ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

TENDER

FOR

Supply, Installation, Testing & Commissioning (SITC) of Audio – Visual System and Stage Lighting in Auditorium Building

VOLUME – I

- **Notice Inviting Bids**
- **Instructions to Bidders**
- **Pre-Qualification**

OCTOBER 2018

आरोग्यम् सुख सम्पदा

All India Institute of Medical Sciences, Raipur
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Tele: 0771- 2572930, email: ee.civil@aiimsraipur.edu.in
Website: www.aiimsraipur.edu.in

NIT No. 20/EE/AIIMS/RPR/2018-19 Dated 04.10.2018

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

04.10.2018

Notice Inviting Tender

Executive Engineer (Civil) AIIMS Raipur on behalf of Director AIIMS Raipur Invites percentage rate bids from eligible contractors/firms for the following works**:**

Name & Description of work	Estimated cost (Rs.)	Tender available and Last date to fill the tender.	Bid Security amount (in Rs.)
NIT No. 20/EE/AIIMS/RPR/2018-19 dated 04.10.2018 SITC of Audio – Visual System and Stage Lighting in Auditorium Building at AIIMS Raipur (C.G.).	4,99,98,736/-	From 05.10.2018 to 25.10.2018 upto 3.00pm	9.98 Lakh

The above works includes Integrated Presentation, Sound Reinforcement and Stage Lighting System and maintenance during defect liability period including Operation and Maintenance as per the Tender BOQ description. Overall completion period of the above work shall be 04 calendar months. Please refer detailed NIT on AIIMS Raipur website www.aiimsraipur@edu.in for details regarding submission, pre bid conference, completion period of various building under each work & other tender details.

AIIMS reserves the right to accept or reject any application without assigning any reason or incurring any liability whatsoever.

Prospective bidders are advised to regularly scan through AIIMS Raipur website www.aiimsraipur.edu.in as corrigendum/amendments etc., if any, will be notified on these websites only and separate advertisement will not be made for this

Executive Engineer (Civil)
All India Institute of Medical Sciences, Raipur

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

NOTICE INVITING TENDER

NIT No. 20/EE/AIIMS/RPR/2018-19 Dated 04.10.2018

Executive Engineer (Civil) AIIMS Raipur on behalf of Director AIIMS Raipur invites Percentage rate bids from eligible contractors/firms for the following works:

Name and Description of work	**Estimated cost (Rs.)**	**Completion period of Work (Months)**	Tender available and Last date to fill the tender.	**Bid Security amount (Rs.)**
SITC of Audio – Visual System and Stage Lighting in Auditorium Building at AIIMS Raipur (C.G.).	4,99,98,736/-	04 months	From 05.10.2018 to 25.10.2018 upto 3.00pm	9.98 Lakh

The above works includes Integrated Presentation, Sound Reinforcement, Stage Lighting System and maintenance during the defect liability period including Operation and Maintenance as per the relevant BOQ item description. Overall completion period of the above work shall be 04 calendar months. The bid document is available online from 05.10.2018. The bidders are required to submit (a) Original non-refundable Demand Draft of Rs.10,000/- (Rs. Ten Thousand only) as cost of bid, in favour of AIIMS Raipur payable at Raipur, Original bid security in approved form as detailed in Vol.I of Tender documents to the office of Executive Engineer (Civil), Project Cell, AIIMS Raipur, Tatibandh, Raipur (C.G.) – 492099 before date and time fixed for opening of bid either by registered post or by hand failing which the bid be declared non-responsive.

The documents to be submitted are listed at Annexure I.

The complete set of Tender Documents comprising six Volumes I, II, III, IV, V & VI has been made available at www.aiimsraipur.edu.in.

The interested applicant contractors/firms may like to attend the pre bid meeting which will be held at 02:30 PM at AIIMS Raipur Campus Tatibandh, Raipur (C.G.) on 15.10.2018

AIIMS Raipur reserves the right to accept or reject any application without assigning any reason or incurring any liability whatsoever.

Prospective bidders are advised to regularly scan through www.aiimsraipur.edu.in. as corrigendum/amendments etc., if any, will be notified on this portal only and separate advertisement will not be made for this.

Executive Engineer (Civil)
All India Institute of Medical Sciences, Raipur

DISCLAIMER

This document has been prepared by Executive Engineer (Civil) AIIMS Raipur on behalf of Director AIIMS Raipur. The information is provided to prospective Bidders, who are interested to Bid for **SITC of Audio – Visual System and Stage Lighting in Auditorium Building at AIIMS Raipur (C.G.)**

This document is neither an agreement, nor an offer or invitation to perform work of any kind to any party.

The purpose of this document is to provide interested parties with information to assist the preparation of their Bid. While due care has been taken in the preparation of the information contained herein, and believe it to be complete and accurate, neither any of their authorities or agencies nor any of their respective officers, employees, agents or advisors give any warranty or make any representations, expressed or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it.

Further, AIIMS Raipur does not claim that the information is exhaustive. Respondents to this document are required to make their own inquiry/ survey and will be required to confirm, in writing, that they have done so and they did not rely solely on the information given herein.

AIIMS Raipur reserves the right not to proceed with the Project or to change the configuration of the Project, to alter the timetable reflected in this document or to change the process or procedure to be applied. It also reserves the right to decline to discuss the Project further with any respondent.

No reimbursement of cost of any type or on any account will be made to persons or entities submitting their Bid.

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR TENDERING FORMING PART OF BID DOCUMENT

Executive Engineer (Civil) AIIMS Raipur on behalf of Director AIIMS Raipur invites Percentage Rate bids from eligible contractors/firms for the following works:

Name and Description of work	Estimated cost (Rs.)	Bid Security amount (Rs.)	Completion period of Work (Months)	Tender available and Last date to fill the tender.	Time and Date of Opening of Technical Bid
SITC of Audio-Visual System and Stage Lighting in Auditorium Building at AIIMS Raipur (C.G.)	4,99,98,736/-	9.98 Lakhs	04 months	From 05.10.2018 to 25.10.2018 upto 3.00pm	3:30pm on 25.10.2018

1. Contractor who fulfills the following requirements shall be eligible to apply. Joint ventures are not accepted.

   a. Should have satisfactorily completed the works as mentioned below during the **last seven years** ending previous day of last date of submission of bids.

      i. Three similar works each costing not less than Rs.**1.99**Crores,

      or

      two similar works each costing not less than Rs.**2.99**Crores,

      or

      one similar work costing not less than Rs.**3.99**Crores

   Similar Work shall mean works of "***Supplying, Installation, Integration, Testing & Commissioning of Audio Reinforcement, Video Equipments, Audio Conference System, Control System& Stage Lighting***" all executed under one composite agreement.

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

   b. Should have had a minimum average annual financial turnover of **Rs. 2.49Crore** during the last three years ending 31st March 2018 (copy of Certificate from CA to be submitted).

   c. Should not have incurred any loss in more than two years (profit after tax should be positive) during the last five years ending 31st March 2018

   d. Should have a Minimum Solvency **Rs. 1.99 Crore** (copy of original solvency to be submitted).

   e. In case Audio-Visual system and Stage Lighting work executed in a composite work, (i.e., in addition to Audio-Visual and Stage Lighting there are many other subheads in

the tender) the gross value of work execute against audio visual system and Stage Lighting of work shall be clearly specified in the Completion certificate.

2. The intending bidder must read the terms and conditions of Notice Inviting Bids and the Bid documents carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required. All information called for in the enclosed forms should be furnished against the relevant columns in the forms. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. Even in no information is to be provided in a column, a "nil" or "no such case" entry should be made in that column. If any particulars/query is not applicable in case of the bidder, it should be stated as "not applicable". The bidders are cautioned that not giving complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms may result in the bid being summarily disqualified.
3. Information and Instructions for bidders posted on website shall form of bid document.
4. The document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website www.aiimsraipur.edu.in free of cost.
5. Certificate of **Financial Turnover:** At the time of submission of bid, contractor have to submit Affidavit/ Certificate from **CA** mentioning Financial Turnover of last 3 years or for the period as specified in the bid document and the relevant pages of the profit and loss statement and balance sheet from the annual report.
6. Deleted
7. Deleted
8. Deleted
9. Deleted
10. Certificate of **Financial Turnover:** At the time of submission of bid, contractor shall submit an Affidavit/ Certificate from **CA** mentioning Financial Turnover of last 3 years or for the period as specified in the bid document and the relevant pages of the profit and loss statement and balance sheet from the annual report.
11. Contractor must ensure to quote rate of section/sub head. If any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as**"0"(ZERO).**
    a. If a tenderer quotes nil rates against each item in Percentage rate tender or does not quote any percentage above/below on the total amount of the tender or any section/sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
12. The Technical bid shall be opened first on due date and time as mentioned above. The time and date of opening of financial bid of contractors qualifying the technical bid shall be communicated to them at a later date.

13. Pre-Bid conference shall be held in AIIMS Raipur Campus, Tatibandh, Raipur (C.G) on 15.10.2018 at 02:30 pm to clear the doubt of intending bidders, if any.
14. When bids are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.
15. AIIMS Raipur reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

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AIIMS Raipur

List of Documents to be submitted within the period of bid submission:

i. Demand Draft/Pay order or Banker's Cheque /Bank Guarantee of any Scheduled Bank against EMD.

ii. Demand Draft/Pay order or Banker's Cheque of any Scheduled Bank towards cost of Bid Document.

iii. Form of Bid and Appendix (Form A) and Form A appendix.

iv. Power of attorney (Form E) in favour of the person signing the bid.

v. Affidavit / Undertaking for engaging specialized agencies- (Form H)

vi. Affidavit by Bidder (Form K)

vii. Form "T-1" (Financial Information- Annual Financial Statement for the last Five Years

viii. For "T-1-B" (Solvency certificate form a scheduled Bank)

ix. Form "T-2" (List of all works of similar nature successfully completed during the last seven years)

x. Form "T-4" (Performance Report of works)

xi. Form "T-5" (Structure and Organization)

xii. Certificate of Registration for GST and acknowledgement of up-to-date file return.

xiii. Copy of GST Registration or undertaking in this regard as per clause 1.27

xiv. Undertaking as per requirements of clause 1.28 (as per format Form M)

DEFINITIONS

1. **"Application"** shall mean the response submitted by interested parties.
2. **"BID/Tender"** shall mean documents issued by AIIMS Raipur to the prospective Bidder. The word "**Tender**" is synonymous with "**Bid**".
3. **"Bid Security/ Earnest Money"** shall mean the amount to be deposited by the Bidder with the Tender.
4. **"Bid Validity"** shall mean the period for which the Bids shall remain valid.
5. **"Bidder/Applicant"** shall mean the party participating in the Tendering process pursuant to and in accordance with the terms of this document. The word "**Tenderer**" is synonymous with "**Bidder**".
6. **"Contract Agreement"** shall mean the agreement to be signed between the Successful Tenderer and the competent authority of AIIMS Raipur/their authorized representative.
7. **"Contract Price"** shall mean the financial bid of the Successful Tenderer as accepted by the Client.
8. **"Date of commencement of work"** shall mean the date of Start as specified in the Schedule "F" or the date of handing over of the site, whichever is later in accordance with the phasing if any, as indicated in the tender document.
9. **"Defects Liability Period"/"Maintenance Period**" means the period after completion of the Project during which the AIIMS Raipur or his authorized representative / Engineer-in-charge/HSCC will notify to the Contractor any defect noticed in the work and the Contractor is liable for rectification of such defects. Proof of dispatch of letter notifying the defect/ intimating the representative of Contractor at site on the last date of Defect liability period will make the Contractor liable for rectify all such defects.
10. **"Engineer in Charge" (EIC)** means the Engineer Officer as mentioned in the schedule "F" hereunder, as authorized by AIIMS Raipur.
11. **"Evaluation Committee"** shall mean the committee constituted by AIIMS Raipur for the evaluation of the bids.
12. "***HSCC (India) Limited***"/"**HSCC**" shall mean HSCC (India) Limited, having its corporate office at E-6(A), Sector 1, Noida – 201 301 appointed by All India Institute of Medical Sciences, Raipur as a DDPRC and Project Consultant.
13. **"Letter of Award"** shall mean the letter issued by the AIIMS Raipur to the Successful Tenderer inviting him to sign the Contract Agreement.
14. **"Performance Guarantee"** shall mean the amount to be paid by the Successful Tenderer as per relevant clause mentioned elsewhere.

15. **"Processing Fee**" shall mean the amount to be paid by the Tenderers in consideration of cost of bid document.
16. **"Project"** shall mean SITC of Audio – Visual System and Stage Lighting in Auditorium Building at AIIMS Raipur (C.G.)
17. **"Site"** shall mean the place where the works under the Project are to be carried out and the details of which are provided in this document.
18. **"Successful Tenderer"** shall mean the Tenderer declared technically and financially successful for the Project and with whom, the Contract Agreement shall be signed.
19. "**Similar Works**" as defined in eligibility criteria.
20. **"Scheduled banks"** mean **"Scheduled commercial Banks**"
21. **"Employer/Principal Employer"** means **AIIMS Raipur**.
22. **"NIT"** means **Notice Inviting Tender.** The word "**Notice Inviting Tenders**" is synonymous with "**Notice Inviting Bids**".
23. **"ITB"** means **Instructions to Bidders**
24. **"DDPRC"** shall mean Design & Detailed Project Report Consultant.
25. **"Project Consultant (PC)"** shall mean HSCC (India) Limited

NOTICE INVITING BIDS

All India Institute of Medical Sciences, Raipur

1. Executive Engineer (Civil) AIIMS Raipur on behalf of Director AIIMS Raipur invites Percentage Rate tenders, from eligible contractors as per eligibility criteria laid down, for the work of **"SITC of Audio-Visual System and Stage Lighting at Auditorium Building at AIIMS Raipur (C.G.)".**

1.1. The work is estimated to cost as given in Table - I. **Executive Engineer (Civil)** AIIMS Raipur will deal all the matters relating to invitation of tenders. Any clarification shall be sought from Executive Engineer (Civil) AIIMS Raipur on e-mail address ee.civil@aiimsraipur.edu.in. The NIT and other details are also available on the AIIMS Raipur website www.aiimsraipur.edu.in.

1.2. Pre bid conference will held on 15.10.2018 at 02:30 pm in the AIIMS Raipur Campus, Tatibandh, Raipur (C.G.) or any other venue as decided in future for which intimation will be published on web site. Executive Engineer (Civil) AIIMS Raipur may also be contacted in this regard.

1.3. TABLE - I

Name & description of work	Estimated cost (Rs.)	Completion period of work (months)	Tender available and Last date to fill the tender.	Bid Security amount (in Rs.)	Cost of Tender (Tender Document Fee) (in Rs.)
SITC of Audio Visual System and Stage Lighting in Auditorium Building at AIIMS Raipur (C.G.)	4,99,98,736/-	04 months	From 05.10.2018 to 25.10.2018 upto 3.00pm	9.98 Lakhs	10000/-

1.4. Intending bidder is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:

1.4.1. Eligibility Criteria

The Tenderer should meet the following minimum eligibility criteria:

Bidders who fulfill the following requirement shall be eligible to apply. Joint ventures of whatsoever kind are not accepted.

(a) Experience should be in the name of the bidding company and not in subsidiary/ associate company/ Group Company etc. Experience as part of a Joint Venture shall not be considered.

(b) (i) Experience of having successfully completed works during the last 7 years ending previous day of last date of submission of tenders

Three similar completed works each costing not less than the amount equal **to Rs. 1.99Crore** (amount in Rupees of 40% of the estimated cost).

or

Two similar completed works each costing not less than the amount equal to **Rs. 2.99Crore** (amount in Rupees of 60% of the estimated cost).

or

One similar completed work of costing not less than the amount equal to **Rs.3.99Crore** (amount in Rupees of 80% of the estimated cost).

*"**Similar Works**" shall mean a work comprising of" ***Supplying, Installation, Integration, Testing & Commissioning of Audio Reinforcement, Video Equipments, Audio Conference System, Control System& Stage Lighting***" all executed under one composite agreement.

Own works / work under the same management / own certification of the bidder shall not be considered for pre-qualification.

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

The past experience in similar nature of work should be supported by certificates issued by the client's organization. In case the work experience is of Private sector the completion certificate shall be supported with copies of Corresponding TDS Certificates.

(c) **Turnover**: Average annual financial turnover on construction works should be at least 50% (i.e. 2.49 Cr.) of the estimated cost during the immediate last three consecutive financial year ending *31st March, 2018*. The turnover should be of the Bidding Company and not for Group Company or subsidiary company etc. Year in which no turnover is shown would also be considered for working out the average.

(d) **Profit / loss**: The Company should have a positive Net Worth and should have incurred loss (profit after tax should be positive) in not more than Two years during the last Five years ending *31st March 2018.*This should be duly certified by the Chartered Account.

(e) **Solvency Certificate**: Solvency of the amount equal to 40% (i.e. 1.99 Cr.) of the estimated cost of the work duly certified by his bankers.

(f) Direct / indirect Joint Ventures (JV)/ Consortium of any kind are not permitted.

(g) In case Audio-Visual system and Stage Lighting work executed in a composite work, (i.e., in addition to Audio-Visual and Stage Lighting there are many other subheads in the tender) the gross value of work execute against audio visual system and Stage Lighting of work shall be clearly specified in the Completion certificate.

(h) The intending Bidder shall have to furnish an affidavit as under:

" I/WE undertake and confirm that eligible similar work (s) has/have not been got executed through another Contractor on back to back basis. Further that if such a violation comes to the notice of AIIMS Raipur, before the date of start of work, the AIIMS Raipur shall be free forfeit the entire money deposit/performance guarantee.

Note:- The Affidavit shall be submitted as a part of letter of submission given in the format attached.

(i) The specialized agency shall have a valid official authorization from Original Equipment Manufacturer (OEM) of following in favour of the AIIMS Raipur, for which authorization is receive and to be submitted at the time of Technical Bid.

(a) For professional video wall system.
(b) Sound reinforcement system
(c) Matrix controller /switching system (AV Over IP) / control system
(d) Stage lighting system

(j) Bidder must submit the Technical datasheet, schematic & line diagram with complete make and model no of the items quoted by him with manufacturer's catalogue for all items quoted, with complete specifications at the time of Technical Bid submission.

1.5. The site for the work is available.

1.6. The bid documents consisting of plans specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents is available from 05.10.2018 at on the AIIMS Raipur website www.aiimsraipur.edu.in.

1.7. Deleted

1.8. Bid shall be accompanied with Earnest money of **Rs. 9.98 Lakhs** in shape of demand draft of a scheduled bank issued in favour of "***AIIMS Raipur***" Payable at Raipur or fixed deposit receipt or Banker's cheque or Bank Guarantee in favour of

"***AIIMS Raipur***" as per Form B, having validity for six months or more from the last date of receipt of tenders or any extension thereof.

The earnest money amount in the form of demand draft or pay order or Banker's cheque or Bank Guarantee shall be submitted in the office of Executive Engineer (Civil), Project Cell, AIIMS Raipur, Tatibandh, Raipur (C.G.) – 492099. Interested bidders who wish to participate in the bid has also to make following payments in the form of Demand Draft / Pay order or Banker's Cheque of any Scheduled Bank and to be submitted in the office of Executive Engineer (Civil), Project Cell, AIIMS Raipur, Tatibandh, Raipur (C.G.) – 492099.:

(i) Cost of bid Document – Rs. 10000/- "as mentioned in detailed NIT drawn in favour of "**AIIMS Raipur**" Payable at Raipur.

Demand Draft or Pay order or Banker's cheque or Bank Guarantee against EMD and Cost of bid document shall be placed in single sealed envelope superscripted as "**Earnest Money and Cost of Bid Document**" with name of work and due date of opening of the bid also mentioned thereon and to be submitted in the office of Executive Engineer (Civil), Project Cell, AIIMS Raipur, Tatibandh, Raipur (C.G.) – 492099. The last date & time of submission of bid From 05.10.2018 to 25.10.2018 upto 3.00pm. The documents submitted shall be opened at 3:30pm on the same day.

Bid documents submitted by intending bidders shall be opened only of those bidders, whose Earnest Money Deposit and Cost of Bid Document and other documents placed in the envelope are found in order.

1.8.1. The bid submitted shall become invalid and cost of bid & Tender processing fees has not be refunded if:

(i) The bidder is found ineligible.
(ii) The bidder does not submit all the documents (including GST registration) as stipulated in the bid document.
(iii) If any discrepancy is noticed in the documents as submitted in the office of tender opening authority.

1.9. The tender comprising the Instructions to bidders, Technical Package Part-I, Technical Package Part-II and Financial Package as detailed in clause 2.3.6 and 2.3.7 of ITB shall be submitted offline, each marked as per clause 2.3.12 of ITB Upto 3.00pm on 25.10.2018. Technical Package Part-I, Technical Package Part-II will be opened on the same day at 3:30pm i.e. on 25.10.2018. Technical Package Part-II" of only those tenderer(s), whose earnest money and Tender document fee placed in the other envelope (Technical Package Part I), are found to be in order, shall be opened**.**

1.10. The bidder, whose tender is accepted, will be required to furnish performance guarantee 5% (Five Percent) of the tendered amount within the period specified in Schedule F. This guarantee shall be in the form of fixed deposit receipt (FDR) or Banker's Cheque or Demand Draft or Bank Guarantee of any scheduled commercial bank based in India, in favour of "***AIIMS Raipur***" as per Form C.

1.11. In case the contractor fails to deposit the said performance guarantee within the period as indicated in schedule 'F', including the extended period if any, the earnest money deposited by the contractor shall be forfeited automatically without any notice to the contractor.

1.11.1. The contractor whose tender is accepted will also be required to furnish either copy of applicable licenses / registration or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW welfare board and programme chart (time and progress) within the period specified in schedule F.

1.12. **Evaluation of performance** :

Evaluation of the performance of contractors for eligibility shall be done by AIIMS. If required, the works executed by the bidders who otherwise qualify may be got inspected by AIIMS or a committee or any other authority as decided by Client.

1.13. The description of the work is as follows: - The work involves "**SITC of Audio-Visual System and Stage Lighting in Auditorium at AIIMS Raipur (C.G.)".** Further details can be seen at the AIIMS Raipur website www.aiimsraipur.edu.in.

1.16. Copies of other drawings and documents pertaining to the works are available online for bidders at on the AIIMS Raipur website www.aiimsraipur.edu.in.

1.17. Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed. The bidder shall be responsible for arranging and maintaining at its own cost all materials, tools & plants, water, electricity, access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

1.18. The Competent Authority for &on behalf of AIIMS Raipur does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidder shall be summarily rejected.

1.19. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.

1.20. The competent authority on behalf of AIIMS Raipur reserves to himself the right of accepting the whole or any part of the tender and the bidder shall be bound to perform the same at the rate quoted.

1.21. The contractor shall not be permitted to tender for works in case his near relative is Gazetted officer in Ministry of Health and Family Welfare/AIIMS Raipur and is directly dealing with the Project. Any breach of this condition by the contractor would disqualify him from participation and consideration in the tender process.

1.22. No Engineer of gazetted rank or other Gazetted officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the tender or engagement in the contractor's service.

1.23. The tender for the works shall remain open for acceptance for a period of **90 (Ninety)** days from the LAST date of submission of bid or any extension thereto. If any bidder withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the Department, then the Client shall, without prejudice to any other right or remedy, be at liberty to forfeit 100% of the said earnest money as aforesaid. Further the bidder shall not be allowed to participate in the re–tendering process of the work.

1.24. This is a Time Bound Project

1.25. If the rate quoted by the lowest (L1) tenderer is considered unbalanced (in relation to the Department's estimate of cost of work to be performed under the contract) by AIIMS Raipur, then tenderer shall submit detail price/rate analysis of major items of the work within 7 days of such notice so as to demonstrate the internal consistency of these price/rate(s) with his quoted price/rate(s). After evaluation AIIMS Raipur may require the tenderer to submit additional Security upto 5% of the estimated cost put to tender for the performance of the agreement in the shape of F.D. or BG in favour of the Director, AIIMS Raipur before signing of the agreement, which shall be refunded along with the normal Performance Guarantee. After Completion of work, if he fails to complete the work or leave the work incomplete, this 5% additional Performance Guarantee, shall also be forfeited by the department, in addition to other provision of the contract & the agreement shall be terminated and action shall be taken in accordance of relevant contract clause of the agreement.

1.26. [Deleted]

1.27. Registration/ Licence: The firm should have GST Registration with the appropriate Authorities **In case the firm is not registered at the time of submission of bid,**

they will submit an undertaking that they will get themselves registered with the concerned authorities in case they are awarded the work.

1.28. The contractor/firm will indemnify HSCC (I) Ltd and AIIMS Raipur, as the case may be, against all penal action that may be levied/effected by any concerned authority for default in any labour regulation/PF/ESI and other statutory requirements of the relevant Acts/Laws related to the work of the contractor and will bear the legal charges, if any, and will pay the legal charges/dues directly to the concerned authority. An undertaking in this regard is required to be submitted by applicants along with prequalification.

1.29. This Notice Inviting bid shall form a part of the contract document. The successful Tenderer/ contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of :-

a) The Notice Inviting Bids, all the documents including General Conditions of the Contract, Specific Conditions of Contract, Specifications, Bill of Quantities and drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto including amendments, corrigendum etc. if any.

Following shall also be part of the contract:

Standard CPWD forms as mentioned in Schedule F consisting of:

i. Various standard clauses with corrections upto the date stipulated in Schedule F along with annexures thereto.

ii. CPWD Safety Code.

iii. Model rules for protection of health, sanitary arrangements for workers employed by CPWD or its contractors.

iv. CPWD Contractors Labour regulations

v. List of Acts and Omissions for which fines can be imposed.

1.30. **Bid document consists of :**

1.30.1.1. Volume – I (Notice Inviting Tenders (NIT), PQ Criteria& Instructions to Bidders (ITB))

1.30.1.2. Volume – II (General Conditions of Contract

1.30.1.3. Volume – III (Specific Conditions of Contract)

1.30.1.4. Volume – IV (Technical Specifications)

1.30.1.5. Volume – V (Schedule of Quantities)

1.30.1.6. Volume – VI (Tender Drawings)

All amendments(s)/ corrigendum, if any.

1.31. AIIMS Raipur reserves the right to accept or reject any or all the tenders without assigning any reason, No Bidder shall have any cause of action or claim against the AIIMS Raipur for rejection of his tender**.**

Executive Engineer (Civil)
All India Institute of Medical Sciences, Raipur

SECTION-II
INSTRUCTIONS TO BIDDERS (ITB)

2 Introduction:

"SITC of Audio-Visual System and Stage Lighting in Auditorium Building at AIIMS Raipur (C.G.)"

The scope of work shall include Integrated Presentation, Sound Reinforcement, Stage Lighting, maintenance during defect liability period including Operation and Maintenance as per the Tender BOQ descriptionincluding preparation of all detailed shop drawings, obtaining approval from all local authorities, electrical inspector, etc. (if required)

2.1 Eligibility Criteria : As per Notice inviting Bids

2.2 Disqualification. Even if a Contractor meets the eligibility criteria as, AIIMS Raipur may, at their discretion and at any stage during the selection process or execution of the Project, order disqualification of the contractor if the Contractor has:

2.2.1 Made misleading or false representations in the forms, statements and attachments submitted; or

2.2.2 The Contractor has been blacklisted by any government agency even after bids have been opened; or

2.2.3 Record of poor performance such as abandoning work, not properly completing the contract, or financial failures/weaknesses/abnormal delay in completing the work, etc.

2.3 BID Documents :

2.3.1 **Contents of BID Documents**

BID Document shall consist of the documents listed in this document along with any schedules, addendum or corrigendum etc. issued by AIIMS RAIPUR for the purpose.

2.3.2 **Pre-Bid Conference**

The purpose of the meeting will be to clarify the doubt of the intending tenderer, beside discussion on any additional suggestion proposed by the tenderer. If found necessary, a corrigendum to the tender documents would be issued to all the intending tenderers, and thereafter no further query/condition shall be entertained. HSCC (I) Ltd/AIIMS RAIPUR shall conduct pre-Bid meeting(s) at the time and venue mentioned in Notice Inviting Bid.

2.3.3 **Clarifications**

A prospective Contractor requiring any clarification with regards to the BID document may notify Executive Engineer (Civil), Project Cell, AIIMS Raipur,

Tatibandh, Raipur (C.G.) – 492099 in writing or by tele-fax at the mailing address indicated in Notice Inviting Bid. Executive Engineer (Civil), Project Cell, AIIMS Raipur, Tatibandh, Raipur (C.G.) – 492099 will respond any request for clarification which is received within seven days of the first date of issue of the Tenders. Written Copies of the Executive Engineer (Civil), Project Cell, AIIMS Raipur's response (including an explanation on the query but without identifying the source of the inquiry) shall be uploaded on the AIIMS Raipur Website www.aiimsraipur.edu.in. Only written communication/ clarification can be considered as valid

2.3.4 **Amendment to BID Document**

i. At any time prior to the deadline for the submission of Bids, AIIMS Raipur may, for any reason, whether at its own initiative or in response to a clarification or query raised by prospective Bidders, modify the BID document by an amendment.

ii. The said amendments in the form of the addendum/corrigendum will be made available on www.aiimsraipur.edu.in not later than 3 days prior to the original or extended deadline for the submission of the bids. The uploading of the said amendments shall be binding of the bidders. The Bidders are strongly advised to regularly visit AIIMS Raipur Website to ensure that they are aware of the amendments. The addendum (s) issued will form part of the BID documents.

iii. In order to afford prospective Bidders reasonable time for preparing their Bids after taking into account such amendments, the AIIMS Raipur may, at its discretion, extend the deadline for the submission of Bids.

iv. The above information will only be placed on AIIMS Raipur Website and it will be the responsibility of the bidders to read.

2.3.5 **Preparation of Bid:**

a) Bidder's responsibility**:**

i. The Bidder is solely responsible for the details of his Bid and the preparation of Bids.

ii. The Bidder is expected to examine carefully all the contents of BID document as mentioned in Notice Inviting Bids including instructions, conditions, forms, terms, etc. and take them fully into account before submitting his offer. Bids, which do not satisfy all the requirements, as detailed in these documents, are liable to be rejected as being unresponsive.

iii. The Bidder shall be deemed to have inspected the Site and its surroundings and taken into account all relevant factors pertaining to the Site, while preparing and submitting the Bid.

b) Project Inspection and Site Visit

Any Site information given in this Bid Document is for guidance only. The Bidder is advised to visit and examine the Site of works and its surroundings at his/their cost and obtain at his/their own responsibility, any information that may consider necessary for preparing the Bid and entering into a Contract with AIIMS Raipur, including availability of electricity, water and drainage, where applicable.

AIIMS Raipur shall not be liable for such costs, regardless the outcome of the selection process.

c) Documents Comprising the Bid

Bidder shall submit their Bids in two packages namely the Technical Package and the Financial Package. The contents of the technical and financial package are as mentioned hereinafter i.e. Clause 2.3.6 & 2.3.7.

d) Alternative Proposal by bidders:

Bidders shall submit offers that comply with the requirement of the Tender, including basic technical design as indicated in the drawing and specifications. Alternatives will not be considered.

2.3.6 **Contents of Technical Package:**

The technical package, clearly labeled as "***TECHNICAL PACKAGE***", has to be submitted in two parts.

(A) Technical Package Part –I ; **Shall be submitted in ORIGINAL in envelope no. 1 and shall comprise the following :**

I. Original Non-refundable Demand Draft of Rs. 10000/- as Tender Fee

II. Bid Security, in original,

a. The Bidder shall enclose EMD with their Bid for an amount, as mentioned in Notice Inviting Bids.

b. The EMD will be in the form of demand draft of a scheduled bank issued in favour of "**AIIMS Raipur**" payable at Raipur or fixed deposit receipt or Banker's cheque or Bank Guarantee in favour of **"AIIMS Raipur**" as per Form B, having validity for six months or more from the last date of receipt of tenders. The Bank guarantees should be irrevocable and operative for a period of six months or more from the last date of receipt of tenders or any extension thereof.

c. Bids not accompanied by EMD & tender fee, shall be treated as non-responsive, and will be summarily rejected by AIIMS Raipur

d. The Bid securities of unsuccessful Bidders shall be discharged/ returned by AIIMS Raipur in not later than 30 days after the expiration of the period of Bid Validity.

e. The Bid Security shall be forfeited if a bidder withdraws his bid during the period of bid validity or in the case of the successful bidder, if he fails to furnish the necessary performance security or enter into the Contract within the specified time limit.

III Form A- Form of bid and Appendix Form A -Appendix, duly signed and filled.

IV Original affidavit (as per format at Form K)

(B). Technical Package Part –II **shall be submitted duly signed &** stamped by authorized signatory and comprise the following:

a) Indemnity/ undertaking as per requirements of clause 1.28 (Form M)

b) The enclosed documents shall be submitted and mentioned as Annexure I

1. Power of attorney (Form E) in favour of the person signing the Bid
2. Affidavit/ Undertaking for engaging specialized agencies - (Form H)
3. Form "T-1" (Financial Information) – Annual Financial Statement for the last five year
4. Form "T-1-B"(Solvency Certificate from a Scheduled Bank)
5. Form "T-2" (List of all works of similar nature successfully completed during the last seven years)
6. Form "T-4" (Performance Report of Works)
7. Form "T-5" (Structure and Organization)
8. Copies of GST Registration or undertaking in this regard as per Clause 1.27.
9. Certificate of Registration for GST and acknowledgement of up-to-date file return.

2.3.7 Contents of Financial Package

The financial package **(VOLUME V - BILL OF QUANITITY/ PRICE BID)** should be submitted to this office only. These Percentage rate /prices should include all costs associated with the Project including any out of pocket / mobilization expenses, taxes, charges, levies, cess, VAT, GST, Service Tax, insurance, EPF, ESI. Etc.as per GCC applicable till the date of submission of bids or any extension thereof. EPF & ESI on the part of Employer shall be borne by the contractor and nothing shall be reimbursed on this account by AIIMS Raipur. In case Government levies/modifies any tax subsequently the same will be adjusted

plus/minus as the case may be. The Bidder must ensure to fill up Percentage rate against summary of each component. If any cell is left blank then value of that cell shall be treated as "0" (ZERO).

2.3.8 **Language of Bid**

The Bid and all related correspondence and documents relating to the Project shall be in English language.

2.3.9 **Currency of Bid**

Bid prices shall be quoted in Indian Rupees only. The amount mentioned elsewhere in the bid document will also deemed to be in Indian Rupees unless otherwise mentioned.

2.3.10 **Extension of Bid Validity**

Prior to the expiry of the original Bid Validity Period, AIIMS Raipur may, at its discretion, request Bidders to extend the Bid Validity Period for a specified additional period and also correspondingly extend the period of validity of Bid Security submitted in the form a Bank Guarantee.

2.3.11 **Format and Signing of Bid**

a. Bid documents (technical package/ bid Part II and financial package/ bid) shall be signed by a person duly authorized to sign the Bid documents. The Bidder shall also submit a power of attorney authorizing the person signing the documents.

b. Entries to be filled in by the Bidder shall be typed or written in indelible ink.

c. The complete Bid shall be without alterations, overwriting, interlineations or erasures except those to accord with instructions issued by AIIMS Raipur, or as necessary to correct errors made by the Bidder. All amendments/corrections shall be initialed by the person or persons signing the Bid.

d. All witnesses and sureties shall be persons of status and probity and their full names, occupations and addresses shall be written below their signatures.

2.3.12 **Sealing and Marking of Bids**

a. The Bid shall be submitted along with documents and mode of submission mentioned at Clause 2.3.6 and Clause 2.3.7 of Volume I and also mentioned in the Checklist at Annexure - I at PAGE NO. 33 of this volume I.

Please note that the item rates/ Percentage rate /quoted amount should not be indicated in any of the documents enclosed in Technical package part I

and Technical Package part II. Non-compliance shall entail rejection of the Bid.

b. In the case of percentage Rate Tenders, only percentage quoted shall be considered. Any tender containing rates below/above quoted are liable to be rejected. Rates quoted by the contractor in percentage shall be accurately filled. In e-tendering, the intending bidder can quote his percentage in figures only. The percentage rate in words, amount of each item and total is generated automatically. Therefore, the rate quoted by the bidder in percentage shall be taken as correct. In event no percentage has been quoted for any item (s), it will be presumed that the contractor has included the cost of this/these items(s) in other items and rate for such item(s) will be considered as zero and work will be required to be executed accordingly.

However, if a tenderer quotes nil percent against each item in item tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

Please note that the price should not be indicated in any of the documents enclosed in Envelope no. 1 & 2. Non-compliance shall entail rejection of the Bid.

2.3.13 **Submission of Bids**

i. Bids should be submitted to:

Executive Engineer (Civil))
Project Cell,
AIIMS Raipur, Tatibandh,
Raipur - 492099

ii. The last date for submission of completed Bids is given in Notice Inviting Bids. The AIIMS Raipur may, at their discretion, extend this date, in which case all rights and obligations of the AIIMS Raipur and the Bidder shall thereafter be subjected to the new deadline as extended. If such nominated date for submission of Bid is subsequently declared as a public holiday, the next official working day shall be deemed as the date for submission of Bid.

iii. Required documents which are required to be submitted in original as per mode defined in Checklist at Annexure I at Page 33 of VOLUME-I shall be submitted by hand or through registered post or courier service at the address mentioned above. AIIMS Raipur shall not take any cognizance and shall not be responsible for delay/loss in transit or non-submission of said documents in time.

iv. Required documents sent telegraphically or through other means of transmission (Tele-fax, E-mail etc.), which cannot be delivered in a sealed envelope, shall be treated as defective, invalid and shall stand rejected.

v. Modifications/ Substitution/ Withdrawal of Bids

(a) No modification or substitution of the submitted Bid shall be allowed after last date of submission of bids.

(b) A Bidder may withdraw its submitted Bid, provided that written notice of the withdrawal is received by Executive Engineer (Civil), Project Cell, AIIMS Raipur, Tatibandh, Raipur (C.G.) – 492099 before the last date for submission of Bids.

(c) Only a single copy of the withdrawal notice shall be prepared and each page of the notice shall be signed and stamped by the authorized signatory. The notice shall be duly marked "WITHDRAWAL". This withdrawal notice will be opened at the time of opening of bid and not earlier. The signature of GPA holder will be verified and withdrawal shall be considered only in case both are same.

vi. Bid Due Date

a. Bids should be received at the address mentioned in this document, on or before the stipulated/extended time and date as specified in Notice Inviting Bids.

b. AIIMS Raipur may, in exceptional circumstances, and at its sole discretion, extend the Bid due date by issuing an addendum.

vii. Late Bids

Any Bid received at the address mentioned above after the deadline prescribed for submission of Bids in Notice Inviting Bids/extended date as the case may be, herein will not be considered and will be returned unopened to the Bidder.

2.3.14 **Power of Attorney:**

Bidders shall submit, along with Technical Package - Part II, a power of attorney, on a stamp paper of appropriate value, in favour of the person signing the Bid documents authorizing him to sign the Bid documents, make corrections/ modifications thereto and interacting with AIIMS Raipur and act as the contact person. The format for the power of attorney shall be as per form E of Bid Document Volume-I. In case bids are signed by Managing Director/Partner/Proprietor himself, Power of Attorney is not required.

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

2.3.15 **Bid Opening and Evaluation:**

Bid Opening

i. The Bids will be opened in the presence of Bidders or their authorized representatives who may choose to attend on date & time as mentioned in Notice Inviting Bids. If such nominated date for opening of Bid is subsequently declared as a public holiday, the next official working day shall be deemed as the date of opening of the Bid.

ii. Bids for which an acceptable notice of withdrawal has been submitted shall not be opened.

iii. Bids which have not complied with one or more of the foregoing instructions may not be considered.

iv. On opening of the Bid, it will be checked if they contain Technical & Financial Bids and EMD/ Bid Security as detailed above.

v. Technical Package Part I of the Bids will only be opened. They will be checked for completeness and confirmation of submission of the requisite Bid Security. If the documents do not meet the requirements of the Tender, a note will be recorded.

vi. The Bidders name, the presence or absence of the requisite Bid Security and any other details as AIIMS Raipur or their authorized representative, may consider appropriate will be announced at the time of Bid opening.

vii. Technical Package Part-II of only the bidders whose Bid Securities and cost of bid document are found in order will be opened

viii. Technical evaluation shall be as per section IV, Evaluation Process.

ix. Financial Package of all bidders whose bids are found responsive after Technical evaluation will be opened at a later date.

2.3.16 **Determination of Responsiveness**

i. Prior to the detailed evaluation of Bids, AIIMS Raipur will determine whether each Bid is responsive to the requirements of the tender.

ii. For the purpose of this clause, a responsive Bid is one which:

a. is accompanied by the power(s) of attorney if required

b. contains all the information as requested in the Bid Document

c. contains information in formats same/similar as those specified in this Bid Document

d. mentions the validity period of the offer

e. is accompanied by the Bid Security/ EMD,

f. Confirms to all the terms, conditions and specifications of Tender without

material deviation or reservation. "Deviation" may include exceptions and exclusions. A material deviation or reservation is one which affects, in any substantial way, the scope, quality, performance or administration of the works to be undertaken by the Bidder under the Contract, or which limits in any substantial way, AIIMS Raipur's rights or the Bidder's obligations under the Contract as provided for in Bid and/or is of an essential condition, the rectification of which would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids at reasonable price.

iii. If a Bid is not substantially responsive to the requirements of Bid, it will be rejected by AIIMS Raipur. The decision of AIIMS Raipur in this regard shall be final and binding. The financial Packages of non-responsive Bidders shall not be opened.

2.3.17 **Evaluation of Bids**

i. AIIMS Raipur would examine and evaluate responsive Bids, as per the criteria set out in this document at Section IV Evaluation Process

ii. AIIMS Raipur reserves the right to reject any Bid if:

a. At any time, a material misrepresentation is made or uncovered; **or**

b. The Bidder does not respond within the stipulated time to requests for supplemental information/ clarifications required for the evaluation of the Bid; **or**

c. It is found that the information provided is not true or incorrect or facts/ material for the evaluation have been suppressed.

2.3.18 **Clarification of Bids**

ii. Evaluation of technical Bids submitted by Bidders shall be undertaken based on details submitted therein only. Bidder shall not be allowed to submit on their own, additional information or material subsequent to the date of submission and such material / information, if submitted, will be disregarded. It is therefore essential that all details are submitted by the Bidder comprehensively, accurately and specifically in their technical Bid, avoiding vague answers. However, Evaluation Committee, if it so desires, reserves the right to seek any clarification from the Bidders on the information provided in the technical package. The request for clarifications and the response shall be in writing, or by tele-fax. No change / addition in the information or substance of the Bid shall be sought, offered or permitted.

iii. To assist in the examination, evaluation and comparison of the financial Bid, Evaluation Committee may ask Bidders individually for clarifications. The request for clarification and the response shall be in writing or by tele-fax. No change in the price or substance of the Bid shall be sought, offered or permitted except as required to confirm correction of arithmetical errors

observed by the Evaluation Committee during the evaluation of Bids.

2.3.19 **Process to be Confidential**

i. Except the public opening of the Bids, information relating to the examination, clarification, evaluation and comparison of Bids and recommendations concerning the award of Contract shall not be disclosed to Bidders or other persons not officially concerned with such process.

ii. Any effort by a Bidder to influence AIIMS Raipur's Evaluation Committee in the process of examination, clarification, evaluation and comparison of Bids and in decisions concerning award of Contract, shall result in the rejection of their Bid.

2.3.20 **Award of Contract**

i. Award Criteria

AIIMS Raipur will declare the Bidder ranked L1 as Successful Bidder and proceed to issue Letter of Award (LOA) as per the procedure mentioned in the Bid Document and terms and conditions set out in this Bid document.

ii. Notification of Award

a. Prior to the expiry of the period of Bid Validity, AIIMS Raipur will issue the Letter of Award to the Successful Bidder, notifying him of being declared successful and the intent to sign the Contract Agreement with him. This letter (hereinafter and in the Conditions of Contract called 'the Letter of Award') shall mention the sum which AIIMS Raipur, will pay to the Contractor in consideration of the completion and guarantee of the work to be performed by them, as prescribed therein (hereinafter and in the conditions of Contract called 'the Contract Price'). No correspondence will be entertained by AIIMS Raipur from the unsuccessful Bidders.

b. The Letter of Award shall constitute a part of the Contract.

c. Upon submission of Performance Guarantee by the Successful Bidder, AIIMS Raipur will promptly notify the other Bidders and discharge / return their Bid securities.

iii. Signing of Agreement

a. AIIMS Raipur shall prepare the Contract Agreement in the Proforma (Form D) included in this document, duly incorporating all the terms of agreement between the two parties. Within FIFTEEN days from the date of issue of the Letter of Award the Successful Bidder will be required to execute the Contract Agreement.

b. Prior to the signing of the Contract Agreement, the Successful Bidder shall submit Performance Guarantee.

c. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board and Programme Chart (Time and Progress) within the period specified in schedule F.

d. The Contract Agreement shall be duly signed by AIIMS Raipur and the Contractor through their authorized signatories.

e. In case the Successful Bidder does not sign the Contract Agreement, AIIMS Raipur reserves the right to cancel the selection process, forfeit any Bid Security and/or Performance Guarantee, as the case may be, submitted by the Successful Bidder and either re-Bid or proceed in any manner that it may deem fit.

f. Contract agreement will be signed by the authorized signatories.

1.14. All amendments / addendums shall be made available at AIIMS Raipur website www.aiimsraipur.edu.in.

g.. It will be the responsibility of the bidder to see the web site regularly and update.

SECTION-III

SCOPE OF WORK

1. Bids are now invited for following scope of works:

   SITC of Audio-Visual System and Stage Lighting in Auditorium Building at AIIMS Raipur (C.G.)"

   The scope of work shall include Integrated Presentation, Sound Reinforcement, Stage Lighting, maintenance during defect liability period including Operation and Maintenance as per the Tender BOQ description including preparation of all detailed shop drawings, obtaining approval from all local authorities, electrical inspector, etc. (if required)

2. Detailed engineering drawings/shop drawings including Single Line Diagram (SLD), Flow Chart, drawings for all ancillary services, electrical services drawings, internal telecommunication and networking drawings based on the tender drawings will be prepared and get approved from Engineer-In-Charge.
3. Maintenance and Operation of the Audio Visual System and Stage Lighting as per the terms and conditions described in the tender documents
4. Deleted
5. The relevant architecture and services drawings of the existing Auditorium building necessary for carrying out the word will be made available to finally selected Contractor.
6. The activities to be carried out for the completion of the Project shall include the following and any additional activities incidental to these:
   i. Getting all approvals / permissions / planning permits of the statutory / local / governmental agencies as required incidental to completion of work.
   ii. Submission of the completion (i.e. 'as-built') drawings and other related documents, both a hard copy and the soft copy in Auto CAD or any other IT application used for the purpose.
   iii. Preparation of specifications and vender list (in case not already provided) for all equipment wherever necessary and called upon to do so and getting these approved from client.
   iv. Obtaining occupancy certificate and related NOC's from statutory/ local/governmental agencies. Statutory payment on this account will be reimbursed by the client at actuals on production of payment receipts
7. **Approvals Required**

   The Contractor shall obtain all necessary approvals as the case may be with related to/ required for Completion of the work. All expenditure on this account will be borne by the contractor.

HSCC/AIIMS Raipur may, at the written request of the Contractor, assist him in obtaining the approvals from relevant authorities. However any such request by the Contractor shall not bind HSCC/AIIMS Raipur in any manner.

SECTION IV

EVALUATION PROCESS

4.1 Evaluation Process:

The Bids will be evaluated in the following stages:

i. Stage 1- Technical Evaluation

ii. Stage 2- Financial Evaluation.

4.2 Stage 1-Technical Evaluation

i. The technical Bids shall be evaluated as per criteria mentioned in Clause 1.4 in respect of experience of similar class of works completed, and financial turnover etc. will first be scrutinized and bidder's eligibility for the work is determined.

ii. The financial Bid of only those Bidders who are technically qualified shall be opened.

iii. The financial Bids of Bidders whose technical Bids are found unacceptable shall be not be opened

iv. AIIMS Raipur shall notify all the technically qualified Bidders of their technical qualification indicating the date, time and venue for opening of financial Bids.

4.3 Stage II-Financial Evaluation

v. Evaluation Committee shall open the financial Bid of the technically qualified Bidders in the presence of the Bidders/their authorized representative, who choose to attend, at the scheduled date and time.

vi. On opening the financial Bids, the Evaluation Committee shall read out the financial Bid to all the Bidders and note the same.

vii. The Evaluation Committee shall correct arithmetic errors, if any and sign the same. If any discrepancy is found between the amount in percentage/figures and the amount in words, the amount in words shall prevail.

viii. If a tenderer quotes nil against each item in Percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

ix. All the financial Bids shall then be ranked according to the financial Bid in increasing order with the Bidder quoting the least amount ranked L1, Bidder quoting next higher figure as L2 and so on.

x. L1 will be declared as Successful Bidder and his offer will be processed further.

xi. (a) The financial bid of all eligible bidders as decided by Client shall be opened and the decision of Client will be final and binding.

(b)The date and time of opening of financial bids shall be decided by Department which will be intimated at an appropriate time

4.4 Letter of Award:

The Successful Bidder would be notified in writing by AIIMS Raipur by issuing the Letter of Award (LOA) in favour of the Bidder.

Annexure -1 Checklist

CHECK LIST OF DOCUMENTS TO BE SUBMITTED WITH THE BID

TECHNICAL PACKAGE - Part I

S.No	Name of Document	Mode of submission	Page No.
1.	Non -refundable Demand Draft of Rs.10,000/- (Rs. Ten Thousand) only as cost of bid, in favour of "AIIMS Raipur" payable at Raipur.	**In Original in Envelop no. 1**	
2.	Bid Security (Form B) in separate sealed envelope		
3.	Form of bid and Appendix (Form A) for the bid		
4.	Affidavit by Bidder (Form K) on a duly notarized non judicial Rs.100/- stamp paper		

TECHNICAL PACKAGE - Part II

S.No	Name of Document	Mode of submission	Page No.
1	Power of attorney (Form E) in favour of the person signing the Bid	**Offline**	
2	Affidavit for engaging specialized agencies (Form H)		
3	Form " Form "T-1" (Financial Information)		
4	Form "T-1-B"(Solvency Certificate from a Scheduled Bank)		
5	Form "T-2" (Details of works)		
6	Form "T-4" (Performance Report of Works)		
7	Form "T-5" (Structure and Organization)		
8	Copies of GST Registration or undertaking in this regard as per clause 1.27		
9	Undertaking as per requirement of clause-1.28 (as per form M)		
10	Certificate of registration for GST and acknowledgement of up-to-date file return.		

