

NOTICE INVITING FOR e-TENDER

Name of work: - Operation & Comprehensive maintenance of 2X165 TR Central A.C Plant installed at Sh. Yogeshwar Dutt & Sushil Kumar Hall of SAI NRC Sonapat. (SH: - Replacement of defective AHU).

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Certified that this N.I.T. contains page 1 to 28

N.I.T. No. 15/EE(E)/KED/2026-27/Karnal is approved for Rs. 539868/-

**ASSISTANT ENGINEER(E)
SESD, CPWD, Sonipat**

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

**INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING FORMING PART OF
BID DOCUMENT**

The Assistant Engineer (E), Sonipat Central Electrical Sub Division, Sonipat on behalf of President of India invites the online percentage rate tenders from the eligible contractors of CPWD Enlisted in B&R Category in single bid for the following work:-

Sr. No.	NIT No.	Name of work & Location	Estimated cost put to Bid	Earnest Money	Period of Completion	Last date & time of submission of bid, original EMD, copy of receipt for deposition of original EMD and other documents as specified in the NIT	Time & date of online opening of tender
1	2	3	4	5	6	7	8
1	15/EE(E)/KED/2026-27/Karnal	Operation & Comprehensive maintenance of 2X165 TR Central A.C Plant installed at Sh. Yogeshwar Dutt & Sushil Kumar Hall of SAI NRC Sonapat. (SH: - Replacement of defective AHU).	Rs. 539868.00	Rs. 10797.00	45 days	On 17/07/2026 at 16.00	On 17/07/2026 at 16.30

- The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
- The bidder must associate with himself, agencies of the appropriate eligibility to bid for each of specialized nature of items/work listed below individually. Such works shall be got executed only through associated agencies specialized in these fields. The bidder whose bid is accepted shall associate specialized agencies those fulfilling the eligibility criteria as mentioned here under during last 7 years ending last date of month previous to the one in which tenders are invited. If the bidder, having valid electrical license if applicable for E&M works, himself fulfills the eligibility criteria laid down below for associated specialized agencies, then the bidder shall not require to associate with himself the associated specialized agency.
 - One similar completed work of value not less than 80% of Estimated cost of Rs. 5,39,868.00
OR
 - Two similar completed works of individual value not less than 60% of Estimated cost of Rs. 5,39,868.00
OR
 - Three similar completed works of individual value not less than 40% of Estimated cost of Rs. 5,39,868.00

Similar work means: "SITC/Replacement of AHU"
- Information and Instructions for bidders posted on website shall form of bid document.

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

4. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website **www.etender.cpwd.gov.in** or **www.cpwd.gov.in** free of cost. Press notice will also be available on Central Public Procurement Portal (URL [http:// eprocure.gov.in](http://eprocure.gov.in)) through system link.
5. The bid can only be submitted after **deposition of original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer CPWD within the period of bid submission** and uploading the mandatory scanned documents such as Demand Draft or Pay-order or Banker's Cheque or Deposit at call Receipt or Fixed Deposit Receipts and Bank Guarantee of any Scheduled Bank towards EMD in favour of **Executive Engineer (E), Karnal Central Electrical Division, CPWD, Karnal as mentioned in NIT, receipt for deposition of original EMD to division office of any Executive Engineer, CPWD** and other documents as specified.

The contractors already registered on the e-tendering portal will have option to continue by paying tender processing fee upto one year from the date of registration, or to switch over to (new) registration without tender processing fee any time. All new registrations from 01-04-2015 will be without tender processing fee.

6. Those contractors not registered on website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
7. The intending bidders must have valid Class-III digital signature to submit the bid.
8. On opening date of the financial bid, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
9. Contractor can upload documents in the form of JPG format and PDF format.
10. 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).
However, if a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section/sub head in Percentage Rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
11. The department reserves the right to reject any or all bids without assigning any reason thereof.
12. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board and Programme Chart (Time and progress) within the period specified in Schedule "F", If applicable.
13. After submission of the bid, the bidder can re-submit revised bid any number of times but before last date and time of submission of bid as notified.

While submitting the revised bid, bidder can revise the quoted rates of one or more items any number of times but before last date and time of submission of bid as notified.

ASSISTANT ENGINEER(E)
SESD, CPWD,
Sonapat. (Haryana)

List of Documents to be scanned and uploaded on due date and time mentioned above:

(i)	Copy of Treasury Challan/ Demand Draft / Pay Order or Banker's Cheque / Fixed Deposit Receipts/ Deposit at Call Receipt / Bank Guarantee of any scheduled bank against EMD.
(ii)	Copy of receipt for deposition of original EMD with division office of any Executive Engineer including NIT issuing EE, CPWD.
(iii)	GST registration Certificate, if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with bid documents. "If work is awarded to me, I/we shall obtain GST registration certificate, as applicable, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and /or for any action taken by CPWD or GST department in this regard."
(iv)	Detail of Agency – Form –B
(v)	Copy of PAN Card
(vi)	I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis or subletting basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for bidding in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Performance Guarantee-Form C
(vii)	Certificates of work Experience, if firm have.
(viii)	Valid Enlistment order of the CPWD contractors in appropriate class in B&R category
(ix)	Up to date GST Return filed to be uploaded by the bidder.
(x)	Copy of Valid Electrical Contractor License.
(xi)	Any other document as specified in the NIT.

**ASSISTANT ENGINEER(E)
SESD, CPWD, Sonipat.**

Proforma—I

Memorandum of Understanding

This Memorandum of Understanding (MOU) is made on theat.....

Between

.....(main contractor) having its registered office at..... which expression shall unless repugnant to the subject or context include its administrators, successors and assigns.

And

.....(Associate Electrical contractor) having its registered office at..... represented by..... Which expression shall unless repugnant to the subject or context include its administrators, successors and assigns.

Whereas, Central Public Works Department, have issued tender papers to quote for the following work to M/s..... (main contractor)

Name of Work:

Whereas, This Memorandum of Understanding has been entered into to execute Electrical works for the above work by M/s.....(Electrical Contractor) (Associate electrical contractor).

Whereas, both the parties have gone through and understood the various conditions & clauses of the tender and willingly agree to abide by them.

This MOU shall be valid till the duration of completion of above work and shall be extended if so required by the CPWD.

In witness whereof we have put our hand and seal on dated

For(Main Contractor) For.....(Associate Elect. contractor)

Witness:-

- 1.
- 2.

