Format of Bank Guarantee for Bid Security
(BANK GUARANTEE ON NON-JUDICIAL STAMP PAPER OF Rs.100)

BID SECURITY (BANK GUARANTEE)

WHEREAS, _____ *[name of Bidder]* (hereinafter called "the Bidder") has submitted his Bid dated _____ *[date]* for the (**insert the name of the works)** (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that We _____ *[name of bank]* of having our registered office at _____ (hereinafter called "the Bank") are bound unto _____(hereinafter called "the Employer") in the sum of Rs._____[1](Rupees _____ _____ ____ _____) for which payment well and truly to be made to the said Employer the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 2018.
THE CONDITIONS of this obligation are:

(1) If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of Bid;
or
(2) If the Bidder having been notified of the acceptance of his bid by the Employer during the period of Bid validity:

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or

(b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or

(c) does not accept the correction of the Bid Price pursuant;

we undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without any protest or demur or any objection, whatsoever on our part and without any first claim or reference to the Contractor, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

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

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

_____
[signature, name, and address]

The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Section 1 (II).

Instruction for furnishing Bank Guarantee

- The Bank Guarantee by Bidders will be given on non-judicial stamp paper as per stamp duty applicable at the place where the tender has emanated. The non-judicial stamp paper should be in name of the issuing bank.
- This bank guarantee/ all further communication relating to the bank guarantee should be forwarded to HAFED Office, Panchkula only.
- The full address along with the Telex/Fax No. and email address of the issuing bank to be mentioned.

PERFORMANCE BANK GUARANTEE

To

_____ [name of Employer]
_____ [address of Employer]

WHEREAS _____ [name and address of Contractor] (hereafter called "the contractor") has undertaken, in pursuance of Contract No. _____ dated _____ to execute _____ [name of Contract and brief description of Works] (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligation in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of _____ [amount of guarantee]* _____ (in words), such sum being payable in the types and proportions of currencies in which the Contract Price is Payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____[amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we waive notice of any such change, addition or modification.
The Bank guarantee for performance security shall remain in force as given in the Bid Document shall be valid up to 3 months beyond the expiry of the Defects Liability Period.

Signature and Seal of the guarantor_____
Name of Bank_____
Address _____
Date_____

* An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract including additional security for unbalanced Bids, if any and denominated in Indian Rupees.

BANK GUARANTEE FOR ADVANCE PAYMENT

To

_____ [name of Employer]
_____ [address of Employer]
_____ [name of Contractor]
_____ [name of Contract]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, sub-clause 51.1 ("Advance Payment") of the above mentioned Contract,_____

[Name and address of Contractor] (Hereinafter called" the Contractor") shall deposit with _____ [name of Employer]a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of _____[amount of Guarantee]*_____[in words].

We, the _____[bank of financial institution], as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to _____[name of Employer] on his first demand without whatsoever right of obligation on our part and without his first claim to the Contractor, in the amount not exceeding_____[amount of guarantee]*_____[in words].

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between_____ [name of Employer]and the contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

The guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until_____ [name of Employer] receives full repayment of the same amount from the Contractor.

Yours truly,

Signature and Seal: _____
Name of Bank/Financial Institution:_____
Address: _____
Date: _____

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* An amount shall be inserted by the Bank of Financial Institution the amount of the Advance Payment, and denominated in Indian Rupees.

INDENTURE FOR SECURED ADVANCES
FORM 31

(for use in cases in which the contract is for finished work and the contractor has entered into an agreement for the execution of a certain specified quantity of work in a given time)

This indenture made the _____ day of _____, 20____ BETWEEN _____ (hereinafter called the contractor which expression shall where the context so admits or implies be deemed to include his executors, administrators and assigns) or the one part and the Employer of the other part.

Whereas by an agreement dated _____ (hereinafter called the said agreement) the contractor has agreed.

AND WHEREAS the contractor has applied to the Employer that he may be allowed advanced on the security of materials absolutely belonging to him and brought by him to the site of the works the subject of the said agreement for use in the construction of such of the works as he has undertaken to executive at rates fixed for the finished work (inclusive of the cost of materials and labour and other charges.)

AND WHEREAS the Employer has agreed to advance to the Contractor the sum of Rupees _____ on the security of materials the quantities and other particulars of which are detailed in Accounts of Secured Advances attached to the Running Account bill for the said works signed by the Contractor on _____ and the Employer has reserved to himself the option of making any further advance or advances on the security of other materials brought by the Contractor to the site of the said works.

