



ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

OFFICE OF THE
EXECUTIVE ENGINEER
PROJECT CELL AIIMS, RAIPUR

NOTICE INVITING e-TENDER

N.I.T. NO. 38/EE/AIIMS/RPR/2023-24 (2nd call)

NAME OF WORK : **Comprehensive Annual Maintenance and operation of HVAC System installed at AIIMS Raipur.**

ESTIMATED COST : Rs. 4,20,33,264.00

EARNEST MONEY : Rs. 8,41,000.00

CONTRACT PERIOD : 3 years

TYPE OF WORK : Maintenance

**e-sign by Prashant Kumar Ravi
Executive Engineer
AIIMS, Raipur**

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INSTRUCTIONS FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

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

REGISTRATION:

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

SEARCHING FOR TENDER DOCUMENTS:

- 1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS:

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.

- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the Number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” or “Other Important Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS:

- 1) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidder has to select the payment option as “offline” to pay the tender fee / EMD as applicable and enter details of the instrument.
- 4) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- 5) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.
- 7) The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 8) The documents being submitted by the bidders would be encrypted using PKI encryption all techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is

maintained using the secured Socket Layer 128-bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key.

- 9) Further this key is subjected to asymmetric encryption using buyers/bid opener's public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 10) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 11) Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 12) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

ASSISTANCE TO BIDDERS:

- 1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- 2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk number 0120-4200462, 0120-4001002.
- 3) For any further assistance, please contact to the office of Executive Engineer, AIIMS Raipur.

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, RAIPUR

INFORMATION AND ISNTRUCTIONS FOR bidders FOR e-TENDERING FORMING PART OF BID DOCUMENT AND TO BE POSTED ON WEBSITE
(Applicable for inviting Open bids system)

NOTICE INVITING e-TENDER

(a)	Name of Work	“Comprehensive Annual Maintenance and operation of HVAC System installed at AIIMS Raipur.”
(b)	NIT No.	38/EE/AIIMS/RPR/2023-24 (2nd call)
(c)	Estimated Cost put to tender	Rs. 4,20,33,264.00
(d)	Earnest Money Deposit(Mandatory to submit original EMD for participating in Bid)	Rs. 8,41,000.00 (to be submitted in the form of an account payee demand draft, fixed deposit receipt from a commercial bank, bank guarantee issued/ confirmed from any of the commercial bank in India in favour of AIIMS,Raipur in the office of Project cell, AIIMS, Raipur before the last date of opening of technical Bid.
(e)	Period of Completion	3 Years
(f)	Last Date &Time of Submission	21-11-2023 Upto 15:00 Hours
(g)	Date & Time for opening of Technical Bid	22-11-2023 after 15:30 Hours.

1. The intending Bidder must read the Terms &conditions carefully. He/ She should only submit bid if consider himself/herself eligible and bidder in possession of all the documents required.
2. Information and Instructions for bidders posted on website shall from part of bid document.
3. The Bid documents consisting of specifications, the schedule of quantities of various types of items to be executed and the set of terms &conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website www.aiimsRaipur.edu.in Or <https://eprocure.gov.in/eprocure/app>.
4. Those contractors not registered on the website mentioned above, are required to get registered beforehand.
5. The intending bidder must have valid class-III digital signature to submit the bid.
6. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
7. Contractor can upload documents in the form of JPG format and PDF format.
8. Contractor must ensure to quote rate of each item. The column meant for quoting rate in figures appears in pink color and the moment rate is entered, it turns sky blue. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as “0”. Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as “0” (ZERO). In such a case, firm will have to execute those items free of cost.

9. The department reserve 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

**Executive Engineer
AIIMS, Raipur**



CPWD-6 FOR e-TENDERING

1. The Executive Engineer, AIIMS, Raipur on behalf of Director, AIIMS, Raipur invites online PercentageRate/Item—Rate bids in Two bid system (Technical cum Eligibility &Financial)**from Specialized agency/ Specialized firm**for the work of **“Operation and Comprehensive maintenance of Central Chillar plant and other HVACequipments installed at AIIMS Raipur”**

~~The enlistment of the contractors should be valid on the last date of submission of bids. In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.~~

2. The work is estimated to cost **Rs. 4,20,33,264.00/-** This estimate, however, is given merely as a rough guide.
3. The intending bidder must read the terms and conditions of Tender document carefully. Bidder may submit bid having all required documents.
4. Intending bidders shall have to register at CPPP portal to participate in the tendering process. For details kindly visit website [http:// eprocure.gov.in/eprocure/app](http://eprocure.gov.in/eprocure/app) or In case the bidder requires any elucidation regarding the tender documents, may contact to the office of Project Cell, AIIMS Raipur before the opening of tender date.
5. For e-tendering of this tender, downloaded from AIIMS Raipur website and Central Public Procurement Portal (CPPP) e-Procurement website.
6. The intending bidders must have valid class-III digital signature to submit the bid. **Manual bid shall not be accepted in any circumstance.** The complete bidding process is online bidding; Bidder should have valid digital Signature Certificate (DSC) for online submission of bids.
7. The bid document consisting of 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 <http:// eprocure.gov.in/eprocure/app> free of cost.
8. The bid can be submitted only after uploading the mandatory scanned documents up to 100 dpi Copies of eligibility documents and EMD as specified on the e-tendering website within the period of tender submission. Bidders can upload documents in the form of JPG format, PDF format and any other format as permissible by the e-tendering portal.
9. *Bidders must ensure to quote rate of each item. If any cell is left blank the same shall be treated as "0". Therefore, If any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0"(ZERO). After submission of the bid online the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.*

10. After submission of bid online, it can be revised any number of times before specified time on last date of submission of bid. *While submitting the revised bid, bidder can revise the rate of one or more item(s) any number of times (need not re-enter rate of all the items) but before last time and date of submission of bid as notified.*
11. Financial bids shall be opened online only for bidders for whom EMD and other uploaded documents are found in order and who are found to be eligible to bid for work. On opening date, the bidder can log in and see the bid opening process. After opening of bid he/she will receive the competitor bid sheets.
12. If the bidder is found ineligible after opening of technical cum eligibility, bid shall become invalid.
- 13. The Bidders shall have to submit original instrument for EMD before the last date of opening of TECHNICAL cum Eligibility Bid to the office of Tender Opening Authority. Bid security will be refunded to the successful bidder on receipt of a performance security. Bid securities of the unsuccessful bidders will be returned within 30 days of declaration of result of technical bid evaluation.**
14. The Technical cum Eligibility bid shall be opened first on due date and time as mentioned above. Opening of financial bids of contractors qualifying the eligibility shall be opened at a later date.
15. The department 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 criteria.
16. **Performance Guarantee:** The successful contractor will be required to furnish a Performance guarantee of **3% (Three Percent)** of Tendered Value after receiving notification of award in the form of **an account payee demand draft, fixed deposit receipt from a commercial bank, bank guarantee issued/ confirmed from any of the commercial bank in India** in the name of the "All India Institute of Medical Sciences, Raipur" which shall be kept valid for a period of 6 months beyond completion of all the contractual obligations. The Performance Guarantee can be forfeited in the event of any breach or negligence or non-observance of any condition of contract or for unsatisfactory performance or non-observance of any condition of the contract. Performance Security will be released after successful completion of work under the contract. *In case the contractor fails to deposit the said performance guarantee within the period including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with tender shall be returned after receiving the aforesaid performance guarantee.*

17. Sources and Verification of Bank Guarantees

Bank Guarantee for Bid Security (EMD), Performance Guarantee, Security Deposit should be irrevocable and operative Bank Guarantee (BG) as per format enclosed in the Bid Document and should be issued by a Scheduled Commercial (i.e. Indian or Foreign Banks included in the Second Schedule of Reserve Bank of India Act, 1934 excluding Co-operative banks or Regional Rural Banks). ~~In case of foreign bidders or in case of GTE, if Bank Guarantee is from a foreign bank branch situated outside India, the Bank Guarantee must be issued through any of the Scheduled Commercial Bank. In case BG is issued directly by a bank outside India, it should be executed on letter Head of the Bank and should be advised and made payable through their Indian Branch/Corresponding Bank in India.~~ The Issuing Bank should also state the name and designation of the next Higher Authority of the Officials who have issued the Bank Guarantee. Bank guarantees submitted by the tenderers/ contractors as EMD/ performance securities need to be immediately verified from the issuing bank **before acceptance**. There may not be any need to get the Bank Guarantee vetted from legal/ finance authority if it is in the specified format. Guidelines for verification of BGs submitted by the bidders/ contractors against EMD/ performance security/ advance payments and for various other purposes are as follows:

- i) BG shall be as per the prescribed formats;
- ii) The BG contains the name, designation and code number of the Bank officer(s) signing the guarantee(s);
- iii) The address and other details (including telephone no.) of the controlling officer of the bank are obtained from the branch of the bank issuing the BG (this should be included in all BGs). The confirmation from the issuing branch of the bank is obtained in writing through registered post/ speed post/ courier. The bank should be advised to confirm the issuance of the BGs specifically quoting the letter of Procurement Entity on the printed official letterhead of the bank indicating address and other details (including telephone nos.) of the bank and the name, designation and code number of the officer(s) confirming the issuance of the BG; Pending receipt of confirmation as above, confirmation can also be obtained with the help of responsible officer at the field office, which is close to the issuing branch of the bank, who should personally obtain the confirmation from issuing branch of the bank and forward the confirmation report to the concerned procurement entity.

18. Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids, 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 bid. A bidder shall be deemed to have full knowledge of the site whether he

inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his 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 bid 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.

19. The Tender paper/documents can be seen / downloaded from Official website & submitted through Online.
20. The competent authority on behalf of the Director, AIIMS, Raipur does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids 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.
21. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable to rejection.
22. The Competent Authority, the **Engineer-In-Charge**, reserves to himself the right of accepting the whole or any part of the bid and the bidder shall be bound to perform the same at the rate quoted.
23. The contractor shall not be permitted to bid for works in the AIIMS, Raipur responsible for award and execution of contracts, in which his near relative is posted as an officer in any capacity between the grades of Executive 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 gazette officer in the AIIMS, Raipur. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
24. The bid for the works shall remain open for acceptance for a period of **90 days** from the date of opening of bids.
25. This notice inviting bid shall form a part of the contract document. The successful bidder/ contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of "The Notice Inviting bid, all the documents including additional conditions, specifications and drawings, GCC, if any, forming part of the bid as uploaded at the time of invitation of bid and rate quoted online at the time of

submission of bid and acceptance thereof together with any correspondence leading thereto.

26. Purchase preference shall be given to Class-I local supplier(s) based on their declaration of the percentage (%) of minimum local content used in the manufacturing of quoted product as per Public Procurement (Preference to make in India), Order 2017 notification issued by GoI, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion (DIPP) vide order no. P-45021/2/2017-PP (BE-II) dated 15/06/2017 and order no. 31026/65/2020-MD dated 30/12/2020 issued by Ministry of Chemicals & Fertilizers, Department of Pharmaceuticals

“Local Content” means the amount of value added in India which shall be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

27. It is expected that, all the participating BIDDER companies have understanding and prior knowledge about the “Make in India” Initiative and Price Preference Policy of Govt. of India. However, it is once again emphasized that before participating this e-tender please carefully read the “Make in India” Initiative and directives of Govt. of India, since in case if any “Make in India” Registered Company will participate against this e-tender, the Price preference as per the same will be given to such participating Bidder company for ensuring necessary compliances of “Make in India” Policy of the Govt. of India.

28. Eligibility of Bidder

(a) Minimum Eligibility Criteria :

- (i) The Applicant should be **Specialized agency/ Specialized firm.**
- (ii) Average annual financial turnover on construction works should be at least 30% of the estimated cost put to tender during the immediate last three consecutive financial years. The value of annual turnover figures shall be brought to current value by enhancing the actual turnover figures at simple rate of 7% per annum.
- (iii) Experience of having successfully completed similar work in Govt./ Semi Govt./ PSU/ Autonomous Bodies of Govt. during last 7 years ending on previous day of last day of submission of tender. 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 day of submission of tenders.

Three similar* works each of value not less than 40% of the estimated cost put to tender with minimum 600 TR capacity of individual chiller.

OR

Two similar* works each of value not less than 60% of the estimated cost put to Tender with minimum 600 TR capacity of individual chiller.

OR

One similar* work of value not less than 80% of the estimated cost put to tender with minimum 600 TR capacity of individual chiller.

*Similar work shall mean works of “**Operation and Comprehensive maintenance of Central Air Conditioning System/ Operation and Comprehensive maintenance of HVAC System**”.

- **Comprehensive maintenance of High side of HVAC system shall be got executed by OEM/Authorized service agencies of OEM.**

(b) **Bid Capacity and Technical Eligibility Criteria:**

- (i) The bidder who comply with the above Minimum Eligibility Criteria will be eligible further for consideration of bid(s) only if their available bid capacity is more than the Estimated Cost Put To Tender for the work mentioned in this Notice Inviting Tender.

The available bid capacity shall be calculated as under:

Assessed available Bid Capacity = $(A \times N \times 1.5 - B)$

Where

‘N’ = Number of years prescribed for completion of work for which bid has been invited.

‘A’ = Maximum turnover in construction works executed in any one year during the

last seven years taking into account the completed as well as works in progress.

The value of completed works shall be brought to current costing level by enhancing at a simple rate of 7% per annum

‘B’ = Value of existing commitment and ongoing works to be completed

The values for

A= Computed for the Bidder from **Performa-III**

N= No. of years for “Period of Completion” for work for which NIT is invited.

B= Computed for the Bidder from **Performa-VI**

Bidder shall submit details of ongoing works as per **Performa-III and Performa-VI**

- (i) For the Contractors to whom any work(s) in AIIMS Raipur is awarded and in progress, prior to Opening of Financial Bid, a Monthly Performance Report for contractors will be prepared by the Engineer-in Charge to ascertain their performance to complete any additional work in AIIMS Raipur within Stipulated Time of completion of work or Extended Time of completion of work (if any). Any adverse remark in the Monthly Performance Report for contractor shall result in rejection of Technical Bid of such contractor for this NIT. This criteria for Technical Eligibility of Bidder may be relaxed in the case of contractor whose performance has been found to be very high order with the approval of Director, AIIMS Raipur.

(c) Contractual Performance in Other Departments

Letter of past contractual performance to be submitted by bidder as per **Performa - VII**

29. Signing of bid document:

- a. If the bidder is an individual, the bid shall be signed by him above his full type written name and current address.
- b. If the bidder is a proprietary firm, the bid shall be signed by the proprietor above his full type written name and the full name of his firm with its current address.
- c. If the bidder is a firm in partnership, the bid shall be signed by all the partners of the firm above their full type written names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the later case a certified copy of the power of attorney should accompany the application. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the application.
- d. If the bidder is a limited company or a corporation, the bid shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The bidder should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.

30. In the bid documents the word / sentence shall be read as under :-

- a. President of India – Director, AIIMS, Raipur**

b. The terms Director General includes CPM/ADG region/ SDG PR Special Director General / Additional Director General and CPM/ Chief Engineer of the Zone - Director/Executive Engineer/Executive Engineer, AIIMS, Raipur.

c. CPWD – AIIMS Raipur.

31. Any dispute or difference arising out of this contract or in connection therewith which cannot be amicably settled between the parties shall be finally settled under the rules of council of Arbitration of India by one or more arbitrator appointed in accordance with the said rules. The arbitration shall take place at Raipur (Chhattisgarh) and the resulting award shall be final and binding upon the parties and shall be in lieu of any other remedy.



PROFORMA OF SCHEDULES

SCHEDULE 'A'

Schedule of quantities enclosed on separate sheets from page : 89

SCHEDULE 'B'

Schedule of materials to be issued to the contractor:

S.No.	Description of item	Qty.	Rates in figures & words at which the material will be charged to the contractor.	Place of issue
1	2	3	4	5
		----- NIL ----- -----		

SCHEDULE 'C'

Tools and plants to be hired to the contractor

S.No.	Description	Hire charges per day	Place of issue
1	2	3	4
		----- NIL -----	

SCHEDULE 'D'

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

SCHEDULE 'E'

Reference to General Condition of Contract : CPWD GCC-2023 (Maintenance Works) modified and amendment up to the last date of submission of tender.

Name of work : **“Comprehensive Annual Maintenance and operation of HVAC System installed at AIIMS Raipur.”**

Estimated Cost of work : **Rs. 4,20,33,264.00**

(i) Earnest money : **Rs. 8,41,000.00**

(To be returned after receiving of Performance Guarantee)

- (ii) Performance Guarantee : 3% of tendered value.
- (iii) Security Deposit : 2.5% of tendered value.

SCHEDULE 'F'

GENERAL RULES & DIRECTIONS:

Officer inviting tender : **Executive Engineer, AIIMS Raipur on behalf of Director AIIMS Raipur.**

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3. : See below

Definitions:

2(v) Engineer-in-Charge : **Executive Engineer, AIIMS Raipur**

2(viii) Accepting Authority : **Executive Engineer, AIIMS Raipur (C.G)**

2(x) Percentage on cost of materials and labour to cover all overheads and profits : **15%**

2(xi) Standard Schedule of Rates : **As per Market Rates**

2(xii) Department : **Project Cell, AIIMS Raipur.**

9(ii) Standard CPWD contract Form : **GCC 2023 (Maintenance Works) & CPWD Form 7/8 as modified & corrected up to last date of receipt of Bid/tender.**

CLAUSE 1

(i) Time allowed for submission of Performance Guarantee, programme chart (Time and progress) and applicable labour Licenses, registration with EPFO, ESIC and BOCW welfare board or proof of applying Thereof from the date of issue of letter of acceptance : **07 Days**

(ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period Provided in (i) above : **03 Days**

CLAUSE 2

Authority for fixing compensation under clause 2 : **Superintending Engineer/ Director, AIIMS**

CLAUSE 2A

Whether Clause 2A shall be applicable : **NA**

Authority to decide:

- (i) Extension of time : Executive Engineer, AIIMS Raipur (C.G.)
- ~~(ii) Rescheduling of mile stones : Executive Engineer/Director, AIIMS Raipur~~
- (iii) Shifting of date of start in case of delay in handing over of site : Executive Engineer/Director, AIIMS Raipur

CLAUSE 5

Time allowed for execution of work – **3 Years.**

Number of days from the date of issue of letter of acceptance for reckoning date of start : **10 Days**

Mile stone(s) as per table given below:-

Sl No	Description of Milestone (Physical)	Time allowed in days (from date of start)	Amount to be withheld in case of non-achievement of
1	← NIL →		
2			
3			
4			→

Authorities:

- (i) To take action under clause 5:- **Executive Engineer, AIIMS Raipur or his successor**

PROFORMA OF SCHEDULES CLAUSE 5**Schedule of handing over of site**

Part	Portion of Site	Description	Time Period for handing over reckoned from date of issue of letter of Intent.
Part A	Portion without any hindrance	All works	10 days
Part B	Portions with encumbrances	NA	NA
Part C	Portions dependent on work of other agencies	NA	NA

CLAUSE 5A

Whether Clause 5A shall be applicable : **NA**

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.

Minimum Rs. 13 lakh.
Running Account Bills to be
submitted by Contractor and
payment to be made after 30 days
from payment of Previous RA Bills.