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

Receipt of deposition of original EMD

Receipt No. _____

Dated _____

1.	Name of work	:	Operation & Comprehensive maintenance of 2X165 TR Central A.C Plant installed at Sh. Yogeshwar Dutt & Sushil Kumar Hall of SAI NRC Sonapat. (SH: - Replacement of defective AHU)
2.	NIT No.	:	15/EE(E)/KED/2026-27/Karnal
3.	Estimated Cost	:	Rs.539868/-
4.	Amount of Earnest Money Deposit	:	Rs. 10797/-
5.	Last date of submission of bid	:	17/07/2026

(*To be filled by / EE at the time of issue of NIT and uploaded along with NIT)

To be filled by EMD receiving officer

1. Name of contractor :
2. Form of EMD No. & Date :
3. Amount Earnest Money Deposit :
4. Date of submission of EMD :

Signature, Name & Designation of EMD
Receiving officer (EE, AE(P)/AE/AAO)
along with office stamp

To be filled by EMD receiving officer

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

DETAIL OF AGENCY

1.	Name of the agency	:	
2.	Correspondence Address	:	
3.	Name of the authorized person for contact	:	
4.	Official contact number on which contractor is available for the department	:	
5.	Official e-mail for correspondence	:	

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

FORM - C

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

(Scanned copy to be uploaded at the time of submission of bid)

Signature of bidder(s) with stamp

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

CENTRAL PUBLIC WORKS DEPARTMENT

CPWD-6 FOR e-TENDERING

 सत्यमेव जयते	GOVERNMENT OF INDIA CENTRAL PUBLIC WORKS DEPARTMENT	 CPWD
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1. The Assistant Engineer (E), Sonipat Central Electrical Sub Division, Sonipat on behalf of President of India invites the online Percentage Rate tenders in single bid from the eligible contractors of CPWD Enlisted in B&R Category in single bid for the following work:-

“Operation & Comprehensive maintenance of 2X165 TR Central A.C Plant installed at Sh. Yogeshwar Dutt & Sushil Kumar Hall of SAI NRC Sonapat. (SH: - Replacement of defective AHU)”.

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.

- 1.1 The work is estimated to costs **Rs. 539868/-** This estimate, however, is given merely as a rough guide.
- 2 Agreement shall be drawn with the successful bidder on prescribed **Form No. CPWD 7** which is available as a Govt. of India Publication and also available on website **www.cpwd.gov.in**. Bidder shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
- 3 The time allowed for carrying out the work will be **45 days** whichever is later, in accordance with the phasing, if any, indicated in the tender documents.
- 4 (i) The site for the work is available.
- 5 The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can also be seen from website **www.etender.cpwd.gov.in** or **www.cpwd.gov.in** free of cost.
- 6 After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified.
- 7 While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.
- 8(a) Earnest Money in the form of Treasury Challan or Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt (drawn in favour of **Executive Engineer (Electrical), Karnal Central Electrical Division, CPWD, Karnal**) shall be scanned and uploaded to the e-Tendering website within the period of bid submission.

The original EMD should be deposited either in the office of Executive Engineer (E) inviting bids or division office of any Executive Engineer, CPWD, within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT.

This receipt shall also be uploaded to the e-tendering website by the intending bidder up to the specified bid submission date and time.

- 8(b) Copy of enlistment order/certificate of work experience and other documents as specified in the NIT shall be scanned and uploaded to the e-tendering website within the period of bid submission. **However, certified copy of all the scanned and uploaded documents as specified in NIT shall have to be submitted by the lowest bidder only within a week from the date of opening of the price bid physically in the office of tender opening authority.**

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

Online Bid Documents submitted by intending bidders shall be opened only of those bidders, **whose original EMD deposited with any division of CPWD and other documents scanned and uploaded are found in order.**

The bid documents shall be opened on **17/07/2026.**

9. The bid submitted shall become invalid if: -
- (i) The bidder is found ineligible.
 - (ii) The bidder does not deposit original EMD with division office of any Executive Engineer, CPWD.
 - (iii) The bidder does not upload all the documents (including GST registration and acknowledgement of upto date filed return) as stipulated in the bid document **including the copy of receipt of deposition of original EMD.**
 - (iv) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted **physically by the lowest bidder** in the office of tender opening authority.
 - (v) If a tenderer quotes nil rates against each item in percentage rate tender or does not quote any percentage above/below on the total amount of the tender or any section/sub head in Item Rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
10. In case any discrepancy is noticed between the documents as uploaded at the time of submission of the bid online and hard copies as submitted physically in the office of Executive Engineer, then the bid submitted shall become invalid and the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further, the tenderer shall not be allowed to participate in the re-tendering process of the work.
11. The contractor whose bid is finally accepted will be required to furnish performance guarantee of 5% (Five Percent) of bid amount within the period specified in Schedule F. This guarantee shall be in the form of Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any Scheduled Bank (in case guarantee amount is less than Rs.1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the bidder fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with the tender shall be returned after receiving aforesaid performance guarantee. The tenderer will be suspended for one year & shall not be eligible to bid for CPWD tenders from date of issue of suspension order.
- The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses / Registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board and Programme Chart (Time and progress) within the period specified in Schedule "F".
12. Intending bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent upon 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 and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.
- In addition to the above, bidders are to be advised to see for themselves the bridges existing on the approach passage to the site for assessing the position with regard to carriage of building materials and T&P, Nothing extra shall be payable to the successful bidder for any type of existing restricted conditions with regards.
13. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.
14. Canvassing whether directly or indirectly, in connection with tenderers is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
15. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
16. The contractor shall not be permitted to tender for works in the CPWD Circle Office responsible for award and execution of contracts, in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Gazetted officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this department.

17. No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the previous permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the tender or engagement in the contractor's service.
18. **The bid for the works shall remain open for acceptance for a period of thirty (30) days from the date of opening of bid.** If any bidder withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, and then the Government shall, without prejudice to any other right or remedy, be at liberty **to take suitable action as per rule.** ~~forfeit 50% of the said earnest money as aforesaid.~~ Further the bidders shall not be allowed to participate in the re-bidding process of the work.
19. 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 contract consisting of: -
 - a) The Notice Inviting bid, all the documents including Special Conditions, General Specifications/ Additional Specifications/ Particular Specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - b) Standard **C.P.W.D. Form 7** (GCC for CPWD Works 2020) amended upto last date of submission of bid.
20. The bid document will include following components:

PART-A: CPWD-6, CPWD form - 7 including schedule A to F for the work, Standard General Conditions of Contract for CPWD 2020 with all amendments/modifications upto date of submission of bid.