Now THIS INDENTURE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of Rupees _____ on or before the execution of these presents paid to the Contractor by the Employer (the receipt where of the Contractor doth hereby acknowledge) and of such further advances (if any) as may be made to him as a for said the Contractor doth hereby covenant and agree with the President and declare as follows:

(1) That the said sum of Rupees _____ - so advanced by the Employer to the Contractor as aforesaid and all or any further sum of sums advanced as aforesaid shall be employed by the Contractor in or towards expending the execution of the said works and for no other purpose whatsoever.

(2) That the materials details in the said Account of Secured Advances which have been offered to and accepted by the Employer as security are absolutely the Contractor's own propriety and free from encumbrances of any kind and the contractor will not make any application for or receive a further advance on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the Contractor indemnified the Employer against all claims to any materials in respect of which an advance has be made to him as aforesaid.

(3) That the materials detailed in the said account of Secured Advances and all other materials on the security of which any further advance or advances may hereafter be made as aforesaid (Hereafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the directions of the Engineer.

(4) That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the said materials and that until used in construction as aforesaid the said materials shall remain at the site of the said works in the Contractor's custody and on his own officer authorized by him. In the event of the said materials or any part thereof being stolen, being stolen, destroyed of damaged of becoming deteriorated in a greater degree than is due to reasonable use and wear thereof the Contractor will forthwith replace the same with other materials of like quality of repair and make good the same required by the Engineer.

(5) That the said materials shall not be any account be removed from the site of the said works except with the written permission of the Engineer of an officer authorized by him on that behalf.

(6) That the advances shall be repayable in full when of before the Contractor receives payment from the Employer of the price payable to him for the said works under the terms and provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done than on the occasion of each such payment the Employer will be at liberty to make a recovery from the contractor's bill for such payment by deducting there form the value of the said materials than actually used in the construction and in respect of which recovery has not been made previously, the value of this purpose being determined in respect of each description of materials at the rates at which the amounts if the advances made under these presents were calculated.

(7) That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of these presents the total amount of the advance or advances that may still be owing of the Employer shall immediately on the happening of such default be repayable by the Contractor to be the Employer together with interest thereon at twelve percent per annum from the date or repayment and with all costs, charges, damages and expenses incurred by the **Employer** in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the **Employer** to reply and pay the same respectively to him accordingly.

(8) That the Contractor hereby charges all the said materials with the repayment to the Employer of the said sum of Rupees _____ and any further sum of sums advanced as aforesaid and all costs, charges, damages and payable under these presents

PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the power contained therein if and whenever the covenant and the money owing shall not be paid in accordance there with the **Employer** may at any time thereafter adopt all of any of the following courses as he may deem best:

(a) Seize and utilize the said materials or any thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement and the amount due to the contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the contractor, he is to pay same to the **Employer** on demand.

(b) Remove and sell by public auction the sized materials or any part thereof and our of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the **Employer** under these presents and pay over the surplus (if any) to the Contractor.

(9) That except in the event of such default on the part of the contractor as aforesaid interest on the said advance shall not be payable.

(10) That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail and in the event of any dispute of difference arising over the construction of effect of these presents the settlement of which has not been here-in-before expressly provided for the same shall be referred to the Employer whose decision shall be final and the provision of the Indian Arbitration Act for the time being in force shall apply to any such reference.

FORMAT FOR POWER OF ATTORNEY FOR LEAD MEMBER OF CONSORTIUM POWER OF ATTORNEY

(Only applicable for JV/ Consortium)

Whereas the Awarder of India (AWARDER) has invited applications from interested parties for Whereas, the member of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the tender document (DNIT) and other connected documents in respect of the Project.

Whereas, it is necessary under the DNIT Document for the members of the Consortium to designate one of them as the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESSE THAT:

We, M/s. , M/s. and M/s. (the respective names and addresses of the registered office) do hereby designate M/s.(name and address of the registered office) being one of the members of the Consortium, as the Lead Member of the Consortium (name and address of the registered office) being one of the members of the Consortium, to do on behalf of the Consortium, all or any of the acts, deed or things necessary or incidental to the Consortium's bid for the Project, including submission of application / Proposal, participating in conference, responding to queries, submission of information / documents and generally to represent the Consortium in all its dealings with AWARDER, any other Government Agency or any person, in connection with Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with AWARDER.

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

Dated this the day of[year] (Executants)

(To be executed by all the members of the Consortium) Notes:

• The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants (s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.