CLAUSE 7 A

Whether clause 7A shall be applicable : YES

CLAUSE 8

Authority to decide compensation on account if
contractor fails to submit completion plans : **Superintending Engineer/Director,
AIIMS**

CLAUSE 10A : **As required by Engineer-in-
Charge**

CLAUSE 10B (II)
Whether Clause 10 B (ii) shall be applicable : **Not Applicable**

CLAUSE 10C
Component of labour expressed as percent of
value of work : **Not Applicable**

CLAUSE 10CC : **Not Applicable**

CLAUSE 11
Specifications to be followed for execution of work : CPWD General Specifications for
Heating, Ventilation & Air-
Conditioning (HVAC) 2017, for Electrical
Works, Part-I (Internal-2013), Part-II
(External-1994), Part-IV (Sub Station-
2013), amended up to date and
additional terms & conditions
attached.

CLAUSE 12

Authority to decide deviation upto 1.5 times
of tendered amount : **Executive Engineer/Director, AIIMS
Raipur**

**The Completion cost of any agreement for maintenance works including works of up-
gradation, aesthetic, special repair, addition/alteration should not exceed two times the
contract amount. Deviation up to 1.25 times of Contract amount shall be approved by
Engineer-in-Charge with recorded reasons. Deviation beyond 1.25 times up to 1.50 times
of contract amount shall be approved by SE with recorded reasons. In exceptional case,
Director, AIIMS, Raipur shall have power to approve the deviation beyond 1.50 times up
to 2.0 times of Contract amount with recorded reason and take suitable corrective
action.**

12.2&12.3

Deviation Limit beyond which clauses
12.2 & 12.3 shall apply for building work : No limit

Maintenance works including works of up-gradation, aesthetic, special repair, addition / alteration.

- (i) 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 considered in the estimated cost put to tender plus/minus percentage above/below quoted contract amount. Payment of Extra Item, in case of non-schedule items (Non-DSR items) shall be made as per Office Memorandum No DG/CON/313 dated 17.02.2021.
- (ii) In the case of contract items, which exceed the limit laid down in Schedule F, the contractor shall be paid rates specified in the schedule of quantities.

12.5

- (i) Deviation Limit beyond which clauses
12.2 & 12.3 shall apply for foundation work
(except items mentioned in earth work subhead : No limit
in DSR and related items)
- (ii) Deviation Limit for items mentioned in earth
work subhead of DSR and related items : No limit

CLAUSE 16

Competent Authority for deciding reduced rates : Superintending Engineer/ Director, AIIMS Raipur

CLAUSE 18

List of mandatory machinery, tools & plants : As required by Engineer -in- Charge
to be deployed by the contractor at site

CLAUSE 19 C..... Engineer- in charge (Executive Engineer)

CLAUSE 19 D..... Engineer- in charge (Executive Engineer)

CLAUSE 19 G Engineer- in charge (Executive Engineer)

CLAUSE 19 K Engineer- in charge (Executive Engineer)

CLAUSE 19 L Applicable

CLAUSE 25

Constitution of Dispute Redressal Committee (DRC): AIIMS, Raipur

CLAUSE 32 : **Applicable**

Requirement of Technical Representative(s) and recovery Rate

Sl. no.	Minimum qualification of technical representative	Disciplin	Designation (Principal technical / Technical representative)	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36 (i)	
						Figure	Words
1	Graduate Engineer	Site Engineer	Principal technical Representative	5	1	Rs. 25000/- per month	Rupees Twenty Five thousand only.
2	Graduate Engineer or Diploma Engineer	Site Engineer	Site Engineer	2 or 5	2	Rs. 15000/- per month	Rupees Fifteen thousand only.

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.

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

CLAUSE 38

- (i) Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of : Not Applicable
- (ii) Variations permissible on theoretical quantities
 - (a) Cement
 - For works with estimated cost put to tender not more than Rs. 25 lakh : 3% Plus/minus
 - For works with estimated cost put to tender more than Rs. 25 lakh : 2% Plus/minus
 - (b) Bitumen all works : 2.5% Plus & only & nil on minus side
 - (c) Steel Reinforcement and Structural steel section for each diameter, section and category : 2% Plus/minus
 - (d) All other materials : Nil

List of Mandatory Documents to be filled in by the bidders in various forms to be scanned and uploaded within the period of bid submission

1	Enlistment Order for the Contractor(Wherever applicable)
2	Scanned Copy of EMD (Original to be submitted as mentioned in Information and Instructions for Bidders for e-Tendering)
3	Letter of transmittal (Annexure-A)
4	Vendor Details as per (Annexure-B)
5	Structure & Organization (Annexure-C)
6	Declaration by Bidder (Annexure-D)
7	Consent Letter (Annexure-E)
8	Self Certification under Preference to “MAKE IN INDIA” Policy (Annexure –F)
9	GST Registration Certificate
10	Proof of Average Annual Financial Turnover should be at least 30% of the estimated cost put to tender during the immediate last three consecutive financial years (Proforma III)
11	Details of The Similar Works Completed In Last Seven Years (Performa-IV)
12	Details of ongoing/existing works (Proforma-VI)
13	Affidavit on non-judicial paper of Rs. 50/- duly attested by Notary/ Magistrate for PAST CONTRACTUAL PERFORMANCE (Proforma-VII)
14	Consent Letter from Associate Specialized Agency (Form A) and MoU (Form B) If the main agency (Enlisted contractor) have not experience of similar works.

e-sign by Prashant Kumar Ravi
Executive Engineer
AIIMS, Raipur

LETTER OF TRANSMITTAL

From:

To

The Executive Engineer,
Project Cell, AIIMS, Raipur (C.G.)

Subject: Submission of bids for the work of “**Comprehensive Annual Maintenance and operation of HVAC System installed at AIIMS Raipur.**”

Sir,

Having examined the details given in the bid document for the above work, I/we hereby submit the relevant information.

1. I/we hereby certify that all the statement made and information supplied in the enclosed forms A to H and accompanying statement are true and correct.
2. I/we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
3. I/we authorize Engineer-In-Charge or his representative to approach individuals, employers, firms and corporation to verify our competence and general reputation.
4. I/we submit the requisite certified net worth or solvency certificate and authorize the Executive Engineer, AIIMS, Raipur to approach the Bank issuing the solvency certificate to confirm the correctness there of. I/we also authorize the Executive Engineer, AIIMS, Raipur to approach individuals, employers, firms and corporation to verify our competence and general reputation.
5. I/we submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following eligible similar works:

Name of work	Certificate from

Certificate: It is certified that the information given in the enclosed eligibility bid are correct. It is also certified that I / We shall be liable to be debarred, disqualified / cancellation of enlistment in case any information furnished by me / us is found to be incorrect.

Enclosures:

Date of submission:

Seal of bidder

Signature(s) of Bidder(s)

FORM FOR DETAILED INFORMATION BY BIDDER (Vendor Details)

1.	Name of the Bidder	
2.	Permanent Account No (PAN)	
3.	Particulars of Bank Account	
	a) Name of the Bank	
	b) Account Number	
	c) Name of the Branch	
	d) Branch Code	
	e) Address	
	f) City Name	
	g) Telephone No	
4.	Legal status of the bidder (attach copies of original document defining the legalstatus)	
	a) An Individual	
	b)A proprietary firm	
	c)A firm in partnership	
	d) A limited company or Corporation	
5.	GST Registration Certificate No	
6.	Valid Email ID of the Bidder	
7.	Complete Postal Address of the bidder	

(Authorized Signature of the Bidder with Seal)

STRUCTURE & ORGANISATION

1. (a) Name
(b) Address of the bidder
2. (a) Telephone no.
(b) Telex no.
(c) Fax no.
(d) E-mail
3. Legal status of the bidder (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
4. Particulars of registration with various Government Bodies if any (attach attested photocopy)

Organization/Place of registration	Registration No.
1.	
2.	
3.	
5. Names and titles of Directors & Officers with designation to be concerned with this work.

Signature of Bidder(s) with Seal

DECLARATION

It is to certify that:

- 1) I/We agree with the terms and conditions of it and understood that it will form part of the agreement.
- 2) I hereby certify that none of my Relative(s) are employed in AIIMS Raipur, Chhattisgarh. In case at any stage, it is found that the information given by me is false/incorrect, AIIMS shall have the absolute right to take any action as deemed fit without any prior intimation to me”.
- 3) I/We undertake and confirm that eligible Work(s) has/have not been got executed through another contractor on back to back basis. Further, it is stated that, if such a violation comes to the notice of Department, than I/We shall be debarred for bidding in AIIMS in future forever. Also, if such a violation comes to the notice of AIIMS, Raipur before date of start of work, the Engineer-In-Charge shall be free to forfeit the entire amount of Earnest MoneyDeposit/Performance Guarantee.
- 4) I / We have signed (with stamp) uploaded documents of the tender before submitting the same.
- 5) All the information and documents given/ uploaded for bids are true.
- 6) I / We have provided our e-Mail id for any communication in this regard.
- 7) I have read carefully & understood the important instructions to the all bidders.

Date.....

Contractor

E-Mail: _____

(Sign with Seal)

CONSENT LETTER

“Comprehensive Annual Maintenance and operation of HVAC System installed at AIIMS Raipur.”

I/We hereby give my/ our consent to work as contractor till the completion of work and I/we will be responsible for execution of work only by skilled persons in the field of **related work** as per satisfaction of Engineer-In-Charge.

I/We have experience to technically execute, take measurements and will produce computerized measurement sheets of work before covering hidden work / job and other exposed works in time as per clause 6 otherwise measurement will be recorded by the representative of Engineer-In-Charge which will be bound to me. Final measurement with bill will be produced by me/us within one month after completion date otherwise representative of Engineer-In-Charge will prepare the same which will be acceptable and bound to me/us and no any claim in this regard will be made by me/us.

I/We will provide all invoices and related test certificates of materials as required by E-In-C. All Analysis of rates for Extra, Deviation items etc. will be produced by me/us in consultation with representative of Engineer-In- Charge on time for getting approval from Competent Authority of AIIMS before execution of work or otherwise the same will be prepared by the department and will be bound to me/us.

I/we will also engage suitable and skill Engineer(s) for the work as per Clause 32 of General Condition of Contract.

I further certify that the above particulars pertaining to me are correct.

I/We will produce all uploaded documents in original for physical verification before issue of Letter of Acceptance or / and as demanded by Engineer-In Charge before the payment.

I/We will submit “No Claim Certificate” in the approved format in company letter head after receiving final bill payment.

Signature of contractor with seal

Self Certification under Preference to “MAKE IN INDIA” Policy

CERTIFICATE

In line with Government Public Procurement Order No. P-45021/2/2017-BE-II dt. 15/06/2017, its revision dated 04/06/2020 and any subsequent modifications/Amendments from time to time and as applicable on the date of submission of tender, we hereby certify that we _____ (Name of Contractor/Firm/ Agency) are local Contractors and will meet the requirement of minimum Local content (50%) as defined in above orders for the material against Tender No _____, if selected as _____ Lowest Bidder

Details of location at which local value addition will be made is as follows:

The information furnished hereinafter is correct to the best of my knowledge and belief and I undertake to produce relevant records before the procuring entity or any other Government authority for the purpose of assessing the local content of goods/services/works supplied by me.

In the event of the local content of the goods/services/works mentioned herein is found to be incorrect and not meeting the prescribed supplier class categorization criteria as per said order, based on the assessment of procuring agency(ies)/Government Authorities for the purpose of assessing the local content, action shall be taken against me in line with the PPP-MII order and

provisions of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rule for which for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Thanking You

Seal and Signature of Authorized Signatory

Date: _____

ANNUAL TURNOVER FOR THE LAST THREE YEARS

S. No.	FINANCIAL YEAR	Annual Turnover from Construction Works (Rs. in Lacs)	Remarks
1	2020-21		
2	2021-22		
3	2022-23		

Note:

- 1 The bidder shall submit the Certificate from the Chartered Accountant, wherever the Annual Turnover is certified for the relevant financial year in which the minimum criteria of Annual Turnover is satisfied should also be submitted.

DETAILS OF THE SIMILAR WORKS COMPLETED IN LAST SEVEN YEARS

Sl. No.	Description of the work with Contract No./ Work Order No.	Department in which work carried out	Date of award	Stipulated date of completion	Date of actual completion	Value of completed work (Rs. in Lacs)	Reasons for delays, Penalty if any	Any other relevant information

Note:

- 1. The Bidder shall submit the attested Copies of the Completion Certificates from the Client i.e. Department(s) of Govt./Semi Govt./PSU/Autonomous Bodies of Govt..**

DETAILS OF ON-GOING/EXISTING WORKS

Sl.No.	Description of The Work With Contract No./ Work Order No.	Department in which work is awarded	Date of award	Stipulated date of completion	Value Of work as per order (Rs.in lacs)	Value of Work completed so far (Rs. Inlacs)	Anticipated date of Completion of work	Any other Relevant information

Note:

- 1. The copies of Work Orders of ongoing-awarded works and documentary proof for payment issued by the Client i.e. Department(s) of Govt./Semi Govt./PSU/Autonomous Bodies of Govt. shall be attached.**

PAST CONTRACTUAL PERFORMANCE

(Affidavit on non-judicial stamp paper of Rs.50/- duly attested by Notary/Magistrate)

This is to certify that We, M/s _____[Name of the Bidder with address], in submission of the Bid “(Name of the Work and NIT No.)”:

- i) have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements;
- ii) do not have records of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.;
- iii) have never been banned by any Central/State Govt. Departments/Public Sector Undertakings or Enterprises or Autonomous Bodies of Central/State Govt.;
- iv) have submitted all the supporting documents and furnished the relevant details as per the prescribed format.; and
- v) have submitted all the information and the requisite documents with the Bid and further certify that we are fully responsible for the correctness of the information and documents submitted by us.

SEAL AND SIGNATURE OF THE BIDDER

Note: Exceptions of the above, if any, shall be clearly mentioned with details by the bidder for evaluation/consideration if any.

**CONSENT LETTER FROM ELIGIBLE ASSOCIATE AGENCY OF SPECIALIZED
WORK(S)**

Name of work: **~~“Comprehensive Annual Maintenance and operation of HVAC
System installed at AIIMS Raipur.”~~**

- ~~1. I / We hereby give my consent to associate with M/s
for executing the of work of (Mention specialized work(s)).~~
- ~~2. I / We will execute the work as per specifications and conditions of the agreement
and as per directions of the Engineer in Charge for the corresponding specialized
work(s) till the completion of the work.~~
- ~~3. I / We will be responsible for necessary action to handover the installations and
for rectification of defects and repair during the maintenance / warranty period.~~
- ~~4. Also I / We will employ full time technically qualified Engineer / supervisor for
the specialized work(s) component of the work as required for the work. I / We
will attend inspection of officers of the department as and when required.~~

Date:

~~Signature with date of Main Agency
/Contractor~~

~~Address:~~

~~Signature with date of Associate
Specialized Agency~~

~~Address:~~

~~1. Witness with address~~

~~—(From main contractor side)~~

~~2. Witness with address~~

~~—(From associated agency side)~~

MEMORANDUM OF UNDERSTANDING [M.O.U] BETWEEN

1] M/S [Name of the firm/agency with full address]

—Enlistment Status

—Valid Upto:

—[Henceforth called the main contractor]

—And

2] M/S [Name of the firm/agency with full address]

—Enlistment Status

—Valid Upto:

—[Henceforth, called Associated specialized Agency]

~~For the execution of Specialized Works :~~ **“Comprehensive Annual Maintenance and operation of HVAC System installed at AIIMS Raipur.”**

We state that M.O.U between us will be treated as an agreement and has legality as per Indian Contract Act [amended upto date] and the department [AIIMS] can enforce all the terms and conditions of the agreement for execution of the above work. Both of us shall be responsible for the execution of work as per the agreement to the extent this MOU allows. Both the parties shall be paid consequent to the execution as per agreement to the extent this MOU permits.

In case of any dispute, either of us will go for mediation by the EE , AIIMS, Raipur, Any of us may appeal against the mediation to the Director, AIIMS, Raipur. His decision shall be final and binding on both of us. We have agreed as under:

1] The associated specialized agency will execute all specialized work(s) in the wholesome manner as per terms and conditions of the agreement and as per the direction of the Engineer in charge.

2] That the Associated specialized agency has gone through the contract and has understood the scope of work required for the purpose of executing the specialized work(s).

3] All the machinery and equipments, tools and plants, special T&P required for execution of the specialized work(s), as per agreement, shall be the responsibility of the associated specialized agency.

4] The site staff required for the specialized work(s) shall be arranged by the associated specialized agency as per terms and conditions of the agreement.

5] Site order book maintained for the said work shall be signed by the authorized representative of main contractor as well as Associated specialized Agency.

6] All the correspondence regarding execution of the specialized work(s) shall be done by the Department with the Associated specialized agency with a copy to the main contractor.

~~In case of non compliance of the provisions of agreement, the main contractor, as well as the associated agency shall be responsible.~~

~~The action under clauses 2 and 3 shall be initiated and taken against the main contractor.~~

~~SIGNATURE OF MAIN CONTRACTOR SIGNATURE OF ASSOCIATED
SPECIALIZED AGENCY.~~

~~Date:~~

~~Place~~



ALL INDIA INSTITUTE OF MEDICAL SCIENCE RAIPUR
Percentage Rate Tender/ ~~ItemRate Tender~~& Contract for Works

Tender for the work of: **“Comprehensive Annual Maintenance and operation of HVAC System installed at AIIMS Raipur.”**

e- T E N D E R

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 AIIMS Raipur within the time specified in Schedule 'F', viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings 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 respects in accordance with, such conditions so far as applicable.

I/We agree to keep the tender open for **Ninety (90) days** from the due date of opening of financial bid and not to make any modification in its terms and conditions.

A sum of **Rs.8,41,000.00** is hereby forwarded in Receipt Treasury Challan/ Deposit at Call Receipt of a Scheduled Bank/ Fixed Deposit Receipts of a Scheduled Bank/ Demand Draft of a Scheduled Bank/ Bank Guarantee issued by a Scheduled Bank as earnest money. A copy of the earnest money in Receipt Treasury Challan/ Deposit at Call Receipt of a Scheduled Bank/ Fixed Deposit Receipts of a Scheduled Bank/ Demand Draft of a Scheduled Bank/ Bank Guarantee issued by a Scheduled Bank is submitted with tender. If I/We, fail to furnish the prescribed performance guarantee within prescribed tender, 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 his 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 guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the General Conditions of Contracts (CPWD). 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 AIIMS Raipur in future for period as per decision of Engineer-in-Charge. 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 Deposited / 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#
Postal Address#

Witness : #
Address: #
Occupation: #
applicable

e-Mail id#

To be filled in by the contractor/witness as

ACCEPTANCE

The above tender (as modified vide letters mentioned hereunder) is accepted by me for and on behalf of the AIIMS Raipur for a sum of ₹. _____ *

(Rupees _____ * _____)

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

a) _____ *

b) _____

c) _____

For & on behalf of the AIIMS Raipur.

Signature.....

Dated

Designation.....