FINANCIAL PACKAGE COMPRISING OF:

S.No	Name of Document	Mode of Submission	Page No.
1.	Price Bid (Bill of Quantities – Volume-V)	Offline	

Note: The bidders are required to submit all documents duly signed & stamped by authorized signatory.

(a) Original non-refundable Demand Draft of Rs.10000/- (Rs. Ten Thousand Only) as cost of bid, in favour of "AIIMS Raipur" payable at Raipur.

(b) Original Bid Security as per approved Form B – Vol. I of Tender which should be submitted to the office of Executive Engineer (Civil), Project Cell, AIIMS Raipur, Tatibandh, Raipur (C.G.) – 492099 before the date and time fixed for opening of bid either by registered post or by hand failing which the bid will be declared non-responsive.

Form A-Form of Bid and Appendix

FORM OF BID

Name of the Work: **Supply, Installation, Testing & Commissioning (SITC) of Audio – Visual System and Stage Lighting Auditorium Building at AIIMS Raipur (C.G.)**

To

Executive Engineer,
AIIMS RAIPUR,
TATIBANDH,
RAIPUR – 492099

Sub : **Submission of Proposal**

Having visited the Site, ascertained the Site conditions and examined the General Conditions of Contract as well as Specific Conditions of Contract, Notice Inviting Bids, Instructions to Bidders etc. and addenda for the above project, we the undersigned, are pleased to submit our technical and financial Bid along with relevant documents.

1. We acknowledge that the Appendix forms an integral part of the Bid.
2. While preparing this Bid, we have gathered our own information and conducted our own inquiry/survey to our satisfaction and we do not rely solely on the information provided in the Bid Documents. We shall not hold AIIMS Raipur responsible on any account in this regard.
3. We undertake, if our Bid is accepted, to commence the works within the stipulated time and to complete the whole of the works comprised in the Contract within the stipulated time calculated from the start date
4. If our Bid is accepted, we will furnish a bank guarantee as Performance Guarantee for the due performance of the Contract. The amount and form of such guarantee or bond will be in accordance with as given in the General Conditions of the Contract.
5. We are aware that in the event of delay in execution of the Project, beyond the agreed timelines due to reasons attributable to us, liquidated damages shall be recovered from us.
6. Our Bid is valid for your acceptance for a period of **NINETY DAYS** from the last date of submission of the Bid as per the Bid Documents or any extension thereto.
7. We agree to the General Conditions of Contract and Specific Conditions of Contract and the terms and conditions mentioned in the Bid Documents.
8. 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. We further confirm and declare that no agency commission or any payment, which may be construed as an agency, commission has been, or will be, paid and that the Bid price does not include any such amount. We acknowledge the right of AIIMS RAIPUR, if it finds anything 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.

9. We understand that you are not bound to accept the lowest or any Bid you may receive.
10. If our Bid is accepted, we understand that we are to be held solely responsible for the due performance of the Contract.
11. We enclose;
    a. All documents as per the checklist
    b. Bank guarantee for Rs _____ (Rupees _____ only) issued by _____ (name of the bank) valid until _____ towards EMD.

Note : i. The Appendix forms part of the Bid

ii. Bidders are required to fill up all the blank spaces in this form of Bid and Appendix.

Dated this……day of…….**2018**

Signature ……

Name……..…… in the capacity of ……..

duly authorized to sign Bids for and on behalf of……..……

Address ……..……..

…….

……..

Witness – Signature …….

Name ……..

Address ……

…….

……..

Form Appendix

APPENDIX TO THE FORM OF BID

i.	(a) Amount of Performance Guarantee to be deposited by financially successful bidder	As per Clause 1 of GCC
	(b) Amount of Security Deposit	As per Clause 1 A of GCC
Ii	Date for commencement of work	15 days from letter of award or 15 days after handing over of site whichever is later.
Iii	Time for completion	04 Calendar months
iv.	Amount of compensation in case of extension of completion date due to delays by the Contractor	As per Clause 2 of GCC
v.	Defects Liability Period from the date of issue of "Taking-over certificate"	12 months
vi.	(a)Period of validity of Performance Guarantee	As per of GCC
	(b) Period of validity of Security Deposit	As per of GCC

Signature

(Authorized Signatory)

Date ……..…… Name …….

Place …….. ……. Address

…….

Form B

FORMAT FOR EMD/ BID SECURITY BANK GUARANTEE

(To cover payment of Bid Security and Conditions of Contract)

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To

Executive Engineer,
AIIMS RAIPUR,
TATIBANDH,
RAIPUR – 492099

Dear Sir,

In consideration of your agreeing to accept Bank Guarantee for Rs. .....(Rupees .....)in lieu of payment from M/s ..... having its /their registered office at .....(hereinafter called the Bidder) towards Bid Security in respect of your Tender no. ..... calling for Tender for .....at ..... and for due fulfilment of the terms and conditions of the said Tender, we hereby undertake and agree to indemnify and keep you indemnified to the extent of Rs ..... (Rupees .....).

In the event of any loss or damages, costs, charges or expenses caused to or suffered by you by reason of any breach or non-observance on the part of the Bidder of any terms and conditions of the said Tender, we shall on demand and without cavil or argument, and without reference to the Bidder, irrevocably and unconditionally pay you in full satisfaction of your demand the amounts claimed by you, provided that our liability under this guarantee shall not at any time exceed Rs .....(Rupees .....).

This guarantee herein contained shall remain in full force and till you finalise the Tender and select the Tender as per your choice and it shall in the event of the said Bidder being selected and entrusted with the said work, continue to be enforceable till the said Bidder executes the Agreement with you and commences the work as stipulated under the terms and conditions of the said Tender have been fully and properly carried out by the said Bidder and accordingly discharges the guarantee.

We also agree that your decision as to whether the Bidder has committed any breach or non-observance of the terms and conditions of the said Tender shall be final and binding on us.

We undertake to pay the AIIMS RAIPUR any money so demanded by the AIIMS RAIPUR notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceedings pending before any Court or Tribunal relating thereto, our liability under this present being absolute and equivocal.

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

This guarantee shall continue to be in full force and effect for a period of six months from the date of submission of Bid. Notwithstanding the above limitations, we shall honour and discharge the claims preferred by you within thirty days of expiry of this guarantee.

We shall not revoke this guarantee during its currency except with your previous consent in writing. This guarantee shall not be affected by any change in Constitution of our bank or of the Bidder firm. Your neglect or forbearance in the enforcement of the payment of any money, the payment whereof is intended to be hereby secured or the giving of time for the payment hereto shall in no way relieve us our liability under this guarantee.

Dated this ..... day of .....

Yours faithfully,

For and on behalf of

The…….Bank.

Signature of authorized bank official

Name: ……..

Designation: ……...…

Stamp/Seal of the Bank: …….……..

Form-C

FORM OF PERFORMANCE GUARANTEE BANK GUARANTEE

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To

Executive Engineer,
AIIMS RAIPUR,
TATIBANDH,
RAIPUR – 492099

Dear Sir,

In consideration of the AIIMS RAIPUR, having offered to except the terms and conditions of the proposed agreement between…….. &M/S_____ (hereinafter referred to as "the said Contractor (s)", which expression shall include his successor and assignees) for the work of _____ Contract No _____in terms inter alia, of the _____ Letter No._ _____ dated_____ and the General Conditions of Contract and upon the condition of the Contractor's furnishing Security for the performance of the Contractor's obligations and discharge of the Contractor's liability under and in connection with the said Contract upto a sum of Rs. _____ (Rupees _____only) amounting to _____percent of the total Contract value.

1. We,_____(hereinafter called `The Bank' which expression shall include its successors and assignees) hereby jointly and severally undertake to guarantee the payment to the Employer in rupees forthwith on demand in writing and without protest or demur or any and all moneys payable by the Contractor to the Employer in respect of or in connection with the said Contract inclusive of all the Employer's losses and damages and costs, (inclusive between attorney and client) charges and expenses and other moneys payable in respect of the above as specified in any notice of demand made by the Employer to the Bank with reference to this guarantee upto an aggregate limit of Rs._____(Rupees _____ only).

2. We_____ Bank Ltd. further agree that the Employer shall be sole judge of and as to whether the said Contractor has committed any breach or breaches of any of the terms and conditions of the said Contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by the Employer on account thereof and the decision of the Employer that the said Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by the Employer from time to time shall be final and binding on us.

3. The Employer shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other Security in respect of the Contractor's obligations and liabilities hereunder or to vary the Contract or the work

to be done there under vis-a-vis the Contractor or to grant time or indulgence to the Contractor or to reduce or to increase or otherwise vary the prices of the total Contract value or to release or to forbear from enforcement of all or any of the Security and/or any other Security(ies) now or hereafter held by The Employer and no such dealing(s) reduction(s) increase(s) or other indulgence(s) or arrangements with the Contractor or release or forbearance whatsoever shall absolve the bank of the full liability to the Employer hereunder or prejudice the rights of the Employer against the bank.

4. This guarantee shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the Contractor but shall in all respects and for all purposes be binding and operative until payment of all monies payable to the Employer in terms thereof.

5. The bank hereby waives all rights at any time inconsistent with the terms of this guarantee and the obligations of the Bank in terms hereof shall not be anywise affected or suspended by reason of any dispute or disputes having been raised by the Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to the Employer in terms hereof.

8. The amount stated in any notice of demand addressed by the Employer to the Bank as liable to be paid to the Employer by the Contractor or as suffered or incurred by the Employer on account of any losses or damages or costs, charges and/or expenses shall be conclusive evidence of the amount so liable to be paid to the Employer or suffered or incurred by the Employer as the case may be and shall be payable by the Bank to The Employer in terms hereof.

9. This guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of the Employer and liabilities of the Contractor arising upto and until midnight of_____.

10. This guarantee is valid till _____(date to be mentioned) (Sixty days beyond the stipulated date of completion or the extended period, thereof)

11. This guarantee shall be in addition to any other guarantee or Security whatsoever that the Employer may now or at any time anywise may have in relation to the Contractor's obligations/or liabilities under and/or in connection with the said Contract, and the Employer shall have full authority to have recourse to or enforce this Security in preference to any other guarantee or Security which the Employer may have or obtain and no forbearance on the part of the Employer in enforcing or requiring enforcement of any other Security shall have the effect of releasing the Bank from its full liability hereunder.

10. It shall not be necessary for the Employer to proceed against the said Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding that any Security which The Employer may have obtained or obtain from the Contractor shall at the time when proceedings are taken against the said bank hereunder be outstanding or unrealised.

11. We, the said Bank undertake not to revoke this guarantee during its currency except with the consent of the Employer in writing and agree that any change in the constitution of the said Contractor or the said bank shall not discharge our liability hereunder.

12. We_____ the said Bank further that we shall pay forthwith the amount stated in the notice of demand notwithstanding any dispute/difference pending

between the parties before the arbitrator and/or that any dispute is being referred to arbitration.

13. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs._____ (Rupees_____ _____) and this guarantee shall remain in force till_____ and unless a claim is made on us within 3 months from that date, that is before _____ all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities there under.

Dated_____day of_____20

For and on behalf of Bank.

Issued under seal :

Form D

FORM OF AGREEMENT

This agreement is made at **Raipur** on the _____ day of _____2018 between …….…… *AIIMS RAIPUR* which expression shall, unless repugnant to the context or meaning thereof be deemed to mean and include its successors, legal representatives and assigns) of the **First Part.**

Second Part

M/s _____ a Company incorporated under the Companies Act 1956 having Head Office at _____,
(hereinafter called the "Contractor" which expression unless repugnant to the context shall mean and include its successors-in-interest assigns etc.) of the **Second Part.**

Whereas .....is desirous that certain works should be executed, for **Construction of** _____ hereinafter called the "The Project" and has accepted a Tender submitted by the contractor for the execution and completion of such works as well as guarantee of such works and the remedying of defects therein.

NOW THIS AGREEMENT WITHNESSTH as follows:

1. 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.
2. The following documents shall be deemed to form and be read and constructed as part of this agreement Viz.

   Volume – 1 (NIT & Evaluation Criteria)

   - Notice Inviting Bids
   - Scope of work
   - Evaluation Process

   Volume- II (GCC)

   - General Conditions of Contract

   Volume – III (SCC)

   - Specific Condition of Contract

   Volume – IV Technical Specifications

   Volume - V (Financial bid and Bill of Quantities)

   Volume – VI (Tender Drawings)

   All the correspondence till award of contract i.e. addendum, LOA etc.

   Technical and Financial bids submitted by bidder.

3. In consideration of the payment to be made by AIIMS Raipur to the Contractor as hereinafter mentioned, the Contractor hereby covenants with AIIMS Raipur to executed and complete the Project by ---------- and remedy and defects therein in conformity in all respects with the provisions of the Contract.

4. AIIMS Raipur hereby covenants to pay the Contractor in consideration of the execution and completion of the Project and the remedying of defects therein, the total Contract Price of Rs. ---------- ---------- only) being the sum stated in the letter of Award (LOA) subject to such additions thereto or deductions there from as may be made under the provisions of the Contract at the times and in the manner prescribed by the Contract.

5. OBLIGATION OF THE CONTRACTOR

   The Contractor shall ensure full compliance with tax laws of India with regard to this Contract and shall be solely responsible for the same.

   IN WITHNESS OF WEREOF 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 .....
Signature of the authorized official	Signature of the authorized official
Name of the Contractor Stamp / Seal of the Contractor	Name of the official Stamp / Seal
SIGNED, SEALED AND DELIVERED By the said	By the Said
on behalf of the Contractor:	on behalf of the .....
in the presence of: Witness_____ Name _____ Address_____	 Witness_____ Name _____ Address_____

Form E

Format for Power of Attorney for authorized signatory

FORMAT FOR POWER OF ATTORNEY FOR SIGNING OF PROPOSAL

Know all men by these presents, we ……. (Name of the Tenderer and address of their registered office) do hereby constitute, appoint and authorize Mr / Ms……(name and residential address of Power of Attorney holder) who is presently employed with us and holding the position of …….……. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our Bid for the Project and submission of all documents and providing information / responses to _____ _____, representing us in all matters before _____ _____, and generally dealing with _____ _____ in all matters in connection with our proposal for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

FORM - H

UNDERTAKING

We do hereby undertake to engage a specialised agency after approval of AIIMS Raipur for undertaking the execution of specialized works of Audio/Visualand Stage Lighting (_____ Name of the specialized work_____) whose minimum qualification shall be as under:

I. For Specialized works:

(i) Average Annual Financial Turnover during the last three financial years, i.e., _____, should be at least 50% of the estimated price of the works.

(ii) Experience of having successfully completed similar works during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following :

Three similar completed works each costing not less than the amount equal to 40% of estimated price of _____ works.

or

Two similar completed works each costing not less than the amount equal to 60% of estimated price of _____ works.

or

One similar completed work costing not less than the amount equal to 80% of estimated price of _____ works.

(iii) We shall be solely responsible for successful execution of _____ work.

(Authorized Signatory of bidder)

Form K

AFFIDAVIT

(On a Rs 100/- non judicial stamp paper duly notarized)

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.
2. The undersigned also herby certifies the our firm M/s _____ have neither abandoned any contract awarded to us nor such works have been rescinded, during the last five years prior to the date of this application.
3. The undersigned also herby confirmed M/s _____ have not been blacklisted/debarred/penalized by any government agency or public sector undertaking or judicial authority/arbitration body.
4. The undersigned hereby authorize (s) and request (s) any bank, person, form or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.
5. The undersigned understands and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the Client.
6. The eligible similar work (s) has/have not been got executed through another Contractor on back to back basis.

_____

Signed by an Authorized Officer of the Firm

Form-M

UNDERTAKING

We do hereby indemnify HSCC (I) Ltd and AIIMS Raipur, against all penal action that may be levied/effected by any concerned authority for default in any labour regulation/PF/ESI and other statutory requirements of the relevant Acts/Laws related to the work of the contractor and will bear the legal charges, if any, and will pay the legal charges/dues directly to the concerned authority.

FORM 'T-1'

FINANCIAL INFORMATION

1. Financial Analysis-Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last five years duly as submitted by the applicant to the Income tax Department (Copies to be attached) and duly certified by the Chartered Accountant mentioning the membership number issued by ICAI along with the full address.

i) Gross Annual Turnover on construction works for last three years ending 31.03.2018

Financial Year	Annual Turn Over in Indian Rupees (or equivalent to Indian Rupees) from Construction works as per Audited Balance Sheet
For the Year 2015-16	Rs.
For the Year 2016-17	Rs.
For the Year 2017-18	Rs.
Average Annual Turnover over the past three years	Rs.

ii) Profit / Loss for last Five years ending 31.03.2018

Financial Information in Rs. Equivalent	For year 2013-14	For year 2014-15	For year 2015-16	For year 2016-17	For year 2017-18
1. Total Assets					
2. Current Assets					
3. Total Liabilities					
4. Current Liabilities					
5. Profit before Tax					
6. Profit after Tax					
7. Net Worth					

Financial arrangements for carrying out the proposed work.

Solvency certificate from Bankers of the bidder in the prescribed Form "T-1B".

Signature of Chartered Accountant with Seal

Signature of Applicant.

FORM 'T-1 B'

FORM OF BANKERS' CERTIFICATE FROM A SCHEDULED BANK

This is to certify that to the best of our knowledge and information that M/s./Shri …… having marginally noted address, a customer of our bank are/is respectable and can be treated as good for any engagement upto a limit of Rs. ……(Rupees……). This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

(Signature)
For the Bank

NOTE (1) Bankers certificates should be on letter head of the Bank, sealed in cover addressed to tendering authority.

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

FORM - 'T - 2'

DETAILS OF ALL WORKS OF SIMILAR NATURE COMPLETED

DURING THE LAST SEVEN YEARS ENDING PREVIOUS DAY OF LAST DATE OF SUBMISSION OF TENDERS

Sl.No	Name of Work/ Project & location	Owner of sponsoring Organization	Cost ofWork In Lakh)	Date of Commencement As per contract	Stipulated Date of completion	Actual date of completion	Litigation/ Arbitration Pending/ in Progress with details*	Name & address/ Telephone No. of officer to whom reference may be made	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

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

Copy of work Orders and Completion Certificates of the above works should also be submitted.

Signature of Applicant

FORM 'T - 4'

PERFORMANCE REPORT OF WORKS
REFERRED TO IN FORM "T-2"

01.	Name of work / Project & Location	
02.	Agreement No.	
03.	Bided Cost	
04.	Executed Cost	
05.	Date of Start	
06.	**Date of completion :**	
	i) Stipulated date of completion	
	ii) Actual date of completion	
07.	(a) Whether case of levy of compensation has been decided or not	Yes/No
	(b) If decided, Amount of compensation levied for delayed completion, if any	
08.	Amount of reduced rate items, if any	
09.	**Performance Report :**	
	a) Quality of work	Outstanding / Very Good / Good / Poor
	b) Financial soundness	Outstanding / Very Good / Good / Poor
	c) Technical Proficiency	Outstanding / Very Good / Good / Poor
	d) Resourcefulness	Outstanding / Very Good / Good / Poor
	e) General behavior	Outstanding / Very Good / Good / Poor

Dated : _____

Executive Engineer or Equivalent

Form 'T – 5'

STRUCTURE & ORGANIZATION

01.	Name & Address of the applicant	
02.	Telephone No. / Telex / Fax No.	
03.	Legal status of the applicant (attach copies of original document defining the legal status)	
	a) An Individual	
	b) A proprietary firm	
	c) A firm in partnership	
	d) A limited company or Corporation	
04.	Particulars of registration with various Government bodies (*attach attested photocopy*)	
	Organization / Place of Registration :	
	1.	
	2.	
	3.	
05.	Names and Titles of Directors & Officers with designation to be concerned with this work	
06.	Designation of individuals authorized to act for the organization.	
07.	Was the applicant 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 and reasons of suspension of work.	
08.	Has the applicant or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give name of the project and reasons for abandonment.	
09.	Has the applicant or any constituent partner in case of partnership firm, ever been debarred/	

	black-listed for Biding in any organization at any time? If so, give details.	
10.	Has the applicant or any constituent partner in case of partnership firm, ever been convicted by a Court of Law? If so, give details.	
11.	In which field of Civil Engineering construction the applicant has specialization and interest?	
12.	Any other information considered necessary but not included above.	

Signature of Applicant

END OF VOLUME - I

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

TENDER

FOR
Supply, Installation, Testing & Commissioning (SITC) of Audio – Visual System and Stage Lighting in Auditorium Building

VOLUME – II

GENERAL CONDITIONS OF CONTRACT

OCTOBER 2018

आरोग्यम् सुख सम्पदा

All India Institute of Medical Sciences, Raipur
G.E. Road, Tatibandh, Raipur – 492099, Chhattisgarh
Tele: 0771-2572930, email: ee.civil@aiimsraipur.edu.in
Website: www.aiimsraipur.edu.in

NIT No. 20/EE/AIIMS/RPR/2018-19 Dated 04.10.2018

Percentage Rate / Item Rate Tender & Contract
Index

GENERAL GUIDELINES

1. This book of "General Conditions of Contract" is applicable to both types of tenders i.e." Percentage rate tenders and Item rate tenders". Accordingly, alternative provisions for conditions Nos. 4, 10 & 12 of the General Rules and Directions are given in this book. The appropriate alternatives will be applicable in specific cases depending on whether this is used for percentage rate tender (CPWD-7) or item rate tender (CPWD-8).

2. CPWD-6, Schedules A to F, special conditions/specifications and drawings only will be issued to intending bidders. The standard form will not be issued along with the Tender Documents but the same shall form part of the agreement to be drawn and signed by both parties after acceptance of tender.

3. All blanks are confined to Notice Inviting Tender (CPWD-6) and Schedules A to F.

4. Authority approving the Notice Inviting Tenders (NIT) shall fill up all the blanks in CPWD-6 and in Schedules B to F before issue of Tender Papers.

5. The intending bidders will quote their rates in Schedule A.

6. The proforma for registers and Schedules A to F are only for information and guidance. These are not to be filled in the Standard Form. The Schedules with all blanks, duly filled, shall be separately issued to all intending tenderers.

CPWD - 7/8

GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
Percentage Rate Tender/Item Rate Tender & Contract for Works

Tender for the work of :-
……
……
……
(i) To be submitted/uploaded by.....hours on.....to
...../upload at www.tenderwizard.com/cpwd
(ii) To be opened in presence of tenderers who may be present at..... hours on.....in the office of.....
Issued to: …….
Signature of officer issuing the documents
……
Designation ……
Date of Issue: ……
* Note Applicable for e-tendering

TENDER

I/We have read and examined the notice inviting tender, schedule, A, B, C, D, E & F Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the President of India within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.

We agree to keep the tender open for thirty/ forty five/ sixty/ ninety (30/45/60/90) days from the due date of its opening in case of single bid system / Ninety(90) days from the date of opening of technical bid in case tenders are invited on 2 bid/envelop system/ One hundred twenty(120) days from the date of opening of technical bid in case bids are invited on 3 bid/envelop system for specialized work (strike out as the case may be) and not to make any modification in its terms and conditions.

A sum of Rs. …… is hereby forwarded in cash/receipt treasury challan/deposit at call receipt of a scheduled bank/fixed deposit receipt of scheduled bank/demand draft of a scheduled bank/bank guarantee issued by a scheduled bank as earnest money.

A copy of earnest money in receipt treasury challan/deposit at call receipt of a scheduled bank/fixed deposit receipt of scheduled bank/demand draft of a scheduled bank/bank guarantee issued by a scheduled bank is scanned and uploaded **(strike out as the case may be)**. If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said President of India or his successors, in office

shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/ We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

Further, I/We agree that in case of forfeiture of Earnest Money or Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/We shall be debarred for tendering in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

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

Dated Signature of Contractor
Witness: Postal Address

Address:
Occupation:

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the President of India for a sum of Rs. …….....
(Rupees.....
.....)

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

(a)
(b)
(c)

For & on behalf of the President of India

Signatures…….....
Dated: Designation……..….....

GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT

General Rules & Directions

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

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

2. In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power-of attorney authorizing him to do so, such power of attorney to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act, 1952.

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

Applicable for Item Rate Tender only (CPWD - 8)

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

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

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

If the revised tendered amount (worked out on the basis of quoted rate of individual items) of two or more contractors received in revised offer is again found to be equal, then the lowest tender, among such contractors, shall be decided by draw of lots in the presence of SE of the circle, EE(s) in-charge of major & minor component(s) (also DDH in case Horticulture work is also included in the tender), EE(P) or EE(HQ) of the circle and the lowest contractors those have quoted equal amount

of their tenders.

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

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

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

Applicable for Percentage Rate Tender only (CPWD - 7)

4A. Applicable for Percentage Rate Tender only (CPWD-7)

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

1. The contractor does not quote percentage above/below on the total amount of tender or any section/sub head of the tender.
2. The percentage above/below is not quoted in figures & words both on the total amount of tender or any section/sub head of the tender.
3. The percentage quoted above/below is different in figures & words on the total amount of tender or any section/sub head of the tender.

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

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

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

If the revised tendered amount of two more contractors received in revised offer is again found to be equal , the lowest tender, among such contractors, shall be decided by draw of lots in the presence of SE of the circle, EE(s) in-charge of major & minor component(s) (also DDH in case Horticulture work is also included in the tender), EE(P) or EE(HQ) of the circle & the lowest contractors those

have quoted equal amount of their tenders.

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

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

5. The officer inviting tender or his duly authorized assistant, will open tenders in the presence of any intending contractors who may be present at the time, and will enter the amounts of the several tenders in a comparative statement in a suitable form. In the event of a tender being accepted, a receipt for the earnest money shall thereupon be given to the contractor who shall thereupon for the purpose of identification sign copies of the specifications and other documents mentioned in Rule-I. In the event of a tender being rejected, the earnest money shall thereupon be returned to the contractor remitting the same, without any interest.

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

7. The receipt of an accountant or clerk for any money paid by the contractor will not be considered as any acknowledgment or payment to the officer inviting tender and the contractor shall be responsible for seeing that he procures a receipt signed by the officer inviting tender or a duly authorized Cashier.

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

9. The tenderers shall sign a declaration under the officials Secret Act 1923, for maintaining secrecy of the tender documents drawings or other records connected with the work given to them. The unsuccessful tenderers shall return all the drawings given to them.

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

Applicable for Item Rate Tender only (CPWD - 8)

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

Applicable for percentage Rate Tender only (CPWD - 7)

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

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

Applicable for Item Rate Tender only (CPWD - 8)

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

Applicable for Percentage Rate Tender only (CPWD - 7)

12A. In Percentage Rate Tender, the tenderer shall quote percentage below/above (in figures as well as in words) at which he will be willing to execute the work. He shall also work out the total amount of his offer and the same should be written in figures as well as in words in such a way that no interpolation is possible. In case of figures, the word 'Rs.' should be written before the figure of rupees and word 'P' after the decimal figures, e.g. 'Rs. 2.15P and in case of words, the word 'Rupees' should precede and the word 'Paisa' should be written at the end.

13.

(i) The Contractor whose tender is accepted, will be required to furnish performance guarantee of 5% (Five Percent) of the tendered amount within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10,000/-) or Deposit at call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form.

(ii) The contractor whose tender is accepted will also be required to furnish by way of Security Deposit for the fulfillment of his contract, an amount equal to 2.5% of the tendered value of the work. The Security deposit will be collected by deductions from the running bills as well as final bill of the contractor at the rates mentioned above. The Security amount will also be accepted in cash or in the shape of Government Securities. Fixed Deposit Receipt of a Scheduled Bank or State Bank of India will also be accepted for this purpose provided confirmatory advice is enclosed.

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

15. Sales-tax/VAT (except service tax), purchase tax, turnover tax or any other tax applicable in respect of this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same. However, in respect of service tax, same shall be paid by the contractor to the concerned department on demand and it will be reimbursed to him by the Engineer-in-Charge after satisfying that it has been actually and genuinely paid by the contractor.

16. The contractor shall give a list of both gazetted and non-gazetted C.P.W.D. employees related to him.

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

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

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

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

20. 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 Superintending Engineer/Executive Engineer may in his discretion, without prejudice to any other right or remedy available in law, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

CONDITIONS OF CONTRACT

Definitions

1. The **Contract** means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority as indicated in **Schedule 'F'** on behalf of the AIIMS Raipur 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.
2. In the contract the following expressions shall, unless the context otherwise requires, have the meanings, thereby respectively assigned to them:-
   i) The expressions **works or work** shall, unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.
   ii) **Accepting Authority** shall mean the authority mentioned in **Schedule 'F'**.
   iii) **The Contractor** shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.
   iv) **Department** means All India Institute of Medical Science, Raipur & represented by officials of AIIMS Raipur.
   v) ***District Specificat*ions** means the specifications followed by the State Government in the area where the work is to be executed.
   vi) The **Engineer-in-charge means the** Executive Engineer.
   vii) **Expected risk(s) are** risks due to riots(other than those on account of the contractor's employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any act of Government, damage from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the Accepting Authority 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 Government's faulty design of work.
   viii) The **AIIMS Raipur** or **Principal Employer** shall mean the All India Institute of Medical Science, Raipur & represented by officials of AIIMS Raipur.
   ix) **Market rate** shall be the rate as decided by 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 Schedule 'F' to cover, all overheads and profits.
   x) The **President** means the President of India and his successors.

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

xii) The **Site** shall mean the land/ or place 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 located or used for the purpose of carrying out the contract.

xiii) **"Tendered Value"/"Contract Price"** means the value of the entire work as stipulated in the letter of award.

xiv) The expressions **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.

xv) Client or **AIIMS Raipur** means All India Institute of Medical Science, Raipur

Scope and performance

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

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

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

Works to be carried out

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

Sufficiency of tender

7. The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and price quoted in the Schedule of Quantities, which rates and price shall, except as otherwise provided, cover all his obligations under

the contract and all matters and things necessary for the proper completion and maintenance of the works.

Discrepancies and Adjustment of errors

8. The several documents forming the contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawings and figured dimensions in preference to scale and specific conditions in preference to general conditions.

8.1 In the case of discrepancy between the Schedule of Quantities, the Specifications and /or the Drawings, the following order of preference shall be observed –

a) Description of Schedule of Quantities

b) Particular specification and Specific Condition, if any.

c) Drawings

d) CPWD Specifications

e) Indian Standard Specifications of B.I.S.

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

Any error in description, quantity or rate in schedule of quantities or any omission there from shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligation under the contract.

Signing of Contract

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

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

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

(a) Various standard clauses with corrections upto the date stipulated in Schedule 'F' along with annexure thereto.

(b) C.P.W.D. Safety Code.

(c) Model Rules for the protection of health, sanitary arrangements for workers employed by the Client or its contractors, which are applicable for the workers employed by the Contractor for this Project.

(d) CPWD Contractor's Labour Regulations, to be followed by the Contractor for this Project.

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

iii. No payment for the work done will be made

(a) Unless contract is signed by the contractor.

(b) Till the copy of registration with EPFO and ESI is submitted by the contractor.

CLAUSES OF CONTRACT

CLAUSE 1
Performance Guarantee

(i) The contractor shall submit an irrevocable Performance Guarantee of 5% (Five percent) of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge up to a maximum period as specified in schedule 'F' on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of 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/Banker's Cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay Order of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the form annexed hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government 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 Government to make good the deficit.

(ii) 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 authority, the performance guarantee shall be returned to the contractor, without any interest. However, in case of contracts involving maintenance of building and services/any other work after construction of same building and services/other work, then 50% of Performance Guarantee shall be retained as Security Deposit. The same shall be returned year wise proportionately.

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

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

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

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

(v) On substantial Completion of any work which has been completed to such an extent that the intended purpose of the work is met and ready to use, then a provisional Completion certificate shall be recorded

by the Engineer-in-Charge. The provisional certificate shall have appended with a list of outstanding balance item of work that need to be completed in accordance with the provisions of the contract.

This provisional completion certificate shall be recorded by the concerned Engineer- in– charge with the approval of Project Manager / Chief Project Manager /Superintending Engineer. After recording of the provisional Completion Certificate for the work by the competent authority, the 80 % of performance guarantee shall be returned to the contractor, without any interest.

However in case of contracts involving Maintenance of building and services / any other work after construction of same building and services/ other work, then 40% of performance guarantee shall be returned to the contractor, without any interest after recording the provisional Completion certificate.

CLAUSE 1 A
Recovery of Security Deposit

The person/persons whose tender(s) may be accepted (hereinafter called the contractor) shall permit Government 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% of the gross amount of each running and final bill till the sum deducted will amount to security deposit of 2.5% of the tendered value of the work. Such deductions will be made and held by Government by way of Security Deposit unless he/they has/have deposited the amount of Security at the rate mentioned above in cash or in the form of Government Securities or fixed deposit receipts. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the security deposit and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the Government to make good the deficit.

All compensations or the other sums of money payable by the contractor under the terms of this contract may be deducted from, or paid by the sale of a sufficient part of his security deposit or from the interest arising therefrom, or from any sums which may be due to or may become due to the contractor by 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 Engineer-in-Charge, 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 lac subject to the condition that amount of such bank guarantee, except last one, shall not be less than Rs. 5 lac. Provided further that the validity of bank guarantee including the one given against the earnest money shall be in conformity with provisions contained in clause 17 which shall be extended from time to time depending upon extension of contract granted under provisions of clause 2 and clause 5.

In case of contracts involving maintenance of building and services/any other work after construction of same building and services/other work, then 50% of Performance Guarantee shall be retained as Security

Deposit. The same shall be returned year wise proportionately.

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 Divisional Officer 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 justified extended date of completion, as per clause 5 (excluding any extension under Clause 5.5) as well as any extension granted under clauses 12 and 15, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the authority specified in schedule 'F' may decide on the amount of Tendered Value of the work for every completed day/month (as determined) 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 for delay of work	@ 1 % per month of delay to be computed on per day basis

Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10 % of the Tendered Value of work or of the Tendered Value of the Sectional part of work as mentioned in Schedule 'F' for which a separate period of completion is originally given.

In case no compensation has been decided by the authority in Schedule 'F' during the progress of work, this shall be no waiver of right to levy compensation by the said authority if the work remains incomplete on final justified extended date of completion. If the Engineer in Charge decides to give further extension of time allowing performance of work beyond the justified extended date, the contractor shall be liable to pay compensation for such extended period. If any variation in amount of contract takes place during such extended period beyond justified extended date and the contractor becomes entitled to additional time under clause 12, the net period for such variation shall be accounted for while deciding the period for levy of compensation. However, during such further extended period beyond the justified extended period, if any delay occurs by events under sub clause 5.2, the contractor shall be liable to pay compensation for such delay.

Provided that compensation during the progress of work before the justified extended date of completion for delay under this clause shall be for non-achievement of sectional completion or part handing over of work on stipulated/justified extended date for such part work or if delay affects any other works/services. This is without prejudice to right of action by the Engineer in Charge under clause 3 for delay in performance

and claim of compensation under that clause.

In case action under clause 2 has not been finalized and the work has been determined under clause 3, the right of action under this clause shall remain post determination of contract but levy of compensation shall be for days the progress is behind the schedule on date of determination, as assessed by the authority in Schedule F, after due consideration of justified extension. The compensation for delay, if not decided before the determination of contract, shall be decided after of determination of contract.

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 Government. In case, the contractor does not achieve a particular milestone mentioned in schedule F, 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 as above. 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

In case, the contractor completes the work ahead of stipulated date of completion or justified extended date of completion as determined under clauses 5.3, 12 & 15, a bonus @ 1% (one per cent) of the tendered value per month computed on per day basis, shall be payable to the contractor, subject to a maximum limit of 5% (five per cent) of the tendered value. Provided that justified time for extra work shall be calculated on pro-rata basis as cost of extra work X stipulated period /tendered value. The amount of bonus, if payable, shall be paid along with final bill after completion of work. Provided always that provision of the Clause 2A shall be applicable only when so provided in 'Schedule F'.

CLAUSE 3
When Contract can be Determined

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

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

(ii) If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence and continues to do so after a notice in writing of seven

days from the Engineer-in-Charge.

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

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

(v) 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 Government.

(vi) If the contractor shall enter into a contract with 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.

(vii) If the contractor had secured the contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of Integrity Agreement.

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

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

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

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

When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge on behalf of the Client shall have powers:

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

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

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

CLAUSE 3A

In case, the work cannot be started due to reasons not within the control of the contractor within 1/8th of the stipulated time for completion of work or one month whichever is more, either party may close the contract by giving notice to the other party stating reasons. In such eventuality, the Performance Guarantee of the contractor shall be refunded within following time limits :

(i) If the Tendered value of work is up to Rs. 45 lac : 15 days.

(ii) If the Tendered value of work is more than Rs. 45 lac and up to Rs. 2.5 Crore : 21 days.

(iii) If the Tendered value of work exceeds Rs. 2.5 Crore : 30 days.

Neither party shall claim any compensation for such eventuality. This clause is not applicable for any breach of the contract by either party.

CLAUSE 4

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 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 Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take

possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) and 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 Schedule 'F' or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in schedule 'F' or from the date of handing over of the site notified by the Engineer-in-Charge, whichever is later. However, the handing over of site by the Engineer in Charge, in full or in part (if so provided in contract), shall be completed within two months from issue of acceptance letter. If the Contractor commits default in commencing the execution of the work as aforesaid, the performance guarantee shall be forfeited by the Engineer in Charge and shall be absolutely at the disposal of the Government without prejudice to any other right or remedy available in law.

5.1 As soon as possible but within twenty one days of award of work and in consideration of

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

(i) The Contractor shall submit a Time and Progress Chart for each mile stone. The Engineer- in-Charge may within 30 days thereafter, if required modify, and communicate the program approved to the contractor failing which the program submitted by the contractor shall be deemed to be approved by the Engineer-in-Charge. The work programme shall include all details of balance drawings and decisions required to complete the contract with specific dates by which these details are required by contractor without causing any delay in execution of the work. 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 programme has been agreed upon) complete the work as per mile stones given in Schedule 'F'.

(ii) In case of non-submission of construction programme by the contractor the program approved by the Engineer-in-Charge shall be deemed to be final.

(iii) The approval by the Engineer-in-Charge of such programme shall not relieve the contractor of any of the obligations under the contract.

(iv) The contractor shall submit the Time and Progress Chart and progress report using the mutually agreed software or in other format decided by Engineer-in-Charge for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery Rs. 2500/ - (for works costing upto Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per week or part basis in case of delay in submission of the monthly progress report.

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

(i) force majeure, or

(ii) abnormally bad weather, or

(iii) serious loss or damage by fire, or

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

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

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

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

(viii) any other cause like above which, in the reasoned opinion 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 for entry in the hindrance register (physical or web-based as prescribed in Schedule 'F' but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

The contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed in sub clause 5.2.

5.3 In case the work is hindered by any reasons, in the opinion of the contractor, by the Department or for someone for whose action the Department is responsible, the contractor may immediately give notice thereof in writing to the Engineer-in-Charge in the same manner as prescribed under sub Clause 5.2 seeking extension of time or rescheduling of milestone/s. The authority as indicated in Schedule 'F' shall, if justified, give a fair and reasonable extension of time and reschedule the mile stones for completion of work after due consideration of the same within 30 days of receipt of such request. In event of non application by the contractor for extension of time E-in-C after affording opportunity to the contractor may give, supported with a programme, a fair and reasonable extension within a reasonable period of occurrence of the event.

Such extension of time or rescheduling of milestone/s shall be without prejudice to any other right or remedy of the parties in contract or in law; provided further that for concurrent delays under this sub clause and sub clause 5.2 to the extent the delay is covered under sub clause 5.2 the contractor shall be entitled to only extension of time and no damages.

5.4 Request for rescheduling of Mile stones or extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed forms i.e. Form of application by the contractor for seeking rescheduling of milestones (Appendix-XVI) or Form of application by the contractor for seeking extension of time (Appendix – XVII) respectively to the authority as indicated in Schedule 'F'. The Contractor shall indicate in such a request the period by which rescheduling of milestone/ s or extension of time is desired.

With every request for rescheduling of milestones, or if at any time the actual progress of work falls behind the approved programme by more than 10% of the stipulated period of completion of contract, the contractor shall produce a revised programme which shall include all details of pending drawings and decisions required to complete the contract and also the target dates by which these details should be available without causing any delay in execution of the work. A recovery as specified in Schedule 'F' shall be made on per day basis in case of delay in submission of the revised programme.

5.4.1 In any such case the authority as indicated in Schedule 'F' may give a fair and reasonable extension of time for completion of work or reschedule the mile stones. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in Schedule 'F' in writing, within 30 days of the date of receipt of such request from the Contractor in prescribed form. In event of non application by the contractor for extension of time E-in-C after affording opportunity to the contractor, may give, supported with a programme (as specified under 5.4 above), a fair and reasonable extension within a reasonable period of occurrence of the event.

5.5 In case the work is delayed by any reasons, in the opinion of the Engineer-in-Charge, by the contractor for reasons beyond the events mentioned in clause 5.2 or clause 5.3 or clause 5.4 and beyond the justified extended date; without prejudice to right to take action under Clause 3, the Engineer-in-Charge may grant extension of time required for completion of work without rescheduling of milestones. The contractor shall be liable for levy of compensation for delay for such extension of time.

CLAUSE 6

Measurements of Work Done

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

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

All measurements and levels shall be taken jointly by 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 Department 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 appliance, labour and other things necessary for measurements and recording levels.

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

The contractor shall give, not less than seven days' notice to 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 officer of the department 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 having pages of A-4 size as per the format of the department so that a complete record is obtained of all the items of works performed under the contract.

All such measurements and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the Engineer-in-Charge or his authorized representative as per interval or program fixed in consultation with Engineer-in-Charge or his authorized representative. After the necessary corrections 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 department a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer-in-Charge and/or his authorized representative would thereafter check this MB, and record the necessary certificates for their checks/test checks.

The final, fair, computerized measurement book given by the contractor, duly bound, with its pages machine numbered, should be 100% correct, and no cutting or over-writing in the measurements would thereafter be allowed. If at all any error 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 department. Thereafter, the MB shall be taken in the Divisional Office records, and allotted a number as per the Register of Computerised MBs. This should be done before the corresponding bill is submitted to the Division Office for payment. The contractor shall submit two spare copies of such computerized MB's for the purpose of reference and record by the various officers of the department.

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

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

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

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

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the 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 No payment shall be made for work, estimated to cost Rs. **One lac** or less till after the whole of the work shall have been completed and certificate of completion given. For works estimated to cost over Rs. One lac, 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 Department in triplicate on or before the date of every month fixed for the same by the Engineer-in-Charge. The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Schedule 'F', in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved. Engineer-in-Charge shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work. In the event of the failure of the contractor to submit the bills, 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 10th working day after the day of presentation of the bill by the Contractor to the Engineer-in-Charge or his Asstt. Engineer 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.

In case of delay in payment of intermediate bills after 45 days of submission of bill by the contractor provided the bill submitted by the contractor found to be in order, a simple interest @ 10% per annum

shall be paid to the contractor from the date of expiry of prescribed time limit which will be compounded on yearly basis.

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 department to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.

The Engineer-in-Charge in his sole discretion on the basis of a certificate from the Asstt. Engineer to the effect that the work has been completed up to the level in question make interim advance payments without detailed measurements for work done (other than foundations, items to be covered under finishing items) up to lintel level (including sunshade 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 to be submitted by the contractor within 10 days of the interim payment. In case of delay in submission of bill by the contractor a simple interest @ 10% per annum shall be paid to the Government from the date of expiry of prescribed time limit which will be compounded on yearly basis.

Payments in composite Contracts

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

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

CLAUSE 7A

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

CLAUSE 8

Completion Certificate and Completion Plans

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

CLAUSE 8A

Contractor to Keep Site Clean

When the annual repairs and maintenance of works are carried out, the splashes and droppings from white washing, colour washing, painting etc., on walls, floor, windows, etc shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, quarters or premises etc. where the work is done: without waiting for the actual completion of all the other items of work in the contract. In case the contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this work done at the cost of the contractor either departmentally or through any other agency. 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-ll 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 of 0.1 % of Tendered Value or limit prescribed in Schedule F whichever is more as may be fixed by the

Superintending Engineer concerned and in this respect the decision of the Superintending Engineer shall be final and binding on the contractor.

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

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 within the period specified hereinunder, the period being reckoned from the date of receipt of the bill by the Engineer-in- Charge or his authorized Asstt. Engineer, complete with account of materials issued by the Department and dismantled materials.

(I) If the Tendered value of work is up to Rs. 45 lac : 2 months

(II) If the Tendered value of work is more than Rs.45 lac and up to Rs. 2.5 Crore : 3 months

(III) If the Tendered value of work exceeds Rs. 2.5 Crore : 6 months

In case of delay in payment of final bills after prescribed time limit, a simple interest @ 10% per annum shall be paid to the contractor from the date of expiry of prescribed time limit which will be compounded on yearly basis, provided the final bill submitted by the contractor found to be in order.

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 recognized financial institutions instead of direct to him provided that the contractor furnishes to the Engineer-in-Charge (1) an authorization in the form of a legally valid document such as a power of attorney conferring authority on the bank; registered financial, co-operative or thrift societies or recognized financial institutions to receive payments and (2) his own acceptance of the correctness of the amount made out as being due to him by Government or his signature on the bill or other claim preferred against Government 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 recognized financial institutions. While the receipt given by such banks; registered financial, co-operative or thrift societies or recognized 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 recognized financial institutions.

Nothing herein contained shall operate to create in favour of the bank; registered financial, co-operative or thrift societies or recognized financial institutions any rights or equities visa- vis the Client.

CLAUSE 10

Materials supplied by Government

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

As soon as the work is awarded, the contractor shall finalise the programme for the completion of work as per clause 5 of this contract and shall give his estimates of materials required on the basis of drawings/or schedule of quantities of the work. The Contractor shall give in writing his requirement to the Engineer-in-Charge which shall be issued to him keeping in view the progress of work as assessed by the Engineer-in-Charge, in accordance with the agreed phased programme of work indicating monthly requirements of various materials. The contractor shall place his indent in writing for issue of such materials at least 7 days in advance of his requirement. Such materials shall be supplied for the purpose of the contract only and the value of the materials so supplied at the rates specified in the aforesaid schedule shall be set off or deducted, as and when materials are consumed in items of work (including normal wastage) for which payment is being made to the contractor, from any sum then due or which may therefore become due to the contractor under the contract or otherwise or from the security deposit. At the time of submission of bills, the contractor shall certify that balance of materials supplied is available at site in original good condition.

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

The contractor shall bear the cost of getting the material issued, loading, transporting to site, unloading, storing under cover as required, cutting assembling and joining the several parts together as necessary. Notwithstanding anything to the contrary contained in any other clause of the contract and (or the CPWA Code) all stores/materials so supplied to the contractor or procured with the assistance of the Government shall remain the absolute property of Government and the contractor shall be the trustee of the stores/materials, and the said stores/materials shall not be removed/disposed off from the site of the work on any account and shall be at all times open to inspection by the Engineer-in-Charge or his authorized agent. Any such stores/materials remaining unused shall be returned to the Engineer-in- Charge in as good a condition in which they were originally supplied at a place directed by him, at a place of issue or any other place specified by him as he shall require, but in case it is decided not to take back the stores/materials the contractor shall have no claim for compensation on any account of such stores/materials so supplied to him as aforesaid and not used by him or for any wastage in or damage to in

such stores/materials.

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

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

CLAUSE 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 Government.

The contractor shall, at his own expense and without delay, supply to the Engineer-in-Charge samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the Contractor shall be in conformity with the 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 thirty days of supply of samples or within such further period as he may require intimate to the Contractor in writing whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to 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 analyzed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the Engineer-in-Charge. The Contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.

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

The Engineer-in-Charge shall 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 schedule F.

CLAUSE 10B

(i) Secured Advance on Non-perishable Materials

The contractor, on signing an indenture in the form in Annexure XVIII by the Engineer-in- Charge, shall be entitled to be paid during the progress of the execution of the work up to75% 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 the Engineer- in-Charge shall be final and binding on the contractor in this matter. No secured advance, shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.

(ii) Mobilization Advance

Mobilization advance not exceeding 10% of the tendered value may be given, if requested by the contractor in writing within one month of the order to commence the work. Such advance shall be in two or more 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 Bonds not more than 6 in number from Scheduled Bank for the amount equal to 110% of the amount of advance and valid for the period till recovery of advance. This (Bank Guarantee from Scheduled Bank for the amount equal to 110% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery.

Provided always that provision of Clause 10 B (ii) shall be applicable only when so provided in 'Schedule F'.

(iii) Plant Machinery & Shuttering Material Advance

An advance for plant, machinery & shuttering material required for the work and brought to site by the Contractor may be given if requested by the contractor in writing within one month of bringing such plant and machinery to site. Such advance shall be given on such plant and machinery which in the opinion of the Engineer-in-Charge will add to the expeditious execution of work and improve the quality of work. The amount of advance shall be restricted to 5% percent of the tender value. In the case of new plant and equipment to be purchased for the work, the advance shall be restricted to 90% of the price of such new plant and equipment paid by the contractor for which the contractor shall produce evidence satisfactory to the Engineer-in-Charge. In the case of second hand and used plants and equipment, the amount of such advance shall be limited to 50% of the depreciated value of plant and equipment as may be decided by the Engineer- in-Charge. The contractor shall, if so required by the Engineer-in-Charge, submit the statement of value of such old plant and equipment duly approved by a Registered Valuer recognized by the Central Board of Direct Taxes under the Income- Tax Act, 1961. No such advance shall be paid on any plant and equipment of perishable nature and on any plant and equipment of a value less than Rs. 50,000/- Seventy five per cent of such amount of advance shall be paid after the plant & equipment is brought to site and balance twenty five percent on successfully commissioning the same.

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

1. Leasing company which gives certificate of agreeing to lease equipment to the contractor.
2. Engineer in Charge, and
3. The contractor.

This advance shall further be subject to the condition that such plant and equipment (a) are considered by the Engineer-in-Charge to be necessary for the works; (b) and are in working order and are maintained in working order; (c) hypothecated to the Government as specified by the Engineer-in-Charge before the payment of advance is released. The contractor shall not be permitted to remove

from the site such hypothecated plant and equipment without the prior written permission of the Engineer-in-Charge. The contractor shall be responsible for maintaining such plant and equipment in good working order during the entire period of hypothecation failing which such advance shall be entirely recovered in lump sum. For this purpose, steel scaffolding and form work shall be treated as plant and equipment.

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

(iv) Interest & Recovery

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

(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 and plant and equipment advance may be extended in the discretion of the Engineer-in-Charge.

