominee, for amicable settlement. Upon such reference, both the Parties shall meet at the earliest mutual convenience and in any event within fifteen (15) days of such reference to discuss and attempt to amicably resolve the Dispute. If the Dispute is not amicably settled within thirty (30) days of such meeting between the Parties, either Party may refer the Dispute to arbitration in accordance with the provisions of Clause 25.2 below.



## Arbitration

### Procedure

Subject to the provisions of Clause 25.1, any Dispute, which is not resolved amicably, shall be finally settled by binding arbitration under the Arbitration and Conciliation Act, 1996.

The Arbitration proceedings shall be conducted by the Sole Arbitrator to be appointed or nominated by the Principal, KMC. The Party invoking the arbitration clause shall give a notice of its intention to proceed for the arbitration to Principal, KMC requesting for appointment of Arbitrator. Such notice shall provide details for the claims along with the amount thereof and supporting documents. If within 30 (thirty) days of receipt of such notice/intimation, Principal, KMC fails to appoint arbitrator, the Party seeking appointment of arbitrator may take further steps in accordance with Arbitration Act. The arbitrators shall always give item-wise and reasoned awards in all cases where the value of total claims exceeds Rs.1.00 million.

The award of the sole Arbitrator shall be binding on all parties.

Neither party shall be entitled to bring a claim for arbitration, if it is not filed within four months of the following:-

Of the date of completion of the work as certified by Engineer-in-

Charge Or

Of the date of abandonment of the work or breach of contract under any of its clauses. Or  
Of its non-commencement or non-resumption of work within 10 days of written notice for commencement or resumption as applicable. Or

Of the cancellation, termination or withdrawal of the work from the contractor in whole or in part and/or revision or foreclosure of the contract. Or

If the claim pertains to rates or recoveries introduced in the final bill, the reference to the Arbitrator shall be made within four months from the date of payment of the final bill to the contractor or from the date a registered notice is sent to the contractor to the effect that his final bill is ready by Engineer-in-Charge (whose decision in this respect shall be final and binding) whichever is earlier.

If the claim pertains to any action by either party during defects liability period, the reference to the Arbitrator shall be made within two months from the date of end of defects liability period

If the matter is not referred to arbitration within the period prescribed above, all the rights and claims of either party under the contract shall be deemed to have been forfeited and absolutely barred by time for arbitration.

Place of Arbitration

The place of arbitration shall be at Delhi.

English Language



The language of arbitration shall be English and the Award shall be a speaking award.

Performance during Arbitration

Pending the submission of and/or decision on a dispute and until the arbitration award is published; the Parties shall continue to perform their respective obligations under this Agreement without prejudice to a final adjustment in accordance with such award.

Costs

Each of the Parties to this Agreement shall bear their own respective costs for and during the Arbitration and shall not raise any claim in respect thereof as against the other Party. The fees, if any, of the arbitrator and other expenses incurred by Arbitrator shall be shared in equal proportion by both the parties and shall be paid before the award is made and published.

No Suspension of Work on Account of Arbitration

The reference to Arbitration shall proceed notwithstanding that the Works shall not then be or be alleged to be complete, provided always that the obligations of the Employer, Engineer-in-Charge and the Contractor shall not be altered by reasons of arbitration being conducted during the progress of the Works. Neither party shall be entitled to suspend the work or part of the work to which the dispute relates on account of arbitration and payments to the Contractor shall continue to be made in terms of the Contract.

Interest on Arbitration Award

Where the arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period, till the date on which the award is made.

Jurisdiction of Courts

Where recourse to a Court is to be made in respect of any matter, the court at Delhi/ New Delhi shall have the exclusive jurisdiction to try all disputes between the parties

## CLAUSE 29

Replace the contents of first para of sub clause (i) of this clause by the following:

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



#### **CLAUSE 29A**

Replace the contents of this clause by the following:

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

It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the Employer will be kept withheld or retained as such by the Engineer-in-Charge or the Employer 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 34**

Replace the contents of this clause by the following:

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**

This clause is deleted.

#### **CLAUSE 36**

Replace the words "Principal Technical Representative" by "Engineer in charge appointed by College", wherever occurring, in this clause.

#### **CLAUSE 42**

This clause is deleted.

#### **CLAUSE 45**

Replace the contents of this clause by the following:

Security Deposit of the work shall not be refunded till the contractor produces a clearance certificate from the concerned 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 the Engineer-in-Charge. The Engineer-in-Charge, 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 security deposit will be released subject to clause 17 of SCC.





## **ADDITIONAL CONDITIONS OF CONTRACT**

The special/additional conditions given hereunder in this section are either not covered in general conditions of contract or are supplementary to the corresponding provisions in general conditions of contract and shall be read in conjunction with the general conditions of contract. However, in case of any difference/ambiguities between the provisions in general conditions of contract and special/additional conditions of contract, the provisions in special/additional conditions of contract shall prevail.

### **COMPLIANCE WITH STATUTES, REGULATIONS AND LAWS**

The Contractor shall familiarize themselves and conform in all aspects with:

The provision of any enactment in India as applicable from time to time  
Regulations or bye-laws of any local body and utilities.

The Contractor shall be bound to give all notices required by statute, regulations or by-laws, as aforesaid and to pay all fees and bills payable in respect thereof. The Contractor will arrange necessary clearances and approvals before the Work is taken up.

Ignorance of Rules, Regulations and Bylaws shall not constitute a basis for any claim at any stage of work

The Contractor shall indemnify Employer/Engineer-in-Charge against all penalties and liabilities of every kind of breach of any such enactment, laws, regulations, bye-laws or rules.

### **ENGINEER-IN-CHARGE'S INSTRUCTIONS**

The Contractor shall comply with instructions given by Employer/Engineer-in- Charge in accordance with the Contract.

The Contractor shall give reasonable notice to Engineer-in-Charge of any instruction, which he considers necessary for the execution of the works, to enable Engineer-in-Charge to issue the instruction so that progress of the Works is not delayed. Engineer-in-Charge shall not, however, be bound to issue any instruction which, in its opinion, is unnecessary.

No act or omission by Engineer-in-Charge or Engineer-in-Charge's Representative in the performance of any of the Engineer-in-Charge's duties or the exercise of any of the Engineer-in-Charge's powers under the Contract shall, in any way, operate to relieve the Contractor of any of the duties, responsibilities, obligations or liabilities imposed upon the Contractor by any of the provisions of the Contract.

### **FACILITIES FOR AND CO-ORDINATION WITH OTHERS**

The Contractor shall, in accordance with the requirements of Employer/Engineer- in-Charge, afford all reasonable facilities for any other Contractor who may be carrying out, on or adjacent to any Site any Work not included in the Contract but



required by Employer/Engineer-in-Charge, any utilities undertaking or other duly constituted College.

The Contractor shall, on the written request of Engineer-in-Charge, make available to any such other Contractor or to Engineer-in-Charge or any such College, any roads or ways for the maintenance of which the Contractor is responsible, for which no additional payment shall be made by Employer.

The Contractor shall be deemed to have made adequate allowance in the Contract Price and in the Works Program in respect of these obligations.

## **WATER & ELECTRICITY CHARGES**

As per Clause 31A if the water is supplied by College, the water charges @ 1 % shall be recovered on gross amount of the work done.

Similarly if electricity is supplied by College electricity charges @ 1% shall be recovered on Gross amount of work done. The contractor shall make his own arrangement to draw electricity from the point fixed by College.

## **PROGRAMS**

The Contractor shall submit a detailed program to Engineer-in-Charge after issue of Letter of Acceptance not later than 14 days from the date of issue of Letter of Acceptance. The Contractor shall also submit a revised program whenever Engineer-in-Charge finds that the previous program is inconsistent with actual progress or with the Contractor's obligations.

Each program shall include the following:

- the order in which the Contractor proposes to carry out the Works,
  - all major events and activities in the production of Construction or Manufacture Documents; and
  - the sequence of all tests specified in the Contract including Integrated Testing and Commissioning.
- The Works Program shall show the Contractor's plan for organizing and carrying out whole of the Works.
- Tasks in the Works Program shall be sufficiently detailed to describe activities and events that include, but are not limited to, the following:
- Key Dates, and Works Area Hand-over Dates,
  - all physical work to be undertaken in the performance of the Contract obligations, including Temporary Works,
  - the requested date for issue of any drawings or information by the Engineer-in-Charge,
  - procurement of major materials and the delivery and/or partial delivery date on-Site of principal items of Contractor's Equipment,
  - any off-site work such as production or pre-fabrication of components,
  - installation of temporary construction facilities,
  - design, supply and/or construction activities of sub-contractors,
  - any outside influence which will or may affect the Works.

The Works Program shall show achievement of all Key Dates and Works Area Hand-over Dates.

No significant alteration to the program, or to such arrangements and methods, shall be made without obtaining consent of Engineer-in-Charge. If the progress of the Works does not conform to



the program, Engineer-in-Charge may instruct the Contractor to revise the program, showing the modifications necessary to achieve completion within the Time for Completion.



Consent by Engineer-in-Charge to Program shall not relieve the Contractor of any of his responsibilities or obligations under the Contract. If the Program indicates that a Key Date/Milestone has not, or will not be met, it shall not, by itself entitle the Contractor to an extension of time in relation to such Key Date/Mile Stone.

If at any time Engineer-in-Charge considers the actual or anticipated progress of the work reflects a significant deviation from the Works Program, he may request the Contractor to submit a proposed revised Program which together with Narrative Statement, shall be submitted by the Contractor within seven (7) days after the Engineer-in-Charge's instruction. The proposed revised Works Program shall show the sequence of operations of any and all works related to the change and the impact of changed work or changed conditions.

For the Project, the Contractor shall adopt 7 days a week calendar, identical calendar for the purpose of programming and Execution of Works. Official documents shall be transacted during 5 days week - Monday through Friday, except for National (Government) Holidays. For Project purposes, a week begins at 0001 hours on a Monday and ends at 2359 hours on a Sunday. The completion of an activity or the achievement of an event when given a week number shall be taken to mean midnight on the Sunday at the end of the numbered week. An access date or activity start date when given as a week number shall be taken to mean 0001 hours on a Monday of the Numbered week.

Failure of the Contractor to submit any program, or any required revisions thereto within the time limits stated for acceptance by the Engineer-in-Charge, shall be sufficient reason for not making the relevant stage on account payment by the Engineer-in-Charge.

### **PROGRESS REPORTS**

The Contractor shall submit to Engineer-in-Charge by the end of each calendar month his Monthly Progress Report (3 copies) which shall, amongst other things, highlight actual or potential departures from the Works Program and state the measures which the Contractor proposes to take in order to make good or reduce any delay and shall account for all work actually performed from 26<sup>th</sup> day of the last month and up to and including the twenty-fifth (25<sup>th</sup>) day of the month of the submission.

The Contractor shall submit to Engineer-in-Charge, as and when desired, a written report as to the progress of procurement, off-Site manufacture of various components if any. The Contractor shall also submit to Engineer-in-Charge such other reports as may reasonably be required by him or any relevant College or public body.

The monthly progress report shall inter-alia contain details regarding: **FINANCIAL STATUS**

A narrative review of all significant financial matters, and actions proposed or taken in respect to any outstanding matters.

A spread sheet indicating the status of all payments due and made.

A report on of the status of any outstanding claims. The report shall in particular provide interim updated accounts of continuing claims.



## PHYSICAL PROGRESS

It shall describe the status of work performed, significant accomplishments, including critical items and problem areas, corrective actions taken or planned and other pertinent activities, and shall, in particular, address interface issues, problems and resolutions. It shall include a simplified representation of progress measured in percentage terms compared with percentage planned as derived from the Works Program.

## PROGRAMME UPDATE (For Entire Project)

Program updating shall include the monthly Program update which shall be prepared by recording actual activity completion dates and percentage of activities completed up to the twenty-fifth (25<sup>th</sup>) of the month together with estimates of remaining duration and expected activity completion based on current progress. The Program Update shall be accompanied by an Activity Report and a Narrative Statement.

## MILESTONES STATUS

A report on the status of all Milestones due to have been achieved during the month and forecasts of achievement of any missed Milestones, and those due in the next month.

## PLANNING AND CO-ORDINATION

A summary of all planning/co-ordination activities during the month and details of outstanding actions.

A schedule of all submissions and consents/approvals obtained/outstanding.

## CASH FLOW ESTIMATE

The Contractor shall furnish to the Engineer the detailed cash flow estimate in respect of the works within 1 month of the award of the Contract. This shall be up-dated and submitted every month thereafter till the completion of the works.

## PROCUREMENT REPORT

A summary of all significant procurement activities during the month, including action taken to overcome problems.

Submit a report listing major items of plant and materials to be incorporated into the Works.

## SAFETY

(1) A review of all safety aspects during the month including reports on all accidents and actions proposed to prevent further occurrence.

## ENVIRONMENTAL

(1) A review of all the environmental issues during the past month to include all monitoring reports, mitigation measures undertaken, and activities to control environmental impacts.



### **IDENTIFICATION & SHIFTING OF UTILITIES :**

Identification of underground utilities, preparation of utility shifting/relocation plans for underground/over ground utilities to be affected due to project execution. Shifting of all affected utilities like sewer lines/storm water lines, water supply lines, and electric cables/OFC to be affected due to project execution. The work of identification of all underground utilities, preparation of utility shifting/relocation plans for underground/over ground utilities to be affected due to project execution shall be considered incidental to work and no payment shall be made to contractor. However payments for actual relocation/shifting of all affected utilities like sewer lines/storm water lines, water supply lines and electrical cables/OFC shall be made to Contractor, if done by the Contractor.

The contractor shall be responsible to coordinate with service provider/concerned authorities for shifting of utilities. This will include initial and frequent follow-up meetings/ actions/ discussions with each involved service provider/ concerned authorities.

The contractor will obtain necessary approval from such Authorities after payments by the Employer/Engineer-in-Charge and also in cases where payments are not required to be made for such shifting. Employer/Engineer-in- Charge will also write to all concerned departments / service provider organization for expediting and facilitating shifting of utilities and removal of encroachment etc.

The contractor will not be entitled for any additional compensation for delay in shifting of utilities by the service provider /concerned authorities. Payment for shifting of utilities as required by the concerned department shall be made by the Employer/Engineer-in-Charge.

In case any utility(ies) is encountered, the shifting of the utility(ies) would be undertaken only in exceptional circumstances where in the opinion of the Engineer-in-Charge no other option is available.

No payment shall however be made for supporting the utilities during course of work.

The utilities shall be diverted with proper liaison and approval of the utility owning agencies. The utilities which are not be diverted but require supporting, proper supporting shall be done so that they are not damaged. Due precautions shall be taken by Contractor while handling the existing utilities and the same must not be damaged at any cost. If due to some or the other reason, miss-happening occurs, it should be rectified immediately by the Contractor at his own cost under intimation of Engineer-in-Charge/Employer. Till rectification of the damaged utility, the Contractor shall make arrange substitute arrangement for keeping the utility functional at his own cost.

### **SAFETY OF WORKS**

The Contractor shall throughout the execution of the Works including the carrying out of any testing, commissioning or remedying of any defect:

take full responsibility for the adequacy, stability, safety and security of the Works, Plants, Contractor's Equipment, Temporary Works, operations on Site and methods of manufacture, installation, construction and transportation;



have full regard for the safety of all persons on or in the vicinity of the Site (including without limitation persons to whom access to the Site has been allowed by the Contractor), comply with all relevant safety regulations, including provision of safety gear, and insofar as the Contractor is in occupation or otherwise is using areas of the Site, keep the Site and the Works (so far as the same are not completed and occupied by Employer) in an orderly state appropriate to the avoidance of injury to all persons and shall keep Employer/Engineer-in-Charge indemnified against all injuries to such persons.

provide and maintain all lights, guards, fences and warning signs and watchmen when and where necessary or required by Employer/Engineer-in-Charge or by laws or by any relevant College for the protection of the Works and for the safety and convenience of the public and all persons on or in the vicinity of the Site; and

where any work would otherwise be carried out in darkness, ensure that all parts of the Site where work is being carried out are so lighted as to ensure the safety of all persons on or in the vicinity of the Site and of such work.

Contractor is required to take note of all the necessary provisions related to Safety, Health and Environment Protection enclosed at Annexure-A-II of Special/Additional Conditions of Contract and the Contractor's bid price shall be inclusive of all the necessary costs to meet the prescribed safety standards.

Contractor shall be paid for this work only under relevant items in BOQ, if especially provided for in the BOQ. If not provided for in BOQ, the above mentioned works and the related activities shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

In the case, the Contractor fails in the above, Employer/Engineer-in-Charge may provide the necessary arrangements and recover the costs from the Contractor.

### **PROTECTION OF THE ENVIRONMENT**

The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to avoid injury, damage and nuisance to people and property resulting from pollution, noise and other results of his operations. The Contractor shall ensure that air emissions, surface discharges and effluent from the Site during the Contract Period shall not exceed the values as per the requirements of Employer/Engineer-in-Charge, Local Bodies and other statutory provisions, and shall not exceed the values prescribed by law. The Contractor shall conform to the Employer/Engineer-in-Charge' requirements and shall indemnify Employer/Engineer-in-Charge against any liability or damages or claims arising out of his operations. The Contractor shall be responsible and liable for any stoppage, closure or suspension of the works due to any contravention of statutory requirements relating to the protection of the environment and shall indemnify and keep indemnified Employer/Engineer-in-Charge in this regard.

The Contractor's Site Environmental Plan shall be developed from provisions related to Safety, Health and Environment Protection enclosed at Annexure-A-II of Special/Additional Conditions of Contract and the Contractor's bid price shall be inclusive of all the necessary costs to meet the prescribed safety, health & environmental standards.



### **CONTRACTOR'S OPERATIONS ON SITE**

The Contractor shall confine his operations to the Site, and to any additional area which may be provided to the Contractor and agreed by Engineer-in-Charge as working areas. The Contractor shall take all necessary precautions to keep his personnel and equipment within the Site and such additional areas, and to keep and prohibit them from encroaching on adjacent land.

### **DISCOVERIES**

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest, in addition to oil and other minerals discovered on the Site shall be the absolute property of the Employer/Government and the Contractor shall take all the necessary precautions to prevent its workmen or its sub-contractors' workmen or any other person from removing or damaging any such article or thing and shall immediately upon discovery thereof, acquaint Employer/Engineer-in-Charge of such discovery and carry out the instructions of Employer/Engineer-in-Charge.

### **PUBLICITY**

The Contractor shall not publish or otherwise circulate alone or in conjunction with any other person, any articles, photographs or other materials relating to the Contract, the Site, the Works, the Project or any part thereof, nor impart to the Press, or any radio or television network any information relating thereto, nor allow any representative of the media access to the Site, Contractor's Works Areas, or off-Site place of manufacture, or storage except with the permission in writing of Employer/Engineer-in-Charge. The Contractor shall ensure that his sub-contractors of any tier shall be bound by a like obligation and shall, if so required by Employer/Engineer-in-Charge, enforce the same at his own expense. The provisions of this Sub-Clause shall not exempt the Contractor from complying with any statutory provision in regard to the taking and publication of photographs.

### **WORKING HOURS**

The Contractor, if required, shall carry out work during night hours or in shifts, unless specifically provided otherwise in the Contract. No increase in rates or extra payments shall be admissible for night work.

The Contractor shall provide adequate lighting and safety arrangements for night operations. Due to sensitive location of the project site, there may be restrictions placed on movement of vehicles, working hours or there may be stoppage of work for particular periods by Police/Administrative Authorities due to security reasons or otherwise. No claim whatsoever on this account shall be entertained notwithstanding the fact that the contractor may have to pay to labourers and other staff engaged directly or indirectly on the work according to the provisions of labour regulations and/or any agreements entered upon by Contractor.

### **PRESERVATION OF PEACE AND ORDERLY CONDUCT**

The Contractor shall be responsible for preservation of peace and orderly





conduct at the site and its neighborhood by Contractor's employees, Representatives, petty contractors, Sub Contractors etc. In case, deployment of a Special Police Force, becomes necessary at or near Site due to disorderly conduct by Contractor's employees, Representatives, petty contractors, Sub Contractors etc., during the tenure of works, the expenses for the same shall be borne by the Contractor.

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his staff and labour, and to preserve peace and protection of persons and property in the neighborhood of the Works against such conduct.

### **INSURANCE**

The Contractor shall insure the Plants, Materials and Works in the joint names of the Employer & the Contractor against all loss or damage. This insurance shall cover loss or damage from any cause other than the Employer's risks listed elsewhere in the contract. Such insurance shall be for a limit of not less than the full replacement cost (including profit) and shall also cover the costs of demolition and removal of debris. Such insurance shall be in such a manner that Employer and the Contractor are covered from the commencement date until the date of issue of the Completion Certificate for the whole of Works. The Contractor shall extend such insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Completion Certificate, and for loss or damage occasioned by the Contractor or Sub-contractors in the course of any other operations. The Contractor shall insure the Contractor's Equipment against all risks, all loss or damage. This insurance shall cover loss or damage from any cause other than the Employer's risks listed elsewhere in the contract. Such insurance shall be for a limit of not less than the full replacement value (including delivery to Site). Such insurance shall be in such a manner that each item of equipment is insured while it is being transported to the Site and throughout the period it is on or near the Site.

The Contractor shall insure against liability to third parties in the joint names of Employer & the Contractor for any loss, damage, death or bodily injury which may occur to any physical property (except Contractor's Plants, Materials and Works) or to any person (except contractor's personnel), which may arise out of the performance of the Contract and occurring before the issue of the Performance Certificate. Such insurance shall be at least for the amount of Rs.

0.50 Million for any one incident, with no. of incidents unlimited.

The Contractor shall effect and maintain insurance against losses and claims arising from the death or injury to any person employed by the Contractor or any Sub-contractor (wherever applicable) in such a manner that the Employer and the Engineer-in-Charge are indemnified under the policy of insurance. For Sub-contractor's employees (wherever applicable), such insurance may be effected by the Sub-contractor, but the Contractor shall be responsible for compliance with this Clause.

For the liability towards insurances as above the Contractor shall obtain and submit (but not limited to) the following insurances:



Contractor's All Risk Policy (CAR Policy)  
Workman Compensation Policy  
Third Party Liability insurance Policy

The Contractor shall, within 7 days from the issue of Notice to commence the work, submit to Engineer-in-Charge:

Evidence that the insurances described in this Clause have been effected, with an Indian Insurance Company, and  
Copies of the policies for the insurances described in this Sub-Clause.

When each premium has been paid, the contractor shall submit copy of receipts to KMC Engineer-in-Charge.

The contractor shall affect all insurances for which he is responsible with insurers and in terms approved by Engineer-in-Charge. Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify such loss or damage. Payments received from insurers shall be used for the rectification of such loss or damage.

The contractor (and, if appropriate, Employer) shall comply with the conditions stipulated in each of the insurance policies. The contractor shall make no material alteration to the terms of any insurance without the prior approval of Engineer-in-Charge. If an insurer makes (or purpose to make) any such alteration, the contractor shall notify Engineer-in-Charge immediately.

If the contractor fails to effect and keep in force any of the insurances required under the contract, or fails to provide satisfactory evidence, policies and receipts in accordance with this sub-clause, Employer/Engineer-in-Charge may, without prejudice to any other right or remedy, effect insurance for the coverage relevant to such default, and pay the premiums due. In such cases the premium paid by Employer/Engineer-in-Charge plus overheads (equal to 50% of the premium paid) shall be recoverable from the contractor by Employer/Engineer-in-Charge, and may be deducted by Employer/Engineer-in-Charge from any monies due, or to become due to the contractor or recover the same as debt due from the contractor. The contractor shall not dispute the amount of premium paid by Employer/Engineer-in-Charge or the overhead charges thereon.

Nothing in this clause limits the obligations, liabilities or responsibilities of the contractor or Employer/Engineer-in-Charge, under the other terms of the contract or otherwise. Any amount not insured or not recovered from the insurers shall be borne by the contractor.

The Contractor shall submit to Engineer-in-Charge, the details of all claims made with the insurer and claims accepted by the insurer or any other details as required by Engineer-in-Charge on monthly basis.

### **NOTICE TO CONTRACTOR**

All notices to the Contractor shall be served by post or mail or telefax or by hand to the Contractor or his authorized representatives. In case of notices delivered by post, they will be deemed to have been delivered after 7 days of dispatch.



### **NOTICE TO EMPLOYER/ENGINEER-IN-CHARGE**

All notices to **Employer/Engineer-in-Charge** shall be served by post or mail or telefax, or by delivering by hand to the address nominated for the purpose.

### **TESTING**

This sub clause shall apply to all tests on plants/works/materials as specified in the Contract. The Contractor shall provide all documents and other information necessary for all types of testing and such assistance, labour, materials, electricity, fuel, stores, apparatus and instruments as are necessary to carry out such tests efficiently. All required tests shall be made in the presence of Engineer-in-Charge's representatives. If Engineer-in-Charge's representative does not attend at the time and place agreed, or if the Contractor and Engineer-in-Charge's representative agree that Engineer-in-Charge's representative shall not attend, the Contractor may proceed with the tests, unless Engineer-in-Charge's representative instructs the Contractor otherwise. Such tests shall be deemed to have been made in the Engineer-in-Charge's presence.

The Contractor shall promptly forward to Engineer-in-Charge's duly certified reports of the tests.

The cost of making any Test shall be borne by the Contractor if such Test is clearly intended as mandatory by the relevant technical specifications or provided for in the Contract. If any, additional test is ordered by the Engineer-in- Charge's which is either:

not so intended by or provided for in the Contract, or  
though so intended or provided for is ordered by the Engineer to be carried out by an independent person at any place other than the Site(if facility available in site laboratory) or any approved laboratory or the place of manufacture or fabrication of the Materials.

then the cost of such Test shall be borne by the Employer. If, however, the Test shows the workmanship or Materials not to be in accordance with the Contract, then the cost of such Test will be borne by the Contractor.

No such testing shall relieve the Contractor from any obligation or responsibility.

The Contractor shall be responsible for all on-site and off-site testing and for all in-situ testing. All appropriate laboratory tests shall be carried out in the Contractor's laboratory, unless otherwise permitted or required by the Engineer- in-Charge. Where the laboratory is not appropriately equipped and/or staffed for some tests, or if agreed to by the Engineer-in-Charge, tests may be carried out in other laboratories approved by Engineer-in-Charge.

Equipment, apparatus and materials for in-situ tests and laboratory compliance tests carried out by the Contractor shall be provided by the Contractor. The equipment and apparatus shall be maintained by the Contractor and shall be calibrated before the testing starts and at regular intervals as permitted by the



Engineer-in-Charge. The equipment, apparatus and materials for in-the situ tests shall be removed by the Contractor as soon as practicable after the testing is complete.

Records of in-situ tests and laboratory tests shall be kept in the custody of Engineer-in-Charge In addition to any other requirements, the test reports report shall contain the following details :

- material or part of the Works tested;
- location of the batch from which the samples were taken or location of the part of the Works;
- place of testing;
- date and time of tests;
- weather conditions in the case of in-situ tests;
- technical personnel supervising or carrying out the tests;
- size and description of samples and specimens;
- method of sampling;
- properties tested;
- method of testing;
- readings and measurements taken during the tests;
- test results, including any calculations and graphs;
- specified acceptance criteria; and
- other details stated in the Contract.

Reports of tests shall be signed by the authorized representatives of the Contractor & Engineer-in-Charge.

If, as a result of inspection, examination or testing, any Plant, Material or workmanship is found to be defective or otherwise not in accordance with the Contract, Engineer-in-Charge may reject the same and by giving notice to the Contractor with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item after rectification complies with the Contract. If Engineer-in-Charge requires such Plant, Material, design or workmanship to be retested ,the tests shall be repeated under the same terms and conditions. If such rejection and retesting cause Engineer-in-Charge to incur additional costs, such costs shall be recoverable from the Contractor by Engineer-in-Charge and may be deducted by Engineer-in-Charge from any monies due, or to become due ,to the Contractor.

### **CONTRACTOR'S TEMPORARY WORKS**

The Contractor shall, prior to commencing the construction of the Temporary Works, submit a certificate to the Engineer-in-Charge signed by him certifying that the Temporary Works have been properly and safely designed and checked and that the Contractor has checked the effect of the Temporary Works on the Permanent Works and has found this to be satisfactory.



### **USE OF THE SITE**

The Site or Contractor's Equipment shall not be used by the Contractor for any purposes other than for carrying out the Works, except that, with the consent in writing of the Engineer-in-Charge. Rock crushing plant shall not be used on the Site. The location and size of each stockpile of materials, including excavated materials, within the Site shall be as permitted by the Engineer-in-Charge. Stockpiles shall be maintained at all times in a stable condition. Entry to and exit from the Site shall be controlled and shall be only available at the locations for which the Engineer-in-Charge has given his consent.

### **ACCESS TO THE SITE**

The Contractor shall make its own arrangements, subject to the consent of the Engineer-in-Charge, for any access required to the Site. In addition, the Contractor shall ensure that access to every portion of the Site is continually available to Employer/Engineer-in-Charge.

### **ACCESS TO OUTSIDE THE SITE**

The Contractor shall be responsible for ensuring that any access or egress through the Site boundaries are controlled such that no disturbance to residents or damage to public or private property occur as a result of the use of such access or egress by its employees and sub-contractors.