SCOPE OF WORK

1. GENERAL

- 1.1 This tender is for complete Operation and Comprehensive Maintenance of the Central Air-conditioning System comprising of all the machineries & equipment installed in the ACChillerPlantincludingChillers, CoolingTowers,CondenserPumps,Primary & Secondary Pumps, Hot water generators, VFD & Automation of Pumps, Air washer, Air Handling Units, FCUs, Ventilation Fans, In-line Fans, Lift Pressurization System, BMS system, UVGI,Heat Recovery wheels,Humidifier, Hepa Filter,Electrical Paneletc. throughout the period of contract for 24x7x365 basis.
- 1.2 Total capacity of HVAC system installed at AIIMS Raipue is 3900TR which comprise of:
 - a) Hospital area- 4 x 750 TR (3 working + 1 standby)
 - b) Medical College- 2 x 225 TR (2 working)
 - c) Nursing college- 2 x 100 TR (1 working + 1 standby)
 - d) Auditorium- 2 x 125 TR (2 working)
- 1.3 The list of major equipment of HVAC system installed at AIIMS Raipur to which operation and comprehensive maintenance has to be carried out in this workare given as Annexure-A.
- 1.4 Water and electricity will be provided by AIIMS Raipur towards Operation and Maintenance of HVAC system.
- 1.5 The minor items, instrumentation & control, field devices, control panels, water quality assesment etc. which are accessories but not listed in Annexure-A, are part of the complete systems covered under comprehensive maintenance.
- 1.6 Also, the piping network of chilled & Hot water circulation along with their accessories insulation such as bends, tees, reducer flanges, valves,Actutors,strainers outlets, bracket etc. of HVAC System are covered under comprehensive maintenance. Besides, ducting with different thickness of insulation pertaining to AHU/ FCU and associated volume Control Dampers, Fire Dampers, grilles, diffusers, fusible link, Electrical paneletc. are also covered under comprehensive maintenance.
- 1.7 The scope of work as mentioned below are the minimum expected from the firm/agency/ contractor apart from breakdown maintenance and any other work required for operation and maintenance in proper way as per the operation and maintenance manuals of respective equipment as per sound engineering practices and as per CPWD general specifications& HVAC works 2017/ ISHRAE/ASHRAE recommendations.
- 1.8 Any work/ exigency pertaining to HVAC System of AIIMS, Raipur even if it is not specifically mentioned in this document but required for proper functioning of HVAC system shall be carried out by the contractor at no extra cost.
- 1.9 The contractor shall have to take up both operation and preventive as well as breakdown maintenance jobs comprehensively, which means it includes all provision of manpower/ supervisor/ Engineer/ spares/ repairs/ replacement etc. for both high side and low side equipment.
- 1.10 The Engineer-in-Charge or his representative shall give instructions regarding the jobs to be carried out as and when requirement arises at site. The contractor shall have to carry out the jobs and complete in all respect to the entire satisfaction of the Engineer-In-Charge, such as scheduled checking/servicing/overhauling of the machines as per instructions of Engineer and maintenance schedules indicated in the tender document or recommended by manufacturers of the machines as the case may be.

- 1.11 The scope of work also includes repair/replacement/ overhauling of all the parts of the machines/equipments, which become defective, inefficient or get damaged during working. The decision of the Engineer-in-charge regarding repair/replacement/ overhauling of any part of the machine will be final and binding on the contractor.

2. OPERATION:

- 2.1 The HVAC System will operate in 3 Shift basis (24 hrs a day) & 365 days a year. The normal shift timings are as follows:
- | | | |
|-----------|---|----------------------|
| 1st Shift | - | 0600 hrs to 1400 |
| 2nd Shift | - | 1400 hrs to 2200 hrs |
| 3rd Shift | - | 2200 hrs to 0600 hrs |
- 2.2 Arrival & Departure of staff should be well-planned to up-keep the operation and maintenance requirement in tact round the clock.
- 2.3 In order to have safe and effective operation of the system, the Contractor must ensure that the system is operated in the most efficient manner without sacrificing any safety aspect and giving due regard to the health of the machine/equipment as well as the working personnel. For this, the operating personnel should be conversant with the operating logic and control philosophy of machines/equipments and should be capable of recording the events / incidents during operation, noting the parameters & maintain the log books from time-to- time. Data such as load, important temperatures, pressures, levels etc. and other vital data observed during the operation shall be recorded.
- 2.4 Before and during operation of the system, observance of basic rules of operation, systematic and careful inspection of the individual parts of the system and equipment, checking the functions of all sub- assemblies and components in time are essential and to be ensured. The checks have to be made strictly in accordance with the check lists for the machine.
- 2.5 During operation, if any abnormality, defect / fault is noticed, the same shall be promptly communicated and remedial steps must be taken and the contractor shall place a suitable mechanism for rectification of problems so that delay in operation can be avoided.
- 2.6 In no case, running of system should be without proper & required no. of manpower. Similarly, operation of machines/equipments shall not be carried out in abnormal condition(s) and by compromising with safety of machines by repeated & prolonged by-passing of safety devices, field devices, etc. Normally bypassing of field devices and safety devices is not permissible. However, the same if done for operational urgency should be made good promptly.

3. MAINTENANCE:

- 3.1. Maintenance primarily aims at keeping the system in efficient and reliable operating conditions, minimizing the downtime during operation so as to ensure their maximum availability and productivity.

- 3.2. The contractor's scope covers deployment of different maintenance teams as per requirement comprising of engineer/ supervisor, technicians, skilled / semiskilled workmen for efficient and effective preventive, predictive and corrective maintenance during the term of the contract.
- 3.3. The contractor shall carry out the maintenance such as (a) Preventive Maintenance comprising Planned maintenance or schedules maintenance, Condition based Maintenance and (b) Corrective Maintenance (Unscheduled Maintenance) comprising Breakdown Maintenance and Post fault maintenance for all the systems or subsystems.
- 3.4. The contractor shall prepare a routine maintenance plan and ensure timely maintenance of the system as per the plan. The maintenance planning shall be made on the basis of
- a) Preventive Maintenance
 - b) Pending scheduled activities
 - c) Observation made during execution of PMS
 - d) Observation made during operation Condition monitoring
 - e) Observation of AIIMS inspection
 - f) Observation of OEM experts
 - g) Any additional works /requirements
- 3.5. **Written Clearance:** Where the maintenance period is expected to exceed 4 hrs., the Contractor must obtain written clearance, in a format acceptable to AIIMS, with due intimation to the EIC & the concerned Executive Engineer clearly indicating the nature of maintenance intended to be undertaken, expected time of commencement and completion.
- For undertaking the major maintenance activities, planning shall have to be done by the Contractor in advance and in consultation with the Engineer-in-charge so as to make the best use of the idle period. The contractor shall properly plan for execution of maintenance activities during non-operational time of systems/equipments.
- 3.6. Minor painting works of machines/equipments/pipe lines etc. for corrosion protection is included in scope of the Contractor. The Contractor shall promptly take remedial measures like mechanical chipping followed by application Zinc rich primer where rusting starts so that further deterioration can be avoided till the planned painting starts.

4. **IMPROVEMENT PLANS:**

During the course of the Contract, the Contractor may suggest improvement plans to make the HVAC system more reliable and efficient. AIIMS, RAIPUR shall examine such plans and if such plans are acceptable, AIIMS reserves the right to implement the plan either by engaging the Contractor or any other agency. In such cases, the Contractor shall extend all co-operations to AIIMS for implementation of any modification plan with least interruption to the site activities. In case the Contractor is entrusted with the modification work, the Contractor shall have to carry out the work without discontinuing the on-going operational and maintenance contractual obligations in any manner.

5. **SUPPLY OF T & P AND CONSUMABLES:**

The Contractor shall provide all T&P, testing equipment, ladder(s), scaffolding, High Pressure Jet Pump, Vacuum Pump, Chain Pulley Blocks, High pressure hose for DA and oxygen, cutting set with regulator, welding cable, holder, screen, scraping & cleaning hand tools, all consumables such as DA & Oxygen, different types of electrodes, oil seals, V- belts, Adhesive, Insulation material, G.I sheets for ducts, bolts & nuts, cotton cloth/wastes/rags, hydraulic oil seals, O-rings, gaskets, end – connectors, nipples & ferules, all types of Filters (Oil & Air), C-shine/ drain cleaning material, fuses, capacitors, Indication Lamps, Connectors, PVC tape, EPR tape, Ampere tape, Electrical Cleaning agent (CRC Lectra Clean , CRC 226 etc.), Diesel, Petrol, lubricants and Chemicals for chemical dosing of Cooling Tower Water etc. necessary for smooth O & M of the HVAC System.

All the mechanical, electrical & OEM spares required for operation, routine maintenance and breakdown maintenance of the High Side & Low Side of the HVAC System will be supplied and Installed/rectified by Contractor. However, any loss of spares due to faulty operation or inadequate maintenance of the High Side & Low Side of the HVAC System shall be to the Contractor's account.

6. **MAINTENANCE OF RECORDS :**

Following Documents / Records are to be maintained at site by the contractor:

- a) Daily Log Book of Chillers/BMS
- b) Complain Log Book
- c) Site Materials Account Register
- d) Equipment History Card/ checklist
- e) Chiller Plant, Cooling Tower, Tertiary Pump check list
- f) AHU, Exhaust/ Fresh Air, FCU Check List.
- g) Pressure Gauge and Temperature Meter and other measuring instrument calibration test once per year or as recommended by Engineer-in-charge'
- h) Maintenance Schedule Activity
- i) Attendance Register
- j) Breakdown Report
- k) Maintenance Report:
 - i. Report on house -keeping & safety as per the format acceptable to AIIMS.
 - ii. Spares Consumption Report as per the format acceptable to AIIMS.
 - iii. Air balancing and water balancing should be done in the alternate quarter.

The format of the above Log Books and reports for reporting shall be prepared and implemented as per the requirement of the Engineer-in-charge.

7. **Contractor's personnel:**

- 7.1 "Contractor's Personnel" means the Manager/Engineer/Supervisor, technicians and other personnel including labours to be provided and deployed by the Contractor for smooth Operation & Maintenance of the HVAC System of AIIMS, Raipur. A total of Minimum 21 nos. of man-power for operation and Maintenance thoroughly familiar with the type of machines/equipments shall be deployed at the site for 365 days basis as mentioned below:

Sl. No	Designation	Qualification	Minimum Number of person per day	Category	Remark
<u>Minimum manpower required for Operation and Maintenance</u>					
1	Engineer	Diploma / B.Tech in Mechanical, Electrical, AC&R with experience of 05 year for diploma and 02 Year for B. Tech in Relevant field & in HVAC Plant	1 (on all days excluding Weekly rest)	Highly Skilled	For supervision of Operation and maintenance
<u>For Operation</u>					
2	Chiller/BM SOperator	ITI In Mechanical /Electrical/ HVAC/RAC with 2 years'experience inChillerOperation	9	Skilled	For Operation of Chiller plant and BMS system
3	AHU/FCU operator	ITI in Mechanical /ElectricalOR12th Pass with 2years'experienceinPump /Chiller maintenance	4	Semi Skilled	
<u>For Maintenance</u>					
4	Electrician	I.T.I in Electrician with 02 Year in O&M HVAC System	1 (on all days excluding Weekly rest)	Skilled	
5	Fitter	ITI in Fitter Trade with 02 Year in O&M HVAC System	1 (on all days excluding Weekly rest)	Skilled	
6	Welder	ITI In Welder Trade with 02 Year in O&M HVAC System	1 (on all days excluding Weekly rest)	Skilled	
7	AC&R Technician	ITI in RAC Trade with 02 Year in O&M HVAC System	1 (on all days excluding Weekly rest)	Skilled	
5	Helper	10 th Class	3 (on all days excluding Weekly rest)	Unskilled	
Total			21		

Note: -

- a) This is the minimum number of manpower; which contractor have to deploy. The contractor may increase the manpower as and when/ if required for proper functionality of maintenance of system (AIIMS will not pay any extra for increase in manpower).
 - b) The contractor should submit a detailed general and shift duty chart of proposed staff to be deployed one month in advance before the start of every month and schedule of detailed works to be carried out.
 - c) Any extra manpower/ expert team/ specialized manpower if required at any time for attending any repair/breakdown shall be deployed by the agency at his own cost for which nothing extra shall be payable.
- 7.2 All the manpower should be duly qualified/ experienced and capable to handle Electrical/ Air-Conditioning works to the satisfaction of Engineer-in-charge. They should be fully conversant with relevant Indian Standards and should follow Electrical / Industrial safety norms/ practices.
- 7.3 The Contractor shall submit a consolidated list of contractor's personnel (O&M staff) indicating the name, date of birth, trade, grade, experience, qualification etc. for the O & M of the system.
- 7.4 The core personnel of the contractor including engineers so deployed must have adequate qualification & experience in their respective fields such as assembly and sub-assembly of the machines/equipments including electrical circuit of electrical power/control system, PLC & VFD system (Automation System) etc. and are in a position to plan the maintenance requirement and rectify any defects developed during the operation of the system with minimum down time.
- 7.5 The Contractor shall furnish the details of the man power deployment pattern in appropriate format for smooth O & M of the System to AIIMS within 15 days of issue of LOA for acceptance.
- 7.6 During the continuance of the Contract, if the Contractor intends to induct new work men or make alterations in their grade, the Contractor shall communicate the same for appraisal of AIIMS.
- 7.7 In case of breakdown maintenance / major repair or replacement maintenance work, where AIIMS reasonably determines that the Contractor has not employed the required resources, then AIIMS shall have the right to ask the Contractor to arrange for such resources.
- 7.8 The Contractor shall be solely responsible for compliance to provisions of various labours, industrial, safety, any other laws applicable and all statutory obligations such as wages, allowances, compensations, EPF, Bonus, Gratuity, ESI, etc. relating to security of manpower deployed in AIIMS, Raipur. AIIMS shall have no liability in this regard. The latest Notification from the Office of the Chief Labour Commissioner (C), Ministry of Labour & Employment, Govt. of India shall be considered to determine the latest daily wage rates under different categories and any subsequent changes in statutory rates/changes as per Govt. orders constituting daily wages structure i.e EPF, ESI etc. will be amended time to time by the contractor.
- 7.9 The contractor shall be solely responsible for any accident/ medical/ health related liability/ compensation for the labour deployed by it at AIIMS, Raipur site. AIIMS shall have no liability in this regard.
- 7.10 The contractor is advised to ensure that the payment is regularly credited to the bank account of the individual staff employed and pay-slips for respective payments are duly stamped and signed and issued regularly.

- 7.11 If any man power from contractor side strike or show non-satisfaction due to payment issue or any other issue caused by the contractor, because of which the quality of work is hampered, strong action will be taken against the contractor as per the labour law & penalty as deemed fit shall be imposed.
- 7.12 The staff employed by the contractor should be well behaved, polite, & courteous. The Contractor must disengage immediately the workmen in case of indiscipline, misconduct, negligence in duty, suppression of facts, deliberate mishandling of machine & equipment, sabotage, professional in-competency etc. and replace him with due intimation to AIIMS.
- 7.13 The manpower provided by the contractor shall not claim to become the employees of AIIMS, Raipur and there will be no Employee and Employer relationship between the manpower engaged by the Contractor for the deployment in AIIMS, Raipur site.
- 7.14 Any damage caused by the workmen engaged by the Contractor to any machinery or equipment or installation of AIIMS due to negligence, ignorance or malafide intention shall be made good at the cost of the Contractor within a reasonable period of time acceptable to AIIMS, failing which the cost of the damages assessed by AIIMS shall be deducted from the bill of the Contractor or any money due to the Contractor.
- 7.15 The contractor shall provide uniform and Personal Protective Equipment (PPE) to their workmen. The contractor shall issue Identity Cards to his workmen at his own cost and shall duly be intimate in writing the Engineer-In-Charge as and when there is any change.
- 7.16 During the period of contract, Watch & Ward and Housekeeping/cleanliness of the machines/equipments shall be the responsibility of the Contractor at his own cost.
- 7.17 The Contractor shall observe all applicable regulations regarding safety of man and machine. Authority for Access: No person other than Contractor's Personnel shall be allowed to operate the machines / equipments except with the consent of AIIMS. The personnel of the Contractor must possess proper identity card having their photographs. The Contractor shall grant access to all machine related data, records, reports and software that is being generated or used as part of its services for the plant for verification of AIIMS. All such data shall be the property of AIIMS and shall not be used by the Contractor for any purposes other than contractual requirements. Use of such information for any other purpose by the Contractor is strictly prohibited.
- 7.18 The contractor shall notify AIIMS promptly regarding the occurrence of any emergency situation and take quick action to prevent any threatened damage, injury or loss to the machine or persons or property of AIIMS.

8. SAFETY :

- 8.1 All equipment shall be complete with approved safety devices wherever a potential hazard to personnel exists and with provision for safe access for personnel to and around equipment for operation and maintenance functions. Special care shall be taken to ensure against entry of rats, lizards and other creeping reptiles which may create electrical short circuit inside live equipment.
- 8.2 Safety aspects in work places have to be followed as per relevant Standards & Codes. Any accident or damage to life of man and machinery shall be treated as negligence & it is purely the responsibility of the contractor. AIIMS, Raipur will not be responsible for any accidents or damages. Safety of all the staff under this contract is the sole responsibility of the contractor. There shall be no liability on AIIMS, Raipur to pay any compensation arising out of any labour dispute or

accident etc. at site.

9. SCHEDULE OF ANNUAL OPERATION & COMPREHENSIVE MAINTENANCE:

9.1 High side scope of work

1. Operation of the plant on 24 hours basis including Saturday, Sundays and holidays as required by the deployment.
2. All routine / schedule checks of High side equipments should be carried out as per manufacturer recommendations and tentatively as mentioned below. Proper records should be maintained showing the details of works carried out, parts replaced if any, and may be shown to Engineer-in-charge as & when demanded.
3. Replacement of all type of defective mechanical, electrical components, instruments, electrical accessories, perishable and non perishable items, VFD, refrigerant, oil filters, shaft seal, v-belt / coupling and other damaged part of compressor inclusive of impellers and all parts of cooling towers & flappers including fills required for smooth functioning of HVAC system.
4. The viscosity and suitability of compressor oil will have to be checked and the firm will furnish certificate in this regard. During test of oil, if the results are not found as per required standards for running compressor, the agency shall change the oil. The decision of Engineer-in-charge will be final & binding to the contractor. Topping up of refrigerant and compressor oil. (The prescribed oil and gas shall be supplied by the firm for the purpose for all centrifugal units.).
5. Attending to any special repair job as & when felt necessary.
6. Firm shall provide 4 working hours call back service for fault rectification. All faults to be cleared within reasonable period of time or stand by equipment to be made operational for service. All faulty equipments to be collected from site and repaired equipments delivered or replaced if required & fitted at site. A proper record of the work undertaken including full details of the fault attended etc. shall be maintained and kept in the plant room for the inspection of Engineer-in-charge.
7. All instrumentation and cabling under the original agreement i.e. instrumentation & logging to be maintained and operated as per requirement at site. (This includes replacement of defective instruments & cables).