PART-B: General/ Special Conditions/Commercial & Technical, Particular Specifications of the work.

Part C:- Schedule of quantities of the work.
21. The eligible bidders shall quote rates for all items.

ASSISTANT ENGINEER(E)
SESD, CPWD, Sonipat.

Form of Bank Guarantee for Earnest Money Deposit/Performance Guarantee/Security Deposit/Mobilization Advance

1. Whereas the Executive Engineer (name of division), CPWD on behalf of the President of India (hereinafter called “The Government”) has entered into an agreement bearing number with (name and address of the contractor) (hereinafter called “the Contractor”) for execution of work (name of work) The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date)..... as Performance Guarantee/Security Deposit/Mobilization Advance from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.
2. We,(indicate the name of the bank) (herein after referred to as “the Bank”), hereby undertake to pay to the Government an amount not exceeding Rs. (Rupees only) on demand by the Government within 10 days of the demand.
3. We, (indicate the name of the Bank), do hereby undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said Contractor. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupees Only)
4. We, (indicate the name of the Bank), further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor in any suit or proceeding pending before any Court or Tribunal, our liability under this Bank Guarantee being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.
5. We, (indicate the name of the Bank), further agree that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation here under to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor 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 or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor 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. We, (indicate the name of the Bank), further agree that the Government at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor at the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee the Government may have in relation to the Contractor’s liabilities.
7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.
8. We, (indicate the name of the Bank), undertake not to revoke this guarantee except with the consent of the Government in writing.
9. This Bank Guarantee shall be valid up to unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. (Rupees Only) and unless a claim in writing is lodged with us within the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

Date

Witness:

1. Signature
Name and address

Authorized signatory
Name

Designation

Staff code no.

Bank seal

2. Signature
Name and address

* Date to be worked out on the basis of validity period of 90 days where only financial bids are invited and 180 days for two/three bid system from the date of submission of tender.

** In paragraph 1, strike out the portion not applicable. Bank Guarantee will be made either for earnest money or for performance guarantee/security deposit/mobilization advance, as the case may be.

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

CPWD FORM NO.7
GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT

STATE: Haryana

Circle: KCC, DIVISION-KCED, Karnal

BRANCH: E&M

SUB DIVISION: SCED, Sonipat

PERCENTAGE RATE TENDER & CONTRACT FOR WORKS

(A) Tender for the work of: -

“Operation & Comprehensive maintenance of 2X165 TR Central A.C Plant installed at Sh. Yogeshwar Dutt & Sushil Kumar Hall of SAI NRC Sonapat. (SH: - Replacement of defective AHU)”.

- i) To be submitted/uploaded online on **17/07/2026** through website **www.etender.cpwd.gov.in** or **www.cpwd.gov.in** to **Assistant Engineer(E), Sonipat Central Electrical Sub Division, CPWD, Sonipat.**
- ii) To be opened online in presence of tenderers who may be present on **17/07/2026** in the office of **Assistant Engineer(E), Sonipat Central Electrical Sub Division, CPWD, Sonipat.**

T E N D E R

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

I/We hereby tender for the execution of the work specified for the President of India within the time specified in Schedule ‘F’, viz. Schedule of Quantities and in accordance in all respects with the Specifications / Special conditions, Designs, Drawings and instructions in writing as referred to in this tender document and with such materials as are provided for, by and in respects in accordance with, such conditions so far as applicable.

We agree to keep the tender open for **(30) thirty Days** from the date of opening of tender and not to make any modifications in its terms and conditions.

A sum of **Rs.10797/-** is hereby forwarded in Cash / Receipt Treasury Challan / FDR/ Deposit at Call Receipt of a Scheduled Bank/ FDR of a Scheduled Bank / Demand Draft of a Scheduled Bank/ Bank guarantee issued by a schedule bank as earnest money. If I/we fail to furnish the prescribed Performance Guarantee within prescribed period, I/we agree that the said President of India or his successor 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 the 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 earnest money and the Performance Guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, upto maximum of the percentage mentioned in Schedule ‘F’ and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 & 12.3 of the tender form. **Further, I/We agree that in case of forfeiture of earnest money or both Earnest Money or Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.**

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

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 from the tendering in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

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

Dated:	}	Signature of Contractor	}
Witness: -		Postal Address: -	
Address: -		Telephone No.	
Occupation: -		Fax:-	
		E-Mail:-	

ACCEPTANCE

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

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

For & on behalf of the President of India.

i)	Signature
ii)	
iii)	Designation
iv).....	
	Assistant Engineer

Dated: -

SCHEDULES (A to F)

SCHEDULE 'A'

Schedule of quantities

- As per **BOQ**

Estimated Cost put to tender

- **Rs. 539868/-**

SCHEDULE 'B'

Schedule of materials to be issued to the contractor

S.No.	Description of item.	Quantity.	Rate 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
		NIL	

SCHEDULE 'D'

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

NIL

SCHEDULE 'E'

Reference to General Conditions
of Contract:

General Conditions of contract 2023 for CPWD works amended
up to previous day of the last date of submission of the tender.

1.1 Name of Work:

**“Operation & Comprehensive maintenance of 2X165 TR
Central A.C Plant installed at Sh. Yogeshwar Dutt & Sushil
Kumar Hall of SAI NRC Sonapat. (SH: - Replacement of
defective AHU)”.**

1.2 Estimated Cost of work: -

Rs. 539868/-

1.3 Earnest Money: -

Rs. 10797/-

1.4 Performance Guarantee

**(a) 5% of Tender Value or Estimated Cost Put to Tender
(ECPT) (Whichever is higher)**

**(b) Where the tendered amount is less than eighty
percent (80%) of the Estimated Cost Put to Tender
(ECPT), the Performance Guarantee, in addition to the
requirement under (a) above, shall be increased by an
amount equal to the difference between eighty percent
(80%) of the ECPT and the tendered amount**

1.5 Security Deposit

2.50% of tendered value.