CLAUSE 10C

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

If after submission of the tender, if the price of any marital in corporate in the work (excluding the material covered under clause 10 CA and not been a material supply for a Engineer in charge's store in accordance with clause 10 therefore)and/ or wages of labour increases as a direct result of the coming into force of any fresh ,low or statutory rule or order (but not due to any variation of rate in GST applicable on such material(s) being considered under this clause) beyond the prices/wages prevailing at the time of the last stipulated date of receipt of tenders including extensions, if any, for the work during contract period including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, then the amount of the contract shall accordingly be varied.

If after submission of the tender, the price of any material incorporated in the works (excluding the materials covered under Clause 10CA and not being a material supplied from the Engineer- in-Charge's stores in accordance with Clause 10 thereof) and/or wages of labour as prevailing at the time of last stipulated date of receipt of tender including extensions, if any, is decreased as a direct result of the coming into force of any fresh law or statutory rules or order (but not due to any changes of rate in sales tax/VAT, Central/State Excise/Custom Duty), Government shall in respect of materials incorporated in the works (excluding the materials covered under Clause 10CA and not being material supplied from the Engineer-in-Charge's stores in accordance with Clause 10 hereof) and/or labour engaged on the execution of the work after the

date of coming into force of such law statutory rule or order be entitled to deduct from the dues of the contractor, such amount as shall be equivalent to the difference between the prices of the materials and/or wages as prevailed at the time of the last stipulated date for receipt of tenders including extensions if any for the work and the prices of materials and/or wages of labour on the coming into force of such law, statutory rule or order. This will be applicable for the contract period including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2.

Engineer-in-Charge shall call books of account and other relevant documents from the contractor to satisfy himself about reasonability of increase in prices of materials and wages.

The contractor shall, within a reasonable time of his becoming aware of any alteration in the price of any such materials and/or wages of labour, give notice thereof to the Engineer-in- Charge stating that the same is given pursuant to this condition together with all information relating thereto which he may be in position to supply.

For this purpose, the labour component of 85% of the value of the work executed during period under consideration shall not exceed the percentage as specified in Schedule F, of the value of work done during that period and the increase/decrease in labour shall be considered on the minimum daily wages in rupees of any unskilled mazdoor, fixed under any law, statutory rule or order. The cost of work for which escalation is applicable (W) is same as cost of work done worked out as indicated in sub-para (ii) of clause 10 CC except the amount of full assessed value of secured Advance.

CLAUSE 10 CA

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

If after submission of the tender, the price of materials specified in Schedule F increases/ decreases beyond the base price(s) as indicated in Schedule F for the work, then the amount of the contract shall accordingly be varied and provided further that any such variations shall be effected for stipulated period of Contract including the justified period extended under the provisions of Clause 5 of the Contract without any action under Clause 2.
However for work done/during the justified period extended as above, it will be limited to indices prevailing at the time of updated stipulated date of completion considering the effect of extra work (extra time to be calculated on pro-rata basis only as cost of extra work x stipulated period/tendered cost).

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

The amount of the contract shall accordingly be varied for all such materials and will be worked out as

per the formula given below for individual material:-

Adjustment for component of individual material

$$V = P \times Q \times \frac{CI - CI_0}{CI_0}$$

where,

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

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

For Projects and Original Works

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

For Maintenance Works

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

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

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

Note: (i) In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the index prevailing at the time of updated stipulated date of completion considering the effect of extra

work (extra time to be calculated on prorata basis only as cost of extra work x stipulated period/ tendered cost) shall be considered.

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

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

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

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

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

CLAUSE 10 CC

Payment due to Increase/Decrease in Prices/Wages (excluding materials covered under clause 10 CA) after Receipt of Tender for Works

If the prices of materials (not being materials supplied or services rendered at fixed prices by the department in accordance with clause 10 & 34 thereof) and/or wages of labour required for execution of the work increase, the contractor shall be compensated for such increase as per provisions detailed below and the amount of the contract shall accordingly be varied, subject to the condition that such compensation for escalation in prices and wages shall be available only for the work done during the stipulated period of the contract including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2. No such compensation shall be payable for a work for which the stipulated period of completion is equal to or less than the time as specified in Schedule F. Such compensation for escalation in the prices of materials and labour, when due, shall be worked out based on the following provisions:-

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

(ii) The cost of work on which escalation will be payable shall be reckoned as below :

(a) Gross value of work done up to this quarter : (A)

(b) Gross value of work done up to the last quarter : (B) (k)
(c) Gross value of work done since previous quarter (A-B) (C)
(d) Full assessed value of Secured Advance (excluding materials Covered under Clause 10 CA) fresh paid in this quarter : (D)
(e) Full assessed value of Secured Advance (excluding materials Covered under Clause 10 CA) recovered in this quarter : (E)
(f) Full assessed value of Secured Advance for which escalation Payable in this quarter (D-E): (F)
(g) Advance payment made during this quarter: (G)
(h) Advance payment recovered during this quarter: (H)
(i) Advance payment for which escalation is payable in this Quarter(G-H): (I)
(j) Extra items/deviated quantities of items paid as per Clause 12 Based on prevailing market rates during this quarter: (J)

Then, M = C+F+I-J
N = 0.85 M

Less cost of material supplied by the department as per Clause 10 and recovered during the quarter (K)

(l) Less cost of services rendered at fixed charges as per Clause 34 and recovered during the quarter (L)

Cost of work for which escalation is applicable:

$$W = N - (K + L)$$

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

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

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

$$Vm = W \times \frac{Xm}{100} \times \frac{MI - MI_O}{MI_O}$$

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

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

Xm = Component of 'materials' (except cement, structural steel, reinforcement bars POL and other materials covered under clause10CA) expressed as percent of the total value of work.

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

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

***Note:** relevant component only will be applicable.

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

(a) The compensation for escalation shall be worked out at quarterly intervals and shall be with respect to the cost of work done as per bills paid during the three calendar months of the said quarter. The dates of preparation of bills as finally entered in the Measurement Book by the Assistant Engineer/ date of submission of bill finally by the contractor to the department in case of computerised measurement books shall be the guiding factor to decide the bills relevant to the quarterly interval. The first such payment shall be made at the end of three months after the month (excluding the month in which tender was accepted) and thereafter at three months' interval. At the time of completion of the work, the last period for payment might become less than 3 months, depending on the actual date of completion.

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

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

$$VL = W \times \frac{Y}{100} \times \frac{LI - LI_0}{Ll_o}$$

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

W : Value of work done, worked out as indicated in sub-para (ii) above.

Y : Component of labour expressed as a percentage of the total value of the work.

L I : Minimum wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as applicable on the last date of the quarter previous to the one under consideration. (In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the minimum wage prevailing on the last date of quarter previous to the quarter pertaining to updated stipulated date of Completion considering the effect of extra work (extra time to be calculated on prorata basis only as cost of extra work x stipulated period/ tendered cost, shall be considered.)

Ll_o : Minimum daily wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as on the last stipulated date of receipt of tender including extension, if any.

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

(a) The minimum wage of an unskilled mazdoor mentioned in sub-para (vi) above shall be the higher of the wage notified by Government of India, Ministry of Labour and that notified by the local administration both relevant to the place of work and the period of reckoning.

(b) The escalation for labour also shall be paid at the same quarterly intervals when escalation due to increase in cost of materials is paid under this clause. If such revision of minimum wages takes place during any such quarterly intervals, the escalation compensation shall be payable at revised rates only for work done in subsequent quarters;

(c) Irrespective of variations in minimum wages of any category of labour, for the purpose of this clause, the variation in the rate for an unskilled mazdoor alone shall form the basis for working out the escalation compensation payable on the labour component.

(viii) In the event the price of materials and/or wages of labour required for execution of the work decrease/s, there shall be a downward adjustment of the cost of work so that such price of materials and/or wages of labour shall be deductible from the cost of work under this contract and in this regard

the formula herein before stated under this Clause 10CC shall mutatis mutandis apply, provided that:

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

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

(ix) Provided always that:-

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

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

Note: Updated stipulated date of completion (period of completion plus extra time for extra work for compensation under clause 10C, 10CA and 10CC

The factor of 1.25 taken into account for calculating the extra time under clause 12.1 for extra time shall not be considered while calculating the updated stipulated date of completion for this purpose in clause 10C, clause 10CA, and clause 10CC.

CLAUSE 10 D

Dismantled Material Govt. Property

The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as Government's property and such materials shall be disposed off to the best advantage of Government 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 signed by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications of Central Public Works Department specified in Schedule 'F' 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.

The completion cost of any agreement for Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration shall not exceed 1.25 times of Tendered amount. Any further deviation beyond this limit upto 1.5 times of tendered amount shall be approved by Chief Engineer with recorded reason and in exceptional case, ADG shall have full power to approve the deviation beyond 1.50 times of tendered amount with recorded reason and take suitable corrective action.

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

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

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

12.2 Deviation, Extra Items and Pricing

A. For Project and original works:

In the case of extra item(s) (items that are completely new, and are in addition to the items contained in the contract), the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis, which shall include invoices, vouchers etc. and Manufacturer's specification for the work failing which the rate approved later by the Engineer- in-

charge shall be binding and the Engineer-in-Charge shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined, failing which it will be deemed to have been approved.

B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:

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

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

Deviation, Substituted Items, Pricing

A. For Project and original works:

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

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

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

B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:

In the case of substitute Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plus cost index (at the time of tender) plus/minus percentage above/ below quoted contract amount. Payment of substitute items in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.

Deviation, Deviated Quantities, Pricing

A. For Project and original works:

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

limit of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:

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

The prescribed time limits for finalising rates for Extra Item(s), Substitute Item(s) and Deviated Quantities of contract items is within 30 days after submission of proposal by the contractor without observation of the Engineer-in-Charge.

12.3 A. For Project and original works:

The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Schedule F, and 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.

B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:

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

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

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

(i) For Buildings : All works up to 1.2 meters above ground level or up to floor 1 level whichever is lower.

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

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

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

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

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

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

CLAUSE 13

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

If at any time after acceptance of the tender or during the progress of work, the purpose or object for which the work is being done changes due to any supervening cause and as a result of which the work has to be abandoned or reduced in scope the Engineer-in-Charge shall give notice in writing to that effect to the contractor stating the decision as well as the cause for such decision and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

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

(ii) Government 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 Government 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 Government, 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.

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

(iv) 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.

(v) 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 Government 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 Government from the contractor under the terms of the contract.

In the event of action being taken under Clause 13 to reduce the scope of work, the contractor may furnish fresh Performance Guarantee on the same conditions, in the same manner and at the same rate for the balance tendered amount and initially valid up to the extended date of completion or stipulated date of completion if no extension has been granted plus 60 days beyond that. Wherever such a fresh Performance Guarantee is furnished by the contractor the Engineer-in-Charge may return the previous Performance Guarantee.

Clause 14

Carrying out part work at risk & cost of contractor

If contractor:

(i) At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Engineer-in-Charge; or

(ii) Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Engineer-in-Charge; or

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

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

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

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

the contractor.

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

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

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

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

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

CLAUSE 15

Suspension of Work

(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:

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

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

(c) for safety of the works or part thereof.

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

(ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above:

(a) the contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part, and;

(b) If the total period of all such suspensions in respect of an item or group of items or work for which a separate period of completion is specified in the contract exceeds thirty days, the contractor shall, in addition, be entitled to such compensation as 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.

(iii) 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 sub- para (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 Government or where it affects whole of the works, as an abandonment of the works by Government, 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 Government, 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.

CLAUSE 15 A

Compensation in case of Delay of Supply of Material by Govt.

The contractor shall not be entitled to claim any compensation from Government for the loss suffered by him on account of delay by Government in the supply of materials in schedule 'B' where such delay is covered by the difficulties relating to the supply of wagons, force majeure or any reasonable cause beyond the control of the Government.

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

CLAUSE 16

Action in case Work not done as per Specifications

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-in-Charge, his authorized subordinates in charge of the work and all the superior officers, officer of the Quality Assurance Unit of the Department or any organization engaged by the Department 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 to the Engineer-in-Charge or his authorized subordinates incharge of the work or to the Chief Engineer in charge of Quality Assurance or his subordinate officers or the officers of the organization engaged by the Department for Quality Assurance or to the Chief Technical Examiner or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand 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 as the authority specified in schedule 'F' may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of 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 defect liability period

If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road kerb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wires, trees, grass or grassland, or cultivated ground

contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within twelve months (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 Engineer-in-Charge's stores), machinery, tools & plants as specified in schedule F. In addition to this, appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of 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 18 A

Recovery of Compensation paid to Workmen

In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Workmen's

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

CLAUSE 18 B

Ensuring Payment and Amenities to Workers if Contractor fails

ln 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, Government is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H or under the C.P.W.D. Contractor's Labour Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by C.P.W.D. Contractors, Government 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 Government under sub-section(2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, Government 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 Government to the contractor whether under this contract or otherwise Government shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the Government full security for all costs for which Government might become liable in contesting such claim.

CLAUSE 19

Labour Laws to be complied by the Contractor

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

The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986.

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

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 19 B

Payment of Wages

Payment of wages:

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

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

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

(iv) (a) The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-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 concerned.

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.

(v) The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, 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.

(v) The contractor shall indemnify and keep indemnified Government against payments to be made under and for the observance of the laws aforesaid and the C.P.W.D. Contractor's Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors.

(vi) 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.

(vii) 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 C.P.W.D. Safety Code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangement and provide necessary facilities as aforesaid, he shall be liable to pay a penalty of Rs.200/- for each default and in addition, the Engineer-in-Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

CLAUSE 19 D

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:-

(1) the number of labourers employed by him on the work,

(2) their working hours,

(3) the wages paid to them,

(4) 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

(5) 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 Government, a sum not exceeding Rs.200/- for each default or materially incorrect statement. The decision of the Divisional Officer shall be final in deducting from any bill due to the contractor, the amount levied as fine and be binding on the contractor.

CLAUSE 19 E

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

CLAUSE 19 F

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

1. Leave :
   (i) in the case of delivery - maternity leave not exceeding 8 weeks, 4 weeks up to and including the day of delivery and 4 weeks following that day,
   (ii) in the case of miscarriage - upto 3 weeks from the date of miscarriage.
2. Pay :
   (i) in the case of delivery - leave pay during maternity leave will be at the rate of the women's average daily 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.
   (ii) in the case of miscarriage - leave pay at the rate of average daily earning calculated on the total wages earned on the days when full time work was done during a period of three months immediately preceding the date of such miscarriage.
3. 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.
4. The contractor shall maintain a register of Maternity (Benefit) in the Prescribed Form as shown in appendix -I and II, and the same shall be kept at the place of work.

CLAUSE 19 G

In the event of the contractor(s) committing a default or breach of any of the provisions of the Central Public Works Department, Contractor's Labour Regulations and Model Rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and' Rules which is materially incorrect, he/they shall, without prejudice to any other liability, pay to the Government a sum not exceeding Rs.200/- for every default, breach or furnishing, making, submitting, filing such materially incorrect statements and in the event of the contractor(s) defaulting continuously in this respect, the penalty may be enhanced to Rs.200/- per day for each day of default subject to a maximum of 5 per cent of the estimated cost of the work put to tender. The decision of 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 of the C.P.W.D. Contractor's Labour Regulations and Model Rules and the provisions of the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (R& A) Central Rules 1971, for the protection of health and sanitary arrangements for work-people employed by the contractor(s) (hereinafter referred as "the said Rules") the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said Rules be complied with and the amenities prescribed therein be provided to the work-people within a reasonable time to be specified in the notice. If the contractor(s) shall fail within the period specified in the notice to comply with and/observe the said Rules and to provide the amenities to the work-people as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities hereinbefore mentioned at the cost of the contractor(s). The contractor(s) shall erect, make and maintain at his/their own expense and to approved standards all necessary huts and sanitary arrangements required for his/their work-people on the site in connection with the execution of the works, and if the same shall not have been erected or constructed, according to approved standards, the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said huts and sanitary arrangements be remodelled and/or reconstructed according to approved standards, and if the contractor(s) shall fail to remodel or reconstruct such huts and sanitary arrangements according to approved standards within the period specified in the notice, the Engineer-in-Charge shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the contractor(s).

CLAUSE 19 H

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

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

(b) The contractor(s) shall in addition construct suitable cooking places having a minimum area of 1.80m x 1.50m (6'x5') adjacent to the hut for each family.

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

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

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

shall ensure that throughout the period of their occupation, the roofs remain water-tight.

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

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

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

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

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

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

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

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

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

CLAUSE 19 I

The Engineer-in-Charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractors' employ upon the work who may be incompetent or misconduct himself and the contractor shall forthwith comply with such requirements. In respect of maintenance/repair or renovation works etc. where the labour have an easy access to the individual houses, the contractor shall issue identity cards to the labourers, whether temporary or permanent and he shall be responsible for any untoward action on the part of such labour. AE/JE 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 unauthorized during construction, and is handed over to the Engineer-in-Charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Engineer-in-Charge shall have the option to refuse to accept the said building/buildings in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay, a levy upto 5% of tendered value of work may be imposed by the Superintending Engineer whose decision shall be final both with regard to the justification and quantum and be binding on the contractor.

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

CLAUSE 19K

Employment of skilled/semi-skilled workers

The contractor shall, at all stages of work, deploy skilled/semi-skilled tradesmen who are qualified and possess certificate in particular trade from 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 19L

Contribution of EPF and ESI

The ESI and EPF contributions on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of the employer paid by the contractor shall be reimbursed by the Engineer-in-Charge to the contractor on actual basis. **The applicable and eligible amount of EPF&ESI shall be reimbursed preferably within 7 days but not later than 30 days of submission of documentary proof of payment provided same are in order.**

CLAUSE 20

Minimum Wages Act to be complied with

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

CLAUSE 21

Work not to be sublet. Action in case of insolvency

The contract shall not be assigned or sublet without the written approval of the 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 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 Engineer- in-Charge on behalf of the President of India shall have power to adopt the course specified in Clause 3 hereof in the interest of Government 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 Government without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

CLAUSE 23

Changes in firm's Constitution to be intimated

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

CLAUSE 24

All works to be executed under the contract shall be executed under the direction and subject to the approval in all 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 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 **or if the Engineer in Charge considers any act or decision of the contractor** on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable and is disputed, **such party** shall promptly within 15 days **of the arising of the disputes** request the **Chief Engineer or where there is no Chief Engineer, the Additional Director General (CE/ADG) who shall refer the disputes to** Dispute Reressal Committee (DRC) within 15 days along with a list of disputes with amounts claimed if any in respect of each such dispute. The Dispute Redressal Committee (DRC) shall give the opposing party two weeks for a written response, and, give its decision within a period of 60 days **extendable by 30 days by consent of both the parties** from the receipt of **reference from CE/ADG**. The constitution of Dispute Redressal Committee (DRC) shall be as indicated in Schedule 'F'. Provided that no party shall be represented before the Dispute Redressal Committee by an advocate/legal counsel etc.

If the Dispute Redressal Committee (DRC) fails to give its decision within the aforesaid period or any party is dissatisfied with the decision of Dispute Redressal Committee (DRC) or expiry of time limit given above, then either party may within a period of 30 days from the receipt of the decision of Dispute Redressal Committee (DRC), give notice to the Chief Engineer, CPWD, in charge of the work or if there be no Chief Engineer, the Additional Director General of the concerned region of CPWD or if there be no Additional Director General, the Director General, CPWD (CE/ADG/DG) for appointment of arbitrator on prescribed proforma as per Appendix XV under intimation to the other party.

It is a term of contract that each party invoking arbitration must exhaust the aforesaid mechanism of settlement of claims/disputes prior to invoking arbitration.

The CE/ADG/DG shall in such case appoint the sole arbitrator or one of the three arbitrators as the case may be within 30 days of receipt of such a request and refer such disputes to arbitration. Wherever the Arbitral Tribunal consists of three Arbitrators, the contractor shall appoint one arbitrator within

30 days of making request for arbitration or of receipt of request by Engineer-in-charge to CE/ADG/DG for appointment of arbitrator, as the case may be, and two appointed arbitrators shall appoint the third arbitrator who shall act as the Presiding Arbitrator. In the event of

a. A party fails to appoint the second Arbitrator, or

b. The two appointed Arbitrators fail to appoint the Presiding Arbitrator, then

The Director General, CPWD shall appoint the second or Presiding Arbitrator as the case may be.

(ii) Disputes or difference shall be referred for adjudication through arbitration by a Tribunal having sole arbitrator where Tendered amount is Rs. 100 Crore or less. Where Tendered Value is more than Rs. 100 Crore, Tribunal shall consist of three Arbitrators as above. The requirements of the Arbitration and Conciliation Act, 1996 (26 of 1996) and any further statutory modifications or re-enactment thereof and the rules made there under and for the time being in force shall be applicable.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed, if any, in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the decision of the DRC.

It is also a term of this contract that any member of the Arbitration Tribunal shall be a Graduate Engineer with experience in handling public works engineering contracts at a level not lower than Chief Engineer (Joint Secretary level of Government of India). This shall be treated as a mandatory qualification to be appointed as arbitrator.

Parties, before or at the time of appointment of Arbitral Tribunal may agree in writing for fast track arbitration as per the Arbitration and Conciliation Act, 1996 (26 of 1996) as amended in 2015.

Subject to provision in the Arbitration and Conciliation Act, 1996 (26 of 1996) as amended in 2015 whereby the counter claims if any can be directly filed before the arbitrator without any requirement of reference by the appointing authority, the arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and in all cases 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 as per the Act.

The place of arbitration shall be as mentioned in Schedule F. In case there is no mention of place of arbitration, the arbitral tribunal shall determine the place of arbitration.

The venue of the arbitration shall be such place as may be fixed by the Arbitral Tribunal in consultation with both the parties. Failing any such agreement, then the Arbitral Tribunal shall decide the venue.

CLAUSE 26

Contractor to indemnify Govt. against Patent Rights

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

CLAUSE 27

Lumpsum Provisions in Tender

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

CLAUSE 28

Action where no 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

Withholding and lien in respect of sum due from contractor

(i) Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, the Engineer-in-Charge or the Government shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, the Engineer-in-Charge or the Government shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the Engineer-in-Charge or the Government 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 of the Government 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 Government will be kept withheld or retained as such by the Engineer-in-Charge or Government till the claim arising out of or under the contract is determined by the arbitrator(if the contract is governed by the arbitration clause) by the competent court, as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the Government 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) Government 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 Government 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 Government to the contractor, without any interest thereon whatsoever.

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

CLAUSE 29A

Lien in respect of claims in other Contracts

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

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

CLAUSE 30

Employment of coal mining or controlled area labour not permissible

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

Where ceiling price for imported labour has been fixed by State or Regional Labour Committees not more than that ceiling price shall be paid to the labour by the contractor.

The contractor shall immediately remove any labourer who may be pointed out by the Engineer- in-Charge as being a coal mining or controlled area labourer. Failure to do so shall render the contractor liable to pay to Government a sum calculated at the rate of Rs.10/- per day per labourer. The certificate of the 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, District of Bilaspur.

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

CLAUSE 31

Unfiltered water supply

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

(i) That the water used by the contractor(s) shall be fit for construction purposes to the

satisfaction of the Engineer-in-Charge.

(ii) 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 31 A

Departmental water supply, if available

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

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

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

(iii) The Department 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 Government, 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 damages 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 authority 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 Government 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 damages to adjacent buildings, roads and service lines. He shall be responsible for any accidents or damages 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 Surpluse material

Notwithstanding anything contained to the contrary in this contract, where any materials for the execution of the contract are procured with the assistance of Government either by issue from Government stocks or purchase made under orders or permits or licences issued by Government, 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 Government 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 licence or permit and/or for criminal breach of trust, be liable to Government 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

(i) 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 Schedule 'C' 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 Government over and above the T&P stipulated for issue, the Government 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.

(ii) Plant and Machinery when supplied on hire charges shown in Schedule 'C' shall be made over and taken back at the departmental equipment yard/shed shown in Schedule 'C' 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 Divisional Engineer 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.

(iii) The plant and machinery as stipulated above will be issued as and when available and if required by the contractor. The contractor shall arrange his programme 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 Department.

(iv) 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 Superintending Engineer shall be final and binding on the contractor.

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

(vi) 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 Department against any loss or damage caused to the plant and machinery either during transit or at site of work.

(vii) 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 daily 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.

(viii) 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.

(ix) 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.

(x) 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 Department and will be countersigned by the contractor or his authorized 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).

(xi) 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.

(a) 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.

(xii) 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 Divisional Engineer 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.

(xiii) 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 Government plant and machinery in question have, in fact, remained idle with the contractor because of the suspension

(xiv) In the event of the contractor not requiring any item of plant and machinery issued by Government though not stipulated for issue in Schedule 'C' 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

(i) The contractor undertakes to make arrangement for the supervision of the work by the firm supplying the tar or bitumen used.

(ii) The contractor shall collect the total quantity of tar or bitumen required for the work as per standard formula, before the process of painting is started and shall hypothecate it to 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 authorized 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 lower than specified in Schedule 'F'. The Engineer-in-Charge shall within 3 days of receipt of such communication, intimate in writing his approval or otherwise of such a representative(s) to the contractor. Any such approval may at any time be withdrawn and in case of such withdrawal, the contractor shall appoint another such representative(s) according to the provisions of this clause. Decision of the tender accepting authority shall be final and binding on the contractor in this respect. Such a principal technical representative and other technical representative(s) shall be appointed by the contractor soon after receipt of the approval from 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 Schedule 'F' and the decision of the Engineer-In-Charge as recorded in the site order book and measurement recorded checked/test checked in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to appoint suitable technical Principal technical representative and/or other technical representative(s) and if such appointed persons are not effectively present or are absent by more than two days without duly approved substitute or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as suitable other technical representative(s) is/are appointed and the contractor shall be held responsible for the delay so caused to the work. The contractor shall submit a certificate of employment of the technical representative(s) (in the form of copy of Form-16 or CPF deduction issued to the Engineers employed by him) alongwith 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

(i) GST, Building and other Construction Workers Welfare Cess or any other tax, levy or Cess in respect of input for or output by this contract shall be payable by the contractor and Government shall not entertain any claim whatsoever in this respect except as provided under Clause 38.

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

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

CLAUSE 38

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

(i) All tendered rates shall be inclusive any tax, levy or cess applicable on last stipulated date of receipt of tender including extension if any. No adjustment i.e. increase or decrease shall be made for any variation in the rate of GST, Building and Other Construction Workers Welfare Cess or any tax, levy or cess applicable on inputs.

However, effect of variation in rates of GST or Building and Other Construction Workers Welfare Cess or imposition or repeal of any other tax, levy or cess applicable on output of the works contract shall be adjusted on either side, increase or decrease.

Provided further that for Building and Other Construction Workers Welfare Cess or any tax (other than GST), levy or cess varied or imposed after the last date of receipt of tender including extension if any, any increase shall be reimbursed to the contractor only if the contractor necessarily and properly pays such increased amount of taxes/levies/ cess.

Provided further that such increase including GST shall not be made in the extended period of contract for which the contractor alone is responsible for delay as determined by authority for extension of time under Clause 5 in Schedule F.

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

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

CLAUSE 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 Divisional Officer on behalf of the President of India shall have the option of terminating the contract without compensation to the contractor.

CLAUSE 40

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

The contractor shall not be permitted to tender for works in the CPWD circle (Division in case of contractors of Horticulture/Nursery categories) responsible for award and execution of contracts in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of

the Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Gazetted Officer in the C.P.W.D. or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department. If however, the contractor is registered in any other department, he shall be debarred from tendering in CPWD for any breach of this condition.

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

CLAUSE 41

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

No engineer of gazetted rank or other gazetted officer employed in engineering or administrative duties in an engineering department of the Government of India 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 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 as aforesaid, before submission of the tender or engagement in the contractor's service, as the case may be.

CLAUSE 42

Return of material & recovery for excess material issued.

(i) 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 Government for use in the work shall be calculated on the basis and method given hereunder:-

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

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

(c) 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.

(d) For any other material as per actual requirements.

(ii) Over the theoretical quantities of materials so computed a variation shall be allowed as specified in Schedule 'F'. The difference in the net quantities of material actually issued to the contractor and the theoretical quantities including such authorized variation, if not returned by the contractor or if not fully reconciled to the satisfaction of 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 Schedule 'F', 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 Schedule 'F', shall be final & binding on the contractor.

For non scheduled items, the decision of the Superintending Engineer regarding theoretical quantities of materials which should have been actually used, shall be final and binding on the contractor.

(iii) The said action under this clause is without prejudice to the right of the Government to take action against the contractor under any other conditions of contract for not doing the work according to the prescribed specifications.

CLAUSE 43

Compensation during warlike situations

The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the Engineer-in-Charge and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the contractor shall when ordered (in writing) by the Engineer-in-Charge to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Engineer-in- Charge, such payments being in addition to compensation upto the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed, but not already measured and paid for, the compensation shall be assessed by the Divisional Officer upto Rs.5,000/- and by the Superintending Engineer concerned for a higher amount. 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 Divisional Officer.

CLAUSE 44

Apprentices Act provisions to be complied with

The contractor shall comply with the provisions of the Apprentices Act, 1961 and the rules and orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the contract and the Superintending Engineer 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

Release of Security Deposit of the work shall not be refunded till the contractor produces a clearance certificate from the Labour Officer. As soon as the work is virtually complete, the contractor shall apply for the clearance certificate to the Labour Officer under intimation to 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.

NOTE:

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

INTEGRITY PACT

To,

……..,
……..,
……..

Sub: NIT No. ……. for the work …….....

Dear Sir,

It is here by declared that CPWD is committed to follow the principle of transparency, equity and competitiveness in public procurement.

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

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

Yours faithfully

Executive Engineer

INTEGRITY PACT

To,

Executive Engineer,
……..,
……..

Sub: Submission of Tender for the work of ……...……....

Dear Sir,

I/We acknowledge that CPWD is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

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

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

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

Yours faithfully

(Duly authorized signatory of the Bidder)

To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of CPWD.

INTEGRITY AGREEMENT

This Integrity Agreement is made at ..... on this..... Day of..... 20.....

BETWEEN

President of India represented through Executive Engineer,

.....

(Name of Division)

CPWD, ..., (Hereinafter referred as the

(Address of Division)

'Principal/Owner', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

.....

(Name and Address of the Individual/firm/Company)

through ..... (Hereinafter referred to as the

(Details of duly authorized signatory)

"Bidder/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

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

.....

(Name of work)

Hereinafter referred to as the "Contract"

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

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

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

Article 1: Commitment of the Principal/Owner

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

a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

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

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

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

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

(1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

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

a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.

b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/ Contract(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

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

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

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

(4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.

(5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

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

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

(2) Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.

(3) Criminal Liability: If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or

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

Article 4: Previous Transgression

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

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

(3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

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

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

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

(3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/ Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6- Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

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

Article 7- Other Provisions

(1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters of the Division of the Principal/Owner, who has floated the Tender.

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

(3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by

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

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

(5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

Article 8- LEGAL AND PRIOR RIGHTS

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

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

.....

(For and on behalf of Principal/Owner)

.....

(For and on behalf of Bidder/Contractor)

WITNESSES:

1. .....

(signature, name and address)

2. .....

(signature, name and address)

Place:

Dated :

SAFETY CODE

1. Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra Mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and hand-hold shall be provided on the ladder and the ladder shall be given an inclination not steeper than ¼ to 1 (1/4 horizontal and 1 vertical).
2. Scaffolding of staging more than 3.6 m (12 ft.) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm (3 ft.) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
3. Working Platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6 m (12 ft.) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in (2) above.
4. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90 cm (3 ft.).
5. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 m (30 ft) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (11 ½") for ladder up to and including 3 meter (10 ft.) in length. For longer ladders this width should be increased at least ¼" for each additional 30 cm.(1 foot) of length. Uniform step spacing of not more than 30 cm shall be kept. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defence of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may, with the consent of the contractor, be paid to compensate any claim by any such person.
6. (a) Excavation and trenching- All trenches 1.2 m (4 ft,) or more in depth, shall at all times be supplied with at least one ladder for each 30 meter (100 ft) in length or fraction thereof. Ladder shall extend from bottom of the trench to at least 90 cm. (3 ft) above the surface of the ground. The sides of the trenches, which are 1.5 m (5 ft) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated material shall not be placed within 1.5 m (5 ft) of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

   (b) Safety Measures for digging bore holes:-

   (i) If the bore well is successful, it should be safely capped to avoid caving and collapse of

the bore well. The failed and the abandoned ones should be completely refilled to avoid caving and collapse;

(ii) During drilling, Sign boards should be erected near the site with the address of the drilling contractor and the Engineer in-charge of the work;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

b) At least 5 to 6 manholes upstream and downstream should be kept open for atleast 2 to 3 hours before any man is allowed to enter into the manhole for working inside.

c) Before entry presence of toxic gases should be tested by inserting wet lead acetate paper, which changes colour in the presence of such gases and gives indication of their presence.

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

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

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

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

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

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

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

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

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

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

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

o) If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.

p) The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.

vi) The contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Whenever men above the age of 18 years are employed on the work of lead painting, the following precautions should be taken: -

a) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.

Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.

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

9. As per additional clause (viii)(i)of Government Safety Code(iv), the Contractor shall not employ women and men below the age of 18 years on the work of painting with product containing lead in any form. Whenever men above the age of 18 are employed on the work of lead painting, the following principles must be observed for such use:

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

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

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

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

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

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

vii) Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed by the competent authority of Department.

viii) Department may require, when necessary, medical examination of workers.

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

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

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

(i) (a) These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order.

(b) Every rope used in hoisting or lowering materials or as means of suspension shall be of durable quality and adequate strength, and free from patent defects.

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

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

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

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

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

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

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

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

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

1. APPLICATION

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

2. DEFINITION

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

3. FIRST-AID FACILITIES

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

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

a) For work places in which the number of contract labour employed does not exceed 50- Each first-aid box shall contain the following equipment: -

1. 6 small sterilized dressings.
2. 3 medium size sterilized dressings.
3. 3 large size sterilized dressings.
4. 3 large sterilized burn dressings.
5. 1 (30 ml.) bottle containing a two percent alcoholic solution of iodine
6. 1 (30ml) bottle containing salvolatile having the dose and mode of administration indicated on the label.
7. 1 snakebite lancet.
8. 1 (30gms.) bottle of potassium permanganate crystals.
9. 1 pair scissors.
10. 1 copy of the first-aid leaflet issued by the Director General, Factory Advice Service and Labour Institute, Government of India or his Client.
11. 1 Bottle containing 100 tablets (each of 5 gms.) of aspirin.
12. Ointment for burns.
13. A bottle of suitable surgical antiseptic solution

b) For workplaces in which the number of contract labour exceeds 50- Each first–aid- box shall contain the following equipment.

1. 12 small sterilized dressing.
2. 6 medium size sterilized dressings.

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

iii) Adequate arrangements shall be made for immediate procurement of the equipment when necessary.

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

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

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

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

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

4. DRINKING WATER

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

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

iii) Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or other source of pollution. Where water has to be drawn from an existing well, which is

within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it or for drinking. All such wells shall be entirely closed in and be provided with a trap door, which shall be dust and waterproof.

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

5. WASHING FACILITIES

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

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

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

6. LATRINES AND URINALS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

7. PROVISION OF SHELTER DURING REST

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

Provided that the Engineer-in-Charge may permit subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

8. CRECHES

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

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

iii) The contractor shall supply adequate number of toys and games in the playroom and sufficient number of cots and beddings in the bedroom.

iv) The contractor shall provide one ayah to look after the children in the crèche when the number of women workers does not exceed 50 and two when the number of women workers exceeds 50.

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

9. CANTEENS

i) In every work place where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour numbering one hundred or more are

ordinarily employed, an adequate canteen shall be provided by the contractor for the use of such contract labour.

ii) The contractor shall maintain the canteen in an efficient manner.

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

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

v) The floor shall be made of smooth and impervious materials and inside walls shall be lime-washed or colour washed atleast once in each year. Provided that the inside walls of the kitchen shall be lime-washed every 4 months.

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

vii) Wastewater shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.

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

ix) The dining hall shall accommodate at a time 30 percent of the contract labour working at a time.

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

xi)

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

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

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

xiii) a)

1. There shall be provided and maintained, sufficient utensils, crockery, furniture and any other equipment's, necessary for the efficient running of the canteen.
2. The furniture utensils and other equipment shall be maintained in a clean and hygienic condition.

b)

1. Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.
2. A service counter, if provided, shall have top of smooth and impervious material.
3. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment's.

xiv) The foodstuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.

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

xvi) In arriving at the price of food stuffs, and other articles served in the canteen, the following items shall not be taken into consideration as expenditure namely: -

a) The rent of land and building.

b) The depreciation and maintenance charge for the building and equipment's provided for the canteen.

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

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

e) The interest and amounts spent on the provision and maintenance of equipment's provided for the canteen.

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

10. ANTI-MALARIAL PRECAUTIONS

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

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

12. AMENDMENTS

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

CPWD CONTRACTOR'S LABOUR REGULATIONS TO BE FOLLOWED IN THIS PROJECT

1. SHORT TITLE

These regulations may be called the CPWD Contractors Labour Regulations and shall be followed by the Contractor for this Project.

2. DEFINITIONS

i) **Workman** means, any person employed by Department or its contractor directly or indirectly, through a subcontractor, with or without the knowledge of the Department, to do any skilled, semiskilled or unskilled, manual, supervisory, technical or clerical work, for hire or reward, whether the terms of employment are expressed or implied, but does not include any person: -

a) Who is employed mainly in a managerial or administrative capacity; or,

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

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

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

ii) **Fair Wages** means wages whether for time or piecework fixed and notified under the provision of the Minimum Wages Act from time to time.

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

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

3.

i) Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.

ii) When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week he shall be paid over time for the extra hours put in by him at double the ordinary rate of wages.

iii) a) Every worker shall be given a weekly holiday normally on a Sunday, in accordance with the provisions of Minimum Wages (Central) Rules 1960, as amended from time to time, irrespective of whether such worker is governed by the Minimum Wages Act or not.

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

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

4. DISPLAY OF NOTICE REGARDING WAGES ETC.

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

5. PAYMENT OF WAGES.

i) The contractor shall fix wage periods in respect of which wages shall be payable.

ii) No wage period shall exceed one month.

iii) The wages of every person employed as contract labour in an establishment or by a contractor, where less than one thousand such persons are employed, shall be paid before the expiry of seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.

iv) Where the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.

v) All payment of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.

vi) Wages due to every worker shall be paid to him direct or to other person authorised by him in this behalf.

vii) All wages shall be paid in current coin or currency or in both.

viii) Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.

ix) A notice showing the wages period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the contractor to the Engineer-in-Charge under acknowledgement.

x) It shall be the duty of the contractor to ensure the disbursement of wages in presence of authorised representative of the Engineer-in-Charge who will be required to be present at the place and time of the disbursement of wages by the contractor to workmen.

xi) The contractor shall obtain from the junior engineer or any other authorised representative of the Engineer-in-Charge, as the case may be, a certificate under his signature at the end of the entries in the "Register of Wages" or the "Wage-cum-Muster Roll", as the case may be, in the following form: -

"Certified that the amount shown in the column No……has been paid to the workman concerned in my presence on……..…..at……"

6. FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES

(i) The wages of a worker shall be paid to him without any deduction of any kind except the following: -

(a) Fines

(b) Deductions for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.

(c) Deductions for damage to or loss of goods expressly entrusted to the employed person for custody, or for loss of money or any other deductions which he is required to account, where such damage or loss is directly attributable to his neglect or default.

(d) Deduction for recovery of advances or for adjustment of overpayment of wages, advances granted shall be entered in a register.

(e) Any other deduction, which the Central Government may from time to time, allows.

(ii) No fines should be imposed on any worker save in respect of such acts and omissions on his part as have been approved of by the Chief Labour Commissioner.

Note:- An approved list of Acts and Omission for which fines can be imposed is enclosed at Appendix-1.

(iii) No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.

(iv) The total amount of fine, which may be imposed, in any one-wage period, on a worker, shall not exceed an amount equal to three paise in a rupee of the total wages, payable to him in respect of that wage period.

(v) No fine imposed on any worker shall be recovered from him by instalment, or after the expiry of sixty days from the date on which it was imposed.

(vi) Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

7. LABOUR RECORDS

(i) The contractor shall maintain a **Register of Persons employed** on work on contract in Form XIII of the CL (R&A) Central Rules 1971 (Appendix IV)

(ii) The contractor shall maintain a **Muster Roll** register in respect of all workmen employed by him on the work under Contract in Form XVI of the CL (R&A) Rules 1971 (Appendix V)

(iii) The contractor shall maintain a **Wage Register** in respect of all workmen employed by him on the work under contract in Form XVII of the CL (R&A) Rules 1971 (Appendix VI)

(iv) Register of accident – The contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:

a) Full Particulars of the labourers who met with accident.

b) Rate of wages.

c) sex

d) Age

e) Nature of accident and cause of accident

f) Time and date of accident

g) Date and time when admitted in hospital

h) Date of discharge from the hospital

i) Period of treatment and result of treatment

j) Percentage of loss of earning capacity and disability as assessed by Medical Officer.

k) Claim required to be paid under Workmen's Compensation Act.

l) Date of payment of compensation

m) Amount paid with details of the person to whom the same was paid

n) Authority by whom the compensation was assessed

o) Remarks.

v) The contractor shall maintain a **Register of Fines** in the Form XII of the CL (R&A) Rules 1971 (Appendix XI)

The contractor shall display in a good condition and in a conspicuous place of work the approved list of acts and omission for which fines can be imposed (Appendix X)

vi) The contractor shall maintain a **Register of deductions for damage or loss** in Form XX of the CL (R&A) Rules 1971 (Appendix XII).

vii) The contractor shall maintain a **Register of Advances** in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIII).

viii) The contractor shall maintain a **Register of Overtime** in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIV).

8. ATTENDANCE CARD-CUM WAGE SLIP

i) The contractor shall issue an **Attendance card cum wage slip** to each workman employed by him in the specimen form at (Appendix-VII).

ii) The card shall be valid for each wage period.

iii) The contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.

iv) The card shall remain in possession of the worker during the wage period under reference.

v) The contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.

vi) The contractor shall obtain the signature or thumb impression of the worker on the wage slip at the time of disbursement of wages and retain the card with him.

9. EMPLOYMENT CARD

The contractor shall issue an **Employment Card** in the Form XIV of CL (R&A) Central Rules 1971 to each worker within three days of the employment of the worker (Appendix-VIII).

10. SERVICE CERTIFICATE

On termination of employment for any reason whatsoever the contractor shall issue to the workman whose services have been terminated, a Service Certificate in the Form XV of the CL (R&A) Central Rules 1971 (Appendix-IX).

11. PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulations Nos. 6 &7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-in-Charge or Labour Officer or any other officers authorised by the Department this behalf.

12. POWER OF LABOUR OFFICER TO MAKE INVESTIGATIONS OR ENQUIRY

The labour officer or any person authorised by the Central Government on their behalf shall have power to make enquiries with a view to ascertaining and enforcing due and proper observance of Fair Wage Clauses and provisions of these Regulations. He shall investigate into any complaint regarding the default made by the contractor or subcontractor in regard to such provision.

13. REPORT OF LABOUR OFFICER

The Labour Officer or other persons authorised as aforesaid shall submit a report of result of his investigation or enquiry to the Engineer in charge concerned indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractor's bill be made and the wages and other dues be paid to the labourers concerned. In case an appeal is made by the contractor under Clause 13 of these regulations, actual payment to labourers will be made by the Engineer in charge after the *Superintending Engineer* has given his decision on such appeal.

i) Engineer in charge shall arrange payments to the labour concerned within 45 days from the receipt of the report form or the *designated Superintending Engineer* as the case may be the Labour Officer

14. APPEAL AGAINST THE DECISION OF LABOUR OFFICER

Any person aggrieved by the decision and recommendations of the Labour Officer or other person so authorised may appeal against such decision to the *Superintending Engineer* concerned within 30 days from the date of decision, forwarding simultaneously a copy of his appeal to the Executive Engineer concerned but subject to such appeal, the decision of the officer shall be final and binding upon the contractor.

15. PROHIBITION REGARDING REPRESENTATION THROUGH LAWYER

i) A workman shall be entitled to be represented in any investigation or enquiry under these regulations by: -

a) An officer of a registered trade union of which he is a member.

b) An officer of a federation of trade unions to which the trade union referred to in Clause (a) is affiliated.

c) Where the employer is not a member of any registered trade union, by an officer of a registered trade union, connected with the industry in which the worker is employed or by any other workman employed in the industry in which the worker is employed.

ii) An employer shall be entitled to be represented in any investigation or enquiry under these regulations by:-

a) An officer of an association of employers of which he is a member.

b) An officer of a federation of associations of employers to which association referred to in Clause (a) is affiliated.

c) Where the employer is not a member of any association of employers, by an officer of association of employer connected with the industry, in which the employer is engaged or by any other employer, engaged in the industry in which the employer is engaged.

iii) No party shall be entitled to be represented by a legal practitioner in any investigation inquiry under these regulations.

16. INSPECTION OF BOOKS AND SLIPS

The contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Officer or any other person, authorised by the Central Government on his behalf.

17. SUBMISSION OF RETURNS

The contractor shall submit periodical returns as may be specified from time to time.

18. AMENDMENTS

The Central Government may from time to time add to or amend the regulations and on any question as to the application/interpretation or effect of those regulations the decision of the EIC concerned shall be final.

Appendix 'I'

REGISTER OF MATERNITY BENEFITS (Clause 19F)

Name and address of the contractor_____

Name and Location of the work_____

Name of the Employee	Father's/ husband's name	Nature of Employment	Period of actual confinement	Date on which notice of confinement given
1	2	3	4	5

Date on which maternity leave commenced and ended				
Date of Delivery/ Miscarriage	In case of delivery		In case of miscarriage	
	Commenced	Ended	Commenced	Ended
6	7	8	9	10

Leave pay paid to the employee				Remarks
In case of delivery		In case of miscarriage		
Rate of leave pay	Amount paid	Rate of leave pay	Amount paid	
11	12	13	14	15

Appendix 'II'

SPECIMEN FORM OF THE REGISTER, REGARDING MATERNITY BENEFIT ADMISSIBLE TO THE CONTRACTOR'S LABOUR

Name and address of the contractor_____

Name and location of the work_____

1. Name of the woman and her husband's name.
2. Designation
3. Date of appointment.
4. Date with months and years in which she is employed.
5. Date of discharge / dismissal, if any.
6. Date of production of certificates in respect of pregnancy.
7. Date on which the woman informs about the expected delivery.
8. Date of delivery / miscarriage / death.
9. Date of production of certificates in respect of delivery / miscarriage.
10. Date with the amount of maternity/ death benefit paid in advance of expected delivery.
11. Date with amount of subsequent payment of maternity benefit.
12. Name of the person nominated by the woman to receive the payment of the maternity benefit after her death.
13. If the woman dies, the date of death, the name of the person to whom maternity benefit amount was paid, the month thereof and the date of payment.
14. Signature of the contractor authenticating entries in the register.
15. Remarks column for the use of inspecting officer.

Appendix 'III'

LABOUR BOARD

Name of work:_____

Name of Contractor:_____

Address of Contractor:_____

Name and address of Government divn. _____

Name of CLIENT Labour Officer :_____

Address of CLIENT Labour Officer:_____

Name of Labour Enforcement Officer:_____

Address of Labour Enforcement Officer:_____

Sl.No	Category	Minimum wage Fixed	Actual wage paid	Number Present	Remarks

Weekly holiday_____

Wage period _____

Date of payment of Wages_____

Working hours_____

Rest interval_____

Appendix 'IV'

Form-XIII (See Rule 75)
Register of Workmen Employed by Contractor

Name and address of contractor_____

Name and address of establishment under which contract is carried on_____

Nature and location of Work_____

Name and address of Principal Employer_____

Sl. No.	Name and surname of Workman	Age and Sex	Father's/ Husband's Name	Nature of employment / designation.	Permanent home address of the workman (Village and Tehsil, Taluka and District)	Local Address	Date of commencement of employment	Signature or thumb impression of the workman	Date of Termination of employment.	Reasons For terminations.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

Appendix 'V'

Form-XVI (See Rule 78(2)(a)

Muster Roll

Name and address of the contractor_____

Name and address of establishment under which contract is carried on_____

Nature and location of work_____

Name and address of Principal Employer_____

For the month of fortnight_____

Sl. No.	Name of workman	Sex	Father's/ Husband's Name	Dates					Remarks
1	2	3	4	5					6
				1	2	3	4	5	

Appendix 'VI'

Form –XVII (See Rule 78(2)(a))

Register of Wages

Name and address of the contractor_____

Name and address of establishment under which contract is carried on_____

Nature and location of work_____

Name and address of Principal Employer_____

Wages period_____ Monthly/fortnightly

Sl.No.	Name of workman	Serial No.in the register of workman	Designation Nature of work done	No. of days worked	Units of work done	Daily rate of wages/piece rate	Basic Wages
1	2	3	4	5	6	7	8

Dearness allowances	Overtime	Other cash payments(Indicate nature)	Total	Deductions if any, (indicate nature)	Nett amount paid	Signature or thumb impression of the workman	Initial of contractor or his representative
9	10	11	12	13	14	15	16

Appendix 'VII'
(Observe)

Wage Card No._____

Wage Card

Name and address of the contractor_____ Date of issue_____

Name and location of work_____ Designation_____

Name of Workman_____ Month/fortnight----------

Rate of Wages_____

DATE																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Morning																															
Evening																															
Initial																															

Rate_____ Amount_____

Received from_____ the sum of Rs. _____on account of my wages.

Signature

The wage card is valid for one month from the date of issue

Appendix 'VII'
(Reverse)

Form-XIX
(See rule 78(2)(b))

Wages Slip

Name and address of the contractor_____

Name and Father's/Husband's name of workman_____

Nature and location of work_____

For the Week/Fortnight/Month ending_____

1. No. of days worked _____
2. No. of units worked in case of piece rate workers_____
3. Rate of daily wages/piece rate_____
4. Amount of overtime wages_____
5. Gross wages payable_____
6. Deduction, if any_____
7. Net amount of wages paid_____

Initials of the Contractors or his representative

Appendix 'VIII'

Form-XIV
(See rule 76)

Employment Card

Name and address of the contractor_____

Name and address of establishment under which contract is carried on_____

Nature of work and location of work_____

Name and address of Principal Employer_____

1. Name of Workman_____
2. Sl No. in the register of workman employed_____
3. Nature of employment/designation_____
4. Wage rate (with particulars of unit in case of piece work)_____
5. Wages period_____
6. Tenure of employment_____
7. Remarks_____

Signature of contractor

Appendix 'IX'

Form-XV (See Rule 77)

Service Certificate

Name and address of the contractor_____

Nature and location of work_____

Name and Address of workman_____

Age or date of birth_____

Identification marks_____

Father's/Husband's name_____

Name and address of establishment in under which contract is carried on_____

Name and address of Principal Employer_____

Sl.No.	Total period for which employed		Nature of work done	Rate of Wages (with particulars of unit in case of piece work)	Remarks
	From	To			
1	2	3	4	5	6

Signature

Appendix 'X'

LIST OF ACTS AND OMISSIONS FOR WHICH FINES CAN BE IMPOSED

In accordance with rule 7 (v) of the CPWD Contractor's Labour Regulations to be displayed prominently at the site of work both in English and local Language.