### **SURVEY OF THE SITE**

A survey shall be carried out of the Site to establish its precise boundaries and the existing ground levels within it. This survey shall include a photographic survey sufficient to provide a full record of the state of the Site before commencing the work with particular attention paid to those areas where reinstatement will be carried out later on. The survey shall be carried out before the site clearance wherever possible and in any case prior to the commencement of work in any Works Area. The survey shall be carried out by the Contractor and agreed with the Engineer-in-Charge. This shall be considered incidental to work and nothing extra shall be paid for this activity. The Contractor shall relate the construction of the Works to the Site Grid. To facilitate this, survey reference points shall be established

The Contractor shall carefully protect all the survey reference points, bench marks, setting out points, monuments, towers and the like from any damages and shall maintain them and promptly repair or replace any points damaged from any causes whatsoever. The Contractor shall regularly recheck the position of all setting out points, bench marks and the like to the satisfaction of the Engineer-in-Charge. This shall be considered incidental to work and no separate payment shall be made for the same.

### **BARRICADES AND SIGNBOARDS**

The Contractor shall erect barricades and gates around its areas of operations to prevent entry by unauthorised persons to his Works Areas and necessary identity cards /permits



should be issued to workers and staff by the contractor. The Contractor shall submit proposal for barricades of the complete perimeter of all works areas to the Engineer-in-Charge. Painting of the barricades shall be carried out to the design and colours as directed by the Engineer-in-Charge and the Contractor shall carry out re-painting of the entire barricades on half yearly basis or earlier, if required. Adequate provision for lighting of barricades in night shall be made by way of provision of rope lights, blinkers etc. No work shall be commenced in any Works Area until the Engineer-in-Charge has been satisfied that the barricades installed by the Contractor are sufficient to prevent, within reason, unauthorised entry and for the safety of the surroundings. Project signboards shall be erected not more than two (2) weeks, or such other period as the Engineer-in-Charge has given his consent, after the date of commencement of the Works. The types, sizes and locations of project signboards shall be agreed with the Engineer-in-Charge before manufacture and erection. Other advertising signs shall not be erected on the Site.

The consent of the Engineer-in-Charge shall be obtained before hoardings, fences, gates or signs are removed. Hoardings, fences, gates and signs which are to be left in positions after the completion of the Works shall be repaired and repainted as instructed by the Engineer-in-Charge. Hoardings, barricades, gates and signs shall be maintained in clean and good order by the Contractor until the completion of the Works, whether such hoardings, fences, gates and signs have been installed by the Contractor or by others and transferred to the Contractor during the period of the Works. All the fencing, hoardings, gates and signs etc. shall be mopped minimum one in a week and washed monthly.

All hoardings, barricades, gates and signs installed by the Contractor shall be removed by the Contractor upon the completion of the Works, unless otherwise directed by the Engineer-in-Charge.

Hoarding/ barricades can be reused after removing from one place to other locations / sites provided they are in good condition and approved by Engineer- in-Charge.

Damaged/worn-out barricades /hoarding shall be replaced by contractor within 24 hours. Engineer-in-Charge 's decision regarding need for replacement shall be final and binding and if no action is taken by contractor the cost of any repairs will be deducted by the Engineer-in-Charge from any payment due to the Contractor.

Contractor shall be paid under relevant BOQ items for this work, only if especially provided for in the BOQ. If not provided for in BOQ, the barricading and the related work/activity shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

### **CLEARANCE OF THE SITE**

All Temporary Works which are not to remain on the Site after the completion of the Works shall be removed prior to completion of the Works or at other times instructed by the Engineer-in-Charge The Site shall be cleared and reinstated to the lines and levels and to the same condition as existed before the Works started except as otherwise stated in the Contract.



### **SAFETY, HEALTH, LABOUR WELFARE AND ENVIRONMENTAL REQUIREMENTS**

The Contractor shall comply with in the conditions stipulated in the contract on Safety, Health, labour welfare and Environment Protection. Non-compliance of the provisions in contract regarding Safety, Health, Labour Welfare and Environmental Protection shall attract nonrefundable fine/damages as follows:

On first Default/Non-compliance: Rs.5,000/-

On second Default/Non-compliance: Rs.7,000/-

On third & each subsequent Default/Non-compliance: Rs.10,000/- subject to a maximum of 5 per cent of the contract value.

### **OTHER SAFETY MEASURES Fire Regulations and Safety**

The Contractor shall provide and maintain all necessary temporary fire protection and firefighting facilities on the Site during the construction of the Works, and shall comply with all requirements of the Delhi Fire Services Department. These facilities may include, without limitation, fire hose reels in temporary site buildings, raw water storage tanks and portable fire extinguishers suitable for the conditions on the Site and potential hazards.

The Contractor shall submit details of these facilities to the Engineer-in-Charge prior to commencement of work on the Site.

If, in the Engineer-in-Charge's opinion, the use of naked lights may cause a fire hazard, the Contractor shall take such additional precautions and provide such additional firefighting equipment (including breathing apparatus) as the Engineer-in-Charge considers necessary. The term "naked light" shall be deemed to include electric arcs and oxyacetylene or other flames used in welding or cutting metals.

Oxyacetylene burning equipment will not be permitted in any confined space. Burning equipment of the oxypropane type shall be used.

This shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

### **Hazard and Risk Assessments**

The Contractor shall, prior to the commencement of any operation carry out a detailed hazard and risk assessment. The results of such assessments shall be recorded and the records kept for inspection by the Engineer-in-Charge.

The Contractor shall produce detailed method statements for all medium and high risk operations and shall submit them to the Engineer-in-Charge for his consent prior to commencement of any task to which they relate.

The Contractor shall produce and implement a Permit to Work system for all high risk operations. The Permit to Work system shall be submitted to the Engineer-in-Charge for consent before application.

This shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

### **Explosives**

Explosives shall not be used without prior written consent of the Engineer-in-



Charge. Before consent to blasting is granted, the Contractor shall prepare a Specification as to the size of charge, the method of firing and any other restrictions that may be imposed from time to time.

Where the Engineer-in-Charge has consented to the use of explosives, the Contractor shall be responsible for obtaining the requisite licenses and permits for complying with all statutory requirements for blasting.

The storage, transportation and use of explosives shall at all times be governed by the Explosives Acts and such other statutory regulations which may be applicable and as imposed by the Statutory Authorities.

### **Standby Equipment**

The Contractor shall provide adequate stand-by equipment to ensure the safety of personnel, the Works and the public. These measures shall include as a minimum the following:-  
stand-by pumping and generating equipment for the control of water;  
stand-by equipment and spares for illumination of the Works; and  
stand-by generating equipment and equipment for the lighting and ventilation of underground works.

This shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

### **Co-operation**

The Contractor shall provide full co-operation and assistance in all safety surveillance carried out by the Employer/Engineer-in-Charge. Any breaches of the Site Safety Plan or the statutory regulations or others disregard for the safety of any persons may be the reason for the Engineer-in-Charge to exercise his College to require the site agent's removal from the Site.

### **CARE OF THE WORKS**

Unless otherwise permitted by the Engineer-in-Charge all work shall be carried out in dry conditions.

The Works, including materials for use in the Works, shall be protected from damage due to water. Water on the Site and water entering the Site shall be promptly removed by temporary drainage or pumping systems or by other methods capable of keeping the Works free of water. Silt and debris shall be removed by traps before the water is discharged in the Municipal storm water drainage system

The Contractor shall make all arrangements with and obtain the necessary approval from the relevant authorities for discharging water to drains, watercourses etc. The relevant work shall not be commenced until the approved arrangements for disposal of the water have been implemented.

The methods used for keeping the Works free of water shall be such that settlement of, or damage to, new and existing structures do not occur.

Measures shall be taken to prevent flotation of new and existing structures.

This shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.





### **PROTECTION OF THE WORKS FROM WEATHER**

Work shall not be carried out in weather conditions that may adversely affect the Works unless proper protection is provided to the satisfaction of the Engineer-in- Charge.

Permanent Works, including materials for such Works, shall be protected from exposures of weather conditions that may adversely affect such Permanent Works or materials.

During construction of the Works storm restraint systems shall be provided where appropriate.

These systems shall ensure the security of the partially completed and ongoing stages of construction and in all weather conditions. Such storm restraint systems shall be installed as soon as practicable and shall be compatible with the right of way, or other access around or through- out the Site.

The Contractor shall at all times program and order progress of the work and make all protective arrangements such that the Works can be made safe in the event of storms.

This shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

### **PROTECTION OF THE WORK**

The finished works shall be protected from any damage that could arise from any activities on the adjacent site/ works.

### **DAMAGE AND INTERFERENCE**

Work shall be carried out in such a manner that there is no damage to or interference with: watercourses or drainage systems; (b) utilities; (c) structures (including foundations), roads, including street furniture, or other properties; (d) public or private vehicular or pedestrian access; (e) monuments trees, graves or burial grounds other than to the extent that is necessary for them to be removed or diverted to permit the execution of the Works. Heritage structures shall not be damaged or disfigured on any account. The Contractor shall inform the Engineer-in-Charge as soon as practicable of any items which are not stated in the Contract to be removed or diverted but which the Contractor considers need to be removed or diverted to enable the Works to be carried out. Such items shall not be removed or diverted until the consent of the Engineer-in- Charge to such removal or diversion has been obtained.

Items which are damaged or interfered with as a result of the Works and items which are removed to enable work to be carried out shall be reinstated to the satisfaction of the Engineer-in-Charge and to at least the same condition as existed before the work started. This shall be considered incidental to work and nothing extra shall be paid to the contractor in this regard.

Any claims by Utility Agencies due to damage of utilities by the Contractor shall be borne by the Contractor.

### **STRUCTURES, ROADS AND OTHER PROPERTIES**

The Contractor shall immediately inform the Engineer-in-Charge of any damage to structures, roads or other properties.



## **ACCESS**

Alternative access shall be provided to all premises if interference with the existing access, public or private, is necessary to enable the Works to be carried out. The arrangements for the alternative access shall be as agreed by the Engineer-in-Charge and the concerned agency. Unless agreed otherwise, the permanent access shall be reinstated as soon as practicable after the work is complete and the alternative access shall be removed immediately as it is no longer required, and the ground surfaces reinstated to the satisfaction of the Engineer-in-Charge. Proper signage and guidance shall be provided for the traffic / users regarding diversions. This shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

## **TREES**

The felling of trees in the National Capital Territory of Delhi is governed by the Delhi Preservation of Trees Act 1994 (Delhi Act No. 11 of 1999). The Contractor is not permitted to cut any trees without the permission of the Employer/Engineer-in-Charge. Subject to compliance with the aforementioned act, arrangements for permission from Forest Department for tree felling may be made by the Employer/Engineer-in-Charge. The trees requiring to be felled, will be removed completely (including roots/stumps) by the Contractor prior to commencement/during execution of the works and the payment of tree cutting, removal, transportation required in this item shall be paid as per provisions in the contract.

## **PROTECTION OF THE ADJACENT STRUCTURES AND WORKS**

The Contractor shall take all necessary precautions to protect the structures or works being carried out by others adjacent to and, for the time being, within the Site from the effects of vibrations, undermining and any other earth movements or the diversion of water flow arising from its work. This shall be considered incidental to work and nothing extra shall be paid to the contractor in this regard.

## **PROGRESS PHOTOGRAPHS**

The Contractor shall provide monthly progress photographs which have been properly recorded to show the progress of the works to the Engineer-in-Charge. The photographs, of not less than 30 per month in number, shall be taken on locations agreed with the Engineer-in-Charge to record the exact progress of the Works. Two sets of photographs shall be provided on CD ROM format with two sets of colour prints of 175 mm x 125 mm size.

The Contractor shall mount each set of each month's progress photographs in a separate album of a type to which the Engineer-in-Charge has given his consent, and shall provide for each photograph two typed self-adhesive labels, one of which shall be mounted immediately below the photograph and one on the back of the photograph. Each label shall record the location, a brief description of the progress recorded and the date on which the photograph was taken. This shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

The Contractor shall ensure that no photography is permitted on the Site without the agreement of the Engineer-in-Charge. Contractor should be aware of the



local regulations and conditions with regard to Photography in some “RESTRICTED AREA’ in Delhi.

### **RECORDS OF WAGE RATES**

The Contractor shall keep monthly records of the average, high and low wage rates for each trade/tradesman employed on the Site and records shall be made available to the Engineer-in-Charge during inspection.

### **MATERIALS**

- Materials and goods for inclusion in the Permanent Works shall be new unless the Engineer-in-Charge has consented otherwise.
- Certificates of tests by manufacturers which are to be submitted to the Engineer- in-Charge shall be current and shall relate to the batch of material delivered to the Site. Certified true copies of certificates may be submitted if the original certificates could not be obtained from the manufacturer.
- Parts of materials which are to be assembled on the Site shall be marked to identify the different parts.
- Materials which are specified by means of trade or proprietary names may be substituted by materials from a different manufacturer which has received the consent of the Engineer-in-Charge provided that the materials are of the same or better quality and comply with the specified requirements.
- Samples of materials submitted to the Engineer-in-Charge for information or consent shall be kept on the Site and shall not be returned to the Contractor or used in the Permanent Works unless permitted by the Engineer-in-Charge. The samples shall be used as a mean of comparison which the Engineer-in-Charge shall use to determine the quality of the materials subsequently delivered. Materials delivered to the Site for use in the Permanent Works shall be of the same or better quality as the samples which have received consent.

### **TRAFFIC MANAGEMENT PLAN**

Immediately after the issue of letter of acceptance (not later than **14 days from the** issue of Letter of Acceptance), the Contractor shall develop a detailed Traffic Management Plan for the work under the contract to cope with the traffic disruption as a result of construction activities and shall implement the Traffic Management Plan throughout the whole period of the Contract.

The basis for the Plan shall take into consideration the need to minimize the inconvenience of road users and the interruption to surface traffic through the area impacted by the construction activities; to ensure the safety of road users in the impacted area; to facilitate access to the construction site, and to maintain reasonable construction progress & to ensure traffic safety at construction site.

The Contractor shall manage the vehicular and pedestrian right of way during the period of construction and shall take account of the need to maintain essential traffic requirements, as these may influence the construction process. Where it becomes necessary to close a road or intersection, or supplementary lanes are required to satisfy the traffic demands, traffic diversion schemes to adjacent roadways shall be developed with quantitative justifications. The Contractor shall co-ordinate with all relevant authorities.



The overall fabrication/erection plan of the Contractor shall take into account the need to ensure that any roads or intersections that have no alternative access shall not be fully closed for construction, emergency access to all properties shall be maintained at all times, access to business premises and property shall be maintained to the extent that normal activities are not seriously disrupted.

Immediately after the issue of letter of acceptance(not later than 14 days from the issue of letter of acceptance), the Contractor shall make his traffic management plan for the construction period and obtain the necessary approval from the transport authorities and the Police Department for temporary traffic arrangements and control on public roads. In the event that the Contractor, having used its best endeavours, fails to secure the necessary approval from the transport authorities and the Traffic Police Department for temporary traffic arrangements and control on public roads, then Employer/Engineer-in-Charge will use its best endeavours to assist the Contractor to secure such approval but without responsibility on the part of Employer/Engineer-in-Charge to do so. This shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

### **SITE ESTABLISHMENT**

The Contractor shall have the following minimum site establishment and the rates are inclusive of providing all these facilities and nothing extra shall be payable on this account:-

#### **SITE LABORATORIES**

The Contractor shall, at his own cost, provide, erect and maintain in a clean, stable and secure condition a laboratory, equipped for the routine testing of construction materials/works, as per the requirements set forth in Annexure-B attached to this section. This laboratory shall be located at the Contractor's principal work site or at a location agreed to by the Employer/Engineer-in- Charge.

If the Contractor fails to setup/establish or arrange the required equipment/apparatus due to any reason, Employer is free to take samples of material from site and got tested from external laboratory as decided by Engineer-in-charge at Risk and Cost of Contractor.

#### **SITE ACCOMMODATION/OTHER FACILITIES**

The Contractor shall provide and maintain its site accommodation at its own cost at locations consented to by the Engineer-in-Charge. Offices, sheds, stores, mess rooms, garages, workshops, latrines etc. on the Site shall be maintained in a clean, stable and secure condition. Living accommodation shall not be provided on the Site. No land shall be provided by Employer/Engineer-in-Charge for labour camp and Contractor shall make his own arrangements for the same.

The Contractor shall provide latrines and wash places for the use of its personnel and all persons who will be on the Site. The size and disposition of latrines and wash places shall accord with the numbers and dispositions of persons entitled



to be on the Site, which may necessitate their location on structures and, where necessary there shall be separate facilities for males and females. The capacities and layout shall be subject to approval of the Engineer-in-Charge. The Contractor shall arrange regular disposal of effluent and sludge in a manner that shall be in accordance with local laws/ regulations.

The Contractor shall be responsible for maintaining all latrines and wash places on the Site in a clean and sanitary condition and for ensuring that they do not pose a nuisance or a health threat. The Contractor shall also take such steps and make such provisions as may be necessary or directed by the Engineer-in- Charge to ensure that vermin, mosquito breeding etc. are at all times controlled.

### **SITE UTILITIES AND ACCESS**

- (a) The Contractor shall be responsible for providing water, electricity, telephone, sewerage and drainage facilities for contractors site offices, structures and buildings and for all site laboratories and all such services that are necessary for satisfactory performance of the Works. The Contractor shall make all arrangements with and obtain the necessary approval from the relevant civil and utility authorities for the facilities.
- (b) The contractor shall be responsible for provision of power supply for his works. The Employer cannot guarantee provision of adequate, continuous power supply. However assistance will be given in obtaining the necessary permissions for site generators and the like.

### **SUBMISSION OF PARTICULARS**

The following particulars shall be submitted to the Engineer-in-Charge for its



consent not more than fifteen (15) days after the date of commencement of the Works:  
drawings showing the formation works and the layout the Contractor's offices, project signboards, principal access and other major facilities required early in the Contract, together with all service utilities;  
drawings showing the details to be included on the project signboards and diversion boards. Drawings showing location of stores, storage areas, and other major facilities shall be submitted to the Engineer-in-Charge for his consent as early as possible but in any case not less than seven(7) days prior to when such facilities are intended to be constructed on the Site.

#### **ASSIGNMENT OF SUBCONTRACTOR'S OBLIGATIONS:**

In the event of a Subcontractor having undertaken towards the Contractor in respect of the work executed, or the goods, materials, Plant or services supplied by such Subcontractor, any continuing obligation extending for a period exceeding that of the Defects Liability Period under the Contract, the Contractor shall at any time, after the expiration of such Period, assign to the Employer, with no extra cost, the benefit of such obligation for the unexpired duration thereof.

#### **POSSESSION OF SITE AND ACCESS THERETO:**

Save insofar as the Contract may prescribe:

- the extent of portions of the Site of which the Contractor is to be given possession from time to time
- the order in which such portions shall be made available to the Contractor, and, subject to any requirement in the Contract as to the order in which the Works shall be executed, the Employer will, with the Engineer's notice to commence the Works, give to the Contractor possession of
- so much of the Site, and
- such access as, in accordance with the Contract, is to be provided by the Employer as may be required to enable the Contractor to commence and proceed with the execution of the Works in accordance with the program referred to in Clause 4, if any, and otherwise in accordance with such reasonable proposals as the Contractor ' shall, by notice to the Engineer with a copy to the Employer, make. The Employer will, from time to time as the Works proceed, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the execution of the Works with due dispatch in accordance with such program or proposals, as the case may be.

#### **NATIONAL GREEN TRIBUNAL (NGT) GUIDELINES:**

The work shall be carried out in accordance with the various guidelines issued by National Green Tribunal (NGT).

The guidelines of NGT includes but not limited to:-

**To avoid wastage of curing water, following guidelines are to be followed:**



Curing water should be sprayed on concrete structures; free flow of water should not be allowed for curing.

After liberal curing on the first day, all concrete structures should be painted with curing chemical to save water. This will stop daily water curing hence save water.

Concrete structures should be covered with thick cloth/gunny bags and then water should be sprayed on them. This would avoid water rebound and will ensure sustained and complete curing.

Ponds should be made using cement and sand mortar to avoid water flowing away from the flat surface while curing.

Water ponding should be done on all sunken slabs, this would also highlight the importance of having an impervious formwork.

**To reduce the air pollution, following guidelines are to be followed:**

Sprinkling of water and fine spray from nozzles to suppress the dust.

On-Road- Inspection should be done for black smoke generating machinery.

Promotion of use of cleaner fuel should be done.

All DG sets should comply emission norms notified by MoEF.

Vehicles having pollution under control certificate may be allowed to ply.

Use of covering sheet to prevent dust dispersion at buildings and infrastructure sites, which are being constructed.

Use of covering sheets should be done for trucks to prevent dust dispersion from the trucks, implemented by district offices.

Paving is a more permanent solution to dust control, suitable for longer duration projects.

High cost is the major drawback to paving.

Reducing the speed of a vehicle to 20 kmph can reduce emissions by a large extent. Speed bumps are commonly used to ensure speed reduction. In cases where speed reduction cannot effectively reduce fugitive dust, it may be necessary to divert traffic to nearby paved areas

Every Worker working on construction site or engaged in loading and unloading of building materials shall be provided with masks.

Dust emissions from construction sites will be completely controlled by all the authorities and the vehicles used for transportation of building materials shall be properly cleaned before it is permitted to ply on the roads

Building materials shall be covered with tarpaulin sheets while transportation

**To reduce the Noise pollution, following guidelines are to be followed:**

Use latest / properly maintained Construction Equipment as far as possible in order to reduce noise at construction site.

DG Sets should be used with proper enclosures.

Proper maintenance of machinery used in transportation at site.

Use of noise deflectors can also help in reducing the noise.

**To ensure health and safety of the workers during construction,**

The objective is to ensure health and safety of the workers during construction, with effective provisions for the basic facilities of sanitation,



drinking water, safety of equipments or machinery etc. Following are some of the recommendations to be followed:

- Comply with the safety procedures, norms and guidelines (as applicable) as outlined in the document Part 7 \_Constructional practices and safety, 2005, National Building code of India, Bureau of Indian Standards Provide clean drinking water to all workers
- Provide adequate number of decentralized latrines and urinals to construction workers.
- Guarding all parts of dangerous machinery.
- Precautions for working on machinery
- Maintaining hoists and lifts, lifting machines, chains, ropes, and other lifting tackles in good condition.
- Durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.
- Ensuring that walking surfaces or boards at height are of sound construction and are provided with safety rails or belts.
- Provide protective equipment; helmets etc.
- Provide measures to prevent fires. Fire extinguishers and buckets of sand to be provided in the fire-prone area and elsewhere
- Provide sufficient and suitable light for working during night time
- Dangers, health hazards, and measures to protect workers from materials of construction, transportation, storage etc.
- Safety policies of the construction firm/division/company.





## Annexure-A I

List of major Labour Laws applicable to establishments engaged in Construction of Civil Works

Workmen Compensation Act, 1923 Payment of Gratuity Act, 1972  
Employees' PF and Miscellaneous Provisions Act, 1952 Maternity Benefit Act, 1951  
Contract Labour (Regulation and Abolition) Act, 1970 Minimum Wages Act, 1948  
Payment of Wages Act, 1936 Equal Remuneration Act, 1979 Payment of Bonus Act, 1965  
Industrial Disputes Act, 1947  
Industrial Employment (Standing Orders) Act, 1946 Trade Unions Act, 1926  
Child Labour (Prohibition and Regulation) Act, 1986  
Inter-State Migrant Workmen's (Regulation of Employment and Conditions of Service) Act, 1979  
The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and the Cess Act of 1996  
The Factories Act. 1948.



## Annexure-A II

Provisions Related to Safety, Health & Environment Protection to be complied/ followed by Contractor

The provisions given here should be read in conjunction with;

The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996. Delhi Rules, 2002

The Factories Act, 1948

Other Laws of India, Regulations, Rules and Codes of Practice on Safety Health and the Environment that may be applicable.

The Conditions of Contract in respect of Health and Safety

The Employer's Requirements as given in the documents of the Contract.

The important applicable Indian Standards

CPWD Contractor's Labour Regulations

1A. Cost of complying with these provisions shall be deemed to be included in the bid prices quoted by Contractor, shall be considered incidental to work and nothing extra shall be paid to Contractor except what has been specifically provided under relevant items of BOQ for this work.

The provisions given herewith outline the minimum health and safety, standards that shall be required during the construction. These provisions represent the minimum standards required and each Contractor is encouraged to expand and improve upon it. These provisions are not intended to replace existing standards that are currently in force in India. However, it is intended to support the standards and to highlight to Contractors the areas of concern that shall be addressed in their respective Site Safety Plans in order to establish good health and safety practices. The obligations and requirements for Health, Safety and environment protection set out within this document are entirely without prejudice and do not derogate from the Contractor's obligations with respect to the Contract and his statutory obligations with respect to Health, Safety & environment protection.

The Contractor is fully responsible for the safety of the Works, his personnel, subcontractors' personnel, the public and all persons directly or indirectly associated with the Works or on or in the vicinity of the Site.

The provisions given herewith provide relevant information and procedures to assist the Contractor to ensure that his employees and sub-contractors work within a safety-conscious and safety-regulated environment. Compliance with the procedures set out in these provisions shall not relieve the Contractor of any of his Statutory Duties or his responsibilities under the Contract.

Notwithstanding anything contained herein, the Contractor shall remain liable to comply with the provisions of all acts, rules, regulations and bylaws for the time being in force in India and applicable in the matter of Safety, Health & Environment Protection.





**SCHEDULE D-4**

**SPECIAL CONDITIONS FOR STEEL**

**1. CONDITIONS FOR STEEL**

- 1.1 The contractor shall procure Fe500 D grade Thermo Mechanical Treated (TMT) Steel Reinforcement bars from Main producers of steel like SAIL, Rashtriya Ispat Nigam Ltd., TISCO, JSPL or as per direction of Architect. The documents in support of the purchase of steel shall be produced by the contractor along with the particulars of the manufacturer/supplier of steel for every lot of steel.

Specifications of thermo-mechanically treat bars (TMTbars Fe500 D):-

The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated in the work. All consignment received at the work site shall be inspected by the Site staff along with the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer-in-Charge in respect of all the lots of steel brought by him from approved supplier to the site of work. The original vouchers and test certificates shall be defaced by the Site staff and kept on record in the site office.

Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to BIS codes; the same shall stand rejected and shall be removed from the site of work by the contractor at his OWN cost within a week's time from written orders from the Engineer-in Charge to do so. Unless OTHERWISE specified elsewhere in the contract document, the testing (nominal mass, tensile strength, bend test. rebound test etc.) shall be done as per frequency of samples not less than as given below:-

Size of Bar	For consignment below 100 Tones	For Consignment Over 100 Tones
Under 10 mm dia	One sample for each 25 tones or part thereof.	One sample for each 40 tones or part thereof.
10mm to 16mm dia.	One sample for each 35 tones or part thereof.	One sample for each 45 tones or part thereof.
Over 16mm dia.	One sample for each 45 tones or part thereof	One sample for each 50 tones or part thereof.

- 1.2 The steel reinforcement shall be brought in bulk supply of 10 tons or more or as decided by the Engineer-in-Charge along with manufacturer test certificate for each lot.
- 1.3 The steel reinforcement shall be stored by the contractor at site of work about 30cm. to 45 cm. above ground. A coat of cement wash shall be given to steel bars when stored at site for long duration so as to prevent corrosion. Nothing extra shall be paid on these accounts. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- 1.4 The contractor shall supply free of charge the steel required for testing. The cost of tests shall be borne by the contractor.
- 1.5 The Actual issue and consumption of steel on work shall be regulated and proper account maintained as per provision of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in Clause 42 of the contract and shall be governed by conditions laid therein.
- 1.6 The actual issue of steel shall be actual weight of total quantity of Steel received at the site less actual weight of balance quantity of steel lying unutilized at the work site.
- 1.7 Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge.
- 1.8 In case the contractor bring surplus quantity of steel the same after completion of the work will be removed



from the site by the contractor at his own cost after approval of the Engineer-in- Charge.

- 1.9 Reinforcement including authorized spacer bars and lappages shall be measured in length of different diameters as actually (not more than as specified in the drawings) used in the work nearest to a centimeter. Wastage and unauthorized overlaps shall not be measured.
- 1.10 The standard sectional weights referred to CPWD Specifications for works 2002 will be considered for conversion of length of various sizes of M.S. Bars, Tor Steel Bars and T.M.T. bars into Standard Weight.
- 1.11 Records of actual Sectional weights shall also be kept dia-wise and lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as Derived Actual Weight.
- 1.12. a) If the Derived Weight as in sub-para (2.11) above is less than the Standard Weight as in Sub-para (2.10) above then the Derived Actual Weight shall be taken for payment.  
b) If the Derived Actual Weight is found more than the Standard Weight, the Standard Weight as per in sub-para (2.10) above shall be taken for payment. In such case nothing extra shall be paid for the difference between the Derived Actual Weight and the standard Weight
- 1.13 In case, TMT steel bars from main producers as above are not available, TMT steel bars from approved secondary producers having valid BIS license, can be used after obtaining prior approval of the Engineer-In-Charge in writing. The contractor will have to produce a 'Non availability Certificate' from the main producers and a recovery of Rs. 1500/- pr M.T. will be effected in case use of TMT steel bars from approved secondary manufacture is permitted by the department.