SCHEDULE 'F':-

General Rules & Directions:-

Officer Inviting Tender

ASSISTANT ENGINEER(E), SESD, Sonipat

Definitions:-

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

2(i) Engineer-In-Charge	AE(E), SESD, CPWD, Sonipat.
2(ii) Accepting Authority	AE(E), SESD, CPWD, Sonipat.
2(iii) Percentage on cost of materials and Labour to cover all overheads and Profits	15%
2(iv) Standard Schedule of Rates	Delhi Schedule of Rates 2022 & MR
2(v) Department	Central Public Works Department
2(vi) Standard CPWD Contract Form	GCC for maintenance works-2023 and CPWD Form 7 as amended/ modified up to previous day of the last date of submission of the tender
Clause-1:	
(i) Time allowed for submission of Performance guarantee after date Of issue of letter of acceptance	07 days
(ii) Maximum allowable extension with late fee @0.1% per day of the Performance guarantee amount beyond the period provided in (i) above	03 days
Clause-2:	
Authority for fixing compensation Under Clause 2	Superintending Engineer, CPWD, Karnal
Clause – 2A:	
Whether clause-2A shall be Applicable.	Not applicable
Clause-5:	
Number of days from the date of issue of letter of acceptance for reckoning date of start	10 days
Mile Stone	Refer Para (A) Table of Milestones
Time allowed for execution of work	45 days
Authority to decide	
i. Extension of time for completion of work.	Executive Engineer (E), KED, CPWD, Karnal.
Clause-6:-	
Clause applicable- (6):-	Clause 6
Clause-7:- Gross work to be done together With net payment / adjustment of Advances for material collected, If any, since the last such payment For being eligible to interim payment	
	Rs. 2 lacs
Clause-7A:- Regarding applicability of labour laws:- Related to labour license, registration of Contactor with EPFO, ESIC and BOCW Welfare board	
	Yes, Applicable
Clause-10A:-	
	NA
Clause-10-B (ii).	
Whether clause 10-B (ii) shall be applicable	Not, Applicable
Correction—Nil	Deletion—Nil
Insertion—Nil	Overwriting—Nil

Clause-10C:- Component of labour expressed as percentage of value of work

N/A

Clause 10 CA

N/A

Materials covered under this clause:	Nearest material (other than cement, reinforcement bars and structural steel) for which All India Whole sale Price Index to be followed	Base Price of the materials covered under 10 CA. (January, 2016)
Nil	Nil	Nil

Clause-10-CC: -

Not Applicable.

Component of Materials of Civil work (except materials covered under clause 10CA)

Nil

Component of Labour expressed as %age of total value of work-----

NIL

Component of POL expressed as %age of total value of Civil work

NIL

Clause-11:- Specifications to be followed for execution of work.

C.P.W.D. Specifications

General Specification for Electrical Works Part I Internal - 2023.
CPWD General Specification for Electrical Works (Part II External)-2023
CPWD General Specification for Electrical Works (Part III Lifts & Escalators)-2003
CPWD General Specification for Electrical Works Part IV Substation - 2013.
CPWD General Specification for Electrical Works Part V Wet riser & sprinkler system - 2020.
CPWD General Specifications for Electrical Works Part VI Fire Detection and Alarm System – 2018.
CPWD General Specification for Electrical Works Part VII DG Sets - 2013.
CPWD General Specification for Electrical Works Part VIII Gas Based Fire Extinguishing System - 2013.
CPWD General Specification for Heating Ventilation & Air-Conditioning-2017 (as amended up to date).

Clause-12:-

Type of Work:

Maintenance Work

Authority to decide deviation beyond 1.25 times up to 1.50 times of tendered amount

Superintending Engineer or successor thereof

12.2 & 12.3

Deviation limit beyond which clause 12.2 & 12.3 shall apply for building work in superstructure.

No limit(All the deviated quantities shall be paid at agreement rates)

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

- 12.5 (i) Deviation limit beyond which clause 12.2 & 12.3 shall apply for foundation works (except items mentioned in earth work Sub-Head in DSR and related items) NA
- (ii) Deviation limit for items in Earth work Sub-head of DSR and related items NA

a) The completion cost shall, in no case, exceed 1.5 times the contract amount.

(The completion cost includes gross amount of work done, amount of extra items and deviations and escalation amount admissible as per agreement etc.)

Clause-16:- Competent Authority for Deciding reduced rates. Superintending Engineer, CPWD, KNL.

Clause 18:- List of mandatory machinery, tools & plants to be deployed by the Contractor at site As required for timely execution of work

Clause-25:

Constitution of Dispute Redressal Committee (DRC)	Component Authority to appoint DRC
DRC shall constitute one Chairman and two members.	Chief Engineer or Additional Director General

TABLE OF MILE STONE(S)

Name of work: “Operation & Comprehensive maintenance of 2X165 TR Central A.C Plant installed at Sh. Yogeshwar Dutt & Sushil Kumar Hall of SAI NRC Sonapat. (SH: - Replacement of defective AHU).

Time Period allowed for Completion of Work: - 45 days.

Para (A) In Physical/Financial Terms: -

S. NO.	DESCRIPTION OF MILESTONE (PHYSICAL)	TIME ALLOWED IN DAYS (FROM THE DATE OF START)	AMOUNT TO BE WITH-HELD IN CASE OF NON-ACHIEVEMENT OF MILESTONE.
Not Applicable			

GENERAL TERMS AND CONDITIONS

General

1.1 The copy of CPWD General Specifications are readily available in CPWD website www.cpwd.gov.in under the link publication.

1.2 **Location:**

Work shall be carried out at **SAI, NRC, Sonepat**. The contractor is advised to visit the site of work to have an idea of the execution of the work; failure to do so shall not absolve their responsibility to do the work as specified in agreement.

1.3 The work shall be executed as per CPWD General Specifications for Electrical works part-I (internal) 2023, Part-II (external) 1995 as amended upto date, relevant I.E. Rules, industry standards, BIS/IES and as per directions of Engineer-in-charge. These additional specifications/conditions are to be read in conjunction with above and in case of variations; specifications given in these additional conditions shall apply. However, nothing extra shall be paid on account of these Specific conditions, as the same are to be read along with schedule of works for the work.

1.4 The tenderer should in his own interest visit the site and get familiarize with the site conditions before tendering.

1.5 No T&P shall be issued by the Department and nothing extra shall be paid on account of this.

2.0 **Commercial Conditions**

2.1 Type of contract

The work to be awarded by this tender shall be treated as indivisible works contract.

3.0 **Terms of payment**

On account payments for part work (after stipulated and statutory deductions) as assessed by the Engineer-in-charge for the applicable items in the Contract shall be payable at part rates not exceeding the percentage indicated against the stages of work.