• Also, wherever required, the executants (s) should submit for verification the extract of the charter documents and documents such as a resolution / power of attorney in favor of the Person executing this Power of Attorney for the delegation of power hereunder on behalf of the executants (s)

FORMAT FOR POWER OF ATTORNEY FOR SIGNING OF APPLICATION
(Applicable for all bidders including JV)

(On Stamp paper of relevant value)

POWER OF ATTORNEY Know all men by these presents, we(name and address of the registered office) do hereby constitute, appoint and authorize Mr. / Ms. (name and address of residence) who is presently employed with us and holding the position of as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our bid for the project envisaging Bid for _____.at HAFED Mega Food Park, Rohtak including signing and submission of all documents and providing information / responses to HAFED, representing us in all matters before HAFED, and generally dealing with HAFED in all matters in connection with our bid for the said Project.

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

Dated this the Day of ....., …… For _____

(Signature)
(Name, Title and Address)
Signing on behalf of the Bidder/ Lead Member in case of Consortium

Accepted …… (Signature)
(Name, Title and Address of the Attorney)

Agreement Form

Agreement

This agreement, made the _____ day of _____ between _____ (name and address of Employer) [hereinafter called "the Employer"] and _____ (name and address of Contractor) hereinafter called "the Contractor" of the other part.

Whereas the Employer is desirous that the Contractor execute _____ (name and identification number of Contract) (Hereinafter called "the Works") and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein, at a cost of Rs. _____

NOW THIS AGREEMENT WITNESSTH as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to tem in the conditions of contract hereinafter referred to and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein conformity in all aspects with the provisions of the contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
4. The following documents shall be deemed to form and be ready and construed as part of this Agreement viz.
   - i) Letter of Acceptance
   - ii) Notice to proceed with the works;
   - iii) Contractor's Bid
   - iv) Condition of Contract : General and Special
   - v) Contract Data
   - vi) Additional condition
   - vii) Drawings
   - viii) Bill of Quantities and
   - ix) Any other documents listed in the Contract Data as forming part of the Contract.

In witnessed whereof the parties there to have caused this Agreement to be executed the day and year first before written.

The Common Seal of _____ was hereunto affixed in the presence of:

Signed, Sealed and Delivered by the said _____
_____

in the presence of :

Binding Signature of Employer _____

Binding Signature of Contractor _____

Witnesses of Employer	Witnesses of Contractor
1	1
2	2

Section-7

BILL OF QUANTITIES/DNIT

Sr. No.	Description	Unit	Estimated Lump-sum Cost (Rs. in Crores)
1	Planning, Design, Fabrication, Supply, Erection, Testing, Commissioning and Trial Run (3 Months) including Civil, PEB, MEP, Firefighting Works for COLD STORAGE (500 MT), SORTING GRADING (1.5 TPH), WAREHOUSE (500 MT), Complete In all Respect On Turnkey Basis, with annual maintenance and technical operations of three years , with annual maintenance and technical operations of three years At HAFED Mega Food Park, Primary Processing Center JIND, Haryana	**JOB**	**Rs. 9.80 Crores**

Note:

1. The item wise price of goods to be supplied shall be on F.O.R. site basis inclusive of GST, applicable taxes, duties, freight etc. The item wise price shall also include the charges for packing and forwarding, transportation, transit insurance and all other local costs incidental to delivery of the goods to their final destination, storage insurance and safe custody at site.

2. The bidder should submit the bill of quantities/ individual price break-up of each item, clearly mentioning the item description, makes, model nos., quantities, rate, amount, GST and all applicable Tax if any and total price in numbers as well as in words. Failing to submit the individual price break-up in the asked format shall not be taken into account for evaluation and shall not be considered for award.

3. Bidders must quote their prices for all the three parts. In case the bidder omits any part(s), their bid will be considered as incomplete and treated as non-responsive.

4. Individual price break-up of each item shall be finalized by Competent Authority of HAFED for billing purpose.

5. The item wise price of goods to be supplied shall be on FOR site basis inclusive of applicable taxes & duties. The item wise price shall also include the charges for packing and forwarding, transportation, transit insurance and all other local costs incidental to delivery of the goods to their final destination, storage insurance and safe custody at site.
6. In case of discrepancy between unit price and total price, unit price shall prevail.

7. The item wise quoted price should inclusive of service cover/incidental services during defect liability period of 2 years.

FORM FOR PRICE BID

I/We hereby tender for the execution of the works for the Haryana State Cooperative Supply and Marketing Federation Limited (here in after referred to as HAFED) specified in the underwritten memorandum within the time specified in such memorandum.

Single percentage rates are to be quoted in the box specified below in figures as well as in words above/below applicable on Lump cost mentioned as Estimated cost in Tender documents.

We quote our rates _____ (in figures) above/below which will be applicable on the LS Amount provided in DNIT	We quote our rates _____ (in words) above/below which will be applicable on the LS Amount provided in DNIT

And in accordance, in all respects, with the specifications drawings and instructions in writing referred to in Section 1 to 9 of this document and with such materials as are provided by the Implementing Agency in all other respect in accordance with such conditions so far as applicable. The contract shall be divided in four part (i. SITC Supply Installation Testing and Commissioning, ii. AMC, iii. Operations separately, iv. Civil & PEB).