### **CONDITION FOR CEMENT**

1. The contractor shall procure 43 grade (confirming to IS 8112 or IS 12269) ordinary Portland cement, as required in the work from reputed manufacturers of cement of approved make and having a production capacity of one million tonnes as approved by Ministry of Industry, Govt. of India and holding license to use ISI certification mark for their product whose name shall be got approved from Engineer-In-Charge. The tenderer may also submit a list of names of cement manufacturers which they propose to use in the work. The tender accepting authority reserves right to accept or reject name(s) of cement manufacture(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufacturers, given by the tenderer fully or partially. Supply of cement shall be taken in 50 kg. bags bearing manufacturers. name and ISI marking, along with manufacturers test certificate for each lot. Samples of cement arranged by the contractor shall be taken by the Engineer-In-Charge and got tested in accordance with provisions of relevant BIS Codes. The cement for such testing purpose shall be supplied by the contractor free of charge. In case test results indicate that the cement arranged by the contractor does not conform to the relevant BIS Codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-In-charge to do so. The cost of tests shall be borne by the contractor.
2. The cement shall be brought at site in bulk supply of minimum approximately 25 tonnes or as decided by the Engineer-in-charge.
3. The cement godown of the capacity to store a minimum of 1000 bags of cement shall be constructed by the contractor at site of work for which no extra payment shall be made. Double lock provision shall be made to the door of the cement godown. The keys of the lock shall remain with the Engineer-in-charge or his authorized representative and the key of the other lock shall remain with the contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-charge.
4. The contractor shall supply free of charge the cement required for testing. The cost of test inclusive of carriage/transportation shall be borne by the contractor.
5. The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein.
6. Cement brought to site and cement remained unused after completion of work shall not be removed from site without written permission of the Engineer-in-charge.

### **GENERAL DUTIES OF CONTRACTORS**



Every person employed by Contractor on construction sites are obliged to comply with the general duties imposed on them under the Contract. Every person employed should, not only avoid careless or reckless behavior, but should also take positive steps to understand workplace hazards. They must follow all necessary safety and environment rules and procedures, and ensure that their acts or omissions at work do not put the health and safety of self or others at risk.

Contractors shall be responsible for complying with all statutory and contractual requirements on construction safety, health and environment including the general duties imposed on them under the Laws and Regulations of the Government of India, Government of the National Capital Territory of Delhi and other relevant authorities.

The Employer/Engineer-in-Charge shall only deal with health and safety matters through the Contractor and shall hold the Contractor responsible for all his and his approved Sub-contractors, actions. All approved Sub-contractors shall be responsible to the Contractor.

Contractor shall ensure that an adequate level of competent supervision is maintained at the workplace at all times with all supervisory staff having the relevant knowledge, training, and experience to enable them to supervise the work in a proper manner.

Any major breach of the Site Safety measures, relevant Statutory Provisions and Safety Codes, or any other blatant disregard for the health and safety by any person directly or indirectly associated with the works may result in the Employer/Engineer-in-Charge exercising their College in requiring the removal from the Site of the Contractor's Site Manager and/or other personnel. Any person who is removed from the site for breach of safety measures shall not be allowed to be reemployed on any other worksite.

The Contractor shall provide all necessary measures to protect the public from accidents and shall be bound to bear the expenses of defending every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the safety precautions and to pay any damages and costs which may be awarded in any such suit, action or proceedings to any such person or which may with the consent of the Contractor be paid to compromise any claim by any such person.

The safety provisions shall be brought to the notice of all concerned by displaying on a notice board at a prominent place at the work location. Persons responsible for ensuring compliance with the Safety Code shall be named therein by the Contractor.

To ensure effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the Contractor shall be open to inspection by the Engineer-in-Charge or his Representative.



## REPORTING OF ACCIDENTS AND DANGEROUS OCCURRENCES

All accidents and dangerous occurrences shall be recorded by Contractor, regardless of whether or not personnel injury occurs.

The Engineer-in-Charge shall be notified by the quickest possible means, for example by telephone of the following classifications of accidents and incidents and by subsequent written notification within twenty four hours:

Fatal Accident

Major Injury Accident – Any fracture, other than to the fingers or toes, any loss of limb or part of a limb, dislocation of shoulder, hip, knee or spine, loss of sight, any other injury that leads to unconsciousness, requires resuscitation, requires admittance to hospital for more than 24 hours or which causes more than 10 days absence from work.

Dangerous Occurrence

Any Incident Involving A Member Of The Public

The Contractor shall report immediately, orally and in writing, all fatal accidents, and other occurrences requiring reporting, to the police, at the police station in whose jurisdiction the accident occurred.

An accident shall also become reportable to the Engineer-in-Charge if it causes incapacity for more than three days excluding the day of the accident.

Charge

The following information is required in reporting an accident to the Engineer-in-

particulars of the Contractor or approved Sub-contractor employing the injured person; particulars of the deceased or injured person: name, address, occupation, sex, and age; the date, cause or circumstances of the accident; and the nature of the injury, stating whether death or incapacity was caused by the injury.

All dangerous occurrences on site must be reported in writing to Engineer-in- Charge within 24 hours, irrespective of whether there are casualties or not. The following information has to be provided:

the time of the occurrence;

damage to any building, machinery or plant; and

the circumstances in which the accident occurred.

If no one is injured, the above notification is sufficient. In the case of death or serious injury, the accident reporting procedure outlined in para 6.5 must also be followed.

## REPORTING OF FIRES BY CONTRACTOR

The Contractor shall report to the Engineer-in-Charge all fires which occur on site including any fires that have been extinguished by the Contractor himself, and the Engineer-in-Charge may send staff to investigate such fires. The





following information should be provided :-

- time of fire;
- location of fire;
- means of extinguishing the fire;
- injury to any person/damage to any property; and
- the probable cause of fire.

This action is in addition to reporting the incident to the Chief Fire Officer Delhi, and Police in accordance with local regulations.

### SAFETY SIGNS

All safety signage that is displayed in and around the sites shall be in both Hindi and English.

Examples of signs that shall be required shall include amongst others the following:

- Wear Safety Helmets.
- Permit to Work areas
- Wear Safety Footwear.
- Wear Hearing Protection.
- Wear Eye Protection.
- Danger Electricity.
- Danger Crane Overhead.
- Stop Look and Listen
- No Smoking.
- First Aid.
- No Entry signs
- Fire precautions.

(m) Emergency Exit from underground works

All safety signs shall comply with the internationally recognized Safety Colors.

### INDUSTRIAL HEALTH AND LABOUR WELFARE

The Contractor shall be responsible for maintaining healthy working conditions for all his, and his sub-contractors, workers. In particular he shall pay attention to the effects of noise, dust, air pollution and the use of chemicals. If it is not possible to remove the cause of harm then suitable and sufficient Personal Protective Equipment (PPE) should be provided to those workers who could be affected.

If the use of PPE is the only means of providing protection the Contractor shall ensure that all the workers affected are properly trained in the use of the PPE and that adequate supervision is provided to ensure its proper use.

The Contractor shall carry out noise assessments to establish what noise levels his workers are being exposed to. If excessive noise levels above 90dB(A) are found then the contractor shall attempt noise reduction measures. Where it is not possible to reduce the noise level, the Contractor shall provide the workers with suitable hearing protectors, which effectively reduce the sound level at the user's ear to, or below, 90dB(A). The Contractor shall ensure that all the workers



affected are properly trained in the use of hearing protection equipment.

Contractor shall ensure that no worker lifts by hand or carries overhead or over his back or shoulders any material, article, tool or appliances exceeding in weight the maximum limits set out below unless aided by another worker or a mechanical device:-

Adult-Male : 55 kg.

Adult- Female : 30 kg.

#### Toilets

The Contractors shall ensure that an adequate number of toilets are made available at the work site with the ratio being no less than one toilet for every 50 workers or part thereof. The toilets shall be located so that persons do not have to walk more than five hundred meters to use them. The toilets shall have adequate water supply and be kept in a clean and tidy condition at all times.

#### Drinking Water

The Contractors shall ensure that effective arrangements are made to provide and maintain at suitable points at work site a sufficient supply of wholesome drinking water. All such points shall be legibly marked "Drinking Water" in Hindi and English and no such point shall be situated within six meters of any washing place, urinal or latrine.

### EXCAVATIONS

The contractor shall ensure that all excavations are supervised by workers with thorough knowledge and experience of excavation work.

The integrity of the excavation and the support system shall be inspected prior to the commencement of any works on a daily basis with the results of the inspections being formally recorded. All such records shall be kept available for inspection by the Engineer's Representative.

Where there is the possibility of any ingress of water then pumping sumps shall be established with pumps being readily available for use and additional ladders placed for use in the event of an emergency evacuation.

Before digging any excavations, Contractor shall plan against the following;

collapse of the sides;

materials falling onto people working in the excavation;

people and vehicles falling into the excavation;

people being struck by plant;

undermining nearby structures;

Contact with underground services;.

fumes; and

Make sure the necessary equipment needed such as trench sheets, props, etc, are available on site before work starts.

The following general precautions should be observed;



Prevent the sides and the ends from collapsing by battering them to a safe angle or supporting them with timber, sheeting or proprietary support systems.

Do not go into unsupported excavations.

Never work ahead of the support.

Remember that even work in shallow trenches can be dangerous. Proper support may be required to be provided if the work involves bending or kneeling in the trench.

Prevention of materials falling into excavations

No spoil or other materials should be stored within one metre of the sides of excavations. The spoil may fall into the excavation and the extra loading will make the sides more prone to collapse.

It may be made sure that the edges of the excavation are protected against falling materials.

Toe boards may be provided, where necessary.

Wear a hard hat when working in excavations.

Take steps to prevent people falling into excavations. If the excavation is 2 m or more deep, provide substantial barriers, e.g. guard rails and toe boards.

Keep vehicles away from excavations wherever possible. Use brightly painted baulks or barriers where necessary.

(k) Where vehicles have to tip materials into excavations, use stop blocks to prevent them from over-running. Remember that the sides of the excavation may need extra support.

Undermining nearby structures

To prevent the undermining of nearby structures; it shall be ensured that excavations do not affect the footings of scaffolds or the foundations of nearby structures. Walls may have very shallow foundations, which can be undermined by even small trenches. If required, temporary supports may be provided before digging starts.

## LIFTING OPERATIONS

Lifting Appliances:

Contractor shall ensure that all lifting appliances, including synchronized mobile jacks, pit jacks, mobile cranes, tower cranes, gantry cranes, launching beams and lorry mounted cranes, prior to being allowed to work on site shall have available for inspection by the Engineer-in-Charge's Representative a current Certificate of Inspection issued by a Competent Person.

All lifting appliances with a lifting capacity of more than one tonne shall, where practicable, be fitted with Automatic Safe Load Indicators and Audible Warning Devices which shall be kept in an operable condition at all times the lifting appliance is in use. Checks should be made to ensure that the Automatic Safe Load Indicator is properly calibrated and is functioning properly.

All lifting appliances shall be maintained in accordance with the manufacturer's instructions and shall be subject to a regular preventative maintenance program.



All lifting appliances shall be inspected every three months by a third party competent person. Certificates of Inspection shall be available with the lifting appliance.

The operators of lifting appliances shall conduct daily inspections of their respective lifting appliances with the results of the inspections being recorded and kept available for inspection.

The Contractor shall ensure that only thoroughly trained and experienced persons aged twenty-one years and over are allowed to operate lifting appliances.

#### Lifting Gear:

Lifting Gear includes chain slings, rope slings, or similar gear and a ring, link, hook, plate clamp, shackle, swivel or eye bolt.

The Contractor shall ensure that all lifting gear shall be in good condition and shall be tested and certified every six months, with the Safe Working Load being stamped or clearly displayed upon it. Records of test shall be kept available for inspection.

All lifting gear shall be visually inspected before any use and if any defects are found then it shall be removed from site or dismantled / disabled in order to ensure that it is not used in a defective state.

All lifting gear shall be properly stored and not left lying on the ground where it could be damaged or used in an unsafe manner.

#### Lifting Operations:

The Contractor shall ensure that during the course of any lifting operations the following minimum requirements shall be followed:

All lifting operations shall be under the control of a competent "Lifting Supervisor" appointed by the contractor.

Only thoroughly trained and experienced crane drivers shall be allowed to operate cranes.

Only thoroughly trained and experienced slingers and riggers shall be allowed to sling loads and give directions to crane operators.

A standard code of hand signals shall be adopted for controlling the movements of the crane and both the driver and the signaler shall be thoroughly familiar with the signals.

The driver of the crane shall respond to signals from only the appointed signaler but shall obey the stop signal at any time no matter who gives it.

Before commencing any lifting operations the ground conditions on which the crane is to stand shall be investigated in order to ensure that the load bearing capabilities are adequate.

The weight of the load must be known to the crane driver and the stinger/rigger before lifting commences.

No loads are to be stowed over public areas without stopping pedestrians and vehicles first.

No unauthorized persons are allowed into the lifting



zone. No person is allowed to ride the hook of the crane or the loads being lifted.

Any areas where a minimum clearance of six hundred millimeters from the rear of the stowing Kent ledge of the crane cannot be achieved and where persons could be trapped against obstacles then a fence shall be erected to prevent access.

All crane hooks shall be fitted with an operable safety catch.

Wherever practicable all loads shall have tag-lines attached in order to ensure that the load can be controlled at all times.

Provision shall be made to ensure that the lifting slings or chains can be safely removed from the loads once they have been landed.

All lifted loads and stacked materials shall be left in a secure and stable condition at all times.

Whenever working close to isolated overhead power-lines the lifting appliances shall be grounded to earth as a secondary precaution against accidental energisation.

No close working to any live overhead power-lines is permitted without the operation of a strict Permit to Work system being in place.

### WORK IN CONFINED SPACES

The term 'confined space' has two defining features. Firstly, it is a place which is substantially (though not always entirely) enclosed and, secondly, there will be a reasonably foreseeable risk of serious injury from hazardous substances or conditions within the space or nearby.

Some confined spaces are fairly easy to identify, for example, closed tanks and sewers. Others are less obvious but may be equally dangerous, for example closed and unventilated or inadequately ventilated rooms and silos, ducts, culverts, tunnels, boreholes, bored piles, manholes, shafts, excavations, sumps, inspection pits, cofferdams, and building voids.

The most likely hazards of working in confined spaces are as follows:

Flammable Substances and Oxygen Enrichment;

Toxic Gas, Fume or Vapour;

Oxygen deficiency;

The Ingress or Presence of Liquids;

Presence of Excessive Heat,

Excessive Humidity

#### Entry Procedures

Contractors will ensure that only persons, who have been thoroughly trained, experienced and are physically fit shall be allowed to work in Confined Spaces. Persons with any of the following medical conditions shall not be allowed to work in confined spaces:

a history of fits, blackouts or fainting attacks,

a history of heart disease or disorder,

high blood pressure,

asthma bronchitis, or shortness of breath on exertion,

deafness



meniers disease or disease involving giddiness or loss of balance,  
claustrophobia or nervous or mental disorder,  
back pain or joint trouble that would limit mobility in confined spaces,  
deformity or disease of the lower limbs limiting movement.

Chronic skin disease,

Serious defects in eye sight or lack of sense of smell

No smoking shall be allowed in or within 2 meters of the opening to any confined space and suitable warning signs shall be positioned.

Before any confined space work commences the following equipment shall be available for use:

Multi Gas Monitor; or other suitable gas monitoring equipment.

Self contained breathing apparatus.

Full body type harness for each worker

Flame proof Lighting

Ventilation equipment

Tripod and Lifeline Hoist Rope for work in situations where a vertical exit from the confined space is required

The persons involved in confined space working operations shall be trained in use of above mentioned equipment.

When workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that manhole covers are open and manholes are ventilated at least for an hour before workers are allowed to go into them. Manholes so open shall be cordoned off with suitable railing and provide warning signals or boards to prevent accidents to the public.

### SITE ELECTRICITY

The Contractor shall nominate a qualified representative who shall be solely responsible for ensuring the safety of all temporary electrical equipment on Site. The name and contact telephone number of the representative shall be displayed at the main distribution board for the temporary electrical supply so that he can be contacted in case of an emergency.

All electrical installation work on Site shall be carried out in accordance with the requirements laid down in the Specification. All work shall be supervised or executed by qualified and suitably categorized electricians.

All Temporary Electrical Site installations and distribution systems shall be in accordance with Indian Electrical Regulations, The Power Companies' Supply Rules, BS 7671 Requirements for electrical installation, the IEE Wiring Regulations (16th Edition), BS 7375 Distribution of Electricity on Construction and Building Sites; BS 4363 Distribution Assemblies for Electricity Supplies for Construction and Building Sites.

Distribution equipment utilized within the temporary electrical distribution system shall incorporate the following features:



- (a). flexibility in application for repeated use;  
Suitability for transport and storage;  
robust construction to resist moisture and damage; and  
Safety in use.

All cabling shall be run at high level whenever possible and firmly secured to ensure it does not present a hazard or obstruction to people and equipment.

Protection shall be provided for all main and sub-circuits against excess current, residual current and earth faults. The protective devices shall be capable of interrupting (without damage to any equipment or the mains or sub-circuits) any short circuit current that may occur.

Earthing and bonding shall be provided for all electrical installations and equipment to prevent the possibility of dangerous voltage rises and to ensure that faults are rapidly cleared by installed circuit protection.

Only plugs and fittings of the weatherproof type shall be used.

Cables shall be selected after full consideration of the conditions to which they will be exposed and the duties for which they are required. For supply cables up to 3.3kV the cable armouring shall be used as the earth return in conditions where the cable is continuously extended and not subject to continuous movement after installation.

When workers are employed on electrical installations which are already energized, insulating mats, working apparel such as gloves, sleeves and boots, as may be necessary, shall be provided. Workers shall not wear any rings, watches and carry keys or other material which are good conductors of electricity.

#### WELDING AND CUTTING

Contractors shall ensure that all welding, cutting and gouging is carried out so that the risks are kept at a minimum.

All equipment must be in good condition & properly installed.

Flexible hoses, cables and connections must be free from damage or risk of damage in service. Cables and hoses shall have adequate carrying capacity.

Welders shall wear the correct personal protective equipment which includes the following;  
face and eye protection with correct grade of shield;  
gauntlet gloves;  
safety footwear  
welders apron or fire retardant overalls;  
The atmosphere in the vicinity of work must be known to be safe to breathe and free from flammable gases.



Adequate ventilation and fume extraction must be provided and used as required by the risk assessment and especially in enclosed areas and pits.

Surfaces to be heated by the process must be cleaned of contaminants that may be degraded by heat or give off noxious fumes (e.g. paints, plastics, zinc coating).

Naked flames or high temperature surfaces must not be allowed in the vicinity of volatile solvents.

All moveable flammable materials must be removed from the vicinity of work and fireproof covers placed over all flammable materials that cannot be removed.

During all welding the work piece and any access equipment must be safely secured.

#### Oxy-fuel Gas Processes

Handle cylinders carefully, keep outside enclosed areas and secure in an upright position. Keep oxygen cylinders away from fuel gas cylinders where possible.

Flash back arresters shall be fitted to both the fuel gas and oxygen cylinders.

Non return valves shall be fitted to the torch or cutting torch;

Ensure screwed fittings and hoses are correct and keep screwed and sealed surfaces free of contaminants, such as oil and grease.

Close cylinder valves when flame is extinguished.

Ensure any vessel, drum or tank that has contained flammable or toxic substances has been properly cleaned and inspected before subjecting it to hot work.

Checks for gas leaks should be carried out using soapy water.

Remove all torches from enclosed areas when not in use.

Suitable fire extinguisher to be available at all places where hot work is being carried out.

Use firewatchers if there is a possibility of ignition unobserved by the operator (e.g. on the other side of bulkheads).

#### Arc Cutting, Gouging and Welding Processes

Connect the welding current return cable to the workpiece close to the arc point or to a well electrically conductive support structure in good contact with the workpiece. Also, connect the workpiece or the support structure to a separate earth terminal.





Take precautions against the risk of increased fume hazards when welding with chrome containing fluxed consumables or high current metal inert gas (MIG) or tungsten inert gas (TIG) processes.

Avoid being in contact with water or wet floors when welding. Use duckboards or rubber protection. Provide screens to limit exposure of others to glare from arcs.

Use the correct eye and face protection with the correct filter glass.

Use a low voltage open circuit relay device if welding with alternating current in constricted or damp places.

### HEAVY PLANT OPERATIONS

The contractor shall ensure that only safe and well-maintained plant and equipment shall be allowed to operate on any of the sites.

All operators of heavy plant such as, earth movers, piling rigs, etc. shall be medically fit, over eighteen years of age and be thoroughly trained and experienced to operate the equipment.

No unauthorized person shall be permitted to ride on plant.

The operators shall conduct daily inspections of their respective items of plant with the results of these inspections being recorded and the records kept available for inspection.

All mobile heavy plant shall be equipped with at least one 5kg Dry Powder Fire Extinguisher, carried at a suitable position so as to ensure its easy availability.

Whenever heavy plant is operating in congested areas, thoroughly trained and experienced banksmen shall be deployed to control the plant and personnel movement and interface.

Any waste engine oil and filters following any on site servicing and maintenance shall be removed from the sites and disposed of in an environmentally conscious manner at authorized disposal locations. .

All drums of fuel oil shall be stored on drip trays or the fuel shall be kept in bunded bulk storage fuel tanks, with quantities stored being kept to a minimum.

The storage areas shall have dry powder fire extinguishers positioned in close proximity to their location for use in an emergency.

### DEMOLITION

The Contractor shall ensure that all demolition works shall be carried out in a controlled manner under the management of experienced and competent



supervision.

Prior to any demolition commencing, a survey shall be conducted to identify if there are any hazardous materials present, for example the presence of materials such as asbestos and lead.

If any hazardous materials are found, then consideration shall be given as to whether they shall need to be removed by a Specialist Agency or Sub-contractor prior to the main demolition works commencing.

Before the demolition commences all relevant notifications will need to be given to the local authorities and media.

Measures for protection to the public shall be required to be put into place in order to give protection from any possible falling debris and dust generation.

All power supplies and services shall be disconnected before any demolition work commences.

Before any demolition work is commenced and also during the process of the work, all roads and open areas adjacent to the work site shall either be closed or suitably protected.

## 16A FALSEWORK/FORMWORK

16A.1 The contractor shall ensure that all false work / formwork-has been properly designed and is suitable for the purpose.

16A.2 All designed false work / formwork shall be erected in strict accordance to the design.

16A.3 Prior to the loading and subsequent striking of false work / formwork, the same shall be inspected to ensure that they have been erected in the prescribed manner.

16A.4 Adequate provision shall be made on the working platforms for the concrete placement operations, these shall include locations for vibrators and the unobstructed movement of personnel controlling the rubber hose during the concrete pumping operations or the concrete skip during any skipping operations.

16A.5 The Contractor shall use the following checklist to check that false work / formwork is being used safely;

have the design and the supports for shuttering and false work / formwork been checked?

is it being erected safely from steps or proper platforms?

are the props plumb and properly set out?

are the bases and ground conditions adequate for the loads?

are the correct pins used in the props?

are the timbers in good condition?

is it inspected by a competent person against the agreed design before permission is given to pour concrete?

## 16B WORKING AT HEIGHT

Suitable scaffolds shall be provided for workmen for all work that cannot safely be done from the ground, or from solid construction except for such short period work as can be done safely from ladders. When a ladder is used, an extra labourer shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable foot-holds and hand-holds shall be provided on the ladder, which shall be given an inclination not steeper than 1/4 to 1.



Scaffolding or staging more than 3.25 meters above the ground or floor, swung or suspended from an overhead support or erected with stationary support, shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 meter 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 openings 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 support or structure.

Working platforms, gangways, and stairways shall be so constructed that they do not sag unduly or unequally, and if the height of any platform or gangway or stairway is more than 3.25 meters above ground level or floor level, it shall have closely spaced boards, have adequate width and be suitably provided with guard rails as described in (ii) above.

Every opening in the floor of a structure or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of one meter.

Safe means of access and egress shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 meters in length. The width between side rails in a rung ladder shall in no case be less than 30 cm for ladders up to and including 3 meters in length. For longer ladders the width shall be increased at least 6 mm for each additional 30 cm of length. Spacing of steps shall be uniform and shall not exceed 30 cm.



### TEMPORARY TRAFFIC ARRANGEMENTS AND CONTROL

Temporary traffic diversions and pedestrian routes shall be surfaced and shall be provided where work on roads or footpaths obstruct the existing vehicular or pedestrian access. The relevant work shall not be commenced until the approved temporary traffic arrangements and control have been implemented.

Temporary traffic arrangements and control for work on public roads and footpaths shall comply with the requirements of the College.



documents containing such requirements shall be kept on the Site at all times.

#### USE OF ROADS AND FOOTPATHS

Public roads and footpaths on the Site in which the work is not being carried out shall be maintained in a clean and passable condition.

Measures shall be taken to prevent the excavated materials, silt or debris from entering gullies on roads and footpaths; entry of water to the gullies shall not be obstructed.

Surfaced roads on the Site and leading to the Site shall not be used by tracked vehicles unless protection against damage is provided.

Contractor's Equipment and other vehicles leaving the Site shall be loaded in such a manner that the excavated material, mud or debris will not be deposited on roads. All such loads shall be covered or protected to prevent dust being emitted. The wheels of all vehicles shall be washed when necessary before



## REINSTATEMENT OF PUBLIC ROADS AND FOOTPATHS

Temporary diversions, pedestrian access and lighting, signing, guarding and traffic control equipment shall be removed immediately when they are no longer required. Roads, footpaths and other items affected by temporary traffic arrangements and control shall be reinstated to the same condition as existed before the work started or as permitted by the Engineer-in-Charge immediately after the relevant work is complete or at other times permitted by the Engineer- in-Charge. The Contractor shall submit his design for the reinstatement to the relevant authorities and obtain their prior approval to carrying out the work.

This shall be considered incidental to work and nothing extra shall be paid to contractor in this regard.

## PERSONAL PROTECTIVE EQUIPMENT

The Contractor shall at all times keep and maintain an adequate supply of suitable personnel protective equipment which shall be readily available for use at all times on the sites, and would include amongst others the following items:

- Safety Helmets.
- Hearing Protection.
- Respiratory Protection.
- Eye Protection.
- Protective Gloves.
- Safety Footwear.
- High Visibility Clothing to BS EN 471 Class 3 standard

All sites shall be designated as HARD HAT and SAFETY BOOTS SITES and as such an adequate supply of safety helmets and safety boots shall be kept available for use by all staff, workers and authorized visitors to the sites.

The Contractor shall remove from the site any worker who consistently refuses to wear the appropriate personal protective equipment.



All workmen at site shall be provided with safety helmets and yellow/orange jackets. Workmen required on site during night hours shall be provided with fluorescent yellow jackets with reflective lopes. Workers employed on mixing asphaltic materials, cement, lime mortars, concrete etc. shall be provided with protective footwear, protective goggles. Those engaged in handling 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-shield. Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

#### FIRST AID

At every workplace, there shall be maintained in a readily accessible place first aid appliances including an adequate supply of sterilized dressings, bandages, sterilized cotton wool, eye irrigation sterile solution, disposable gloves, ointments for burns/cuts, pressure dressings, paper towels, general purpose medicines etc. as prescribed in the Factory Rules of the State in which the work is carried on. The appliances shall be kept in good order and, in large work places, they shall be placed under the charge of a responsible person who shall be readily available during working hours. In each site office and location one employee, suitably trained in first aid, should be available at all working hours for the purpose of attending to emergencies.

#### FIRE PRECAUTIONS

The Contractor shall be responsible for supplying and maintaining adequate fire precaution facilities on all his sites. The following minimum standards should be adhered to:

The Contractor shall ensure that specially trained personnel are available to deal with fires due to electrical causes, gas explosions etc.

A good standard of housekeeping shall be maintained at all times on the sites.

No accumulations of rubbish shall be allowed to gather.

Combustible scrap and other construction debris shall be disposed off site on a regular basis.

If scrap is to be burnt on site, the burning site should be specified and located at a distance no less than 12 metres from any construction work or any other combustible material.

Signage shall be erected at prominent positions showing the correct use of portable first aid fire extinguishers.

Emergency plans and Fire Evacuation plans shall be prepared and issued. Mock drills should be held on a regular basis to ensure the effectiveness of the arrangements.

#### Fire Fighting Equipment

At various locations around the site clearly visible fire points shall be established for use in an emergency and each fire point should have available as a minimum the following type of equipment:-

Dry Powder Extinguisher.

Water Type Extinguisher.

Bucket of Sand.



Recharging of fire extinguishers and their proper maintenance should be ensured and as a minimum should meet Indian National Standards.

The Telephone Number of the local fire brigade should be prominently displayed near each telephone on site. Supervisors and workmen at the site should be trained in the use of firefighting equipment provided at the site.

#### Storage of Flammable Liquids

All flammable liquids shall be kept in a secure fire resistant store protected from electrical sparks welding sparks open flames and smoking.

Only such amounts of flammable liquids should be issued as are required for immediate use. Cans for carrying flammable liquids should be leak-proof and properly stoppered and clearly marked "FLAMMABLE LIQUID".