1. Willful insubordination or disobedience, whether along or in combination with other.
2. Theft fraud or dishonestly in connection with the contractors beside a business or property of Department.
3. Taking or giving bribes or any illegal gratifications.
4. Habitual late attendance.
5. Drunkenness fighting, riotous or disorderly or indifferent behaviour.
6. Habitual negligence.
7. Smoking near or around the area where combustible or other materials are locked.
8. Habitual indiscipline.
9. Causing damage to work in the progress or to property of the Department or of the contractor.
10. Sleeping on duty.
11. Malingering or slowing down work.
12. Giving of false information regarding name, age, father's name etc.
13. Habitual loss of wage cards supplied by the employers.
14. Unauthorized use of employer's property of manufacturing or making of unauthorized particles at the work place.
15. Bad workmanship in construction and maintenance by skilled workers which is not approved by the Department and for which the contractors are compelled to undertake rectification.
16. Making false complaints and/or misleading statements.
17. Engaging on trade within the premises of the establishments.
18. Any unauthorized divulgence of business affairs of the employees.
19. Collection or canvassing for the collection of any money within the premises of an establishment unless authorized by the employer.
20. Holding meeting inside the premises without previous sanction of the employers.
21. Threatening or intimidating any workman or employer during the working hours within the premises.

Appendix 'XI'

Form-XII (See Rule 78(2)(d))

Register of Fines

Name and address of the contractor_____

Name and address of establishment in under which contract is carried on_____

Nature and location of work_____

Name and address of Principal Employer_____

Sl.No.	Name of workman	Father's/Husband's name	Designation/nature of employment	Act/Omission For which fine imposed	Date of Offence
1	2	3	4	5	6

Whether workman Showed cause against fine	Name of person in whose presence employees explanation was heard	Wage period and wages payable	Amount of fine imposed	Date on which fine realized	Remarks.
7	8	9	10	11	12

Appendix 'XII'

Form-XX (See Rule 78(2)(d))

Register of Deduction for Damage or Loss

Name and address of the contractor_____

Name and address of establishment in under which contract is carried on_____

Nature and location of work_____

Name and address of Principal Employer_____

Sl.No.	Name of workman	Father's/Husband's name	Designation/nature of employment	Particulars of damage or loss	Date of damage or loss
1	2	3	4	5	6

Whether workman showed cause against fine	Name of person in whose presence employees explanation was heard	Amount of deduction imposed	No. of installments	Date of recovery		Remarks
				First installment	Last installment	
7	8	9	10	11	12	13

Appendix 'XIII'

Register of Advances

Name and address of the contractor_____

Name and address of establishment in under which contract is carried on_____

Nature and location of work_____

Name and address of Principal Employer_____

Sl. No.	Name of workman	Father's/Husband's name	Designation nature of employment	Wage period and wages payable	Date and Amount of Advance given	Purpose(s) for which Advance made	Number of Installments by which advance to be repaid	Date and amount of each installments repaid	Date on which last Installments was repaid	Remarks
1	2	3	4	5	6	7	8	9	10	11

Appendix 'XIV'

Form-XXIII (See Rule 78(2)(e))

Register of Overtime

Name and address of the contractor_____

Name and address of establishment in under which contract is carried on _____

Nature and location of work_____

Name and address of Principal Employer _____

Sl.No.	Name of workman	Father's/husband's name	Sex	Designation /nature of employment	Date on which Overtime worked	Total overtime worked or production in case of piece rated	Normal rate of wages	Overtime rate of wages	Overtime earnings	Rate on which overtime wages paid	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

APPENDIX XV
Notice for appointment of Arbitrator
[Refer clause 25]

To

The

……

Dear Sir,

In terms of clause 25 of the agreement, particulars of which are given below, I/we hereby give notice to you to appoint an arbitrator for settlement of disputes mentioned below:

1. Name of applicant
2. Whether applicant is Individual/Prop. Firm/Partnership Firm/Ltd. Co.
3. Full address of the applicant
4. Name of the work and contract number in which arbitration sought

5 Name of the Division which entered into contract

6. Contract amount in the work
7. Date of contract
8. Date of contract Date of initiation of work
9. Stipulated date of completion of work
10. Actual date of completion of work (if completed)
11. Total number of claims made
12. Total amount claimed
13. Date of intimation of final bill (if work is completed)
14. Date of payment of final bill (if work is completed)
15. Amount of final bill (if work is completed)
16. Date of request made to Reviewing Authority for decision
17. Date of receipt of Reviewing Authority's decision
18. Date of appeal to you
19. Date of receipt of your decision.

Specimen signatures of the applicant

(only the person/authority who signed the contract should sign)

I/We certify that the information given above is true to the best of my/our knowledge. I/We enclose following documents.

1. Statement of claims with amount of claims.
2.
3.
4.

Yours faithfully,

Copy in duplicate to:

1. The Engineer –in-charge

Formats

GUARANTEE TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER SUPPLY AND SANITARY INSTALLATIONS

The agreement made this……. Day of ……. Two thousand and …….. between …….. S/O……. (hereinafter called the GUARANTOR of the one part) and the ---------- (herein after called the Client of the other part). WHEREAS THIS agreement is supplementary to the contract. (Herein after called the Contract) dated……and made between the GUARANTOR OF THE ONE PART AND the Client of the other part, whereby the contractor interalia, undertook to render the work in the said contract recited structurally stable workmanship and use of sound materials.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said work will remain structurally stable and guarantee against faulty workmanship, finishing, manufacturing defects of materials and leakages etc.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable, after the expiry of maintenance period prescribed in the contract for the minimum life of ten years, to be reckoned format the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer- in- charge with regard to nature and cause of defects shall be final.

During the period of guarantee the guarantor shall make good all defects to the satisfaction of the Engineer-in- charge calling upon him to rectify the defects, failing which the work shall be got done by the Client by some other contractor at the guarantor's cost and risk. The decision of the Engineer –in- charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make goods all the defects, commits breach there-under then the guarantor will indemnify the Principal and his successor against all loss, damage cost expense or otherwise which may be incurred by him by reason of any default on the part of THE GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the Client the decision of the Engineer in charge will be final and binding on the parties.

IN WITNESS WEHREOF those presents have been executed by the obligator. And …….. by for and on behalf of the Client on the day, month and year first above written.

Signed sealed and delivery by OBLIGATOR in the presence of:
1.
2.
SIGNED FOR AND ON BEHALF OF ---------- BY…… in the present of:
1.
2.

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR WATER PROOFING TREATMENT FOR BASEMENT/TERRACE/TOILETS.

The agreement made this_____day of _____two thousand and_____between_____ S/o_____(hereinafter called the GUARANTOR of the one part) and the ---------- (hereinafter called the Client of the other part).

WHEREAS this agreement is supplementary to a contract. (Herein after called the Contract)dated_____and made between the GUARANTOR OF THE ONE PART AND the Client of the other part, whereby the contractor interalia, undertook to render the structures in the said contractor of the work in the said contract recited completely water and leak proof.

THE GUARANTOR hereby guarantee that the water proofing treatment given by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date after the expiry of maintenance period prescribed in the contract. Provided that the guarantor will not be responsible for leakage caused by earthquake or structural defects.

The decision of the Engineer in charge with regard to cause of leakage shall be *final.*

During the period of guarantee the guarantor shall make good all defects and in case of any defects being found render the structure water proof to the satisfaction of the Engineer in charge at his cost and shall commence the work for such rectification within seven days from the date of issue of notice from the Engineer in charge calling upon him to rectify the defects, failing which the work shall be got done by the Client through some other contractor at the guarantor's cost and risk. The decision of the *Engineer in charge* as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing, or commits breach there-under then the guarantor will indemnify the Principal and his successor against all loss, damage, cost of expenses or otherwise which may be incurred by him by reason of any of any default on the part of the GUARANTOR in performance *and observance* of this supplementary agreement.

As to the amount of loss and/or cost incurred by the Client on the decision of the Engineer in charge will be final and binding on the parties.

IN WITNESS WHEREOF those presents have been executed by the obligator _____and by_____by for and on behalf of ---------- on the day, month and year first above written.

Signed sealed and delivered by OBLIGATOR in presence of:
1._____ 2.

SIGNED FOR AND ON BEHALF OF ---------- BY_____ In presence of:
1._____ 2._____

Form of Earnest Money Deposit
Bank Guarantee Bond

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

KNOW ALL PEOPLE by these presents that we..... (name of bank) having our registered office at ..... (Hereinafter called "the Bank") are bound unto.....

(Name and division of Executive Engineer) (Hereinafter called "the Engineer-in-Charge") in the sum of Rs..... (Rs. in words .....) for which payment well and truly to be made to the said Engineer-in- Charge the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this..... Day of ..... 20... . THE CONDITIONS of this obligation are:

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

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

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

OR

b) fails or refuses to furnish the Performance Guarantee, in accordance with the provisions of tender document and Instructions to contractor, We undertake to pay to the Engineer-in-Charge either up to the above amount or part thereof upon receipt of his first written demand, without the Engineer-in-Charge having to substantiates his demand, provided that in his demand the Engineer-in-Charge will note that the amount claimed by his is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.

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

DATE..... SIGNATURE OF THE BANK

WITNESS..... SEAL

(SIGNATURE, NAME AND ADDRESS)

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

FORM OF PERFORMANCE SECURITY BANK GUARANTEE

Bank Guarantee Bond

In consideration of the President of India (hereinafter called "The Government") having offered to accept the terms and conditions of the proposed agreement between…….and ……..……. (Hereinafter called "the said Contractor(s)") for the work …… (Hereinafter called "the said agreement") having agreed to production of an irrevocable Bank Guarantee for Rs.……. (Rupees …… only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We ……. (Hereinafter referred to as "the Bank") hereby undertake to pay to the Government an amount not exceeding Rs …….. (Rupees……. Only) on demand by the Government.
2. We …….(indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demure, merely on a demand from the Government stating that the amount claimed as required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. …….. (Rupees …….only)
3. We, the said bank further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the Contractor(s) shall have no claim against us for making such payment.
4. We ……. (indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in- Charge on behalf of the Government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.
5. We ……. (indicate the name of the Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).
7. We ……. (Indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.
8. This guarantee shall be valid up to ……unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs …… (Rupees ……..) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged. Dated the ……..day of ……for…….(indicate the name of the Bank)

PROFORMA OF SCHEDULES

(Operative Schedules)

SCHEDULE 'A'		
	Schedule of quantities (BOQ)	Attached as Volume –V, Bill of Quantities.
SCHEDULE 'B'		
	Schedule of materials to be issued to the contractor	NIL – No material to be issued to the Contractor
SCHEDULE 'C'		
	Tools and plants to be hired by the contractor	NIL – No tools and plant to be hired to the Contractor
SCHEDULE 'D'		
	Extra schedule for specific requirements/document for the work, if any.	As attached in tender form for the work, if any
SCHEDULE 'E'		
	Reference to CPWD General Conditions of Contract 2014-Correction-Slip-CON-302 as per Vol-II	
	Name of work : :	**SITC of Audio – Visual System and Stage Lighting in Auditorium Building at AIIMS Raipur (C.G.).**
	Estimated cost of work:	As per NIT
	Earnest money:	As per NIT (to be returned after receiving performance guarantee)
	Performance Guarantee:	**5% of Tendered Value**
	Security Deposit:	**2.5% of Tendered Value**
SCHEDULE 'F'		
	GENERAL RULES & DIRECTIONS	
	Officer inviting bid	Executive Engineer (Civil) AIIMS Raipur on behalf of Director AIIMS Raipur

	DEFINITIONS	
1	Authority executing the agreement on behalf of the AIIMS Raipur	Executive Engineer , AIIMS Raipur
2(i)	Accepting Authority	All India Institute of Medical Sciences, Raipur
2(vi)	Engineer-in-Charge	Executive Engineer, AIIMS Raipur (C.G.)
2(ix)	Percentage on cost of materials and labour to cover all Overheads and profits.	15%
2(xi)	Standard Schedule of Rates	Delhi Schedule of Rates 2016, with up to date correction slips (up to date of floating of NIT)& Market Rate for Non Delhi Schedule of Rates 2016
2(xii)	Department	AIIMS Raipur or its authorized representative.

9(ii)	Standard Contract Form	All uploaded documents
	CLAUSES OF CONTRACT	
Clause 1	(i) Time allowed for submission of Performance Guarantee, Programme Chart (Time & Progress) and applicable labour licences, registration with EPFO, ESIC & BOCW Welfare Board, GST or proof of applying thereof from the date of issue of letter of acceptance	**15 days**
	(ii)Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period as provided in (i) above.	**30 days**
Clause 2	Authority for fixing compensation under Clause 2.	Superintending Engineer, AIIMS Raipur
	Authority for deciding incentive under Clause 2A.	NA
	Whether Clause 2A shall be applicable	No
Clause 5	Number of days from the date of issue of letter of acceptance for reckoning date of Start	15 days
	Time allowed for execution of the Works from Date of Start	**04 Months**
	Authority to decide shifting of date of start in case of delay in handing over of site.	Superintending Engineer, AIIMS Raipur
	Mile stone(s) will be as per table given below :	

Mile Stone No	**Description of Milestone (Physical)**	**Time allowed in days (from date of start)**	**Amount to be with- held in case of non - achievement of milestone.**
1	Submission of Shop Drawing/samples	30 Days	1/3 rd of Contract Value for each milestone.
2	Supply of Audio – Visual and stage lighting Equipment	90 Days	
4	Completion of Works	120 days	

Clause 5.4	Authority for deciding Extension of Time and rescheduling of Milestones	Superintending Engineer, AIIMS Raipur.
Clause 6, 6A	Clause applicable – (6 or 6A)	**6A**
Clause 7	Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment.	**50 Lakhs**
Clause 7A	Whether clause 7A shall be applicable	**Yes**
Clause 8B	Completion Plans to be Submitted by the Contractor as per specifications	Latest General CPWD Specifications for Electrical works (Part – I internal) and (Part – II

		External)	
Clause 10A	List of testing equipment to be provided by the contractor at site laboratory.	**Applicable**	
Clause 10B	Whether Clause 10 B (ii) shall be applicable	**No**	
	Whether Clause 10 B (iii) shall be applicable	**NO**	
Clause 10C	Component of labour expressed as per-cent of value of work	**Not Applicable**	
Clause 10CA		**Not Applicable**	
	Material covered under this clause	Cement, Steel Reinforcement bars & Structural Steel	
	Base price of all the materials covered under Clause 10CA (Base price to be mentioned valid at the time of last stipulated date of receipt of Tender including extension, if any.	*Cement- OPC Rs. _____/- per MT	
		*Reinforcement Steel- Primary Manufacturer Rs._____/- per MT	
		*Structural Steel- Rs._____ /- Per MT	
	***** includes cement component used in RMC brought at site from outside approved RMC plants, if any.		
	Base price and its corresponding period of all the materials covered under clause 10CA is to be mentioned at the time of approval of NIT. In case of recall of tenders, the base price may be modified by adopting latest base price and its corresponding period.		
Clause 10CC	Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column	**Applicable** only if time is more than 12 months.	
	Schedule of component of other Materials, Labour POL, etc. for price escalation.		
	Component of civil (except materials covered under clause 10CA) and Electrical construction Materials expressed as percentage of total value of work	Xm	**40%**
	Component of Labour – expressed as percent of total value of work.	Y	**25%**
	Component of P.O.L. –	Z	**0%**
	Note:- Xm ……. % should be equal to (100)- Material covered under Clause 10 CA i.e. Cement, Steel, POL and other material specified in Clause 10 CA + component of labour)		
Clause 11	Specifications to be followed for execution of work	CPWD Specifications with up to date correction slips, (up to date of floating of tender) and, Technical Specifications (Volume IV) of the tender documents.	
Clause 12	Type of Work	**Project and Original Work**	
12.2 & 12.3	Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building work.	**30 %**	
12.5	(i) Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work (Except earth work)	**30%**	
	(ii) Deviation Limit for items in earth work subhead of DSR or related items	**100 %**	
Clause 16	(iii) Competent Authority for deciding reduced rates.	Superintending Engineer, AIIMS Raipur.	
Clause 18	List of mandatory machinery, tools & plants to be deployed at site.	Are to be suggested by the contractor in Part 1 of NIB	
Clause 25	Reviewing Authority	Executive Engineer, AIIMS Raipur	
	Appealing Authority	Superintending Engineer, AIIMS Raipur/ Director, AIIMS Raipur	

		or his Authorized representative
	Constitution of Dispute Redressal Committee	Chairman Member Member **To be appointed by AIIMS RAIPUR**

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

S. No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical representative)	Minimum Experience (Yrs.)	Minimum (No.)	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)(Rs. Per Month)
1.	Graduate Engineer or Diploma Engineer	Electronic/ Electrical/IT/Instrumentation	Project Manager	05 or 10 years respectively	01	Rs. 25,000/- per month
2.	Graduate Engineer or Diploma Engineer	Electronical/Electrical/IT/Instrumentation	Site Engineer	05 or 08 years respectively	01	Rs. 15,000/- per month per person

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers

Diploma holder with 10 years relevant experience with a reputed construction company can be treated at par with graduate Engineer for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of the requirement of Graduate Engineers.

Clause 39	Authority having option of terminating the Contract in event of death of Contractor	AIIMS RAIPUR

Clause 42

	Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of	S.R 2016 printed by CPWD with upto date correction slip
	Variation permissible on theoretical quantities	**Not Applicable**
	a) Cement for works with estimated cost put to tender not more than Rs. 5 lakhs.	**3% plus/minus**
	For works with estimated cost put to Tender is more than Rs. 5 lakhs.	**2% plus/minus**
	b)Bitumen all works	**2.5% plus & only & nil on minus side.**
	c) Steel reinforcement and structural steel Sections for diameter, section and category.	**2% plus/minus**
	d)All other materials	**Nil**
	RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION	**Not Applicable**

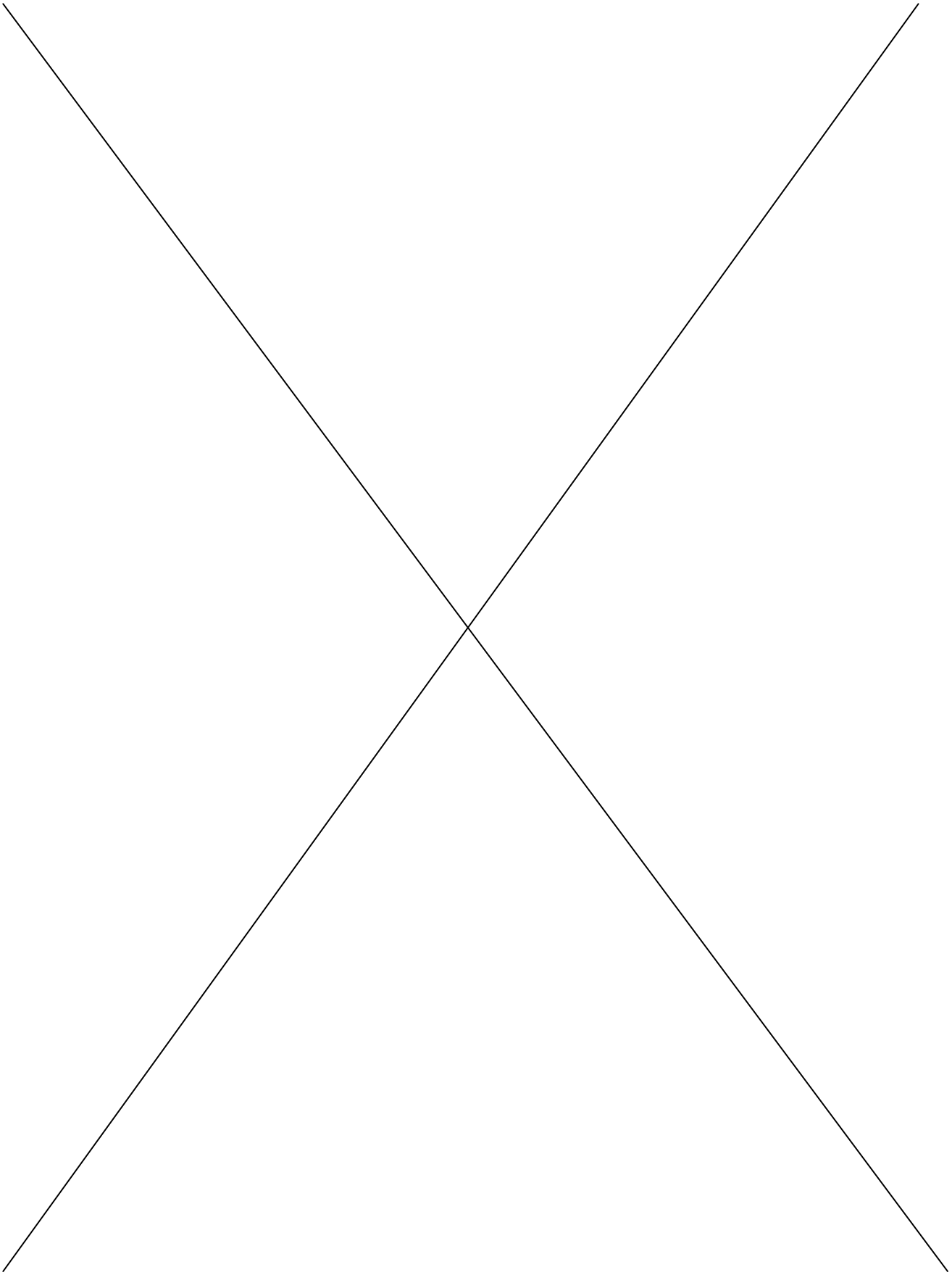
Annexure – I

A-List of Equipment for Field Testing Laboratory (Minimum)

1. Steel tapes – 3m
2. Vernier calipers
3. Micrometer screw 25 mm gauge
4. A good quality plumb bob
5. Spirit level, minimum 30 cms long with 3 bubbles for horizontal vertical
6. Wire gauge (circular type) disc
7. Foot rule
8. Long nylon thread
9. Digital Multimeter
10. Magnifying glass
11. Screw driver 30 cms long
12. ball pin hamer, 100 gms
13. Plastic bags for taking samples
14. Earth resistance tests (for Electrical Divisions)
15. Meggar (for Electrical Divisions)
16. Lux meter

Note: The above list is indicative and is bare minimum. However Contractors are advised to provide Field Testing Equipments in required number so that Quality of work does not suffer due to shortage of Equipment.

END OF VOLUME - II



ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

TENDER

FOR

Supply, Installation, Testing & Commissioning (SITC) of Audio – Visual System and Stage Lighting in Auditorium Building

VOLUME – III

Specific Conditions of Contract

OCTOBER 2018

आरोग्यम् सुख सम्पदा

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NIT No. 20/EE/AIIMS/RPR/2018-19 Dated 04.10.2018

SPECIFIC CONDITIONS OF CONTRACT (SCC)

1. The contents of special conditions take precedence over the General 'Clauses of Contract'.

2. Within 15 days of issuance of Letter of Award (LOA) or signing of contract, whichever is earlier, the contractor shall submit his construction plan with the details in accordance to the requirements given in the 'clauses of contract'.

3. The contractor shall give notice to the Engineer-in-charge whenever the works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and details of the nature and amount of the delay or disruption likely to be suffered if it is late.

4. The contractor shall make his own arrangements for water and for obtaining electric connections if any and make necessary payments to concern authorities. All expenses towards collection of samples, packing, transportation etc. shall be borne by the contractor.

5. Work shall normally be done in a single shift/day. However, if the work is required to be executed in more than one shift in a day for meeting the time lines, the Contractor with prior approval of the Engineer—in-charge, shall have to make necessary arrangements for the same and all costs towards the same shall be deemed to have been included in the quoted rates.

6. The contractor shall, in performing the contract, comply with applicable rules and laws. Unless otherwise stated, the contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licenses and approvals, as required by the laws in relation to the execution and completion of the works and remedying of any defects; and the contractor shall indemnify and hold the institute harmless against and from the consequences of any failure to do so.

7. The contractor shall set out the works in relation to original points, lines and levels of reference specified on the contract or notified by the Engineer-in-charge. The contractor shall be responsible for the correct positioning of all parts of the works, and shall rectify any error in the positions, levels, dimensions or alignment of the works.

8. The contractor shall:
    a) Comply with all applicable safety regulations,
    b) Take care for the safety of all persons on the site,
    c) Use reasonable efforts to keep the site and works clear of unnecessary obstruction so as to avoid danger to these persons,
    d) Provide fencing, lighting, guarding and watching of the works until completion and taking over.
    e) Provide any temporary works (including roadways, footways, guards and fences) which may be necessary, for the execution of the works, for the use and protection of the public and of owners and occupiers of adjacent land.
    f) The contractor shall not use any project building, Roads, Facility, article for his/construction use without permission of Engineer in charge**.**

g) Not be allowed to use Lifts by labour or for carriage of materials unless it is approved by Engineer in- charge.

9. Security and traffic arrangements

In the event of any restrictions being imposed by the Security agency of AIIMS Raipur /Traffic or any other authority having jurisdiction in the area on the working or movement of labour /material, the contractor shall strictly follow such restrictions and nothing extra shall be payable to the contractor on such accounts. The loss of time on these accounts, if any, shall have to be made up by augmenting additional resources whatever required. The contractor is required to make his own arrangements to provide huts for labourers as is acceptable to local bodies and nothing extra shall be paid on this account. He shall make his own arrangements for stores, field office etc. Before tendering, he shall visit the site and assess the manner in which he is able to arrange the above facilities. The Engineer-in-Charge shall in no way be responsible for any delay on this account and no claim, whatsoever, on this account shall be entertained.

No payment shall be made for any damage caused by rain, snowfall, flood or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the govt. property and the work for which payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him.

10. Details of all procedures and compliance documents shall be submitted to the Engineer-in-charge for information before each execution stage is commenced. When any document of a technical nature is issued to the engineer-in-charge, evidence of the prior approval by the contractor himself shall be apparent on the document itself. Compliance with the quality assurance system shall not relieve the contractor of any of his duties, obligations or responsibilities under the contract.

11. The work shall generally be carried out in accordance with the specification mentioned in the contract and latest CPWD Specifications with up to date correction slips, additional/Particular Specifications, drawings and as per instructions of Engineer-in-Charge. Any additional item of the work, if taken up subsequently, shall also confirm to the relevant CPWD specifications as mentioned above. Working drawings will be released to the contractor commensurate to the construction schedule approved by Engineer In Charge.

a) The several documents forming the tender are to be taken as mutually complementary to one another. Detailed drawings shall be followed in preference to small scale drawings and figured dimensions in preference to scale dimensions.

b) In case, there be any difference or discrepancy between the descriptions of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and IS Codes etc., the following order of precedence shall be observed.
   1. Description of items as given in Schedule of quantities.
   2. Technical specifications / particular specification.
   3. Special conditions.
   4. Additional Condition.
   5. Tender drawings attached.

6. CPWD Specifications, CPHEEO, ASHRAE and any other standard(s) mentioned in technical specifications including correction slips issued up to the last date of uploading/submission of tender.
7. General Conditions of Contract including correction slips issued up to the last date of uploading/submission of tender.
8. Indian Standards Specifications of B.l.S.
9. ASTM, BS, or other foreign origin codes mentioned in tender document.
10. Manufacturer's specifications and as decided by the Engineer-in-Charge.
11. Sound Engineering practices or well established local construction practices.

12. The works to be governed by this contract shall cover delivery and transportation up to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works including operation and maintenance.

13. The works to be undertaken by the contractor shall inter-alia include the following:

    a) Preparation of detailed Shop drawings and coordinated drawing.
    b) The contractor shall submit material submittals for approval of Engineer-in-Charge prior to delivery of material at site.
    c) Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
    d) Deleted
    e) Preparation of As-built drawings.
    f) Operation and maintenance as per the BOQ so Mentions.

14. The contractor shall be required to submit the following minimum documents as approved by the Engineer-in-charge along with the bills. Engineer-in-charge may require any additional documents to process the bill which shall be submitted by the contractor without fail.
    a) Certified measurement book (computerized),
    b) Quality certificate along with test reports, such as Pre dispatch (Factory) test reports and Laboratory test (On site and outside test reports) as directed by EIC.
    c) Cumulative statement of payments made till date,
    d) Proof that all due payments have been given to its sub—contractor and deposited into the account of statutory authorities like for PF, ESI, etc.

15. After completion of work and before issuance of certificate of completion, the contractor shall submit the duly approved drawings mentioning "as installed" drawings to the Engineer- in-charge in the format as follows:
    a) Three (3) sets of layout drawing drawn at appropriate scale and
    b) Three (3) nos. of Compact discs/pen drives (with editable provisions and without any password protection)

16. The contractor shall prepare and produce instruction, guarantee cards (stamped & signed along with (purchase bill), operation and maintenance manuals in English for the use, operation and the maintenance of the supplied equipment and installations, and submit to the Engineer-in-charge in (3) copies at the time of handing over. The manuals shall get generally consist of the following:

    a) Description of the project
    b) Operating instructions
    c) Maintenance instructions including procedures for preventive maintenance

d) Manufacturer's catalogues.
e) Spare parts list
f) Trouble shooting charts.
g) Drawings.
h) Type and routine test certificates for major items.

One (1) set of reproducible 'as built' drawings.

17. The language for written communication shall be English.

18. The list of approved makes is provided in the tender document which shall be used by the contractor during the construction. It is deemed that the rates quoted by the contractor have considered the approved makes only. Wherever in any item a catalogue number is mentioned along with the brand name, an equivalent product of the brands mentioned in the list of approved makes of materials shall be allowed. However, the data sheets along with all other details of the product shall be got approved from Engineer-in-Charge before procurement. Wherever the benchmark product is specified, in case, contractor wish to use product other than the benchmark product, the contractor has to establish to Engineer-In-Charge that the product they want to use is superior or equivalent (in specification and cost) to bench mark product. The technical details of benchmark product and the product contractor wish to use in the work shall be supplied by the contractor.

19. The nomenclature of the item given in the schedule of quantities gives in general the work content but is not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and/or described in the specifications, provided that the same can be reasonably inferred there from may be several incidental works, which are not mentioned in the nomenclature of each item but will be necessary to complete the item in all respect. All these incidental works / costs which are not mentioned in item nomenclature but are necessary to complete the item shall be deemed to have been included in the rates quoted by the contractor for various items in the schedule of quantities. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any range in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Engineer-in-Charge. Nothing extra shall be payable on this account.

20. The contractor(s) shall give to the local body, police and other authorities all necessary notices etc. that may be required by law and obtain all requisite licenses for temporary obstructions, enclosures etc. and pay all fee, taxes and charges which may be leviable on account of these operations in executing the contract. He shall make good any damage to the adjoining property whether public or private and shall supply and maintain lights either for illumination or for cautioning the public at night.
    The Contractor shall bear all incidental charges for cartage, storage and safe custody of materials, if any, issued by department as well as to those materials also arranged by the contractor.

21. The contractor shall give performance test of all the systems per the specifications in the presence of the Engineer-in-Charge or his authorized representative before the work is

finally accepted and nothing extra whatsoever shall be payable to the contractor for such test.

The rates quoted by the bidder in respect of individual item shall be deemed to have included all royalties, tolls, duties, local and other levies, taxes including GST, insurances, EPF, ESI etc. EPF & ESI on the part of Employer shall be borne by the contactor and nothing shall be reimbursed on this account by AIIMS Raipur. AIIMS Raipur shall not be responsible for payment of any applicable tax including GST over and above quoted rates. In case Government levies/modifies any tax subsequently the same will be adjusted plus/minus as the case may be.

22. **Insurance Policies**

22.1.1 Employer's Risks

The Employer's risks are:

(a) (i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,

(ii) Rebellion, revolution, insurrection, or military or usurped power, or civil war,

(iii) ionising radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component thereof,

(iv) Pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speed,

(b) loss or damage due to the use or occupation by the **Employer** of any Section or part of the Permanent Works, except as may be provided for in the Contract,

(c) loss or damage to the extent that it is due to the design of the Works, other than any part of the design provided by the Contractor or for which the Contractor is responsible,
and

(d) any operation of the forces of nature (insofar as it occurs on the site) which an experienced contractor:

(i) could not have reasonably foreseen, or

(ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures:

(A) prevent loss or damage to physical property from occurring by taking appropriate measures, or

(B) insure against.

22.1.2 Insurance of Works and Contractor's Equipment

The Contractor shall, without limiting his or the Employer's obligations and responsibilities under Clause 22.1.1 insure:

(a) The Works, together with materials and Plant for incorporation therein, to the full replacement cost and it being understood that such insurance shall provide for compensation to be payable to rectify the loss or damage incurred.

(b) The Contractor's Equipment and other things brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

The insurance under clause 22.1.2 shall be issued by an insurance company which has been determined by the contractor to be acceptable to the Employer.

22.1.3 Scope of Cover

The insurance in paragraphs (a) and (b) of Sub-Clause 22.1.2 shall be in the joint names of the Contractor and the **Employer** and shall cover:

(a) AIIMS Raipur and the Contractor against all loss or damage from whatsoever cause arising (including natural calamities, earthquake, subsidence, landslide, rock slide, flood, storm, cyclone, fire, theft, burglary, strike, riot, sabotage, terrorism), other than as provided in Sub- Clause 22.1.5, from the commencement date until the date of completion in respect of the Works or any Section or part thereof as the case may be, and

(b) The Contractor for his liability:
   (i) during the Defects Liability Period for loss or damage arising from a cause occurring prior to the commencement of the Defects Liability Period, and

   (ii) for loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations during the Defects Liability Period.

It shall be the responsibility of contractor to notify the Insurance Company of any change in the nature and extent of the works and to ensure the adequacy of the Insurance cover at all times during the period of contract.

The Insurance Polices (CAR & WC) shall be submitted on or before the Date of Commencement.

22.1.4 Responsibility for Amounts not recovered

Any amounts not insured or not recovered from the insurers shall be borne by the **Employer** or the Contractor in accordance with their responsibilities Clause 22.1.1.

22.1.5 Exclusions

There shall be no obligation for the insurance in Sub-Clause 22.1.2 to include loss or damage caused by the risks listed under sub clause 22.1.1 para a (i) to (iv).

If the Contractor receives instructions from the **Employer** to insure against War Risk, such insurance if normally available shall be effected, at the cost of the **Employer,** with an Insurance Company acceptable to the **Employer** and shall be in the joint names of the contractor and the **Employer.**

22.1.6 Damage to Persons and Property

The Contractor shall, except if and so far as the Contract provides otherwise, indemnify the **Employer** against all losses and claims in respect of:

(a) death of or injury to any person, or

(b) loss or damage to any property (other than the Works) :

Which may arise out of or in consequence of the execution and completion of the Works and the remedying of any defects therein, and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, subject to the exceptions defined in Sub-Clause-22.1.2.

22.1.7 Exceptions

The "exceptions" referred to in Sub-Clause 22.1.6 are:

(a) the permanent use or occupation of land by the Works, or any part thereof,

(b) the right of the **Employer** to execute the Works, or any part thereof, on, over, under, in or through any land,

(c) damage to property which is the unavoidable result of the execution and completion of the Works, or the remedying of any defects therein, in accordance with the Contract.

(d) death of or injury to persons or loss of or damage to property resulting from any action or neglect of the **Employer**, his agents, servants or other contractors, not being employed by the Contractor, or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or, where the injury or damage was contributed to by the Contractor, his servants or agents, such part of the said injury of damage as may be just and equitable having regard to the extent of the responsibility of the **Employer,** his servants or agents or other contractors for the injury or damage.

22.1.8 Indemnity by Employer

The **Employer** shall indemnify the Contractor against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the exceptions defined in Sub-Clause 22.1.7.

22.1.9 Third Party Insurance (Including Employer's Property)

The Contractor shall, without limiting his or the **Employer's** obligations and responsibilities under Clause 22.1.6 to 22.1.8, insure, in the joint names of the Contractor and the **Employer**, against liabilities for death of or injury to any person (other than as provided in Clause 22.1.11 to 22.1.12 or loss of or damage to any property (other than the Works) arising out of the performance of the Contract other than the exceptions defined in paragraphs (a), (b) and (c) of Sub-Clause 22.1.7.

22.1.10 Minimum Amount of Insurance

Such insurance shall be for at least the amount stated in Clause 22.1.2 above.

22.1.11 Cross Liabilities

The insurance policy shall include a cross liability clause such that the insurance shall apply to the Contractor and to the **Employer** as separate insured.

22.1.12 Accident or Injury to Workmen

The **Employer** shall not be liable for or in respect of any damages or compensation payable to any workman other than for death or injury resulting from any act or default of the **Employer**, his agents or servants. The Contractor shall indemnify and keep indemnified the **Employer** against all such damages and compensation, other than those for which the **Employer** is liable as aforesaid, and against all claims, proceedings, damages, costs, charges, and expenses whatsoever in respect thereof or in relation thereto.

22.1.13 Insurance Against Accident to Workmen

The Contractor shall insure against such liability and shall continue such insurance during the whole of the time that any persons are employed by him on the Works. Provided that, in respect of any persons employed by any Subcontractor, the Contractor's obligations to insure as aforesaid under this Sub-Clause shall be satisfied if the Subcontractor shall have insured against the liability in respect of such persons in such manner that the **Employer** is indemnified under the policy, but the Contractor shall require such Subcontractor to produce to the Project Consultant/Engineer-In-Charge, when required, such policy of insurance and the receipt for the payment for current premium.

22.1.14 Evidence and Terms of Insurance

The Contractor shall provide evidence to the **Engineer-In-Charge** as soon as practicable after the respective insurance have been taken out but in any case prior to the start of work at the Site that insurance required under the Contract have been effected and shall, within 84 days of the Commencement Date, provide the insurance policies to the **Employer**. When providing such evidence and such policies to the **Employer**, the Contractor shall notify the **Engineer-In-Charge** of so doing. Such insurance policies shall be consistent with the general terms agreed prior to the issue of the Letter of Acceptance. The Contractor shall effect all insurance for which he is responsible with insurers and in terms approved by the Engineer-In-Charge.

22.1.15 Adequacy of Insurance

The Contractor shall notify the insurers of changes in the nature, extent or programme for the execution of the Works and ensure the adequacy of the insurance at all times in accordance with the terms of the Contract and shall, when required, produce to the Engineer-In-Charge the insurance policies in force and the receipts for payment of the current premiums.

22.1.16 Remedy on Contractor's Failure to Insure

If the Contractor fails to effect and keep in force any of the insurance required under the Contract, or fails to provide the policies to Engineer-In-Charge within the period required by Sub-Clause 22.1.14, then and in any such case the **Employer** may effect and keep in force any such insurance and pay any premium as may be necessary for that purpose and from time to time deduct the amount so paid from any monies due or to become due to the Contractor, or recover the same as a debt due from the Contractor.

22.1.17 Compliance with Policy Conditions

In the event that the Contractor or the **Employer** fails to comply with conditions imposed by the insurance policies effected pursuant to the Contract, each shall indemnify the other against all losses and claims arising from such failure.

The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to, the insurance referred to in Clauses 22.1.2 to 22.1.5, 22.1.8 to 22.1.12 and 22.1.14 to .22.1.16) with insurers from India.

23. **Authority and Duties of the PC:**

The PC has been appointed by and duly authorized by the client to supervise, test, examine, approve or reject any material and/or works, to order, cancel, alter, modify, any of the materials, items of works within the framework of the contract and as per the technical specifications, drawings and schedule of items issued by the PC and the DDPRC. The PC is further authorized to administer the contract, check, correct, modify and certify or reject any bill or request for payment for materials, Items or works. The PC shall obtain prior approval of the client for any deviation from the contract including extension of time to the contractor.

The duties of PC are given in this document elsewhere, however main duties are as under:-

(a) Monitor and supervise the work.
(b) Test and examine any materials to be used in the works.
(c) Check workmanship of the items executed.
(d) Ensure correct measurement of BOQ.
(e) Prepare and issue certificate of payment and recommend for payment to client.
(f) Order variation of quantities, items etc.
(g) Recommend extension of time limit.
(h) Record extra items of the work.

(i) Check the rate analysis of extra items.
(j) Ensure complete compliance with the drawings, technical specification and various requirements of contract documents.
(k) Recommend/ Issue amendments to design & drawings of DDPRC with their recommendation if essential during construction as per site requirement.

24. Testing charges including supply of samples, packaging and sending the laboratory, if any, shall be borne by contractor.

24. Other contractors are/may also be working at site. The contractor has to work in close co-ordination of other contractors. In case on any damage or defacement of finishes / structure whether completed or under finishing stage by the contractor the same shall be rectified by the contractor whose labour has damaged or defaced the finishes/ structure. If the contractor fails to rectify the same, the same shall be got done at risk and cost or as deemed fit by Engineer-in-charge.

25. Existing toilets shall not be allowed to be used by the labour. For working labour portable toilets shall be arranged by the contractor in working area.

26. The working site area shall be kept clean. All garbage /packaging materials etc. shall be disposed off properly.

27. Unless otherwise specified, all items in which installation is included in the item of work necessary installation kit, if any, required shall be included in the quoted rate of item. Installation may be in the ceiling or on wall or any surface as per detailed drawing and as per direction of Engineer in-charge.

28. Notwithstanding anything contained under Clauses of contract, all cost of EPF & ESI shall be borne by the contractor. Neither extra payment nor reimbursement shall be made on this account.

29. Notwithstanding anything contained under Clauses of contract, no escalation shall be paid under Clause 10CA and Clause 10CC.

30. All supply, safety arrangements, facilities for labour etc. shall be as per GRIHA norms and as directed by Engineer-in-Charge.

31. The Contractor shall operate and maintain all the installed systems for a period of 3 years including one year of defect liability period after the completion of work or handing over the installed systems to AIIMS Raipur whichever is later. The maintenance shall include comprehensive maintenance including cost of defective parts/systems, visiting charges, service charges, transportation charges etc. The equipments or components, or any part thereof, so found defective during this period shall be forthwith repaired or replaced free of cost to the satisfaction of the AIIMS Raipur. In case it is felt by the AIIMS Raipur that undue delay is being caused by the contractor in doing this, the same will be got done by the AIIMS Raipur at the risk and cost of the contractor. The decision of AIIMS Raipur in this regard shall be final and binding on the contractor.

    Minimum One technical staff shall be deployed at site for operation, maintenance and explaining/demonstrating the functionality of installed systems to AIIMS Raipur for the complete period of Operation and Maintenance work of 03 years after the completion of

work and handing over the installed systems to AIIMS Raipur and technical staff(s)/expert(s) to be made available as and when required as per the requirement. If such technical staff is not deployed at site a recovery @ Rs 750 per day will be made.

32. The financial implications for above requirements shall be deemed to be included in quoted rates and nothing extra shall be paid on these accounts.

33. No idling charges or compensation shall be paid for idling of the contractor's labour, staff or P&M etc. on any ground or due to any reason whatsoever.

34. Any dispute arising due to typing mistakes/ omissions in the document the decision of the Client will be final.

35. Languages, Law & Jurisdiction

The ruling language in which the Contract and related aspects shall be drawn up shall be English only. The contact its meaning and interpretation & relationship between the parties shall be governed by Laws of India and as applicable to site of work. Notwithstanding any other Court/ Courts having jurisdiction to decided the question(s) forming the subject matter of the reference, if the same had been the subject matter of a suit any and all actions and proceeding arising out of or in relation to the Contract (including any arbitration in terms thereof) shall lie only in the Court of Competent Civil Jurisdiction at Bilaspur and only the said Court(s) shall have jurisdiction of entertain and try any such action(s) and / or proceeding(s) to the exclusion of all other Courts.

37. Errors, Omissions and Discrepancies.

(a) In case of errors, omissions and /or disagreement between written and scaled dimensions on the drawings or between the drawings and specifications, etc. the following order of precedence shall apply:

i. Between scaled and written dimension (or description) on drawing, written dimension shall be adopted.
ii. Between the written or shown description or dimensions in the drawings and the corresponding one in the specification, the former shall be taken as correct.
iii. Between the written description of the item in the specifications and descriptions in the Bill of Quantities of the same item, the latter shall be adopted.

(b) The several documents forming the Contract are to be taken as mutually explanatory of one another, but in case of ambiguity or discrepancies in conditions or specifications the same shall be explained and adjusted by HSCC. In case the Contractor does not agree with the explanation given by the HSCC, then the matter, on his written notice, will be referred to the Engineer-In-Charge/Client and his decision shall be final and binding to the contractor.

(c) In all cases of omissions and /or doubts or discrepancies in any of the items or specifications, a reference shall be made to the HSCC. Elucidation, elaboration or decision of the Engineer-in-charge shall be considered as authentic. The

Contractor shall be held responsible for any error that may occur in the work through lack of such reference and precaution.

38. Further Drawings and Instructions

The Contractor shall carry out and complete the said work in every respect in accordance with this Contract and with the directions of and to the satisfaction of the Engineer – In - Charge. Engineer – In - Charge may in his absolute discretion and from time to time further issue drawings and/or written instructions, details, directions and explanations, which are hereafter collectively referred to as Engineer – In – Charge's Instructions" in regard to:

(a) The variation or modification of the design, quality or quantity of items of works or the addition or omissions or substitution of any item.

(b) Any discrepancy in the drawings or between the bill of quantities and/or drawings and/or specification.

(c) The removal from the site of any material brought thereon by the contractor and the substitution of any other material therefore.

(d) The removal and/or re-execution of any works executed by the contractor.

(e) The dismissal from the works of any persons employed thereupon.

(f) The opening up for inspection of any work covered up.

(g) The amending and making good of any defects under clause thereof.

The contractor shall forthwith comply with and duly execute any work comprised such as Engineer – In – Charge's instructions provided always that verbal instructions, directions and explanations given to the contractor or his representative upon the works by the Engineer – In - Charge, shall, if involving a variation, be confirmed in writing by the Contractor within seven days, and if not dissented from in writing within a further seven days by the Engineer – In - Charge, such shall be deemed to be Engineer – In - Charge instructions within the scope of the contract

39. Contractor's General Responsibilities

(a) Execution of works:

The Contractor shall, subject to the provisions of the Contract, and with due care and diligence, execute and complete the Works & remedy any defects therein in accordance with the Contract. The Contractor shall provide all labour, including the supervision thereof, materials, Constructional Plant and Machineries and all other things, whether of a temporary or permanent nature, required in and for such execution, completion, maintenance and remedying of any defects, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract.

If the contractor finds any discrepancy in the drawings or between the drawings, bill of quantities and specifications, he shall immediately and in writing refer the same to the HSCC who shall decide which is to be followed

The contractor is bound to carry out any items of work necessary for the completion of the job even though such items are not included in the bill of quantities and rates instructions in respect of such additional items and their quantities will be issued in writing by the HSCC/Engineer- In -Charge.

The Contractor must bear in mind that all the work shall be carried out strictly in accordance with the specifications as given in these documents and also in compliance of the requirements of the local public authorities and to the requirements / satisfaction / direction of the HSCC/Engineer-in-charge and no deviation of any account will be permitted.

The contractor shall have to use materials from the makes / manufacturers specified in the list of materials of approved brand and/or manufacture contained in the contract documents and as approved by the HSCC/Engineer – In - Charge. Wherever different pattern/ Design/ Quality of materials with same specification/ make as specified in the contract, is available in the market, HSCC/Engineer-in-Charge will approve the pattern/ Design/ Quality of the material/ item which shall be final and binding on the contractor. In case of unavailability the any pattern/design/Quality may be approved by HSCC/Engineer-In-Charge. Manufacturers test certificates in original for all the equipments and material supplied must be submitted along with the supply of the materials/equipments.

The HSCC/Engineer – In - Charge is empowered to cancel an approval of material if subsequently it is found that approved material once brought at site and tested does not meet the requirement as specified in the contract. In such case the HSCC/Engineer – In - Charge will accord approval of alternate material.

(b) Adequacy, stability and safety:

The Contractor shall take full responsibility for the adequacy, stability and safety of all site operations and methods of construction.

(d) Initial and Final Clearance of site for temporary works:

The Contractor shall be responsible for the clearance of the site of all scrub, debris, rubbish, etc. to be removed off site to a location to be provided by the contractor and approved by the HSCC.

The above is applicable for all site offices, labour camps, and godowns etc., which are not required after the works is fully completed.

(e) Storage, Cleaning and Dewatering

The Contractor shall at all the times during construction keep the Site clean and free from all debris and unwanted materials on a daily basis as per instructions of the HSCC/Engineer – In - Charge.

Storage of materials shall be in an organized manner and in proper compartments as directed by HSCC. Storage on suspended floors shall not be permitted unless specifically approved in writing by the HSCC/Engineer – In - Charge for specific materials in specific locations and in approved manner. The HSCC shall be furnished with load details, if requested, before seeking approval for storage.

Regular cleaning operations shall be undertaken to remove all dust, debris, waste materials etc. A cleaning schedule shall be maintained.

Contractor shall make his own arrangement for storage of those materials, which can be accommodated at site. Contractor shall be fully responsible for safe custody of the same. Materials shall be considered as "Delivered at Site" only after the physical presence of materials at site are verified by the HSCC. Stores elsewhere shall not be eligible for being considered as "Delivered at Site."

Contractor shall be responsible to keep entire site free from water due to water coming from any source at any level and shall protect all materials and works from being damaged by the water from any source. Contractor shall make proper arrangements for drainage prior to use of water for curing, testing, cleaning etc.

Any expenditure incurred by the Contractor in fulfillment of his obligations under this sub-clause shall be deemed to have been included in the Contract Sum.

40. Watching & Lighting

The Contractor shall throughout the execution and completion of the Works and the remedying of the site and the Works and the remedying of any defects therein have full regard for the safety of all persons entitled to be on the site and keep the site and the Works in an orderly state appropriate to the avoidance of danger to such persons and in connection with the Works provide and maintain at his own cost all lights, guards, fencing and watching when and where necessary or required by the HSCC, or by any duly constituted authority, for the execution and for the protection of the Work, and/or for the safety and convenience of the public or others and take all reasonable steps to protect the environment on and off the site and to avoid damage or nuisance to person or property of the public or others resulting from pollution, noise and other causes as a consequence of his methods of operation.

41. Care of Works

From the commencement to the certified completion of the whole of works, the contractor shall take full responsibility for the care thereof and of all temporary works and in case any damage loss or injury shall happen to the works or to any part thereof or to any temporary works from any cause whatsoever save and except the expected risks as defined in sub-clauses of Clause 12.