S.N	Stage of work	Percentage of Rate on Tendered Amount
a	Supply of material at site in good condition along with manufacture's test reports. (except exclusive supply item)	70%
b	On completion of installation in all respect.	20%
c.	Testing, Commissioning & handing over to the department.	10%

For other items, the part rates will be decided by the Engineer-In-Charge of the work and shall be binding on the contractor.

3.2 **Security Deposit**

Security Deposit shall be deducted from each running bill and the final bill to the extent of 2.5% of the gross amount payable subject to a maximum amount of 2.5% of the tendered value. The security deposit shall be released on the expiry of guarantee period of 12 Months stipulated in the contract. Bank guarantee will not be accepted as security deposit.

3.3 **Performance Guarantee**

The successful tenderer shall submit an irrevocable performance guarantee of 5% of the tendered amount in addition to the other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement within 15 days of issued of letter of acceptance of tender. This guarantee shall be in the form of Demand draft / pay order or irrevocable bank guarantee bond of any scheduled bank or the State Bank of India in the specified format or in the form of Government security, fixed deposit receipt pledged in favour of Executive Engineer or as specified in the letter of acceptance of tender. The performance guarantee shall be initially valid up stipulated date of completion plus 60 days beyond. This bank guarantee shall be kept valid till the recording of completion certificate for the work by the competent authority.

3.4 Income Tax, labour cess & other statutory deductions etc shall be made at source as per the prevalent laws. The deductions of Security Deposit, Income-Tax, Works Contract Tax etc shall be done after calculation of the above due payments as per clauses 3.1 to 3.3 and net payment shall be reduced accordingly.

4.0 **Rates**

4.1 The rates quoted by the tenderer, shall be firm and inclusive of all taxes including GST and all charges for packing forwarding, insurance, freight and delivery, installation, testing, commissioning etc at site including temporary construction of storage, risks, overhead charges, general liabilities/obligations and clearance from Local Body. However, the fee for the Local Body inspections shall be borne by the department.

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

4.2 The department will not issue Octroi exemption certificate.

5.0 **Completeness of Tender**

All sundry equipment, fittings, unit assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections and all other items which are useful and necessary for efficient assembly and installation of wall fan and components of the work shall be deemed to have been included in the tender irrespective of the fact whether such items are specifically mentioned in the tender documents or not.

6.0 **Storage and Custody of Materials**

For storage of sundry materials and erection equipments or else the agency has to make his own arrangements. No separate storage accommodation shall be provided by the department. Watch and ward of the stores and their safe custody shall be the responsibility of the contractor till the final taking over of the installation by the department.

7.0 **Care of the Building**

Care shall be taken by the contractor while handling and installing the various equipments and components of the work to avoid damage to the building. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste materials arising out of the installation from the site of work.

8.0 **Completion Period**

The completion period indicated in the tender documents is for the entire work of planning, designing, approval of drawings etc arrangement of materials & equipments, delivery at site including transportation, installation, testing, commissioning and handing over the entire system to the satisfaction of the Engineer-in-charge.

9.0 **Guarantee**

9.1 All equipments shall be guaranteed for a period of 12 months (if not mentioned otherwise) from the date of taking over the installation by the department, against unsatisfactory performance and /or break down due to defective design, workmanship or material. The equipments or components, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost, to the satisfaction of the Engineer-in-charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of the Engineer-in-charge in this regard shall be final & binding on the contractor.

9.2 The tender shall guarantee among other things, the following: -

- a) Quality, strength and performance of the materials used as per manufacturers standards.
- b) Safe mechanical and electrical stress on all parts under all specified conditions of operation.

10.0 **Power Supply**

Arrangement of electric power supply (Three Phase/Single Phase) at a single point as required to carry out the work for final testing and commissioning of the system will be lie in the scope of the contractor. Department will not pay anything extra on this account. This shall be in the scope of successful firm. No hindrance on account of non-availability of power supply from client department or CPWD shall be considered and contractor shall be responsible for any delay in work on account of above.

11.0 **Water Supply**

Arrangement of Water supply for testing & for successful installation & completion of the system shall be in the scope of successful firm without any extra cost.

12.0 **Acceptable Makes of Various Equipments**

The List of acceptable makes of various equipments/components/accessories have been indicated in "NIT". The tenderer shall work out the cost of the offer on basis of acceptable makes along with other terms & conditions of contract. Alternate makes are not acceptable. The items which are covered or not covered in the approved list of make in the contract, contractor shall submit at least three makes for approval by Engineer-in-charge. Only makes approved in writing by Engineer-in-Charge shall be used at site. Any material brought at site without prior approval of Engineer-in-charge may be rejected, even if the make is available in NIT and contractor shall be responsible for any such rejection of material.

- i. Contractor shall get approval of Makes & Models of material before their use at site. The technical specifications / catalogue shall also be submitted along with submission for approval. In case unapproved material is found to be used /installed at site or kept at site store for installation, department shall not only confiscate such material but also be at liberty to recover cost for removal of material from site from contractors bill.
- ii. **For each item to be used at site, contractor shall submit model number for each item of minimum three different make for approval by Engineer-in-charge.** Only approved make & model/material shall be used at site. Any material found at site which has not been approved can be rejected and shall

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

not be paid. Contractor will be solely responsible for non-payment due to use of non-approved material.
The submission for material approval shall be minimum two weeks before its use at site.

- 13.0 The successful tenderer should furnish well in advance three copies of detailed instructions and manuals of manufacturers for all items of equipments regarding installation, adjustments operation and maintenance including preventive maintenance & trouble shooting together with all the relevant data sheets, spare parts catalogue etc all in triplicate.

14.0 Extent of work

- 14.1 The work shall comprise of entire labour including supervision and all materials necessary to make a complete installation and such tests and adjustments and commissioning, as may be required by the department. The term complete installation shall not only mean major items of the plant and equipments covered by specifications but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in details in the tender documents in connection with this contract as this is a turnkey job. The quoted rates shall be deemed to be inclusive of all kind of leads, lifts, clearing of site/jungle and nothing extra shall be paid, whatsoever on such account
- 14.2 In addition to supply, installation, testing and commissioning of complete installation,, following works shall be deemed to be included within the scope of work to be executed by the tenderer as this is a turnkey job.
- a) Minor building works necessary for installation of equipments, foundation, making of opening in walls or in floors and restoring them to their original condition / finish and necessary grouting etc as required.
 - b) All supports for rising mains, cables and MS channels for erection of panels &etc as are necessary.
 - d) Getting Local Body inspection done & obtaining approval for energizing the installation if required. However, necessary fees for inspection shall be borne by the Department.
 - e) Arrangement of electric supply (Single / Three phase) and water supply for execution and successful commissioning of the system.
 - f) Small wiring, inter-connection etc inclusive of all materials and accessories, necessary to comply with the regulations as well as proper and trouble free operation of the equipment.
 - g) Closing of the cable entry points in sub-station against seepage of water, rodents etc.
 - h) Tools and tackles required for handling and installation.
 - i) Necessary testing equipments for commissioning.
 - j) Watch and Ward of materials and/or installation and equipments till their handling over to the department.
 - k) All minor building works, such as equipments foundation if required cutting and making good holes, grouting of channels belts as required. Cutting and making good damages etc.
 - l) Provision of supports/clamps for equipments, cables etc wherever required.