Rags soaked in paints, kerosene and other flammable liquids should be disposed of daily under supervision. Large quantities of such rags should not be allowed to accumulate.

All Diesel fuel storage tanks shall be made bund around in order to control any spillage or leakage that may occur.

"NO SMOKING" signs shall be prominently displayed at all areas where flammable materials are stored.

#### SITE PERIMETER HOARDING

The Contractor shall be required to keep the site as safe and secure as possible at all times, including the erection of site perimeter Hoarding which shall also deter trespassers both adult and children alike.

The Contractor shall provide a solid two meter high securely erected barricade around the perimeter of the site, with agreed and guarded access and egress points for both personnel and vehicles.

At each entrance to the site the Contractor shall erect a large billboard warning all persons who enter the site that they are required to wear the appropriate Personal Protective Clothing and that no unauthorized access is allowed.

Wherever the fence runs adjacent to the highway with no buffer-zones then the fence shall have traffic warning lights duly affixed to it.

Wherever the fence borders on pedestrian footpaths lighting shall be provided to illuminate the pedestrian routes. The positioning of the fence-line shall not reduce the width of the pedestrian footpath to less than 900 mm in order to be able to accommodate disabled persons in wheelchairs.

Site perimeter fencing shall be washed at least once a month and repainted at least annually. The site fencing shall need to be inspected on a regular basis in order to ensure that the integrity of the fencing is maintained at all times as far as is practicable.

#### VISITORS TO SITE

All visitors to site shall report to the Contractors site offices where they shall be issued with appropriate Personal Protective Equipment if they are to go out onto the site work areas. Any visitors going out to the site work areas shall be accompanied at all times by a member of the site personnel.

#### ENVIRONMENTAL FRIENDLY CONSTRUCTION PRACTICES

##### Containment of Air Pollution

##### During Transport of Material

The Contractor shall take precautions. to minimize visible particulate matter from being deposited upon public roadways as a direct result of his operations. Precautions





include removal of particulate matter from equipment before movement to paved streets or prompt removal of material from paved streets onto which such material has been dropped.

All construction equipment should be washed clean of visible dirt/mud before



exiting the construction sites. Any deposition of material on public streets by construction equipment should be removed by manual sweeping, or by deploying electro-mechanical devices.

The Contractor shall provide a wash pit or a wheel washing and/or vehicle cleaning facility at the exits from work sites such as construction depots and batching plants. At such facility, high-pressure water jets will be directed at the wheels of vehicles to remove all spoil and dirt. Water shall be pumped through an electrically operated pump set, to hydrants attached with rubber hoses, by activation of push button located at the hydrant, allowing for upto 10 minutes of wash time.

Wheel washing facilities will be provided with efficient drainage, incorporating silt traps to prevent any excessive buildup of water. These facilities could include water re-circulation apparatus to minimize water consumption. At the wheel wash facility, water, dirt, gravel etc. shall be drained into precast trench drains with removable grated cover. This dirty water shall flow, through a piping, into solids separator and from there to oil separator before final discharge.

Where wheel-washing facility is not possible, the contractor shall ensure manual cleaning of wheels by wire brushes or similar suitable means.

The Contractor shall ensure that vehicles with an open load carrying area used for moving potentially dust-producing materials shall have properly fitting side and tailboards. Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be carried in vehicles fitted with covers.

#### During Dumping of Materials At Site

The Contractor shall place material in a manner that will minimize dust production. Material shall be stabilized each day by watering or other accepted dust suppression techniques.

The heights from which materials are dropped shall be the minimum practical. height to limit fugitive dust generation.

The Contractor shall stockpile material in the designated locations by the Employer with suitable slopes. Access to the site shall be regulated for entry of men, material and machine.

During dry weather, dust control methods such as water sprinkling must be used daily especially on windy, dry day to prevent any dust from blowing. During rains, the stockpile may be covered with tarpaulin or similar material to prevent run off.

The Contractor shall provide water sprinkling at any time that it is required for dust control use. Dust control activities shall continue even during work stoppages

#### At Construction Site

At each construction site, the Contractor shall provide storage facilities for dust generating materials and shall be closed containers/bins or wind protected shelters or mat covering or walled or any combination of the above to the satisfaction of the Employer. The Contractor shall spray water at construction sites as required to suppress dust, during handling of excavation soil or debris or during demolition.

Stockpiles of sand and aggregate greater than 20m<sup>3</sup> for use in concrete manufacture shall be enclosed on three sides, with walls extending above



the stockpile and two (2) meters beyond the front of the stockpile.

Effective water sprays shall be used during the delivery and handling of all raw sand and aggregate and other similar materials, when dust is likely to be created and to dampen all stored materials during dry and windy weather.

Areas within the Site such as construction depots and batching plants, where there is a regular movement of vehicles shall have an approved hard surface that is kept clear of loose surface material.

Unless the Engineer-in-Charge has given consent otherwise, the Contractor shall restrict all motorized vehicles on the Site to a maximum speed of 15 kilometers per hour and confine haulage and delivery vehicles to the designated roadways inside the site.

At the Batching plant the following additional conditions shall be complied with:

The Contractor shall undertake at all times the prevention of dust nuisance as a result of his activities.

The Contractor shall frequently clean and water the concrete batching plant and crushing plant sites and ancillary areas to minimize any dust emission.

The Contractor shall erect hoardings securely around all construction work sites during the main construction activity, to contain dust within the site area and also to reduce air turbulence caused by passing traffic. The hoarding shall be safely secured to the ground to prevent from toppling with minimum gap between the base of hoarding and ground surface.

#### During Drilling and Blasting

Water spray should be used to control dust during breaking of rock/concrete.

During blasting operations, appropriate precautions should be taken to minimize dust such as the use of blast nets, canvas covers and watering.

Wire mesh made of heavy-duty tyres or sand bags should be used over blast area on each shot to prevent flying rock and reduce dust.

Blasting technique should be consistent not only with nature and quantity of rock to be blasted but also the location of blasting.

The contractor shall give due preference to explosives with better environmental characteristics.

#### Containment of Water Pollution

At construction sites, depots and batching plants temporary drainage works should be maintained, removed and reinstated as necessary and all other necessary precautions should be taken for avoidance of damage by flooding and silt.

Sedimentation tanks or other acceptable measures, of sufficient capacity to trap silt-laden water before discharge into the outlet drain should be provided. The system should be flexible and be able to handle multiple inputs from a variety of sources.

Temporary open storage of excavated materials from cut and cover-tunneling work used for backfill on site should be covered with tarpaulin or similar fabric



during rainy season or at any time of the year when rainstorms are likely. Washout of construction or excavated materials should be diverted to drainage system through appropriate sediment traps.

Bentonite slurries or other grouts used in diaphragm wall construction piling and other concrete works should be collected in a separate slurry collection system. If reuse is not practicable then it should be disposed off at nearest landfill site after obtaining permission from agency owning the landfill and under the conditions imposed by the agency concerned, or to a different disposal location as advised by the Employer.

The Contractor shall discharge wastewater arising from site offices, canteens or toilet facilities constructed by him into sewers after obtaining prior approval of agency controlling the system. A wastewater drainage system shall be provided by the Contractor to drain wastewater into the sewerage system.

Surface run-off from construction sites, depots should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps silt traps or sediment basins.

Perimeter channels/drains should be constructed in advance of site formation works and earthworks. Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, to ensure that these facilities are functioning properly at all times.

Construction works should be programmed to minimize soil excavation works in rainy seasons (July to September). If excavation in soil could not be avoided in these months or at any time of year when rain are likely, for the purpose of preventing soil erosion, temporarily exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Arrangement should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of rains.

Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections.

Rainwater pumped out from trenches or foundation excavation should be discharged into storm drains via silt removal facilities.

Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.

Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into sewers. Discharge of surface run-off into sewers must always be



prevented in order not to unduly overload the sewerage system.

Groundwater pumped out of wells, etc. for the lowering of ground water level in basement of foundation construction, and groundwater seepage pumped out of tunnels under construction should be discharged into storm drains after the removal of silt in silt removal facilities.

#### Containment of Noise

To the extent required to meet the noise limits, the Contractor shall use reasonable efforts to include noise reduction measures listed below to minimize construction noise emission levels. Noise reduction measures include, but not limited to the following:

Minimize the use of impact devices, such as jackhammers, and pavement breakers. Where possible, use concrete crushers or pavement saws for tasks such as concrete deck removal and retaining wall demolition.

Equip noise producing equipment such as jackhammers and pavement breakers with acoustically attenuating shields or shrouds recommended by the manufacturers thereof, to meet relevant noise limitations.

Use construction equipment manufactured or modified to dampen noise and vibration emissions, such as:

Use electric instead of diesel-powered equipment.

Use hydraulic tools instead of pneumatic impact tools.

Maximize physical separation, as far as practicable, between noise generators and noise receptors. Separation includes following measures:

Provide enclosures for stationary items of equipment and barriers around particularly noisy areas on site.

Locating stationary equipment so as to minimize noise and vibration impact on community. To the extent feasible, configure the construction site in a manner that keeps noisier equipment and activities as far as possible from noise sensitive locations and nearby buildings. Plant and equipment known to emit noise strongly in one direction should where possible, be oriented in a direction away from noise sensitive receptor and reduce the number of plant and equipment operating in critical areas close to noise sensitive receptors.

Scheduling truck loading, unloading, and hauling operations so as to minimize noise impact near noise sensitive locations and surrounding communities.

Minimize noise intrusive impacts during most noise sensitive hours. Plan noisier operations during times of highest ambient noise levels. Keep noise levels relatively uniform; avoid excessive and impulse noises.

Equipment and plant are not to be kept idling when not in use.

Schedule work to avoid simultaneous activities that both generate high noise levels.

For diesel generator sets, the noise from the DG set shall be controlled by providing an acoustic enclosure or acoustic treatment of the room for DG sets. Such acoustic enclosures/acoustically treated rooms, shall be so designed for minimum 25 dB(A) insertion loss or for meeting the ambient noise standards, whichever is on higher side.

#### Containment of Waste



Handling and disposal of waste like General refuse, Construction Waste including waste from excavated material etc. may cause environmental degradation and nuisance. To prevent it, such waste shall be handled and disposed properly. As such, transportation and disposal of all waste shall be strictly managed by the Contractor.

#### General Refuse

Handling and disposal of general refuse shall cope with the peak construction workforce during the construction period. Provided the refuse is stored and transported in accordance with good practice and disposed at licensed landfills, the negative environmental impacts would be minimal. General refuse shall be stored in enclosed bins or units separate from construction and chemical wastes. An authorised waste collector should be employed by the contractor to remove general refuse from the site, on a daily basis to minimize odour, pest and litter impacts.

#### Construction Waste

Construction Waste arising from the project construction activities and from the demolition of existing structures where necessitated shall be regularly sent for dumping in nearest sanitary landfill sites.

#### Chemical Waste

Chemical waste is likely to be generated by construction activities shall be stored in the suitable containers. Containers used for the storage of chemical waste should:

- Be suitable for the substances they are holding, resistant to corrosion, maintained in good condition, and securely closed.

- Be of adequate capacity and

- Display a label in English and Hindi as to the contents, quantity and safe method of disposal in accordance with instructions contained in MSDS.

The storage area for chemical waste should:

- Be clearly labeled and used solely for the storage of chemical waste;

- Be enclosed on at least three sides;

- Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;

- Have adequate ventilation;

- Be covered to prevent rainfall entering and

- Be arranged so that incompatible materials are adequately separated. Disposal of chemical waste should be via a licensed waste collector; duly authorized by MOEF or State Pollution Control Board as the case may be. License of the waste collector shall be shown to the employer/engineer on demand.

#### Hazardous Waste

Classification of waste as Hazardous shall be in accordance with Hazards Waste Management & Handling) Rules 1989, and 2003 or its latest amendment.

The contractor shall identify all the hazardous waste generated as a result of his



activities. If such waste is generated then the contractor shall apply to State Pollution Control Board for 'authorization' and dispose the same only to currently authorized recyclers (a list of which can be obtained from state pollution control board) under intimation to the Employer/Engineer.

The Rules given above shall govern the Classification, Handling, Storage and disposal of such Hazardous Waste.

Hazardous waste would mainly arise from the maintenance of equipment which may include, but not be limited to, used engine oils, hydraulic fluids and waste fuel; spent mineral oils/cleaning fluids from mechanical machinery; scrap batteries or spent acid/alkali; and spent solvents/solutions, some of which may be derived, from equipment cleaning activities.

For disposal of waste requiring special attention and hazardous waste the contractor shall enter into agreement with authorized agencies dealing with the same.

The Contractor is responsible for the correct storage and handling of waste oil/waste chemical containers unit such a time that they are transported to the chosen disposal area or waste oil containers.

All waste collection containers shall be of appropriate size with a closed lid. Each container will be clearly labeled both with a color code system and labeled in Hindi and English. Original labels of empty containers should be completely covered over and the contents of the type of waste stored in the used containers clearly indicated.

#### Transportation of Waste

The transportation of construction spoil shall be allowed only to officially designated dumpsites after obtaining necessary permission from appropriate College. In order to avoid dust or odour impacts, vehicles leaving a site carrying excavate should have their load covered. Vehicles should be routed as far as possible to avoid sensitive receivers in the area.

#### HOUSEKEEPING

Work site shall be kept reasonably clean, kept free from obstruction and any construction equipment, tools, and materials etc. shall be properly stored. Any wreckage, rubbish shall be temporarily stored in wreckage and rubbish bins. These wreckage and rubbish bins shall be cleaned at frequent intervals.

General Housekeeping shall be carried out and ensured at all times at work sites, Labour Camps, Stores and Offices.

Full height fence, barriers etc. will be installed at the site in order to preserve the surrounding area from excavated soil, rubbish etc which may cause inconvenience to public.

Every individual would be responsible for housekeeping in his work area i.e.

At Work Site: All workers shall clean their work place after completion of their job. Supervisor shall ensure good housekeeping of their respective work area through their workers.



At Labour Camp: All workers shall be responsible to maintain good housekeeping and hygienic condition in their respective rooms/dormitories. The Contractor shall ensure the availability of dustbins at required place and regular cleaning of rooms, kitchens, toilet blocks and dustbins. Safe disposal of all waste materials, shall also be ensured. Arrangement for regular fumigation shall be made by the contractor.

At Store: Proper access and stacking shall be ensured at the Stores. A list will display daily stock of materials. All work material should be stored in clearly marked containers or at designated storage area.

#### Avoidance of Nuisance

The Contractor shall take all precautions to avoid any nuisance arising from his operations. This shall be accomplished, wherever possible by suppression of nuisance at source rather than abatement of the nuisance once generated.

Following site clearing and before construction, the Contractor shall remove all trash, debris and other weeds.

The Contractor shall ensure that the work place is free of trash, garbage, debris and weeds. The Contractor shall provide at site, metal or heavy-duty plastic 'Refuse Containers' with tight fitting lids for disposal of all garbage or trash associated with food. The containers shall not have openings that allow access by rodents.

To keep the area free of litter and garbage, specific locations shall be designated for consuming food and snacks to prevent random disposal of waste. All waste shall be deposited in the refuse containers. Suitable all weather signage shall be prominently displayed for compliance of these requirements.

The refuse containers shall be kept upright with their lids shut. These containers shall be emptied at least once daily by the Contractor to maintain site sanitation. There shall be different containers for bio-degradable/recyclable and hazardous (flammable) wastes.

All plants/equipment/machinery shall be well maintained by regular servicing and kept free from oil/grease dripping. Drip pans of suitable size shall be used to collect oil leakages and spills. The area shall be cleaned after completion of maintenance/repair and generated waste disposed off in approved manner.

#### **Accommodation for Labour:**

**Accommodation of Labour is not possible in the College. The contractor is required to make independent arrangement for accommodation of labour.**





### CAMP DISCIPLINE

The Contractor shall take requisite precautions, and use his best endeavours to prevent any riotous or unlawful behaviour by or amongst his workmen, and others, employed directly or through sub-contractors. These precautions shall be for the preservation of the peace and protection of the inhabitants and security property in the neighborhood of the Works. In the event of the Employer requiring the maintenance of a Special Police Force at or in the vicinity of the site, during the tenure of the work, the expenses thereof shall be borne by the Contractor and if paid by the Employer, shall be recoverable from the Contractor.

The sale of alcoholic drinks or other intoxicating drugs or beverages upon the work, in any labour camp, or in any of the buildings, encampments or tenements owned or occupied by, or within the control of, the Contractor or any of his employees directly or through sub-contractors employed on the work, shall be forbidden, and the Contractor shall exercise his influence and College to secure strict compliance with this condition. The Contractor shall also ensure that no labour or employees are permitted to work at the site in an intoxicated state or under the influence of drugs.

The Contractor shall remove from his camp such labour and their families, as refuse protective inoculation and vaccination when called upon to do so on the advice of the Medical College. Should Cholera, Plague or any other infectious disease break out, the Contractor shall at his own cost burn the huts, bedding, clothes and other belongings of or used by the infected parties. The Contractor shall promptly erect new huts on healthy sites as required by the Employer/Engineer-in-Charge, within the time specified by the Employer/Engineer-in-Charge, failing which the work may be done by the Employer/Engineer-in-Charge and the cost recovered from the Contractor.

#### Anti-malarial precautions:

The Contractor shall, at his own expense, conform to all anti-malarial measures including filling up any borrow pits which may have been dug by him.

#### Awareness and Education of HIV/AIDS

The contractor shall provide/carryout HIV/AIDS awareness and training program to its labour and management, at least twice per year during the construction period.



#### Child Labour Prohibition

The contractor shall not employ Child Labour for any works or in any manner under the Contract at any time. In the event that the Contractor uses child labour, Employer may terminate the Contract.



## Annexure – B

### CONTRACTOR'S SITE LABORATORY

#### SITE LABORATORY

The Site Laboratory shall consist of the following accommodation 1 laboratory, 1 Store Room

The laboratory, store room etc. shall be in one building; the curing tank may be in a separate area, but if so it shall be adjacent to the laboratory building & connected to it by a level, weatherproof passageway.

#### STANDARD OF CONSTRUCTION

The laboratory shall be constructed to the best engineering practices and as approved by the Engineer – in- charge.

A water tank with minimum capacity of 2000 litres shall be installed, as a source of constant water supply of laboratory.

In the case of sinks for washing samples, adequate trapping and/or separating devices shall be provided to ensure the proper functioning of the facility.

#### FURNISHING AND FIXTURES

The contractor's site laboratory shall be provided with required furnishing and fixtures.

#### LABORATORY EQUIPMENT

The Contractor shall submit to Engineer –in – Charge offer for approval within 2 weeks of the order to commence work the name of the supplier it intends to use for each piece of apparatus together with the relevant catalogue number.

The equipment in testing laboratory shall be maintained to accuracy appropriate to the required testing methods with routine calibration by an accredited organization as recommended by the Engineer. Equipment shall also be calibrated after maintenance or relocation.

The Contractor's site laboratory shall be equipped with the following material testing equipment as a minimum. The nature and quantity of equipment required for testing may be varied by the Engineer depending on the detail of the Contractor's Design and Construction methods or for any other reason which he deems to be valid and necessary for the proper quality control.

Weight Balance capacity 500 gm, sensitivity 0.01 gm	1 set
Sieve Analysis	
Sieve shaker (portable)	1 unit
Coarse sieves in sizes from 100mm to 10mm	1 set each



Fine Sieves 10 MM to 75 Micron	1 set each
Pans & Covers	
Unit Weight of Aggregate	
Weight Balance, 100 kg, capacity with 10 gm precision	1 No
Tamping rod 16mm diameter x 600mm long	1 No
Measuring containers (3,10,15,30 liters)	1 each
Flakiness and Elongation	
Flakiness gauge, elongation index	1 set
Slump cone	1 No.
Mixing pan for concrete	1 No.
Scoop for general purpose	2 No.
Concrete cube mould, 450 mm, 150 mm & 70 mm	12 each
Concrete curing tank with capacity for 500 cubes	1 No.
Compression testing machine (hydraulic/simple hand operated)	1 No.
Vernier caliper	1 No.
Steel rule, 300 mm long graduated	1 No.
Rubber gloves	10 pr.
Cotton working gloves	20 pr.
First aid kit	1 set
Wire brush	6 No.
Steel tape, 3m,5m,30m	1 each
Shovel: Square Mouthed	2 No.
Screw Gauge	1 NO.
3 m straight edge & measuring wedge	1 No.
Auto level instrument	1 No.
Straight edge - 2.1 metre .	2 NO.
Sprit level	2 NO.
Safety requirement (helmet, illumination Wiest & Gumboots etc.)	20 Sets



## **SECTION 4**

## **APPENDIX TO BID**



### Appendix to Bid

S. No.	Items	General(GCC)/ Special(SCC)/ Additional(ACC) Conditions of Contract Clause/ Sub- clause	Particular Condition for this Contract
1	Determination of market rates	GCC : Definitions : Clause 2(x)	Contractor's profit and overheads @ 15% shall be applied while determining market rates on the basis of cost of material & labour at site.
2	Date of Commencement of work	GCC : Definitions : Clause 2(xiii)	Minimum 7 days from the date of issue of Letter of Acceptance (LOA) or as mentioned in letter of Commencement if issued.
3	Performance Guarantee	GCC/SCC Clause 1(i)	Performance guarantee to be submitted within 15 days from the date of issue of Letter of Acceptance
4	Performance Guarantee	GCC/SCC Clause 1(i)	Maximum allowed extension beyond the period specified in S.No. 3 above : 3 days
5	Milestone to be achieved during execution	GCC Clause 2	Milestone-1 & 2  The amount of Rs.20 lacs to be withheld by Employer/Engineer-in-Charge, if the Contractor fails to achieve milestone.
6	Incentive for early completion	GCC Clause 2A	The provisions of this clause shall not be applicable for this contract.
7	Time and Extension for delay	GCC Clause 5	Time allowed for execution of works: 6 months from the date of Commencement of work Date of Commencement of works: minimum 7 days from the date of issue of Letter of Acceptance(LOA) or as mentioned in letter of commencement



8	Milestones to be achieved during execution	GCC Clause 5.1	Milestone 1 (0 to 3 months), Milestone 2 (4 to 6 months)
9	Payment on Intermediate Certificate	GCC/SCC Clause 7	Min. Gross amount of work done value since last bill for being eligible for interim payment: Rs. 20 lacs (Rupees Twenty Lacs only) or as permitted by Engineer-in-Charge.
10	Materials to be provided by Contractor	GCC Clause 10A	The lab shall be equipped at least with the testing equipments as indicated in Annexure-B attached with Special/Additional Conditions of Contract
11	Mobilization advance	GCC/SCC Clause 10B(ii)	Mobilization Advance will be provided on fulfillment of all conditions stipulated in Contract in this regard
12	Plant, Machinery & Shuttering Material Advance	GCC/SCC Clause 10B(iii)	Not applicable
13	Payment on account of increase in prices/wages due to statutory order(s)	GCC clause 10C	Component of labour express as percentage of value of work 10%
14	Payment due to variation in prices of materials after receipt of bid	GCC Clause 10CA	Not applicable
15	Payment due to Increase/Decrease in prices/wages(excluding material covered under clause 10CA) after receipt of bids for works	GCC Clause 10CC	Provisions of this clause shall not be applicable for this Contract as the Contract period for the work is less than 18 months



16	Deviation, Deviated Quantities, Pricing	Last Para of GCC clause 12.2 i.e. "In case of contract items, substituted .....the rates so determined and GCC clause 12.3	<p>The quantities of items mentioned Bill of Quantities in this contract is approximate, and liable to vary during the actual execution of the Work. Some items / group of items may have to be altered, added or omitted. The Contractor shall be bound to carry out and complete the stipulated work as instructed by Engineer-in-Charge irrespective of the magnitude of variations including additions, alternations or omissions in the Bill of Quantities, individual items specified in the Bill of Quantities. Variations in individual BOQ items shall be paid at BOQ rates except in the situation as provided for below:</p> <p>If the quantum of variation in any BOQ item is such that, in the opinion of Engineer-in-Charge/Contractor, the rate in the contract for any BOQ item, by reason of such variation, is rendered inappropriate, then, after due Consultation by Engineer-in-Charge with the Employer and Contractor, a suitable revised rate shall be agreed upon between Contractor &amp; Engineer-in- Charge. In the event of disagreement, Engineer-in-Charge shall fix such other revised rate as in his opinion, appropriate and shall notify the Contractor accordingly and the same shall be binding on Contractor.</p> <p>However, the provisions of this clause shall be subject to following: No change in the rate for any item contained in BOQ shall be considered in case of any decrease in the actual quantity of work executed. Similarly, in case of deletion of a particular BOQ item or a group of BOQ items, no claim for loss of profit or revision of rates of any other BOQ item shall be considered. In case of positive variation in any BOQ</p>
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			item, the change in the rate of BOQ item shall be effected only if the total actual quantity executed is more than 1.25 times the BOQ quantity of that particular item and the financial implication calculated for the enhanced quantity at BOQ rate is more than the 1% of contract price. In case this condition is satisfied, the revised rate shall be applicable only to the quantities exceeding 1.25 times BOQ quantity.
17	Suspension of work - Compensation for loss suffered by Contractor on account of delay in supply of materials by Employer	GCC Clause 15	No material shall be supplied by Employer/Engineer-in-Charge
18	Defects Liability Period	SCC Clause 17	12 months (365 days) after Completion of works (as accepted by Engineer-in-Charge) 60 months (21900 days) after Completion for specialized work of strengthening of structures.
19	Contractor to Supply Tools & Plants etc.	GCC Clause 18	No material, tools , plants etc. shall be provided/supplied by Employer/Engineer-in-Charge
20	Hire of Plant & Machinery	GCC Clause 34	No Plant & Machinery shall be provided/supplied either free or on hire by Employer/Engineer-in-Charge
21	Contractor's Superintendence, Supervision, Technical Staff & Employees	GCC/SCC Clause 36	Minimum requirement, of technical representatives, their qualification & experience are as given in Form T-6 of Section-2 of Bid Documents
		GCC/SCC Clause 36	Penalty/Recovery from Contractor for non-fulfillment of provisions of clause 36 is Rs.50,000/- Per month
22	Return of material & recovery for excess material issued	GCC Clause 42	No material shall be supplied by Engineer/Employer

Signature & Company Seal Date .....

Name .....

Place .....

Address .....



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## MILESTONES

The Following works are mandatory to be completed within specified Milestones from the date of commencement of work, out of the scheduled works of this agreement.

Milestone-1 (0 to 3 month)

To be decided in consultation with College authorities.

Milestone-2 (4 to 6 month)

To be decided in consultation with College authorities.



# SECTION 5

## TECHNICAL SPECIFICATIONS



## TECHNICAL SPECIFICATIONS

### CIVIL WORKS

#### 1.0. PREAMBLE

These technical specifications shall be read in conjunction with the various other documents forming the contract, namely Invitation for Bids & Instructions to Tenderers, Conditions of Contract, Special Conditions of Contract, Additional condition of contract nomenclature of items and other related documents, together with any addendum issued thereto.

Absence of terms such as providing, supplying, laying, installing, fixing etc. in the description of items does not even remotely suggest that the contractor is absolved of such providing, supplying etc. unless an explicit stipulation is made in this contract. The department shall bear no costs of materials, equipment's duties, taxes, royalties etc.

In addition to the general obligation of the Contractor during defect liability period, the Contractor shall guarantee successful performance of waterproofing treatments for a period of **ten years** from the date of completion of the work. The Engineer-In- Charge shall prescribe the form and the manner of executing such guarantees. The Contractor hereby confirms that there is nothing in the items/specifications (or a short-coming therein) as will prevent such successful performance. The work shall be executed through approved specialists experienced in the respective trades.

The classification of various items of work for purpose of measurements and payments shall be as per bills of quantities (BOQ). Except where distinguished by the BOQ, the rates apply to all heights, depths, sizes, shapes and locations unless otherwise explicitly specified. They also cater for all cuts and wastes.

The specifications may have been divided in different sections/sub-head for convenience only. They do not restrict any cross-reference. The Contractor shall take in to account inter-relations between various parts of works/ trades. No claim shall be entertained on basis of compartment interpretations.

Any Civil work required as part of electrical and other installation shall be executed by the Contractor as directed under this contract.

The Contractor shall be required to submit and take approval from the Engineer-In-Charge of shop drawings of the items of work specified in the specifications or as



directed from time to time. No extra payment shall be made for the same. Shop drawings shall be in metric units and shall be prepared in a format approved by the engineer-in-charge.

The Contractor shall prepare and submit as-built drawings by way of making modifications/ changes carried out with respect to the construction drawings issued prior to the construction of respective elements. These will be then incorporated by the respective Consultant/agency in to their drawings for maintaining necessary records.

No walls, terraces shall be cut for making any opening after waterproofing has been done without approval of the Engineer-In-Charge. Cutting of waterproofing when authorized by the Engineer-In-Charge in writing shall be done very carefully, so that no other portion of the waterproofing is damaged. On completion of the work at such places, the waterproofing membrane shall be made good and ensured that the opening/cutting is made fully waterproof as per specifications and details of waterproofing approved by the Engineer-In-Charge at no extra cost. No structural member shall be cut or chased without the written permission of the Engineer-In-Charge.