The contractor shall at his own cost repair and make good the same so that on completion, the works shall be in good order and condition and conformity to every respect with the requirements of the contract and Engineer-in-charge's instructions. The contractor shall also be liable for any damage to the works occasioned by him including his subcontractors in the course of any operations carried out by him for the purpose of completing any outstanding work and complying with his obligations under clause 33 hereof. The contractor shall indemnify the Employer from all risks on this account.

42. Expected Risks & Force Majeure

(a) Expected Risks

The "expected risks" are war, hostilities (whether war declared or not), invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, or (unless solely restricted to the Contractor or of his sub-Contractors and arising from the conduct of, their workmen) riot, commotion or disorder or radiation or contamination by radio-activity and other hazardous properties of any explosive, nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive, nuclear assembly or nuclear component thereof, pressure waves caused by aircraft or other aerial devices traveling at sonic or supersonic speeds, or any such operation of the forces of nature as an experienced contractor could not foresee, or reasonably make provision for on insure against all of which are herein collectively referred to as "the expected risk"

(b) Force Majeure

i) Any failure or delay in the performance by either party hereto of its obligations under his Contract shall not constitute a breach thereof or give rise to any claims for damages if, and to the extent that it is caused by occurrences beyond the control of the party affected, namely, acts of God, floods, explosions, wars, riots, storms, earthquakes, insurrection, epidemic or other natural disasters. The party so affected shall continue to take all actions reasonably within its power to comply as far as possible with its obligations under this Contract. The affected party shall promptly notify the other party after the occurrence of the relevant event and shall use every reasonable effort to minimize the effects of such event and act in all good faith with due care and diligence.

ii) In the event of the effect of force majeure continuing beyond the period of One hundred and Twenty (120) days, the parties shall mutually decide whether or not to terminate this Contract. In the event of termination of contract the contractor shall be paid for the work done and which has been accepted and certified by the HSCC and shall not assert any additional claims against the Client.

43. Contractor's Superintendence

(a) The contractor shall be solely responsible for the means, methods, techniques sequence and procedure of construction. The Contractor shall be responsible to see the completed work complies accurately with the Contract Document.

The Contractor shall give or provide all necessary superintendence during the execution of the Works.

(b) Unauthorized Persons

No unauthorized persons are allowed on the site. The Contractor shall instruct all such persons to keep out and shall take steps to prevent trespassing. However the contractor will make sure to provide free access at any time for Engineer-in-charge/Client/HSCC to the site and other working places.

44. Compliance with Statutes, Regulations, Etc.

The contractor shall conform to the provisions of any statue, ordinance, law, act of the legislature relating to the works, and to the regulations an by-laws of any local or other duly constituted authority and of any water, electric supply and other companies and/or authorities with whose systems the structure is proposed to be connected. The Contractor shall keep the Client/Engineer-in-charge/HSCC indemnified against all fines or penalties or liability of every kind for breach of any such statutory ordinance, law act of the legislation, regulations, and byelaws as aforesaid.

The contractor shall before making any variations from the drawings or specifications that may be necessitated by so regulations, give to the Engineer-in-charge written notice, specifying the variation proposed to be made and the reasons for making it and apply for instructions thereon. The contractor will not execute any work without written permission from the Engineer-in-charge/HSCC.

The contractor shall bring to the attention of the Engineer-in-charge/HSCC all notices required for execution by the said acts, regulations or bye-laws to be given to any authority and pay to such authority, or to any public office all fees that may be properly chargeable in respect of the works, and lodge the receipts with the Engineer-in-charge/HSCC.

45. Quality of Materials, Workmanship and Test

The Client/Engineer-in-charge may carry out Third Party Quality Assurance/Audit by an independent agency/ individual/firm/institute at any time. The agency will be permitted and offered all support related to site inspection by the Contractor. Suggestions therein will be carried out without any extra cost.

45.1 Samples

The approval of Samples/Datasheets by the HSCC/Engineer- In-Charge shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Document unless Contractor has in writing called the HSCC/Engineer-in-charge's attention to each such variation at the time of submission as specified above and received written approval of each such variation by specific written notation thereof incorporated in or accompanying the Sample approval; nor will any approval

by Engineer-in-charge /HSCC relieve Contractor from responsibility for complying with the requirements of contract.

Only when the Samples/Datasheets are approved in writing by the HSCC/Engineer-In-Charge, the contractor shall proceed with the procurement and installation of the particular material / equipment. The approved samples shall be signed by the HSCC/Engineer-In-Charge for identification and shall be kept on record at site office until the completion and acceptance of the work and shall be available at the site for inspection / comparison at any time. The contractor shall keep with him a duplicate of such samples to enable him to process the matter.

For items of works where the samples are to be made at the site, the same procedure shall be followed. All such samples shall be prepared at a place where it can be left undisturbed until the completion of the project.

The HSCC/Engineer-In-Charge shall communicate his comments / approval to the Contractor to the samples at his earliest convenience. Any delay that might occur in approving of the samples for reasons of its not meeting with the specifications or other discrepancies, inadequacy in furnishing samples of best qualities from various manufacturers and such other aspects causing delay on the approval of the materials / equipment's etc. shall be to the account of the contractor. In this respect the decision of the Engineer-in-charge shall be the final.

On delivery of the supplies of materials / equipments for permanent works at the site, the contractor shall specifically arrange to get the supply inspected by the HSCC and compared with the approved sample and his specific obtained before using the same in the work.

45.2 Testing facilities

In case certain tests are to be carried out in approved outside laboratory, as stipulated in the contract document / as directed by the HSCC/Engineer-In-Charge, the Contractor shall bear the entire cost including samples, taking samples, testing, reports etc. Performance tests of equipments.

46. Absence of Specifications

If the specifications do not contain particulars of materials and works which are obviously necessary for the proper completion of the works, and the intention to include, which is inferred, all such materials and works shall be supplied and executed by the Contractor without extra charge. If the Contractor requires additional information, he shall, in pursuance of Clause 2 hereof, so request in writing well in advance to commencement of the particular work to the HSCC who will issue such detailed information within a reasonable time.

47. Obtaining Information's related to Execution of work

No claim by the Contractor for additional payment will be entertained which in consequent upon failure on his part to obtain correct information as to any matter affecting the

execution of the works, nor will any misunderstandings or the obtaining of incorrect information or the failure to obtain information relieve him from any risks or from the entire responsibility for the fulfillment of the contract.

48. Access for Inspection

Persons nominated by Engineer-in-charge/HSCC shall at all reasonable times have free access to work and/ or to the workshops, factories or other places where materials are lying or from which they are being obtained and the Contractor shall extend necessary service to Engineer-in-charge/HSCC and their representatives every facility necessary for checking measurements, inspection and examination and test of the materials and workmanship.

49. Examination of Work before covering up

(a) No part of the works shall be covered up or put out of view without the written approval of the HSCC and the contractor shall afford full opportunity for the HSCC to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon. The contractor shall give due notice to the HSCC whenever any such work or foundation is or ready or about to be ready for examination and the HSCC shall, without unreasonable delay, unless he considers it necessary and advises the contractor accordingly, attend for purpose of examining and measuring such work or examining such foundation.

(b) Uncovering and making openings

The contractor shall uncover any part or parts of the works or make openings in or through the same as the HSCC may from time to time direct and shall reinstate to make good such part or parts to the satisfaction of the HSCC. No extra payment will be paid for this.

50. Variations

(a) The HSCC/Engineer-In-Charge shall make a variation in the form, quality or quantity of the works or any part thereof that may be necessary and for that purpose or if for any other reason it shall, in his opinion be desirable, he shall order the contractor to do and the contractor shall do any of the following:

i) Increase or decrease the quantity of any work included in the contract
ii) Change the character or quality or kind of any such work
iii) Change the levels, lines, positions and dimensions of any part of the works.
iv) Execute additional work of any kind necessary for the completion of the works.
v) Change any specified sequence or timing of construction of any part of the work.

No such variation shall in any way vitiate or invalidate the contract, but the cost, if any, of all such variations shall be taken in account for payment to the contractor as an addition or adjustment to the amount of the contract sum. Provided that where the issue of instruction to vary the works is necessitated by some default or breach by

the contractor or for which he is responsible, any additional cost attributable to such default or breach shall be borne by the contractor.

(b) The HSCC/Engineer-In-Charge shall omit any component from scope of works that may be necessary and for that purpose or if for any other reason it shall, in his opinion be desirable and shall issue such instructions to the contractor. The contractor shall do the same without in any way vitiate or invalidate the contract. Any cost attributable to above shall be borne by the contractor.

c) Orders for variation to be in writing

The contractor shall make no such variations without an order in writing by the Engineer-In-Charge, provided that no order in writing shall be required for increase up to 30% or decrease in the quantity of any work where such increase or decrease is not the result of an order given under this Clause, but is the result of the quantities exceeding or being less than those stated in the schedule of items.

51. Works by Other Agencies

The Client/ Engineer-in-charge/HSCC reserves the right to use premises and any portion of the site for the execution of any work not included in this contract which it may desire to have carried out by other persons simultaneously, and the contractor shall allow the reasonable facilities for the execution of such work, but shall not be required to provide any plant or material for the execution of such work except by special arrangement with the employer. Such work shall be carried out in such manner as not to impede the progress of the works included in the contract and the contractor shall not be responsible for any damage or delay which may happen to or occasioned by such work.

52. Dues not paid by the Contractor

The contractor shall pay all dues or fees to Statutory authorities and Electric and Water supply authorities etc. within due period and indemnify the Client and the HSCC from any claims or compensations or penalties or damages arising out of non-payment of any such dues or fees. However, in case some dues or fees are not paid by him / and or claims for compensations or penalties etc. are raised by the Statutory authorities, the Client may deposit the required amount for any or all of the above and recover or deduct the same from any money payable to the contractor by the Client or any other means available to the Client such as bank guarantee.

53. Urgent Repairs

If, by reason of any accident, or failure, or other event occurring to or in connection with the works, or any part thereof, either during the execution of the works, or during period of Defects Liability any remedial or other work or repair, shall, in the opinion of the Engineer-in-charge/HSCC be urgently necessary for the safety of the Works and the Contractor is unable or unwilling at once to do such work or repair, the Engineer-in-charge/HSCC may employ and pay other persons to carry out such work or repair as the case may be and may consider necessary. If the work or repair so done by the other agency is the work which, in the opinion of the Engineer-in-charge/HSCC the Contractor was liable to do at his own expense under the Contract, all expenses incurred by Other agency in so doing shall be

recoverable from the Contractor by the Engineer-in-charge/HSCC, or may be deducted by the Engineer-in-charge/HSCC from any monies due or which may become due to Contractor.

54. Reports by Contractor

(a) The Contractor as directed by the Engineer-in-charge/HSCC shall prepare further Progress Charts and Schedules.
(b) Every care has been made to include all the aspects/ terms and condition in these documents. However, during execution, any issue arises, which has not been included in these documents, norms/ rules & regulations/ terms & conditions as prevalent in CPWD shall be followed.

55. Miscellaneous

a) By-Laws of Statutory Authorities

The Contractor and his labour shall not violate municipal/sanitation/health or any other byelaws.

b) Tax Deduction at Source

Taxes and surcharge as applicable, shall be deducted from the amount paid to the Contractor towards the value of the work done. The amount so deducted at source, shall be deposited into Government Treasury and a certificate thereof shall be issued to the Contractor.

c) Definition of "and", "or", "and/or"

The terms "and", "or", "and/or" used in the context with the description or enumeration of two or more items or components of work or documentation or anything similar shall mean as is relevant and applicable to the text.

d) Technical Examination

The Client shall have the right to cause Audit and Technical Examination of the works and the final bills of the contractor including all supporting vouchers, abstracts, etc. to be made as per payments of the final bill and if as a result of such Audit and Technical Examination the sum is found to have been overpaid in respect of any work done by the contractor 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 the Client/ Engineer-in-charge/HSCC to recover the same from the security deposit or Performance Security of the contractor or from any dues payable to the contractor. If it is found that the contractor was paid less than what was due to him under the contractor in respect of any work executed by him under it, the amount of such under payment shall be duly paid. The work comes under the purview of CVC and as such all orders and instructions are applicable to this work.

In the case of any audit examination and recovery consequent on the same the contractor shall be given an opportunity to explain his case and the decision of the Client shall be final. Payment on this account will be recovered from the contractor.

In the case of Technical Audit, consequent on which there is a recovery from the contractor, recovery should be made with orders of the Client whose decision shall be final. All action under this clause should be initiated and intimated to the contractor within the period of twelve months from the date of completion.

e) Site instruction book

For the purpose of quick communication between Engineer-in-charge/HSCC and the Contractor or his representative, site instruction book shall be maintained at site as described below:

Any communication, relating the works may be conveyed through records in the site instruction book. Such a communication from HSCC to the Contractor shall be deemed to have been adequately served in terms of the contract. Such site instruction book shall have machine numbered pages in triplicate and shall be carefully maintained and preserved by the Contractor and shall be made available to Engineer-in-charge/HSCC and Client as and when demanded. Any instruction which Engineer-in-charge/HSCC may like to issue to the Contractor may be recorded by the Engineer-in-charge/HSCC in site instruction book and two copies thereof taken by the HSCC for his record.

56. Co-ordination Meeting

The Contractor shall be required to attend co-ordination meetings with the Engineer-In-Charge, the HSCC and the other Contractors during the period of Contract as instructed by the Engineer-In-Charge/HSCC. All costs incidental to such interaction shall be to the Contractor's account and no claim will be entertained by the Engineer-In-Charge/HSCC on this account.

57. Contractor's Working Area

Suitable working area will be provided by the Engineer-In-Charge to the Contractor. The Contractor may have to carry out some cutting / filling work for making his working area. The cost of all such Works shall be deemed to have been included in the rates and prices quoted for the Works and no extra payment shall be made on this account.

58. Compliance of Statutory Obligations for obtaining completion Certificates:

The Contractor shall comply all the statutory obligations and obtain all required clearances to implement the project without any financial repercussions to HSCC /Employer and ensure all follow up actions with the local authorities in this respect for smooth completion of the project. All statutory charges to get any NOC, clearances from local authorities to be obtained by the contractor and the charges towards the NOC shall be reimbursed after submitting the bills/documentary evidences along with RA bills/final bill. The contractor is required to obtain all NOC, completion & Occupancy certificates from the respective local bodies as applicable:

59. Rates/Prices

The quoted rates/prices for the items shall be complete in all respect including all labour, material, plant and machinery, tools and tackles, batching plant for RCC work including water & electricity, all taxes including GST/Service Tax duties, levies, octroi, statutory levies applicable from time to time and others as specified in SCC etc.

60. Arbitration

The venue/ seat of Arbitration shall be at Raipur/Delhi

During the arbitration the contractor shall not stop the work & shall continue to work in terms of the contact.

61. The entire works will be liable to be inspected by Chief Technical Examiner i.e. CTE /CVC and ISO auditors. The Contractor will provide all necessary help required for in this connection. The Contractor will have to comply with the procedures/observations/ suggestions of the CTE/ISO in respect of quality, specifications, and workmanship in his scope of work, if any. No extra payment will be made on this account. However, any recovery arising out of the CTE's observation will be borne by the Contractor.

62. Separate bank Account

The contractor shall open a bank account specifically for this contract. The mobilization advance given to the contractor shall be deposited in this account only. The details of this account shall be made available to the Engineer-In-Charge. The contractor Shall draw from this account the expenses for the purpose of procurement of materials, machineries, tools & plants and shuttering required for the said work only.

END OF VOLUME - III

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

TENDER

FOR

Supply, Installation, Testing & Commissioning (SITC) of Audio – Visual System and Stage Lighting in Auditorium Building

VOLUME – IV

- **Technical Specification**
- **Approved Make List**

OCTOBER 2018

आरोग्यम् सुख सम्पदा

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1.0 GENERAL SCOPE OF WORK

The scope of work shall cover internal electrical works for **Integrated Presentation, Sound Reinforcement, Lighting System, Dimmer & control wiring and AMC for Auditorium at AIIMS, Raipur.** The scope of work covers electrical equipment as per BOQ. Also, supply, installation, testing and commissioning of electrical works of the project including the following main items/systems:

i. UPS
ii. Internal electrification through concealed MS conduit and provide light points, fan points, socket outlets etc. including supplying, installation, testing and commissioning of light fixtures, fans etc.
iii. Conduiting for computer networking.
iv. CCTV.
v. LT Cabling.
vi. Earthling, safety equipments and misc items required for electrical installation complete in all respect.
vii. Specialized Service Of Auditorium.
viii. Light Control.
ix. Any other items/ works required for the completion of electrical work.
x. Contractor shall submit equipment drawing from manufacturer along with the layout etc. and working drawings for approval from AIIMS Electrical Engineer before manufacture / commencement of work at site.
xi. Contractor has to submit the working drawing of internal & external electrification based on our tender drawings for the approval of AIIMS Electrical Engineer before commencement of work.
xii. If, details of any electrical item/ system are left out, then kindly refer the CPWD specifications & approval from Engineer.

2.0 REGULATIONS AND STANDARDS

2.1 All equipments their installation, testing and commissioning shall conform latest CPWD/ IS specifications in all respects. Indian Standard Code of Practice for Electrical Wiring Installation IS:732-1989. It shall also be in conformity with Indian electricity Rules and the Regulations, National Electric Code, National Building Code, latest CPWD specifications amended up to date and requirements of the Local Electric Supply Authority. In general, all materials equipment and workmanship shall conform to the Indian Standards specifications and code. Mode of all measurement will be as per latest CPWD norms/ specifications Some of the applicable codes/standards are as under:

a)	CPWD General specifications for electrical works	Part-I (Internal)- 2013
b)	CPWD General specifications for electrical works	Part-II (External)-1995
c)	CPWD Specification/norms for measurement	Latest revision
d)	Guide for marking of insulated conductors	IS 5578

e)	Guide for uniform system of marking and identification of conductor and apparatus terminals.	IS 11353
f)	Low voltage switchgear and control gear assemblies	IS 8623 Part-1 to 3
g)	Specification for low voltage switchgear and control gear	IS 13947
h)	Code of practice for selection, Installation and maintenance of switchgear and control gear.	ISI 10118 Part – 1 - 4
i)	PVC insulated cables for working voltages upto and including 1100V.	IS 694
j)	Conduit for electrical installations	IS 9537
k)	Accessories for rigid steel conduits for electrical wiring	IS 3837
l)	Boxes for the enclosure of electrical accessories	IS 14772
m)	General and safety requirements for luminaries	IS 1913
n)	Code of practice for earthing	IS 3043
o)	Electrical accessories – circuit breakers for over current protection for household and similar installations.	IS 8828
p)	Low voltage switchgear and control gear	IS 13947 part 1 – 5
q)	Current Transformers	IS 2705
r)	Voltage Transformers	IS 3156
s)	Direct acting indicating analogue electrical measuring instruments and their accessories	IS 1248 part – 1 to 9
t)	Control Switches (switching device for control and auxiliary circuits including contactor relays) for voltages upto and including 1000V ac and 1200V DC.	IS 13947 & IS 1336
u)	Energy Conservation Building code	(Latest)

In case of contradiction in specification the priority of the documents shall be as follows:

CPWD/ IS specification, BOQ, drawings, Technical specifications

3.0 MV & FLOOR PANELS

3.1 GENERAL

Main/Sub Distribution Panels shall be indoor type, metal clad, floor mounted, free standing, totally enclosed, extensible type, air insulated, cubicle type for use on 415 Volts, 3 phase, 50 cycles system.

3.2 CONSTRUCTION

Main/Sub Panels shall be:

i. Of metal enclosed, indoor, floor mounted, free standing construction (unless otherwise specified) type.

ii. Made up of the requisite vertical sections, which when coupled together shall form continuous dead front switchboards.

iii. Provide dust and damp protection.

iv. Be readily extensible on both sides by the addition of vertical sections after removal of the end covers in case of Main Panels.

v. All panels shall be front access type.

Main/Sub Panels shall be constructed only of materials capable of withstanding the mechanical, electrical and thermal stresses, as the effects of humidity, which are likely to be encountered in normal service.

Each vertical section shall comprise of the following:

i. A front-framed structure of rolled/folded sheet steel channel section, of minimum 2 mm thickness, rigidly bolted together. This structure shall house the components contributing to the major weight of the equipment, such as circuit breaker cassettes, moulded case circuit breaker, main horizontal busbars, vertical risers and other front mounted accessories. The structure shall be mounted on a rigid base frame of folded sheet steel of minimum 2 mm thickness and 100 mm height. The design shall ensure that the weight of the components is adequately supported without deformation or loss of alignment during transit or during operation.

ii. A cable chamber housing the cable end connections, and power/control cable terminations. The design shall ensure generous availability of space for ease of installation and maintenance of cabling, and adequate safety for working in one vertical section without coming into accidental contact with live parts in an adjacent section.

iii. A cover plate at the top of the vertical section, provided with a ventilating hood where necessary. Any aperture for ventilation shall be covered with a perforated sheet having less than 1 mm diameter perforations to prevent entry of vermin.

iv. Front and rear doors fitted with dust excluding neoprene gaskets with fasteners designed to ensure proper compression of the gaskets. When covers are provided in place of doors, generous overlap shall be assured between sheet steel surfaces with closely spaced fasteners to preclude the entry of dust.

The height of the panels should not be more than 2400 mm for MV Panels. Operating handle of breaker in top most compartments shall not be higher than 1800 mm. The total depth of the panel should be adequate to cater to proper cabling space and should not be less than 350mm.

Doors and covers shall be of minimum 2mm thick sheet steel. Sheet steel shrouds and partitions shall be of minimum 1.6 mm thickness. All sheet panels shall be smoothly finished, leveled and free from flaws. The corners should be rounded. The apparatus and circuits in the power control centers (panels) shall be so arranged as to facilitate their operation and maintenance and at the same time to ensure the necessary degree of safety.

Apparatus forming part of the Main/Sub Panels shall have the following minimum clearances.

i.	Between phases	- 32 mm
ii.	Between phases and neutral	- 26 mm
iii.	Between phases and earth	- 26 mm
iv.	Between neutral and earth	- 26 mm

When, for any reason, the above clearances are not available, suitable insulation shall be provided. Clearances shall be maintained during normal service conditions.

Creepage distances shall comply with those specified in relevant standards.

All insulating material used in the construction of the equipment shall be of non-hygroscopic material, duly treated to withstand the effects of the high humidity, high temperature tropical ambient service conditions.

Functional units such as circuit breakers and moulded case circuit breakers shall be arranged in multi-tier formation, except that not more than two air circuit breakers shall be housed in a single vertical section. Cable entry for various feeders shall be from the rear. Panel shall be suitable for termination of bus duct for incoming breakers.

Metallic/insulated barriers shall be provided within vertical sections and between adjacent sections to ensure prevention of accidental contact with:

i. Main busbars and vertical risers during operation, inspection or maintenance of functional units and front mounted accessories.

ii. Cable termination of one functional unit, when working on those of adjacent unit/units.

All doors/covers providing access to live power equipment/ circuits shall be provided with tool operated fasteners to prevent unauthorized access.

Provision shall also be made for permanently earthing the frames and other metal parts of the switchgear by two independent connections.

3.3 METAL TREATMENT & FINISH

All steel work used in the construction of the Main/Sub Panels should have undergone a rigorous metal treatment process as follows:-

i. Effective cleaning by hot alkaline degreasing solution followed by cold water rinsing to remove traces of alkaline solution.

ii. Pickling in dilute sulphuric acid to remove oxide scales & rust formation, if any, followed by cold water rinsing to remove traces of acidic solution.

iii. A recognized phosphating process to facilitate durable coating of the paint on the metal surfaces and also to prevent the spread of rusting in the event of the paint film being mechanically damaged. This again, shall be followed by hot water rinsing to remove traces of phosphate solution.

iv. Passivating in de-oxalite solution to retain and augment the effects of phosphating.

v. Drying with compressed air in a dust free atmosphere.

vi. Panel shall be powder coated with epoxy based powder paint after the above process so as to render the material suitable for corrosive environment.

vii. Paint shade shall be Pebble (light) grey, shade no RAL 7032 unless otherwise specified.

3.4 BUSBARS

The busbars shall be air insulated and made of high conductivity, high strength aluminum alloy complying with the requirement of IS-5082.

The busbars shall be suitable braced with non-hygroscopic SMC supports to provide a through fault withstand capacity of 25kA RMS symmetrical for one second. The

neutral as well as the earth bar should be capable of withstanding the above level. Ridges shall be provided on the SMC supports to prevent tracking between adjacent busbars. Large clearances and Creepage distances shall be provided on the busbar system to minimize possibilities of fault.

The Main/Sub Panels shall be designed that the cables are not directly terminated on the terminals of breaker etc. but on cable termination links. Capacity of aluminum busbars shall be considered as 0.8 Amp per sqmm. of cross sectional area of the busbar. The main busbars shall have continuous current rating throughout the length of Panels. The cross section of neutral busbars shall be same as that of phase busbar for busbars of capacity up to 200Amp; for higher capacity the neutral busbar shall not be less than half (50%) the cross section of that the phase busbars. The busbar system shall consist of main horizontal busbar and auxillary vertical busbars run in busbar alley/chamber on either side in which the circuit could be arranged/connected with front access.

Connections from the main busbars to functional circuit shall be arranged and supported to withstand without any damage or deformation the thermal and dynamic stresses due to short circuit currents. Busbars to be colour coded with PVC sleeves.

3.5 SWITCHGEARS

Refer subhead 4.00 – LT switchgears

3.6 CABLE TERMINATIONS

Cable entries and terminals shall be provided in the Main/Sub Distribution Panels to suit the number, type and size of aluminium conductor power cables and copper conductor control cable specified.
Provision shall be made for top or bottom entry of cables as required. A cable chamber 150 mm. high shall be provided at the bottom throughout the length and depth of the MDB/SDB. Generous size of cabling chambers shall be provided, with the position of cable gland and terminals such that cables can be easily and safely terminated.
Barriers or shrouds shall be provided to permit safe working at the terminals of one circuit without accidentally touching that of another live circuit.
Cable risers shall be adequately supported to withstand the effects of rated short circuit currents without damage and without causing secondary faults.

3.7 LABELS

Labels shall be anodised aluminium with white engraving on black background shall be provided for each incoming and outgoing feeder of Main/Sub Distribution and all Panels.

3.8 TEST AT MANUFACTURES WORK

All routine tests specified in IS: 8623-1977 shall be carried out and test certificates submitted.

3.9 TESTING AND COMMISSIONING

Commissioning checks and tests shall be included all wiring checks and checking up of connections. Primary/secondary injection tests for the relays adjustment/setting shall be done before commissioning in addition to routine meggar test. Checks and tests shall include the following.

a) Operation checks and lubrication of all moving parts.

b) Interlocking function check.

c) Insulation test: As per CPWD Specifications.

d) Trip tests & protection gear test.

4.0 L.T. SWITCHGEARS

4.1 MOULDED CASE CIRCUIT BREAKERS.

GENERAL

Moulded Case Circuit Breaker shall be incorporated in the Main/Sub Distribution Boards wherever specified. MCCBs shall conform to IS 13947 (Part 2) & IEC 947 (2) in all respects. MCCBs shall be suitable for three phase 415 volts. MCCBs shall have microprocessor based over current and short circuit releases with adjustable current setting or Thermal Magnetic with variable current setting as per BOQ.

4.1.1 Technical Specifications

MCCB should be suitable for 100% isolation.

Electrical/ Mechanical endurance shall be as per IS/ IEC 60497.

Fault identification of O/L, S/C, E/F shall be indicated on panel door.

The MCCB should be current limiting type with trip time of less than 10 milli sec under short circuit conditions. The MCCB should be either 3 or 4 poles as specified in BOQ.

MCCB shall comply with the requirements of the relevant standards IS13947 – Part 2 /IEC 60947-2 and should have test certificates for breaking capacities from independent test authorities CPRI / ERDA

MCCB shall comprise of Quick Make -break switching mechanism, arc extinguishing device and the tripping unit shall be contained in a compact, high strength, heat resistant, flame retardant, insulating moulded case with high withstand capability against thermal and mechanical stresses.

The breaking capacity of MCCB shall be minimum 35KA / 50 KA or as specified in BOQ. The rated service breaking capacity should be equal to rated ultimate breaking capacities (Ics=Icu).

All MCCBs upto 200A ratings should be provided with Thermal Magnetic type release with adjustable Overload and fixed short circuit protections or specified as BOQ. MCCBs of ratings 250A & above shall be provided with Microprocessor based having inbuilt adjustable protections against Over Load (L), Short Circuit (S) and Ground Faults (G)] with time delay or specified as BOQ.

All MCCBs should be provided with the Rotary Operating Mechanism. The ROM should be with door interlock (with defeat feature) & padlock facility

MCCB should have Spreader links & Phase barriers as standard feature. Superior quality of engineering grade plastics confirming to glow wire Tests as Per IEC 60695-2-1 should be used for insulation purpose.

The handle position shall give positive indication of 'ON', 'OFF' or 'Tripped' thus qualifying to disconnection as per the IS/IEC indicating the true position of all the contacts.

4.1.2 FRAME SIZES

The MCCBs shall have the following frame sizes subject to meeting the fault level or as per manufacturer's standard practice.

a.	Upto 100A rating	.....	100A frame.
b.	Above 100A upto 200A	.....	200A frame.
c.	Above 200A up to 250A	.....	250A frame.
d.	Above 250A up to 400A	.....	400A frame.
e.	Above 400A up to 630Aq	.....	630A frame.
f.	Above 630A to 800A	.....	800A frame.

4.1.3 CONSTRUCTIONS

The MCCB's cover and case shall be made of high strength heat treatment and flame retardant thermo-setting insulating material. Operating handle shall be quick make/quick break, trip-free type. The operating handle shall have suitable "ON", "OFF" "and" "tripped" indicators. Three phase MCCBs shall have common operating handle for simultaneous operation and tripping of all the three phases. MCCBS shall be provided with rotary handle.

Suitable extinguishing device shall be provided for each contact. Tripping unit shall be of thermal magnetic or static release type provided in each pole & connected by a common trip bar such that tripping of any pole operates all three poles to open simultaneously. MCCB shall be current limiting type.

Contact trips shall be made of suitable air resistant, silver alloy for long electrical life. Terminals shall be of liberal design with adequate clearance.

4.1.4 BREAKING CAPACITY

Unless otherwise specified, rated service breaking capacity of the Moulded Case Circuit Breakers shall be minimum 35kA.

4.1.5 TESTING

a. Original test certificate of the MCCB as per Indian Standards (IS) 315-C-8370 shall be furnished.

b. Pre-commissioning tests on the Main Distribution/Sub Distribution Board incorporating the MCCB shall be done as per standard.

4.2 SWITCH DISCONNECTOR FUSE UNITS

The Switch Disconnector Fuse Units shall be double break type suitable for load break duty (AC 23) quick make and break action. Hinged doors shall be duly interlocked with operating mechanism so as to prevent opening of the door when the switch is in 'ON' position and also prevent closing of the switch when the door is not properly secured. All contacts incoming and outgoing terminals of switch shall be adequately sized to receive proper size of cables. High rupturing capacity (HRC) fuse links shall be provided with switch fuse units and shall be in accordance with IS 13703-1&2-1993 and having rupturing capacity of not less than 31 MVA at 415 volts. HRC fuse links shall be provided with visible indicators to so that they have operated. The switch disconnector fuse units shall be manufactured in accordance with IS 13947-3-1993.

FUSE

Fuse shall be of the high rupturing capacity (HRC) fuses links and shall be in accordance with IS 13703-1&2-1993 and having rupturing capacity of not less than 31 MVA at 415 volts. The backup fuse rating for each motor/equipment shall be chosen as the fuse does not operate on starting of motors/equipments.

4.3 MEASURING INSTRUMENTS, METERING & PROTECTION

4.3.1 GENERAL

Direct reading electrical instruments shall be in conformity with IS 1248. The accuracy of direct reading shall be 1.0 for voltmeter and 1.5 for ammeters. Other type of instruments shall have accuracy of 1.5. The errors due to variations in temperature shall be limited to a minimum. The meter shall be suitable for continuous operation between-10 degree Centigrade to + 50 degree Centigrade. All meters shall be of flush mounting type of 96mm square or circular pattern. The meter shall be enclosed in a dust tight housing. The housing shall be of steel or phenolic mould. The design and manufacture of the meters shall ensure the prevention of fogging of instrument glass. Instruments meters shall be sealed in such a way that access to the measuring element and to the accessories within the

case shall not be possible without removal of the seal. The meters shall be provided with white dials and black scale markings.

The pointer shall be black in colour and shall have zero position adjustment device which could be operated from outside. The direction of deflection shall be from left to right.

Suitable selector switches shall be provided for all ammeters and voltmeters intended to be used on three-phase supply.

The specifications herein after laid down shall also cover all the meters, instrument and protective devices required for the electrical work. The ratings type and quantity of meters, instruments and protective devices shall be as per the schedule of quantities.

4.3.2 DIGITAL AMMETERS

Ammeters shall be standard digital type or specified in BOQ the ammeters shall be calibrated as per the latest edition of IS: 1248. Ammeters shall be instrument transformer operated, and shall be suitable for 5A secondary of instrument transformer. The scales shall be calibrated to indicate primary current, unless otherwise specified. The ammeters shall be capable of carrying sustained overloads during fault conditions without damage or loss of accuracy.

4.3.3 DIGITAL VOLTMETERS

Voltmeters shall be standard digital type or specified in BOQ the ammeters shall be calibrated as per the latest edition of IS: 1248. The range for 415 volts, 3 phase voltmeters shall be 0 to 500 volts. Suitable selector switch shall be provided for each voltmeter to read voltage between any two lines of the system. The voltmeter shall be provided with protection fuse of suitable capacity.

4.3.4 CURRENT TRANSFORMERS

Current transformers shall be in conformity with IS: 2705 (Part I, II & III) in all respects. All current transformers used for medium voltage applications shall be rated for 1kV. Current transformers shall have rated primary current, rated burden and class of accuracy as required. However, the rated acceptable minimum class of various applications shall be as given below:

Measuring : Class 0.5 to 1

Protection : Class 5P10.

Current transformers shall be capable of withstanding without damage, magnetic and thermal stresses due to short circuit fault of 50KA on medium voltage system. Terminals of the current transformers shall be marked permanently for easy identification of poles. Separate CT shall be provided for measuring instruments and protection relays. Each C.T. shall be provided with rating plate.

Current transformers shall be mounted such that they are easily accessible for inspection, maintenance and replacement. The wiring for CT's shall be copper conductor, PVC insulated wires with proper termination lugs and wiring shall be bunched with cable straps and fixed to the panel structure in a neat manner.

All Current Transformer shall be Cast resin type.

4.4 MISCELLANEOUS

Control switches shall be of the heavy-duty rotary type with escutcheon plates clearly marked to show the operating position. They shall be semi-flush mounting with only the front plate and operating handle projecting.

Indicating lamps shall be of the filament type of low watt consumption, provided with series resistor where necessary, and with translucent lamp covers, bulbs & lenses shall be easily replaced from the front.

Push buttons shall be of the momentary contact, push to actuate type fitted with self-reset contacts & provided with integral escutcheon plates marked with its functions.

5.0 INTERNAL ELECTRIFICATION OF BUILDING

5.1 SCOPE

As specified in subhead 1.00

5.2 GENERAL

The electrical Installation work shall be carried out in accordance with Indian Standard Code of Practice for Electrical Wiring Installation IS: 732-1989 and IS: 2274-1963. It shall also be in conformity with the current Indian Electricity rules and regulations and requirements of the Local Electricity Supply Authority and Fire Insurance regulations, so far as these become applicable to the installation. Electrical work in general shall be carried out as per following CPWD Specifications with up to date amendment.

- Specifications for Electrical Works Part-I (Internal) by CPWD – 2005 or latest revision
- Specifications for Electrical Works Part-II (External) by CPWD – 1994 or latest revision

Wherever these specifications calls for a higher standard of material and or workmanship than those required by any of the above mentions regulations and specification then the specification here under shall take precedence over the said regulations and standards.

5.3 DISTRIBUTION BOARDS

As a general practice only MCB type double door DB shall be used or as specified in BOQ.

Distribution Board shall be standard type. Distribution boards shall contain miniature circuit breakers of rating specified in BOQ/DB Schedule.

Miniature circuit breakers shall be quick make and quick break type with trip free mechanism. MCB shall have thermal and magnetic short circuit protection. All miniature circuit breakers shall be of minimum 9 KA rated rupturing capacity unless otherwise specified.

Neutral busbars shall be provided with the same number of terminals, as there are single ways on the board, in addition to the terminals for incoming mains. An earth bar of similar size as the neutral bar shall also be provided. All live parts shall be screened from the front. Ample clearance shall be provided between all live metal and the earth case and adequate space for all incoming and outgoing cables. A circuit identification card in clear plastic cover shall be provided for each distribution board.

MCB's shall be provided on the phase of each circuit. The individual banks of MCB's shall be detachable. There shall be ample space behind the banks of MCB's to accommodate all the wiring. All the distribution boards shall be completely factory wired, ready for connections. All the terminals shall have adequate current rating and size to suit individual feeder requirements. Each circuit shall be clearly numbered from left to right to correspond with wiring diagram. All the switches and circuits shall be distinctly marked with a small description of the service installed.

Earth Leakage Circuit Breaker shall be current operated type and of 30mA sensitivity unless otherwise specified. It shall also provide over-current and short circuit protection i.e. it shall be MCB-cum-RCCB (Residual Current Circuit Breaker). In case ELCB doesn't have inbuilt short circuit protection, same rating MCB have to be provided for short circuit protection along with ELCB. Cost of this MCB is deemed to be included in the cost of ELCB. ELCB shall be housed within the Distribution Board.

Distribution Boards shall be ready for connections and shall be inspected in the factory by HSCC Electrical Engineer before dispatch.

Before procurement of Distribution Boards, MCB's, ELCB's (incomer and outgoings) etc., the contractor has to take approval of the DB Schedule/Drawings of each DB from the HSCC Electrical Engineer. The whole unit i.e. Distribution Board, MCB's, ELCB's etc. shall come from the manufactures premises/workshop. After inspection and clearance from the HSCC Electrical Engineer the same may be dispatched to site for installation. However if a single component (such as ELCB or MCB or DB) is required for any reason such as replacement, increase in no. of circuits in the DB, change in the load of existing circuit, change in the total load on a particular DB etc.,

the same may be ordered separately but after the approval of HSCC Electrical Engineer.

5.4 METALLIC CONDUIT WIRING SYSTEM

5.4.1 TYPE AND SIZE OF CONDUIT

All conduit pipes shall be of approved gauge (not less than 16 SWG for conduits of sizes up to 32 mm diameter and not less than 14 SWG for conduit of size above 32mm diameter) solid drawn or reamed by welding finished with black stove enameled surface. All conduit accessories shall be of threaded type and under no circumstances pin grip type accessories shall be used. The maximum number of PVC insulated 650/1100 volts grade copper conductor cable that can be drawn in conduit of various sizes shall be as per IS Code. No steel conduit less than 20mm in diameter shall be used.

5.4.2 CONDUIT JOINTS

Conduit pipes shall be joined by means of threaded couplers, and threaded accessories only. In long distance straight run of conduits, inspection type couplers at reasonable intervals shall be provided or running threads with couplers and jam nuts shall be provided. In the later case the bare threaded portion shall be treated with anti-corrosive preservative. Threads on conduit pipes in all cases shall be between 13 mm to 19 mm long sufficient to accommodate pipes to full threaded portion of couplers or accessories.

Cut ends of conduit pipe shall have neither sharp edges nor any burrs left to avoid damage to the insulation of conductor while pulling them through such pipes.

5.4.3 PROTECTION AGAINST CONDENSATION

The layout of conduit should be such that any condensation or sweating inside the conduit is drained out. Suitable precaution should also be taken to prevent entry of insects inside the conduit.

5.4.4 PROTECTION OF CONDUIT AGAINST RUST

The outer surface of conduit including all bends, unions, tees, junction boxes etc. forming part of conduit system shall be adequately protected against rust when such system is exposed to weather by being painted with two coats of oxide paint applied before they are fixed. In all cases, no bare threaded portion of conduit pipe shall be allowed. Unless such bare thread portion of conduit is treated with anticorrosive preservative or covered with approved plastic compound.

5.4.5 PAINTING OF CONDUIT AND ACCESSORIES

After installation, all accessible surface (if any) of conduit pipes, fittings etc. shall be painted with two coats of approved enameled paint or aluminium paint as required to match the finish of surrounding wall, trusses etc.

5.4.6 RECESS CONDUIT

The chase in the wall shall be neatly made and of ample dimensions to permit the conduit to be fixed in the manner desired. In the case of building under construction, conduit shall be buried in the wall before plastering and shall be finished neatly after erection of conduit. Incase of exposed brick/rubble masonry work, special care shall be taken to fix the conduit and accessories in position along with the building work. Entire work of chasing the wall, fixing the conduit in chases, and burring the conduit in mortar before plastering shall form part of point wiring work.

The conduit pipe shall be fixed by means of staples or by means of saddles not more than 60cm apart or by any other approved means of fixing. Fixing of standard bends and elbows shall be avoided as far as practicable and all curves maintained by bending the conduit pipe itself with the long radius, which shall permit easy drawing in of conductors. All threaded joints of conduit pipe shall be treated with some approved preservative compound to secure protection against rust. Suitable inspection boxes to the barest minimum requirements shall be provided to permit periodical inspection and of facilitate replacement of wires, if necessary. These shall be mounted flush with the wall. Suitable ventilating holes shall be provided in the inspection box covers. Wherever the length of conduit run is more than 10 meters, then circular junction box shall be provided.

5.4.7 METAL OUTLET BOXES & COVERS

The switch box shall be made of modular metal boxes with suitable size modular cover plates. Modular metal box shall be made of mild steel on all sides except on the front.

The metal box (other than modular type) shall be made of metal on all sides except on the front. Boxes shall be hot dip galvanized mild steel. Metal boxes upto 20 x 30 cm size M.S. box shall have wall thickness of 18 SWG and MS boxes above 20 x 30 cm size shall be of 16 SWG. The metallic boxes shall be painted with anticorrosive paint before erection. Clear depth of the box shall not be less than 60mm. All boxes shall be covered from top with Phenolic laminated sheet of approved shade. These shall be of 3 mm thick synthetic phenolic resin bonded laminated sheet as base material and conform to grade P-I of IS: 2036-1994.

5.4.8 ERECTION AND EARTHING OF CONDUITS

The conduit of each circuit or section shall be completed before conductors are drawn in. The entire system of conduit after erection shall be tested in presence of HSCC Electrical Engineer for mechanical and electrical continuity throughout and permanently connected to earth conforming to the requirement by means of special approved type of earthing clamp effectively fastened to conduit pipe in a workmen like manner for a perfect continuity between the earth and conduit.

5.4.9 SWITCHES

All 5 and 15 Amp switches shall be modular type of 240 volts A.C. grade. All switches shall be fixed on modular metal boxes. All 5 Amp socket shall be 3 pin type

and 15 Amp socket shall be 5/6 pin type (unless otherwise specified) suitable for 15/5 Amp. All modular switches, sockets, telephone outlets, TV outlet etc. shall be in off white finish unless otherwise specified. The switches controlling the lights or fans shall be connected to the phase wire of the circuit. Switch boards shall be located at 1200 mm above finished floor level unless otherwise indicated on drawings or directed by Engineer-In-Charge.

In case of computer power points, power points, telephone points etc. to be fixed on laminated partition board (furniture), same shall be fixed on laminated board (portion of laminated board meant for fixing power points) with base plate/cover plate as applicable, duly fixed with screws.

5.4.10 COVER PLATE

All modular switches, sockets, telephone outlets etc. shall be fixed modular metal boxes with modular base plates and modular cover plates on top.

5.4.11 WALL SOCKET PLATE

Each outlet shall have a switch located beside the socket preferably on the same cover plate/modular base. The earth terminal of the socket shall be connected to the earth wire.

5.5 WIRING.

All PVC insulated copper conductor wires shall conform to relevant IS Codes. All wires/cables shall be stranded type irrespective of its size. Cable conductor size and material shall be specified in BOQ.

All internal wiring shall be carried out with PVC insulated wires of 650/1100 volts grade. The circuit wiring for points shall be carried out in looping in system and no joint shall be allowed in the length of the conductors. Circuit wiring shall be laid in separate conduit originating from distribution board to switch board for light/fan. A light/fan switchboard may have more than one circuit but shall have to be of same phase.

Looping circuit wiring shall be drawn in same conduit as for point wiring. Each circuit shall have a separate neutral wire. Neutral looping shall be carried out from point to point or in light/fan switchboards. A separate earth wire shall be provided along with circuit wiring for each circuit. For point wiring red/yellow/blue colour wire shall be used for phase and black colour wire for neutral. Circuit wiring shall be carried out with red, yellow or blue colour PVC insulated wire for RYB phase wire respectively and black colour PVC insulated wire for the neutral wires. Bare copper wire shall be used as earth continuity conductor and shall be drawn along with other wires. No wire shall be drawn into any conduit until all work of any nature, that may cause injury to wire is completed. Care shall be taken in pulling the wires so that no damage occurs to the insulation of the wire.

Before the wires are drawn into the conduit, the conduits shall be thoroughly cleaned of moisture, dust and dirt. Drawing and jointing of copper conductor wires and cables shall be as per CPWD specifications.

Maximum number of PVC insulated 650/1100 V grade aluminium/copper conductor cable conforming to IS : 694 - 1990

Nominal Cross-Sectional area of conductor in Sq.mm.	25mm		32mm		38mm		51mm		64mm	
	S	B	S	B	S	B	S	B	S	B
1	4	5	6	7	8	9	10	11	12	13
1.5	10	8	18	12	-	-	-	-	-	-
2.5	8	6	12	10	-	-	-	-	-	-
4	6	5	10	8	-	-	-	-	-	-
6	5	4	8	7	-	-	-	-	-	-
10	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 :

1. The above table shows the maximum capacity of conduits for a simultaneous drawing in of cables.

2. 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.

3. Conduit sizes are the nominal external diameters.

5.5.1 JOINTS.

All joints shall be made at main switches, distribution board socket and switch boxes only. No joint shall be made in conduits and junction boxes. Conductors shall be continuous from outlet to outlet.

5.5.2 LOAD BALANCING

Balancing of circuits in three-phase installation shall be planned before the commencement of wiring and shall be strictly adhered to.

5.5.3 COLOUR CODE FOR CIRCUIT WIRING.

Colour code for circuit and sub main wiring installation shall be Red, Yellow, and Blue for three phases. Black for neutral and yellow/green or green only for earth incase of insulated earth wire.

6.0 LT CABLES

6.1 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.

6.2 MATERIAL

The L.T. power cable shall be XLPE Cable PVC insulated PVC sheathed type aluminium conductor armoured cable and L.T. control cable shall be PVC insulated PVC sheathed type copper conductor unarmoured cable conforming to IS: 7098: 1988 (Part-I) with up to date amendments.

6.3 INSTALLATION OF CABLES

Cables shall be laid directly in ground, pipes, masonary ducts, on cable tray, surface of wall/ceiling etc. as indicated on drawings and/or as per the direction of HSCC Electrical Engineer. Cable laying shall be carried out as per CPWD specifications.

6.4 INSPECTION

All cables shall be inspected at site and checked for any damage during transit.

6.5 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.

6.6 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 metre. Cables shall be laid at depth of 0.75 metres below ground level for LT Cables and 1 metre below ground level for HT cable. 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 along side 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.

Cable route marker shall be provided as per CPWD specifications. Cost of cable route markers is deemed to be included in the cost of cables/cable laying.

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 cable 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. Pipes for cable crossing the road shall be laid at a depth of 1000 mm.

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 surfaces, road ways, side walks, curbs, 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/ladders. 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 centres. 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. Tray tags are to be tied at all bends. On straight lengths, tags shall be provided at every 5 metres.

6.7 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.

a. Before laying.
b. After laying.
c. After jointing.

Along with the test as prescribed in IS Code, cross sectional area shall also be checked. On completion of cable laying work, the following tests shall be conducted in the presence of the Engineer in Charge.

a. Insulation Resistance Test (Sectional and overall).

b. Continuity Resistance Test.

c. 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, equipments and labour for conducting the above tests & shall bear all expenses of conducting such tests.

7.0 EARTHING

7.1 GENERAL

All the non-current metal parts neutral of transformers & DG set etc of electrical installation shall be earthed properly. All metal conduits trunking, switchgear, distribution boards, switch boxes, outlet boxes, and all other parts made of metal shall be bonded together and connected by means of specified earthing conductors to an efficient earthing system. Earthing work shall conform to CPWD General Specifications for Earthing work shall conform to Internal) -1994 and IS 3043 amended up to Date.

7.2 EARTHING CONDUCTOR

Earth continuity conductor along with submain wiring from Main/Sub Distribution boards to various distribution boards shall be of copper. Earth continuity conductor

from distribution board onward up to outlet point shall also be of bare copper. Earth continuity conductor connecting Main & Sub Distribution boards to earth electrode shall be with galvanised MS strip.

7.3 SIZING OF EARTHING CONDUCTOR

Single phase distribution board shall have one earth continuity conductor while three phase distribution board shall be provided with two earth continuity conductors. Earthing of main switch board and sub switch boards shall be earthed with two independent earth electrodes or as indicated elsewhere. Earth conductor laid in ground shall be protected for mechanical injury & corrosion by providing GI pipe.

7.4 **Earthing System – specification**

Earthing system should comply to the requirements specified below. Earthing system should offer a resistance less than 5 ohms throughout the year. In places where Soil resistivity is more, multiple earth electrodes are to be installed to get the required value. Length of the earthing rod also can be increased to achieve low and stable resistance value.

Solid rods are recommended as earth electrode than a pipe due to the fact that solid rods can be easily driven by hydraulic hammers. Deep driven rods provide more stable and less Earth Resistance. Doubling the length of the rod will reduce earth resistance up to 40 %, where as doubling the diameter will reduce the resistance by only 10 %, but may increase the cost by 4 times. Lower earth resistance can also be achieved by increasing the number of earth rods. E.g. 40 % reduction in earth resistance is possible if the rods are increased from 1 to 2. The minimum spacing between earth pits should be equal to the length of the rod. Increasing the spacing between earth pits also reduces the earth resistance significantly.

Need and importance of Earthing:

- Human and Personnel safety.
- Equipment protection.
- Provides low impedance path for fault currents.
- To ensure good quality power.
- Protection against lightning and transient currents, noise reductions, Limitation of EMI.

References:

IEC 60364: Low Voltage Electrical Installations-Part 5-54: Selection & Erection of Electrical equipment- Earthing arrangement & protective conductors.
IEC 62561: Lightning Protection system Components.
IEC 62305: Protection Against Lightning –Part 3: Protection of structures & life Hazards
UL 467: Grounding and Bonding Equipments
UL96: Lightning Protection System – Components
IS 2309: Code of practice for protection of buildings & allied structures from lightning
IS 3043: Code of practice for earthing.