15.0 Works to be done by the Department

Unless otherwise mentioned in the tender specifications the following works shall carried out by the department.

- i) To make the site available for the work. The contractor should select such equipment for installation as can be properly installed in the spaces shown in specification drawings. While no guarantee can be given minor modification required by the contractor if mentioned in the tender or intimated immediately after the receipt of tender shall be carried out if structurally possible.
- 16.0 Exclusion and work to be done by other agencies:
The following shall be excluded from the scope of the work:
- a) Major dismantling of any existing building work.

17.0 Inspection and Testing

- 17.1 All the tests certificate of the equipments are required to submit along with delivery of material.
- 17.2 Copies of all documents of routine and type test certificates of the equipment,/cable carried out at the manufacturers premises shall be furnished to the Engineer-in-charge and consignee.
- 17.3 After completion of the work in all respects the contractor shall offer the installation for testing and operation.

18.0 Validity

Tenders shall be valid for acceptance for a period of 30 days from the date of opening.

19.0 Compliance with Regulations and Indian Standards

- 19.1 All works shall be carried out in accordance with relevant regulation, both statutory and those specified by the Indian standards related to the works covered by this specification. In particular, the equipment and installation will comply with the following:

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

- i) Factories Act
 - ii) Indian Electricity Rules
 - iii) BIS & other standards as applicable
 - iv) Workmen's compensation Act
 - v) Statutory norms prescribed by local bodies, Power supply co., etc.
- 19.2 Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.
- 19.3 Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. Failure to provide such safety requirement would make the tenderer liable for penalty of Rs. 500/- for each default. In addition, the department will be at liberty to make arrangement for the safety requirements at the cost of tenderer and recover the cost thereof from him.
- 20.0 **Indemnity**
The successful tenderer shall at all times indemnify the department, consequent on this works contract. The successful tenderer shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of erection, construction and putting into operation the equipments and ancillary equipment under the supervision of the successful tenderer in so far as the latter is responsible. The successful tenderer shall also provide all insurance including their party insurance as may be necessary to cover the risk. No extra payment would be made to the successful tenderer on account of the above.
- 21.0 **Erection Tools**
No tools and tackles either for unloading or for shifting the equipments for erection purposes would be made available by the department. The successful tenderer shall make his own arrangement for all these facilities.
- 22.0 **Cooperation with other agencies**
The successful tenderer shall co-ordinate with other contractors and agencies engaged in the construction of buildings, if any, and exchange freely all technical information so as to make the execution of this work/contract smooth. No remuneration should be claimed from the department for such technical cooperation. If any unreasonable hindrance is caused to other agencies and any completed portion of the work has to be dismantled and re-done for want of cooperation and coordination by the tenderer during the course of work, such expenditure incurred will be recovered from the successful tenderer if the restoration work to the original condition or specification of the dismantled portion of the work was not undertaken by the tenderer himself.
- 23.0 The work will be carried out with least disturbance during shifting & shut down taken in consultation with the client department.
- 24.0 **Verification of correctness of equipment at Destination**
The contractor shall have to produce all the relevant records to certify that the genuine equipments from the manufacturers has been supplied and erected.
- 25.0 **Painting**
This shall include cost of painting of the entire installation.
- 26.0 **Maintenance**
- 26.1 Sufficient trained and experienced staff shall be made available to meet any exigency of work during the guarantee period of 3 years from the handing over of the installation.
- 27.0 **Interpreting specifications**
In the case of discrepancy between the schedule of Items, the specification and/ or the drawings, the following order of preference shall be observed:-
- (a) Schedule of Work.
 - (b) Specific Conditions.
 - (c) General Terms and Condition.
 - (d) Drawings.
 - (e) CPWD Specifications.
 - (f) NBC – 2016
 - (g) Indian Standard Specifications of B.I.S.
- However, the order of preference provided is in general and in case of contradiction or otherwise, higher of specifications available in above documents/acts/codes shall be followed. Contractor is advised to quote the rates accordingly keeping in mind that highest of specification available shall be adopted.
- 28.0 General Terms & Condition, Special conditions & additional condition mentioned in part-B of NIT (i.e. Civil Component of work) shall also be applicable for part-C of NIT as well (Not applicable for Electrical exclusive contracts).

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

- 29.0 Excavation shall include hard rock excavation as well and nothing extra shall be paid on this account.
- 30.0 In case cable is laid at depth less than as mentioned in NIT/CPWD specifications recovery at Rs. 15 per 10 cm depth /meter of cable length shall be recovered from bill. This shall also be applicable for GI pipe work, DWC pipe work, Earthing work as well.
- 31.0 Challan & Test Certificate for all items amounting more than Rs. 50,000/- shall be submitted along with running bill in case both Challan & Test certificated are not submitted R.A. bill shall not be considered & contractor shall be responsible for any delay in payment.
- 32.0 Contractor shall submit cable route plan for approval before start of cable work. In case drawings for area /layout are not available with department these drawings shall be prepared by contractor at his on cost. For the purpose of assessment of work contractor is advised to visit the site to get familiar with site conditions before quoting his rates
- 33.0 All cabling & street light work shall be carried out as per CPWD specifications (External) 1995. Contractor shall obtain written clearance from JE/AE in charge of work before refilling the excavated trenches, otherwise it shall be presumed that contractor has not excavated required depth and item/component of item for excavation and refilling for trenches shall not be paid and contractor shall be responsible for such non payment.
- 34.0 Contractor shall be fully responsible for shifting of services encountered at site like electrical lines/power cables/ telephone, TV, data cables/electric poles/light poles/feeder pillar (whether energized or not)/dismantling and handing over such material to department. For shifting of such services including dismantling of such material required for smooth working at site, nothing extra shall be paid. Contractor is advised to visit site before quoting his rates.
- 35.0 Measurements shall be recorded for all measurements and levels of work done in the shape of computerised measurement book.
- 36.0 It is clarified that being occupied building site will be made available in phases/parts only. The work may also be required to be executed during odd hours/night shift/holidays for which nothing extra shall be paid.
- 37.0 Any damage to the building during the execution of work shall be the responsibility of the contractor and the same will made good immediately at his own cost to the satisfaction of the Engineer-in-charge.