All materials intended to be used at site shall be tested prior to its use in an approved manner. Tests shall be conducted as per frequency of CPWD specifications and in case of non- availability of such frequency of tests in CPWD specifications, decision of Engineer- In-Charge shall be final and binding. Cost of all such tests and any other tests felt necessary by the Engineer-In-Charge shall be deemed to be included in the price of respective materials quoted by the Contractor. **Any defective materials brought to site shall be returned without any extra cost for the same.**

Performance tests shall be carried out on all/any items, of work as directed by the Engineer-In-Charge. Should any item fail to pass the tests, the Contractor shall be given opportunity to take corrective measures and have the same re-tested to the satisfaction of the Engineer-In-Charge, he may at his sole discretion order dismantling of the whole or part of the works done and order the Contractor to reconstruct the same. The cost of all these operations and materials shall be borne by the Contractor without any extra claim.

The Contractor may make a special note of the strictness of the concrete mix to be adopted in items of maximum water-cement ratio, minimum slump, control of total chloride and sulphate contents, use of admixtures etc.

Minimum cement contents are given purely from durability point of view. Larger contents shall have to be provided if demanded by mix design.



Provision of cement slurry to create bond between plain/reinforced concrete surface and subsequent applied finishes (floor, plaster, dado, skirting etc.) shall not be paid extra.

Mix design using smaller aggregate of 10mm down shall also be done in advance for the use in junction having congested reinforcement.

A full-fledged laboratory shall be established at site to start of construction and shall also stock all relevant codes as per the requirements of the special specifications. Nothing extra shall be payable on account of this.

Procedure of mixing the admixtures shall be strictly as per manufactures recommendations if not otherwise directed by the Engineer-In-Charge.

The batching plant for all concrete shall be used. Alternatively, use of ready mix concrete from an approved source shall be permitted. Concrete shall be transported in Transit mixers.

All the water tanks and other liquid retaining concrete structures shall undergo hydro-testing as per special specifications.

Special benches shall be provided at site for stacking reinforcement bars of different sizes as per the specifications.

Form work for RCC shall be designed in such a way that the form work of the adjacent slabs can be removed without disturbing the props/supports of the beams.

Wherever there are tension/suspended concrete members, which are suspended from upper level structure members, the shuttering/ scaffolding of such members at lower level shall have to be kept in place till upper level supporting members gain minimum required strength. Cost of such larger durations of keeping in place the shuttering/scaffolding shall be deemed to be included in the price quoted for respective structural members **and nothing extra shall be payable on this account.**

In the mobilization period, the Contractor shall carry out expeditiously and without delaying the following works:

Material testing and mix design of concrete/ bituminous works as contemplated in the specifications.

Setting up of full-fledged site laboratory as per the requirement of these specifications. Any other pre-requisite items required for final execution.



The specifications for market rate items to be executed under this contract are enclosed. Items, which are not covered under the specifications, shall be executed; as per latest CPWD specifications & relevant BIS codes.

Unless otherwise specified in the nomenclature of individual item or in these specifications, the entire work shall be carried out as per CPWD specifications 2009 Volume I & II with upto date correction slips. The measurements of component of work shall be in metric units.

For the item not covered in the CPWD Specifications, the work shall be executed as per latest relevant standard codes published by BIS(formerly ISI) inclusive of all amendments issued thereto or revision, if any, upto the date of opening of tenders.

In case of BIS codes specifications are not available the decision of the Engineer- in-Charge based on acceptable sound engineering practice and local usage shall be final and binding on the contractor.

The rates of different items of works shall be for all height, lifts, leads and depths of the building except where otherwise specified in the item of work or in special conditions appended with the Tender.

All materials to be used in the works shall bear ISI Certification marks unless otherwise the make specified in the item or special conditions appended with tender document. In case IS marked materials mentioned in the tender document are not used due to non-availability, the materials used shall confirm to IS code applicable in this contract.

In such cases the Engineer shall satisfy himself about the quality of such materials and give his approval in writing. Only articles classified as First Quality by the manufacturer shall be used unless otherwise specified.

All materials not having ISI marking shall be tested as per provision of the mandatory Tests in relevant IS specifications. The Engineer may relax the condition regarding testing if the quantity of materials required is small. For the products bearing ISI certification mark, no further testing is required at site. In all such cases of use IS certified materials proper proof of procurement of materials from authentic manufacturers shall be provided by the Contractor to the satisfaction of Engineer.

Unless otherwise specified in the bill of quantities the rates for all items of work shall be considered as inclusive of all operations required for which no extra payment will be made.



The contractor shall clear the site thoroughly of all the scaffolding materials and rubbish etc., left out of his work and dress the site around the building to the satisfaction of the Engineer before the work is considered as complete.

The rates quoted for all the brick/concrete work shall be deemed to include making openings, shall cut, leave or form holes, recesses, chases etc., and making good these with cement sand mortar (1:3)/PCC (1:2:4) or with the same specifications as directed by the Engineer. No extra payment shall be made to the Contractor on this account.

Where ever IS/BIS codes are mentioned in the CPWD Specifications or in these specifications the latest codes with up to date amendments shall be used.

### **Bar Bending Schedule.**

Contractor shall prepare bar bending schedules for prior approval of the Engineer. However, the approval does not relieve the contractor from his liability for bending, placing and binding reinforcements as per the approved drawings.

All bars shall be bent by machine or other approved means. Bends, hooks and shapes shall conform strictly to the dimension shown on drawings and unless otherwise mentioned, the binding dimensions shall conform to IS: 2502. All binding shall be done with 18 gauge annealed soft iron galvanized wire. When shown on drawing or instructed by Engineer, reinforcement shall be welded. The cover as shown on drawing shall be maintained by use of plastic spacers at approved spacing. Sufficient number of chairs and hangers shall be used to keep the reinforcement in position. No placing of concrete shall be done before the inspection and approval of reinforcement by Engineer-in-Charge.

The Contractor shall ensure that the reinforcement steel does not get rusted and shall properly store it. The contractor shall apply cement slurry to the bars as soon as it reaches site.

### **Testing of Materials.**

All materials used in the works shall be subject to inspection and tests. The contractor shall carry out sampling of such materials and making of concrete test cubes as and when ordered by the Engineer as per the appropriate Indian Standards and as directed by the Engineer. The contractor shall deliver the samples of materials and concrete test cubes in a manner as directed by the Engineer who will inspect the same and then order for testing of the materials and concrete cubes.





The contractor shall arrange for testing of materials normally at Station but samples may be sent to outside testing laboratories, if necessary. The delivery of the samples shall be undertaken by the contractor. The cost and charges for sampling of materials and concrete cubes and delivering the same to the office of the Engineer and / or other places including all incidentals in connection with the same as directed by the Engineer and the testing charges thereof shall be borne by the contractor and shall be deemed to be included in the rates and prices quoted in the Bill Of Quantities. The results of the tests carried out shall be binding on the contractor who shall comply with any rectification measures that the Engineer may deem fit and order to be executed by the contractor as a result of testing. The frequency and number of test of materials shall be as decided by the Engineer-in charge.

Frequency of tests:

At least one test consists of three sample specimen at random from each lot. The samples shall be got tested from the test house as mentioned here under:-

Shriram Institute for Industrial Research, Delhi.

CPWD Testing Lab, IP Bhawan, IP estate, New Delhi.

**3.0** Utilization, application mix proportion etc. of materials in waterproofing, repair & rehabilitation and carbon fiber wrapping works shall be as per manufacturer specification.

**4.0** Old/ expiry date materials shall not be allowed to be used in the work.

**5.0** Contractor shall depute technically competent person for execution of the work.

## **6.0 GENERAL**

The structural steel item includes supplying, providing, fabricating, assembling, and erecting at site Tubular structure in the bended profile shaped as per the drawing with special plate connectors, pinion joints, using SAW / MMAW / MIG welding process with cleaning the surface and applying a coat of epoxy primer.

### **STRENGTHENING METHODOLOGY**

The building blocks have to be repaired and strengthened to satisfy the structural requirements to have safe occupancy for a design life of 5-7 years after repair/ strengthening.

The details/ schemes/specific methodology of the strengthening as well as repairs are given below:

### **STRENGTHENING/ REPAIRING OF SLAB, BEAM & COLUMN CRACKS**

The cracked elements without any indication of concrete getting debonded or the core concrete after removal of cover for repair if found to have cracks; or if the concrete as a whole has gone porous, the same shall be treated by sealing the cracks with epoxy putty and grouting the same with low viscous epoxy grout. The steps involved in repair of cracks are as follows:

Surface preparation,

Fixing of packers,

Filling of cracks &

Grouting of low viscosity epoxy.

### **STRENGTHENING OF SLAB/ BEAM WITH DAMAGE DUE TO CORROSION/ RUSTING OF REINFORCEMENT IN SMALL AREA (Damaged area upto 5 Sqm)**

Prop & Support the RCC slab under distress.

Remove all loose & Spalled cover concrete including finishing plaster (detected to be



loose by tapping).

Clean the rusted reinforcement of concrete preferably by using sand blasting to obtain a minimum 15 mm clear air gap all around including behind the reinforcement.

Provide additional reinforcement (MS wire-mesh of 3mm dia @75c/c) wherever necessary & tie the same to the existing reinforcement with necessary binding wire & nails/overlapping/anchoring

Fix shear keys of appropriate diameter at specified spacing in both directions over the surface to be covered with repair material.



Clean the reinforcement of rust by using alkaline chemical rust remover with paint brush.

Apply appropriate passivating coat over the prepared RCC surface.

The prepared concrete surface shall be covered with appropriate mix of polymer modified cement mortar in layers including behind reinforcement over the bond coat of polymer modified cement slurry. The mortar cover thickness shall be not less than 15mm over the reinforcement. The maximum thickness shall be not more than 30mm with each layer not exceeding 10mm.

Wet Curing shall be carried out for a minimum period of 7 days.

### **STRENGTHENING OF SLAB/ BEAM WITH DAMAGE DUE TO CORROSION/ RUSTING OF REINFORCEMENT IN LARGE AREAS (Damaged area > 5 Sqm)**

Prop & Support the RCC slab under distress.

Remove all loose & Spalled cover concrete including finishing plaster (detected to be loose by tapping).

Clean the rusted reinforcement of concrete preferably by using sand blasting to obtain a minimum 15 mm clear air gap all around including behind the reinforcement.

Provide additional reinforcement (MS wire-mesh of 3mm dia @75c/c) wherever necessary & tie the same to the existing reinforcement with necessary binding wire & nails/ overlapping/anchoring.

Fix shear keys of appropriate diameter at specified spacing in both directions over the surface to be covered with repair material.

Clean the reinforcement of rust by using alkaline chemical rust remover with paint brush.

Apply appropriate passivating coat over the prepared RCC surface.

Shotcreting with average thickness of 50mm shall be done within the tacking period of epoxy bond coat to be applied over the prepared surface of concrete.

Finishing plaster, if necessary, may be provided within 48 hours of shot- creting without allowing the RCC slab to become dry during the intervening period.

Water curing shall be carried out for a minimum period of 7 days.



### **STRENGTHENING OF RCC BEAMS/ FLEXURAL MEMBERS WITH ADDITIONAL REINFORCEMENT**

Wherever as per the structural design requirement, the existing structural flexural member need to be strengthened with addition reinforcement, the reinforcement shall be inserted/ anchored into the supporting structural member.

For strengthening of the member, the plaster as well as concrete cover shall be removed. Clean the reinforcement of rust by using alkaline chemical rust remover with paint brush. The additional reinforcement shall be anchored into the support using high strength bonding chemical of Hilti or equivalent. Steel connectors into the existing members in order to new stirrups/ ties shall also be anchored into the structural member.

Coating of the existing structural member with an appropriate epoxy / bonding material shall be done to ensure the bond between the old and new concrete.

Polymer Modified Concrete & Mortar shall be done to have minimum 25 mm cover to the reinforcement within the tacking period of epoxy bond coat.

Water curing shall be carried out for a minimum period of 7 days.

### **STRENGTHENING OF RCC BEAMS/ FLEXURAL MEMBERS WITH ADDITIONAL REINFORCEMENT**

Wherever the existing projection slabs/ balcony need to be strengthened, the additional reinforcement shall be provided at the top face. This addition reinforcement shall be inserted/ anchored into the supporting structural member.

For strengthening of the member, the flooring as well as concrete top cover shall be removed.

Clean the reinforcement of rust by using alkaline chemical rust remover with paint brush. The additional reinforcement shall be anchored into the support using high strength bonding chemical of Hilti or equivalent.

Coating of the existing structural member with an appropriate epoxy / bonding material shall be done to ensure the bond between the old and new concrete.



Micro-concrete of required thickness shall be done to match the slab thickness  
Water curing shall be carried out for a minimum period of 7 days.

### **STRENGTHENING OF DAMAGED/ CRACKED MASONRY**

Remove plaster, wherever required, to identify and mark the cracks and damages in the masonry.

Drill holes of 16~18 mm diameter and 40~50mm deep along crack lines at spacing of 200~300mm or thickness of the structural member, whichever is less.

Remove coarse debris and dust in opened up cracks and drilled holes by blowing oil free compressed air.

Insert injection nipples in holes drilled along crack lines and fix them by sealing only its sides with polymer modified mortar

Injecting low viscous non shrink, high strength epoxy in the nozzle/ packers by pressure grouting machine till the nozzle refuse to accept the grout or epoxy oozes from the nozzle/packers.

### **STRENGTHENING OF DAMAGED MORTAR AND JOINTING IN MASONRY**

Remove plaster, wherever required, to identify damages of joints/ mortar in the masonry.

Cut grooves and remove the loose mortar in the joints.

Remove dust in the joints and grooves by blowing oil free compressed air.

Apply the bond coat with brush and seal the grooves and damaged joints with polymer modified mortar.

Water curing shall be carried out for a minimum period of 7 days.

## **REPAIR AND GENERAL WORK METHODOLOGY**

### **PROPPING & SUPPORTING STRUCTURAL MEMBERS**

Design the prop and support system using steel tubular sections with extension pieces or with built-up sections to ensure required relief to structural members from stresses due to loads coming over it, including the self-load of the member itself. No timber ballies etc shall be used as props. However, timber runners /



beams/planks of adequate section could be used for supporting structural beams, slabs as load distribution mechanism.

Arrange all propping and supporting elements as per approved design.

For Columns and beams : Identify and mark the members under structural distress, which are unable to sustain service load conditions and/or which are required to be ripped open for undertaking structural repairs or retrofitting.

For Beam/ Slabs: Identify and mark the points for propping and supporting on soffit of RCC beam/ slab requiring structural repairs, for transfer of loads to relieve it from stresses and simultaneously avoiding its collapse during the repair process.

Work shall be inspected before taking up structural repairs for safe load transfer to the founding medium by implementation of approved drawings/design of prop & support system.

### **REMOVAL OF SURFACE PLASTER USING CHISEL AND HAMMER**

Safety shall be ensured in accordance with the requirements and specifications.

Provide double row type MS steel scaffolding.

Existing plaster to be identified for removal by tapping all areas and its boundary shall be marked with a colour marking (in an optimal rectangular shape)

Remove the plaster manually with the help of chisel and hammers to completely expose the parent masonry or concrete surface, so as not to have any traces of such plaster left behind.

### **CHIPPING OF UNSOUND AND WEAK CONCRETE**

Safety shall be ensured in accordance with the requirements and specifications.

Prop and support shall be provided to relieve the structural member of stress and strains

Scaffolding, if necessary for the exterior members, shall be done for working upon the area.

Working platforms for interior members, if necessary, shall be erected suitably or provided as mobile.



- Mark off the area to be repaired using straight lines between corners. The marked area shall have 90° corners with the sides parallel or normal to the direction of the reinforcement. The marked boundaries for the repair area, outside the perimeter of the spall. For a single spall, the repair area should have a minimum width of 100 mm in any direction. If a number of spalls are closely located to each other, these spalls should be included in a single area marked for repair.
- Cut shall be made along the marked boundary, normal-to-the surface. It should be made with a diamond cutter blade. However, when diamond cutting is not practical, the normal cut be made with a power driven chisel. Minimum depth of cut shall be 10 mm. In situations where the diamond saw could cut into the reinforcing steel due to inadequate concrete cover, the boundary edge should be formed manually by means of chisel and impact hammers. A cover meter could be used to estimate the depth of cover.
- Chipping to remove all the unsound and weak concrete materials shall be done carefully from the damaged portions of structural members by adopting mechanical or manual means up to the required depth to produce sound concrete surface to a near uniform depth for the repair area.
- Chiseling: Hand Tools are typically applicable for concrete removal for smaller, moderate and areas of limited access. Removal should begin at the interior of the repair area and progress toward the boundaries, using suitable hammer. Power Driven Chisels/Hammers are normally applicable for chiseling smaller thicknesses up to about 50 mm. Pneumatic Hammers are normally applicable for chiseling larger thicknesses in excess of 50 mm Mechanical Milling (single drum, rotary cutter head with Tungsten –carbide bits) is applicable for large areas where the concrete cover is to be removed. Care must be taken to avoid contact with the reinforcing steel as both the reinforcement and the cutter drum could be damaged. Rounded and Feathered Edges should be hand cut to form normalto-the-surface boundaries. All the edges and cavities shall be square shouldered.
- A full-depth chiseling and removal of concrete of reinforcement shall be carried out, in case the concrete in contact and in immediate vicinity of the reinforcement is carbonated.
- Inspection and soundness testing, after concrete removal & cleaning, for weaknesses and delamination of exposed surfaces shall be visually carried out. If required, additional removal will be done.



Cleaning of debris and dust shall be carried out from within the chiseled/chipped area and its disposal.

### **CLEANING RUST FROM REINFORCEMENT**

Cleaning by manual method-

Remove the rust manually from all round the surfaces along the length of reinforcement, using hand tools like chisels, hammers, wire brushes, abrading cloth, etc This shall be continued manually along the length of the rusted reinforcement till such time that the steel surface is cleared of all rust that could be removed manually.

Clearing by chemicals-

Removal of rust by using the Rust Remover Chemical, rust remover shall be brush applied over the reinforcement surface along the full length of rusted reinforcement. After 4 hours (or as prescribed by manufacturer) of its application, the surface shall be cleaned with wire brush and all loose particles. It shall be washed with water thoroughly and allowed to dry.

### **ALKALINE PASSIVE BOND COAT ON REINFORCEMENT**

Prepare the surface for treatment as per manufacturer specification.

Thoroughly inspect all the concrete surfaces prior to applications of passivating coat.

Material Mixing: Components of the passivating coat mix shall be weight batched and mixed in specified proportions in a clear container free from harmful residue or foreign particles.

Material Application: The alkaline passivating & bonding material shall be applied to prepared reinforcement substrate after tying in new reinforcement wherever specified in the form of bars or welded wire fabric.

### **BOND COAT FOR HARDENED CONCRETE WITH REPAIR CONCRETE/ MORTAR**

Prepare the surface for treatment.

Saturate the surface with water but shall be free of excess surface water, debris and dust, where cementitious bond is to be applied. Otherwise, surface to remain dry and clean of debris and dust.

Thoroughly inspect all the concrete surfaces prior to application of adhesive. Polymer modified bonding cement slurry shall be applied to a thickness not in





excess of 2 mm. If necessary, a second coat shall be applied at right angles to the first to ensure complete coverage and absence of pin holes.

All concrete surfaces shall be well protected beyond limits of surface receiving adhesive against spillage

### **CEMENT BASED POLYMER MODIFIED CONCRETE (PMC)**

Polymer Modified Concrete: (Using Coarse Sand) cleaning the surfaces, moistening and applying polymer base bonding coat of M/s BASF India Ltd and cement in the ratio 1:1 by weight of cement. Mix Hand pack Polymer Modified concrete in the ratio of 1:1:2 (1 part cement: 1 one part coarse sand: 2 part aggregate and admix the polymer latex in the ratio of 2% weight of cement.

**Purpose:** To carry out structural repairs to prepared patches of spalled concrete with an alkaline impervious repair material comprised of polymer admix cement concrete.

#### **Procedure:**

**Step-1:** Follow the guidelines for safety as already mentioned.

**Step-2:** Clean the dust and saturate the prepared surface of concrete and reinforcement with a clean oil free and water free for construction.

**Step-3:** Inspection of concrete surface prior to adhesive application shall be thoroughly inspected. Surfaces shall be ensured to be free from any deleterious materials such as oil, dust, dirt etc using oil free.

**Step-4: Mix and Prepare Polymer Modified Concrete** to have a uniform consistency and texture by adding cement, sand, aggregate and polymer.

Repairing with cement based polymer modified concrete shall be done immediately after applying the bonding slurry to the prepared surfaces.

### **CEMENT BASED POLYMER MODIFIED MORTAR (PMM)**

**Purpose:** To carry out structural repairs to prepared patches of spalled concrete with an alkaline impervious repair material comprised of polymer admix cement-sand mortar.

#### **Procedure:**

**Step-1:** Clean the dust and saturate the prepared surface of concrete and reinforcement with a clean oil free air blast and water fit for construction.



**Step-2:** Concrete surface prior to adhesive application shall be thoroughly inspected. Surfaces shall be ensured to be free from any deleterious materials such as oil, dust, dirt etc using oil free air blast.

**Step-3:** Mix and Prepare Polymer Modified Mortar to have a uniform consistency and texture by adding cement sand and polymer.

**Step-4:** Plastering with cement based polymer modified mortar shall be done immediately after applying the bonding slurry to the prepared surfaces.

### **EARTHQUAKE BAND**

#### **i. PROVIDING STRUCTURAL STEEL EARTHQUAKE BANDS**

For earthquake resistance, the building blocks to be provided with structural bands at lintel level of each floor. the surface for treatment.

At lintel level, 25 mm wide and 75 mm deep grooves to be cut to insert the ISMC 150 channel into the brick wall.

The ISMC 150 shall be prepared with primer coating and 8 dia holes at 300 mm interval. Fix the channels into the grooves and provide 6 mm dia mechanical anchors through the holes of structural steel channels and firmly fix it into the brick walls.

Wherever the structural band has to cross the RCC column, a steel plate 150mm wide, 6mm thick shall be provided which shall be welded with the ISMC 150 at the two ends and anchored into the RCC column using mechanical anchor.

After completion of the structural steel band fixing, a coat of weather proof paint shall be applied on the steel members.



LIST OF APPROVED MAKES CIVIL WORKS

S. No.	Materials	Approved make
1	POLY-SULPHIDE SEALENT	PIDILITE, TUFFSEAL, CHOKSEY, CHEMICLA
2	DAMP PROOF MATERIAL	IMPERMO BY M/S SNOWCEM, DURA- 1, ACC-PROOF, AT –CRETE LATEX
3	STUCTURAL STEEL SECTIONS	TATA, SAIL, RINL, JSPL, JSW steel Ltd., APOLLO
4	ADMIXTURE	FOSROC, MC MBT, SIKA, CICO, ASIAN, DURA BUILD CARE, ROFFE, VAM ORGANICS, DURA-SPRED, AT-PLAST
5	WHITE CEMENT	J.K. WHITE, BIRLA WHITE
6	WATER PROOFING COMPOUND	TAPE CRETE, CICO, ACCOPROOF, IMPERMO BY M/S SNOWCEM SIKA, DURA-CRETE, AT-CRETE
7	BITUMEN	INDIAN OIL, HINDUSTAN PETROLEUM, BHARAT PETROLEUM
8	BRICK-COBA WATERPROOFING AND ACRYLIC IMPREGNATION TREATMENT	ROOFERS COMBINE / DEVICON INTERNAZIONALE / HINDUSTAN WATERPROOFING
9	WATER PROOFING MEMBRANE	CARLISLE OR EQUIVALENT
10	NONMETELIC SURFACE HARDNER	MC DERITOP F.H. OR EQUIVALENT
11	LOCKS/ LATCH	D-LINE, DORMA, GODREJ
12	LAMINATES	GREEN, MERINO, CENTURY, FORMICA,



S. No.	Materials	Approved make
13	WIRE MESH	STERLING ENTERPRISES, TRIMURTY WELDED MESH OR EQUIVALENT
14	PRELAMINATED PARTICLE BOARD	GREENPLY, DURO, CENTURY, KITLAM, JOYTI PLY, CENTURY OR EQUIVALENT
15	ADHESIVE	PIDILITE, DUNLOP, VAMORGANIC, DURA-XY-BOND, AT-BOND COAT
16	EPOXY MORTAR	FOSROC, SIKA, DURA-XY-RM, AT- BOND (EX)
17	DASH FASTNERS/ ANCHORING FASTNERS.	HILTI, FISHER
18	FLUSH DOOR SHUTTERS (DECORATIVE /NON DECORATIVE)	GREEN PLY ,CENTURY,, KITLAM, ALPRO, JOYTI
19	HYDRAULIC DOOR CLOSER/FLOOR SPRING / HARDWARE	D-LINE,DORMA, GEZE, HARDWYN, GODREJ
20	WOODEN DOOR FITTINGS OF BRUSHED STEEL	DORMA, D-Line, ARKAY
21	STAINLESS STEEL RAILING	D-LINE, DORMA, CONNECT ARCHITECTURAL PRODUCTS PVT. LTD, JINDAL STAINLESS STEEL LTD, ICICH INDUSTRIES, ESSAL
22	FIRE CHECK DOOR	PROMAT, NAVAIR,SURKHI,SHAKTI MET-DOR
23	FIRE CHECK ASSESSORIES CALCIUM SILICON BOARD	FROMTECT OR EQUIVALENT
24	SMOKE SEAL STRIP	IMPORTED PROMAT/ASTRO FLAME
25	DOOR CLOSER LOCK	GEZE,DORMA, DLINE,GODREJ



S. No.	Materials	Approved make
26	PANIC EXIT DEVICE	INGERROLL RAND /MONARCH
27	DOOR COORDINATOR	UL LISTED /MONARCH
28	ANDODISED ALUMINIUM HARDWARE (HEAVY DUTY)	HARDIMA, EVERITE, SIGMA (ISI MARKED)
29	TOUGHENED/NON TOUGHENED GLASS	PILKINGTON, SAINT GOBAIN, ASAHI, GLAVERBEL
30	POLYSTER POWDER COATING SHADES	NEROLAC, BERGER, J&N
31	ALUMINIUM SECTIONS	JINDAL, HINDALCO, BHORUKA, INDO ALUSYS
32	FRICTION STAY HINGES	EARL-BIHARI
33	NUTS, BOLTS AND SCREWS, STEEL	KUNDAN, PRIYA, ATUL
34	EPDM GASKET	HANU/ ANAND
35	STUCTURAL SILICONE	DOW CORNING/WACKER
36	WEATHER SILICONE	DOW CORNING/ WACKER
37	ADHESIVE TAPE	NORTON
38	TERROZZO TILES (PRECAST)	TERRAZOINCRETE, HINDUSTAN TILES
39	GLAZED CERAMIC TILES	KAJARIA, SOMANY, NITCO, ASIAN, ORIENT, JOHNSON
40	CEMENT CONCRETE TILES/ HARDONITE TILES	NITCO, NTC, HINDUSTAN
41	VITRIFIED TILES	NITCO, SOMANY, JOHNSON, MARBITO, ORIENT, GRANITO, ASIAN,KAJARIA
42	VITRIFIED PAVING TILE	PAVIT,SUPER TILES,ULTRA



S. No.	Materials	Approved make
43	INTERLOCKING PAVERS	PAVER'S INDIA LTD, PAVIT, SUPER TILES, ULTRA, DALAL TILES, SWASTIC TILES ALWAR
44	TILE ADHESIVE	CICO, PIDILITE, FOSROC
45	PREMIUM ACRYLIC SMOOTH EXTERIOR PAINT WITH SILICONE ADDITIVES	SNOWCEM, ICI DULUX, ASIAN, BERGER, NEROLAC
46	SYNTHETIC ENAMEL PAINT	DULUX, BERGER, NEROLAC, ASIAN,
47	PLASTIC EMULSION PAINT	DULUX, ASIAN, BERGER, NEROLAC, JOTUN
48	VITREOUS CHINA SANITARYWARE	HINDWARE, KHOLER, PARRYWARE
49	STAINLESS STEEL SINKS	NILKANTH, AMC, CORBA, JAYNA, HINDWARE
50	C.P. BRASS FITINGS	JAGUAR, KHOLER, HINDWARE PARKO, MARC
51	MS PIPES	KESORAM, ELECTRO STEEL, TATA, JINDAL
52	ORDINARY PORTLAND CEMENT (Grey)	BIRLA VIKRAM, ACC, L&T, JP REVA, SHREE, AMBUJA, JK.
53	STEEL PRIMER	DULUX, BERGER, NEROLAC, ASIAN PAINTS
54	WOOD PRIMER	DULUX, BERGER, NEROLAC, ASIAN PAINTS
55	MIRROR GLASS	ATUL, MODI, GUARD, GOLDEN
56	REINFORCEMENT STEEL	SAIL, TATA, RINL, SHYAM, RATHI
57	READY MIX CEMENT CONCRETE (RMC)	ACC, AHLCON, UNITECH, L&T, BIRLA ULTRA & ANY OTHER EQUIVALENT BRAND DULY APPROVED BY ENGINEER-IN-CHARGE



S. No.	Materials	Approved make
58	VACUUM DEWATERED FLOOR	WALIA / FIBRECON CF/ VACMAX ENGINEERS / IRONITE
59	NON-SHRINK GROUT	FOSROC CHEMICALS, SIKA, DURA-EV, AT-GROUT (GP)
60	RELEASE AGENT	FOSROC, MBT, DURA-MOL, AT-MOREL
61	TILE ADHESIVE	CICO, PIDILITE,SIKA, DURA – FIX, AT- TILE FIX (P)
62	MASONITE SKIN DOOR	GODREJ, ALPRO, KUTTY, GREEN PLY
63	PVC WATER TANK	SINTEX, NATIONAL , FRONTIER
64	Expansion joint	SAINFIELD /VEXCOLT/ C.S
65	Construction Chemicals for Structure Strengthening	BASF & ANY OTHER EQUIVALENT BRAND DULY APPROVED BY ENGINEER-IN-CHARGE
66	Anchors for Structure Strengthening	HILTI & ANY OTHER EQUIVALENT BRAND DULY APPROVED BY ENGINEER-IN-CHARGE
67	uPVC windows	FENESTA, VEKA or LINGEL

Note:- No material of any make except listed here, shall be used without prior approval of Engineer-in-Charge.