9.1.1 CHILLERS:

A Quarterly Preventive Maintenance

1. Check the operating parameters of all the Chillers and submit the report to E-I-C.
2. Review the previous months operating log records and alarm history.
3. To clean the Electrical panels and entire electrical connections every quarterly with air blower.
4. To check the system operating pressures and temperatures to ensure proper operating conditions of pumps.
5. Check for a sign of refrigerant leakages through standard procedure and rectify the leaks if found.
6. Check the operation of Expansion valves.
7. To check the operation of safety control/ microprocessor by conducting

- control test.
8. To check /calibrate flow switch for proper functioning.
 9. Tightening the entire electrical contractor terminals.
 10. To check the compressor motor starter and associated interlocks etc.
 11. Inspect vibration eliminators for secureness and damage -physical inspection can be done and reported, however the working efficiency cannot be ascertained.
 12. Test secureness of mounting points and tighten all major points.
 13. Measuring operating voltage and ampere and record readings.
 14. Inspect starter for signing of wear, arcing, overheating burns etc.
 15. Inspect wiring and connections for signs of wear, arcing, overheating burns etc.
 16. Check high compressor motor temperature.
 17. Check leakage in compressor.
 18. Check high pressure safety switch.
 19. Verify the refrigerant charging.
 20. Inspect unusual vibration & noise (if any).
 21. Inspect moisture indicator for evidence of moisture.
 22. Record the compressor suction and discharge pressure.
 23. Inspection of BMS system .
 24. Record compressor oil pressure.
 25. Check the condenser fans to ensure guards are in place and free of obstruction.
 26. Check condenser fan motors and related bearings and repaire/Replace if any.
 27. All the faulty parts replacement is in the scope of agency.
 28. To provide and replace internal oil& filters, as & when required during the contract period.
 29. To provide and replace refrigerant driers, as & when required during the contract period.
 30. To inspect oil quantity and replacing the same, if required.
 31. Half yearly detailed parameters monitoring of chiller systems for diagnostics, analysis of chiller health and submit the report to customer.
 32. To check the operation of VFDS of Chiller and Pump systems and if service required, it is to be done by the vendor.
 33. Chiller should be serviced under the supervision of OEM service Engineers towards proper execution of maintenance.
 34. Periodical software up-gradation in chillers.
 35. Condenser and Evaporator descaling with copper friendly chemicals once in a year or as required as instructed by the Engineer -in -Charge.
 36. Lubricate all the valves and bearings of Motor and Pumps.
 37. Meggerings of related all motors and record readings and verify the operation of the electrical interlocks.
 38. Vendor to discuss with admin the plan for the quarterly maintenance before the PMS activity and service report after PMS.
 39. Full range of monitoring, diagnostics, analysis, recommendations, optimization of your equipment as per requirement.
 40. Check Evaporator function and repaire if required.
 41. Check Insulation of chiller,HVAC Pipeline inside plant /Outside & rectify/Repalce if required.
 42. If chiller not performing efficiently then rectification/replacement work regarding any required equipments will be in the scope of agency .

B Annual Preventive Maintenance

1. Replace Oil filters, refrigerant filter if required.
2. To clean all the containers (Oil pump and Oil Heater) during annual visit.
3. Repairing of the leakages of Heat Exchangers as and when required.
4. To attend to the complaints as and when called for.
5. Replenish refrigerant as and when required basis.
6. To check the functioning of Pressure and Temperature gauges and perform the calibration of these devices once a year and submit the report to E-I-C.
7. Replacement of Pressure and Temperature gauges across the Chiller and condenser as when required.
8. Annual testing of compressor oil and replacement of oil as based on the Lab report.
9. Repair and replacement of VFDs.
10. Verify the working condition of all indicator/ alarm lights and LED/LCD displays/Motherboards/EXV cards/ISM /CCM boards. Repair/Replace if required.
11. Test oil pressure safety device as required. Calibrate and record settings.
12. Test the operation of the chilled water pump start auxiliary Repair minor leaks as required Eg: Valve packing, flare nuts. contacts, if applicable.
13. Lubricate all the pipelines valves and bearings of Motor and Pumps.
14. Verify the operation of Oil heaters.
15. Service Provider shall carry out the total maintenance work for chiller units in all respect for healthy operation of the units.
16. Inspect all Electrical Panels and Electrical devices using Thermal Scanning
17. Water balancing of condenser line in chiller plant once in a year and submit the report to E- I-C.
18. Servicing of VFD of Chiller once in a year.
19. Servicing of Hot water generators machine.
20. All replacement/Repairing of any equipment are in the scope of agency.
21. It is the contractor 's responsibility that Chillers must be checked by the authorized representative of the original manufacturer annually and a service report is to be submitted to the Engineer in-charge. Also Chiller should be serviced under the supervision of OEM service Engineers towards proper execution of maintenance.

9.1.2 COOLING TOWERS:

The following points should be considered during the CMC period.

1. Day to day operation and routine maintenance.
2. Check the water level, oil level of the gearbox.
3. Inspect clogging of water sump, fills, nozzles. adjust bleed , float and central valves for desired water level (replace fills/Nozzles/Header if required).
4. Check for unusual noise/vibration in fan and fan guard, motor drive shaft and guard, bearing etc. Also Rebalancing of fan & fan guard, driveshaft & guards.
5. Pressure-wash cooling tower and tower structure.
6. Check VFD operation, attend troubleshooting and rectify if any. Clean the VFD with an airblower .
7. Clean the sump and replace water in the sump on monthly basis.
8. Check the distribution basin for corrosion, leaks and sediments.
9. Check for any leakages in gear reducer, water basin and float valve.
10. Clean Pot Strainer & Replace the pot strainer net (If required)

11. Rewinding of Cooling Tower motor and replacement of its related accessories like terminal etc. Replacement of coupling, Spyder/bush and other related accessories as and when required.
12. Water quality such as PH, Hardness, and TDS etc. for cooling tower and chilled water line shall be monitored on a weekly basis or as frequency decided by the Engineer-in-charge.
13. Chemical treatment/Dosing of the Cooling Tower water shall be done to make it free from corrosion, deposits and biological growth.
14. Cleaning of PVC fills with suitable chemical (once in a year or as directed by E.I.C.). If Fills/nozzle/header etc. not working efficiently then replacement will be made by the agency as directed by E.I.C.
15. Painting of Cooling Tower Base structure, Condenser pipe line once a year. It is prime responsibility of agency to keep safe Base structure.
16. Proper Lifting/Shifting Arrangement of motor/heavy equipments is in the contractor scope with safety precaution.

9.1.3 Pumps, VFD, AHU, FCU Units:

a) Pumps & VFDs.

1. Day to day operation and routine maintenance.
2. Check for leaks on suction and discharge pipes.
3. Check for seals and packing glands etc. and any leakage from glands, seal or flange joints.
4. Replace the seal if required.
5. Check motor and pump operation for excessive vibration, overheating, noise, etc. Motor rewinding to be done (if required). Check alignment of pumps, motor and rectify if required.
6. Lubricate pump and motor bearing (replace bearing if required).
7. Clean exterior of pump, motor and surrounding area.
8. Clean strainer, replace strainer mesh if required.
9. Check VFD operation, attend troubleshooting and rectify if any.
10. Check the connection, termination, terminal blocks, tighten and clean the panel.
11. Clean the VFD with an air blower.
12. Repair or replace VFDs if required.
13. Check shaft or shaft sleeve for scoring.
14. Half Yearly flow checking and submission of report to Engineer-in-Charge.
15. Quarterly service of Pump, electrical panels, replacement of MCB/MCCB, Electrical Panel etc. & repair if required.
16. Annual painting of condenser piping, plant piping etc. to prevent it from rusting will be done as per schedule or when intimated by the Engineer-in-Charge.
17. Dewatering for HVAC trench/ HVAC plant: Agency shall have to make proper arrangement (Suitable Pumps, Piping etc.) for dewatering of the HVAC trench and plants as and when required.

b) AHU / CSU / FCU / FAU, Air- washer, Inline Fans, Ventilations Fans etc.

1. Day to day operation and routine maintenance.
2. Check the unit for noise, vibration and any abnormality.
3. Clean filters periodically as per PPM (replace filters if required).
4. Drain and clean the condensate pan.
5. Lubricate, greasing motor and blower bearing (replace bearing if required).

6. Clean coil and cabinet with vacuum/blower and water pressure.
7. Use fin comb to straighten coil fin if needed
8. Check the motor belt and pulley for proper alignment (replace belt If required).
9. Check the unit's control valves, actuators, Sensors etc.
10. Clean Y-strainers (replace strainer's mesh If required).
11. check the starter panels, check tightness of contacts, clean the panel with blowers and clean the contacts with CRC if required
12. Check Cooling Coil and clean if required.
13. Inspect blower blade for wear and crack or damage and replace the same if required.
14. Check pressure drop at filters and compare it with manufacturer recommendations.
15. Check for air and water leakages.
16. Check functioning of Airwashers & repair if required.
17. Check UVGI, Fire dampers and repair/Replace if required.
18. Clean Y Strainer, Filters, Drain pan, Drain pipe etc.
19. Check Electrical panel rectify if required.
20. Check blower motor & rectify if required.
21. Check Staircase, Tube axial fans, Lift pressurization fans, Bathrooms fans, Inline fans etc. & Repair if required.
22. Check Starter panel & repair if required.
23. Check filters condition replaced if required.

c) Hot Water Generator, Humidifiers

1. Day to day operation and routine maintenance.
2. Check the unit for any abnormality and rectify it.
3. Check the operating parameters of all the units and fill out a daily log sheet. Contractor should ensure optimum RH% and humidity control in conditioned space and record it in logbook.
4. To check /calibrate all instruments/switches /gauges for proper functioning.
5. Check heater elements/ controls/ panel etc. and replace spares if required.
6. Any other work to upkeep the unit in healthy condition.
7. Check pump/Motor & repair if required.

d) Ducting, grill and chilled water pipeline:

1. Ducting and chilled water pipeline insulation is under contractor scope of work.
2. Diffuser, grill, damper and ducting cleaning half yearly.
3. Leakage repairing etc. contractor scope of work.
4. Fire actuator for fresh air damper contractor scope of work.
5. Fire dampers check & Repair if required.
6. Repair/Reinsulation of ducting/Pipeline & insulation is in scope of Agency.
7. Check hvac pipelines & repair/replace if required.

e) Fire Exhaust fan/Fire Damper

1. Fresh air fan and Exhaust fan motor, fan blade etc. repairing / replacement in contractor scope of work.
2. Quarterly fan cleaning and servicing.
3. Electrical parameters checking monthly.

4. Fire damper actuator and controller repairing, checking etc. & replace if required.

f) UVGI lamp:

1. Lamp Checking for proper working.
2. Fault rectification/replacement if any.
3. Check panel and repair if required.

g) Other Works

1. Repair and maintenance of all low side damaged ducts.
2. Repairing of insulation of all chilled water pipelines.
3. Diffuser, grills, dampers and toilet inline fan cleaning as per schedule.
4. Leakage repairing etc. contractor scope of work.
5. Fire actuator for fresh air damper under contractor scope of work.
Oil/Refrigerant gas, filters for chiller, pump, motor, cold storage etc. to be provided as and when required for proper functioning of HVAC system.
6. Check electrical overload protection systems and other electrical systems.
7. Any other requirement to keep the whole HVAC Plant systems efficient, in proper, healthy running condition as per operation and maintenance manual of various equipment.
8. Attending all Electrical and Mechanical breakdown of the Plant and other equipment.
9. All spares parts repairing/replacement to make HVAC System proper functioning.
10. It is mandatory to submit Validation/Calibration Certificates of all instruments used for Operation And Maintenance of HVAC systems, wherever applicable.
11. Replaced parts/ spares, used burnt oil etc. will be property of the vendor. It is his responsibility to dispose off it immediately as per norms of Pollution Control Board.
12. Operation and maintenance of whole BMS system including all controller and DDC panel (i.e. LT panel, Lifts, fire system, HVAC system etc.). BMS system shall be updated with the latest version compatible with the existing system and in case of incompatibility need to replace the system with compatible software, if any modification or hardware instrument required for the system, it is in the scope of the contractor. Contractor must be doing routine, half and yearly preventive maintenance of the whole BMS system.
13. The contractor must maintain the comfort condition at all location of the hospital like temperature, humidity, odor and ventilation as per requirement 24x7x365.
14. Contractor must maintain Fire Alarm & Public Alarm System (FAPA system) synchronization with AHU, DDC controller, lifts and Fresh Air Unit. If the fire damper, damper Relay module and controller find faulty then need to be replaced on an immediate basis.
15. Replacing spare parts of all machinery, equipment, electrical panels etc. due to normal wear & tear.
16. To repair/ replace controls if found necessary.
17. The Plant room should be kept well illuminated, ventilated and all items are secured to ensure safety and security of humans & machines.
18. If due to any reason, any maintenance routines could not be undertaken, the same to be brought into the notice of the Engineer in-charge as soon as possible.
19. Maintaining electrical hygiene for up keeping of all electrical equipment and system viz. motors, starters, electrical wiring including cable w.r.t operation,

- safety and fire prevention point of view.
20. Painting and surface preparation for painting of all supporting steel structure of HVAC System as per equipment details, Piping work including cooling tower base shall be done on yearly basis .
 21. The scope of maintenance includes all kinds of repairs, replacement of all spares, consumables, refrigerant gas, oil etc. These spares shall be replaced with the same type, make and quality. However, if the same is not readily available in the market, the alternate item should be approved by the Engineer in-charge before use at site.
 22. The contract shall include emergency call back service at all hours round the clock for rectification of complaints immediately if noticed during the operation.
 23. Since the plant is catering to the HVAC requirements of AIIMS Raipur, which has a very sensitive patient care area hence the contractor will have to attend to any fault/breakdown immediately. If the desired staff is not deputed in reasonable time, institute officials will be at liberty to employ staff to get the work done by other agency at the risk and cost of the contractor for which the decision of Engineer in-charge will be final and binding.
 24. During the running of the contract the responsibility of physical custody of the plant will rest on the contractor.
 25. Besides the logbooks, the contractor shall maintain a complaint register also in the plant room so that complaints are entered with the date and time in the register by the complainant directly or informed telephonically.
 26. The surrounding areas with machinery will be kept neat & clean. Items such as soap, detergent, cotton waste, sanitizer, etc. will be arranged by the contractor. Proper cleanliness shall be maintained in all work areas including all the equipment complete with panels etc. is under the scope of this work.

9.2 Operation and Maintenance (Routine & Preventive)

9.2.1 Work to be done on daily basis:

1. Start and stop the unit as required by area in-charge.
2. Check the unit for noise, vibration, water leakage and any abnormality.
3. Check the smooth operation of the unit.
4. Check and rectify the refrigerant leakage in the chiller.
5. Maintain the operating logbook of the unit and area for DBT, WBT, and RH of AHU on hourly basis
6. Maintain the cleanliness of the units.
7. The readings of the suction and discharge pressure, oil pressure, oil & refrigerant level, suction and discharge pressure of pumps, Voltmeters & Ammeters etc. shall be checked and recorded in the LOG-BOOK (provided by firm/agency/contractor) on hourly basis. Necessary action shall be taken if the readings are not normal
8. To check all the electrical motors and their bearings, AHU panels and cooling tower panels for abnormal noise/heating and to take necessary action if found malfunctioning.
9. To check the water level in the make-up water tank in the Cooling Towers and check the functioning of the float valve. See proper function of the Cooling Towers.

9.2.2 Work to be done on weekly basis:

1. Check the refrigerant system.
2. Clean all the strainers and the filters.
3. Check alignment/looseness of the entire belt driven equipment and rectify if

required.

4. Oiling and greasing of the moving part of the unit.
5. Filters of AHUs, Fresh air inlet are to be cleaned regularly as per service maintenance schedule.
6. Check water inside the makeup tank for hardness/dirty and fill with soft water if required.
7. To check the lugs/thimbles/terminal points of the electrical motor, switches, starters, single phase preventers and the indication lights etc.
8. Check fan Belt for correct tension and sign of wear and alignment of fan and motor.

9.2.3 Work to be done on monthly basis:

1. To check the gland/seal, coupling of Pumps and Cooling Towers.
2. To check the solenoid valve, safety controls Mechanical, Electrical/Electronics and the interlocking of the various equipment.
3. To check and clean the nozzles of the Cooling Towers and to clean the basin and sump of Cooling Towers. Look for water escaping from sides or from overflow and take remedial measures.
4. Cleaning all FCU units, AHU, CSU.
5. Clean and check all AHU/CSU starter panel, LT panel, in case of exhaust fan panel, all types of HVAC system related electrical panel.
6. Check equipment earthing of complete plant and indicate in logbook
7. All Pre-Filters/Fine filters to be cleaned as per schedule.

9.2.4 Work to be done on quarterly basis:

1. To check and lubricate (if required) the bearing of the motors and keep the proper record.
2. Check the foundation bolts of the Pumps and motors and take the necessary action if required.
3. To check and reset the relays and controls, and to maintain the proper record. Carry out servicing of the main switches/ACBs as required. To tighten all screws, nuts, bolts of the Electrical Power/control system.
4. Check the quantity of Air flow from various outlets in each Room/Area as per drawing and do adjustments of dampers etc. as and when required.
5. AHU/CSU belt alignment and replace if required
6. Test all controlling and safety of the unit
7. Check and adjust cooling tower fan blade and spray nozzle.
8. All Grills/Diffusers of the HVAC system need to be cleaned by maintaining a proper schedule and whenever instructed by Engineer In-charge.
9. BMS Engineer have to visit the site physically to check and rectify any fault present in the BMS system.
10. Service of chillers has to be done by the Agency.

9.2.5 Work to be done on half yearly basis:

1. Check and Clean water strainer in chilled water circuit if required.
2. Check the overload by measuring the amperage, check anti-recycle timer and operation of the electrical interlock, and voltage across the compressor terminal.
3. To tighten the clamps of cooling tower blades.
4. Cleaning of starters of all motors during winter shutdown.
5. Check the functioning of all controls and reset if required.

9.2.6 Work to be done on yearly basis:

1. Checking of smooth operation of Dampers

2. Descaling of the condensers of each chiller
3. Check for obstructions loose boards' fallen insulation on air ducts/ Chilled water pipe and hot water pipe, replace it if required. Clean baskets of pot strainers and "Y" strainers for AHU's.
4. Drain all water from condenser pipe lines and fill fresh water.
5. Change the oil in the oil sump. Replace filter and check oil temperature control.
6. Inspect starter contacts are shielded, transformer, and motor terminals, check connection instarter, tighten motor terminal control circuit terminals.
7. Inspect, calibrate and adjust to original specification, all safety and operating controls including low temperature and high- pressure cut outs, motor protector, oil pressure control, and fan temperature control.
8. Chemical cleaning of cooling coils of AHU and Condensor.
9. Cleaning/Replacement of cooling tower fills.
10. Servicing of LT panel and its breaker .
11. Check all wirings for loose contacts and rectify.
12. Contractor must submit the chiller/ air cooled chiller - Chilled water and condenser approach reports (i.e. chillers efficiency reports generated by OEM) annually.
13. Contractor must submit a fitness certificate of all high side equipment annually.
14. Inspection and maintenance schedule shall be carried out as per OEM's operation & maintenance recommendations as directed by Engineer-in-charge.
15. Painting of condenser water lines, rusted cable trays, support pillars, Plant room, AHU rooms, Accoustic & other equipment as required.
16. Perform megger testing and record motor winding resistance.

9.2.7 Work to be done on weekly basis (MOTs/ICUs/Trauma/OTs):

1. Clean all the strainers and the filters.
2. Check alignment/looseness of the entire belt driven equipment and rectify if required.
3. Oiling and greasing of the moving part of the unit.
4. Filters of AHUs, Fresh air inlet are to be cleaned regularly as per service maintenance schedule.
5. To check the lugs/thimbles/terminal points of the electrical motor, switches, starters, single phase preventers and the indication lights etc.
6. Check fan Belt for correct tension and sign of wear and alignment of fan and motor.
7. Check UVGI rectify/Repalce if required.
8. Check Heat recovery wheel, Humidifier etc. & rectify if required.
9. Check blower , Motor , coils rectify/Repalce if required.
10. Temperature & RH% Required-
 - a) Temperature: 21 ± 3 °C
 - b) Relative Humidity: 55 ± 5 %

10. Mode of Measurement for Operation: Operation of HVAC plant will be measured as per total TR of installed chillers.
11. The contract period of the work is for three year where after expiry of each year AIIMS Raipur will evaluate the performance of services of the agency. If the services are found satisfactory, the agency allowed to continue the contract for year to year upto contract period of 3 year at quoted price.