Components of earthing system:

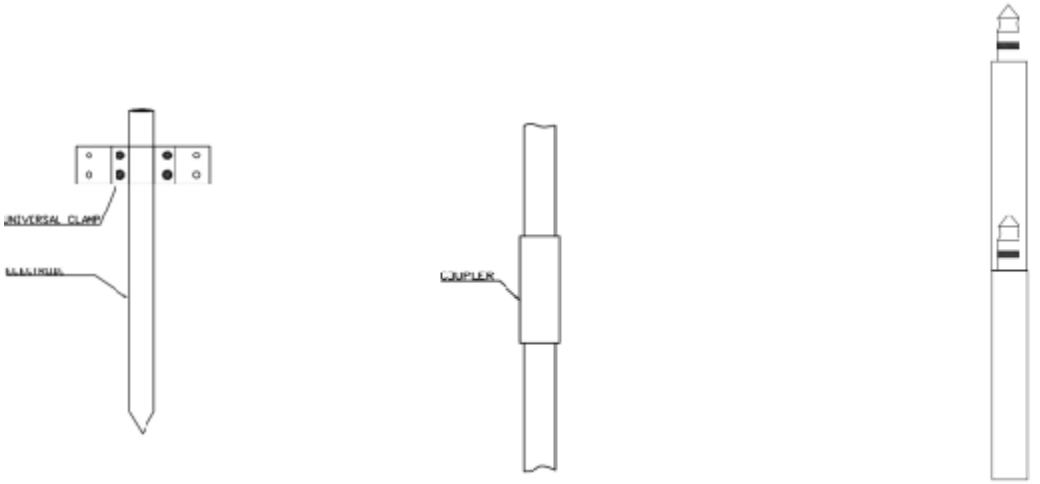
- Earth electrode

- Couplers and Connectors
- Inspection Chamber (Earth Pit)
- Earth enhancement material
- Connecting cable/tape/strip with accessories.

Earth Electrode:
Copper coated Solid steel Rods shall be made of high tensile low carbon steel rod, with molecular bonded with 99.9% electrolytic copper with minimum coating thickness of 250 microns. The minimum length of the earth rod shall be 3 meters which is either a single rod or smaller rods with couplers or similar arrangement. For dry areas, length of the rods can go up to 9 meters. The vendor should quote price of the rod in length of 3 meters. The rod as well as the couplers should satisfy the requirements as per the above-referred standards. For Lightning protection application rods should have a diameter of 14.2 mm or 17.2 mm. In order to carry fault current, earth rods used in Power networks should be of diameter 20 mm or 25 mm. In case of applications more than 3 meters, diameter of the rod should be 20 or 25 mm. These rods also should have facility to drive with an electric/hydraulic hammer.

Interconnecting Strips / Earthing Conductor: Copper coated steel strips / tapes should be used to interconnect different earthing rods as well as horizontal earthing (Ring earthing). These strips should have a coating thickness of minimum 70 microns and have minimum cross sectional area of 90 Sqmm. (Eg 30 X 3 strip)

Couplers / Connecting clamps:
Couplers for interconnecting rods should be made of Brass or any other copper alloy, which is resistant to corrosion. For rods with diameters larger than 20 mm self locking arrangements are preferable instead of couplers. Connectors for connecting Electrode with Earthing conductor/strip should be of Brass/copper alloy or copper coated steel. Fasteners should be made of Stainless steel. Size should be selected according to the electrode and earthing conductor dimensions. Different arrangements should be as per the below fig.



Inspection Chamber :
Should have an inner dimension of 250 mmX 250 mm X 250 mm made of FRP material. Flush Mounted,
removable and lockable cover of the earth pit should be able to withstand 15KN. The area inside the inspection chamber should be such that, the UNIVERSAL CLAMP/EBB/Bus bar is not too deep inside the inspection chamber or projecting out of inspection chamber. The

chamber should have facility for marking earth resistance and latest testing date by paint at the cover and previous recorded values inside the cover.

Earth Enhancement material:

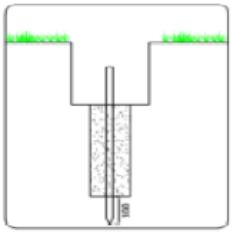
This is a conductive compound producing low resistance of an earth termination system. Earth enhancing
compound shall be so designed and constructed that in normal use their performance is reliable and without danger to persons and the surroundings. The material shall be chemically inert to sub soil and shall not pollute the environment. It shall provide a stable environment in terms of physical and chemical properties and exhibit low resistivity. It shall not be corrosive to the earth electrode itself. The material should have a resistivity less than 50 Ohm meter

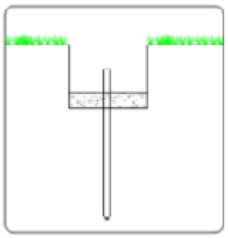
Installation:

Normal soil in Marsh land: Electrodes can be hand driven or hammered into earth for the required length.

Semi Hard Soil: Electrodes can be hammered electrically or hydraulically for the required length.

Hard Soil: Bore a hole with a minimum diameter of 100 MM with at a depth of up to 3 meters. Place the electrode at the centre of the hole in such a way that bottom 100 mm of the electrode is in bond with the
mother soil. For deep driven rods with depth more than 3 meters, remaining length of the rod should be driven into the mother soil. (ref fig)Fill the hole with earth enhancement compound.





Inspection & maintenance:

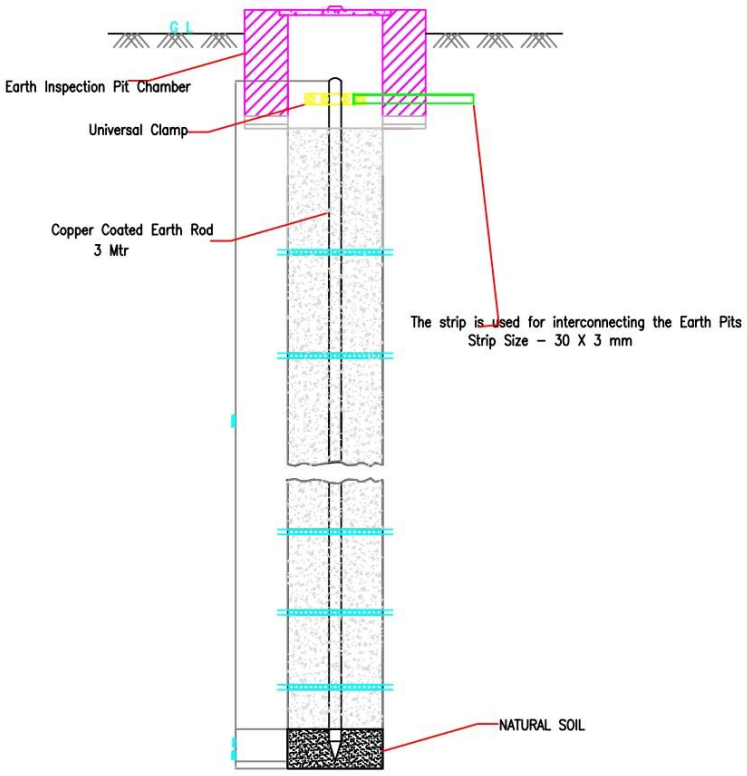
Maintenance of the earthing system has to be done at least once in 6 months, preferably before the monsoon period and a record should be maintained to verify earthing system conductors and components, electrical continuity, earth resistance value, re-fastening of components viz-nuts, bolts etc.

Drawing:

Layout of the complete earthing system with dimensions shall be submitted.

Warranty: Earthing system should provide stable resistance for a period of 18 months after installation as well as for full season. During this period monthly readings are to be recorded by the end user.

Earthing Arrangement



Note: we have to auger the soil up to 1mtr with 100 mm dia and fill up the pit with the 25 kg compound.

8.0 UPS System

PART 1 - GENERAL

8.01 SUMMARY

A. This specification describes a three-phase continuous duty, on-line, double conversion, solid-state uninterruptible power system, hereafter referred to as the UPS. The UPS shall operate in conjunction with the existing building electrical system to provide power conditioning, back-up and distribution for critical electrical loads. The UPS system shall consist of, as required by the project, the UPS module, battery racks, static or maintenance bypass, and other features as described in this specification.

B. UPS level redundancy: All the UPS systems should operate in parallel redundant load sharing mode and all UPS systems should share the load equally. In case any UPS fails, the other UPS should take over 100% load instantaneously without break. Apart from above there are some UPS Units which are standalone units, all standalone UPS Should have static or maintenance bypass as inbuilt. Please refer BOQ for details on redundancy / standalone units.

8.02 UPS SYSTEM DESCRIPTION

A. The System Components: it shall be consist of the following main components:

1. Rectifier, Inverter, and Battery Charger.
2. Battery string(s) in Battery Racks.
3. Battery Breaker
4. Battery to Battery Interconnects / Battery to UPS Connections.

B. UPS: Each UPS shall operate as an on-line, fully automatic system in the following modes:

1. Normal: Utilizing commercial AC power, the critical load shall be continuously supplied by the Inverter. The Inverter shall power the load while regulating both voltage and frequency. The Rectifier shall derive power from the commercial AC source and shall supply DC power to the Inverter. Simultaneously, the Battery Charger shall charge the battery.
2. Battery: Upon failure of the commercial AC power, the critical load shall continue to be supplied by the Inverter, which shall obtain power from the batteries without any operator intervention. There shall be no interruption to the critical load upon failure or restoration of the commercial AC source.
3. Recharge: Upon restoration of the AC source, the Charger shall recharge the batteries and simultaneously the Rectifier shall provide power to the Inverter. This shall be an automatic function and shall cause no interruption to the critical load.
4. Bypass: If the UPS must be taken out of the Normal mode for overload, load fault, or internal failures, the static bypass switch shall automatically transfer the critical load to the commercial AC power. Return from Bypass mode to Normal mode of operation shall be automatic. No-break transfer to and from Bypass mode shall be capable of being initiated manually from the front panel.

8.03 REFERENCES

A. UL 1778 (Underwriters Laboratories) – Standard for Uninterruptible Power Supply Equipment.

B. IEC 62040-1-1 (International Electrotechnical Commission) – Uninterruptible power systems (UPS) – Part 1-1: General and safety requirements for UPS used in operator access areas.
C. IEC 62040-1-2 (International Electrotechnical Commission) – Uninterruptible power systems (UPS) – Part 1-2: General and safety requirements for UPS used in restricted access locations.
D. IEC 62040-3 (International Electrotechnical Commission) – Uninterruptible power systems (UPS) – Part 3: Method of specifying the performance and test requirements.
E. NEMA PE-1 – (National Electrical Manufacturers Association) – Uninterruptible Power Systems standard.
F. IEEE 587 (ANSI C62.41) Category A& B (International Electrical and Electronics Engineers) – Recommended practices on surge voltages in low voltage power circuits.

8.04 SUBMITTALS

A. The UPS system shall be supplied with sufficient documentation, including the following manuals:

1. Installation and Operation Manual: One copy of the installation and operation manual shall be furnished. It shall possess sufficient detail and clarity to enable the owner's technicians or representatives to install and operate the UPS equipment and accessories. The manual shall include the following major items:

a) UPS description
b) UPS site planning and unpacking
c) UPS installation
d) Optional accessory installation
e) UPS theory of operation
f) Operating procedures
g) System events
h) UPS maintenance
i) Performance and technical specifications
j) Wiring requirements and recommendations
k) Physical features and requirements

8.05 QUALIFICATIONS

A. The UPS manufacturer shall have ISO 9001 certification for engineering/R&D, manufacturing facilities and service organization.

B. The UPS manufacturer shall maintain a staffed 7x24x365 service availability for technical and emergency support.

C. Field Engineering Support: The UPS manufacturer shall directly employ a field service department staffed by factory-trained field service engineers dedicated to startup, maintenance, and repair of UPS equipment. Third-party maintenance will not be accepted.

D. Spare Parts Support: Parts supplies shall be located in the field to provide all emergency needs.

8.06 ENVIRONMENTAL REQUIREMENTS

A. The UPS shall withstand any combination of the following external environmental conditions without operational degradation.

1. Operating Temperature: 0 degrees C to + 40 degrees C without de-rating (excluding batteries).
2. Storage Temperature: - 25 degrees C to + 50 degrees C.
3. Relative Humidity (operating and storage): 95% maximum non-condensing.
4. Elevation: Operational: 1000 meters maximum without de-rating.

8.07 SAFETY

CE & IEC 62040-1

8.08 UPS STANDARD FEATURES

The UPS configuration shall consist of the following standard components and features:

A. Each UPS should consist of:

1. Rectifier/Charger: Each rectifier/charger shall convert incoming AC power to regulated DC output for supplying the inverter and for charging the battery. The rectifier/charger shall be a high-frequency PWM design, using Insulated Gate Bi-polar Transistors (IGBTs). The modular design of the UPS shall permit safe and fast removal and replacement of the rectifier/charger module. The rectifier/charger module shall also provide the following:

a) The rectifier shall be capable of drawing power from the utility with a power factor of 0.99 under nominal conditions.

b) The rectifier shall feature protection circuitry that prevents the IGBTs from sourcing current in excess of their published ratings.

2. Inverter: Each inverter shall feature an IGBT pulse-width-modulation (PWM) design with high speed switching. The inverter shall also have the following features:

a) The inverter shall be capable of providing the specified quality output power while operating from any DC source voltage (rectifier or battery) within the specified DC operating range.

b) The modular design of the UPS shall permit safe and fast removal and replacement of the inverter module.

c) The inverter shall feature protection circuitry that prevents the IGBTs from sourcing current in excess of their published ratings.

B. STATIC BYPASS: The bypass shall serve as an alternative source of power for the critical load when an abnormal condition prevents operation in normal mode. The bypass shall consist of a fully rated, continuous duty, naturally commutated static switch for high-speed transfers. The bypass shall feature the following transfer and operational characteristics.

1. Transfers to bypass shall be automatically initiated for the following conditions:

   a) Output overload period expired.

   b) Critical bus voltage out of limits.

   c) Internal over temperature period expired.

   d) Total battery discharge.

   e) UPS failure.

2. Uninterrupted automatic re-transfer shall take place whenever the inverter is capable of assuming the critical load.

3. Uninterrupted automatic re-transfers shall be inhibited for the following conditions:

   a) When transfer to bypass is activated manually or remotely.

   b) In the event of multiple transfers/re-transfer operations the control circuitry shall limit "cycling" to three (3) operations in any ten-minute period. The fourth transfer shall lock the critical load on the bypass source.

   c) UPS failure.

4. Uninterrupted manual transfers shall be initiated from the control panel. Uninterrupted manual transfers to bypass and from bypass shall be possible with the inverter logic. During manual transfers to bypass mode, the inverter must verify proper bypass operations before transferring the critical load to the bypass.

5. All transfers to bypass shall be inhibited for the following conditions:

   a) Bypass voltage out of limits (+/- 10% of nominal)

   b) Bypass frequency out of limits (+/- 3 Hz, adjustable, factory set)

   c) Bypass out of synchronization

d) Bypass phase rotation / installation error

6. Static transfer time: No break, complete in less than 4ms.

7. The bypass shall be manually energized using the control panel

C. Monitoring and control components: The following components shall provide monitor and control capability:

1. Control panel with status indicators.

2. Alarm and metering display.

3. Building alarm monitoring.

4. Communication ports.

D. Battery management system: The UPS shall contain a battery management system which has the following features:

1. The battery management system shall provide battery time remaining while operating in normal mode and battery mode. Battery time available information shall be displayed real-time, even under changing load conditions. Upon commissioning, battery runtime information shall be available.

E. Wiring Terminals: The UPS module shall contain mechanical compression terminals for securing user wiring to the following locations:

1. Rectifier/charger input connections (3-wire plus ground)

2. Bypass input connections (3-wire plus ground for 3-wire plus ground output configuration (415Vac), or 4-wire plus ground for 4-wire plus ground output configuration)

3. DC link connections for battery cabinets (positive and negative).

4. AC output connections (3 or 4 wires plus ground).

8.09 UPS SYSTEM OPTIONS AND ACCESSORIES

The UPS system shall consist of the following options and accessories as required:

A. SNMP Network Adapter and UPS Power Monitoring Software (OPTIONAL): SNMP adapters shall provide a communications interface between the UPS module and SNMP-compatible network management systems. This capability shall allow the unit to be monitored remotely over an Ethernet network using a standard web browser.

B. MODBUS CARD – Required with each UPS.

C. Battery Rack: The battery rack shall house valve regulated, high-rate discharge, lead-acid batteries which provide energy to the support the critical load during a momentary loss of input power to the rectifier. The battery rack shall have the following features:

1. Power wiring internal to each battery cabinet shall be using Nyvin cables.
2. Each battery rack shall feature a DC rated circuit breaker (inbuilt or wall mount). The circuit breaker within the battery rack shall only provide protection to the battery string within that battery
3. Power and Control wiring between the battery rack and the UPS
4. BATTERY TYPE: 12V, VRLA SMF batteries
5. Battery Back-up: As per BOQ

8.10 UNINTERRUPTIBLE POWER SUPPLY RATINGS AND OPERATING CHARACTERISTICS

A Each UPS Continuous Ratings.

Please refer BOQ for ratings.

A. Rectifier/charger input:

1. Nominal three phase input voltage: 415 VAC:

   3-wire plus ground input
2. Operating input voltage range: + 10%, - 15% of average nominal input voltage without battery discharge.
3. For 50Hz systems, operating input frequency range shall be 45 to 55Hz.
4. Input power factor 0.99 lagging.
5. IGBT Based Technology
6. Normal input current limit: The UPS shall have the following programmable input current limit settings while operating in normal mode:
   a) Rectifier/charger input current limit shall be adjustable from 100 to 115% of full-load input current.
   b) Battery input current limit shall be adjustable from 10% to 15% of the UPS full load input current regardless of the actual load on the UPS.
7. On generator input current limit: The UPS shall have the following programmable input current limit settings while operating in normal mode on generator:
   a) Rectifier/charger input current limit shall be adjustable from 100% to 115% of full-load input current.
   b) Battery recharge input current limit shall be adjustable from 10% to 15% of the UPS full load input current regardless of the actual load on the UPS.

8. Input current total harmonic distortion (THD) shall be less than 5.0% @ 100% linear load condition.
9. Power walk-in: Ramp-up to full utility load adjustable from 3 seconds to 60 seconds.
10. Each UPS should be offered with Output Isolation Transformer, external to UPS. Isolation Transformer should be 1:1 Winding, H Insulation Class, Indoor Type, Air Cooled, Delta / Star Type.

B. Bypass input:

1. Synchronizing bypass voltage range shall be +/- 10% of average nominal input voltage.
2. Synchronizing bypass frequency range is centered on the nominal frequency.
3. Bypass and rectifier inputs can be supplied from out of phase sources if required.
4. Input surge withstand capability: The UPS shall be in compliance with IEEE 587 (ANSI C62.41), category A & B (6kV) **or better**

C. Rectifier/charger output:

1. Nominal DC voltage shall be as per vendor design.
2. Steady state voltage regulation shall be +/- 0.5%.
3. Voltage ripple shall be less that 0.5% (peak-to-peak).
4. Capacity: The rectifier/charger shall support a fully loaded inverter and recharge the battery to 90% of its full capacity within 10 times the discharge when input current limit is set at maximum.
5. Low line operation: The rectifier/charger shall be capable of sharing the DC load with the battery when the input voltage falls below the specified operation input voltage range, the on battery indicator shall enunciate operation in this mode.
6. DC sensing: Redundant DC voltage sensing methods shall be incorporated for providing battery over-voltage protection.
7. Battery charger characteristics: The UPS battery charging system shall have the following characteristics:

a) The charger shall be capable of being configured for several charge modes including:

(1) A charging mode that increases battery life by allowing the battery to rest, reducing positive plate corrosion

(2) A charging mode floating the battery at a set level, which can be adjusted via software, used for flooded cell applications

(a) Nominal Float Voltage: 2.25 V per cell.

(b) Equalizing Voltage: 2.38 V maximum per cell (adjustable).

(c) Automatic (time based) or manual (user initiated) equalization available

b) UPS will automatically adjust battery shutdown based upon loading and battery capacity.

(1) The UPS shall automatically adjust the final discharge voltage between 1.67 and 1.75 Volts per cell based on the existing load and the rate and length of discharge.

(2) The absolute minimum operational voltage is 1.67 V per cell (adjustable).

8. The UPS will automatically disconnect the battery system in case of full battery discharge followed by prolonged utility AC voltage failure. The time window before battery disconnection occurs shall be programmable for both time and voltage.

D. UPS output in normal mode

1. 415V, 3-phase, 3-wire or 4 wire plus ground. Output wiring configuration is based upon input wiring configuration for systems without internal transformers.
2. Steady-state voltage regulation (in inverter) shall be within +/- 1% average from nominal output voltage.
3. Transient voltage response shall be < +/- 5% from nominal voltage for 100% load step, full load re-transfers and full load drop on battery.
4. Transient voltage recovery shall be 25ms to within +/- 1% of steady state.
5. Linear load harmonic distortion capability: Output voltage THD of less than 3% for 100% linear load.
6. Non-linear load harmonic distortion capability: Output voltage THD of less than 5% for 100% non-linear load when tested using the non-linear load described in IEC 62040-3 connected line to neutral.
7. Manual output voltage adjustment shall be +/- 3% from nominal.
8. Line synchronization range shall be +/- 3Hz, adjustable to +/- 5Hz.
9. Frequency regulation shall be +/- 0.01Hz free running.
10. Frequency slew rate shall be 1 Hz/second maximum (adjustable).
11. Static transfer time: No break, completed in less than 4ms.
12. EMI Suppression: The UPS shall meet IEC 62040-2, EN50091 Class A restricted limits
13. Efficiency: The UPS efficiency in Online Mode should be

    >= 92% for UPS Rating <= 60 KVA

    >=94% for UPS Rating >60 KVA

8.11 MECHANICAL DESIGN

A. Ventilation: The UPS shall be designed for forced-air cooling. Air inlets shall be on the front of the unit. Air outlets shall be on the top / back as per OEM.

B. Cable entry: Standard cable entry for the UPS cabinet shall be through either the enclosure bottom or top. A dedicated wireway shall be provided within the UPS cabinet for routing user input and output wiring.

C. Front access: All serviceable subassemblies shall be modular and capable of being replaced from the front of the UPS (front access only required). Side or rear access for installation, service, repair or maintenance of the UPS system shall not be required.

8.12 CONTROLS AND INDICATORS

A. Microprocessor controlled circuitry: The UPS controls shall have the following design and operating characteristics:

1. Fully automatic operation of the UPS shall be provided through the use of microprocessor controlled Digital Signal Processing. DSP shall eliminate variances from component tolerance or drift, and provide consistent operational responses.
2. All operating and protection parameters shall be firmware controlled, thus eliminating a need for manual adjustments. The logic shall include system test capability to facilitate maintenance and troubleshooting. Printed circuit board replacement shall be possible without requiring calibration.
3. Start-up and transfers shall be automatic functions.

B. Digital Front Panel Display: The LCD shall display UPS status, metering, battery status, alarm/event queue, active alarms and UPS configurations. The front panel display shall show a system mimic diagram with an outlined power path, current operating mode and event logs.

C. Control Panel Indicators: The UPS control panel shall provide the following monitoring functions with indicator LED's:

1. NORMAL: This shall indicate that the commercial AC utility or generator source is supplying power to the rectifier and the inverter is supporting the critical load. A text message shall indicate if the bypass line is not within tolerance.
2. BYPASS: This shall indicate that the UPS has transferred the load to the bypass circuit.
3. BATTERY: This shall indicate that the commercial AC utility or generator source has failed and the battery is supplying power to the inverter, which is supporting the load. A text message shall indicate if the battery charge is low or if the battery is installed but disconnected.

4. ALARM: This shall indicate that the UPS detects an alarm condition, outlined in detail in the operator's manual.

D. Control Panel Controls: The UPS control panel shall provide the following functions from front panel push buttons:

1. EVENTS: Displays the list of Active System Events and a historical log of system events. Historical logs shall include a detailed time stamped list.
2. METERS: Displays performance meters for the system or critical load. When selected, the front display shall show individual screens of input parameters, output parameters or bypass parameters including; voltage, current and frequency. In addition, the battery display shall show runtime remaining.
3. CONTROLS: Displays a System Controls screen. Allows selection of operating mode, normal, bypass, charger on/off and Power Module on/off.
4. SETUP: Allows display contrast, date and time information serial communication port configuration and display of firmware revision numbers.
5. RETURN: Confirms selection or returns to previous screen.

8.13 COMMUNICATIONS

A. MODBUS Card (Mandatory) is required with each UPS for integration with Building Management System

B. SNMP Card – (Optional) Should be available for monitoring UPS on LAN/WAN Network

8.14 UPS PROTECTION

A. Rectifier/Charger and Bypass protection shall be provided through fusing.

B. Battery protection shall be provided by molded-case circuit for an external battery bank.

C. Electronic current limiting circuitry and fuses in the Inverter circuit shall provide output protection.

D. To comply with agency safety requirements, the UPS shall not rely upon any disconnect devices outside of the UPS to isolate the battery rack from the UPS.

PART 2 - EXECUTION

8.15 INSTALLATION

A. Install in accordance with manufacturer's instructions.

8.16 COMMISSIONING

A. The following procedures and tests shall be performed by Field Service personnel during the UPS startup "as minimum activities"

1. Visual Inspection:
   a) Visually inspect all equipment for signs of damage or foreign materials.
   b) Observe the type of ventilation, the cleanliness of the room, the use of proper signs, and any other safety related factors.
2. Mechanical Inspection:
   a) Check all the power connections for tightness.
   b) Check all the control wiring terminations and plugs for tightness or proper seating.
3. Electrical Pre-check:
   a) Check the DC bus for a possible short circuit.
   b) Check input and Bypass power for proper voltages and phase rotation.
   c) Check all lamp test functions.
4. Initial UPS Startup:
   a) Verify that all the alarms are in a "go" condition.
   b) Energize the UPS module and verify the proper DC, walkup, and AC phase on.
   c) Check the DC link holding voltage, AC output voltages, and output waveforms.
   d) Check the final DC link voltage and Inverter AC output. Adjust if required.
   e) Check for the proper synchronization.
   f) Check for the voltage difference between the Inverter output and the Bypass source.
5. Operational Training: Before leaving the site, the field service engineer shall familiarize responsible personnel with the operation of the UPS. The UPS equipment shall be available for demonstration of the modes of operation.

9.0 Audio Video Solution & Stage luminaries for Auditorium

Video Wall Display	Supply, installation, testing & commissioning of Videowall Display . Diagonal Size : 55 Inch or better. Type : D-LED DID or better . Resolution : 1920 X 1080(FHD) or better . Pixel Pitch : 0.63mm(H) * 0.63mm(V) or better . Brightness : 700 nit or better . Contrast Ratio : 4000:1 or better . Viewing Angle(H/V) : 178/178 or better . Response Time(G-to-G) : 8ms or less. Display Colors : 8 bit - 16.7M or better . Color Gamut : 72% or better . Dynamic Contrast Ratio : Mega Dcr or better . H-Scanning Frequency : 30kHz ~ 81kHz or better . V-Scanning Frequency : 48Hz ~ 75Hz or better . Maximum Pixel Frequency : 148.5MHz or better . Input : Analog D-SUB, DVI-D, Display Port 1.2 , HDMI2.0 x 2 , Stereo mini Jack or better . Output : DP1.2(Loop-out) or better . External Control : RS232C(in/out), RJ45 or better . Bezel Width (mm) : 1.15mm(U/L), 0.55mm(R/B) or better.
Video wall mount with quick lock push system	Professional video wall mount with quick lock push system . Professional video wall mount with quick lock push system . Should be Designed for screens up to 70" (177cm) / 75kg (165lbs) or better . Should support screens with VESA mounting patterns upto 400MMx 400mm or better . VESA Compatibility : 75 x 75, 100 x 100, 200 x 100, 200 x 200, 200 x 300, 300 x 200, 300 x 300, 400 x 200, 400 x 300, 400 x 400 or better . Easy tilt adjustment +/-15° or better . Should feature two swivel points: 180° at wall and 240° at interface or better . Should allow cable management or better . Should have on wall levelling system or better for efficient installation
PC with back end software	Intel® Core™ i7-6700 Processor with Intel® HD Graphics 530 (3.4 GHz base frequency, up to 4 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores).Windows 10 Pro 64. 1 TB 7200 rpm SATA. 8 GB DDR4-2133 SDRAM (1 x 8 GB).Intel® HD Graphics 530. With HDMI.
Wireless presentation system	Multi-user, multi-source wireless collaboration. Remote configuration via web browser built-in WAP mode for on- or off-network deployment. Mirroring support for Android and iOS mobile devices including iOS 11. Display-side control of shared media synchronous desktop audio streaming.
Wooden Podium	Wooden Podium with customised AIIMS logo
WIFI Router	Wifi Router
Ethernet Switch	The network switch should offer atleat 52 PoE ports and 2 SFP ports. The switch should be preconfigured and also switch should be a Layer 3 Gigabit Ethernet Managed Switch which should offer IGMP snooping.
Video Over IP Encoder	The encoder should be AV over IP solution. The compression format shall be minimally compressed or uncompressed. The encoder should have ateleast 2 RJ45 network ports (one PoE) & also include control ports of 1 no RS-232 & 1 no IR. It should include 1 VGA input port and 1 HDMI input port. It should also support resolution upto 1920 X 1200 @60 Hz. Latency should be less than 10ms @ 60 fps. It should support HDCP & EDID. Encoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices.

Video Over IP Wallplate Encoder with KVM Switch	The wall plate encoder should be AV over IP solution. The compression format should be minimally compressed or uncompressed. The encoder should have ateleast 2 RJ45 network ports (one PoE). The encoder should include 1 VGA input port and 1 HDMI input port & support resolution upto 1920 X 1200 @60 Hz. Latency should be less than 10ms @ 60 fps. Encoders should support HDCP & EDID. Enooders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices
Video Over IP Decoder	The decoder should be AV over IP solution. The compression format should be minimally compressed or uncompressed. The decoder should have atleast 2 RJ45 network ports (one PoE). It should include control ports atleast 1 RS-232 & 1 IR. It should include 1 HDMI output port. It should support resolution upto 1920 X 1200 @60 Hz. It should have latency less than 10ms @ 60 fps. It should have inbuilt scaler facility. Comined latency including scaler should be less than 27ms @ 60 fps. It should support HDCP & EDID. Decoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices.
Video Over IP Decoder Card	The card based decoder should be AV over IP solution. The card based decoder should be mounted inside rack mount cage which can power the units. The compression format should be minimally compressed or uncompressed. The card based decoder should have atleast 2 RJ45 network ports (one PoE) & should include control ports of atleast 1 RS-232 & 1 IR. Card based decoders should include 1 HDMI output port & support resolution upto 1920 X 1200 @60 Hz. Latency should be less than 10ms @ 60 fps. Decoders should have inbuilt scaler facility & combined latency including scaler should be less than 27ms @ 60 fps. It should support HDCP & EDID. Card based decoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices.
Mounting Wings	Mounting Wings for Encoders, Decoders and Audio Transceiver.
1RU Rack Shelf	1RU Rack Shelf for Two Side-by-Side Encoders, Decoders and Audio Transceiver to be placed inside podium.
Audio Over IP Transceiver Card	Audio Transceiver should be an audio over IP solution which should be able to send and receive 2 channel balanced or unbalanced audio over IP. It should have input and output of minimum 2 channel balanced or unbalanced audio. The audio transceiver should have atleast 2 RJ45 network ports (one PoE). Latency should be less than 20ms. It should have built in control port- GPI port, 2 channel relay port as well.
Video Over IP Encoder Card	The card based encoder should be an AV over IP solution. The card based encoder should be mounted inside rack mount cage which can power the units.The compression format should be minimally compressed or uncompressed. The card based encoder should have atleast 2 RJ45 network ports (one PoE) & should include control ports atleast 1 RS-232 & 1 IR. It should include 1 VGA input port and 1 HDMI input port & should support resolution upto 1920 X 1200 @60 Hz. Latency should be less than 10ms @ 60 fps. It should support HDCP & EDID. Card based Encoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices.
2RU Rack Mount Cage	2RU Rack Mount Cage which can power for Six Card Units.

AC Adapter	Power Supply 12V External for above devices.
High Definition Pan/Tilt/Zoom Camera with 20 optical Zoom	High Definition PTZ Camera . Image Sensor : 1/2.8-Type Exmor, high-speed, low-noise CMOS Image Sensor or better . Zoom : 20X Optical Zoom with Multi-element Glass Lens or better . Field of View : - . Horizontal: 63º Wide End to 3.47º Tele End, (16:9 Aspect Ratio) or better . Vertical: 36.8˚ Wide End to 1.85˚ Tele End or better . Lens Focal Length : f=4.44mm to 89mm / F1.6 - F3.4 or better . Minimum Illumination : 0.3 Lux or better . Video output Resolutions : HD: 1080p/60/59.94/50./30/25, 1080i60/59.94/50 and 720p/60/59.94/50 or better . Video output Formats : HDMI, Analog Component . Signal to Noise Ratio : > 50 dB or better . Pan Range : - . Pan: +170 degrees to -170 degrees or better . Tilt: +90 degrees to -30 degrees or better . Preset positions : 16 (internal), 6 recalled via IR Remote or better . Control Methods : RS-232 , IR Remote Commander . Cat-5 Cable Distance : Up to 100’ (30.5m) or better .
Full HD Handycam with Stand	Full HD Handycam: SENSOR TYPE: 13.2 mm x 8.8 mm (1.0-type) back-illuminated Exmor R CMOS sensor. EFFECTIVE PIXELS (VIDEO) OR Better.Approx. 14.2 M pixels (16:9) OR More. OPTICAL ZOOM: 12x OR More. IMAGE ZOOM: 4K: 18x HD: 24x6 OR More. SCREEN TYPE: 8.8 cm (3.5 type) Xtra Fine LCD™ display (921K) Wide (16:9).
Blueray & AVR Player	Supply, installation, testing & commissioning of Blueray & AV receiver With HDMI
Ceiling Document Camera	Visualizer . 25x optical zoom and 5x digital zoom . XGA, SXGA, UXGA, WXGA, 1080p . Ethernetfor video streaming and remote control . Output VGA x 1, DVI x 1, USB x 1, Ethernet x 1 . USB flash drive Up to 32GB . USB High Speed 2.0 (480 Mbps) Transmission . Should enable video recording .
Card for Compressed Video over IP Encoder, PoE, SFP, HDMI, USB for Record	The card based encoder should be H.264 compressed AV over IP Encoder. The card based encoder should have atleast 1 RJ45 PoE network port & 1 SFP fiber port and USB port for A/V stream recording. The card based encoder should be mounted inside rack mount cage which can power the units. The card based encoder should be able to deliver highest quality at lowest bandwidths. Bandwidth requirement should be less than 10Mbps. The latency should be less than 175ms @ 60 fps. It should include control ports atleast 1 RS-232 & 1 IR. It should include 1 VGA input port and 1 HDMI input port. It should support resolution upto 1920 X 1200 @60 Hz. It should support HDCP & EDID. Card based encoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices. It should also have inbuilt scaler facility. It should have multiple selectable streaming protocols (RTP, RTSP,RTMP and more) which allow for software endpoints during video to the desktop applications or third-party hardware endpoints like Roku, Amino, or Google TV.

Compressed Video over IP Decoder, PoE, SFP, HDMI, USB for Record	Decoder should be H.264 compressed AV over IP Decoder. Decoder should have atleast 1 RJ45 PoE network port & 1 SFP fiber port and USB port for A/V stream recording. The decoder should be placed inside rack shelf .The decoder should be able to deliver highest quality at lowest bandwidths. Bandwidth requirement should be less than 10Mbps. The latency should be less than 175ms @ 60 fps. It should include control ports atleast 1 RS-232 & 1 IR. It should include 1 HDMI output port. It should support resolution upto 1920 X 1200 @60 Hz. It should support HDCP & EDID. Decoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices. It should also have inbuilt scaler facility. It should have multiple selectable streaming protocols (RTP, RTSP,RTMP and more) which allow for software endpoints during video to the desktop applications or third-party hardware endpoints like Roku, Amino, or Google TV.
Network Video Recorder	Network video recorder should be able to record hours of high-resolution, HD content over an Ethernet LAN. This device should be compatible with all encoders, decoders and transceivers. The recorder should be able to record from any above encoder and uses any above decoder for playback at its original resolution. It should be able to records two separate video streams simultaneously at different resolutions and bit-rate and plays them back synchronously. It shoud be able to record 434 hours of H.264 compression encoder and conversion time should be minimum of 2 minutes per hour.
Windowing Processor	Windowing Processor should be capable of handling multiple real-time HD streams with no video input or output connectors—all video connections are done via Ethernet. It should accepts up to four video streams as input. Each input can be cropped, scaled, and positioned according to stored presets (such as quad, window-in-window, 3+1, etc) or in any user-defined configuration. The combined output video stream should be able to route to one or more displays at HD 1080p or CG 1900×1200 resolution. The device should be able to stack to provide more windowing. The latency should be less than 50 ms @ 1080p(combined latency). It should have 1 no of 120V AC power input, 3 nos of RJ45 outputs and 4 nos RJ 45 inputs.
Tablet Monitor	Tablet Monitor . Screen size : 15.6 (344.232 x 193.536 mm) active matrix TFT LCD or better . Resolution : 1366 x 768 (WXGA) or better . Aspect ratio : 16:9 or better . Response time: 8 ms or better . Luminance: 255 cd/m2 or better . Contrast ratio : 400:1 (typical) or better . Viewing angle : 90°/ 65°(typical) or better . Video input : Analog (RGB) / digital (DVI-I) or better . Video output : Analog (RGB) / digital (DVI-I) or better . Technology : Electromagnetic resonance technology (EMR) or better . Interface : USB (2-port USB hub built-in) or better . Power consumption : 29W (Max), 2W or less in sleep mode, 1W or less in off mode or better .
HDMI patch cable - 6ft	HDMI patch cable - 6ft.
HDMI patch cable - 35ft	HDMI patch cable - 35ft.
HDMI-DVID patch cable - 6ft	HDMI-DVID patch cable - 6ft.

Compressed Video over IP Encoder, PoE, SFP, HDMI, USB for Record	The encoder should be H.264 compressed AV over IP Encoder. The encoder should have atleast 1 RJ45 PoE network port & 1 SFP fiber port and USB port for A/V stream recording. The card based encoder should be mounted using mounting wings. The encoder should be able to deliver highest quality at lowest bandwidths. Bandwidth requirement should be less than 10Mbps. The latency should be less than 175ms @ 60 fps. It should include control ports atleast 1 RS-232 & 1 IR. It should include 1 VGA input port and 1 HDMI input port. It should support resolution upto 1920 X 1200 @60 Hz. It should support HDCP & EDID. Encoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices. It should also have inbuilt scaler facility. It should have multiple selectable streaming protocols (RTP, RTSP,RTMP and more) which allow for software endpoints during video to the desktop applications or third-party hardware endpoints like Roku, Amino, or Google TV.
Wireless Control System	
Integrated Controller	Control processor should have dual NIC, should support IPv6. Also should have onboard RAM of 512MB, 1 M Non Volatile memory, 8 GB SG HC Flash memory, 1 OEM proprietary interface to connect OEM devices. Should have minimum 1 RS-232/422/485 port, 3 RS-232 ports, 4 Digital I/O ports, 4 IR/Serial Output ports, 4 Relay ports. Control processor should have processor speed of 1600 MIPS.
12 VDC, 5.4 A Power Supply with 3.5 mm Phoenix Connector	Power supply for above control processor.
Tabletop Touch Panel	Touch panel should have powerful graphics engine, it should have brilliant 24 -bit color depth. It should have a screen size 10 inches diagonal or more, resolution of 1280 x 800 and 16:9 aspect ratio, brightness should be of minimum 350 cd/sq m, contrast ratio should be of min 800:1, should support LED illumination, SDRAM should be of min 512 MB, Flash of min 4 GB, should include ethernet, USB for firmware upgarde or touch panel file transfer etc.
Power Adaptor (POE Injector)	Should have 10/100/1000 (MbPS) Data Rates. Should meet IEEE802.3af requirements. Should have regulated Output. Should have 100/240 VAC Universal Input
Audio System: 3 Way Line Array	
Wireless Stationary Receiver	Wireless stationary receiver: Switching bandwidth30 MHz.Recommended simultaneous channels50.Number of selectable frequencies1220 (selectable in 25kHz steps).Frequency SelectionSelectable frequency in 25kHz steps.Radio range (Line of sight)100m (depending on antenna system).ModulationFM (Frequency Modulation).EncryptionNo encryption.DiversityTrue Diversity.Unbalanced Audio Output.

Wireless Handheld Transmitter	Wireless handheld transmitter: Audio frequency bandwidth35 - 20000 Hz.Signal to Noise120 dB-A.THD at 1 kHz0.3 Prozent.Operating temperature range-10 to 55 Celsius.Peak deviation48 kHz.Switching bandwidth30 MHz.Recommended simultaneous channels50.Number of selectable frequencies1220 (selectable in 25kHz steps).Frequency SelectionSelectable frequency in 25kHz steps.Radio range (Line of sight)100m (depending on antenna system).Switchable RF powerno.ModulationFM (Frequency Modulation).EncryptionNo encryption.DiversityTrue Diversity.Nominal deviation20 kHz.Radio Output Power (min/max)10 to 50 mW.
Dynamic Microphone Head	Dynamic Microphone Head, Supercardioid. Should have dual thickness varimotion diaphragm provides a subtle and opened sound in all frequency ranges Should have highest feedback suppression laminate diaphragm material damps critical resonance peaks.
Wireless BodyPack Transmitter	Wireless handheld transmitter . Audio frequency bandwidth35 - 20000 Hz . Signal to Noise120 dB-A . THD at 1 kHz0.3 Prozent . Operating temperature range-10 to 55 Celsius . Peak deviation48 kHz . Nominal deviation20 kHz . Radio Output Power (min/max)10 to 50 mW . Transmitter SynchronizationManual . Mute Switch TypeJack Mono (1/4) . Mute Switch GenderFemale . Switching bandwidth30 MHz . Recommended simultaneous channels50 . Number of selectable frequencies1220 (selectable in 25kHz steps) . Frequency SelectionSelectable frequency in 25kHz steps . Radio range (Line of sight)100m (depending on antenna system) . Switchable RF powerno . ModulationFM (Frequency Modulation) . No encryption . True Diversity
Cardioid Lavelier Microphone	Lapel Mic: Audio frequency bandwidth20 - 20000 Hz . Sensitivity13 mV/Pa . Signal to Noise57 dB-A . Electrical impedanceat 1 kH 5000 Ohms . Self noise35.5 mW . Polar PatternCardioid .
Cardioid Headworn Microphone	Lapel Mic . Audio frequency bandwidth20 - 20000 Hz . Sensitivity13 mV/Pa . Signal to Noise57 dB-A . Electrical impedanceat 1 kHz 5000 Ohms . Self noise35.5 mW . Polar PatternCardioid .
Active Antenna Power Splitter	Power Splitter . Antenna power splitter . Operates in an extended frequency range - 470 to 952 MHz for maximum flexibility . Cable length adjustment switch . Link output . Remote power for antennas and receivers . Operating temperature range - -10 to 50 Celsius .
Active directional wide-band UHF receiving antenna	UHF receiving antenna . Switching bandwidth (from/to)470 to 952 MHz . Antenna gain21.5 dBi . Covering angle70 Grad .
Antenna cable for Wireless system	Antenna Cable . Superipor Quality Antenna Cable , 20m . Shall be an RG58 cable or better
Gooseneck Microphone with Base	Gooseneck Mic . Audio frequency bandwidth70 - 18000 Hz . Equivalent noise level30 dB-A . Signal to Noise64 dB-A . Electrical impedance600 Ohms . Recommended load impedance2000 Ohms
Professional Drum Microphone Set	Drum mic set for studio and live applications.

Professional Wired dynamic Vocal Microphone	Vocal Mic: Audio frequency bandwidth70 - 20000 Hz . Sensitivity2.6 mV/Pa . Electrical impedance600 Ohms . Recommended load impedance2000 Ohms . Polar PatternSupercardioid .
Professional Wired dynamic Instrument Microphone	Instrument Mic: Audio frequency bandwidth: 50 - 20000 Hz.Sensitivity : 2.5 mV/Pa.Electrical impedance600 Ohms.Recommended load impedance2000 Ohms.Polar Pattern: Cardioid.
Actice Direct Box	Active direct box . Balanced XLR Lo-Z Output . 3-Way 0/20/40 dB Pad Switch . Flat/High-Cut Filter Switch . Output Polarity Invert Switch
Digital Mixing Console 32 Channel	Mixing Console . Up to 80 channels to mix . 32 Mic Inputs . 8 XLR/1/4 Combi-jacks for line inputs and instruments . 40 DSP input channels (32 mono inputs and 4 stereo channels/returns) . 31 Output busses (All with full DSP processing and GEQ) . 4-band Fully Parametric EQ on each channel and bus . 8 VCAs + 8 Mute groups . 26 motorised faders (24 input + LR/Mono) . 4 fully customisable Fader Layers . Built-in Stagebox Connectivity .
Headphone for Control Room Monitoring	Head phone .Max. Input Power200 mW.Audio frequency bandwidth16 - 28000 Hz.Sensitivity headphones104 dB SPL/V.Rated Impedance55 Ohms.
Powered Loudspeaker for Monitoring	Loudspeaker: Freq range : 43 Hz-24 kHz OR Better. Max Spl: 108 dB SPL OR Better .Driver size: LF- 5 inch/ HF- 1 inch.Amlifier : Class D. Inputs 1 x XLR, 1 x TRS Balanced. .
16 Channel Mini Stagebox	Satgebox: 32 analogue inputs and 8 analogue line outputs . I/O capacity of 32 inputs and 16 outputs . 16 analogue inputs and 8 line outputs . .
Networked Digital Ssignal Processor with AEC	DSP . 12 Analog Inputs (with 48v Phantom Power per Channel) . 8 Analog Outputs . Configurable Signal Processing . 12 Channels of AEC Processing with Auto Gain Control and Noise Cancellation . 48 Channel, Low Latency, Fault Tolerant Digital Audio Bus . Clear Front Panel LED Indication . Bi-Directional Locate Functionality . high bandwidth . 12 Control Inputs and 6 Logic Outputs allow the DSP to be integrated with GPIO compatible devices. . Input Impedance: 3.0k . A/D Latency: 37/Fs [0.77ms@48k] . Dynamic Range: 108dB typical, 22Hz-22KHz unweighted . AEC Processing Latency: 1609/Fs [33.52ms@48k] . Withstanding Voltage: 80V maximum (Off) . Max. Number of Nodes: 60
Feedback Suppressor	Feedback Supression . 24 Programmable Filters per Channel . Stereo or Dual Independent Channel Processing . Live and Fixed Filter Modes . Selectable Filter Lift Times .
Volume Controller	Should have Ethernet Wall Controller. Dual-Gang Size. PoE (Power Over Ethernet). Configured within Audio Architect via Drag-and-Drop. 1 Programmable Push/Rotary Encoder. 1 Programmable Encoder Ring (Multicolored). 8 Programmable Buttons (Multicolored). 2 Programmable 64x128 Pixel LCDs (Multicolored). Sleep Function. Security: Remote Lock/Unlock and Local Unlock via PIN Entry. Multiple Modes of Operation.
Power Adaptor (POE Injector)	Should have 10/100/1000 (MbPS) Data Rates. Should meet IEEE802.3af requirements.Should have regulated Output. Should have 100/240 VAC Universal Input.
Network Switch	. Network Switch

FOH Loudspeaker System: Passive Three-Way High Directivity Line Array Element	Passive Three-Way High Directivity Line Array Element should have following: Frequency Range (-10 DB)1: 65 Hz - 20 kHz OR better. Frequency Response (+/-3 DB)1: 75 Hz - 18 kHz OR better. Horizontal Coverage Angle (-6 DB): 110 degrees nominal (averaged 250 Hz - 16 kHz)OR better. System Input Power Rating2: 900 W Continuous, 3600 W Peak (AES / 2 hour)OR better.700 W Continuous, 2800 W Peak (100 hour)OR better.. Bandpass Nominal Impedance: 12 ohms (drivers wired in series-parallel, passive network). Bandpass Sensitivity3: 101 dB, 1W / 1m OR better.. Max Peak Output4: 136 dB SPL, 1m OR better.. Transducers(Driver Size): LOW FREQUENCY: Two 2166H-1, 165 mm (6.5 in) dia., 50 mm (2 in) Dual Coil, Dual Magnet Neodymium Differential Drive, Direct Cooled OR better. MID FREQUENCY: Four 2103G, 101 mm (2.5 in) with 25.4 mm (1 in) dia. voice coil and Neodymium magnet OR better. HIGH FREQUENCY: Two 2414H, 25 mm (1 in) exit compression driver, Neodymium magnet,38 mm (1.5 in) voice coil OR better. .
Array frame for suspension of above Speakers	Array frame for suspension of above Speakers from OEM Only with motorized chain pully.
Dual Channel Digital Power Amplifier	Power amplifier: 2 Channel amplifier.. SNR> 112dB or Better. THD< 0.1% or Better. Frequency response ± 0.25dB or Better. Crosstalk > 80dB or Better. Sensitivity: 1.4Vrms to 7.75Vrms or Better. Power Output: 2 Ohms Dual: 2800 Watt or Better. 2.7 Ohms Dual: 4200 Watt or Better. 4 Ohms Dual: 3500 Watt or Better. 8 Ohms Dual: 1500 Watt or Better. 4 Ohms Bridged: 5600 Watt or Better. 8 Ohms Bridged: 7000 Watt or Better.