## Electrical Works

### GENERAL

#### SCOPE

These Special Conditions indicate the requirements and precautions to be taken during the execution of Internal Electrical Works to ensure efficient, safe, economical and practical use of materials and equipment.

Though the work shall generally be carried out as per CPWD specifications for 'Internal Electrical Work' 2013, with latest amendments, the special conditions indicated in the succeeding paragraphs shall be followed in letter and spirit.

The Electrical Work shall be carried out by a licensed Electrical Contractor who has a valid Electrical Contractor's Licence to work in Delhi/ NCR.

The contractor must get acquainted with the proposed work, study specifications and conditions carefully before tendering. The work shall be executed in close coordination with all other agencies executing civil work, Fire Alarm, Landscape & Security Lighting, Communication and IT Networking etc. The instructions of Engineer-in-Charge shall be final and binding for following the sequence of work. If the site or part of it is not available for execution it shall be modified accordingly and the contractor shall have no claim for any payment or compensation on this account.

#### WORKS INCLUDED IN THIS SECTION:

Conduit and Wiring Work for Internal Electrical Installations, Telephone and Data Communication etc.

230V. single phase, 3 wire and 415V, 3 phase 4 wire Power distribution system complete.  
Earthing

Supply and Installation of High Mast Lighting system, Luminaries, Fitting and Fixtures, including repairing in existing lights, if any, as required.

LT Cabling and HDFC DWC Piping

Sump pumps etc.





All coordination / expenses regarding NOC for Substation work from Electrical Inspector shall be in the scope of contractor. Rates are inclusive of the above and nothing extra shall be paid for the same.

The contractor will have to make his own arrangement for T&P (General & Special) required for execution of work at site. No built up storage accommodation shall be provided to the contractor. The contractor can however construct a temporary store for storage of his materials and T&P at the site at his own cost. The vacant space for same as considered feasible shall be provided by the department.

**The contractor will have to make his own arrangement for water and power supply for execution of works.**

The contractor will make his own arrangements for transportation of his materials up to the site of work, the security and watch and ward of the materials brought at site and the electrical installation executed by him shall be his responsibility till the work as a whole is completed and handed over to the department.

Any damage done to the building or installation during the execution of work shall be made good by the contractor free of cost. In the event of his failure to do so, the same shall be got rectified through another agency at his risk and cost.

The contractor or his authorized representative will have to sign site order book to acknowledge the instruction issued by Engineer-in-Charge or his authorized representative for all matters relating to the execution of work. The instructions noted in the site order book shall have to be complied within reasonable time as decided by the Engineer-in-Charge.

**INTENT OF SPECIFICATIONS**

The work shall be carried out in accordance with the following relevant & applicable codes amended up to date, and to the best available standards of engineering practice, design & workmanship.

Items of BOQ & Technical Specifications of the Agreement.

CPWD General Specifications for Electrical Works Part I (Internal) 2013 and Part –II (External) 2005, Part-IV (Substation) 2013.

Indian Standards Specifications by BIS, IS Code, NBC 2005

Indian Electricity Rules & Statutory Regulations.

Nothing extra shall be paid for executing the work as per these specifications/codes. The material having ISI mark shall have precedence over the



one confirming to IS Specifications. In case of any discrepancy in the description of any item in the schedule of quantities and the specifications/code, or if the specifications of any of the items are not available, the decision of the Engineer- in-Charge or his authorized representative shall be final and binding and work shall be executed in the manner as may be prescribed by him.

#### SECURITY & SAFETY

In event of any restriction being imposed by the security staff, CPWD, traffic or any other College having control over the project, in such events, the contractor shall strictly follow all such restrictions or instructions issued regarding the same and nothing extra shall be payable to the contractor on account of such restrictions or instructions. The loss of time on this account if any shall have to be made up by generating additional resources if required.

The contractor shall be responsible for the safety, conduct, behavior of his/workers/labourers deputed at site.

No inflammable materials shall be stored at site of work.

The movement of trucks and vehicles of the contractor will be regulated at site in accordance with rules and regulations as approved by competent authorities.

The contractor shall inform in advance, the truck registration numbers, ownership of the trucks, names and addresses of the drivers for necessary action by the security agency.

Names and addresses of labourers/ staff etc. working at site shall be furnished for security verification.

The labourers / staff should not be changed too frequently once the verification of the character and antecedents is done.

After verification of antecedents of workers, identification badges will be issued to them by the contractor under the seal of the Engineer-in-Charge or his representative. The cost of badges would be borne by the contractor.

As and when there is any security requirements, certain additional restrictions can be imposed as per the requirement of the situation.

No claim whatsoever will be entertained by the department on account of any restrictions imposed by the security agencies during execution of work.



## EXECUTION

The contractor shall depute well experienced /skilled Engineer/Supervisor/Foreman & licensed wireman/electrician for execution of work. The Engineer-in-Charge reserves the right to reject/remove any person which is not suitable/ fit in his opinion.

The work shall be executed in well planned & engineered manner. Poor/Bad workmanship shall not be accepted. The same shall be redone as per the directions of the Engineer-in-Charge, for which no extra payment shall be made.

## PAYMENT

No advance payment shall be made.

Running Account Payment can be made during the execution of work on Pro Rata basis. The Department may allow part rate at its discretion worked out by the Engineer-in-Charge, and the same shall have to be accepted by the contractor.

The Engineer-in-Charge reserves the right to recover any part/item not executed, due to site requirements etc. The rates of such items shall be derived by the Department as per the provisions in the agreement or decided by the Engineer-in-Charge, and shall be binding & acceptable to the contractor. However, Sub Standard work if any, shall not be accepted & measured unless approved by the competent College.

## COMPLETION & GUARANTEE

The completion of the work shall be certified by the competent College of the department, the defects if any shall have to be rectified to the entire satisfaction of the competent College.

The contractor shall stand guarantee/warranty for a period of at least 12 months from the date of completion of work or after taking over the installations by the department whichever is later, against any manufacturing defect in material, unsatisfactory performance/ working and / or breakdown due to defective design, workmanship.

The material /equipment/installation so found defective shall be replaced/repared free of cost to the satisfaction of the Engineer-in-Charge. The delay in rectification/replacement shall not be accepted. The department reserves the right



to get it done at the risk and cost of the contractor. The decision of the Engineer- in-Charge shall be final & binding to the contractor.

The contractor must carry out routine inspection/testing once in every three months during the guarantee period and attend to the defects taking place during this period. Sufficient number of trained and experienced staff shall be made available to meet any exigency/emergency at site of work during the guarantee period.

#### DRAWINGS:

The work has to be executed as per the drawings to be issued by College.

The Contractor shall verify all dimensions at site and bring to the notice of the Engineer in Charge any or all discrepancies or deviations noticed. The Engineer- in-Charge reserves the right to make any modifications to the layouts at any stage during the execution of work. No extra claims shall be entertained on account of the same except under the standard provisions under the agreement

After completion of the work the contractor shall submit two sets of As built drawings along with floppy disc/s/CD containing the same before the certificate of completion is issued to him. These drawing would include;

The location of all the equipment supplied & erected by the contractor.

Conduit routes clearly indicating the sizes & number of cables / wires.

Earthing layout - indicating the type & size of earth conductor.

Wiring diagram of Panels / DB's.

Complete single line diagram for Normal and Emergency supplies.

Any other information the EIC may deem fit.

#### ADDITIONAL TECHNICAL SPECIFICATIONS

The electrical fittings in areas of false ceiling / drop ceiling are required to be suspended/ secured from ceiling with suitable hanging arrangement of galvanized metallic chains/dash fasteners.



After the award of work, the contractor shall produce samples of all the materials to be used in the work for approval of the Engineer-in-Charge. The contractor shall also produce manufacturer's test certificates for their conforming to relevant I.S. specifications. Only materials conforming to approved samples shall be used in the work. The approved samples shall be displayed on the board maintained at site.

The Engineer-in-Charge reserves the right to test the material at manufacturer's place, site of work, any independent Laboratory/ Test House. Samples will be arranged by the contractor free of cost. All Charges for testing of samples will also be borne by the contractor including transportation of samples to the test house.

If at any stage during the execution of work, the Engineer-in-Charge is not satisfied with the quality of materials brought/used at the site of work, he shall be at liberty to reject all such materials. The rejected materials shall have to be removed from the site of work immediately. The decision of the Engineer-in-Charge regarding makes of the materials selected shall be final and binding on the contractor.

The conduits/electrical fittings/fixtures/cable trays etc. are required to be fixed in coordination with all other works.

The contractor shall ensure timely fixing of cable trays conduits, boards etc. so that it does not hinder the execution of other works.

The false ceiling will be provided in substantial areas in the building. In order to avoid maintenance problems the contractor will not provide any joints / looping / connectors above the false ceiling.

The switch/ sockets/ data/ telephone points and their boxes shall be of a single make only.

Any junction boxes, bends, elbows, sockets, and other accessories required for laying of conduit and drawing/ pulling the wires etc. shall be provided by the contractor without any extra cost, it shall be measured in wiring/ conduit work.

The contractor shall seal all the exposed parts of conduit / junction boxes with suitable closures/ covers to prevent the entry of insects and foreign particles, without any extra cost.

The contractor shall execute minor civil works like making hole for passing of conduit/ cable / cable tray etc. while crossing any slab/ wall / column, and the same shall be repaired good by the contractor.



All hardware items such as screws, nut bolt, washers, dash fasteners shall be zinc/ cadmium plated iron and shall be deemed to be included in the items of work even if the same have not been specifically mentioned in the BOQ.

Copper wires of 4 sq. mm and above shall be terminated at both the ends with suitable size/ rating, crimping type, copper thimbles/ lugs. Nothing extra shall be paid for the same.

Wherever it is not possible to provide rigid conduits, flexible metallic pipe/conduit shall be provided for running the wires. However, such arrangement has to be kept to the barest minimum and only with the prior approval of Engineer-in-charge.

The MCB distribution boards shall be factory fabricated at Manufacturer's works and the same shall be duly pre-wired at their premises. These boards shall have a loose wire box of at least 200 mm height at the top of the distribution board. The Boards shall be brought to site in ready for installation condition. The MCBs, RCCBs, MCCBs and the MCB distribution Boards shall be of the same make.

The work involves group-controlled light points at some locations, the measurements shall be made as given below.

For more than one light fittings controlled by one switch, the wiring from switch to the first fitting shall be treated as one light point and the subsequent point being controlled from the same switch shall be measured as separate point and no recovery shall be made for not providing additional switches.

The light points switch having more than two points controlled by a single switch shall be of 15/16 Amp rating and nothing extra shall be paid on this account.

While deciding the size of switch boxes for light points/exhaust fan point items, wherever extra modules are available, the same shall be provided with blanking plates without any extra cost.

The contractor shall submit layout drawings of conduits for various services to be embedded in slab / beam / column castings at least 15 days before the scheduled date of such castings, and the contractor shall arrange the material like conduit and accessories at least 10 days before such castings for approval and inspection/ testing of the competent College.

The contractor shall have to submit manufacture's test certificate for the material brought / supplied at site before use for the work. Cables, wires, MCB's, RCCB's, MCCB's, DB's, modular type switch, socket, and accessories etc. without test



certificate shall not be permitted to be used in the work. The department shall be at liberty to pick up any sample (s) at random from the lots of wires and cables brought at site of work and get them tested from the authorized test house. The charges for testing of the samples chosen shall be borne by the contractor and the material required for testing shall have to be provided by the contractor free of cost. The lot/ consignment of the material failed during such testing shall be replaced by the contractor at no extra cost.

All the pre-wired distribution boards / Consumer Units, prewired distribution boards to be used in this project shall be of double door construction with IP 42 Protection. The inner door shall be of sheet steel and shall cover all the equipments and only operating, knobs of MCB's, RCCB's, MCCB's etc. will come out of it, whereas the outer door shall be hinged, at least of 18 SWG CRCA sheet duly painted in

Saddles for surface conduit work on wall shall not be less than 0.55mm (24 gauge) for conduits upto 25mm dia and not less than 0.9mm (20 gauge) for larger diameter. The corresponding widths shall be 19mm and 25mm.

Outlets :

The switch box/ regulator box shall be made of metal on all sides, except on the front. In case of welded mild steel sheet boxes the wall thickness shall not be less than 1.2mm (18 gauge) for boxes upto a size of 20 cm x 30 cm and above this size 1.6mm (16 gauge) thick MS boxes shall be used. The metallic boxes shall be duly painted with anticorrosive paint before erection as per painting specification.

Outlet boxes for light/ power sockets shall be of standard size of manufacturer to accommodate required number of modular switches, socket outlet.

Where a large number of control switches and/ or fan regulators are required to be installed at one place, these shall be installed in more than one outlet box adjacent to each other for ease of maintenance.

An earth terminal with stud and metal washers shall be provided in each DB/MS box for termination of protective conductor and for connection to socket outlet/ metallic body of fan regulator etc.

A metal strip shall be welded/ screwed, to the metal box as support if fan regulators are to be fixed herein.

Clear depth of the box shall not be less than 50mm, and this shall be increased suitably to accommodate mounting of fan regulators in flush pattern.

The fan regulators can also be mounted on the switch box covers, if so directed by the Engineer-In-Charge.

The size of the switch box in case of modular type switches shall be as per manufacturer's standard.

#### INSTALLATION

Common aspects for recessed and surface conduit works.

##### Conduit Joints

The conduit work in each circuit or section shall be completed before the cables are drawn in.

Conduit pipes shall be joined by means of screwed couplers and screwed accessories only. Threads on conduit pipes in all cases shall be between



13mm to 19mm long, sufficient to accommodate pipes to full threaded portion of couplers or accessories.

Cut ends of conduit pipes shall have no sharp edges, nor any burrs left to avoid damage to the insulation of the conductors while pulling them through such pipes.

The Engineer-In-Charge, with a view to ensuring that the above provision has been carried out, may require that the separate lengths of conduit etc. after they have been prepared shall be submitted for inspection before being fixed.

No bare threaded portion of conduit pipe shall be allowed, unless such bare threaded portion is treated with anticorrosive preservative or covered with approved plastic compound.

#### Bends in Conduit

All necessary bends in the system, including diversion, shall be done either by neatly bending the pipes without cracking with bending radius of not less than 7.5 cm., or alternatively, by inserting suitable solid or inspection type normal bends, elbows or similar fittings, or by fixing cast iron inspection boxes, whichever is most suitable.

No length of conduit shall have more than the equivalent of four quarter bends from outlet to outlet.

Conduit fittings shall be avoided as far as possible on conduit system exposed to weather. Where necessary, solid type fittings shall be used.

#### Outlets

All outlets such as switches, wall sockets etc. may be either flush mounting type, or of surface mounting type, as specified in the additional specifications if any or as directed by the Engineer-In-Charge.

### 10.2.3 Earthing Requirements

The entire system of metallic conduit work, including the outlet boxes and other metallic accessories, shall be mechanically and electrically continuous by proper screwed joints, or by double check nuts at termination. The conduit shall be continuous when passing through wall or floors.

Protective (loop earthing) conductor (s) shall be laid along the runs of the conduit between the metallic switch boxes and the distribution boards/ switchboards, terminated thereto. The conductors shall be of such size and material as





specified. Depending upon their size and material, the protective earth conductors shall be either drawn inside the conduits alongwith the cables, or shall be laid drawn in outside the conduits. When laid external to the conduits, this shall be properly clamped with the conduit at regular intervals.

The protective conductors shall be terminated properly using earth studs, earth terminal block etc. as the case may be.

Gas or water pipe shall not be used as protective conductor (earth medium). TABLE - I  
 Maximum number of PVC insulated 650/1100 V grade aluminum/copper conductor cable conforming to IS : 694 - 1990

Nominal Cross-Sectional area of conductor in sq.mm	20mm		25mm		32mm		38mm		51mm		64mm	
	S	B	S	B	S	B	S	B	S	B	S	B
1	2	3	4	5	6	7	8	9	10	11	12	13
1.50	5	4	10	8	18	12	-	-	-	-	-	-
2.50	5	3	8	6	12	10	-	-	-	-	-	-
4	3	2	6	5	10	8	-	-	-	-	-	-
6	2	-	5	4	8	7	-	-	-	-	-	-
10	2	-	4	3	6	5	8	6	-	-	-	-
16	-	-	2	2	3	3	6	5	10	7	12	8
25	-	-	-	-	3	2	5	3	8	6	9	7
35	-	-	-	-	-	-	3	2	6	5	8	6
50	-	-	-	-	-	-	-	-	5	3	6	5
70	-	-	-	-	-	-	-	-	4	3	5	4

NOTE :

The above table shows the maximum capacity of conduits for a simultaneous drawing in of cables.



The columns headed 'S' apply to runs of conduits which have distance not exceeding 4.25m between draw in boxes and which do not deflect from the straight by an angle of more than 15 degrees. The columns headed 'B' apply to runs of conduit, which deflect from the straight by an angle of more than 15 degrees. Conduit sizes are the nominal external diameters.

#### SPECIFICATION FOR L.T CABLES GENERAL

L.T. Cables shall be supplied, inspected, laid tested and commissioned in accordance with drawings, specifications, relevant Indian Standards specifications and cable manufacturer's instructions. The cable shall be delivered at site in original drums with manufacturer's name clearly written on the drums. The recommendations of the cable manufacturer with regard to jointing and sealing shall be strictly followed.

#### MATERIALS

The L.T. Power cables shall be XLPE insulated PVC sheathed type aluminium conductor armoured cable conforming to IS : 7098 : 1988 (Part-I) with upto date amendments where as control cable shall be XLPE insulated and PVC sheathed copper conductor armoured/unarmoured cable conforming to IS:7098 (Part-I) 1988.

#### INSTALLATION OF CABLES

Cables shall be laid directly in ground, pipes, masonry ducts, on cable tray, surface of wall/ceiling etc. as indicated on drawings and/or as per the direction of Engineer-In-Charge. Cable laying shall be carried out as per CPWD specifications.

#### INSPECTION

All cables shall be inspected at site and checked for any damage during transit.

#### JOINTS IN CABLES

The Contractor shall take care to see that the cables received at site are apportioned to various locations in such a manner as to ensure maximum utilisation and avoiding of cable joints. This apportioning shall be got approved from Engineer-In-Charge before the cables are cut to lengths.



#### LAYING CABLES IN GROUND

Cables shall be laid by skilled experienced workmen using adequate rollers to minimize stretching of the cables. The cable drums shall be placed on jacks before unwinding the cable. With great care it shall be unrolled on over wooden rollers placed in trenches at intervals not exceeding 2 metres. Cables shall be laid at depth of 0.75 metres below ground level. A cushion of sand total of 250mm shall be provided both above and below the cable, joint boxes and other accessories. Cable shall not be laid in the same trench or alongside a water main.

The cable shall be laid in excavated trench over 80mm layer of sand cushion. The relative position of the cables, laid in the same trench shall preserved. At all changes in direction in horizontal and vertical planes, the cables shall be bent smooth with a radius of bent not less than 12 times the diameter of cables. Minimum 3 metre long loop shall be provided at both end of cable.

Distinguishing marks may be made on the cable ends for identifications of phases. Insulation tapes of appropriate voltage and in red, yellow and blue colours shall be wrapped just below the sockets for phase identifications.

#### PROTECTION OF CABLES

The cables shall be protected by bricks laid on the top layer of the sand for the full length of underground cable. Where more than one cables is laid in the same trench, the bricks shall cover all the cables and shall project a minimum of approximately 80mm on either side of the cables. Cable under road crossings and any other places subject to heavy traffic, shall be protected by running them through Hume Pipes of suitable size. Cable may also be laid in HDPE DWC pipe.

#### EXCAVATION & BACK FILL

All excavation and back fill required for the installation of the cables shall be carried out by the Contractor in accordance with the drawings and requirements laid down elsewhere. Trenches shall be dug true to line and grades. Back fill for trenches shall be filled in layer not exceeding 150mm. Each layer shall be properly rammed and consolidated before laying the next layer. The Contractor shall restore all surface, roadways, sidewalks, kerbs wall or the works cut by excavation to their original condition to the satisfaction of the Engineer-In-Charge.



#### LAYING OF CABLES ON CABLE TRAY/SURFACE OF WALL/CEILING

Cable shall be laid on perforated M.S. Cable tray. Cables shall be properly dressed before cable ties/clamps are fixed. Wherever cable tray is not proposed, cables shall be fixed on surface of wall or ceiling slab by suitable MS clamps/ saddles. Care shall be taken to avoid crossing of cable.

#### CABLES ON HANGERS OR RACKS

The Contractor shall provide and install all iron hangers racks or racks with die cast cleats with all fixings, rag bolts or girder clamps or other specialist fixing as required.

Where hangers or racks are to be fixed to wall sides, ceiling and other concrete structures, the Contractor shall be responsible for cutting away, fixing and grouting in rag bolts and making good.

The hangers or racks shall be designed to leave at least 25mm clearance between the cables and the face to which it is fixed. Multiple hangers shall have two or more fixing holes. All cables shall be saddled at not more than 150mm centers. These shall be designed to keep provision of some spare capacity for future development.

#### CABLES TAGS

Cable tags shall be made out of 2mm thick aluminium sheets, each tag 1-1/2 inch in dia with one hole of 2.5mm dia, 6mm below the periphery. Cable designations are to be punched with letter/number punches and the tags are to be tied inside the panels beyond the glanding as well as below the glands at cable entries. Trays tags are to be tied at all bends. On straight lengths, tags shall be provided at every 5 meters.

#### TESTING OF CABLES

Prior to installation, burying of cables, following tests shall be carried out. Insulation test between phases, phase & neutral, phase & earth for each length of cable.

Before laying.

After laying.

After jointing.

On completion of cable laying work, the following tests shall be conducted in the presence of the Engineer-In-Charge.



Insulation Resistance Test (Sectional and overall).

Continuity Resistance Test.

Earth Test.

All tests shall be carried out in accordance with relevant Indian Standard code of practice and Indian Electricity Rules. The Contractor shall provide necessary instruments, equipment and labour for conducting the above tests & shall bear all expenses of conducting such tests.





## LIST OF APPROVED MAKES OF MATERIALS

1		PVC Conduit	a) Polypack
			b) Supreme
2		FRLS PVC Insulated copper Wire	a) Finolex
			d) Havells



3		MCB / RCCB	a) Legrand
			b) Schneider Electric
			c) L&T
			d) Siemens
			e) C&S
4		MCB DB / Industrial Socket	a) Legrand
			b) Schneider Electric
			c) L&T
			d) Siemens
			e) C&S
5		MCCB	a) ABB
			b) Siemens
			c) Schneider
			d) L&T
6		Modular Type Switch/Socket/ Information Outlets/Accessories/	a) Havells
		GI Box /TV Socket	b) Schneider
			c) Legrand
			d) MK
			e) Anchor
7		GI Pipe (ISI Marked)	a) TATA
			b) Jindal (Hisar/ Ghaziabad)





8		MV Panels / Feeder Pillar	a) Diamond Electricals
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			b) Trisquare Switchgears
			c) K D Power Control
9		HT Panel	a) Trisquare Switchgears
			b) Advance
			c) Adlec
10		LT Cables Aluminium	a) Finolex
			b) Grandley
			c) Poly Cab
			d) Havells
			e) Batra Hanley
			f) Gloster
			g) Paramount
11		LT Cables Copper	a) Finolex
			b) Bonton
			c) Poly Cab
			d) Havells
			e) Batra Hanley
			f) Gloster
12		Ceiling Fan/ Industrial Type wall fan	a) Crompton
			b) Hevell's
			c) Usha
			d) Polar



			e) Orient
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			f) Almonard
13		Lug / Thimble	a) Dowells
			b) Jainson
			c) Comet
			d) Multi
14		Cable gland / Termination	a) Dowells
			b) Lapp Kabel
			c) Comet
			d) Gripwell
15		Cable Joint / End Termination	a) Raychem
			b) 3 M
			c) M seal
16		Digital Meter	a) Neptune (Phasetrac)
			b) L&T
			c) AE
			d) Conzerve
17		LT Current Transformer	a) AE
			b) Kappa
18		Selector Switch	a) L&T
			b) Kaycee
			c) Neptune
19		Light Fixture	a) Bajaj



			b) C&S
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			c) Philips
20		GI Octagonal Poles and GI high mast	a) Bajaj
			b) PE
			c) BPP
21		Lamp	a) Philips
			b) Osram
			c) Bajaj
			d) wipro
22		Choke	a) Philips
			b) Bajaj
			c) Osram
23		Ignitor	a) Philips
			b) Bajaj
24		Capacitor	1. L & T
			2. Neptune
25		Desert Cooler	Symphony
			Bajaj
			Kenstar
26		Fire Alarm Panel	Agni Instruments
			Daksh Electronics
			ASE
			GST



27		MCP	Agni Instruments
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			Daksh Electronics
			ASE
			GST
28		Hooter	Agni Instruments
			Daksh Electronics
			ASE
			GST
29		Smoke Detectors	Apollo
			System Sensor
			GST
30		Pumps	Kirloskar
			Mather & Platt
			Beacon
			Grunfos
			HBD
31		Exhaust fans	GEC
			Crompton
32		Fire Extinguishers	Zenith
			Safex
			Minimax
			Cease fire
			Getech





33		Electrical Distribution Transformer	CG
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			Kirloskar Electric
			ABB
			Schneider Electric
35		Sump Pumps	Kirloskar
			KSB
			Darling Pumps
			Mody
			Grundfos
			CRI

**NOTES:**

The Contractor shall confirm to use the abovementioned makes of various appliances. No materials of any make other than mentioned in the above list shall be used without prior approval of Engineer-in-charge. Contractor shall submit the samples of all appliances of the makes he intend to use whether it is listed above or not.



## A P E N D I X - III

### LIST OF BUREAU OF INDIAN STANDARDS CODES

All equipment, supply, erection, testing and commissioning shall comply with the requirements of Indian Standards and code of practices given below as amended upto 30<sup>th</sup> April, 2003 and up to date revisions if any. All equipment and material being supplied by the contractor shall meet the requirements of IS, electrical inspectorate and Indian Electricity rules and other Codes / Publications as given below with up to date revision :

#### 1. General

SP : 6 (1)	Structural Steel Sections
IS : 27	Pig Lead
IS : 554	Dimensions for pipe threads where pressure tight joints are required on the threads.
IS : 779	Specification for water meters (domestic type).
IS : 782	Specification for caulking load.
IS : 800	Code of practice for general construction in steel
IS : 1172	Code of Basic requirements for water supply drainage and sanitation.
IS : 1726	Specification for cast iron manhole covers and frames.
IS : 1742	Code of practice for building drainage.
IS : 2064	Selection, installation and maintenance of sanitary appliance code of practice.
IS : 2065	Code of practice for water supply in buildings.
IS : 2104	Specification for water meter for boxes (domestic type)
IS : 2379	Colour code for identification of pipe lines.
IS : 2527	Code of practice for fixing rainwater gutters and down pipes for roof drainage.



IS : 2629	Recommended practice for hot dip galvanizing on iron and Steel.
IS : 3114	Code of practice for laying of cast iron pipe
IS : 4111 (Part 1)	Code of practice for ancillary structures in sewerage system: Part 1 manholes.
IS : 4127	Code of practice for laying glazed stoneware pipes.
IS : 5329	Code of practice for sanitary pipe work above ground for buildings.
IS : 6159	Recommended practice for design and fabrication of material, prior to galvanizing.
IS : 7558	Code of practice for domestic hot water installations.
IS : 8321	Glossary of terms applicable to plumbing work.
IS : 8419 (Part 1)	Requirements for water filtration equipment: Part 1 Filtration medium sand and gravel.
IS : 9668	Code of practice for provision and maintenance of water supplies and firefighting.
IS : 9912	Coal tar based coating materials and suitable primers for protecting iron and steel pipe lines.
IS : 10221	Code of practice for coating and wrapping of underground mild steel pipelines.
IS : 10446	Glossary of terms relating to water supply and sanitation.
IS : 11149	Rubber Gaskets
IS : 12183 (Part 1)	Code of practice for plumbing in multistoried buildings: Part 1 water supply.
IS : 12251	Code of practice for drainage of building basements.
IS : 5572	Code of practice for sanitary pipe work.
BS : 6700	Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their cartilages.
BS : 8301	Code of practice for building drainage.