ASSISTANT ENGINEER(E)
SESD, CPWD, SONIPAT

Additional terms & conditions

1.0 The electrical works shall conform to CPWD General Specifications for Heating, ventilation & air-conditioning (HVAC) works (2017) as amended upto date and as per instructions of the Engineer-in-charge.

2.0 FACTORY BUILT AIR HANDLING UNIT (AHU)

2.1 The air handling unit shall be of double skin construction, draw through type in sectionalized construction consisting of blower section, coil section, Drive Motor with starter and Isolator, humidification section (where specified), filter section, and insulated drain pan. Unless otherwise specified, the unit shall be horizontal type.

2.2 Rating

- (a) The capacity of the cooling/heating coil, the air quantity from the blower fan and static pressure of blower fan shall be as laid down in the tender documents.
- (b) The coil shall be designed for a face velocity of air not exceeding 155 m/min.
- (c) The requisite static pressure demanded by the air circuit shall be developed by the fan at the selected operating speed. The static pressure value shall not in any case be less than 40 mm water gauge in normal cases, not less than 65 mm water gauge where microvee filters are also used and not less than 100 mm water gauge where absolute filters are also used. The fan motor HP shall be suitable to satisfy these requirements and the drive losses.
- (d) The air outlet velocity from the blower fan shall not exceed 610 m/min.
- (e) Noise level at a distance of 2M from AHU shall not exceed 70 dBA.
- (f) All AHU shall be AHRI / Eurovent certified.
- (g) All fans shall be certified by Air Movement and Control Association (AMCA) also.

2.3 Material and Construction

2.3.1 Housing/ Casing

- (i) The housing/ casing of the air handling unit shall be of double skin construction. The main framework shall be of extruded aluminium hollow structural sections. The entire framework shall be assembled using mechanical joints to make a sturdy and strong framework for various sections. For 100% fresh air application or for unit with mixing box framework shall be made of thermal break hollow extruded aluminium profile.
- (ii) Weather proof double skin panels shall be minimum 45mm thick, made of minimum 0.8mm pre-plasticized and pre-painted with PVC guard, GSS sheet on outside and minimum 0.8mm galvanized sheet with minimum 275 GSM zinc coating inside with Polyurethane foam insulation of density not less than 38 kg/cu. m injected in between by injection moulding machine. These panels shall be bolted from inside/ screwed from outside on to the framework with soft rubber gasket in between to make the joints airtight. The gaskets shall be inserted within groove in extruded aluminum profile of the framework. For units installed outdoor, the thickness of double skin panels shall be minimum 40 mm and shall be provided with canopy. All GI components provided shall have minimum 275 GSM zinc coating.
- (iii) Frame work for each section shall also be bolted together with soft rubber gasket in between to make the joints air tight. Suitable doors with nylon handles, aluminum die-cast powder coated hinges & latches shall be provided for access to various panels for maintenance. However, AHU in the form of complete single unit shall also be acceptable with access door(s) for maintenance to various sections. The entire housing shall be mounted on galvanised steel channel frame work made out of G.I. sheet of thickness not less than 2mm. For higher capacity above 30000 CFM AHUs hot dip galvanized steel channel framework made of minimum 3 mm thick G.S. sheet shall be used. All GI components provided shall have minimum 275 GSM zinc coating.

2.3.2 Drain Pan

Drain pan shall be made out of minimum 1.25 mm **stainless steel grade SS 304** sheet externally insulated with minimum 10mm thick closed cell Polyethylene foam insulation **or nitrile rubber or PUF** with necessary dual slope to facilitate fast removal of condensate. Necessary supports will be provided to slide the coil in the drain pan. For stacked coil, additional drip pan or intermediate drain pan fabricated from same material as main drain pan will be installed at back between two coils.

2.3.3 Cooling / Heating coil

- (i) The coil shall be made from seamless solid drawn copper tubes ASTM E -75. The minimum thickness of tube shall be 0.5 mm for cooling / heating / heating-cum-cooling coils. AHUs shall be selected for a

maximum face velocity of 500 FPM (2.54 MPS) for cooling coils. The Coil Casing shall be of SS-304 & fins shall be hydrophilic coated type.

- (ii) The depth of the coil shall be such as to suit the requirements, viz. re-circulated air applications, or 100 % fresh air applications. The coil shall be 6 rows deep for cooling and 2 row deep for heating. In case of 8 rows deep coils, it shall be made of 2x4 rows deep coils with a spacing of 200mm between the two coils, access door and independent drain pan.
- (iv) U bends shall be of copper, jointed to the tubes by brazing, soft soldering shall not be used.
- (v) Each section of the coil shall be fitted with flow and return headers to feed all the passes of the coil properly. The headers shall be of copper and shall be complete with water in/out connections, vent plug on top and drain at the bottom. The coil shall be designed to provide water velocity between 0.6 to 1.8 m/s in the tubes.
- (vi) The fins shall be of aluminium. The minimum thickness of the fins shall be 0.15 mm nominal. The no. of fins shall not be less than 12 Nos. per inch length of coil. Fins may be of either spiral, Sine wave, corrugated or plate type. The tubes shall be mechanically expanded to ensure proper thermal contact between fins and tubes. The fins shall be evenly spaced and upright. The fins bent during installation shall be carefully realigned. For coastal areas complete coil i/c fins shall be treated with Anticorrosive Coating and for 100% F.A. application fins shall be hydrophilic type.
- (vi) The coil shall be suitable for use with the refrigerant specified or with water as the case may be. Refrigerating coils shall be designed for the maximum working pressure under the operating conditions. Water coils shall be designed for a maximum working pressure of 10 kg./sq.cm.
- (vii) Shut off and regulating valves at the inlet and outlet of water shall be provided. In the case of DX coils, solenoid valve and expansion valves shall be provided at the inlet of coil.
- (viii) Chilled water/ Hot water coils shall be (AHRI Certified).