Subwoofer System: Dual 12 Cardioid-Arrayable Subwoofer	Dual 12 Cardioid-Arrayable Subwoofer should have following: Frequency Range (-10 DB)1: 35 Hz - 300 kHz OR better. Frequency Response (+/-3 DB)1: 40 Hz - 300 kHz OR better. System Input Power Rating2: 2000 W Continuous, 8000 W Peak (AES / 2 hour)OR better. 1600 W Continuous, 6400 W Peak (100 hour)OR better.. System Sensitivity: 95 dB, 1 W (per driver) @ 1m (averaged 40 - 140 Hz) OR better.. Maximum Peak Output: :139 dB SPL, 1m (2 Pie, half-space, ground-based application) OR better, 133 dB SPL, 1m (4 Pie, free-space, suspended application) OR better.. Transducers: Low Frequency: 2 x 2263H-1, 305 mm (12 in) dia., 75 mm (3 in) Dual Coil, Dual Magnet, neodymium Differential Drive® OR Better. Nominal Impedance: 2 x 8 ohms OR Better. Input Power Rating 1000 W Continuous, 4000 W Peak (AES / 2 hour) (each transducer)2: 800 W Continuous, 3200 W Peak (100 hour) OR Better.
Dual Channel Digital Power Amplifier	Power amplifier: 2 Channel amplifier. SNR> 112dB or Better. THD< 0.1% or Better. Frequency response ± 0.25dB. Crosstalk > 80dB. Sensitivity: 1.4Vrms to 7.75Vrms or Better. Power Output: 2 Ohms Dual: 3750 Watt or Better. 2.7 Ohms Dual: 5400 Watt or Better. 4 Ohms Dual: 4500 Watt or Better. 8 Ohms Dual: 2100 Watt or Better. 4 Ohms Bridged: 7500 Watt or Better. 8 Ohms Bridged: 9000 Watt or Better.
Stage Lips Loudspeakers	Loud Speaker 2-way Loudspeaker with 1 x 8” LF OR Better. Frequency Range (-10 dB): 47 Hz -20 kHz OR Better. Frequency Response (+/-3 dB): 63 Hz - 19 kHz OR Better. Power Rating: 250W Cont. Pink Noise 500W Program 1000W Peak OR Better. Impedance: 8 Ohms OR Better. Coverage Pattern: 120° x 60° OR Better. Rated Maximum SPL (1m)2: 116 dB OR Better. System Sensitivity: 92 SPL dB/1W/1m OR Better. Low Frequency Driver: 1 x 8 inch with 2.5 in edge wound voice coil OR Better. High Frequency Driver: 1 x 1 inch Exit compression driver,1.5 inch Voice coil OR Better.
Wall Mount Bracket for above loudspeaker	Wall Mount Bracket for above loudspeaker from OEM only.

Multichannel Network Based Power Amplifier	Amplifier- 8 Channel: Frequency Response (8 Ohms, 20 Hz - 20 kHz): +/- 0.25 dB OR Better. Total Harmonic Distortion (at full rated power, 20 Hz - 20 kHz): 0.35% OR Better. Damping Factor (20 Hz to 100 Hz) >1000 OR Better. Input Impedance (nominal balanced, unbalanced)10 kOhms, 5 kOhms OR Better. Maximum Input Level before Compression+20 dBu OR Better. Load Impedance (Stereo/Dual Mode)2 - 16 Ohms. 70Vrms and 100Vrms OR Better. Load Impedance Bridge Mono4 - 16 Ohms. 140Vrms and 200Vrms OR Better. Power Output: 2 Ohms Dual: 150 Watt or Better. 4 Ohms Dual: 300 Watt or Better. 8 Ohms Dual: 300 Watt or Better. 16 Ohms Dual: 150 Watt or Better. 70Vrms Dual: 300 Watt or Better. 100Vrms Dual: 300 Watt or Better. .
Stage Monitor Speaker	Portable, twelve-inch, two-way active speaker system. Self Powered 12 inch, 2 way or Better. Max SPL Output: 135 dB peak. LF Driver: 1 x 12 inch woofer or Better. HF Driver 1 x 1.5 inch OR Better . Coverage Pattern : 90° x 50° OR Better. Input impedance 20K Ohms (balanced), 10K Ohms (unbalanced). Crossover Frequency : 1.85 kHz OR Better. Power rating 1500W (750W x 2). Frequency Range (-10 DB)1: 45 Hz - 20 kHz OR better.. Frequency Response (+/-3 DB)1: 57 Hz - 20 kHz OR better.. Amplifier Type: Class D
Under / Upper Balcony Loudspeaker	Loud Speaker 2-way Loudspeaker with 1 x 8” LF OR Better. Frequency Range (-10 dB): 47 Hz - 20 kHz OR Better. Frequency Response (+/-3 dB): 63 Hz - 19 kHz OR Better. Power Rating: 250W Cont. Pink Noise 500W Program 1000W Peak OR Better. Impedance: 8 Ohms OR Better. Coverage Pattern: 120° x 60° OR Better. Rated Maximum SPL (1m)2: 116 dB OR Better. System Sensitivity: 92 SPL dB/1W/1m OR Better. Low Frequency Driver: 1 x 8 inch with 2.5 in edge wound voice coil OR Better. High Frequency Driver: 1 x 1 inch Exit compression driver,1.5 inch Voice coil OR Better.
Wall Mount Bracket for above loudspeaker	Wall Mount Bracket for above loudspeaker from OEM only.
Multichannel Network Based Power Amplifier	Amplifier- 8 Channel: Frequency Response (8 Ohms, 20 Hz - 20 kHz): +/- 0.25 dB OR Better. Total Harmonic Distortion (at full rated power, 20 Hz - 20 kHz): 0.35% OR Better. Damping Factor (20 Hz to 100 Hz) >1000 OR Better. Input Impedance (nominal balanced, unbalanced)10 kOhms, 5 kOhms OR Better. Maximum Input Level before Compression+20 dBu OR Better. Load Impedance (Stereo/Dual Mode)2 - 16 Ohms. 70Vrms and 100Vrms OR Better. Load Impedance Bridge Mono4 - 16 Ohms. 140Vrms and 200Vrms OR Better. Power Output: 2 Ohms Dual: 150 Watt or Better. 4 Ohms Dual: 300 Watt or Better. 8 Ohms Dual: 300 Watt or Better.

	16 Ohms Dual: 150 Watt or Better. 70Vrms Dual: 300 Watt or Better. 100Vrms Dual: 300 Watt or Better. .
Green Room Loudspeaker	Speaker.Frequency Range (-10 dB)1 : 85 Hz to 22 kHz OR Better..Continuous Program: Power Capacity2 : 50 Watts OR Better..Sensitivity3 : 86 dB SPL, 1W, 1m OR Better..Nominal Impedance: 8 ohms OR Better..Max SPL Output: 103dBOR Better..LF Driver: 88 mm / HF Driver: 13 mm OR Better..Coverage 90° x 90° OR Better.
Dual Channel Amplifier for Green Room	Amplifier : Two channel Or Better.Max power 120W Or Better.Sensitivity 0.775 Vrms for 8 ohms Or Better.Phantom Power: 27 VDC Or Better.
Stage Lighting System	
LED Wash Light	LED wash light : Beam color mixing: RGBW . Aura (secondary lens array illumination) color mixing: RGB . Beam color temperature control: CTO, variable 10 000 - 2500 K . Beam and aura electronic 'color wheel' effect: 33 LEE-referenced colors plus white, . variable-speed color-wheel rotation effect and random color . Beam and aura independent shutter effects: Electronic, with regular and random . pulse, burst and strobe effects . Zoom: 10° - 60° (one-tenth peak angle) . Pan: 540° . Tilt: 232° . Brightness 350 cd/m2 . Light source: 19x 15W RGBW LED Array System . LED refresh rate: Beam 1200 Hz . Minimum LED lifetime: 50 000 hours (to >70% luminous output)* . Total luminous output (wide, one-tenth peak): 6000 lumens . Total luminous output (narrow, one-tenth peak): 4300 lumens . Video compatibility: Designed for use with HD/high-speed video cameras . Maximum power consumption: 400 W . Power supply unit: Auto-ranging electronic switch mode . AC power: 100-240 V nominal, 50/60 Hz . Typical half-cycle RMS inrush current: 10.7 A . Power consumption, all effects static, zero light output: <25 W . Control options: Independent or synchronized Beam and Aura control. Control system: DMX, RDM. Control resolution: 8-bit, with 16-bit control of pan & tilt . DMX channels: 14/25.
Profile Fixture	Profile Fixture: Color mixing: CMY, independently variable 0 - 100%.Color wheel: 6 color filters plus open.Rotating gobo wheel: 6 interchangeable gobos plus open, wheel rotation, gobo.rotation, indexing and shake.Static gobo wheel: 10 gobos plus open, wheel indexing, rotation and shake.Beam effects: Rotating three-facet prism.Zoom: Motorized.Focus: Motorized, with zoom-focus tracking.Iris: 0 - 100%, pulse effects.Shutter effect: Electronic, with variable speed regular and random strobe.Electronic dimming: Four dimming curve options.Pan: 540°.Tilt: 268°.AC power: 120-240 V nominal, 50/60 Hz.Power supply unit: Auto-ranging electronic switch mode.Maximum total power consumption: 750 W.Typical power consumption, all effects static, zero light output: Approx. 50 W.Typical half-cycle RMS inrush current: 10.3 A. Control resolution: 8-bit, with 16-bit control of dimming, gobo indexing, zoom, focus, pan and tilt. DMX channels: 19/27.

Single-Lens LED PAR Can	Single-Lens LED PAR Can: Control options: DMX, single standalone scene. DMX channels: 7. DMX address setting: Control panel with LED display. Color temperature control: Variable 2700 - 7800 K. Color mixing: WW-CW (warm white & cold white). Electronic dimming: 0 - 100%, four dimming curve options.Strobe and pulse effects: Variable speed and action, random strobe.Electronic 'shutter' effect: Instant open and blackout. Zoom: Motorized. Electronic 'shutter' effect: Strobe effect, pulse effects, instant open and blackout. AC power: 100-240 V nominal, 50/60 Hz.Fuse: T 6.3 A. Power supply unit: Auto-ranging electronic switch mode.Light source: 12 x 10 W CWUW LEDs. Minimum LED lifetime: 50 000 hours (to >70% luminous output)*. CRI (Color rendering index): 90.
Bright LED moving head wash light	Bright LED moving head wash light: Control options: DMX. DMX channels: 14. White balance control: RGB adjustment. 16-bit fine control: Dimming, pan and tilt. DMX address setting: Control panel with LCD display. DMX compliance: USITT DMX512/1990.Color mixing: RGBW.Color presets: 36 color presets plus full white, 'color wheel' effects.Electronic dimming: 0 - 100%, four dimming curve options.Strobe and pulse effects: Variable speed and action, random strobe.Electronic 'shutter' effect: Instant open and blackout.Zoom: Motorized.Pan: 540°.Tilt: 200°.Light source: 12 x 10 W RGBW Osram Ostar LEDs.Minimum LED lifetime: 50 000 hours (to >70% luminous output)*.Zoom range: 10° - 60°.AC power: 100-240 V nominal, 50/60 Hz.Power supply unit: Auto-ranging electronic switch mode.Fuse: T 3.15.
Beam moving head	Beam moving head: Color temperature: 8800 K. CRI (Color rendering index): 62. Average lifetime: 6000 hours . Color wheel: 14 colors plus open, continuous and stepped scrolling, rotation with. variable direction and speed. Static gobo wheel: 17 gobos plus open, continuous and stepped scrolling, rotation. with variable direction and speed. Shutter: Strobe effect, pulse effects, instant open and blackout.Prism: 6-facet, indexing and rotation with variable direction and speed. Focus: Motorized.Dimmer: 0 - 100% continuous dimming.Pan: 540°. Tilt: 270.Beam angle: 3°. AC power: 100-240 V nominal, 50/60 Hz. Typical total power consumption: 234 W.
Bright LED PAR Can	Bright LED PAR Can: Control options: DMX, stand-alone scene. DMX channels: 5/9 .White balance control: RGB adjustment. DMX address setting: Control panel with LCD display . Stand-alone programming: Control panel with LCD display. Protocol: USITT DMX512/1990. Color mixing: RGBW. Color selection: 33 color presets plus full white, 'color wheel' effects.Electronic dimming: 0 - 100%.Strobe and pulse effects: Variable speed and action, random strobe. Electronic 'shutter' effect: Instant open and blackout. Zoom: Motorized. Light source: 12 x 10 W RGBW Osram Ostar LEDs. Zoom range: 10° - 60°. Minimum LED lifetime: 50 000 hours (to >70% luminous output). AC power: 100-240 V nominal, 50/60 Hz.Typical total power consumption: 151 W.

Bright LED profile Moving Head	Bright LED profile Moving Head: Control options: DMX, standalone. DMX channels: 17. Standalone trigger options: Music trig, auto trig. Standalone sequences: 4 pre-programmed shows . Standalone memory: 20 scenes. Music trig sensitivity: Adjustable. Setting and addressing: Control panel with backlit graphic display. DMX compliance: USITT DMX512/1990. Light source: 180 W LED engine . Minimum LED lifetime: 20 000 hours. Color wheel 1: 7 colors plus open, rotation with variable direction and speed. Color wheel 2: 7 colors (incl. 1 x UV, 2 x CTC) plus open, rotation with variable. direction and speed. Rotating gobo wheel: 7 gobos plus open, wheel rotation, gobo indexing, rotation and. shake.Static gobo wheel: 8 gobos plus open, wheel rotation and shake. Electronic 'shutter' effect: Strobe effect, pulse effects, instant open and blackout. Prism: Indexing and rotation with variable direction and speed.Iris: Motorized. Focus: Motorized.Electronic dimming: 0 - 100%, four dimming curve options.Pan: 540°.Tilt: 270°.AC power: 100-240 V nominal, 50/60 Hz.Typical total power consumption: 300 W.
Haze Machine	Haze Machine: Housing: Steel & aluminum. Color: Black. Heat exchanger: 900 W, Thermally protected. Blower fan: Integrated, 200-2500 RPM. Airflow control: Optional Air Director. Fluid pump: Oscillating piston, high pressure. Fluid management: Fluid out sensing, sealed for transportation. Fluid reservoir: 2.5 l drop-in reservoir with quick-connect fitting.Coverage volume: 3800 m3 (134,196 ft3) per minute. Operating time with 2.5 l fluid (min/max): 20/70 Hours. Control options: Digital control panel, DMX, optional digital remote control, master/slave link mode. Control parameters: Continuous or timer-controlled output. Haze and fan: Independent variable output, 0-100%.AC power : 220-240 V, 50/60 Hz. Main fuse: 6.3 AT (slow blow) 250 V. Typical power and current: 1010 W, 4.4 A.
Haze formula Fluid	Haze formula Fluid: Water-based formula, leaves little or no residue. Finest and densest haze particles in its class. Produced with ultra-pure, de-ionized water.Superior hang time and optical clarity. Available in various size containers. Actors' Equity/Broadway League approved. Minimum operating temperature (Ta min): 5° C (41° F). Maximum ambient temperature (Ta max.): 40° C (104° F).
Splitter:	Splitter: DMX Splitter / Booster. Opto-isolated DMX Output ports. DMX loop through port with built-in termination. Universal power supply. Rack, truss and wall mountable. Data input: 3-pin XLR male. Data throughput (not amplified or branched): 3-pin XLR female. Data outputs (optically isolated and amplified): 5 x 3-pin XLR female. AC power input: 1.2 m cable tail with US-type (NEMA-5-15) power plug. AC power: 100-240 V nominal, 50/60 Hz.Power supply unit: Auto-ranging electronic switch-mode. Typical total power consumption: 4 W.

Lighting Console Touchscree	Lighting Console Touchscreen: High-resolution folding capacitive multi-touchscreen. Integrated Industrial high-speed processing. 3.5" touchscreen for fast and direct parameter access. 8 digital encoders for parameter control. 8 customizable function keys.4 DMX universes direct from the console. Up to 20 universes via Artnet and sACN without external processors.Controls up to 10240 parameters. Built-in 2D visualizer for selection and real-time visualization. Customizable Graphical User Interface with context-sensitive toolbars and integrated Help menu.Powerful effects engine. 1000 cuelists with fader control.1000 cuelists with playback control buttons. Parallel execution of multiple cuelists.Submaster, Groupmaster and Override functionality.Parameter and Time-fanning functionality. Auto update for presets and cues. On-the-fly global timing adjustments. M-Series Manager Software for programming and triggering via time and calendar schedules,RS232 and IP triggers. Multiple wing attachment (M-Series Modules). MaxNet synchronized programming and playback support. Protocol: DMX512A (RDM), Art-Net2, sACN. 4 physical DMX ports. 20 DMX universes integrated. No limit to number of DMX channels per fixture. Extensive fixture library for all known manufacturers . 65000 presets for each group of functions (P/T, color, gobo, etc.). Effect generator for automated programming of complex effects. Customizable highlight and lowlight function to identify individual fixtures. 4 x universe outputs: 5-pin locking XLR. External monitor screen: 2 x HDMI.Art-Net/sACN for up to 20 DMX universes in total: Gigabit.RJ-45 MaxNet controller link: Gigabit RJ-45. Storage media/hardware peripherals: USB 3.0.Built-in Internal MIDI in/out/thru (MIDI show control, MIDI notes, MIDI timecode). Built-in Internal SMPTE Timecode In/Out: 3-pin XLR.
Cables, Connectors, Accessories & Installation	
Audio/ Line Cable	Audio/ Line Cable : One 20 AWG shielded twisted pair with drain, Super flexible jacket with sequential numbering. .
16 Core snake cable	16 Core snake cable: Stranded Bare Copper. Insulation: Polyolefin. Shielding: Twisted pairs are individually shielded with double serve 'french braid' shields with tinned copper drain wire. Jacketing: Pairs are individually jacketed with numbered and color-coded PVC, Overall Black PVC jacket. Multi audio balanced Oxygen Free Snake cable Outer diameter is 18.0mm. .
Speaker Cable	6 sq.mm for subwoofer, 4 Sq.mm for FOH Speaker, 2.5 Sq.mm for Under Balcony Speakers.
Stereo Audio & Serial Control Cable	Stereo Audio & Serial Control Cable : Two 20 AWG shielded twisted pair with drain, Super flexible jacket with sequential numbering.
Digital twisted pair cables with Connectors	Digital twisted pair cables for Video with Connectors. .
Shielded Cat6 cable	Shielded Cat6 cable for AV. .
Connectors for Audio & Stage Lighting	Connectors: XLR, Speakon, RCA, Stereo, Phoenix, XLR 3/5/Male/Female Solder connector. .
Equipment rack	42U Equipment rack with 800mm Depth, 10 Nos 375mm base Shelfs.

Power conditioners for critical equipments	Surge Protection. Noise Filtration. Voltage Protection. Pull-out Lights. Diagnostic Lights. Isolated Banks. 10 AMP Rating. 11 Total Outlets. BNC Lamp Connector.
5 Mini Coax High-Resolution Cable	5 Mini Coax High-Resolution Cable.
Optical fibre cable for AV Transmission	Optical fibre cable for AV Transmission. .
DMX Cables	14 AWG stranded TC conductors, polyethylene insulation, twisted pairs,+ TC braid shield (90% coverage), 24 AWG stranded TC drain wire, PVC jacket. .
Half Coupler Clamps	For Lighting Bars where the Outer diameter of the pipe or Bar is not more than 50mm. .
35 KVA UPS System with 30 Min Backup	35 KVA UPS System for whole Audjio Video & Stage Lighting System with 30 Min Backup. .
Site Restoration Charges.	Restoration of site (Interior) after complete installation of AV eauipments.
Warranty & CAMC	1 year of warranty with another 2 years of CAMC. (1+2)
Operational Services	3 years of operational Services included for special events.

LIST OF APPROVED MAKES FOR AUDIO VIDEO AND STAGE LIGHTING SYSTEM

Contractor shall use the materials of approved make as indicated below unless specified in BOQ or as approved by the AIIMS electrical incharge. The contractor shall ensure the correct selection of the approved make meeting the specifications and application duties. Before placing order for procurement, the sample of approved make shall be got verified for its suitability to the specification and application duty. However, AIIMS electrical engineer (approving authority) reserves the right to opt for the best preferred listed make. The contractor shall quote the rates for the material and equipment as per the list of approved makes. In the event of the contractor wants to use alternate makes other than those stipulated for any reason , the contractor can send a proposal after ensuring that what he proposes at the least meets both the quality and safety standard of the stipulated makes, and the financial benefit that will occur to the client. He shall also stand full guarantee to his alternate proposal. The alternate makes can be used only after an approval accorded by the client, whose decision will be final in this matter. Any financial implication incurred related with inspection will be borne by contractor.

SN.	Particular	Approved Makes
	Display, Presentation & Switching System	
1	**Video Wall Display**	**Samsung , Christie , LG, Barco**
2	**Video wall mount with quick lock push system**	**Chief , BTECH , Premier, Elite**
3	**PC with back end software**	**Dell, HP, Lenevo, ASUS**
4	**Wireless presentation system**	**Solstice, We Present, AMX**
5	**Wooden Podium**	**Custom**
6	**WIFI Router**	**Cisco, Netgear**
7	**Ethernet Switch**	**AMX, Lightware, Dexon, Extron**
8	**Video Over IP Encoder**	**AMX, Lightware, Dexon, Extron**
9	**Video Over IP Wallplate Encoder with KVM Switch**	**AMX, Lightware, Dexon, Extron**
10	**Video Over IP Decoder**	**AMX, Lightware, Dexon, Extron**
11	**Video Over IP Decoder Card**	**AMX, Lightware, Dexon, Extron**
12	**Mounting Wings**	**AMX, Lightware, Dexon, Extron**

13	**1RU Rack Shelf**	**AMX, Lightware, Dexon, Extron**
14	**Audio Over IP Transceiver Card**	**AMX, Lightware, Dexon, Extron**
15	**Video Over IP Encoder Card**	**AMX, Lightware, Dexon, Extron**
16	**2RU Rack Mount Cage**	**AMX, Lightware, Dexon, Extron**
17	**AC Adapter**	**AMX, Lightware, Dexon, Extron**
18	**High Definition Pan/Tilt/Zoom Camera with 20 optical Zoom**	**Vaddio , Panasonic , Sony**
19	**Full HD Handycam with Stand**	**Panasonic , Sony, Canon, Nikon.**
20	**Blueray and AVR**	**Pioneer , Sony, Tascom**
21	**Ceiling Document Camera**	**Lumens, Aver, Wolf Vision**
22	**Card for Compressed Video over IP Encoder, PoE, SFP, HDMI, USB for Record**	**AMX, Lightware, Dexon, Extron**
23	**Compressed Video over IP Decoder, PoE, SFP, HDMI, USB for Record**	**AMX, Lightware, Dexon, Extron**
24	**Network Video Recorder**	**AMX, Lightware, Dexon, Extron**
25	**Windowing Processor**	**AMX, Lightware, Dexon, Extron**
26	**Tablet Monitor**	**Wacom , Sharp , ELO, Dell**
27	**HDMI patch cable - 6ft**	**AMX, Lightware, Belden**
28	**HDMI patch cable - 35ft**	**AMX, Lightware, Belden**
29	**HDMI-DVID patch cable - 6ft**	**AMX, Lightware, Belden**
30	**Compressed Video over IP Encoder, PoE, SFP, HDMI, USB for Record**	**AMX, Lightware, Belden**
	Wireless Control System	
31	**Integrated Controller**	**AMX, Lightware, Extron**
32	**12 VDC, 5.4 A Power Supply with 3.5 mm Phoenix Connector**	**AMX, Lightware, Extron**

33	**Tabletop Touch Panel**	**AMX, Lightware, Extron**
34	**Power Adaptor (POE Injector)**	**AMX, Lightware, Extron**
	Audio System: 3 Way Line Array	
35	**Wireless Stationary Receiver**	**Audio Technica, AKG, Cad Audio**
36	**Wireless Handheld Transmitter**	**Audio Technica, AKG, Cad Audio**
37	**Dynamic Microphone Head**	**Audio Technica, AKG, Cad Audio**
38	**Wireless BodyPack Transmitter**	**Audio Technica, AKG, Cad Audio**
39	**Cardioid Lavelier Microphone**	**Audio Technica, AKG, Cad Audio**
40	**Cardioid Headworn Microphone**	**Audio Technica, AKG, Cad Audio**
41	**Active Antenna Power Splitter**	**Audio Technica, AKG, Cad Audio**
42	**Active directional wide-band UHF receiving antenna**	**Audio Technica, AKG, Cad Audio**
43	**Antenna cable for Wireless system**	**Audio Technica, AKG, Cad Audio**
44	**Gooseneck Microphone with Base**	**Audio Technica, AKG, Cad Audio**
45	**Professional Drum Microphone Set**	**Audio Technica, AKG, Cad Audio**
46	**Professional Wired dynamic Vocal Microphone**	**Audio Technica, AKG, Cad Audio**
47	**Professional Wired dynamic Instrument Microphone**	**Audio Technica, AKG, Cad Audio**
48	**Actice Direct Box**	**dbx, Klark Technik, Radial, Cad Audio**
49	**Digital Mixing Console 32 Channel**	**Midas, Allen & Heath, Sound Craft.**
50	**Headphone for Control Room Monitoring**	**Audeze, AKG, JH Audio, Cad Audio**
51	**Powered Loudspeaker for Monitoring**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
52	**16 Channel Mini Stagebox**	**Midas, Allen & Heath, Sound Craft.**
53	**Networked Digital Ssignal Processor with**	**d&b Audiotechnik, BSS, Ashly, Nova Acoustics**

	AEC	
54	**Feedback Suppressor**	**dbx, Klark Technik, Ashly, Nova Acoustics**
55	**Volume Controller**	**d&b Audiotechnik, BSS, Meyer Sound.**
56	**Power Adaptor (POE Injector)**	**AMX, Lightware,Dexon, Extron**
57	**Network Switch**	**Cisco, Netgear**
58	**FOH Loudspeaker System: Passive Three-Way High Directivity Line Array Element**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
59	**Array frame for suspension of above Speakers**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
60	**Dual Channel Digital Power Amplifier**	**d&b Audiotechnik, Crown, Lab Gruppen, Ashly**
61	**Subwoofer System: Dual 12 Cardioid-Arrayable Subwoofer**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
62	**Dual Channel Digital Power Amplifier**	**d&b Audiotechnik, Crown, Lab Gruppen, Ashly**
63	**Stage Lips Loudspeakers**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
64	**Wall Mount Bracket for above loudspeaker**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
65	**Multichannel Network Based Power Amplifier**	**d&b Audiotechnik, Crown, Lab Gruppen, Ashly**
66	**Stage Monitor Speaker**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
67	**Under / Upper Balcony Loudspeaker**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
68	**Wall Mount Bracket for above loudspeaker**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
69	**Multichannel Network Based Power Amplifier**	**d&b Audiotechnik, Crown, Lab Gruppen, Ashly**
70	**Green Room Loudspeaker**	**JBL, d&b Audiotechnik, Meyer Sound, Renkus-Heinz**
71	**Dual Channel Amplifier for Green Room**	**d&b Audiotechnik, JBL, Lab Gruppen, Ashly**

	Stage Lighting System	
72	**LED Wash Light**	**Martin/SGM/Chauvet/ROBE**
73	**Profile Fixture**	**Martin/SGM/Chauvet/ROBE**
74	**Single-Lens LED PAR Can**	**Martin/SGM/Chauvet/ROBE**
75	**Bright LED moving head wash light**	**Martin/SGM/Chauvet/ROBE**
76	**Beam moving head**	**Martin/SGM/Chauvet/ROBE**
77	**Bright LED PAR Can**	**Martin/SGM/Chauvet/ROBE**
78	**Bright LED profile Moving Head**	**Martin/SGM/Chauvet/ROBE**
79	**Haze Machine**	**Martin/SGM/Chauvet/ROBE**
80	**Haze formula Fluid**	**Martin/SGM/Chauvet/ROBE**
81	**Splitter:**	**Martin/SGM/Chauvet/ROBE**
82	**Lighting Console Touchscree**	**Martin/SGM/Chauvet/ROBE**
	Cables, Connectors, Accessories & Installation	
83	**Audio/ Line Cable**	**Belden, URO, Mogami**
84	**16 Core snake cable**	**Belden, URO, Mogami**
85	**Speaker Cable**	**Belden, URO, Mogami**
86	**Stereo Audio & Serial Control Cable**	**Belden, URO, Mogami**
87	**Digital twisted pair cables with Connectors**	**Belden, AMX, URO Cables, Wyrestorm**
88	**Shielded Cat6 cable**	**D-link, Belden, URO**
89	**Connectors for Audio & Stage Lighting**	**Neutrik, MK.**
90	**Equipment rack**	**Valrack, Middle Atlantic, APG**
91	**Power conditioners for critical equipments**	**Furman, Surgex, Middle Atlantic.**
92	**5 Mini Coax High-Resolution Cable**	**Belden, AMX, URO Cables, Wyrestorm**
93	**Optical fibre cable for AV Transmission**	**Belden, URO, AMX**
94	**DMX Cables**	**Belden, URO, Mogami**

95	**Half Coupler Clamps**	**ISI Standard**
96	**35 KVA UPS System with 30 Min Backup**	**Emersion, Su- Kam, Hitachi. APC**

- **Equivalent makes can be added with price adjustment with the prior approval of Engineer-in-charge**

END OF VOLUME - IV

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

TENDER

FOR

Supply, Installation, Testing & Commissioning (SITC) of Audio – Visual System and Stage Lighting in Auditorium Building

VOLUME – V

- **Schedule Of Quantity**

OCTOBER 2018

आरोग्यम् सुख सम्पदा

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NIT No. 20/EE/AIIMS/RPR/2018-19 Dated 04.10.2018

SN.	Minimum Specification Required	UOM	QTY	Rate	Amount
Display, Presentation & Switching System					
1	Supply, installation, testing & commissioning of Videowall Display . Diagonal Size : 55 Inch or better. Type : D-LED DID or better . Resolution : 1920 X 1080(FHD) or better . Pixel Pitch : 0.63mm(H) * 0.63mm(V) or better . Brightness : 700 nit or better . Contrast Ratio : 4000:1 or better . Viewing Angle(H/V) : 178/178 or better . Response Time(G-to-G) : 8ms or less. Display Colors : 8 bit - 16.7M or better . Color Gamut : 72% or better . Dynamic Contrast Ratio : Mega Dcr or better . H-Scanning Frequency : 30kHz ~ 81kHz or better . V-Scanning Frequency : 48Hz ~ 75Hz or better . Maximum Pixel Frequency : 148.5MHz or better . Input : Analog D-SUB, DVI-D, Display Port 1.2 , HDMI2.0 x 2 , Stereo mini Jack or better . Output : DP1.2(Loop-out) or better . External Control : RS232C(in/out), RJ45 or better . Bezel Width (mm) : 1.15mm(U/L), 0.55mm(R/B) or better.	Each	36	250000.00	9000000.00
2	Supply, installation, testing & commissioning of Professional video wall mount with quick lock push system . Professional video wall mount with quick lock push system . Should be Designed for screens up to 70" (177cm) / 75kg (165lbs) or better . Should support screens with VESA mounting patterns upto 400MMx 400mm or better . VESA Compatibility : 75 x 75, 100 x 100, 200 x 100, 200 x 200, 200 x 300, 300 x 200, 300 x 300, 400 x 200, 400 x 300, 400 x 400 or better . Easy tilt adjustment +/-15° or better . Should feature two swivel points: 180° at wall and 240° at interface or better . Should allow cable management or better . Should have on wall levelling system or better for efficient installation	Set	36	18000.00	648000.00
3	Supply, installation, testing & commissioning of Intel® Core™ i7-6700 Processor with Intel® HD Graphics 530 (3.4 GHz base frequency, up to 4 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores).Windows 10 Pro 64. 1 TB 7200 rpm SATA. 8 GB DDR4-2133 SDRAM (1 x 8 GB).Intel® HD Graphics 530. With HDMI.	Set	1	80000.00	80000.00
4	Supply, installation, testing & commissioning of Multi-user, multi-source wireless collaboration. Remote configuration via web browser built-in WAP mode for on- or off-network deployment. Mirroring support for Android and iOS mobile devices including iOS 11. Display-side control of shared media synchronous desktop audio streaming.	Each	1	75000.00	75000.00
5	Supply, installation, testing & commissioning of Wooden Podium with customised AIIMS logo	Each	2	180000.00	360000.00
6	Supply, installation, testing & commissioning of Wifi Router	Each	1	12000.00	12000.00
7	Supply, installation, testing & commissioning of The network switch should offer atleat 52 PoE ports and 2 SFP ports. The switch should be preconfigured and also switch should be a Layer 3 Gigabit Ethernet Managed Switch which should offer IGMP snooping.	Each	1	35000.00	35000.00

8	Supply, installation, testing & commissioning of The encoder should be AV over IP solution. The compression format shall be minimally compressed or uncompressed. The encoder should have ateleast 2 RJ45 network ports (one PoE) & also include control ports of 1 no RS-232 & 1 no IR. It should include 1 VGA input port and 1 HDMI input port. It should also support resolution upto 1920 X 1200 @60 Hz. Latency should be less than 10ms @ 60 fps. It should support HDCP & EDID. Encoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices.	Each	4	122648.00	490592.00
9	Supply, installation, testing & commissioning of The wall plate encoder should be AV over IP solution. The compression format should be minimally compressed or uncompressed. The encoder should have ateleast 2 RJ45 network ports (one PoE). The encoder should include 1 VGA input port and 1 HDMI input port & support resolution upto 1920 X 1200 @60 Hz. Latency should be less than 10ms @ 60 fps. Encoders should support HDCP & EDID. Enooders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices	Each	2	150944.00	301888.00
10	Supply, installation, testing & commissioning of The decoder should be AV over IP solution. The compression format should be minimally compressed or uncompressed. The decoder should have atleast 2 RJ45 network ports (one PoE). It should include control ports atleast 1 RS-232 & 1 IR. It should include 1 HDMI output port. It should support resolution upto 1920 X 1200 @60 Hz. It should have latency less than 10ms @ 60 fps. It should have inbuilt scaler facility. Comined latency including scaler should be less than 27ms @ 60 fps. It should support HDCP & EDID. Decoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices.	Each	9	122638.00	1103742.00
11	Supply, installation, testing & commissioning of The card based decoder should be AV over IP solution. The card based decoder should be mounted inside rack mount cage which can power the units. The compression format should be minimally compressed or uncompressed. The card based decoder should have atleast 2 RJ45 network ports (one PoE) & should include control ports of atleast 1 RS-232 & 1 IR. Card based decoders should include 1 HDMI output port & support resolution upto 1920 X 1200 @60 Hz. Latency should be less than 10ms @ 60 fps. Decoders should have inbuilt scaler facility & combined latency including scaler should be less than 27ms @ 60 fps. It should support HDCP & EDID. Card based decoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices.	Each	2	118861.00	237722.00
12	Supply, installation, testing & commissioning of Mounting Wings for Encoders, Decoders and Audio Transceiver.	Each	14	2092.00	29288.00
13	Supply, installation, testing & commissioning of 1RU Rack Shelf for Two Side-by-Side Encoders, Decoders and Audio Transceiver to be placed inside podium.	Each	2	21706.00	43412.00

14	Supply, installation, testing & commissioning of Audio Transceiver should be an audio over IP solution which should be able to send and receive 2 channel balanced or unbalanced audio over IP. It should have input and output of minimum 2 channel balanced or unbalanced audio. The audio transceiver should have atleast 2 RJ45 network ports (one PoE). Latency should be less than 20ms. It should have built in control port- GPI port, 2 channel relay port as well.	Each	1	87745.00	87745.00
15	Supply, installation, testing & commissioning of The card based encoder should be an AV over IP solution. The card based encoder should be mounted inside rack mount cage which can power the units.The compression format should be minimally compressed or uncompressed. The card based encoder should have atleast 2 RJ45 network ports (one PoE) & should include control ports atleast 1 RS-232 & 1 IR. It should include 1 VGA input port and 1 HDMI input port & should support resolution upto 1920 X 1200 @60 Hz. Latency should be less than 10ms @ 60 fps. It should support HDCP & EDID. Card based Encoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices.	Each	4	118861.00	475444.00
16	Supply, installation, testing & commissioning of 2RU Rack Mount Cage which can power for Six Card Units.	Each	1	84915.00	84915.00
17	Supply, installation, testing & commissioning of Power Supply 12V External for above devices.	Each	15	3606.00	54090.00
18	Supply, installation, testing & commissioning of High Definition PTZ Camera . Image Sensor : 1/2.8-Type Exmor, high-speed, low-noise CMOS Image Sensor or better . Zoom : 20X Optical Zoom with Multi-element Glass Lens or better . Field of View : - . Horizontal: 63º Wide End to 3.47º Tele End, (16:9 Aspect Ratio) or better . Vertical: 36.8˚ Wide End to 1.85˚ Tele End or better . Lens Focal Length : f=4.44mm to 89mm / F1.6 - F3.4 or better . Minimum Illumination : 0.3 Lux or better . Video output Resolutions : HD: 1080p/60/59.94/50./30/25, 1080i60/59.94/50 and 720p/60/59.94/50 or better . Video output Formats : HDMI, Analog Component . Signal to Noise Ratio : > 50 dB or better . Pan Range : - . Pan: +170 degrees to -170 degrees or better . Tilt: +90 degrees to -30 degrees or better . Preset positions : 16 (internal), 6 recalled via IR Remote or better . Control Methods : RS-232 , IR Remote Commander . Cat-5 Cable Distance : Up to 100' (30.5m) or better .	Each	3	460000.00	1380000.00
19	Supply, installation, testing & commissioning of Full HD Handycam: SENSOR TYPE: 13.2 mm x 8.8 mm (1.0-type) back-illuminated Exmor R CMOS sensor. EFFECTIVE PIXELS (VIDEO) OR Better.Approx. 14.2 M pixels (16:9) OR More. OPTICAL ZOOM: 12x OR More. IMAGE ZOOM: 4K: 18x HD: 24x6 OR More. SCREEN TYPE: 8.8 cm (3.5 type) Xtra Fine LCD™ display (921K) Wide (16:9).	Each	1	235000.00	235000.00
20	Supply, installation, testing & commissioning of Blueray With HDMI & AVR.	Each	1	9000.00	9000.00
21	Supply, installation, testing & commissioning of Visualizer . 25x optical zoom and 5x digital zoom . XGA, SXGA, UXGA, WXGA, 1080p . Ethernetfor video streaming and remote control . Output VGA x 1, DVI x 1, USB x 1, Ethernet x 1 . USB flash drive Up to 32GB . USB High Speed 2.0 (480 Mbps) Transmission . Should enable video recording .	Each	1	288182.00	288182.00

22	Supply, installation, testing & commissioning of The card based encoder should be H.264 compressed AV over IP Encoder. The card based encoder should have atleast 1 RJ45 PoE network port & 1 SFP fiber port and USB port for A/V stream recording. The card based encoder should be mounted inside rack mount cage which can power the units. The card based encoder should be able to deliver highest quality at lowest bandwidths. Bandwidth requirement should be less than 10Mbps. The latency should be less than 175ms @ 60 fps. It should include control ports atleast 1 RS-232 & 1 IR. It should include 1 VGA input port and 1 HDMI input port. It should support resolution upto 1920 X 1200 @60 Hz. It should support HDCP & EDID. Card based encoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices. It should also have inbuilt scaler facility. It should have multiple selectable streaming protocols (RTP, RTSP,RTMP and more) which allow for software endpoints during video to the desktop applications or third-party hardware endpoints like Roku, Amino, or Google TV.	Each	1	180000.00	180000.00
23	Supply, installation, testing & commissioning of Decoder should be H.264 compressed AV over IP Decoder. Decoder should have atleast 1 RJ45 PoE network port & 1 SFP fiber port and USB port for A/V stream recording. The decoder should be placed inside rack shelf .The decoder should be able to deliver highest quality at lowest bandwidths. Bandwidth requirement should be less than 10Mbps. The latency should be less than 175ms @ 60 fps. It should include control ports atleast 1 RS-232 & 1 IR. It should include 1 HDMI output port. It should support resolution upto 1920 X 1200 @60 Hz. It should support HDCP & EDID. Decoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices. It should also have inbuilt scaler facility. It should have multiple selectable streaming protocols (RTP, RTSP,RTMP and more) which allow for software endpoints during video to the desktop applications or third-party hardware endpoints like Roku, Amino, or Google TV.	Each	1	180000.00	180000.00
24	Network video recorder should be able to record hoursof high-resolution, HD content over an Ethernet LAN. This device should be compatible with all encoders, decoders and transceivers. The recorder should be able to record from any above encoder and uses any above decoder for playback at its original resolution. It should be able to records two separate video streams simultaneously at different resolutions and bit-rate and plays them back synchronously. It shoud be able to record 434 hours of H.264 compression encoder and conversion time should be minimum of 2 minutes per hour.	Each	1	200000.00	200000.00

25	Supply, installation, testing & commissioning of Windowing Processor should be capable of handling multiple real-time HD streams with no video input or output connectors—all video connections are done via Ethernet. It should accepts up to four video streams as input. Each input can be cropped, scaled, and positioned according to stored presets (such as quad, window-in-window, 3+1, etc) or in any user-defined configuration. The combined output video stream should be able to route to one or more displays at HD 1080p or CG 1900×1200 resolution. The device should be able to stack to provide more windowing. The latency should be less than 50 ms @ 1080p(combined latency). It should have 1 no of 120V AC power input, 3 nos of RJ45 outputs and 4 nos RJ 45 inputs.	Each	2	200000.00	400000.00
26	Supply, installation, testing & commissioning of Tablet Monitor . Screen size : 15.6 (344.232 x 193.536 mm) active matrix TFT LCD or better . Resolution : 1366 x 768 (WXGA) or better . Aspect ratio : 16:9 or better . Response time: 8 ms or better . Luminance: 255 cd/m2 or better . Contrast ratio : 400:1 (typical) or better . Viewing angle : 90°/ 65°(typical) or better . Video input : Analog (RGB) / digital (DVI-I) or better . Video output : Analog (RGB) / digital (DVI-I) or better . Technology : Electromagnetic resonance technology (EMR) or better . Interface : USB (2-port USB hub built-in) or better . Power consumption : 29W (Max), 2W or less in sleep mode, 1W or less in off mode or better .	Each	2	48000.00	96000.00
27	Supply, installation, testing & commissioning of HDMI patch cable - 6ft.	Each	10	4807.00	48070.00
28	Supply, installation, testing & commissioning of HDMI patch cable - 35ft.	Each	30	15000.00	450000.00
29	Supply, installation, testing & commissioning of HDMI-DVID patch cable - 6ft.	Each	4	3405.00	13620.00
30	Supply, installation, testing & commissioning of The encoder should be H.264 compressed AV over IP Encoder. The encoder should have atleast 1 RJ45 PoE network port & 1 SFP fiber port and USB port for A/V stream recording. The card based encoder should be mounted using mounting wings. The encoder should be able to deliver highest quality at lowest bandwidths. Bandwidth requirement should be less than 10Mbps. The latency should be less than 175ms @ 60 fps. It should include control ports atleast 1 RS-232 & 1 IR. It should include 1 VGA input port and 1 HDMI input port. It should support resolution upto 1920 X 1200 @60 Hz. It should support HDCP & EDID. Encoders should have onboard, built in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices. It should also have inbuilt scaler facility. It should have multiple selectable streaming protocols (RTP, RTSP,RTMP and more) which allow for software endpoints during video to the desktop applications or third-party hardware endpoints like Roku, Amino, or Google TV.	Each	1	180000.00	180000.00
				Total	**16778710.00**
Wireless Control System					

31	Supply, installation, testing & commissioning of Control processor should have dual NIC, should support IPv6. Also should have onboard RAM of 512MB, 1 M Non Volatile memory, 8 GB SG HC Flash memory, 1 OEM proprietary interface to connect OEM devices. Should have minimum 1 RS-232/422/485 port, 3 RS-232 ports, 4 Digital I/O ports, 4 IR/Serial Output ports, 4 Relay ports. Control processor should have processor speed of 1600 MIPS.	Each	1	315823.00	315823.00
32	Supply, installation, testing & commissioning of Power supply for above control processor.	Each	1	23950.00	23950.00
33	Supply, installation, testing & commissioning of Touch panel should have powerful graphics engine, it should have brilliant 24 - bit color depth. It should have a screen size 10 inches diagonal or more, resolution of 1280 x 800 and 16:9 aspect ratio, brightness should be of minimum 350 cd/sq m, contrast ratio should be of min 800:1, should support LED illumination, SDRAM should be of min 512 MB, Flash of min 4 GB, should include ethernet, USB for firmware upgarde or touch panel file transfer etc.	Each	1	282544.00	282544.00
34	Supply, installation, testing & commissioning of Should have 10/100/1000 (MbPS) Data Rates. Should meet IEEE802.3af requirements. Should have regulated Output. Should have 100/240 VAC Universal Input	Each	1	11391.00	11391.00
				Total	**633708.00**
Audio System: 3 Way Line Array					
35	Supply, installation, testing & commissioning of Wireless stationary receiver: Switching bandwidth30 MHz.Recommended simultaneous channels50.Number of selectable frequencies1220 (selectable in 25kHz steps).Frequency SelectionSelectable frequency in 25kHz steps.Radio range (Line of sight)100m (depending on antenna system).ModulationFM (Frequency Modulation).EncryptionNo encryption.DiversityTrue Diversity.Unbalanced Audio Output.	Each	4	55190.00	220760.00
36	Supply, installation, testing & commissioning of Wireless handheld transmitter: Audio frequency bandwidth35 - 20000 Hz.Signal to Noise120 dB-A.THD at 1 kHz0.3 Prozent.Operating temperature range-10 to 55 Celsius.Peak deviation48 kHz.Switching bandwidth30 MHz.Recommended simultaneous channels50.Number of selectable frequencies1220 (selectable in 25kHz steps).Frequency SelectionSelectable frequency in 25kHz steps.Radio range (Line of sight)100m (depending on antenna system).Switchable RF powerno.ModulationFM (Frequency Modulation).EncryptionNo encryption.DiversityTrue Diversity.Nominal deviation20 kHz.Radio Output Power (min/max)10 to 50 mW.	Each	3	29276.00	87828.00
37	Supply, installation, testing & commissioning of Dynamic Microphone Head, Supercardioid. Should have dual thickness varimotion diaphragm provides a subtle and opened sound in all frequency ranges Should have highest feedback suppression laminate diaphragm material damps critical resonance peaks.	Each	3	11336.00	34008.00

38	Supply, installation, testing & commissioning of Wireless handheld transmitter . Audio frequency bandwidth35 - 20000 Hz . Signal to Noise120 dB-A . THD at 1 kHz0.3 Prozent . Operating temperature range-10 to 55 Celsius . Peak deviation48 kHz . Nominal deviation20 kHz . Radio Output Power (min/max)10 to 50 mW . Transmitter SynchronizationManual . Mute Switch TypeJack Mono (1/4) . Mute Switch GenderFemale . Switching bandwidth30 MHz . Recommended simultaneous channels50 . Number of selectable frequencies1220 (selectable in 25kHz steps) . Frequency SelectionSelectable frequency in 25kHz steps . Radio range (Line of sight)100m (depending on antenna system) . Switchable RF powerno . ModulationFM (Frequency Modulation) . No encryption . True Diversity	Each	1	27407.00	27407.00
39	Supply, installation, testing & commissioning of Lapel Mic: Audio frequency bandwidth20 - 20000 Hz . Sensitivity13 mV/Pa . Signal to Noise57 dB-A . Electrical impedanceat 1 kH 5000 Ohms . Self noise35.5 mW . Polar PatternCardioid .	Each	1	38334.00	38334.00
40	Supply, installation, testing & commissioning of Lapel Mic . Audio frequency bandwidth20 - 20000 Hz . Sensitivity13 mV/Pa . Signal to Noise57 dB-A . Electrical impedanceat 1 kHz 5000 Ohms . Self noise35.5 mW . Polar PatternCardioid .	Each	1	34010.00	34010.00
41	Supply, installation, testing & commissioning of Power Splitter . Antenna power splitter . Operates in an extended frequency range - 470 to 952 MHz for maximum flexibility . Cable length adjustment switch . Link output . Remote power for antennas and receivers . Operating temperature range - -10 to 50 Celsius .	Each	1	92190.00	92190.00
42	Supply, installation, testing & commissioning of UHF receiving antenna . Switching bandwidth (from/to)470 to 952 MHz . Antenna gain21.5 dBi . Covering angle70 Grad .	Each	2	27656.00	55312.00
43	Supply, installation, testing & commissioning of Antenna Cable . Superipor Quality Antenna Cable , 20m . Shall be an RG58 cable or better	Each	2	3113.00	6226.00
44	Supply, installation, testing & commissioning of Gooseneck Mic . Audio frequency bandwidth70 - 18000 Hz . Equivalent noise level30 dB-A . Signal to Noise64 dB-A . Electrical impedance600 Ohms . Recommended load impedance2000 Ohms	Each	2	24915.00	49830.00
45	Supply, installation, testing & commissioning of Drum mic set for studio and live applications.	Each	1	85000.00	85000.00
46	Supply, installation, testing & commissioning of Vocal Mic: Audio frequency bandwidth70 - 20000 Hz . Sensitivity2.6 mV/Pa . Electrical impedance600 Ohms . Recommended load impedance2000 Ohms . Polar PatternSupercardioid .	Each	2	22424.00	44848.00
47	Supply, installation, testing & commissioning of Instrument Mic: Audio frequency bandwidth: 50 - 20000 Hz.Sensitivity : 2.5 mV/Pa.Electrical impedance600 Ohms.Recommended load impedance2000 Ohms.Polar Pattern: Cardioid.	Each	2	9841.00	19682.00
48	Supply, installation, testing & commissioning of Active direct box . Balanced XLR Lo-Z Output . 3-Way 0/20/40 dB Pad Switch . Flat/High-Cut Filter Switch . Output Polarity Invert Switch	Each	2	13080.00	26160.00