## 2. Pipes and Fittings

IS : 458	Specification for precast concrete pipes (with and without reinforcement)
IS : 651	Stone ware pipes
IS : 1239 (Part 1)	Mild steel, tubes, tubular and other wrought steel fittings: Part 1 Mild Steel tubes.
IS : 1239 (Part 2)	Mild Steel tubes, tubular and other wrought steel fittings: Part 2 Mild Steel tubular and other wrought steel pipe fittings.
IS : 1536	Centrifugally cast (spun) iron pressure pipes for water, gas and sewage.
IS : 1537	Vertically cast iron pressure pipes for water, gas and sewage.
IS : 1538	Cast Iron fittings for pressure pipes for water, gas and sewage.
IS : 1729	Sand Cast iron spigot and socket soil, waste and ventilating pipes, fittings and accessories.
IS : 1879	Malleable cast iron pipe fittings.
IS : 3989	Centrifugally cast (sun) iron spigot and socket soil, waste and ventilating pipes, fittings and accessories.
IS : 4346	Specifications for washers for use with fittings for water services.
IS : 4711	Methods for sampling steel pipes, tubes and fittings.
IS : 6392	Steel pipe flanges
IS : 6418	Cast iron and malleable cast iron flanges for general engineering purposes.
IS : 7181	Specification for horizontally cast iron double flanged pipe for water, gas and sewage.

## 3. Valves



IS : 778	Specification for copper alloy gage, globe and check valves for water works purposes.
IS : 780	Specification for sluice valves for water works purposes (50 mm to 300 mm size).
IS : 1703	Specification copper alloy float valves (horizontal plunger type) for water supply fittings.
IS : 5312	(Part 1) Specification for swing check type reflux (non return) valves: part 2 Multi door pattern.
IS : 5312	(Part 2) Specification for swing check type reflux (non return) valves: part 2 Multi door pattern.
IS : 1299	2 (Part 1) Safety relief valves, spring loaded : Design
IS : 1309	5 Butterfly valves for general purposes.
4. Fire Fighting Equipment	
h TAC	Tariff Advisory Committee fire protection manual Part- I.
TAC	Rules of Tariff Advisory Committee for automatic sprinkler system.
NFPA : 1	2 , 1993 Standards on Carbon Dioxide Extinguishing System
IS : 636	Non-percolating flexible firefighting delivery hose.
IS : 884	Specification for first aid hose reel for firefighting.
IS : 901	Specification for couplings, double male and double female, instantaneous pattern for firefighting.
IS : 902	Suction hose couplings for firefighting purposes.
IS : 903	Specification for fire hose delivery couplings, branch pipe, nozzles and nozzle spanner.



- IS : 904 Specification for 2-way and 3-way suction collecting heads for firefighting purposes.
- IS : 907 Specification for suction strainers, cylindrical type for firefighting purposes.
- IS : 908 Specification for fire hydrant, stand post type.
- IS : 909 Specification for underground fire hydrant, sluice valve type.
- IS : 1648 Code of practice for fire safety of building (general)  
:Firefighting equipment and its maintenance.
- IS : 2171 Specification for portable fire extinguishers dry powder (cartridge type)
- IS : 2190 Selection, installation and maintenance of first aid fire extinguishers – Code of practice.
- IS : 2871 Specification for branch pipe, universal, for fire fighting purposes.
- IS : 2878 Specification for fire extinguishers, carbon dioxide type (portable and trolley mounted).
- IS : 3844 Code of practice for installation and maintenance of internal fire hydrants and hose reel on premises.
- IS : 5290 Specification for landing valves.
- IS 5714 Specification for coupling, branch pipe, nozzle, used in hose reel tubing for fire fighting.
- IS : 8423 Specification for controlled percolation type hose for fire fighting.
- IS : 10658 Specification for higher capacity dry powder fire extinguisher (trolley mounted).
- IS : 1309 External hydrant systems – Provision and maintenance – Code of practice.

## 5. Water Quality Tolerance



IS : 3025 (Parts 1 to 44) Method of sampling and test (physical and chemical) for water and waste water.

IS : 4764 Tolerance limits for sewage effluents discharged into inland surface waters.

IS : 10500 Drinking Water

6. Pumps & Vessels

IS : 1520 Specification for horizontal centrifugal pumps for clear cold fresh water.

IS : 2002 Steel plates for pressure vessels for intermediate and high temperature service including boilers.

IS : 5600 Specification for sewage and drainage pumps

IS : 8034 Specification for submersible pump sets for clear, cold, fresh water.

IS : 8418 Specification for horizontal centrifugal self-priming pumps.





SECTION 6  
FORM OF BID



SECTION 6 FORM OF BID

To:  
Principal, Kirori Mal College,

Delhi University, Delhi

**Sub: Bid for \_\_\_\_\_**

Dear Sir,

Having visited the site and examined the Bid Documents including Invitation for Bid, Instructions to Bidders, General/Special/Additional Conditions of Contract, Appendix to Bid, Technical Specifications, Bill of Quantities, Drawings, Forms and other Annexures for the execution of the above named Works, we the undersigned, offer to execute and complete such works and remedy any defects therein in conformity with the said Bid Documents for the sum as quoted in Financial Bid or such other sum as may be ascertained in accordance with the said Bid Document.

We acknowledge that the Appendix to Bid forms an integral part of the bid.

We undertake, if our Bid is accepted, to commence the Works within 7 days from the issue of Letter of Acceptance (or as specified in Appendix to Bid) and to complete and deliver the sections and whole of the Works comprised in the Contract within 6 (Six) months from date of commencement of work.

If our Bid is accepted we will furnish a Performance Security (Guarantee) for the due performance of the contract. The amount and form of such guarantee will be in accordance with requirements of Bid Documents/Conditions of Contract.

We have independently considered the amount shown in the clause 2 of General Conditions of Contract as liquidated damages (compensation for delay) and agree that they represent a fair estimate of the damages likely to be suffered by you in the event of the work not being completed in time.

We agree to abide by this Bid for a minimum period of 90 days from the date fixed for receiving the bids and it shall remain binding upon us and may be accepted at any time before the expiry of that period or any extended period mutually agreed to.

Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding Contract between



us, but without prejudice to your right to withdraw such Acceptance under the provisions of the Conditions of Contract.

We declare that the submission of this Bid confirms that no agent, middleman or any intermediary has been, or will be engaged to provide any services, or any other item of work related to the award of this Contract and that we have not breached or will be breaching the Clause 34 of Instructions to Bidders. We acknowledge the right of the Employer, if he finds to the contrary, to declare our Bid to be non-compliant and if the Contract has been awarded, to declare the Contract null and void.

We understand that you are not bound to accept the lowest or any Bid you may receive.

If our bid is accepted, we understand that we are to be held solely responsible for the due performance of the Contract.

Date this-----day of 2021

Signature----- in the capacity                      duly

authorized to sign Bid for an on behalf of -----

-----

Address-----

-----

Signature of Witness

1.....                      2..... Name & Address of  
Witness

1.....                      2.....

.....

.....

.....



## SECTION 7 BILL OF QUANTITIES



## SCHEDULE OF ITEMS - PREAMBLE

The Schedule of Items shall be read in conjunction with Invitation for Bid, Instructions to Bidders, General and Special /Additional Conditions of Contract, Technical Specifications and Drawings.

The bidder has to quote rates against particular Item.

The rates and prices will be deemed to include all plant, labour, supervision, materials, transport, all temporary works, erection, maintenance, taxes and duties, contractor's profit and establishment/overheads, together with preparation of design and drawings, all general risks, insurance liabilities, compliance of labour laws and obligations set out or implied in the contract.

Errors will be corrected by the Employer as per contract conditions.

The Schedule of Items shall be type written. The person authorized to sign on behalf of the Bidder shall sign in full with company seal and date at the bottom of all pages. Any corrections shall be made by clearly striking out the previous data, writing the correct figure/data and putting signature of the authorized signatory at the place of correction. Use of correction fluid is not allowed.

The works executed against the work order would be paid on measurement basis.

The payment under the Payment Schedule will cover all work specified in the tender drawing and / or provided in the scope of work. The Schedule of Payment will not get modified due to alterations of any type so far as the modifications/alterations .

Name of Work: BALANCE WORK IN LIBRARY BUILDING AT KIRORI MAL COLLEGE, DELHI UNIVERSITY, DELHI-110007						
Sl No		Description of items	Quantity	Unit	Rate	Amount
		<b>Sub Head - A :- Civil Works</b>				
1	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
	4.1.8	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	37.50	cum		
2	5.9	Centering and shuttering including strutting, propping etc. and removal of form for :				
	5.9.3	Suspended floors, roofs, landings, balconies and access platform	405.00	sqm		
	5.9.4	Shelves (Cast in situ)	3.00	sqm		
	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	90.00	sqm		
	5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts	37.50	sqm		
	5.9.7	Stairs, (excluding landings) except spiral-staircases.	26.25	sqm		



	5.9.16	Edges of slabs and breaks in floors and walls	112.50	Meter		
	5.9.19	Weather shades, chajjas, corbels, etc, including edges	11.25	sqm		
3	5.11	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured).				
	5.11.1	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured)	15.00	sqm		
4	5.22A	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto floor V level				
	5.22A.6	Thermo-Mechanically Treated bars.	12852.00	kilogram		
5	5.30	Add or deduct for plaster drip course /groove in plastered surface or moulding to R.C.C. projections.	16.50	metre		
6	5.33	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/recoverable separately).				
	5.33.2	All works above plinth level upto floor V level	84.00	cum		
7	6.4	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :				
	6.4.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	29.25	cum		
8	6.13	Half brick masonry with F.P.S. bricks of class designation 75 in superstructure above plinth level up to floor V level.				
	6.13.2	Cement mortar 1:4 (1 cement : 4 coarse sand)	72.00	sqm		
9	6.15	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry (with F.P.S. bricks).	72.00	sqm		
10	8.2	Providing and fixing 18mm thick gang saw cut mirror polished pre moulded and pre polished machine cut for flooring, staircase treads, risers and landings, kitchen platforms, vanity counters, window sills, facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels.				
		Granite of any colour and shade				
	8.2.2.1	Area of slab upto 0.50 sqm	13.50	sqm		
11	8.3	Extra for providing edge moulding to 18mm thick marble stone counters, Vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.				
	8.3.2	Granite of any colour and shade	25.50	metre		
12	8.4	Extra for fixing marble /granite stone over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive including cleaning etc. complete.	108.75	metre		
13	8.6	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.	9.00	sqm		



14	8.8	Providing and fixing expansion hold fasteners on C.C./R.C.C. surface backing including drilling necessary holes and the cost of bolt etc complete.				
	8.8.1.2	Fastener with threaded dia 10 mm.	15.00	each		
15	9.1	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position :				
	9.1.1	Second class teak wood	0.90	cum		
16	9.21	Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part I) non- decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.				
	9.21.3	25 mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. Piano hinges IS : 3818 marked with necessary screws.	16.50	sqm		
17	9.46	Providing and fixing curtain rods of 1.25 mm thick chromium plated brass plate, with two chromium plated brass brackets fixed with C.P. brass screws and wooden plugs, etc., wherever necessary complete :				
	9.46.3	25 mm dia.	33.75	metre		
18	9.84	Providing and fixing IS:3564 marked having brand logo with ISI embossed on the plate door weight 36 KG to 80 KG and door width from 701 mm to 1000 mm aluminium extruded section body tubular type universal hydraulic door closer with double speed adjustment with necessary accessories and screws etc.complete	16.00	each		
19	9.97	Providing and fixing aluminium tower bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868 ) transparent or dyed to required colour or shade with necessary screws etc. complete :				
	9.97.2	250x10 mm	16.50	each		
	9.97.3	200x10 mm	9.00	each		
	9.97.4	150x10 mm	51.00	each		
20	9.100	Providing and fixing aluminium handles ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade with necessary screws etc. complete :				
	9.100.1	125 mm	16.00	each		
	9.100.2	100 mm	9.00	each		
21	9.1	Providing and fixing aluminium hanging floor door stopper ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade with necessary screws etc. complete.				
	9.101.2	Twin rubber stopper	16.00	each		



22	9.1	Providing and fixing aluminium casement stays ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade with necessary screws etc. complete.	16.00	each		
23	9.11	Providing and fixing bright finished 100 mm mortice lock with 6 levers without pair of handles for aluminium door with necessary screws etc. complete ( best make of approved quality)	16.00	each		
24	9.14	Providing and fixing fly proof stainless steel grade 304 wire gauge, to windows and clerestory windows using wire gauge with average width of aperture 1.4 mm in both directions with wire of dia. 0.50 mm all complete.				
	9.135.2	With 12 mm mild steel U beading	42.00	sqm		
25	9.147 D	Providing and fixing factory made uPVC white colour sliding glazed window upto 1.50 m in height dimension comprising of uPVC multi-chambered frame with in-built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), appropriate dimension of uPVC extruded glazing beads and uPVC extruded interlocks, EPDM gasket, wool pile, zinc alloy (white powder coated) touch locks with hook, zinc alloy body with single nylon rollers (weight bearing capacity to be 40 kg), G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes, wire mesh and silicon sealant shall be paid separately) Note: For uPVC frame and sash extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable.				
	9.147D.2	Three track three panels sliding window with fly proof SS wire mesh (Two nos. glazed & one no. wire mesh panels) made of (small series) frame 92 x 44 mm & sash 32 x 60 mm both having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension (Area of window upto 1.75 sqm).	76.50	sqm		





26	10.1	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	326.25	kg		
27	10.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	425.25	kg		
28	10.3	Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
	10.25.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	258.75	kg		
29	10.3	Providing and fixing stainless steel ( Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	172.50	kg		
30	11.3	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :				
	11.26.1	25 mm Thick	342.00	sqm		
31	11.3	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	50.25	sqm		
32	11.3	Extra for Kota stone/ sand stone in treads of steps and risers using single length up to 1.05 metre .	50.25	sqm		
33	8.31	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacture ) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	133.57	sqm		
34	11.40	Providing and laying rectified ceramic glazed tiles 300 x300 mm or more (thickness to be specified by the manufacture) of 1st quality conforming to IS :15622 of approved make and all colour and shades except white, Ivory, Grey, Fume, Red brown laid on 20mm thick cement mortar 1:4 (1cement : 4coarse sand) including pointing the joint with white cement and matching pigments etc. complete	48.23	sqm		
35	11.41.4	Providing and laying Vitrified floor tiles in different sizes (thickness to be specified by the manufacture) with water absorption less then 8% and conforming to IS :15622 of approved make and colour and shades laid on 20mm thick cement mortar 1:4 (1cement : 4coarse sand) including grouting the joint with white cement and matching pigments etc. complete size of Tile 1000 mmx1000 mm	90.00	sqm		
36	11.4	Deduct for not using 20 mm thick cement mortar 1:4 ( 1 cement :4 coarse sand) bedding in laying of floor tiles	90.00	sqm		
37	11.4	Fixing glazed/ ceramic / vitrified floor tiles with cement based high polymer modified quick set tile adhesive ( water based) conforming to IS :15477 using 5 kg adhesive per sqm of tile area in average 3mm thickness	17.25	sqm		
38	12.4	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				
		12.41.2 110 mm diameter	45.00	rmt		



39	12.4	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.				
		12.42.1 Coupler				
		12.42.1.2 110 mm	5.00	each		
		12.42.4 Single tee without door				
		12.42.4.2 110x110x110 mm	5.00	each		
		12.42.6 Shoe (Plain)				
		12.42.6.2 110 mm Shoe	5.00	each		
40	12.5	Providing and fixing to the inlet mouth of rain water pipe PTMT (an Engineering Thermoplastic) grating square (Slit) 150 mm square with a height of 8 mm and weighing not less than 100 gms.	5.00	each		
41	12.50	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	92.25	sqm		
42	12.5	Providing and fixing precoated galvanised steel sheet roofing accessories 0.50 mm (+ 0.05 %) total coated thickness, Zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws complete :				
	12.51.6	Gutter .(600 mm over all girth)	16.50	Meter		
43	13.2	15 mm cement plaster on the rough side of single or half brick wall of mix :				
	13.2.1	1:4 (1 cement: 6 fine sand)	184.50	sqm		
44	13.16.1	6 mm cement plaster of mix : 1:3 (1 cement : 3 fine sand)	48.23	sqm		
45	13.4	Distemping with oil bound washable distemper of approved brand and manufacture to give an even shade				
	13.41.1	New work (Two or more coats) over and including priming coat with cement primer.	309.75	sqm		
46	13.4	Finishing walls with water proofing cement paint of required shade :				
	13.44.1	New work (Two or more coats applied @ 3.84 kg/10 sqm).	287.59	sqm		
47	13.5	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :				
	13.48.1	Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @ 0.75 ltr / 10 sqm	900.00	sqm		
48	13.6	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade:				
	13.62.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	244.50	Sqm		



49	13.8	Providing and applying 12 mm thick (average) premixed formulated one coat gypsum lightweight plaster having additives and light weight aggregates as vermiculite/ perlite respectively conforming to IS: 2547 (Part - 1 & II) 1976, applied on hacked / uneven background such as bare brick/ block/ RCC work on walls & ceiling at all floors and locations, finished in smooth line and level etc. complete.	486.75	sqm		
50	15.7	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.				
	15.7.4	In cement mortar	9.00	Cum		
51	15.17	Dismantling steel work in single sections including dismembering and stacking within 50 metres lead in:				
	15.17.1	R.S. Joists	172.50	Kg		
	15.17.2	Channels, angles, tees and flats	337.50	Kg		
52	15.18	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 metres lead.	502.50	Kg		
53	15.28	Dismantling roofing including ridges, hips, valleys and gutters etc., and stacking the material within 50 metres lead of:				
	15.28.1	G.S. Sheet	91.50	Sq.m.		
54	15.58	Demolishing R.C.C. work by mechanical means and stockpiling at designated locations and disposal of dismantled materials up to a lead of 1 kilometre, stacking serviceable and unserviceable material separately including cutting reinforcement bars.	17.25	Cum		
55	15.60	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	270.00	Cum		
		<b>SANITARY INSTALLATIONS</b>				
56	17.3	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
	17.28.2	Flexible pipe				
	17.28.2.1	32 mm dia	42.00	each		
57	17.33	Providing and fixing 600x120x5mm glass shelf with edges round of supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40mm long screws, rawl plugs etc. complete.	8.00	each		
		<b>WATER SUPPLY</b>				



58	18.8	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.  Concealed work including cutting chases and making good the walls etc.,				
	18.8.2	20 mm nominal outer dia .Pipes.	165.00	metre		
	18.8.3	25 mm nominal outer dia .Pipes.	82.50	metre		
59	18.9	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement ,trenching ,refilling & testing of joints complete as per direction of Engineer in Charge.				
	18.9.1	15 mm nominal outer dia .Pipes.	60.00	metre		
	18.9.2	20 mm nominal outer dia .Pipes.	60.00	metre		
	18.9.3	25 mm nominal outer dia .Pipes.	22.50	metre		
	18.9.4	32 mm nominal outer dia .Pipes.	22.50	metre		
60	18.7	Providing and fixing PTMT soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements, weighing not less than 106 gms.	21.00	each		
	18.8	Cutting holes upto 30x30 cm in walls including making good the same :				
	18.76.1	With common burnt clay F.P.S. (non modular) bricks.	18.75	each		
61		<b>Aluminium work</b>				
62	21.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately) :				



	21.1.1.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	723.75	kg		
63	21.1.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required (Fittings shall be paid for separately).				
	21.1.2.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	712.50	kg		
64	21.2	Providing and fixing 12mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				
	21.2.2	Pre-laminated particle board with decorative lamination on both sides .	49.50	sqm		
65	21.3	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item) :				
	21.3.2	With float glass panes of 5.50 mm thickness	66.75	sqm		
66	21.1	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	9.00	Nos.		
67	21.2	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete				
	21.15.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	9.00	each		
68	21.2	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in-charge				
	21.16.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	9.00	each		
69	22.5	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm. This layer will be allowed to air cure for 4 hours. b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry	48.23	Sqm		
70	22.7	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand ) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineerin-Charge :				



	22.7.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	360.00	Sqm		
71	NS	All primary members (Columns & Rafters) would be fabricated from Plates having minimum yield strength of 240/345Mpa. And will conform to ASTM-A-572 Standard. The primary members would be fabricated by continuous shop automated welding using submerged arc welding. Primary members fabricated from plate will have flanges and webs jointed one side alternate on either side of the web by a continuous welding process. All primary members shall have one coat of primer. including all fittings directions of engineer-in-charge	1725.00	Kg.		
72	NS	The secondary members consist of Z-Purlins and eave struts coated with one coat of primer would be of Cold formed steel having minimum yield strength of 250/320 Mpa and would conform to IS 2062. including all fittings directions of engineer-in-charge	900.00	Kg		
73	NS	Providing and fixing CPVC non- return valve of approved quality				
		40 mm nominal bore				
		Horizontal	3.00	each		
		Vertical	3.00	each		
74	NS	Providing and fixing uplasticised PVC connection pipe with brass unions :				
		45 cm length				
		20 mm nominal bore	3.00	each		
		25mm nominal bore	2.00	each		
		32 mm nominal bore	2.00	each		
75	NS	Providing & Fixing Towel Rack 600 mm long without lower hangers but with three hooks as per direction of Engineer-in-Charge Code : ACN-1181FHN Jaquar	3.75	Nos.		
76	NS	Providing & Fixing Soap Dispenser with glass bottel as per direction of Engineer-in-Charge Code: AKP-35735P Jaquar	3.75	Nos.		
77	NS	Providing & Fixing Towel Ring Round as per direction of Engineer-in-Charge Code: AQN-7721 Jaquar	3.75	Nos.		



78	NS	Providing and fixing CP grating of approved quality as per direction of Engineer-in-Charge. Circular type. 100 mm nominal dia.	9.00	Nos.		
79	NS	Providing, fixing, jointing and testing in position of ISI marked UV stabilized <b>UPVC pipes</b> for <b>soil, waste and vent &amp; rain water, Type-B</b> as per IS13592 : suitable for rubber ring joints, including all necessary specials and fittings (confirming to IS:) i.e. bends, tees, junctions (with or without doors), reducers, couplers, cowls, clamps, rubber rings, clean outs etc. fixing at wall/ ceiling/ floor level supported by clamp & hangers etc. in concealed / inside duct / under floor & basement ceiling / external work etc. including chase cutting, cutting of RCC slab as required, excavation and back filling in all kind of soils, suspended from floor under false ceiling including cost of shuttering for proper completion of the work, breaking and making good the walls and floors etc. after pipes have been duly laid and tested.				
		The Pipes will be supported with threaded G I rods & clamps on 50x50x5 mm slotted angle. The cost will include all support arrangements. The work includes commissioning of all pipes lines as per drawings and specifications and as directed by engg-in-charge at site. - <b>Supreme/Prince make.</b>				
		110 mm outer dia	60.00	Rm		
80	NS	Providing & fixing <b>Long body Bib Cock</b> with wall flange (Make :- jaguar Con-107 KN )	22.50	each		
81	NS	Providing & fixing <b>Angular Stop Cock</b> with nuts, washer with C.P. brass flange complete, including cutting and making good the walls, wherever required. Regular body with adjustable wall flange (Make :- jaguar Con-059 KN )	12.00	each		
82	NS	Providing & fixing <b>Concealed Stop Cock</b> with nuts, washer with C.P. brass flange complete, including cutting and making good the walls, wherever required. Regular body with adjustable wall flange (Make :- jaguar Con-089 KN )	42.00	each		
83	NS	Providing & fixing Oval counter top Basin with provision also of all accessories required for installation and testing (Brand- Hindware Catalogue no 10017 Oval counter top Basin Star white )	24.00	each		
84	NS	Providing & fixing Pillar Cock Long neck With Aerator Hindware	24.00	each		



85	NS	Providing & fixing <b>Urinal</b> with provision also of all accessories required for installation and testing (Make :- Hindware catalogue no. 60002 FB- Large standard urinal star white )	9.00	each		
86	NS	Providing & fixing <b>10 Lit. Auto flush Urinal cistern</b> with provision also of all accessories required for installation and testing	9.00	each		
87	NS	Providing & fixing <b>Wall-hung European type water closet</b> with provision also of all accessories required for installation and testing (Brand- Hindware Catalogue no 20061 Star white wall mounted closet)	9.00	each		
88	NS	Providing & fixing Concealed Cistern with Chrome Plate Brand Viega including testing and all accessories required for installation.	9.00	each		
89	NS	Providing and fixing 5.5 mm thk. Mirror mounted on S.S Stud	13.50	sqm		
		<b>Sub head B:- Structural Strengthening</b>				
90	NS	Scaffolding: Providing and lifting all the material of steel scaffolding and erecting the steel scaffolding on all floors, of the building to attend ceiling repair work, including bracing, cross supports, runner pipes etc., upto any height. Maintaining for period of repairs including dismantling the same and taking away from site plan. Measurement shall be done on basis: height X length (elevation area), for each set of row installed.	172.50	Sqm		
91	NS	<b>Micro-Concrete:</b> Providing, mixing and pouring ready to use BASF Masteremaco S346 Micro-concrete mixed with 10mm and down aggregates up to 30% aggregate by weight as per the site requirement & as per specification complete.	1.50	Cum		
92	NS	Shuttering: Providing & fixing and removing water-tight shuttering for pouring micro- concrete in column	23.25	Sqm		





93	NS	All charges for providing and applying NITO BOND -FPF on existing surface for all building elements and at all level as per manufacturer specification all complete as per the instruction of Engineer In charge.	177.00	Sqm		
94	134	Providing and applying curing compound FOSROC Concure to the surface on DE shuttering of the column	300.00	Sqm		
95	135	<b>Re-baring:</b> Supplying, Drilling/Cleaning hole and injecting Hilty HY 200 Chemical with the help of Hilty HDM 500 dispenser as per manufacturer/ Structural consultant's specification and fixing rebar of the required diameters subsequently.				
	a	8mm dia - 100mm deep	4.00	Nos		
	b	8mm dia - 200mm deep	4.00	Nos		
	c	10mm dia - 100mm deep	4.00	Nos		
	d	10mm dia - 200mm deep	4.00	Nos		
	e	12mm dia - 120mm deep	4.00	Nos		
	f	12mm dia - 250mm deep	4.00	Nos		
	g	16mm dia - 160mm deep	4.00	Nos		
	h	16mm dia - 320mm deep	4.00	Nos		
96	NS	Epoxy Grouting				
	a	Drilling and fixing NRV nozzles in RCC members including, <b>Drilling Holes:</b> Drilling 14 mm dia., 50 to 75 mm deep holes in structural members at the intervals of 300 mm c/c horizontally and 200 mm c/c vertically in staggered manner as per the drawing. <b>Cleaning of holes:</b> Clean the holes by air blower prior to fixing nozzles. <b>Fixing of Nozzles:</b> Insert 12 mm dia. NRV nozzles in cleaned holes. <b>Cutting of Nozzles:</b> Cut the nozzles by cut of wheel after completion of grouting without damaging structural elements.	45.00	Nos		
	b	Applying & filling of shrinkage free low viscous epoxy resin based injection grout. <b>Product: BASF Master inject 1315</b> <b>(Actual consumption to be recorded at site)</b>	17.25	Kg		
97	NS	<b>Micro Fine Cement Grouting</b>				
	a	Supply and installation of G.I packer for injection grouting. Injection packer shall be grouted, and removed post grouting. cost of injection packer	26.00	Nos		
	b	Additional cost of grouting material Micro fine Cement	75.00	Kg		
98	NS	Providing, mixing and applying polymer modified cement based non shrink pre-packed mortar BASF Master Emaco S 348 in layers of 15mm thickness on chipped concrete. Mortar will be mixed by mechanical stirrer and will be applied by trowel. Each layer to have bond coat which will be paid separately and each layer of 15mm thick mortar too will be paid separately including curing as per manufacturer's specification.	7.50	Sqm		
99	NS	The damaged concrete patch shall be repaired with polymer modified mortar of structural grade having mix design as 50 kg cement: 200 kg coarse sand: 5 kg Sika Latex (Product Data Sheet enclosed), and water to have workable consistency. PMM shall be applied in multiple layers of not more than 15 mm thickness in one layer in the maximum of 40 mm.	7.50	Sqm		