LIST OF MAJOR EQUIPMENTS

Description of Item	Make	Capacity	Qty.
Centrifugal-type water cooled Chiller (In Plant Room), (Capacity 750 TR each)	Carrier	750 TR	4 Nos.
Condenser Water Pumps 3 Phase squirrel case induction Motor Capacity -100 HP Hospital Building	ABB	75 KW	4 Nos.
Condenser Water Pumps Starter Type-Stardelta) Capacity -15 HP Auditorium+Nursing College	Crompton Greaves/Mather Platt	11 KW	5 Nos.
Condenser Water Pumps Starter Type-Stardelta) Capacity -30 HP Medical College	Crompton Greaves/Mather Platt	22 KW	3 Nos.
Secondary Pumping System (In Plant Room) 3 phase induction motor, RPM 1450 H.P 50	Crompton Greaves/Mather Platt	37 KW	4 Nos.
Secondary Pumping System (In Plant Room) For Medical College +Trauma+ Ayush PMR RPM -1455, 15 HP	Crompton Greaves/Mather Platt	11 KW	6 Nos.
Primary Pump 30 KW 40 HP	Crompton	30 KW	4 Nos.
Primary Pump 7.5 KW 10 HP, 1450 RPM	Crompton Greaves/Mather Platt	7.5 KW	5 nos.
b. Medical College + Nursing college Building			

Description of Item		Make	Capacity	Qty.
Primary Pump 11 KW, 15 HP, 1450 RPM		Crompton Greaves/Mather Platt	11 KW	3 nos.
c. Auditorium Building				
5	Cooling Towers (On Plant Room Terrace) (Type- FRP induced draft, Capacity-800 TR, Heat rejection Hospital Building)	DELTA	800 TR	4 Nos.
6	Fan Coil Units (FCU) Medical College	Wave	2.0 TR to 2.5 TR	51 Nos.
7	Air Handling Unit/ Ceiling Suspended AHU (Medical College)	Wave	2500 CFM- 11000 CFM	57 Nos.
8	Ventilation Fan Units (for mechanical Ventilation System) (Medical College)	Ostberg	300 CFM-1400 CFM	43 Nos.
9	Ventilation Fan Units (for mechanical Ventilation System) (Hospital Building)	Ostberg	300 CFM-1400 CFM	360 Nos.
10	Air Washer	Wave	25000 CFM	2 Nos.
11	Screw type Chiller 225 TR (Medical College)	Dunham Bush	225 TR	02 Nos.
12	Cooling Towers (On Plant Room Terrace) (Type- FRP induced draft, Capacity-250 TR, Heat rejection Auditorium building)	DELTA	Capacity-150 TR	2 NOS
13	Inline Fan (ILFE) / Propeller Fan (EF) (Wall/ window type exhaust fan with mounting, arm, impeller, motor with class "B" insulation, 220/240 volts single phase, 50 Hz, power supply) (Hospital Building)	Ostberg	300 CFM-1400 CFM	731 Nos
14	Cooling Towers (On Plant Room Terrace) (Type- FRP induced draft, Capacity-125 TR, Heat rejection Nursing college)	DELTA	Capacity-125 TR	2 NOS

Description of Item		Make	Capacity	Qty.
15	Cooling Towers (On Plant Room Terrace) (Type- FRP induced draft, Capacity-250 TR, Heat rejection (Medical college))	DELTA	Capacity-250 TR	2 NOS
16	Motor Control Centre (MCC) Panel, Electrical Panel Board, AHU/CSU Starter Panel complete with VFD, Voltmeter, Ammeter, Indication lamps, Incoming & Outgoing switches (ACB/MCCB/MCB), CT, Relays & Contactor etc.	System power control / ABB & others	-	Lot
17	Screw type Chiller 125 TR (Auditorium)	Dunham Bush	125 TR	02 Nos.
18	Screw type Chiller 100 TR (Nursing College)	Dunham Bush	100 TR	02 Nos.
19	Fan Coil Units (FCU) Hospital Building	Wave	1.5 TR to 2.5 TR	108 Nos.
20	Air Handling Unit / Ceiling Suspended AHU (Hospital Building)	Wave	3500 CFM-17000 CFM	140 Nos.
21	Air Handling Unit / Ceiling Suspended AHU (Trauma Building)	Wave	3000 CFM-18000 CFM	11 Nos.
22	Fan coil units (Trauma Building)	Wave	1.5 TR to 2.00 TR	8 Nos.
23	Air Handling Unit / Ceiling Suspended AHU (Nursing college Building)	Wave	3500 CFM-8000 CFM	7 Nos.
24	Fan coil units (Nursing college Building)	Wave	1.5 TR to 2.00 TR	4 Nos.
25	Air Handling Unit / Ceiling Suspended AHU (Ayush PMR Building)	Wave	3500 CFM-16000 CFM	11 Nos.
26	Fan coil units (Ayush PMR Building)	Wave	1.5 TR to 2.00 TR	19 Nos.
27	Tube Axial fans	Wave	6000 CFM-25000 CFM	88 Nos
28	Electric Hot Water Generator	KEPL	Capacity-270 KW	03 Nos
29	Humidifier Model no. EH-09	KEPL	Rating -9 KW	40 Nos
30	AHU for MOTs Capacity -3000-4500 CFM	Wave	Capacity -3000-4500 CFM	35 Nos.
31	Heat Recovery Wheel HRW Motor -0.2 KW DOL (All MOTs plus labs)	Wave	Capacity -Used for 3500-4500 CFM	40 Nos

Description of Item		Make	Capacity	Qty.
32	Fire Damper Motor-Greenheck	Greenheck/Trox	-----	Lot
33	Electrical panel for HVAC System All building	System power control / ABB& others	-----	Lot
34	Lift pressurization Fan (Hospital Building)	--	Capacity 6000-8000 CFM	10 Nos
35	Lift pressurization Fan (Aush Building)	--	Capacity 6000-8000 CFM	02 Nos
36	Lift pressurization Fan (Trauma Building)	--	Capacity 6000-8000 CFM	02 Nos
37	Tube axial Fans (Auditorium building)	-	Capacity 6000-25000 CFM	04 Nos
38	Air Handling Units/CS AHU (Auditorium building)	Wave	Capacity-3000-15000 CFM	11 Nos
39	Fan coil units (Auditorium building)	Wave	Capacity-	05 Nos
40	Inline Fan units (Auditorium building)	obsterg	Capacity CFM 300-900 CFM	07 Nos
41	Building Management System (Ayush+Nursing+Trauma+Hospital blocks+Auditorium)	Honnywell	-----	LOT

Penalty clause

All the specific complaints about the HVAC system brought to the working agency shall be attended promptly. Any delay in attending the complaints shall be viewed seriously and penalty shall be imposed on the contractor as deemed fit by the Engineer-In-Charge.

1. Nonfunctional System/Equipment shall be made functional within Stipulated time period, failing which penalty will be deducted from monthly bills and then penalty will be counted from date of fault in respective equipment.

S. No.	Equipment	Stipulated period to make functional	Penalty (Per day per equipment)
1	VFD' s, Cooling tower	7 days	Rs. 10,000/- per day
2	Chiller	30 days	Rs. 15,000/- per day
3	AHU	7 days	Rs. 5,000/- per day
4	Pumps	5 days	Rs. 2,000/- per day
5	AHU control such as modulating motor, Thermostat, Humidity state, Fire mode actuator/motor, Digital	3 days	Rs. 1,000/- per day

	temp. meter, Mixer / Balancing / Butterfly valves, Motor Starter, Electrical paneletc		
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2. A penalty of Rs. 5000/- per day will be levied if the inside conditions (temperature-20+-2, relativehumidity -55+-5, proper air flow, IAQ etc.) are not maintained for more than 24 hours on any dayirrespective whether it is on account of improper maintenance of High side equipment or the lowside equipment or inefficient operation or due to any breakdown.
3. Any staff found missing from duty, recovery shall be made for the day at the rates given below. (It is the responsibility of the agency to make alternative arrangements), in case, any staff proceeds on leave/for reliever duty. On failure, the recovery shall be made from bill at the rate given below:
 - a) Engineer : 2000/- Per day
 - b) Skilled staff : Rs.1500/- Per day
 - c) Semi skilled staff: Rs. 1200/- per day
 - d) Unskilled staff : Rs.1000/- Per day

GENERAL PARTICULAR & ADDITIONAL CONDITIONS OF CONTRACT

A. GENERAL CONDITIONS

1. Name of Work: **“Comprehensive Annual Maintenance and operation of HVAC System installed at AIIMS Raipur.”**
2. For all items of **Civil/Electrical/AC&R**; - CPWD specifications with up to date correction slips up to receipt of tender shall be followed. For the items which are not covered under CPWD Specifications; B.I.S. specifications shall apply. In this regard the decision of Engineer-in-charge shall be final.
3. Wherever any reference is made of any Indian Standard, it shall be taken as reference to the latest edition with all amendments/ revision issued thereto up to the date of receipt of tenders.
4. Unless otherwise specified, the agreement rates for all items of work of the schedule of quantities are for all heights, depths, leads and lifts involved in the execution of work.
5. Other agencies working at site will also simultaneously execute the work entrusted to them and the contractor shall offer necessary co-operation wherever required to other agencies.
6. On account of security consideration, there could be some restrictions on the working hours, movement of vehicles for transportation of materials. The contractor shall be bound to follow all such restrictions and adjust the program for execution accordingly, for which nothing extra shall be paid.
7. The work shall be carried out in a manner complying in all respects with the requirements of relevant bye laws of the local bodies, Labour Laws, minimum wages act, workmen compensation act and other statutory laws enacted by Central Govt. as well as State Govt.
8. All malba/ rubbish/silt/waste, garbage etc. generated due to any operation from buildings/houses/hostels and other open spaces whatsoever shall be disposed off on daily basis by the contractor to the specified common disposal point. After the collection of full truck load of the said malba (approx. 4.5 cubic meters), the same shall be disposed off by the contractor to the authorized municipal dumping ground and nothing extra shall be paid on this account. In case of non-removal/disposal in the specified period, the same would be disposed at risk & cost of contractor.
9. No residential accommodation shall be provided to any of the staff engaged by the contractor. The contractor shall not be allowed to erect any temporary set up for staff in the campus.
10. No claims of the labours shall be entertained by the Department including that of providing employment, regularization of services etc.
11. All required register will be issued by Engineer-in-Charge/Executive Engineer duly marked in chronological order but the contractor will have to arrange all such registers/stationery etc. Nothing extra shall be paid on this account.
12. All T&P, scaffoldings, ladders/Hydra etc, instruments/meters for Construction, consumable and Contingent Articles required for execution of the work shall be arranged by the contractor.
13. The contractor shall make all safety arrangement required for the labour engaged by him at his own cost. All consequences due to negligence or due to lapse of security/safety or otherwise shall remain with the contractor. The department shall not be responsible for any mishap, injury, accident or death of the contractor's staff. No claim in this regard shall be entertained / accepted by the department. Also Contractor is responsible to the damage caused to any man/material other than his team during execution and AIIMS will

not be responsible for that.

14. Contractor shall be fully responsible for any damages caused to govt. property or allotter's property by his or his labor in carrying out the work and shall be rectified by the contractor at his own cost.
15. GST and other Taxes as applicable shall be recovered/ paid from the contractor's bill as per Govt. of India/AIIMS Rules.
16. Chases, holes & drilling works etc. shall be done using power operated tools in the cost of Contract. No extra will be paid for the same.
17. The agency shall restore back the premises and other articles provided by the department to the department at the time of closure of the contract.
18. 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) Additional specifications and special conditions, if any.
 - c) Contract clauses of General conditions of contract for Central P.W.D. works. (iv) CPWD specifications.
 - d) Architectural drawings.
 - e) Indian standards specifications/ BIS. (vii) Sound engineering practice. Any reference made to any Indian standards specifications in these documents, shall imply to the latest version of that standard, including such revisions/amendments as issued by the Bureau of Indian Standards up to last date of receipt of tenders. The contractor shall keep at his own cost all such publications of relevant Indian Standards applicable to the work at site.
19. The contractor and /or his authorized agent should see the site order book every day and get the compliance of instruction given by the JE/AE/Engineer-in-charge (E-I/C) as per time schedule.
20. The contractor will not pitch up tents for laborers, materials and his stores etc.
21. No permanently / temporary huts / structures shall be constructed by the contractor at the site of work or at any government land / premises. Such structures, if any, found at the site or at AIIMS, Raipur land shall be demolished and removed at the cost of the agency without any notice.
22. Any damage to the building structure, fittings or any other articles etc. done by the contractor or his workman during the execution of the work shall be made good by the contractor at his own cost.
23. The contractor shall clear the site properly after the completion of the work.
24. The Agency shall be solely responsible for compliance to the provisions of various Labor and industrial laws, such as, wages, allowances, compensations, EPF, Bonus. Gratuity, ESI etc. as per labour law relating to personnel deployed by it at AIIMS, Raipur site or for any accident caused to them and the institute shall not be liable to bear any expense in this regard. The Agency shall make payment of wages to workers engaged by it by the stipulated date irrespective of any delay in settlement of its bill by AIIMS, Raipur for whatever reason. The Agency shall also be responsible for the insurance of its personnel. The Agency shall specifically ensure compliance of various Laws / Acts, including but not limited to with their re-enactments / amendments / modifications etc.
 - (a) The Payment of Wages Act 1936.

- (b) The Employees Provident Fund & MP Act, 1952.
- (c) The Contract Labor (Regulation) Act, 1970.
- (d) The Payment of Bonus Act, 1965.
- (e) The Payment of Gratuity Act, 1972.
- (f) The Employees State Insurance Act, 1948.
- (g) The Employment of Children Act, 1938.
- (h) The Motor Vehicle Act, 1988.
- (i) Minimum Wages Act, 1948.

25. Breach of Terms and Conditions: Noncompliance of any terms and conditions enumerated in the contract shall be treated as breach of contract. Or In Case of breach of any terms and conditions as mentioned above, the Competent Authority, will have the right to reject the bid at any stage without assigning any reason thereof and nothing will be payable by AIIMS, Raipur in that event the EMD and /or Performance Guarantee and/or security deposit shall also stands forfeited.
26. Termination of Contract: AIIMS, Raipur would have the right to terminate the contract by giving one month's notice before the expiry of the term, in case the work performance is not up to the standard, or in case there is any violation of AIIMS, Raipur rules & regulations, or if there is any lapse in compliance of any labor legislation, or if there is any incident of indiscipline on the part of the bidder or his staff and the agreement may be terminated by either party by giving one month's notice to the institution. The decision of AIIMS, Raipur's management in this regard would be final and binding on the bidder. In such an event, AIIMS, Raipur shall have the right to engage any other bidder to carry out the task.
27. Arbitration: The Arbitration shall be held in accordance with the provision of the Arbitration and conciliations Act, 1996 and the venue of arbitration shall be at Raipur. The decision of the Arbitrator shall be final and binding on the both parties.
28. Dispute Settlement: It is mutually agreed that all differences and disputes arising out of or in connection with this agreements shall be settled by mutual discussions and negotiations if such disputes and differences cannot be settled and resolved by discussions and negotiations then the same shall be referred to the sole Arbitrator appointed by the Director, AIIMS, RAIPUR whose decision shall be final and binding on both the parties. The contract shall be governed by laws and procedures established by Govt. of India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/ processing.
29. Guidelines issued by Hon'ble National Green Tribunal in O.A. No. 21 of 2015 and O.A. No. 95 of 2014 in the matter of Vardhaman Kaushik Vs. Union of India & other and Sanjay Kulshreshtha Vs Union of India & ors: Air Pollution of Dust from Construction and Demolition activity reg. issued vide letter No. DPCC/EIA/Ref-001 to 172/NGT-21/2015/225-408 dt. 17/04/2015 shall be complied by the Bidders.
30. As per modified provisions of CPWD works Manual 2019 vide no. DG/MAN/410 dtd. 22.10.2021 testing charges to be borne by contractor. All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading unloading etc. including testing charges shall be borne by the contractor.

Approved laboratories with priority order as given below:-

1. The laboratories in the Government sector, Semi Government, All Govt. Institutions, Indian Institutes of technology, National Institutes of technology, Central and State research Centre, Centrally and state funded laboratories stand approved for testing

2. M/s MCB Testing Laboratories
3. ArihantAnyatical Laboratory Pvt. Ltd.

Or

5. Any other private laboratory approved by Director, AIIMS, Raipur .
31. The work is to be executed in the AIIMS Raipur Hospital Campus which is under high security restrictions. Restrictions are imposed by the security authorities on the working and movement of labour, materials etc. The contractor shall be bound to follow all such restrictions. The contractor will have to submit names with Photo IDs of the persons & workmen whom he proposed to engage at least two days in advance so that entry permits are issued by the security authorities. If he fails to observe this condition the entry of labourers will not be possible. No claim of damages due to loss of man hours will be admissible.
32. Work site will be kept neat and clean.
33. The security agencies may impose restrictions on the working hours, movement of vehicles for transportation of materials. The contractor shall be bound to follow all such restrictions and adjust the programme for execution accordingly. He should take into consideration all factors and contingencies while quoting rates. No claim what so ever shall be entertained by the department on this account. Any damage done by the contractor to any existing work during the course of execution of the work shall

B. GENERAL CONDITIONS FOR SUPPLY OF MATERIAL

1. The material shall be as per CPWD specifications with up to date correction slip and BIS specifications wherever mentioned and as per List of approved makes (enclosed).
2. In the event of any variation between CPWD specifications and that in the IS Code the former shall take precedent over the later. In the event of variation between the nomenclature of item as per schedule of quantities and specifications, the former shall prevail.
3. ~~Material will be supplied by the contractor within 03 days after giving the requirement otherwise suitable amount imposed as a penalty shall be recovered from contractor's bill after giving notice as decided by the Engineer in-charge. However, the materials in urgent nature shall be supplied within 02-03 Hours.~~
4. The sample of all the items shall have to be got approved by the Contractor from the Engineer-in-Charge/Executive Engineer or his Representative before the supply commences, the approval of sample shall be only in respect of workmanship and finish, and shall be without prejudice to the right of Engineer-in-Charge to get random samples tested out of the actual lot received as per additional conditions. This decision is the Prerogative of Engineer-in-Charge.
5. The contractor shall if required furnish the manufacturer's certificate that the material supplied satisfy the requirements of the relevant specifications.
6. The Engineer-in-Charge shall be at liberty to test respective sample (s) of each item of schedule of quantity in any approved laboratory as decided by him. The sample for testing shall be provided by the contractor. If the test proves satisfactory and the material is accepted, the testing charge in respect of satisfactory test shall be borne by the ~~department~~ **contractor**.

All other expenditure required to be incurred for making available the sample, conveyance

and packing etc, shall be borne by the contractor himself. In case any sample of particular lot fails in testing the contractor shall be bound to replace the entire lot with fresh material of prescribed specifications and the rejected lot shall only be returned to the contractor after fresh lot is supplied. Testing charges in respect of failed sample will be borne by the contractor himself.