2.3.4 Supply Air Fan and Drive

- (i) The supply air fan shall be AMCA certified centrifugal type with DIDW Aerofoil backward curved fan motor blades double inlet double width (DIDW) type. Minimum efficiency of backward curved fans shall be 74%, & for EC-Fan motor, system efficiency shall be minimum 68% or above. The fan housing of Galvanized sheet steel and the impellers shall be fabricated from heavy gauge steel sheet as per approved manufacturer's standard. The side plates shall be die formed for efficient, smooth airflow and minimum losses. Fan impeller shall be mounted on solid shaft supported to housing using heavy duty ball bearings (self-aligning type) Inlet cone must be Spun GSS.. Fan housing and motor shall be mounted on a common extruded aluminium base mounted inside the fan section on anti-vibration spring mounts or cushy- foot mount. The fan outlet shall be connected to casing with the help of fire retardant fabric. The spring or rubber isolator is mounted between the fan compartment and the rest of the AHU to prevent the transmission of noise and vibration into panels.
- (ii) The fan impeller assembly shall be statically and dynamically balanced.
- (iii) In case of belt driven system, the fan shall be fitted with v-belt drive arrangement consisting of not less than two evenly matched belts. Belts shall be of oil resistant type. Adequate adjustments shall be provided to facilitate belt installation and subsequent belt tensioning by movement of the motor on the slide rails. A readily removable door guard shall be provided.
- (iv) The fan motor shall be totally enclosed fan cooled squirrel cage induction motor with IP-55 protection & selected for quiet running. The motor shall be suitable for operation on 415 + 10%V, 3 phase, 50 Hz., A.C. supply. The fan motor shall be premium efficiency IE2 class, as per IS 12615. Motors shall be selected considering 10 % over the maximum possible power absorbed by the fan operating at a maximum face velocity of 3.25 mps. The natural frequency of the fan assembly shall not fall within 30% of its operating speed. For 24 Hour operating systems, there shall be an extended shaft with two drive systems and two motors The motor shall be suitably designed for use with variable frequency drive.

3. All joints shall be airtight.

**ASSISTANT ENGINEER(E)
SESD, CPWD, Sonipat**

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

LIST OF APPROVED MAKES

Only the following makes of equipment/accessories which should comply with the relevant specifications given in the BOQ/tender documents shall be acceptable.

Description of Items	Approved Makes
Air Handling Unit	Flaktwood /Casvent Aircon/ System air / VTS
Filters	Thermadyne / Spectrum / Purolator / Pure Air / Mechmaark / Pyramid / AAF
GSS/ GI Sheet	SAIL / Jindal / TATA
G.I Sheets	SAIL/TATA/ Jindal (Hissar)
Nitrile Rubber insulation	KFlex/ Armacell/ Mandev/ Paramount
MS C Class Pipe	TATA / Jindal Hissar / SAIL
PVC/ UPVC/ CPVC Pipe	Astral / Supreme / Prince
Motorized Butterfly Valve	Advance / Siemens / Honeywell / Danfoss
Pressure Gauge and Thermometer	H-Guru/ Fiebig / Tiemme / Monometer
AHU Motor	Siemens / ABB / Crompton/Havells
AHU Fan	KRUGER / NICOTRA
PVC Insulated FRLS Copper Conductor Wires 1.1 Kv Grade (ISI Marked)	Finolex/ Polycab/ Havells/RR Kable/ KEI/ Grandlay
GI pipe	TATA / SAIL / Jindal Hissar
DWC HDPE Pipe (ISI Marked)	Rex / Duraline /Trupati / Gemini
1.1 KV XLPE (Alumium/Cu) Cable (ISI Marked)	Finolex/ Polycab / Havells / RR Kable / KEI/Grandlay
MCCBs	Siemens (3VL)/ Schneider (Master Pact – NSX) / Equivalent Model in ABB (T-Max) / L & T (D-sine)/Indoasian
Cable Trays & Accessories	Venus/ Slotco/ Pilco/ Reeco/ RM CON
Cable Gland/ Lugs/ Thimbles	Commet/ Dowells/ Raychem / Gripwell / Jainson
PVC CONDUIT	Polycab/AKG/Finolex
MS Angle/MS Channel/MS Flat	TATA/SAIL/Jindal Hissar
Supply / Return air grills	Conaire/Pineaire/Caryaire/System air/Dynacraft
Fire damper	Conaire/Pineaire/Caryaire/System air/Dynacraft Ruskin/Trox
Actuator	Siemens/Honeywell/Danfoss
Nitrile rubber insulation	Armacell/Eurobatex/Videofix
Fastner	Hilti/worth/Fisher
Note: - For materials/equipment to be used in items of work for which approved makes are not given herein, the make of such materials/equipment shall be as decided by Engineer –in-charge.	

ASSISTANT ENGINEER(E)
SESD, CPWD, Sonipat

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil

SCHEDULE OF WORK					
Name of work: - Operation & Comprehensive maintenance of 2X165 TR Central A.C Plant installed at Sh. Yogeshwar Dutt & Sushil Kumar Hall of SAI NRC Sonapat. (SH: - Replacement of defective AHU).					
S.No	Description of Item	Qty.	Rate	Unit	Amount
1	Supply, Installation, Testing & Commissioning of factory-built floor mounted double skin type horizontal air handling unit made of 45mm thick thermal break panels consisting of pre plasticized G.I. casing of thickness 0.8 mm outside layer and 0.8 mm inside layer with polyurethane foam (PUF) insulation factory injected between them by injection moulding machine, complete with blower section with backward curve blower suitable for static pressure as required, cooling coil section with aluminium finned copper tubes (tubes thickness not less than 0.5mm) cooling coil of 6 row deep and heating coil of 2 row deep with MS header, filter section with 50mm thick washable synthetic non-woven air prefilters, belt drive package with TEFC drive motor of efficiency class IE2 suitable for 415+ 10% volts, 50Hz, 3 Phase AC supply, drain connections, stainless steel (18G) drain pan with PUF insulation, necessary vibration isolation arrangement etc. with mixing chamber for fresh air and return air with Al. dampers with weather proof canopy for AHU etc. complete as per specification and of following capacities i/c buyback of old AHU.				
1.1	9000 CFM with 50 mmwg static pressure	1	539868.00	Each	539868.00
		Total			539868.00

ASSISTANT ENGINEER(E)
SESD, CPWD, Sonipat

Correction—Nil

Deletion—Nil

Insertion—Nil

Overwriting—Nil