100	NS	Identifying loose hollow, cracked concrete. Chiseling off the same carefully by manual method, upto good non- carbonated concrete. Lowering, stacking the debris.A) Brushing cleaning the exposed reinforcement. Hacking loose, delaminated concrete, loose aggregates from the surface of tor steel bar. Providing and applying rust converter chemical Sika rust off 100 or equivalent. Washing cleaning and re- brushing the steel after 12 hours minimum. Surface area of steel reinforcement will be measured for payment.B) Providing and applying Zinc rich primer BASF Master Emaco p-130 / Sika Fria Zinc, of approved make to the exposed, cleaned reinforcement. Surface area of steel reinforcement shall be measured for payments.	4.50	Sqm		
101	NS	Spray concrete with BASF-810 upto 50-60 mm thickness	32.25	Sqm		
102	NS	Providing & applying 12mm to 15mm average thick Cement Sand Plaster with Polypropylene Fiber to internal walls in superstructure above plinth level up to any height & level in cement mortar 1:6 (1 cement: 6 coarse sand) including hacking the surfaces, scaffolding, curing, making grooves at desired locations & curing etc. all complete as per details, specifications, drawings and to the satisfaction of the Engineer.	255.00	Sqm		
103	NS	Providing, fabricating and erecting Structural steel members in position at all levels and at all heights as specified in the drawings made out of standard MS sections solid/ hollow conforming to IS 226/2062/800. Cost to include fabricating necessary Gusset Plates, Stiffener plates, Brackets, Bolts, Cleats, seating angles etc., to the required size, shape, alignment etc., as per the drawings. Cost to include welding of members using structural steel welding electrodes as per IS 814 / 816 / 817, a coat of anti-corrosive primer (nonflammable) to the exposed surfaces, testing as per IS 7307 (PART 1), necessary equipment's, wastage, tools and tackles, staging, scaffolding required etc., complete including a coat of zinc chromate primer and two coats of Synthetic enamel painting.	0.38	MT		
104	NS	Providing & applying Welded Wire Mesh to internal walls or RCC surfaces in superstructure above plinth level up to any height & level including scaffolding and Power driven Nails etc. all complete as per details, specifications, drawings and to the satisfaction of the Engineer.	187.50	Sqm		
105	NS	Providing, fabricating, erecting MS frame work comprising of sections like angle and tube for sun shade.	300.00	Kg		
106	NS	Diamond sawing in brick work upto 230mm for creating openings/ creating slots for resting of reinforcement.	15.00	metre		



107	NS	Diamond sawing in RCC member for creating cutouts/ breaches, pockets etc. for passing of service lines or complete removal of member.	15.00	metre		
	a	For RCC slab	11.25	metre		
	b	For RCC column & beams	3.75	Sqm		
108	NS	Supply and fixing anchors as per specification:				
	a	HILTI HST M-12 Mechanical Anchor	4.00	Nos		
	b	HILTI HST M-16 Mechanical Anchor	4.00	Nos		
	c	HILTI HVA M-12 Chemical Anchor	5.00	Nos		
	d	HILTI HVA M-16 Chemical Anchor	5.00	Nos		
	e	HRD M-10 X 100 Mechanical Anchor for Frame Fixing	8.00	Nos		
	f	HLC M-10 X 80 Mechanical Anchor For Frame Fixing	4.00	Nos		
109	NS	Plinth protection: Providing & Laying of RCC around all periphery of building upto thickness of 75-125 with a length of 1 meter to protect foundation from waterlogging	4.50	Cum		
		<b>Carbon wrapping</b>				
110	NS	Chipping of bulged beams, columns etc. to required plane and making good the surface including removing of malba outsider depot.	22.50	sqm		
111	NS	Surface Preparation: Grinding of surface of columns to perfect level and rounding of edges by around 25 mm including filling of any honeycombing/patches in surface by high strength epoxy compound (Sikadur 31/ BASF- Master Brace 2200)	22.50	sqm		
112	NS	<b>430 GSM Single layer:</b> Supply and Installation of unidirectional carbon fiber wrap of minimum 430 GSM (SIKAWRAP /BASF Master Brace GSM 430) bonded with special grade epoxy adhesive (BASF <Asterbrace4500 )applied @ consumption co- efficient of 0.8-1.2 Kg/sqm on 1st layer and thereafter 0.7 kg/sqm for subsequently layer as per the manufacturer design and specification. The thickness of Carbon wrap shall be minimum 0.25 mm. The complete system shall consist of sprinkling of coarse sand over and above final top coat of epoxy adhesive for making suitable for plaster. Column surface area to be measured for payment	22.50	sqm		
113	NS	Providing and applying 40 mm thick cement sand plaster above the carbon wrapping of treatment in cement mortar 1:6 (1 cement : 6 fine and coarse sand l equal proportions) finished smooth including hacking the surfaces, scaffolding, curing, making grooves at desired location etc. complete as per drawing.	22.50	sqm		
114	NS	Providing and applying one coat of curing compound on finished surface	22.50	sqm		
		<b>Sub head C:- Electrical works</b>				
115	1.1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface/ recessed PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FR PVC insulated copper conductor single core cable etc. as required.				
	1.1.3	Group C	203.00	Point		
116	1.11	Wiring for twin control light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface /recessed medium class PVC conduit, 2 way modular switch,modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required	15.00	Point		
117	1.17	Supplying and drawing following sizes of FR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required				
	1.17.3	3 x 1.5 sq.mm	273.75	Meter		
	1.17.6	6 x 1.5 sq.mm	142.50	Meter		



	1.17.9	9 x 1.5 sq.mm	78.75	Meter		
	1.17.12	3 x 2.5 sq.mm	112.50	Meter		
	1.17.15	6 x 2.5 sq.mm	112.50	Meter		
	1.17.21	3 x 4 sq.mm	187.50	Meter		
	1.17.24	6 x 4 sq.mm	112.50	Meter		
	1.17.30	3 x 6 sq.mm	150.00	Meter		
118	1.18	Supplying and drawing following pair, 0.5 sq.mm FR PVC insulated copper conductor, unarmoured telephone cable in the existing surface/ recessed steel/ PVC conduit as required				
	1.18.2	2 Pair	127.50	Metre		
	1.18.3	4 Pair	112.50	Meter		
119	1.21	Supplying and fixing of following sizes of medium classPVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
	1.21.1	20mm	945.00	Metre		
	(b)	25 mm	708.75	Metre		
	(c)	32 mm	45.00	Meter		
120	1.24	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
	1.24.5	6 pin 15/16 amp socket outlet	72.00	each		
	1.24.6	Telephone socket outlet	4.00	each		
	1.24.7	TV antenna socket outlet	4.00	Each		
	1.24.8	Bell Push	4.00	Each		
121	1.25	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required	45.00	Each		
122	1.26	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	15.00	Each		
123	1.27	Supplying and fixing following size/ modules, GI box along with modular bases & cover plate for modular switches in recess etc as required				
	1.27.1	1 or 2 Module (75mm X 75mm)	45.00	Each		
	1.27.4	6 Module (200mm X 75mm)	68.00	Each		
	1.27.5	8 Module (125 mmX125 mm)	38.00	each		
	1.27.6	12 Module (200 mmX150 mm)	26.00	each		
124	1.33	Supplying and fixing 3 pin, 5 amp. Ceiling rose on the existing junction box/ wooden block including connection etc. as required.	38.00	Each		



125	1.44	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq.mm FR PVC insulated, copper conductor, single core cable etc. as required.	24.00	Each		
126	1.50.1	Installation of exhaust fan upto 450 mm sweep in the existing opening, including making the hole to suit the size of the above fan, making good the damage, connection, testing, commissioning etc. as required.( Up to 450mm sweep)	5.00	Each		
127	1.51	Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	5.00	Each		
128	2.3	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper busbar, neutral busbar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator).				
	2.3.8	2+12 way, Double door	1.50	Each		
129	2.8	Supplying and fixing following way, prewired, TP&N MCB distribution board, of steel sheet for 415 volts, on surface/ recess, complete with loose wire box, terminal connectors for all incoming and outgoing circuit, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnection, powder painted including earthing etc. as required. (But without MCB/RCCB/ Isolator).				
	2.8.8	12 Way (4+36) Double Door	3.00	Each		
130	2.1	Supplying and fixing 5 amps or 32 amps rating, 240 volts, 'B' series, miniature circuit breaker suitable for lighting and other load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	2.10.1	Single pole	32.00	Each		
131	2.12	Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	2.12.1	40 amps	2.00	Each		
132	2.13	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	2.13.2	63 amps	1.00	Each		
133	4.1	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
	4.1.4	300 mm width X 50 mm depth X 1.6 mm thickness	18.00	Meter		
	4.1.7	600 mm width X 50 mm depth X 2.0 mm thickness	9.00	Meter		
134	5.2	Earthing with G.I. earth pipe 4.5 mtr long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with without charcoal/coke and salt as required.	2.00	Set		
135	5.11	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	15.00	Mtr		



136	5.14	Providing and fixing 25 mm X 5 mm G.I. Strip on surface or in recess for connection etc at reqd.	15.00	Mtr		
137	5.16	Providing and and fixing 6 SWG dia G.I wire on surface or in recess for loop earthing along with existing surface / recessed conduit / submain wiring / cable as required.	16.50	Mtr		
138	7.1	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
	7.1.1	Upto 35 sq. mm	26.25	Meter		
139	7.7	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
	7.7.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	10.50	Meter		
140	9.1	Supply and making end termination with brass compression gland and aluminium/copper lugs for following size of PVC insulated and PVC sheathed/XLPE aluminium/copper conductor cable of 1.1KV grade as required.				
	9.1.34	4C x 25 Sq.mm Aluminium armoured	4.00	Each		
	9.1.35	4C x 35 Sq.mm Aluminium armoured	20.00	Each		
	9.1.22	3.5C x 50 Sq.mm Aluminium armoured	4.00	Each		
	9.1.23	3.5C x 70 Sq.mm Aluminium armoured	2.00	Each		
	9.1.27	3.5C x 185 Sq.mm Aluminium armoured	2.00	Each		
141	NS	Supplying of following sizes PVC insulated and PVC sheathed power cable of 1.1 KV grade armouret L.T cable as required conforming to IS:1554/IS-7098 ( Part-I ) 1998 as reqd at site.				
	a)	4C x 25 Sq.mm Aluminium armoured	16.50	Meter		
	b)	4C x 35 Sq.mm Aluminium armoured	16.50	Meter		
142	NS	Supply and fixing modular type A/C box complete with 16amp socket outlet 6 to 32 amp SPMCB, cover plate,connection testing and fixing etc as reqd	12.00	Each		
143	NS	Supply and fixing suitable size G.I. box with modular plate & connection in front on surface or in recess, including providing & fixing 3 nos. 6 pin, 15/16 amp. Socket outlet & 1 no. 15/16 Amp. Modular switches, 1 no. indicator, connection, painting etc. complete as reqd.	4.00	Each		
144	NS	Fabrication,Supplying,testing, installation and commissioning of well/ floor mounted cubical panel board/feeder pillar duly made out of 2 mm thick (M.S) fully compartmentalized having 200 amps.4 strip aluminium bus bar,interconnection earthing etc. complete as reqd.(Up to 350mm deep)	1.50	Sq.Mtr		
145	NS	Supply and fixing of 18 W LED surface panel MOD light with 18 W LED bulb ( Brand Halonix)	5.00	each		
146	NS	Supply and fixing Havells brand LED PRIDE PLUS NEO BATTEN 20 W 3000 K Warm Daylight LHEXACP5IN1W020 Decorative Slim Linear LED Batten Length : 1.15 m (1150 mm) Polycarbonate Body, SquareProfile	8.00	each		
147	NS	SUPPLY AND FIXING REGAL BATTEN LED Upto 2x22 W LED Tube (Single Side Connection), General purpose industrial compact batten suitable for single or twin Endura Tube Light with 1m. drop from ceiling	8.00	each		
148	NS	Supply of BULKHEAD Luminaire with toughened frosted glass suitable for 1 no 9 watt CFL lamp complete as required. ( Philips make ) cat no FXC 101	15.00	Each		



149	NS	Supply of following size of A.C. exhaust fan Size of 300 mm,900RPM single phase heavy duty complete with motor, blade fan and cover complete accessories in all respect.(Make:- Khaitan/Bajaj/Usha)	7.00	Each		
150	NS	Supply of 1200mm sweep A.C electric ceiling fan,capicitor type double ball bearing complete with 300mm down rod. Canopies,shackles,blades,but without regulator suitable for operation on 230/240 volts,50Hz,single phase,A.C.supply etc as reqd. (Make:-Bajaj/Usha/Khaitan)	23.00	Each		
151	NS	Supply and fixing of Single port British Style faceplate white (with box) complete in all respect at site.	30.00	Each		
152	NS	Supply and fixing of Giga,24 port Jack Panel (Cat-6) complete in all respect at site.	30.00	Each		
153	NS	Supply and fixing of Mounting Cord 7 ft Cat 6 complete in all respect at site.	30.00	Each		
154	NS	Supply and fixing of Mounting Cord 4 ft Cat 6 complete in all respect at site.	30.00	Each		
155	NS	Supply and fixing of 48 port managed switch gigabit SG300 complete in all respect at site.	2.00	Each		
156	NS	Supply and fixing of 42U floor standing rack with 230 volt AC fan-4d cable manager-9 12 port PDU,HW-5Pkt,Castor Set complete in all respect at site.	1.00	Each		
		<b>SUB-HEAD D: AIR CONDITIONER WORK.</b>				
157	NS	Supplying, installation, testing & commissioning of Aircooled Split Air-conditioners each comprising an outdoor unit consisting of Rotary Compressor, Condensor fan,etc. with outer casing and indoor Hi-wall Type 1.5 TR unit consisting of blower, filter, motoretc. having specified CFM 230+/_10% ,1-50 Hz alongwith cordless remote, (R-22) 1.5 TR with BEE 4 star rating.	15.00	Each		
158	NS	Supplying, installation, testing & commissioning of Aircooled ceiling concealed Air-conditioners each comprising an outdoor unit consisting of Rotary Compressor, Condensor fan,etc. with outer casing and indoor ceiling concealed type 2.0 TR unit consisting of blower, filter, motoretc. having specified CFM 630+/_10% ,1-50 Hz alongwith cordless remote, (R-22 refrigerant) 2.0 TR with BEE 4 star rating.	2.00	Each		
159	NS	Installation charges for 1.5 TR Hi-wall type Airconditioner	15.00	Each		
160	NS	installation charges for 2.0 TR Ceiling concealed type Airconditioner	2.00	Each		
161	NS	Soft Copper Pipe 1/2" & 1/4" having thickness of .8 mm for 1.5 TR AC units	90.00	Rmtr		
162	MR	Soft Copper Pipe 1/2" & 3/4" having thickness of 1.0 mm for 2.0 TR AC units	15.00	Rmtr		
163	NS	4 c (1.5mm) electrical wiring from indoor to outdoor unit (BIS)	90.00	Rmtr		
164	NS	3 c (2.5 sqmm) Electrical wiring from MCB to outdoor units (BIS)	90.00	Rmtr		
165	NS	6 sq mm Electrical wiring from MCB to outdoor units as / BIS	37.50	Rmtr		
166	NS	25 mm Dia. Hard PVC drain pipe	90.00	Rmtr		
167	NS	Voltage stabilizers 4 KVA for A/C	17.00	Each		
168	NS	M.S. angle stand for outdoor units	17.00	Each		
		<b>Sub Head E:-FIRE FIGHTING SYSTEM</b>				
169	NS	S/L/J/T of following sizes of Heavy class (C class) mild steel pipe, flanges and fitting such as bends, tees, reducers, rubber insertions and galvanized nuts and bolts 'heavy class ' conforming to IS:1239-1974 part -I and amendment l/c fixing the pipe on wall/ceiling with suitable MS strip/clamps/bracket and painting with one coat of primer and two or more coats of synthetic enamel paint etc. complete as required.(Internal works) Make - Jindal				
		100 mm	50.00	Mtr		



		80 mm	40.00	Mtr		
		50 MM	35.00	Mtr		
		32 mm	30.00	Mtr		
		25 mm	550.00	Mtr		
		Providing & fixing Butterfly Valve make Zoloto / Sant				
		100 mm	2.00	nos		
		80 MM	10.00	nos		
170	NS	Fire Hose Reel Supply & Installation of swinging type First Aid hose reel (with wall mounting swinging type) in red with 30 mts long and 20 mm dia heavy duty rubber water hose complete with MS socket for tap-off, drum and brackets (including painting) for fixing on wall with anchor fastener, ISI marked 2 year warranty of hose reel make attack/ life guard	4.00	nos		
171	NS	Yard Hydrant Supplying & Installation of SS metal ISI Mark fire hydrant single landing valve with 80 mm N.B. flanged inlet, brass spindle controlled 63 mm dia female instantaneous outlet type. G.M. coupling blank cap, chain, twist release type lug & all accessories Conforming to IS: 5290. Including fixing with anchor fastener and flanged tapping from wet riser.	5.00	nos		
172	NS	Supply & Installation of Rubber Reinforced Lined fire hose Type B (as per IS: 636) of 63 mm dia and length as described below. The hose shall be rated for burst pressure of 35.7 kg/sqcm. Hose shall be complete with SS metal male & female coupling bound & riveted to hose pipe with Copper/SS rivets & 1.5 mm Copper/SS wire	11.00	nos		
173	NS	Supply & Installation of gun metal 4- way Fire Brigade Connection (suction collecting head) consisting of 2 Nos. 63 mm dia instantaneous type male couplings with built-in check valves, complete with bolt, nuts and rubber insertions as required and as per IS:904-1963.	1.00	nos		
174	NS	Supply fixing of 68°C Sprinklers head 15 mm dia URL approved	220.00	nos		
175	NS	Short Branch	6.00	nos		
176	NS	Supply & Installation of 100 mm Dial Type Pressure Gauge with Isolation Ball Valve suitable for working pressure of 150 PSI. Cost shall be inclusive of providing any short pieces, nipples, elbows etcas required.	1.00	nos		
177	NS	Providing and fixing standard firemans axe with heavy rubber handle.	5.00	nos		
178	NS	NRV plates for 100 MM	1.00	nos		
179	NS	Supply & Installation of Air Vessel 200 mm dia. 1.5 Mtr. Long made from MS with 25 mm dia spring - loaded Air Release Valve, Safety Valve and Gunmetal full way Valve for Jockey and Main pump	1.00	nos		
180	NS	Pressure switch for pumps	1.00	nos		
181		<b>Fire Pumps as per Specifications</b>				
		Main pump (Bronze Impeller + mechanical seal) 12.5 HP, 950 LPM @45 MTRS head make – Kilosker, along with all fitting installation work	1.00	nos		
		Jockey pump 10 Hp, 450 LPM, 45 meters head, Make – Kirlosker along with all fittings and installation work, Sprinkler Pump	1.00	nos		
182		Electric panel for whole pumps working	1.00	nos		
182		Armored cable 25 dia	50.00	mtr		
183		<b>Fire Extinguishers</b>				
	a)	ABC type multipurpose fire extinguishers cap-4kg ISI marked 15683 along with certificates	6.00	nos		





	b)	CO <sub>2</sub> type fire extinguishers cap 4.5 kg use on B&C class	4.00	nos		
184	NS	Providing and fixing signages printed on photoluminescent U1000 aluminium sheet of 1.0 mm (+ -10%) containing lumigen II as base chemical, covered under UV stablized coating and of appropriate size (Glo-lite or eq. Make) including fixing on wall, door, ceiling etc. with proper clamps, hangers, cleats anchor fasteners etc. complete in all respects as diercted by Engineer-in-charge.	350.00	Sq.Inch		
185		<b>Any item not covered in BOQ</b>				
		Any item not covered in BOQ and needs to be executed as per actual site condition, shall be paid as per DSR 2016 . ( please quote percentage above or below DSR 2016)	1.00	percentage below - or above + DSR 2016		



## SECTION 8

FORMS



## SECTION 8

### FORMS

#### FORM OF BANK GUARENTEE FOR BID SECURITY

WHEREAS.....(Name & Address of Bidder) (hereinafter called "the Bidder")  
wishes to submit his bid for -----

----- (Name of  
Work as per IFB).

AND WHEREAS the Bidder is required to furnish a Bank Guarantee for the sum of Rs\_\_\_as Bid  
Security against the Bidder's offer as aforesaid.

AND WHEREAS\_\_\_(Name of Bank) have, at the request of the Bidder, agreed to give this  
guarantee as hereinafter contained.

KNOW ALL MEN by these presents that we .....  
(Name & Address of Bank) having our registered office at .....  
(hereinafter called "the Bank") are bound unto , Principal, Kirori Mal College, Delhi University ,  
Delhi (hereinafter called "the Employer") in  
the sum of Rs.\_\_\_\_\_(Rupees )for which payment will and truly to  
be made to the said Employer, the Bank binds itself, its successors and assigns by these  
presents.

We further agree as follows:

That the Employer may without affecting this guarantee grant time or other indulgence to or  
negotiate further with the Bidder in regard to the conditions contained in the said  
Bid and thereby modify these conditions or add thereto any further conditions as  
may be mutually agreed upon between the Employer and the Bidder.

That the guarantee hereinbefore contained shall not be affected by any change in the  
constitution of our Bank or in the constitution of the Bidder.



That any account settled between the Employer and the Bidder shall be conclusive evidence against us of the amount due hereunder and shall not be questioned by us.

That this Guarantee commences from the date hereof and shall remain in force till (date to be filled up) (up to 120 days from the deadline date for submission of Bid).

That the expression 'the Bidder' and 'the Bank' herein used shall, unless such an interpretation is repugnant to the subject or context, include their respective successors and assigns.

THE CONDITIONS OF THIS OBLIGATION ARE:

if the Bidder withdraws his Bid during the period of Bid validity specified in the Form of Bid, or

if the Bidder does not accept the correction of his Bid price in terms of Clause 27 of the "Instructions to Bidders".

if the Bidder having been notified of the acceptance of his Bid by the Employer during the period of Bid validity :

fails or refuses to furnish the Performance Guarantee in accordance with Clause 32 of the "Instructions to Bidders" and/or

fails or refuses to enter into a Contract within the time limit specified in Clause 31 of the "Instructions to Bidders".

We undertake to pay to the Employer mere on demand without demur upto the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of any one or more of the conditions (a), (b), (c) mentioned above, specifying the occurred condition or conditions.

Signature of .....  
Authorized Official of the Bank

Signature of the witness  
.....

Name of Official .....  
Designation .....

Name of the Witness  
.....

Stamp/Seal  
of the Bank .....

Address of the Witness.....



FORM OF PERFORMANCE SECURITY (GUARANTEE) BANK GUARANTEE BOND

To,  
college,  
Principal,  
Kirori Mal Delhi University, Delhi

WHEREAS, M/s \_\_\_\_\_ (hereinafter called "the Contractor") has undertaken, in pursuance of his bid dated \_\_\_\_\_ to execute the \_\_\_\_\_ (hereinafter called the "Contract") and the bid of Contractor has been accepted by the Principal, Kirori Mal College, Delhi University, Delhi vide letter of acceptance No. \_\_\_\_\_ dated \_\_\_\_\_.

AND WHEREAS it has been stipulated by you in the said contract that the contractor shall furnish you with a bank guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the contract;  
AND WHEREAS we have agreed to give the Contractor such a bank guarantee.

NOW THEREOF we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_), such sum being payable in the type of currency in which Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of Rs. as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein. The Bank will deliver the money required by you immediately on demand without delay and demur and without reference to the Contractor and without the necessity of a previous notice or of judicial or administrative procedures and without it being necessary to prove to the Bank the liability or damages resulting from any defects or shortcomings or debts of the Contractor. The Bank shall pay to you any money so demanded notwithstanding any dispute/disputes raised by the Contractor in any suit or proceedings pending before any Court, Tribunal or Arbitrator/s relating thereto and the liability under this guarantee shall be absolute and unequivocal.  
We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.



We further agree that no change or addition to or other modification of the terms of the Contract or of the works to be performed thereunder or of any of the Contract documents, which may be made between you and the Contractor, shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

The liability of the Bank under this bank guarantee shall not be affected by any change in the constitution of the Contractor or of the Bank.

This Guarantee will remain valid and in force up to \_\_\_\_.

Notwithstanding anything contained herein above, our liability under this guarantee is restricted to Rs. \_\_\_\_ (Rupees \_\_\_\_\_) and the guarantee shall remain valid till \_\_\_\_\_. Unless a claim or a demand in writing is made upon us on or before \_ all our liability under this guarantee shall cease.

DATE \_\_\_\_\_

SIGNATURE OF THE ISSUING AUTHORITY OF THE BANK \_\_\_\_\_ SEAL OF THE BANK \_\_\_\_\_  
ADDRESS OF THE BANK \_\_\_\_\_

IN THE PRESENCE OF

SIGNATURE OF THE WITNESS \_\_\_\_\_

NAME AND ADDRESS OF THE WITNESS \_\_\_\_\_



BANK GUARANTEE FOR ADVANCE PAYMENT

To: Principal, Kirori Mal college,  
Delhi University, Delhi

Gentlemen:

In accordance with the provisions of the Conditions of Contract, sub-clause 51.1 (“Advance Payment”) of the above-mentioned Contract .....  
(name and address of Contractor) (hereinafter called “the Contractor”) shall deposit with  
..... (name of Employer) a bank guarantee to guarantee his proper and  
faithful performance under the said Clause of the Contract in an amount of Rs.  
..... (amount of guarantee) Rupees (in words).

We, the .....(Name & address of bank), as instructed by the Contractor, agree unconditionally and irrevocably to guarantee, as primary obligator and not a Surety merely, the payment to (name of Employer) on his first demand without whatsoever right of objection or our part and without his first claim to the Contractor, in the amount not exceeding ..... (amount of guarantee (in words)). We will deliver the money required by you immediately on demand without delay and demur and without reference to the Contractor and without the necessity of a previous notice or of judicial or administrative procedures and without it being necessary to prove to the Bank the liability or damages resulting from any defects or shortcomings or debts of the Contractor. The Bank shall pay to you any money so demanded notwithstanding any dispute/disputes raised by the Contractor in any suit or proceedings pending before any Court, Tribunal or Arbitrator/s relating thereto and the liability under this guarantee shall be absolute and unequivocal. We further agree that no change or addition to or other modification or the terms of the Contract or of Works to be performed thereunder or of any of the Contract documents which may be made between (name of Employer) and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.



This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until ..... (name of Employer) receives full payment of the same amount from the Contractor.

Notwithstanding anything contained herein above, our liability under this guarantee is restricted to Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) and the guarantee shall remain valid till \_\_\_\_\_. Unless a claim or a demand in writing is made upon us on or before \_\_\_\_\_ all our liability under this guarantee shall cease.

DATE \_\_\_\_\_

SIGNATURE OF THE ISSUING AUTHORITY OF THE BANK \_\_\_\_\_ SEAL OF THE BANK \_\_\_\_\_  
ADDRESS OF THE BANK \_\_\_\_\_

IN THE PRESENCE OF

SIGNATURE OF THE WITNESS \_\_\_\_\_

NAME AND ADDRESS OF THE WITNESS \_\_\_\_\_

Note: Bidders are not required to fill/complete this form at the time of Bid Submission.





## FORM OF CONTRACT AGREEMENT

This agreement is made at New Delhi on the .....day of  
.....2021 between (name  
and address of Employer) (hereinafter called “the Employer”) and  
.....(name and address of  
Contractor) (hereinafter called “the Contractor” of the other part).

Whereas the Employer is desirous that the Contractor execute  
.....(name and identification number of Contract) (hereinafter  
called “the Works”) and the Employer has accepted the Bid by the Contractor for the execution  
and completion of such Works and the remedying of any defects therein( as well as  
guarantee of such works\*\*), at a contract price of Rs.  
.....

### NOW THIS AGREEMENT WITNESSETH as follows:

In this Agreement, words and expression shall have the same meanings as are  
respectively assigned to them in the Conditions of Contract hereinafter referred to,  
and they shall be deemed to form and be read and constructed as part of this  
Agreement.

In consideration of the payments to be made by the Employer to the Contractor as  
hereinafter mentioned, the Contractor hereby covenants with the Employer to  
execute and complete the works and remedy any defects therein conformity in all  
aspects with the provisions of the Contract.

The Employer hereby covenants to pay the Contractor in consideration of the execution  
and completion of the Works and the remedying the defects wherein the Contract  
price or such additions thereto or deductions therefrom as may be made under  
the provisions of the Contract at the times and in the manner prescribed by the  
Contract.

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

Invitation for Bid & Instructions to Bidders(including annexures, if any)

#### (ii) Letter of Acceptance

Form of Bid Contractor’s Bid;

Appendix to Bid;

Conditions of Contract (including Special/Additional Conditions  
of Contract);



Technical Specifications;  
Bid Drawings;  
Bill of quantities;  
Addendums issued, if any and  
Any other document/item as applicable & forming part of the contract.

The contractor shall ensure full compliance with tax laws of India with regard to this contract and shall be solely responsible for the same. The contractor shall submit copies of acknowledgements evidencing filing of returns every year and shall keep the Employer fully indemnified against liability of tax, interest, penalty etc. of the contractor in respect thereof, which may arise.

The Courts at Delhi/ New Delhi shall have the exclusive jurisdiction to try all disputes arising out of this agreement between the parties.

IN WITNESS WHEREOF the parties hereto have caused their respective Common Seals to be hereunto affixed / (or have hereunto set their respective hands and seals) the day and year first above written.

For and on behalf of the Contractor

For and on behalf of the College

Signature of the authorized official

Signature of the authorized official

Name of the official

Name of the official

Stamp/Seal of the Contractor

Stamp/Seal of the Employer

**SIGNED, SEALED AND DELIVERED**

By the said

By the said

\_\_\_\_\_

\_\_\_\_\_

Name \_  
on behalf of the Contractor in the presence  
of:

Name \_  
on behalf of the Employer in the presence  
of:

Witness \_\_\_\_\_ Name\_ Address \_\_\_\_\_ Witness \_\_\_\_\_ Name \_\_\_\_\_ Address \_\_\_\_\_



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**Note:**

- \* Blanks to be filled at the time of finalisation of the Form of Agreement.



Section 9

DRAWING

# NIT for Balance works and rectification of defects at Library Building, Kirori Mal College, Delhi University