7. Rejected materials shall have to be removed by the contractor at his own cost within a week of the instructions of doing so. Also go down rent as decided by Engineer-in-Charge shall be charged by the department.
8. In case of any dispute regarding rejection of quantity of materials the decision of Engineer-in- Charge shall be final and binding upon the contractor.
9. Conditional tenders are liable to be summarily rejected.
10. The rates shall be quoted only in the schedule of quantities attached with the tender and nowhere else i.e. letter heads etc.
11. The contractors are specifically required to quote only one rate against each item. The rate Quoted for any item of material shall conform to the prescribed specifications.
12. The quantities are approximate and are liable to change up to any extent on either side. The Engineer- in-Charge reserves right to order deviation from the quantities mentioned in the tender. The contractor shall supply the additional quantity on the rates quoted in the tender documents irrespective of deviation limit mentioned elsewhere in the agreement. The contractor shall have no claim to any payment or compensation whatsoever on account of any profit or advantage which might have derive from the execution of supply in full as mentioned in tender but which did not derive any consequence of the full supply of material mentioned in tender not having been ordered. It is not necessary to use all items in the BOQ/Schedule during contract Period. The use shall be based on the requirement at Site. Contractor cannot claim Payment against Storage of items to maintain the deadline of completion of work as per Tender.
13. The maker of material shall be same as that of actually installed/fixed at site. But, in case of non-availability or due to any reason, Engineer-in-Charge can take decision to install equivalent/new items available in the BOQ/Schedule. In case of any dispute the decision of Engineer-in-Charge shall be final with regards to make/brand of material.
14. For materials used in this work, the record shall be maintained at site in a standard Performa to watch quality and consumption of the material.

e-sign by Prashant Kumar Ravi
Executive Engineer
AIIMS, Raipur

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 thisday 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 substantiate his demand, provided that in his demand the Engineer-in-Charge will note that the amount claimed by him is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date* after the deadline for submission of tender as such deadline is stated in the Instructions to 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.

DATESIGNATURE 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 (Guarantee)

Bank Guarantee Bond-Format – I

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

To
EXECUTIVE ENGINEER,
AIIMS RAIPUR,
TATIBANDH,
RAIPUR – 492099

Dear Sir,

In consideration of the AIIMS Raipur having offered to accept the terms and conditions of the proposed agreement between.....and M/s (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 AIIMS Raipur.

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 AIIMS Raipur stating that the amount claimed as required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupeesonly)

3. We, the said bank further undertake to pay the AIIMS Raipur 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 AIIMS Raipur 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 AIIMS Raipur that the AIIMS Raipur 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 AIIMS Raipur 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 AIIMS Raipur or any indulgence by the AIIMS Raipur 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 tounless extended on demand by the AIIMS Raipur.

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

Dated theday of

for.....(indicate the name of the Bank)

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

- 1.1 Wherever any reference to any Indian Standard Specifications of BIS or other International standards of ASTM/BS/EN occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued there-to or revisions thereof, if any, up to the date of receipt of tenders.
- 1.2 The contractor shall work according to the programme of work as approved by the Engineer-in-charge, for which purpose, the contractor shall submit a programme of the work within 07 days from the stipulated date of start of the work based on computer software and shall update the same every fortnight.
- 1.3 The contractor shall take instructions from the Engineer-in-charge for stacking of materials at site. No excavated earth or building materials shall be stacked on areas where the buildings, roads, services or compound walls are to be constructed.
- 1.4 If as per Municipal or prevailing rules of the secured campuses owned by paramilitary forces, Institutions etc, the huts for labour are not to be erected at the site of work by the contractors, the contractors shall provide such accommodation at such locations as are acceptable to local bodies with all provisions concerning labour safety & sanitation as contained in the relevant clause of the contract, for which nothing shall be payable.
- 1.5 Unless otherwise provided in the Schedule of quantities, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing shall be payable to him on this account.
- 1.6 The working drawings appearing at para 8.1(iii) of conditions of contract in the form CPWD-7/8, shall mean to include both architectural and structural drawings respectively. The structural and architectural drawings shall be properly correlated before executing the work. In case of any difference noticed between architectural and structural drawings, final decision, in writing of the Engineer-in-charge shall be obtained by the contractor before proceeding further.
- 1.7 Some restrictions may be imposed by the security staff etc. on the working and for movement of labour, materials etc. The contractor shall be bound to follow all such restriction / instructions including issue of identity cards to all persons authorized by him to do work / visit the work site and nothing shall be payable on this account.
- 1.8 The contractor shall make his own arrangements for obtaining electric connections, if required, and make necessary payments directly to the department concerned.
- 1.9 The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor (s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed, so as not to interfere with the operations of other contractors, or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of Engineer-in-Charge. The contractor shall be responsible for any damage due to hindrance caused by him.
- 1.10 Cast iron pipes and fittings without ear shall be used. However, pipes and fittings with ears may be accepted without any extra payment. In such cases, clamps are not required and no extra payment shall be made for fixing the pipes in a different manner.

- 1.11 Any cement slurry added over base surface for bond or for continuation of concreting, for protecting reinforcement bars, its cost shall be deemed to have been included in the respective items, unless specified otherwise and nothing extra shall be payable nor extra cement shall be considered in the cement consumption on this account.
- 1.12 Stacking of materials and excavated earth including its disposal shall be done as per the directions of the Engineer-in-Charge. Double handling of materials or excavated earth if required at any stage shall have to be done by the contractor at his own cost.
- 1.13 No claim for idle establishment & labour, machinery & equipments, tools & plants and the like, for any reason whatsoever, shall be admissible during the execution of work as well as after its completion.
- 1.14 Only Star headed Stainless Steel screws shall be used unless otherwise specified.
- 1.15 Work shall be carried out in professional manner with finished product serving the intended purpose with specified strength, durability and aesthetics.
- 1.16 Work activities shall be executed in well thought out sequences such that consequent activities not adversely affecting previously done work. Nothing extra shall be payable to protect the works already done.
- 1.17 The contractor shall prepare all the needed shop drawings well in advance and get them approved before placing the order and execution of the item.
- 1.18 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.

2. RATES

- 2.1 The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work, profile, setting lay out on ground, establishment of reference bench mark(s), installing various signage, taking spot levels, survey with total station, construction of all safety and protection devices, compulsory use of helmet and safety shoes, and other appropriate safety gadgets by workers, imparting continuous training for all the workers, barriers, preparatory works, construction of clean, hygienic and well ventilated workers housings in sufficient numbers as per drawing supplied by Engineer in charge, working during monsoon or odd season, working beyond normal hours, working at all depths, height, lead, lift, levels and location etc. and any other unforeseen but essential incidental works required to complete this work. Nothing extra shall be payable on this account and no extension of time for completion of work shall be granted on these accounts.
- 2.2 The rates quoted by the bidder, shall be firm and inclusive of all taxes and levies.
- 2.3 No foreign exchange shall be made available by the Department for importing (purchase) of equipment, plants, machinery, materials of any kind or any other items required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained from the Contractor, on account of variation in the foreign exchange rate.
- 2.4 All ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at the basement level, temporary structure for plants and machineries, water storage tanks, installation and consumption charges of temporary

electricity, telephone, water etc. required for execution of the work, liaison and pursuing for obtaining various No Objection Certificates, completion certificates from local bodies etc., protection works, testing facilities / laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in-Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts. Before start of the work, the Contractor shall submit to the Engineer-in-Charge, a site / construction yard layout, specifying areas for construction, site office, positioning of machinery, material yard, cement & other storage, fabrication yard, site laboratory, water tank etc.

- 2.5 For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.
- 2.6 All material shall only be brought at site as per program finalized with the Engineer-in-Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.

3. CLEANLINESS OF SITE

The Contractor shall not stack building material / malba / muck/ rubbish on the land or road of the local development authority or on the land owned by the others, as the case may be. So the muck, rubbish etc. shall be removed periodically as directed by the Engineer-in-Charge, from the site of work to the approved dumping grounds as per the local byelaws and regulations of the concerned authorities and all necessary permissions in this regard from the local bodies shall be obtained by the Contractor. Nothing extra shall be payable on this account. In case, the Contractor is found stacking the building material / malba as stated above, the Contractor shall be liable to pay the stacking charges / penalty as may be levied by the local body or any other authority and also to face penal action as per the rules, regulations and bye-laws of such body or authority. The Engineer -in-Charge shall be at liberty to recover, such sums due but not paid to the concerned authorities on the above counts, from any sums due to the Contractor including amount of the Security Deposit and performance guarantee in respect of this contract agreement.

4. INSPECTION OF WORK

In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by the Engineer-In-Charge, AIIMS Raipur and other senior officers of AIIMS Raipur and his authorized representative. The contractor shall at times during the usual working hours and at all times at which reasonable notices of the intention of the Engineer-in-Charge or other officers as stated above to visit the works shall have been given to the Contractor, either himself be present to receive the orders and instructions or have a responsible Site Engineer duly accredited in writing, to be present for that purpose Senior Officers of AIIMS Raipur Authorities shall also be inspecting the on-going work at site at any time with or without prior intimation.

5. CO-OPERATION WITH OTHER CONTRACTORS/SPECIALIZED AGENCIES/SUB-CONTRACTORS

5.1 The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The Contractor shall use such methodology and equipment's for execution of the work, so as to cause minimum environmental pollution of any kind during construction. Further, the Contractor shall take all precautions to abide by the environmental related restrictions imposed by Pollution control board.

Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints, inadequate availability of skilled, semi-skilled or unskilled workers in the near vicinity, non-availability of construction machinery spare parts and any other constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Tenderers are advised to visit site and get first-hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

5.2 The Contractor shall cooperate with and provide the facilities to the sub-Contractors and other agencies working at site for smooth execution of the work. The contractor shall indemnify STC, BSF, authorities.

Against any claim(s) arising out of such disputes. The Contractor shall:

- (i) Allow use of scaffolding, toilets, sheds etc.
- (ii) Properly co-ordinate their work with the work of other Contractors.
- (iii) Provide control lines and benchmarks to his Sub-Contractors and the other Contractors.
- (iv) Provide hoist and crane facilities for lifting material at mutually agreed rates.
- (v) Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
- (vi) Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other Contractors to suit the overall schedule completion.
- (vii) Resolve the disputes with other Contractors/ sub-contractors amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator.

5.3 The work should be planned in a systematic manner so as to ensure proper co-ordination of various disciplines viz. sanitary & water supply, drainage, rain water harvesting, electrical, firefighting, information technology, communication & electronics and any other services.

5.4 Other agencies will also simultaneously execute and install the works of sub-station / generating sets, air-conditioning, lifts, etc. for the work and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings trenches etc. as may be required for such related works (for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall be supplied free of cost by the department unless otherwise specifically mentioned) and the contractor shall fix the same

at time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.

- 5.5 The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and in a proper co-ordinate manner and shall perform it in proper sequence to the complete satisfaction of others.

6. SAFETY MEASURES AT CONSTRUCTION SITE

In order to ensure safe construction, following shall be adhered for strict compliance at the site:-

- (i) The work site shall be properly barricaded.
- (ii) Adequate singnages indicating 'Work in Progress – Inconvenience caused is Regretted' or Diversion Signs shall be put on the sites conspicuously visible to the public even during night hours. These are extremely essential where works are carried out at public places in use by the public.
- (iii) The construction malba at site shall be regularly removed on daily basis.
- (iv) All field officials and the workers must be provided with safety helmets, safety shoes and safety belts.
- (v) Proper MS pipe scaffoldings with work – platforms and easy-access ladders shall be provided at site to avoid accidents.

Necessary First-Aid kit shall be available at the site.

The above provisions shall be followed in addition to the provisions of General Condition of Contract.

7. FIELD TESTING INSTRUMENTS

(Following instruments in sufficient quantity as directed by the Engineer- in- Charge shall be made available by the contractor. It shall be ensured that the instruments always remain in serviceable condition else the same will be replaced. In case of non-availability of instrument Engineer-In-Charge will purchase the same and the invoice amount will be deducted from the bill and will be bound to contractor in the interest of work.

- (1) Steel tapes – 3 m / 5m / 7.5m / 15m / 30m
- (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) Rebound hammer for testing concrete
- (10) Dynamic penetrometer.
- (11) Magnifying glass
- (12) Screw driver 30 cms long

- (13) Ball pin hammer, 100 gms.
- (14) Plastic bags for taking samples
- (15) Moisture meter for timber
- (16) Earth resistance tests
- (17) Total station
- (18) Multimeter,
- (19) Meggar
- (20) Refrigerant Leak detector
- (21) Pipe Bender
- (22) Thermometer
- (23) Hygrometer
- (24) CFM Meter
- (25) Step Ladder
- (26) Cordless drill

8. THE CONTRACTOR SHALL SUBMIT 'METHOD STATEMENT' FOR THE APPROVAL SOON AFTER THE AWARD OF WORK

'Method Statement' is a statement by which the construction procedures for important activities of construction are stated, checked and approved. Method Statement shall have description of the item with elaborate procedures in steps to implement the same. The specification of the materials involved their testing and acceptance criteria, equipments to be used, precautions to be taken, mode of measurements etc.

9. TESTING OF MATERIALS

- 9.1 The contractor shall arrange carrying out of all tests required under the agreement through the laboratory as approved by the Engineer-in-Charge and shall bear all charges in connection therewith including fee for testing unless specified otherwise. In all cases cost of samples and to & fro carriage shall be borne by the contractor. Contractor shall establish a laboratory at site of work at his own cost. The laboratory shall be equipped with all necessary equipment as per requirement of specification or as per direction of Engineer-in-Charge. A list of laboratory equipment to be maintained by the contractor is enclosed at Para 13 page 40 & 41. Establishing the laboratory at site shall not absolve the contractor from fulfilling the criteria of getting the test done in independent approved laboratories as per DG, CPWD, O.M. No. DG/MAN/308 dated 29.05.2014. The decision of the Engineer-in-Charge of allowing any test in the site laboratory shall be final.
- 9.2 Even ISI marked materials may be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/material. Whenever ISI marked materials are brought to the site of work the contractor shall, if required by the Engineer-in-Charge, furnish manufacturer test certificate or test certificate from approved testing laboratory to establish that the material procured by the contractor for incorporation in the work satisfy the provisions of IS codes relevant to the material and/or the work done.
- 9.3 Substandard Material/Work: In case any material/work is found substandard the same shall be rejected by the Engineer-in-Charge and the same shall be removed from the site of work within 48 hour, failing which the same shall be got removed by the Engineer-in-Charge at the risk and cost of the contractor without giving any further notice and time.

SPECIAL CONDITIONS FOR ASSOCIATION OF SPECIALIZED AGENCIES

1. The main contractor shall have to associate other specialized agency(s) (Joint ventures are not accepted) for execution of each of the these specialized work(s), who fulfils the eligibility criteria as defined in Eligibility of Bidder, within 7 days of issue of letter of intent and also after taking prior approval from the Engineer-in-charge.
2. The agency shall submit the similar work experience documents in respect of experience of having satisfactory completed similar works as defined in Eligibility of Bidder.
3. However the main contractor shall also be eligible to carry out himself any or all of the above specialized works without associating any specialized agency provided:-

The main agency fulfills the prescribed eligibility criteria respectively for the above specialized work(s).

4. The intending bidder if does not possess eligibility criteria for specialized works or he could not associate any specialised agency for specialized works before tendering then he shall upload an undertaking that if "I/We shall become the lowest tenderer then I/We shall submit the documents of Associated specialized Agencies/OEM/Authorized service provider of the specialized E&M services as per the eligibility criteria mentioned in the special conditions of NIT for association of specialized agencies after acceptance of tender along with Performance Guarantee.
5. The main contractor shall have to submit documents such as self attested copies of Certificates of Work Experience/Completion issued by client department clearly indicating
 - 1.Name of work
 2. Scope of Work
 3. Agreement No.
 4. Estimated Cost
 5. Tendered Cost
 6. Final Value of Work Done
 7. Date of Start
 8. Stipulated date of Completion
 9. Actual date of completion
6. Nature of the Work etc. (In case some of above said details are not mentioned in the Completion certificate, the firm shall attach sample proof in support of above details), self attested copy of valid Electrical contractor license, GST registration of the proposed associated specialized agencies for verification (if required) and for approval of the department as per eligibility requirement mentioned in above condition no.3 after acceptance of tender alongwith Performance Guarantee. Main contractor shall 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 of proposed associated specialized agencies alongwith above documents.
7. Consent letter of such selected associated specialized agencies for association shall also be enclosed in the prescribed format as per FORM-Aalongwith documents mentioned.

8. If the main contractor fails to submit all the documents of the proposed associated specialized agency(s) as mentioned as above, after acceptance of tender alongwith Performance Guarantee then department shall reject his/her tender.
9. After approval of associated specialized agencies by Engineer-in-charge, the main contractor will submit MOU signed with the associated specialized agency as per FORM-B in shape of affidavit on stamp paper duly attested by notary in original within 7 (Seven) Days after issue of approval letter (for associate specialized agency). The MOU shall be signed by both the parties i.e. main contractor As 1st party and associated specialized Agency as 2nd party, independently for all specialized work(s).
10. All technical discussions during currency of the contract shall be attended by the associated specialized agencies and the main contractor. Commercial/Technical submissions for the specialized work(s) shall be signed and submitted by the associate specialized agencies along with the main contractor.
11. The associated specialized agencies and the main contractor shall attend the site during inspection of the work by the Engineer-in-Charge or higher authority.
12. The main contractor shall be entirely responsible and answerable for all the works done by his associated specialized agency regarding their quality, adherence to the laid down specification, terms and conditions, warranty/guarantee etc as per the agreement and he shall be liable to bear any compensation that may be levied by the department under any of the clauses of the agreement.
13. In the event of the concerned Associated specialized Agency not performing satisfactorily or failure to complete the specialized works(s), the main contractor on written directions of the Engineer-in-charge, shall remove the Associated specialized Agency deployed on the work and shall submit name of new associated specialized Agency as per eligibility criteria mentioned in the NIT to execute the left over specialized work(s) without any loss of time after completion of all formalities mentioned as above. Also if main contractor wants to change the associated specialized agency during the currency of the contract he shall submit name of new associated specialized Agency as per eligibility criteria mentioned in the NIT to execute the left over specialized work(s) after completion of all formalities mentioned as above.
14. The main contractor shall be responsible and liable for proper and complete execution of the all works including specialized work(s) and ensure coordination and completion of all associated specialized works.
15. Running payment for the work shall be made to the main contractor. In case main contractor fails to make the payment to the associated specialized agency(s) by him within 15 days of receipt of each running account payment then on the written complaint of any associated specialized agency(s) for such work, Engineer-in-Charge shall serve the show cause to main contractor and after considering the reply of the same he may make the payment directly to the concerned associated specialized agency(s) for the work as per the terms & conditions of the agreement/M.O.U. drawn between main contractor and associated specialized agency(s) fixed by him, if reply of main contractor either not received or found unsatisfactory. Such payment made to the associated specialized agency(s) shall be recovered by Engineer-in-Charge from the next RA/final bill due to main contractor as the case may be.

FORM OF APPLICATION BY THE CONTRACTOR FOR SEEKING EXTENSION OF TIME

(PART – I)

1. Name of contractor
2. Name of work as given in the agreement
3. Agreement no.
4. Estimated amount put tender
5. Date of commencement of work as per agreement
6. Period allowed for completion of work as per agreement
7. Date of completion stipulated in agreement
8. Period for which extension of time has been given previously:

	SE's letter no. and date	Extension granted	
		Months	Days
(a) 1st extension			
(b) 2nd extension			
(c) 3rd extension			
d) 4th extension			
(e) Total extension previously given.....			