49	Supply, installation, testing & commissioning of Mixing Console . Up to 80 channels to mix . 32 Mic Inputs . 8 XLR/1/4 Combi-jacks for line inputs and instruments . 40 DSP input channels (32 mono inputs and 4 stereo channels/returns) . 31 Output busses (All with full DSP processing and GEQ) . 4-band Fully Parametric EQ on each channel and bus . 8 VCAs + 8 Mute groups . 26 motorised faders (24 input + LR/Mono) . 4 fully customisable Fader Layers . Built-in Stagebox Connectivity .	Each	1	470176.00	470176.00
50	Supply, installation, testing & commissioning of Head phone .Max. Input Power200 mW.Audio frequency bandwidth16 - 28000 Hz.Sensitivity headphones104 dB SPL/V.Rated Impedance55 Ohms.	Each	1	19309.00	19309.00
51	Supply, installation, testing & commissioning of Loudspeaker: Freq range : 43 Hz-24 kHz OR Better. Max Spl: 108 dB SPL OR Better .Driver size: LF- 5 inch/ HF- 1 inch.Amlifier : Class D. Inputs 1 x XLR, 1 x TRS Balanced. .	Each	2	22922.00	45844.00
52	Supply, installation, testing & commissioning of Satgebox: 32 analogue inputs and 8 analogue line outputs . I/O capacity of 32 inputs and 16 outputs . 16 analogue inputs and 8 line outputs . .	Each	1	200000.00	200000.00
53	Supply, installation, testing & commissioning of DSP . 12 Analog Inputs (with 48v Phantom Power per Channel) . 8 Analog Outputs . Configurable Signal Processing . 12 Channels of AEC Processing with Auto Gain Control and Noise Cancellation . 48 Channel, Low Latency, Fault Tolerant Digital Audio Bus . Clear Front Panel LED Indication . Bi-Directional Locate Functionality . high bandwidth . 12 Control Inputs and 6 Logic Outputs allow the DSP to be integrated with GPIO compatible devices. . Input Impedance: 3.0k . A/D Latency: 37/Fs [0.77ms@48k] . Dynamic Range: 108dB typical, 22Hz-22KHz unweighted . AEC Processing Latency: 1609/Fs [33.52ms@48k] . Withstanding Voltage: 80V maximum (Off) . Max. Number of Nodes: 60	Each	1	233841.00	233841.00
54	Supply, installation, testing & commissioning of Feedback Supression . 24 Programmable Filters per Channel . Stereo or Dual Independent Channel Processing . Live and Fixed Filter Modes . Selectable Filter Lift Times .	Each	2	49956.00	99912.00
55	Supply, installation, testing & commissioning of Should have Ethernet Wall Controller. Dual-Gang Size. PoE (Power Over Ethernet). Configured within Audio Architect via Drag-and-Drop. 1 Programmable Push/Rotary Encoder. 1 Programmable Encoder Ring (Multicolored). 8 Programmable Buttons (Multicolored). 2 Programmable 64x128 Pixel LCDs (Multicolored). Sleep Function. Security: Remote Lock/Unlock and Local Unlock via PIN Entry. Multiple Modes of Operation.	Each	1	39217.00	39217.00
56	Supply, installation, testing & commissioning of Should have 10/100/1000 (MbPS) Data Rates. Should meet IEEE802.3af requirements.Should have regulated Output. Should have 100/240 VAC Universal Input.	Each	1	11390.00	11390.00
57	.Supply, installation, testing & commissioning of Network Switch	Each	1	25000.00	25000.00

58	Supply, installation, testing & commissioning of Passive Three-Way High Directivity Line Array Element should have following: Frequency Range (-10 DB)1: 65 Hz - 20 kHz OR better. Frequency Response (+/-3 DB)1: 75 Hz - 18 kHz OR better. Horizontal Coverage Angle (-6 DB): 110 degrees nominal (averaged 250 Hz - 16 kHz)OR better. System Input Power Rating2: 900 W Continuous, 3600 W Peak (AES / 2 hour)OR better.700 W Continuous, 2800 W Peak (100 hour)OR better.. Bandpass Nominal Impedance: 12 ohms (drivers wired in series-parallel, passive network). Bandpass Sensitivity3: 101 dB, 1W / 1m OR better.. Max Peak Output4: 136 dB SPL, 1m OR better.. Transducers(Driver Size): LOW FREQUENCY: Two 2166H-1, 165 mm (6.5 in) dia., 50 mm (2 in) Dual Coil, Dual Magnet Neodymium Differential Drive, Direct Cooled OR better. MID FREQUENCY: Four 2103G, 101 mm (2.5 in) with 25.4 mm (1 in) dia. voice coil and Neodymium magnet OR better. HIGH FREQUENCY: Two 2414H, 25 mm (1 in) exit compression driver, Neodymium magnet,38 mm (1.5 in) voice coil OR better. .	Each	12	301000.00	3612000.00
59	Supply, installation, testing & commissioning of Array frame for suspension of above Speakers from OEM Only With Motorized Chain pulley.	Each	2	251071.00	502142.00
60	Supply, installation, testing & commissioning of Power amplifier: 2 Channel amplifier.. SNR> 112dB or Better. THD< 0.1% or Better. Frequency response ± 0.25dB or Better. Crosstalk > 80dB or Better. Sensitivity: 1.4Vrms to 7.75Vrms or Better. Power Output: 2 Ohms Dual: 2800 Watt or Better. 2.7 Ohms Dual: 4200 Watt or Better. 4 Ohms Dual: 3500 Watt or Better. 8 Ohms Dual: 1500 Watt or Better. 4 Ohms Bridged: 5600 Watt or Better. 8 Ohms Bridged: 7000 Watt or Better.	Each	2	479744.00	959488.00

61	Supply, installation, testing & commissioning of Dual 12 Cardioid-Arrayable Subwoofer should have following: Frequency Range (-10 DB)1: 35 Hz - 300 kHz OR better. Frequency Response (+/-3 DB)1: 40 Hz - 300 kHz OR better. System Input Power Rating2: 2000 W Continuous, 8000 W Peak (AES / 2 hour)OR better. 1600 W Continuous, 6400 W Peak (100 hour)OR better.. System Sensitivity: 95 dB, 1 W (per driver) @ 1m (averaged 40 - 140 Hz) OR better.. Maximum Peak Output: :139 dB SPL, 1m (2 Pie, half-space, ground-based application) OR better, 133 dB SPL, 1m (4 Pie, free-space, suspended application) OR better.. Transducers: Low Frequency: 2 x 2263H-1, 305 mm (12 in) dia., 75 mm (3 in) Dual Coil, Dual Magnet, neodymium Differential Drive® OR Better. Nominal Impedance: 2 x 8 ohms OR Better. Input Power Rating 1000 W Continuous, 4000 W Peak (AES / 2 hour) (each transducer)2: 800 W Continuous, 3200 W Peak (100 hour) OR Better.	Each	4	305000.00	1220000.00
62	Supply, installation, testing & commissioning of Power amplifier: 2 Channel amplifier. SNR> 112dB or Better. THD< 0.1% or Better. Frequency response ± 0.25dB. Crosstalk > 80dB. Sensitivity: 1.4Vrms to 7.75Vrms or Better. Power Output: 2 Ohms Dual: 3750 Watt or Better. 2.7 Ohms Dual: 5400 Watt or Better. 4 Ohms Dual: 4500 Watt or Better. 8 Ohms Dual: 2100 Watt or Better. 4 Ohms Bridged: 7500 Watt or Better. 8 Ohms Bridged: 9000 Watt or Better.	Each	2	2728996.00	5457992.00
63	Supply, installation, testing & commissioning of Loud Speaker 2-way Loudspeaker with 1 x 8” LF OR Better. Frequency Range (-10 dB): 47 Hz -20 kHz OR Better. Frequency Response (+/-3 dB): 63 Hz - 19 kHz OR Better. Power Rating: 250W Cont. Pink Noise 500W Program 1000W Peak OR Better. Impedance: 8 Ohms OR Better. Coverage Pattern: 120° x 60° OR Better. Rated Maximum SPL (1m)2: 116 dB OR Better. System Sensitivity: 92 SPL dB/1W/1m OR Better. Low Frequency Driver: 1 x 8 inch with 2.5 in edge wound voice coil OR Better. High Frequency Driver: 1 x 1 inch Exit compression driver,1.5 inch Voice coil OR Better.	Each	6	58553.00	351318.00
64	Supply, installation, testing & commissioning of Wall Mount Bracket for above loudspeaker from OEM only.	Each	6	5605.00	33630.00

65	Supply, installation, testing & commissioning of Amplifier- 8 Channel: Frequency Response (8 Ohms, 20 Hz - 20 kHz): +/- 0.25 dB OR Better. Total Harmonic Distortion (at full rated power, 20 Hz - 20 kHz): 0.35% OR Better. Damping Factor (20 Hz to 100 Hz) >1000 OR Better. Input Impedance (nominal balanced, unbalanced)10 kOhms, 5 kOhms OR Better. Maximum Input Level before Compression+20 dBu OR Better. Load Impedance (Stereo/Dual Mode)2 - 16 Ohms. 70Vrms and 100Vrms OR Better. Load Impedance Bridge Mono4 - 16 Ohms. 140Vrms and 200Vrms OR Better. Power Output: 2 Ohms Dual: 150 Watt or Better. 4 Ohms Dual: 300 Watt or Better. 8 Ohms Dual: 300 Watt or Better. 16 Ohms Dual: 150 Watt or Better. 70Vrms Dual: 300 Watt or Better. 100Vrms Dual: 300 Watt or Better. .	Each	1	310000.00	310000.00
66	Supply, installation, testing & commissioning of Portable, twelve-inch, two-way active speaker system. Self Powered 12 inch, 2 way or Better. Max SPL Output: 135 dB peak. LF Driver: 1 x 12 inch woofer or Better. HF Driver 1 x 1.5 inch OR Better . Coverage Pattern : 90° x 50° OR Better. Input impedance 20K Ohms (balanced), 10K Ohms (unbalanced). Crossover Frequency : 1.85 kHz OR Better. Power rating 1500W (750W x 2). Frequency Range (-10 DB)1: 45 Hz - 20 kHz OR better.. Frequency Response (+/-3 DB)1: 57 Hz - 20 kHz OR better.. Amplifier Type: Class D	Each	4	121342.00	485368.00
67	Supply, installation, testing & commissioning of Loud Speaker 2-way Loudspeaker with 1 x 8” LF OR Better. Frequency Range (-10 dB): 47 Hz -20 kHz OR Better.Frequency Response (+/-3 dB): 63 Hz - 19 kHz OR Better. Power Rating: 250W Cont. Pink Noise 500W Program 1000W Peak OR Better. Impedance: 8 Ohms OR Better. Coverage Pattern: 120° x 60° OR Better. Rated Maximum SPL (1m)2: 116 dB OR Better. System Sensitivity: 92 SPL dB/1W/1m OR Better. Low Frequency Driver: 1 x 8 inch with 2.5 in edge wound voice coil OR Better. High Frequency Driver: 1 x 1 inch Exit compression driver,1.5 inch Voice coil OR Better.	Each	8	58553.00	468424.00
68	Supply, installation, testing & commissioning of Wall Mount Bracket for above loudspeaker from OEM only.	Each	8	5605.00	44840.00

69	Supply, installation, testing & commissioning of Amplifier- 8 Channel: Frequency Response (8 Ohms, 20 Hz - 20 kHz): +/- 0.25 dB OR Better. Total Harmonic Distortion (at full rated power, 20 Hz - 20 kHz): 0.35% OR Better. Damping Factor (20 Hz to 100 Hz) >1000 OR Better. Input Impedance (nominal balanced, unbalanced)10 kOhms, 5 kOhms OR Better. Maximum Input Level before Compression+20 dBu OR Better. Load Impedance (Stereo/Dual Mode)2 - 16 Ohms. 70Vrms and 100Vrms OR Better. Load Impedance Bridge Mono4 - 16 Ohms. 140Vrms and 200Vrms OR Better. Power Output: 2 Ohms Dual: 150 Watt or Better. 4 Ohms Dual: 300 Watt or Better. 8 Ohms Dual: 300 Watt or Better. 16 Ohms Dual: 150 Watt or Better. 70Vrms Dual: 300 Watt or Better. 100Vrms Dual: 300 Watt or Better. .	Each	1	310000.00	310000.00
70	Supply, installation, testing & commissioning of Speaker.Frequency Range (-10 dB)1 : 85 Hz to 22 kHz OR Better..Continuous Program: Power Capacity2 : 50 Watts OR Better..Sensitivity3 : 86 dB SPL, 1W, 1m OR Better..Nominal Impedance: 8 ohms OR Better..Max SPL Output: 103dBOR Better..LF Driver: 88 mm / HF Driver: 13 mm OR Better..Coverage 90° x 90° OR Better.	Each	4	14014.00	56056.00
71	Supply, installation, testing & commissioning of Amplifier : Two channel Or Better.Max power 120W Or Better.Sensitivity 0.775 Vrms for 8 ohms Or Better.Phantom Power: 27 VDC Or Better.	Each	1	60546.00	60546.00
				Total	**15838088.00**
Stage Lighting System					
72	Supply, installation, testing & commissioning of LED wash light : Beam color mixing: RGBW . Aura (secondary lens array illumination) color mixing: RGB . Beam color temperature control: CTO, variable 10 000 - 2500 K . Beam and aura electronic 'color wheel' effect: 33 LEE-referenced colors plus white, . variable-speed color-wheel rotation effect and random color . Beam and aura independent shutter effects: Electronic, with regular and random . pulse, burst and strobe effects . Zoom: 10° - 60° (one-tenth peak angle) . Pan: 540° . Tilt: 232° . Brightness 350 cd/m2 . Light source: 19x 15W RGBW LED Array System . LED refresh rate: Beam 1200 Hz . Minimum LED lifetime: 50 000 hours (to >70% luminous output)* . Total luminous output (wide, one-tenth peak): 6000 lumens . Total luminous output (narrow, one-tenth peak): 4300 lumens . Video compatibility: Designed for use with HD/high-speed video cameras . Maximum power consumption: 400 W . Power supply unit: Auto-ranging electronic switch mode . AC power: 100-240 V nominal, 50/60 Hz . Typical half-cycle RMS inrush current: 10.7 A . Power consumption, all effects static, zero light output: <25 W . Control options: Independent or synchronized Beam and Aura control. Control system: DMX, RDM. Control resolution: 8-bit, with 16-bit control of pan & tilt . DMX channels: 14/25.	Each	12	185000.00	2220000.00

73	Supply, installation, testing & commissioning of Profile Fixture: Color mixing: CMY, independently variable 0 - 100%.Color wheel: 6 color filters plus open.Rotating gobo wheel: 6 interchangeable gobos plus open, wheel rotation, gobo.rotation, indexing and shake.Static gobo wheel: 10 gobos plus open, wheel indexing, rotation and shake.Beam effects: Rotating three-facet prism.Zoom: Motorized.Focus: Motorized, with zoom-focus tracking.Iris: 0 - 100%, pulse effects.Shutter effect: Electronic, with variable speed regular and random strobe.Electronic dimming: Four dimming curve options.Pan: 540°.Tilt: 268°.AC power: 120-240 V nominal, 50/60 Hz.Power supply unit: Auto-ranging electronic switch mode.Maximum total power consumption: 750 W.Typical power consumption, all effects static, zero light output: Approx. 50 W.Typical half-cycle RMS inrush current: 10.3 A. Control resolution: 8-bit, with 16-bit control of dimming, gobo indexing, zoom, focus, pan and tilt. DMX channels: 19/27.	Each	6	510000.00	3060000.00
74	Supply, installation, testing & commissioning of Single-Lens LED PAR Can: Control options: DMX, single standalone scene. DMX channels: 7. DMX address setting: Control panel with LED display. Color temperature control: Variable 2700 - 7800 K. Color mixing: WW-CW (warm white & cold white). Electronic dimming: 0 - 100%, four dimming curve options.Strobe and pulse effects: Variable speed and action, random strobe.Electronic 'shutter' effect: Instant open and blackout. Zoom: Motorized. Electronic 'shutter' effect: Strobe effect, pulse effects, instant open and blackout. AC power: 100-240 V nominal, 50/60 Hz.Fuse: T 6.3 A. Power supply unit: Auto-ranging electronic switch mode.Light source: 12 x 10 W CWUW LEDs. Minimum LED lifetime: 50 000 hours (to >70% luminous output)*. CRI (Color rendering index): 90.	Each	12	100680.00	1208160.00
75	Supply, installation, testing & commissioning of Bright LED moving head wash light: Control options: DMX. DMX channels: 14. White balance control: RGB adjustment. 16-bit fine control: Dimming, pan and tilt. DMX address setting: Control panel with LCD display. DMX compliance: USITT DMX512/1990.Color mixing: RGBW.Color presets: 36 color presets plus full white, ‘color wheel’ effects.Electronic dimming: 0 - 100%, four dimming curve options.Strobe and pulse effects: Variable speed and action, random strobe.Electronic 'shutter' effect: Instant open and blackout.Zoom: Motorized.Pan: 540°.Tilt: 200°.Light source: 12 x 10 W RGBW Osram Ostar LEDs.Minimum LED lifetime: 50 000 hours (to >70% luminous output)*.Zoom range: 10° - 60°.AC power: 100-240 V nominal, 50/60 Hz.Power supply unit: Auto-ranging electronic switch mode.Fuse: T 3.15.	Each	8	161958.00	1295664.00
76	Supply, installation, testing & commissioning of Beam moving head: Color temperature: 8800 K. CRI (Color rendering index): 62. Average lifetime: 6000 hours . Color wheel: 14 colors plus open, continuous and stepped scrolling, rotation with. variable direction and speed. Static gobo wheel: 17 gobos plus open, continuous and stepped scrolling, rotation. with variable direction and speed. Shutter: Strobe effect, pulse effects, instant open and blackout.Prism: 6-facet, indexing and rotation with variable direction and speed. Focus: Motorized.Dimmer: 0 - 100% continuous dimming.Pan: 540°. Tilt: 270.Beam angle: 3°. AC power: 100-240 V nominal, 50/60 Hz. Typical total power consumption: 234 W.	Each	8	220625.00	1765000.00

77	Supply, installation, testing & commissioning of Bright LED PAR Can: Control options: DMX, stand-alone scene. DMX channels: 5/9 .White balance control: RGB adjustment. DMX address setting: Control panel with LCD display . Stand-alone programming: Control panel with LCD display. Protocol: USITT DMX512/1990. Color mixing: RGBW. Color selection: 33 color presets plus full white, 'color wheel' effects.Electronic dimming: 0 - 100%.Strobe and pulse effects: Variable speed and action, random strobe. Electronic 'shutter' effect: Instant open and blackout. Zoom: Motorized. Light source: 12 x 10 W RGBW Osram Ostar LEDs. Zoom range: 10° - 60°. Minimum LED lifetime: 50 000 hours (to >70% luminous output). AC power: 100-240 V nominal, 50/60 Hz.Typical total power consumption: 151 W.	Each	12	110688.00	1328256.00
78	Supply, installation, testing & commissioning of Bright LED profile Moving Head: Control options: DMX, standalone. DMX channels: 17. Standalone trigger options: Music trig, auto trig. Standalone sequences: 4 pre-programmed shows . Standalone memory: 20 scenes. Music trig sensitivity: Adjustable. Setting and addressing: Control panel with backlit graphic display. DMX compliance: USITT DMX512/1990. Light source: 180 W LED engine . Minimum LED lifetime: 20 000 hours. Color wheel 1: 7 colors plus open, rotation with variable direction and speed. Color wheel 2: 7 colors (incl. 1 x UV, 2 x CTC) plus open, rotation with variable. direction and speed. Rotating gobo wheel: 7 gobos plus open, wheel rotation, gobo indexing, rotation and. shake.Static gobo wheel: 8 gobos plus open, wheel rotation and shake. Electronic 'shutter' effect: Strobe effect, pulse effects, instant open and blackout. Prism: Indexing and rotation with variable direction and speed.Iris: Motorized. Focus: Motorized.Electronic dimming: 0 - 100%, four dimming curve options.Pan: 540°.Tilt: 270°.AC power: 100-240 V nominal, 50/60 Hz.Typical total power consumption: 300 W.	Each	8	261625.00	2093000.00
79	Supply, installation, testing & commissioning of Haze Machine: Housing: Steel & aluminum. Color: Black. Heat exchanger: 900 W, Thermally protected. Blower fan: Integrated, 200-2500 RPM. Airflow control: Optional Air Director. Fluid pump: Oscillating piston, high pressure. Fluid management: Fluid out sensing, sealed for transportation. Fluid reservoir: 2.5 l drop-in reservoir with quick-connect fitting.Coverage volume: 3800 m3 (134,196 ft3) per minute. Operating time with 2.5 l fluid (min/max): 20/70 Hours. Control options: Digital control panel, DMX, optional digital remote control, master/slave link mode. Control parameters: Continuous or timer-controlled output. Haze and fan: Independent variable output, 0-100%.AC power : 220-240 V, 50/60 Hz. Main fuse: 6.3 AT (slow blow) 250 V. Typical power and current: 1010 W, 4.4 A.	Each	2	118354.00	236708.00
80	Supply, installation, testing & commissioning of Haze formula Fluid: Water-based formula, leaves little or no residue. Finest and densest haze particles in its class. Produced with ultra-pure, de-ionized water.Superior hang time and optical clarity. Available in various size containers. Actors' Equity/Broadway League approved. Minimum operating temperature (Ta min): 5° C (41° F). Maximum ambient temperature (Ta max.): 40° C (104° F).	Each	4	9343.00	37372.00

81	Supply, installation, testing & commissioning of Splitter: DMX Splitter / Booster. Opto-isolated DMX Output ports. DMX loop through port with built-in termination. Universal power supply. Rack, truss and wall mountable. Data input: 3-pin XLR male. Data throughput (not amplified or branched): 3-pin XLR female. Data outputs (optically isolated and amplified): 5 x 3-pin XLR female. AC power input: 1.2 m cable tail with US-type (NEMA-5-15) power plug. AC power: 100-240 V nominal, 50/60 Hz.Power supply unit: Auto-ranging electronic switch-mode. Typical total power consumption: 4 W.	Each	3	69029.00	207087.00
82	Supply, installation, testing & commissioning of Lighting Console Touchscreen: High-resolution folding capacitive multi-touchscreen. Integrated Industrial high-speed processing. 3.5" touchscreen for fast and direct parameter access. 8 digital encoders for parameter control. 8 customizable function keys.4 DMX universes direct from the console. Up to 20 universes via Artnet and sACN without external processors.Controls up to 10240 parameters. Built-in 2D visualizer for selection and real-time visualization. Customizable Graphical User Interface with context-sensitive toolbars and integrated Help menu.Powerful effects engine. 1000 cuelists with fader control.1000 cuelists with playback control buttons. Parallel execution of multiple cuelists.Submaster, Groupmaster and Override functionality.Parameter and Time-fanning functionality. Auto update for presets and cues. On-the-fly global timing adjustments. M-Series Manager Software for programming and triggering via time and calendar schedules,RS232 and IP triggers. Multiple wing attachment (M-Series Modules). MaxNet synchronized programming and playback support. Protocol: DMX512A (RDM), Art-Net2, sACN. 4 physical DMX ports. 20 DMX universes integrated. No limit to number of DMX channels per fixture. Extensive fixture library for all known manufacturers . 65000 presets for each group of functions (P/T, color, gobo, etc.). Effect generator for automated programming of complex effects. Customizable highlight and lowlight function to identify individual fixtures. 4 x universe outputs: 5-pin locking XLR. External monitor screen: 2 x HDMI.Art-Net/sACN for up to 20 DMX universes in total: Gigabit.RJ-45 MaxNet controller link: Gigabit RJ-45. Storage media/hardware peripherals: USB 3.0.Built-in Internal MIDI in/out/thru (MIDI show control, MIDI notes, MIDI timecode). Built-in Internal SMPTE Timecode In/Out: 3-pin XLR.	Each	1	872083.00	872083.00
				Total	**14323330.00**
Cables, Connectors, Accessories & Installation					
83	Supply, installation, testing & commissioning of Audio/ Line Cable : One 20 AWG shielded twisted pair with drain, Super flexible jacket with sequential numbering. .	Spool	1	20000.00	20000.00
84	Supply, installation, testing & commissioning of 16 Core snake cable: Stranded Bare Copper. Insulation: Polyolefin. Shielding: Twisted pairs are individually shielded with double serve 'french braid' shields with tinned copper drain wire. Jacketing: Pairs are individually jacketed with numbered and color-coded PVC, Overall Black PVC jacket. Multi audio balanced Oxygen Free Snake cable Outer diameter is 18.0mm. .	Meter	100	1400.00	140000.00
85	Supply, installation, testing & commissioning of 6 sq.mm for subwoofer, 4 Sq.mm for FOH Speaker, 2.5 Sq.mm for Under Balcony Speakers.	Spool	5	70000.00	350000.00

86	Supply, installation, testing & commissioning of Stereo Audio & Serial Control Cable : Two 20 AWG shielded twisted pair with drain, Super flexible jacket with sequential numbering.	Spool	1	75000.00	75000.00
87	Supply, installation, testing & commissioning of Digital twisted pair cables for Video with Connectors. .	Spool	1	100000.00	100000.00
88	Supply, installation, testing & commissioning of Shielded Cat6 cable for AV. .	Packet	0.5	74000.00	37000.00
89	Supply, installation, testing & commissioning of Connectors: XLR, Speakon, RCA, Stereo, Phoenix, XLR 3/5/Male/Female Solder connector. .	Lot	1	205000.00	205000.00
90	Supply, installation, testing & commissioning of 42U Equipment rack with 800mm Depth, 10 Nos 375mm base Shelfs.	Peice	2	60000.00	120000.00
91	Supply, installation, testing & commissioning of Surge Protection. Noise Filtration. Voltage Protection. Pull-out Lights. Diagnostic Lights. Isolated Banks. 10 AMP Rating. 11 Total Outlets. BNC Lamp Connector.	Peice	1	58500.00	58500.00
92	Supply, installation, testing & commissioning of 5 Mini Coax High-Resolution Cable.	Meter	200	615.00	123000.00
93	Supply, installation, testing & commissioning of Optical fibre cable for AV Transmission. .	Meter	200	200.00	40000.00
94	Supply, installation, testing & commissioning of 14 AWG stranded TC conductors, polyethylene insulation, twisted pairs,+ TC braid shield (90% coverage), 24 AWG stranded TC drain wire, PVC jacket. .	Meter	300	600.00	180000.00
95	Supply, installation, testing & commissioning of For Lighting Bars where the Outer diameter of the pipe or Bar is not more than 50mm. .	Peice	88	300.00	26400.00
96	35 KVA UPS System for whole Audjio Video & Stage Lighting System with 30 Min Backup. .	Peice	1	600000.00	600000.00
97	Restoration of site (Interior) after complete installation of AV eauipments.	JOB	1	100000.00	100000.00
98	1 year of warranty with another 2 years of CAMC. (1+2)	JOB	1	200000.00	200000.00
99	3 years of operational Services included for special events.	JOB	1	50000.00	50000.00
				Total	**2424900.00**
				Grand Total Amount including GST	**49998736.00**

Percentage quoted in figure and words -

Signature and address of contractor

END OF VOLUME - V

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

TENDER

FOR

Supply, Installation, Testing & Commissioning (SITC) of Audio – Visual System and Stage Lighting in Auditorium Building

VOLUME – VI

- **Tender Drawing**

OCTOBER 2018

आरोग्यम् सुख सम्पदा

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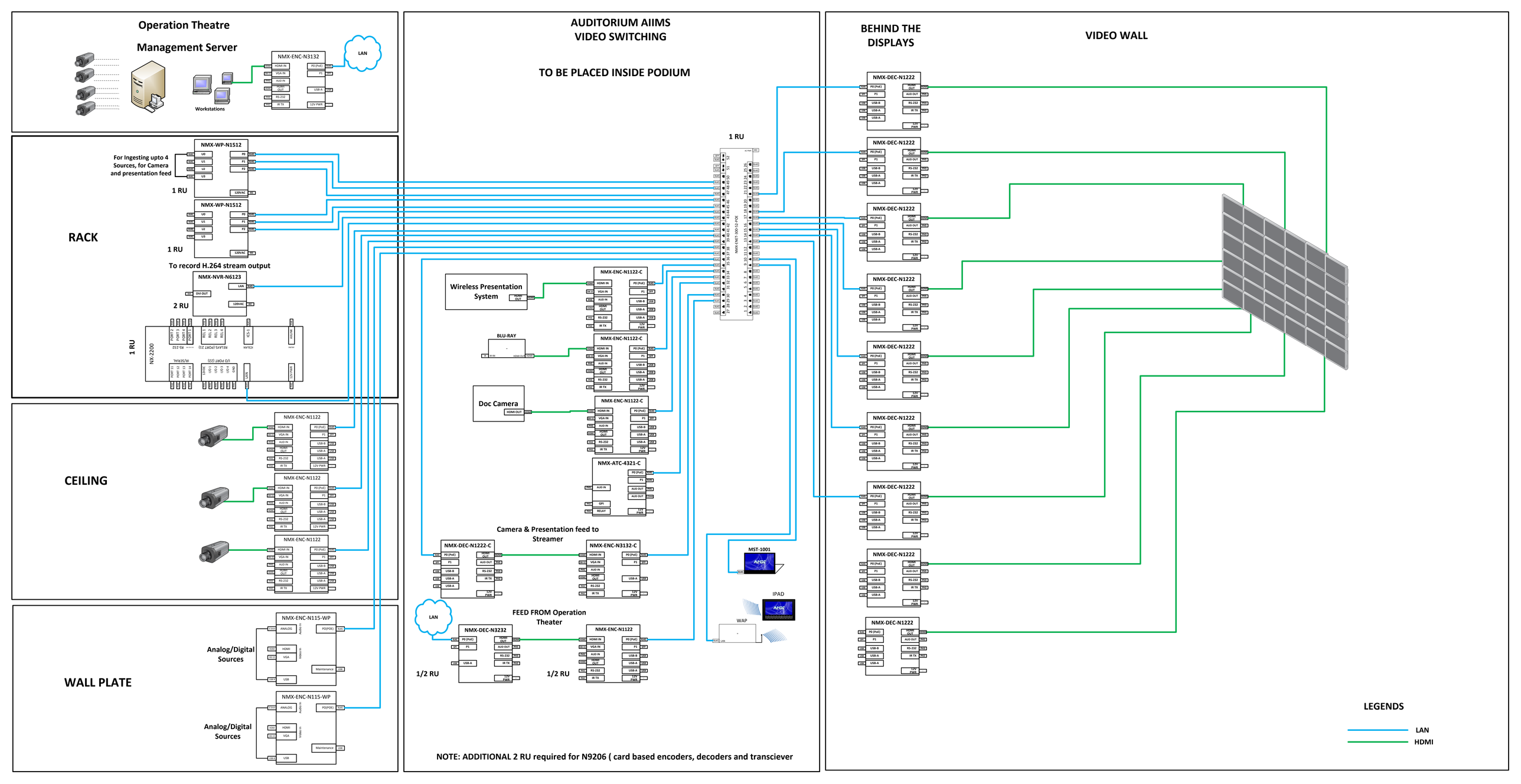
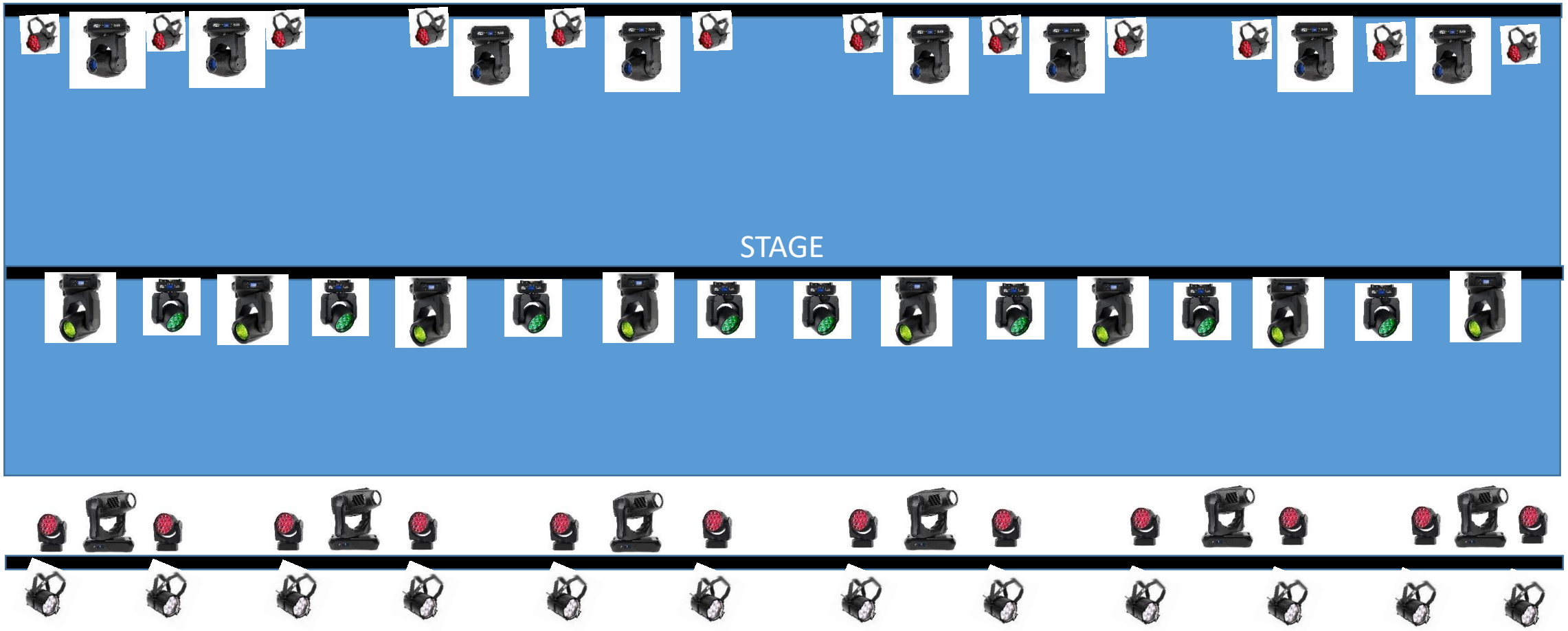
NIT No. 20/EE/AIIMS/RPR/2018-19 Dated 04.10.2018

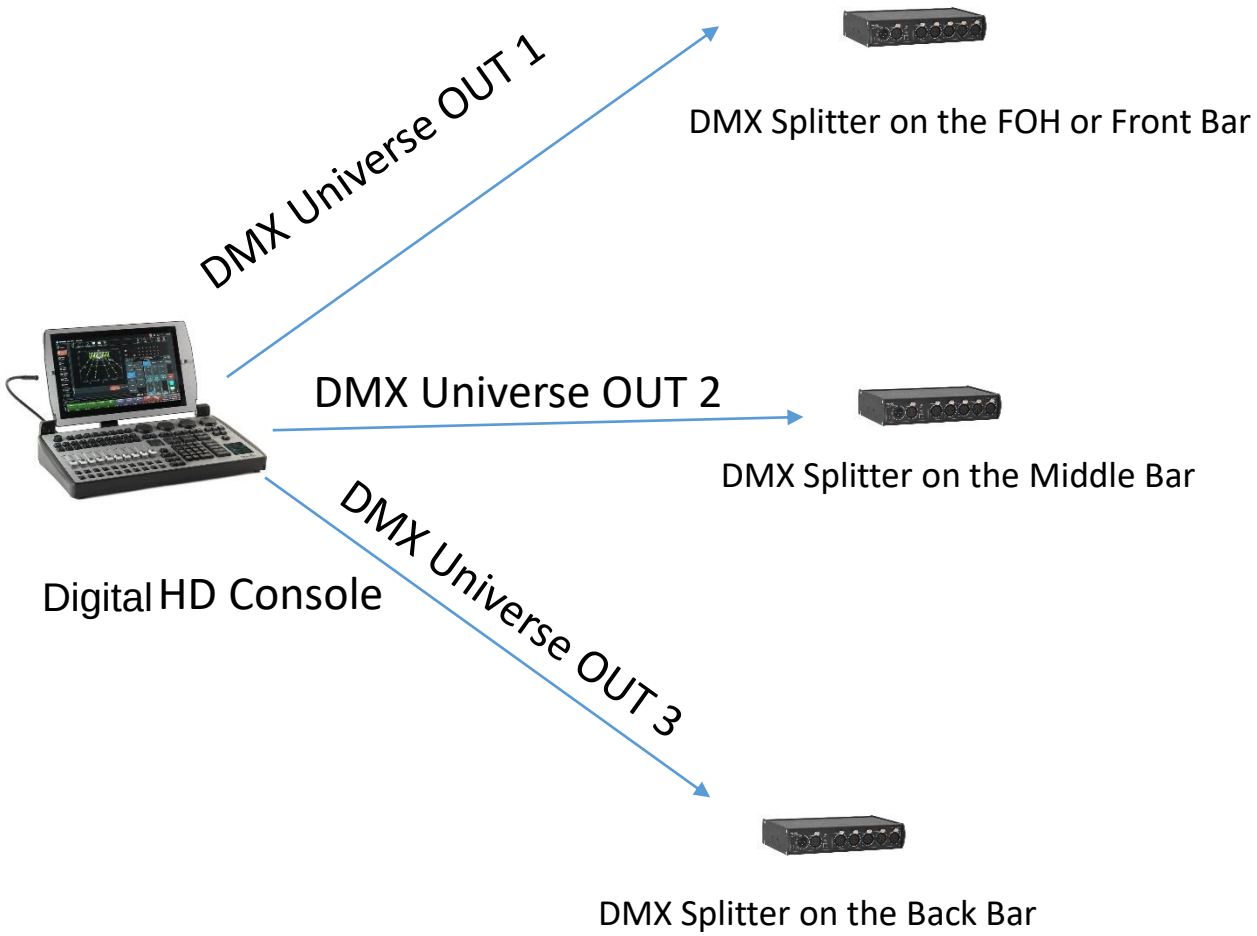

Operation Theatre
Management Server
Workstations
NMX-ENC-N3132
LAN
RACK
For Ingesting upto 4 Sources, for Camera and presentation feed
NMX-WP-N1512
1 RU
NMX-WP-N1512
1 RU
To record H.264 stream output
NMX-NVR-N6123
2 RU
NX-2200
1 RU
CEILING
NMX-ENC-N1122
NMX-ENC-N1122
NMX-ENC-N1122
WALL PLATE
Analog/Digital Sources
NMX-ENC-N115-WP
Analog/Digital Sources
NMX-ENC-N115-WP
AUDITORIUM AIIMS
VIDEO SWITCHING
TO BE PLACED INSIDE PODIUM
1 RU
NMX-XNET-3650-52-POE
Wireless Presentation System
NMX-ENC-N1122-C
BLU-RAY
NMX-ENC-N1122-C
Doc Camera
NMX-ENC-N1122-C
NMX-ATC-4321-C
Camera & Presentation feed to Streamer
NMX-DEC-N1222-C
NMX-ENC-N3132-C
MST-1001
IPAD
WAP
LAN
FEED FROM Operation Theater
NMX-DEC-N3232
NMX-ENC-N1122
1/2 RU
1/2 RU
NOTE: ADDITIONAL 2 RU required for N9206 (card based encoders, decoders and transciever
BEHIND THE DISPLAYS
VIDEO WALL
NMX-DEC-N1222
NMX-DEC-N1222
NMX-DEC-N1222
NMX-DEC-N1222
NMX-DEC-N1222
NMX-DEC-N1222
NMX-DEC-N1222
NMX-DEC-N1222
NMX-DEC-N1222
LEGENDS
LAN
HDMI

BACK BAR

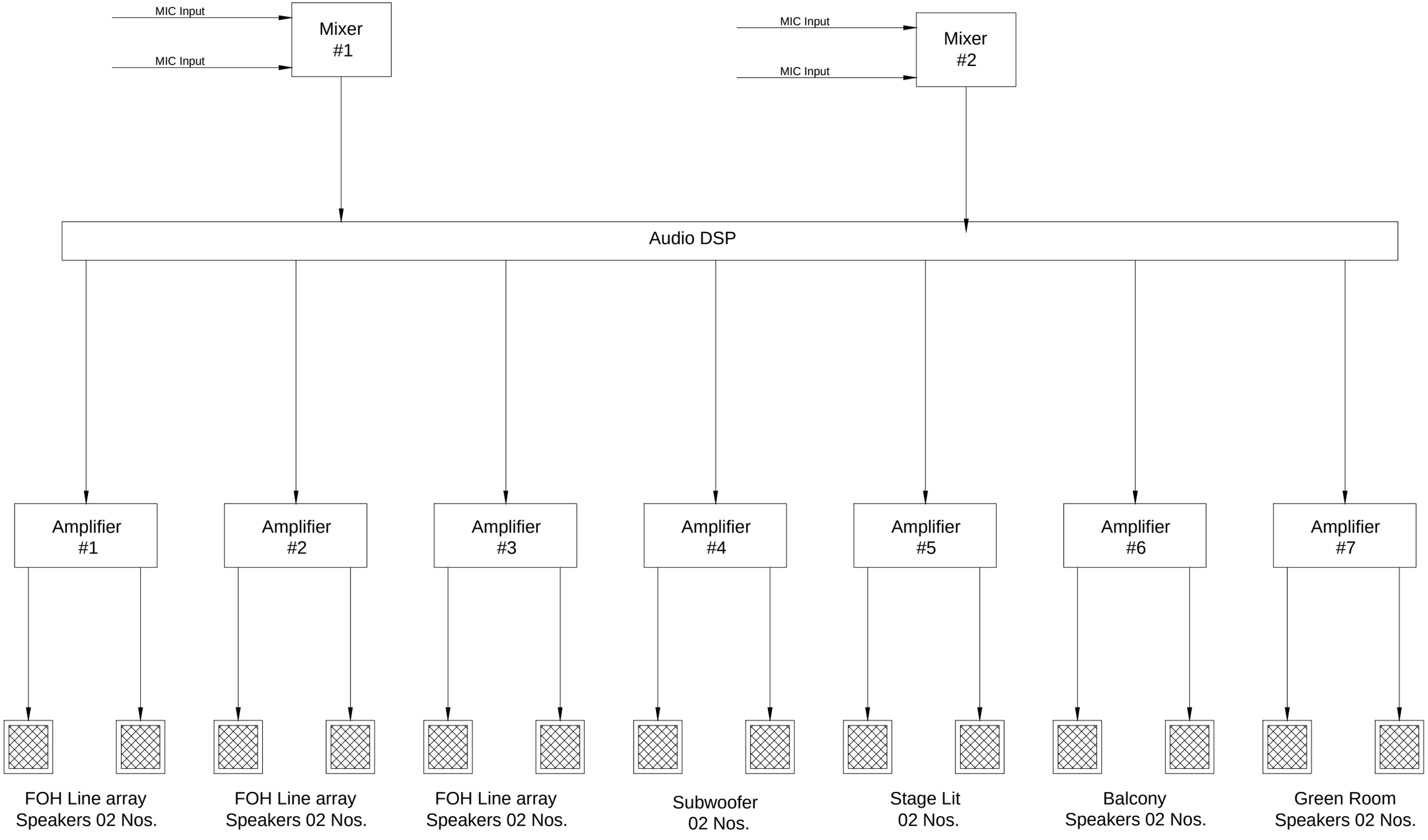


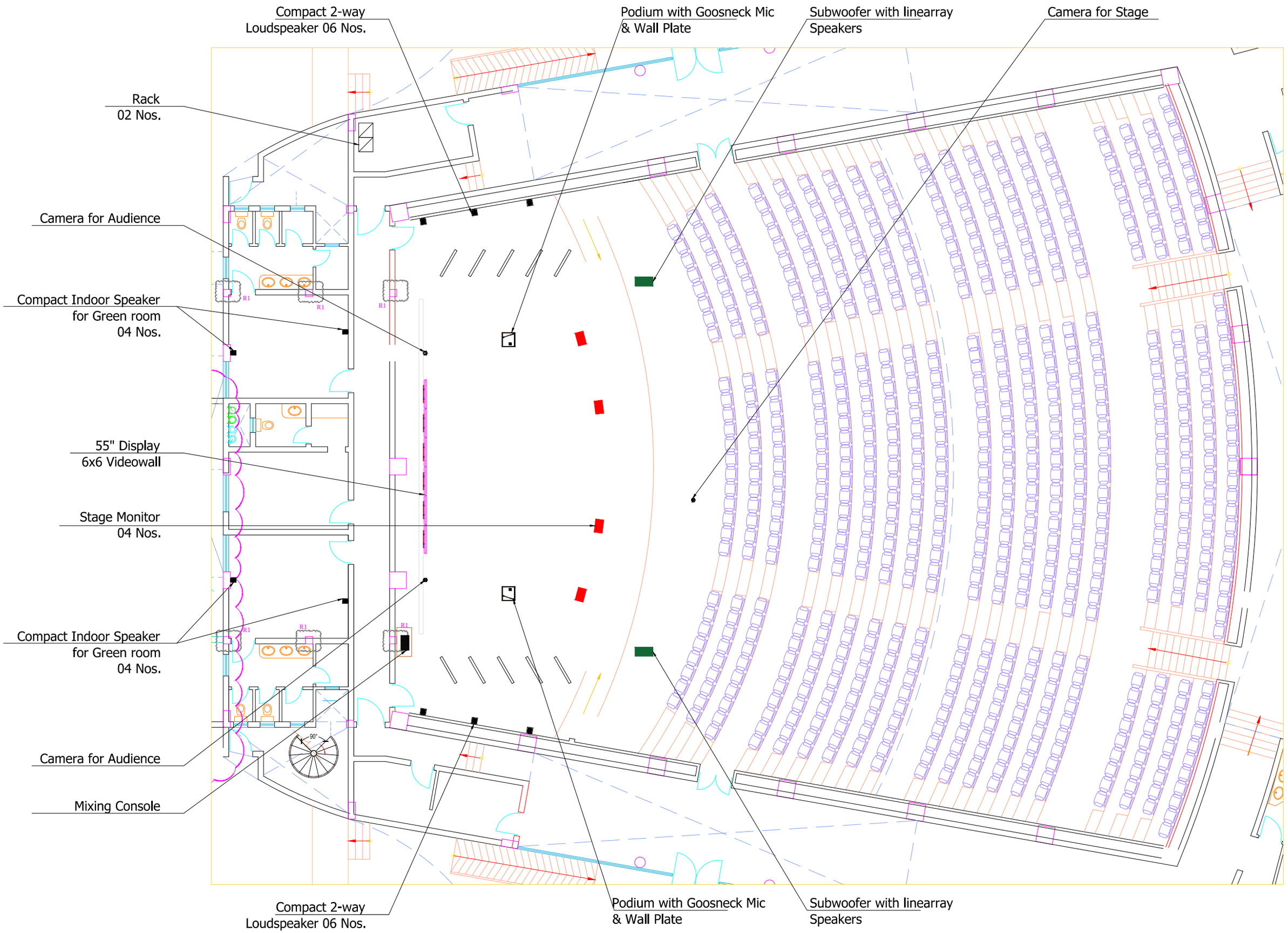
MIDDLE BAR

FRONT OR FOH BAR

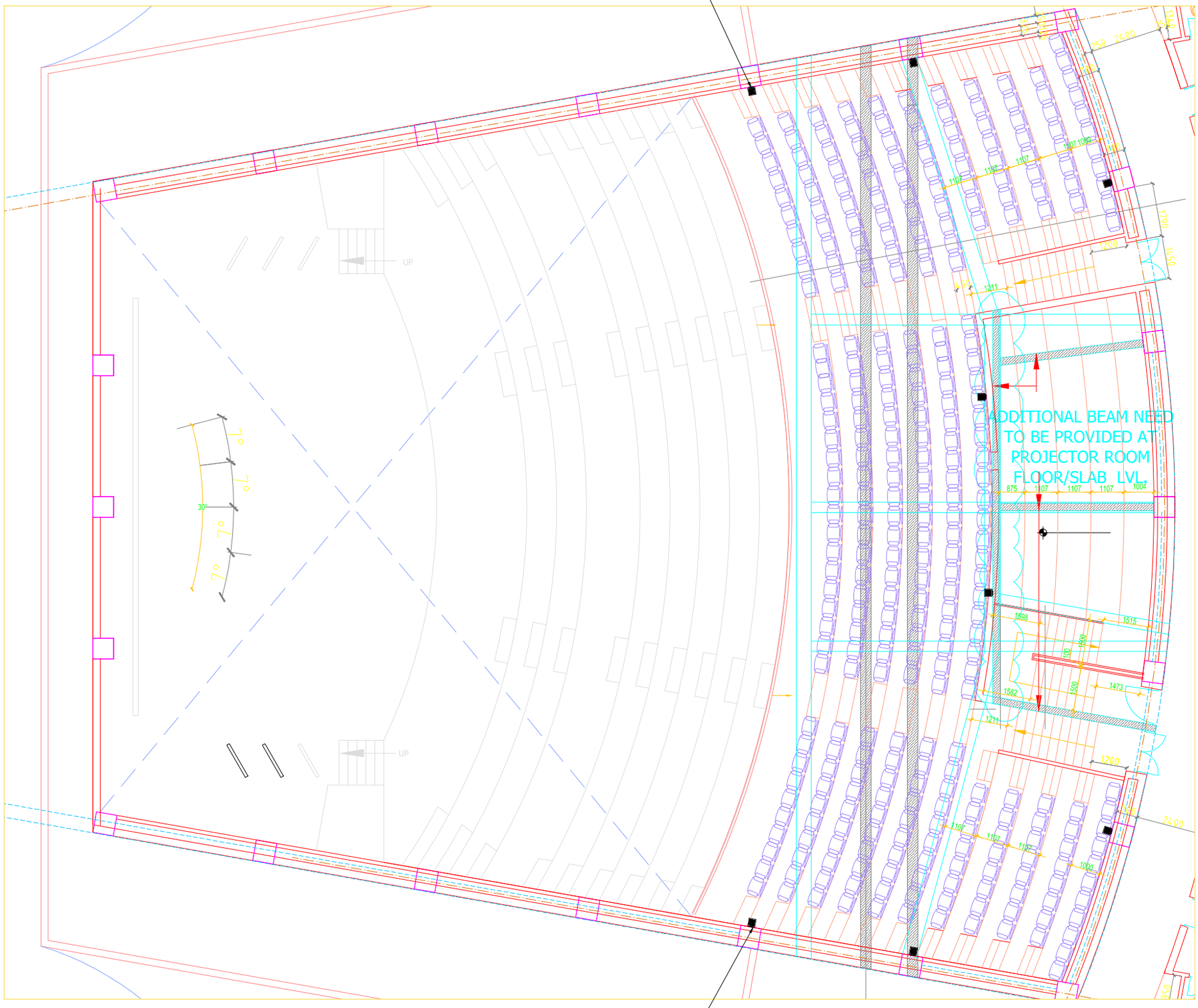


The Splitters have 1 INPUT & 5 OUTPUTS. DMX Cabling is simple daisy chain from one fixture to the other. One can decide at site how to do the DMX Cabling. Every Fixture needs individual Power Source. The console has all 5 Pin XLR OUTS and the splitters have 3 Pin XLR INPUT & 3 Pin XLR OUTS. All Fixtures have 5 Pin XLR INPUT & 5 Pin XLR OUTPUT so kindly workout the 3 Pin Male & Female connectors as well as 5 Pin Male & Female connectors respectively.


MIC Input
MIC Input
Mixer #1
MIC Input
MIC Input
Mixer #2
Audio DSP
Amplifier #1
Amplifier #2
Amplifier #3
Amplifier #4
Amplifier #5
Amplifier #6
Amplifier #7
FOH Line array Speakers 02 Nos.
FOH Line array Speakers 02 Nos.
FOH Line array Speakers 02 Nos.
Subwoofer 02 Nos.
Stage Lit 02 Nos.
Balcony Speakers 02 Nos.
Green Room Speakers 02 Nos.



NOTE: - ALL DIMENSIONS ARE IN MM.



UPPER BALCONY

NOTE: - ALL DIMENSIONS ARE IN MM.