9. Reasons for which extension have been previously given (copies of the previous applications should be attached)
10. Period for which extension if applied for
11. Hindrances on account of which extension is applied for with dates on which hindrances occurred and the period for which these are likely to last.

Serial no	Nature of hindrance	Date of occurrence	Period for which it is likely to last	Period for which extension required for this particular hindrance	Overlapping period if any, with reference to item.	Net extension applied for	Remarks, if any
a	b	c	d	e	f	g	h

Total period on account of hindrances mentioned above..... Months Days

12. Extension of time required for extra work.
13. Details of extra work and the amount involved:
 - a. Total value of extra work
 - b. Proportionate period of extension of time based on estimated amount put to tender on account of extra work.
14. Total extension of time required for 11 & 12

Submitted to the Sub Divisional Officer

Signature of contractor

Dated:.....

**GUARANTEE BOND TO BE EXECUTED BY CONTRACTORS FOR REMOVAL OF DEFECTS
AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS**

The Agreement made thisday of two thousand and
betweenson of of (hereinafter called the Guarantor of the
one part) and the PRESIDENT OF INDIA (hereinafter called Government of the other part).

WHEREAS this agreement is supplementary to a contract (hereinafter called the Contract) dated
and made between the GUARANTOR of the one part and the Government of the other part, whereby the
Contractor, inter alia, undertook to render the buildings and structures in the said contract recited
completely water and leak-proof.

AND WHEREAS GUARANTOR agreed to give a guarantee to the effect that the said structures will remain
water and leak-proof for five years from the date of giving of water proofing treatment.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the
structures completely leak-proof and the minimum life of such water proofing treatment shall be five
years to be reckoned from the date after the Construction period prescribed in the contract.

Provided that the guarantor will not be responsible for leakage caused by earthquake or structural
defects or misuse of roof or alteration and for such purpose:

- (a) Misuse of roof shall mean any operation which will damage proofing treatment, like chopping of
firewood and things of the same nature which might cause damage to the roof;
- (b) Alteration shall mean construction of an additional storey or a part of the roof or construction
adjoining to existing roof whereby proofing treatment is removed in parts;
- (c) The decision of the Engineer-in-Charge with regard to cause of leakage shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being
found, render the building 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 the notice from the
Engineer-in-Charge calling upon him to rectify the defects, failing which the work shall be got done by
the Department 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 GUARANTOR fails to execute the water proofing or commits breach thereunder then the
GUARANTOR will indemnify the Principal and his successors 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 Government the decision of the Engineer-in-Charge will be final and binding
on the parties.

IN WITNESS WHEREOF these presents have been executed by the Obligorand byand
for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

Signed, sealed and delivered by OBLIGOR in the presence of

1.

2.

Signed for and on behalf of THE PRESIDENT OF INDIA byin the presence of

1.

LIST OF SPECIALIZED ITEMS / JOBS

List I - Civil Works

1. ** Water proofing treatment work.
2. Steel work in steel bridge work, space frames for long span structures, steel towers.
3. ** Special foundations including all types of piles.
4. RCC Overhead Tank with independent staging.
5. Structural Repair and Rehabilitation/ Retrofitting works.
6. Soil Investigation and Survey Work.
7. ** Facade cleaning system and façade cleaning.
8. Custom made wooden furniture (factory made).
9. Diaphragm walls.
10. Post construction Anti-termite chemical treatment.
11. Water Treatment Plants
12. Security to vacant bungalows/premises.
13. Tentage works.
14. Washing/dry cleaning works.
15. Synthetic play area surface for games.
16. Environment Impact Assessment Study and Environment Clearance.

Note:- **For these works, Specialized Agencies shall have to be associated by the CPWD / Non CPWD Contractors in case the Contractor does not possess the requisite eligibility and experience as per the NIT conditions to carry out these works..

Electrical Works

LIST- II (A)

S. No. Supplying /fabrication, installation, testing and commissioning of the following

1. Kitchen equipment
2. Lifts, escalators and conveyors
3. Simultaneous interpretation systems
4. Gas plants.
5. Cold storage plant
6. Hot Water/Steam Boilers
7. Public address system; conferencing system, automatic vote recording system, recorders
8. Stage lighting
9. Projector and other special equipment for theatre
10. Repairs and calibration of various types of measuring instruments and relays etc.
11. Testing of transformer oil and dehydration and other type of high potential test.
12. Frequency Convertor
13. Temporary illumination, security lighting and wiring for power outlets for metal detectors in connection with Republic Day and Independence Day Celebrations.
14. EPBAX system (equipments).
15. EPBAX system (cabling and wiring).
16. Illumination of heritage caves and fiber optic lighting system
17. Security system and alarm
18. Building Automation System
19. Hydraulic platform /Lift
20. Incinerator
21. Laundry equipment
22. Centralized clock system.
23. Gas pipe line

24. Modular OT
25. Electrically Operated Gate
26. Fountain Work
27. Water supply motors and pumps of 100 hp or more
28. Mechanized Car Parking Systems
29. VRV/VRF Type Air-Conditioning Systems
30. Oxygen Generation Plant
31. CCTV and Allied Equipments
32. Access Control System
33. Hydro Pneumatic Pumps
34. Providing and fixing of Sensor operated Gates
35. Precision Air Conditioning System
36. LAN System
37. SITC of active power factor filter
38. SITC of Solar Photo Voltaic Power generation system
39. Electronic / Digital Signages
40. Gas based firefighting system, mist based firefighting system
41. Pneumatic Tube System
42. Nurse Call System
43. Design and Execution of Data Centre as per Tier -IV / Tier -III standards alongwith all associated E&M and Data Centre Services.

LIST-II (B)

S. No. Supplying /fabrication, installation, testing and commissioning of the following

1. Diesel Generating Set
2. Heating, Ventilation and Air-conditioning System
3. Sub-station equipment
4. Firefighting system (including wet riser and sprinkler system, portable fire extinguishers)

5. Fire detection and alarm system

List-II (C)

1. Façade Lighting Works (Interior/exterior flood lighting of heritage/Monumental buildings/structures involving Computer aided design and evolution of special mounting arrangements for luminaries).

List -III

Horticulture Works

1. Construction of Vertical Green Wall.
2. Cut flower

LIST -IV

Concurrent list of Specialized items/ jobs

1. Sewage Treatment Plant
2. AMC for Computer System and peripherals.
3. BIM services

NO CLAIM CERTIFICATE

(On company letterhead)

To,

Executive Engineer,
Project Cell, AIIMS, Raipur

Name of Work :

Agreement No. :

Sub: No claim declaration / certificate

We have received the sum of Rs. (Rupees only) in full and final settlement of all the payments due to us for the above stated work under the above mentioned contract agreement, between us and AIIMS, Raipur. We hereby unconditionally, and without any reservation whatsoever, certify that with this payment, we shall have no claim whatsoever, of any description, on any account, against Procuring Entity, against aforesaid contract agreement executed by us. We further declare unequivocally, that with this payment, we have received all the amounts payable to us, and have no dispute of any description whatsoever, regarding the amounts worked out as payable to us and received by us, and that we shall continue to be bound by the terms and conditions of the contract agreement, as regards performance of the contract.

Yours faithfully,

Signatures of contractor

or Officer authorised to sign the contract documents

on behalf of the contractor

(Company stamp)

Date:

Place:

APPROVED MATERIALS LIST (CIVIL)

Note:

1. Unless otherwise specified, the brand/make of the material as specified in the item nomenclature or in the particular specifications or in the list of approved materials attached in the tender, shall be used in the work.
2. The Contractor shall obtain prior approval from the Engineer-in-charge before placing order for any specific material/ Brand/ Make.
3. Whenever the specified brand of material is not available then, the Engineer-in-charge may approve any material equivalent to that specified subject to proof being offered by the Contractor for its equivalence and its non-availability to his satisfaction.

1.	Acid/Alkali Resistant Tile	Somany/ Nitco/ Kajariya/ Bell
2.	Premium Acrylic Emulsion Paint: Interior	Asian (Royale)/ ICI (Velvet)/ Berger (Luxol Silk)/ Nerolac Impression
3.	Admixures& Epoxy	FOSROC/ Aquomix/ BAL-ENDURA/ROFF/Dr.Fixit/CICO/SIKA/BASF
4.	Aluminium Composite Panel	Alpolic/ Aluco Bond/ Reynobond/ Euro bond/ Al-strong/Aludewr
5.	Aluminium Extrusions/ Sections	Hindalco/ Indalco/ Jindal/Indian Aluminium Co.
6.	P.T.M.T. Accessories	Prayag, PRAKASH, SHURYA/Supreme/Kingston
7.	Annealed Float Glass	Saint Gobain/ Modi Guard/ Hindustan Pilkington/TATA
8.	Centrifugally Cast Iron Pipe & Fittings	Neco/ RIF/ Kapilansh/ BIC/SKF/Electrosteel
9.	Ceramic Tiles	Kajaria/ Somany/ Nitco/ Orient Bell/ Johnson/Varmora/AGL/OASIS/Marbitto
10.	Cement Concrete Chequered tiles	Raj-Tiles/ Bharat/ Rigid Tiles/Advance/Ultra Tiles/NITCO
11.	CP Bottle Trap	Parryware / Hindware/ Jaquar/ GRAFDOER by VMS BathwarePvt. Ltd./Prayag
12.	CP Brass Bibcock/ Pillarcock/ Stopcock/ Angle Valve/ Concealed Stop Cock & CP fittings (Normal Range)	Marc(oriental series)/ Parko/ Jaquar (Continental series)/SPRING COLLECTION OF PRIMA /GEM/ESS/Plumber/ GRAFDOER by VMS BathwarePvt. Ltd. /L&K Metro/Vardhman/'Coral' series of parryware/'JOY' & 'VINTAGE' series of KEROVIT by Kajaria /Prayag
13.	CP Waste Coupling	Mark/ GRAFDOER by VMS BathwarePvt. Ltd./ Parko or equivalent /Prayag
14.	Curtain Carrier	Vista levlor or equivalent.
15.	Dash fastener/ Expansion Bolt/Stone Cladding Clamp	M/s DevAshish/HILTI/Fischer/Bosch/Wurth/Trixel.
16.	Door closer/ floor springs	Dorma/ Haffle/ Falcon/Godrej/Dorset/Kich/Sandhu/Hardwyn
17.	Drapery Rod	Vista Levlor or equivalent.
18.	Flushing cistern (single/Dual	Sleek Dual flush PVC cistern of Hindware /

	Flush) as per IS: 7231	'Slimline' of Parryware / Prayag
19.	EPDM Gasket	Anand Lescuyer or equivalent.
20.	Epoxy Primer & Paints	Berger/ Pidilite/ CICO/ BASF/ SIKA/ Asian/ Nerolac/ ICI Kansai Akzo Nobel.
21.	Fibre Glass Shelf	Kamal/ Bath King or equivalent.
22.	Float/ Clear/ Frosted/ Toughened / Refractive Glass	Modi Float/ Saint Gobain/ Asahi/ AIS/ Modiguard.
23.	Flush Doors / Shutters as per IS: 2202	Kutty flush door/ Anchor/ Century/ Kitlam/ Archid/ JAYNA/ Ashiyana Brand by Evergreen Industries/ Bhimsaria Door/ Century/ Greenply / Archid/ Kitply/ Selected Products Company/ Jain Doors pvt. Ltd./ Duro/ Durian
24.	Flush Valve	Aquel/ Marc/ Parryware/ Jaquar / Prayag
25.	FRP Shutters/ frame	Fibre Glass Engineers/ Raipur/ Aashoo Model or equivalent/ JAYNA/ Selected Products Company.
26.	Galvanized/ Stainless Steel Anchor Fasteners	Shakti/ Arrow/ Hilti/ Fischer
27.	GI fitting	Tata/ Jindal/ Zenith/ UNIK/ AVR/ Zoloto.
28.	GI Pipe	Tata/ Zenith/ Jindal (HISAR)/ Prakash Surya.
29.	Glass Mosaic Tile	Bissazza/ Saon or equivalent.
30.	Gun Metal Gate Valve	Zoloto/ Leader/ SAINT
31.	False Ceiling system	Boral Gypsum / India Gypsum/ Laffarge/ St. Gobain (Gyproc)/ Armstrong/ Hunter Dougals/ Aerolite/ Gridsquare/ Interarch
32.	Hardner	Hard crete of Snowcem India/ MC Deritop F.H.
33.	Jet Assembly for EWC	Parryware/ Jaquar/ Grohe/ Kohler
34.	Laminate	Marino/ Greenlam/ Decolam/ Century/ Formica/ Kitlam/ Action TESA/ Sunmica/ Durian
35.	Low Level PVC Cistern Single flush	Sleek model Cistern of PVC of Hindware or 'Slimline' model of Parryware, JINDAL / Prayag
36.	Melamine Polish	Melamine Gold of Asian Paint/ Wudfinofpidilite/ Timbertone of ICI Dullex/ Beegel.
37.	Metal False Ceiling	Nittobo / Armstrong / Trac / Durlum / Huntordonglas/ Aerolite
38.	Mineral Fibre/ Calcium silicate Ceiling	Armstrong / Nitobo / Daiken / Hunter Douglas/ Aerolite
39.	Modular SS Railing System	Metallica India / Stark steel Fabricator / D-line International Denmark / Mobel Hardware.
40.	M.S .Pipe (Railing)	Jindal / Prakash Surya/ Tata/ RINIL
41.	Marine Plywood / BWP Ply	Kitply / Duro / Century/ Greenlam/ Durian
42.	Non asbestos high impact polypropelene reinforced Cement sheet	Everest or equivalent
43.	Oil Bound Distemper/ Dry Distemper	Asian (Professional Acrylic Distemper)/ Maxilite of ICI / Bisan of Berger/ Nerolac (Beauty Acrylic Distemper)
44.	Water closet (Orissa Pan/ Indian type) & fittings, accessories as	Parryware / Hindware / 'KEROVIT' by Kajaria/ ESSCO by Jaquar.

	per IS : 2556	
45.	PE-AL-PE Composite pipes	Jindal or equivalent.
46.	Plastic Connection Pipe	Parryware/Kamal Delux or equivalent.
47.	Plywood/Veneer	Archid/ Kitply/ Green ply/ Century/JAYNA/Green Ply/Merino/Duro/Durian
48.	Polyester Powder Coating	Nerolac/ Berger/ J&N
49.	Poly Sulphide Sealant	PIDISEALbyM/s Pidilite Industry/RDL941-TECHSEALChokseyChemicals/BASF/SIKA/Fosroc
50.	Polymer Modified Cementitious grout	BalEndura/ PidiliteKeroKoal/Ultratech/Ardex/Ferrous Crete.
51.	Pre-laminated Particle Board IS : 12823 (Gr-I/ Type-II)	Kitlam/ Tesa/ Archidply/Eco brand/Century/Bhutan board/Action Tesa/Greenlam/Merino
52.	Primer (Cement Primer)	Decoprime WT of Asian/ white primer of ICI/BP white of Berger/ Nerolac
53.	PVC Rain Water Pipe & Fitting	Finolex/ Classic of Kisan/ Kasta/ Supreme/AKG.
54.	PVC Shutter and frames	Rajshri/ Sintex/Polyline/Duroplast/Jain wood Industries.
55.	PVC Tiles	Arm Strong/ LG or equivalent.
56.	Screws	GKW / Nettle Fold or equivalent.
57.	Silicon Sealant	G.E./ DOW Corning/Waker/BASF/Pidilite/ROFF
58.	Solid Plastic Seat Cover for EWC	EWC standard seat cover white of Parryware/Hindware/'KEROVIT' by Kajaria
59.	Stainless Steel	Jindal Stainless Steel/ Salem Steel
60.	Stainless Steel Screws	Kundan/ Arrow or equivalent.
61.	Stainless steel Sink with or without Draining board.	Nirali/ Hindware/ Frankee/ Cobra/AMC/ GRAFDOER by VMS BathwarePvt. Ltd./Parryware/Neelkanth/Nirali
62.	Structural Silicon Sealant	Dow Corning/ Wacker/ GE/ Du-pont
63.	Structural steel	TATA/ SAIL/ RINL/TISCO/JSW Steel ltd./Jindal steel & Power ltd.
64.	Super plasticizer	MC Baucheme/ Sika/ Fosroc
65.	Synthetic Enamel Paints	Gloss Synthetic Enamel of ICI(Dulux)/Asian (Apcolite Premium gloss)/Berger (Luxol Hi Gloss)/ Synthetic Hi Gloss of Nerolac
66.	Terrazzo tiles /Mosaic Tiles	Raj-Tiles/ Bharat/ Rigid Tiles/NIC/A-1/GTC
67.	Cement Concrete Paver Block &Kerb stone	Rigid Tiles/ Raj-Tiles/Advance
68.	Textured Exterior wall paint	Spectrum/ Ultratech / Heritage by Bakelite coating and paints/Asian paint/Berger/Nerolac/Luxture.
69.	Towel Ring/Towel Rod/Towel Rack	Kamal/ Marc or equivalent /Prayag
70.	Pre-Painted/powder coated CRC windows	M/s classic engineers and fabricators/ M/s JK Enterprises Jaipur/ Nclalltek&seccolor ltd. Hyderabad/ ultimate safety metals.
71.	Veneer	Archid/ SUN/ Durian/ Ventura/ NLDK
72.	Virtuosos China Wash Basin Oval	Hindware / Parryware /KEROVIT' by Kajaria/CERA/Jaguar/ESSCO by Jaquar /Prayag
73.	Vitreous China Floor moulded	Parryware / Hindware /KEROVIT' by Kajaria/

	European with Cistern Complete	CERA/Jaguar/ ESSCO by Jaquar /Prayag
74.	Vitreous China Floor Mounted European W.C. without cistern	Parryware / Hindware /KEROVIT' by Kajaria/ CERA/Jaguar/ ESSCO by Jaquar/Prayag
75.	Vitreous China Half stall Urinal	Model No. 6002 Urinal flat back large of Hindware or magnum of Parryware/ ESSCO by Jaquar/Prayag
76.	Vitreous China laboratory Sink	Hindware / Parryware /KEROVIT' by Kajaria/ CERA/Jaguar/ ESSCO by Jaquar/Prayag
77.	Vitreous China Low Level Cistern for European W.C.	Hindware / Parryware /KEROVIT' by Kajaria/ CERA/Jaguar/ ESSCO by Jaquar/Prayag
78.	Vitreous China Pedestal for Wash Basin	Pedstal of Parryware / Hindware or equivalent/ CERA/Jaguar/ ESSCO by Jaquar/Prayag
79.	Vitreous China Wall Mounted W.C. with vitreous Cistern (component)	Parryware / Hindware /KEROVIT' by Kajaria/ CERA/Jaguar/ ESSCO by Jaquar/Prayag
80.	Vitreous China Wall Mounted W.C. without Cistern.	Parryware / Hindware /KEROVIT' by Kajaria/ CERA/Jaguar/ ESSCO by Jaquar/Prayag
81.	Vitreous China Wash Basin Rectangular without Pedestal	Hindware / Parryware /KEROVIT' by Kajaria/ CERA/Jaguar/ ESSCO by Jaquar/Prayag
82.	Vitrified /Porcelain Tile	Marbogranit/ Euro/ Somany/ diamond of Naveen /Granamite of Bell /OASIS/ceramic/ Granito/ Kajaria/ M/s Restile//Rak/ Johnson/Nitco/ Varmora/AGL/Marbitto.
83.	Waste Pipe	Kamal with brass checknut/Viking
84.	Water Proofing Compound (Liquid)	Pidiproof Ltd./CICO/ Super plast by M/s Structural water proofing/ Impermo/FOSROC/Dr.Fixit (Pidilite Industries))/BASF/ROFF/SIKA/ArdexEndura (BalEndura).
85.	White Cement	JK White/ Birla White.
86.	CPVC Pipes as per IS: 15778	AKG/Ashirvad/PRIME FLOW OF KRISHI POLYMERS/Supreme/KSR by Kisan irrigation/Flowguard plus by finolex/Prince /Prayag
87.	Teak wood/hard wood wire mesh & panel doors	A-1 Teak product Indore or equivalent.
88.	Reinforcement steel	Tata/Sail/RINL/Jindal/Jindal steel & power ltd.
89.	Block Boards as per IS: 1659	JAYNA/Century/Greenply/Archid/Kitply or equivalent.
90.	Brass bib cocks/stop cock	Marc/Parko/Jaquar/SPRING COLLECTION OF PRIMA as per IS : 781 or equivalent/Prayag
91.	Brass ball cocks (Float valve)	Marc/Parko/Jaquar /SPRING COLLECTION OF PRIMA as per IS:1703 or equivalent/Prayag
92.	Water meter	SPRING COLLECTION OF PRIMA as per IS: 779 or equivalent.
93.	HDPE Pipes as per IS:4984	KRISHNA plast pipes/KSR by Kisan irrigation/ Supreme/Reliance/Jain
94.	uPVC Pipes as per IS: 4985	KRISHNA plast pipes/AKG/ KSR by Kisan irrigation/ Supreme/Astral/Prince/Ashirwad/Prayag
95.	uPVC Screen and casing pipes for bore well/tube well as per IS	KRISHNA plast pipes/KSR by Kisan irrigation/ Supreme/Prayag

	: 12818	
96.	uPVC-SWR Pipes SN 8 as per IS: 13592	KRISHNA plast pipes/KSR by Kisan irrigation/Finolex/AKG/Supreme/Prince/Ashirwad/Astral/Prayag
97.	Wooden Shutter with frame	Siesto Brand by Bramsaria doors or equivalent.
98.	uPVC Windows/Doors	SIESTO Brand by Bhimsaria Polymers/Duroplast/Fenesta/Komerling/Wintech/Al uplast
99.	Cement (OPC/PPC)	A.C.C., Jaypee Cement, Ultratech, Shri Cement, JK Lakshmi, GujratAmbuja Cement and Cement Corporation of India.
100	Corrugated GI Sheets	Tata, Essar , Sail JSW, Bhusan
101	Colour coated profile sheets	Tata (Ezydeck)/Lloyd Superdeck/JSW/Jindal
102	Float Glass Profile Sheet TATA (transparent)	Tata, Modiguard, Saint Gobain
103	Aluminium doors & window fittings (Heavy duty)	Jyoti , Argent, Everest/Kilong/Alualpha/classic/Ebco
104	Steel/Wood primer / paint	ICI delux, nerolac, berger, asian
105	Bitumen 85/25Emulsion (MS)	HPCL, IOCL,BPCL
106	PVC water storage tanks	Sintex, water well, Siltank, Polywell/Plasto/ 'SILTANK' by Supreme
107	Bitumen VG-30, VG-10	As per particular specification of item from IOCL, BPCL, HPCL.
108	Rigid Phenolic foam for cold and hot insulation as per IS: 13204	Phenotherm manufactured by Bakelite Hylam ltd
109	Surface Texture Finishes	Heritage manufactured by Bakelite Coatings & paints ltd. or equivalent
110	FRP Chhajjas	Selected Products Company or equivalent.
111	FRP Porta cabin	Selected Products Company or equivalent.
112	G.I. Wire-mesh/Netting	Selected Products Company or equivalent.
113	Wall Putty (White Cement based)	Buildwell (Walplast Products Pvt. Ltd.)/Birla wall care/JK white/Berger/Asian paints/ferrous Crete
114	AAC block	'Ecorex' manufactured by EcorexBuildtechpvt. Ltd. or equivalent.
115	UPVC Agriculture/Pressure pipes and fittings	AKG Extrusion Pvt Ltd. or equivalent /Prayag
116	UPVC underground drainage & sewerage pipes SN 8 as per IS:15328	KSR by Kisan irrigation/Finolex/AKG/Supreme/Prayag
117	Fabrication of aluminium& UPVC doors, windows, Facades including ACP and glazing work	Skyler World or equivalent.
118	Fabrication of aluminium structural glazing and aluminium doors & windows.	KANHA ALU AND FAB PVT. LTD., Raipur or equivalent.
119	Processing and fabrication of glass (toughened, DGU and lamination	Wadhwa Glass Works (P) Ltd., Raipur or equivalent.

120	Glass reinforced Gypsum (GRG) false ceiling	'Diamond' manufactured by Diamond International Inexpvt. Ltd/Gyproc by Saint Gobain.
121	Wooden shutter with frame	'Bhimsaria' or equivalent
122	PPR-C pipes as per IS: 15801	KSR brand/Supreme/Prayag
123	PVC fittings as per IS: 10124 and IS: 7834	KSR brand or equivalent/Prayag
124	PVC underground draingae pipes (structured wall type) as per IS: 16098	Supreme or equivalent/Prayag
125	PVC septic tanks	'Safegard' by Supreme or equivalent
126	PVC underground water tanks	'Amrutam' by Supreme or equivalent
127	PVC readymade toilet blocks	'Cleanage' by Supreme or equivalent
128	PVC chambers & Manholes	Supreme or equivalent
129	Pre-Painted/powder coated CRC windows	M/s classic engineers and fabricators/ M/s JK Enterprises Jaipur/ Nclalltek&seccolor ltd. Hyderabad/ ultimate safety metals.
130	White cement based polymer modified self curringmortor	Ultratech/Dr.Fixit/ Sika/ Fosroc
131	Gypsum plaster	Ferrous crete/ Gyproc (Elite-90)/ Ultratech
132	Tile Adhesive	Ferrous Crete / Ardex/ Endure (Gold Star)/ Pidilite (Fevimatex)/ Weabr (Saint Gobain)
133	Integral water proofing compound with cement (for plaster & mortar)	FOSROC/ Conplast 421/Dr.fixit : LW+/ Sika : sikacim/Asian Paints: Smart care vitalia& equivalent product of BASF/CICO/ArdexEndura
134	Water proofing for bathroom/toilet/balcony & other wet areas.	Fosroc: Brush Bond/CICO:Tapecrete/Dr.fixti : Pidilite 2k/Sika: Nito Bond/Asian Paints: Damp Block 2k & Equivalent Product of BASF/Ardex endure
135	Crystalline water proofing compound.	Fosroc : Fosroc crystalline/Dr.Fixit: Dr.fixit crystalline/Sika: Sika Crystalline/Asian Paints:Crystalline Quart & Equivalent Product of BASF/CICO/ArdexEndura
136	Polycarbonate sheet	GE Plastic/Lexan/MG Polyplast
137	Fire rated doors	Signum fire protection/Shakti Metdoor/NAVAIR/Sukri/Promat International
138	Stainless steel railing Accessories	Jindal/Dorma/Kich/GEZE/Godrej/Hardwyn
139	Stainless steel door & windows fittings	Jindal/Dorma/Kich/Dorset/Godrej/Ozone
140	Acrylic Distemper 1 st quality (washable/Readymix/Low VOC)	Asian Paints (Tractor Aqua Lock Paint)/ Berger: commando or equivalent paints of Nerolac or ICI-Dulux.
141	Plastic emulsion plaint	Asian paint: (Apcolite Heavy Duty Premium Emulsion paint)/ Nerolac :Impressio/Berger:Easy clean/ICI-Dulax:Velvet touch
142	Acrylic Smooth Exterior Paint	Asian Paint : (Apex/ Professional Premium Exterior Emulsion/ Nerolac: XL/Berger: Weather coat/ICI-Dulux: Weather Shieled
143	Premium Acrylic Smooth	Asian paint: Apex Ultima/Nerolac: XL Total/Berger:

	Exterior Paint with Silicon Additive	Weather coat all guard/ICI dulux: Weather Shield max
144	Fire paint	Asian paints/Akzo Nobel Coatings India ltd./ PROMAT/Jotun
145	D.I. Pipes & fittings	Electrosteel/Jindal/Tata Ductura/Kapilansh/Kesorom
146	C.I. manhole covers, frames & CI Gratings	Neco/Raj iron Foundary Agra/BIC/SKF/Kapilansh
147	SFRC manhole cover & Grating	K.K./Jain Pragati
148	C.P. Brass fittings (Superior Range)	Jaquar/Grohe/Roca/Prayag
149	Sanitary ware fittings & Accessories (Superior range)	Kohler/Roca/Hindware/Parryware/Prayag
150	Mirror glass	Atul/Modi Guard/Golden Fish
151	Extruded Polystyrene Insulation Board	Dow Corning/Supreme/Taxes/Analco
152	Heat Resistant Tiles	Swastik/Thermatek
153	Floor Hardener	Ironite/Ferrok/Hardonate
154	Modular Expansion Joint	Herculus/Sanfield India Ltd. Vexcolt
155	Glass Wool	Dow Corning/ U.P. Twinga/Isover
156	UPVC Doors and window hardware	Rotto/Dorset/Kinlong
157	AAC Block adhesive	Ecorex/Ultratech/ArdexEndura/Ferrous Crete
158	Ready Mix Plaster	Ultratech/Ferrous Crete/Saint Gobain
159	Post tension slab	Ultracon technology limited/Tech-9/CRUX
160	Acoustical Wall paneling	Hush or equivalent to be decided by Engineer-in-charge.
161	Sports Vinyl Flooring	Ebaco or equivalent to be decided by Engineer-in-Charge

APPROVED MATERIALS LIST (ELECTRICAL)

1. Unless otherwise specified, the brand/make of the material as specified in the item nomenclature or in the particular specifications or in the list of approved materials attached in the tender, shall be used in the work.
2. The Contractor shall obtain prior approval from the Engineer-in-charge before placing order for any specific material/ Brand/ Make.
3. Whenever the specified brand of material is not available then, the Engineer-in-charge may approve any material equivalent to that specified subject to proof being offered by the Contractor for its equivalence and its non-availability to his satisfaction.

Sl. No.	Item	Acceptable Makes
1	PVC insulated Copper wire / Telephone wire	KEI / HAVELLS / RR Kabel / Polycab / Finolex/ Anchor/ (All with ISI Marked)
2	MCCB with Thermomagnetic releases	L&T/Seimens/Legrand / Schneider/Hager/ABB/ GE/C&S Electric
3	MCCB with Variable microprocessors based releases (o/c, s/c, e/f)	L & T (D-Sine) , ABB (ISO Max), Siemens, Schneider (NS Compact), GE (Recold Plus), Legrand (DPX)
4	MCB / MCB Prewired DB / RCCB/ Industrial Socket not less than 10 K.	Legrand / L&T / Hager / Seimens / Schneider/ Havells/ ABB/HPL
5	Steel Conduit.	BEC / AKG / MK / Rama / Finolex
6	PVC Conduit	BEC,AKG, MK, Anchor, Finolex, Steel Craft, Saraswati, Swastik , Polycab
7	Casing Caping	Saraswati, Polycab, Precision, Astral
8	Call Bell / Buzzer / Ceiling rose / Electronic Regulator.	Anchor / Vinay Clair / Polo Rider / North West.
9	Brass Batten / Angle Holder.	Kinjal / Antex / Emperor/Anchor/Havells/Bajaj.
10	Modular Switch / Socket / Blanking Plate /PVC Box / Metal (GI)Switch Box (the gauge of GI Box shall not less than 20 SWG, of the same make that of Switch) Front Plates, Telephone, T.V. Outlets Socket / Fan Regulator.	Crabtree (VERONA), Anchor (Vision), L&T(Entice), MK (Citric), Legrand (Myrius), Schneider (Opale)/Roma
11	Lamp for (light fittings)	Philips / Osram/ GE/ Bajaj/ Wipro/Crompton/Halonix
12	XLPE insulated PVC sheathed 1.1 KV grade Al. conductor armoured UG cable.	Finolex/ Cable Corporation of India / R.R. Kabels/ Universal Cable/Havells/KEI/ Polycab.
13	Galvanize Octagonal Street light pole/ High Mast &galvonised bracket.	Bajaj/ Transrail/ Valmont/Aster.
14	HRC Protection Fuses/ Fuse	Siemens/ L&T/ Schneider /ABB

	Fittings.	
15	Selector Switches/ Indicating Lamps (LED type)	AE/ Enercon/ L&T/ Neptune/ Conserve/ Secure/ Keycee/ Vaishnav
16	Digital Ammeter/ Voltmeter	Conserve/ Secure/ Enercon/ AE/ MECO/ Universal/ Rishab/ Yokins
17	Current. Transformer	L&T/ A.E./ Kappa/ IMP/ GE or equivalent
18	LUGS, Thimble, Cable Glands	Dowels/ Multi/ COMET/ Hex/ Jhonson / Gripwell/Comex/Comed
19	Timer	L&T/ Siemens/ Schinder/ Hager/ Legrand
20	Modular Blanking Plate	Clipsal, Crabtree, MK, Anchor, Legrand, L&T, ROMA, Siemens Northwest
21	G.I. Pipe	Jindal/ Tata/ Prakash/Surya
22	Power contactor	L&T / Siemens / Schinder/Legrand /ABB
23	Fluorescent Tube Fittings	Surya/ Keslec/Trilux,/ Bajaj,/ Osram, /GE , Wipro,/ Crompton/ Philips /Halonix
24	Tap-off Box (Plug in Type), End Feed Unit	C&S Electric & Switchgear, L & T, ABB, Siemens, Schneider, Tricolite
25	LT Panels / Feeder Pillars / Floor Panels for upto 400A i/c switchgear	L & T, ABB, Siemens, Schneider, Tricolite, Adlec, CRS, Sudhir, Jakson, Advance Panel (Narela), Adhunik, Havells.
26	MPCB	L&T, ABB, Siemens, Schneider
27	LED fittings	Havells/Wipro/CGL/Philips/Bajaj/Osram/Halonix
28	LED Make	Nichia / citizen/ Lumileds / APT Electronics/Cree/Osram /Bridgelux.
29	Static Voltage Stabilizer	Reputed make as approved by Engineer-In-Charge
30	Loudspeaker, Amplifier, Volume Controller,	JBL,BOSE,BOSCH, Electro-Voice, Sennheiser, D & B audiotechnik, meyer Sound
31	Ceiling Fan	Havells/Bajaj/Usha/Crompton/Halonix

APPROVED MATERIALS LIST (HVAC)

1. Unless otherwise specified, the brand/make of the material as specified in the item nomenclature or in the particular specifications or in the list of approved materials attached in the tender, shall be used in the work.
2. The Contractor shall obtain prior approval from the Engineer-in-charge before placing order for any specific material/ Brand/ Make.
3. Whenever the specified brand of material is not available then, the Engineer-in-charge may approve any material equivalent to that specified subject to proof being offered by the Contractor for its equivalence and its non-availability to his satisfaction.

S.no.	Item	Acceptable Makes/ Manufactures
1	Air conditioner	DAIKIN / HITACHI / MITSUBISHI / O General / BLUE STAR / CARRIER
2	INSULATION:-	
a	FIBREGLASS	FGP / UP TWIGA / KHIMCO
b	EXPANDED POLYSTYRENE	BEARDSELL / COOLINE
c	EXPANDED POLYETHYLENE	NIKIFOAM / PROFEEL / Supreme/ EQVT
d	NITRILE FOAM	AEROFLEX / Supreme/ ARMAFLEX / Totaline/ Thermo flex
3	GRILLES / DIFFUSERS	COSMOS / DYNACRAFT/ CARYAIRE/
4	PRE-FILTERS	KIRLOSKAR / DYNA / KLENZAIDS / AIRTECH
5	Power and control CABLES	KEI/ Finolex/ RR Kabel/ Havells/ polycab
6	Drain Piping	SUPREME / PRINCE / Apollo/ Dutron/ Ashirvad/ Finolex/ Astral
7	Ventilation/ Exhaust fans	KRUGER / COMEFRI / NICOTRA / Usha/ Crompton/ Havells/ GE/ Bajaj
8	Copper piping	MANDEV/ RAJCO/ MEHTA/ Totaline/ Godrej
9	PVC insulated Copper wire (FRLS), Cables / Telephone wire	Havells / RR Kabel / Polycab / Finolex/ Anchor/ L&T (All with ISI Marked)
10	Circuit breakers/MCB / MCB DB's / RCCB	Legrand / L&T / Hager / Seimens / Schneider/ MDS/ GE/ Hager/ ABB
11	Industrial Socket	MDS/ HAVELLS/ Hager/ ABB
12	PVC Conduit	AKG/ MK/ Anchor/ Finolex/ Steel Craft/ Saraswati/ Swastik
13	Casing Caping	Saraswati/ Polycab/ AKG
14	LUGS, Thimble, Cable Glands	Dowels/ Commet/ Hex/ Jhonson / Gripwell/ Comex/ Comed
15	Duct sheet metal	Sail/ Jindal/ Tata/ Hindalco/ JSW
16	FRP induced draft Cooling Tower	Delta, Paharpur, Advance, Bell, Marley or Equivalent
17	Ball Valve	Kartar, L&T Hawa, Zoloto, or ISI, BIS Standard or Equivalent
18	Butterfly valves	Kartar, L&T Hawa, Zoloto, or Equivalent (ISI, BIS Standard)
19	M.S 'C' Class as per IS:1239	JINDAL, TATA or Equivalent
20	MS Flange	High Quality or Equivalent (ISI, BIS Standard)
21	MS angle	High Quality or Equivalent (ISI, BIS Standard)
22	Anti-Rust paint with FRP coating	Akzonobel, Berger Paints, Asian Paints Ltd. or Equivalent
23	Auto air Vent Valve	Kartar, Zoloto, or ISI, BIS Standard or Equivalent

SCHEDULE OF QUANTITY

NAME OF WORK : **Comprehensive Annual Maintenance and operation of HVAC System installed at AIIMS Raipur.**

Sl. No.	Item Description	Quantity	Units	Estimated Rate in Rs. P	TOTAL AMOUNT (Inclusive of all Taxes) in Rs. P
1	2	3	4	5	6
1	Comprehensive Annual Maintenance of HVAC System installed at AIIMS Raipur. (both High side & Low Side) of 3900 TR HVAC System.				
1.1	1st Year	3900.00	Per Tr per Year	1709.40	66,66,660.00
1.2	2nd Year	3900.00	Per Tr per Year	1794.87	69,99,993.00
1.3	3rd Year	3900.00	Per Tr per Year	1884.61	73,49,979.00
2	Operation of HVAC System installed at AIIMS Raipur. (both High side & Low Side) of 3900 TR HVAC System.				
2.1	1st Year	3900.00	Per Tr per Year	1709.40	66,66,660.00
2.2	2nd Year	3900.00	Per Tr per Year	1794.87	69,99,993.00
2.3	3rd Year	3900.00	Per Tr per Year	1884.61	73,49,979.00
Total					4,20,33,264.00