Enter both the rates in figures as well as in words, only in the space provided above. In the event of variation of rate in figures and words, the lower value only shall be considered. Only single percentage on all items of DNIT/BOQ is to be entered. In case more than one percentage is entered, the tender will liable to be rejected.

MEMORANDUM

(a)	General Description	Planning, Design, Fabrication, Supply, Erection, Testing, Commissioning and Trial Run (3 Months) including Civil, PEB, MEP, Firefighting Works for COLD STORAGE (500 MT), SORTING GRADING (1.5 TPH), WAREHOUSE (500 MT), Complete In all Respect On Turnkey Basis, with annual maintenance and technical operations of three years , with annual maintenance and technical operations of three years At HAFED Mega Food Park, Primary Processing Center JIND, Haryana
(b)	Estimated Cost	Rs. 980.02 Lakhs
(c)	Earnest Money	Rs. 9.80 Lakhs
(d)	Security to be deducted	5% of all bills (including earnest money)
(e)	Time allowed for completion of capital work	06 (Six) Months

Signature of Contractor

If, this tender is accepted, I/We hereby agree to abide by and fulfill all the terms and provisions of the said conditions of contract annexed hereto so far as applicable or in default thereof forfeit to and pay to the Federation or its successors in office the sums of money mentioned in the said conditions.

The Bank Guarantee of Rs. _____ lakhs is being submitted as EMD for this Bid, the full value of which is to be absolutely forfeited by the Federation or its successors in office without prejudice to any other rights or remedies of the said Federation or its successors in office, if I/We fail to commence the works specified in the above memorandum or otherwise the Bank Guarantee of Rs. _____ Lakhs shall be retained by the Federation on account of the security deposit. Should I/We withdraw or modify the tender within the period of bid validity, my/our earnest money will stand forfeited to the said Federation.

(Signature of the Contractor)

Price Schedule

(To be filled by the technical qualified bidders and submitted in hard copy in sealed envelope to HAFED on the date of financial bid opening. It may be noted that the bidders who will not submit the required price schedule break-up of the financial proposal in sealed envelope at the time of opening of online financial bids as mentioned above, their online commercial/ financial price bid will not be opened and such bidders shall be considered as technically disqualified)

Planning, Design, Fabrication, Supply, Erection, Testing, Commissioning and Trial Run (3 Months) including Civil, PEB, MEP, Firefighting Works for COLD STORAGE (500 MT), SORTING GRADING (1.5 TPH), WAREHOUSE (500 MT), Complete In all Respect On Turnkey Basis, with annual maintenance and technical operations of three years , with annual maintenance and technical operations of three years At HAFED Mega Food Park, Primary Processing Center JIND, Haryana

Part –I: SITC (Supply Installation, Testing & Commissioning) of for COLD STORAGE (500 MT), SORTING GRADING (1.5 TPH), WAREHOUSE (500 MT), Trial Run and Civil, MEP, Freighting works

S. NO.	ITEM DESCRIPTION	MAKE	MODEL NO.	QUANTITY	RATE	AMOUNT	PACKING FORWARDING	INSURANCE	GST	FREIGHT	TOTAL

Part II: Annual Maintenance of three years after completion of Defect Liability Period

S. NO.	Per Month Cost for 36 months	

Part III: Technical Operations of three years

S. NO.	Per Month Cost for 36 months	

Part IV: Civil & PEB Works:

The item-wise description, quantity, unit of measurement (UoM) and rates of each & every Non-Scheduled (NS) and market rate (MR) in respect of Civil, Electrical, Plumbing, PEB and Fire fighting works as detailed in Annexure-A of the DNIT / Tender document shall be submitted in hard copy in sealed envelope to HAFED on the date of financial bid opening. It may be noted that the bidders who will not submit the required price schedule break-up of the financial proposal in sealed envelope at the time of opening of online financial bids as mentioned above, their online commercial/ financial price bid will not be opened and such bidders shall be considered as technically disqualified.

S. NO.	Cost above/ below the estimated cost in the BoQ	

Authorized Signatory with official seal

SECTION – 8

Deviation Statement Forms Technical Deviation Statement

(TO BE SUBMITTED AND ATTACHED IN TECHNICAL BID)

Format A: Technical Deviation Statement

(1) The following are the particulars of deviations from the requirements of the tender specifications:

CLAUSE REFERENCE	DEVIATION	JUSTIFICATION	REMARKS

The technical specifications furnished in the bidding document shall prevail over those of any other document forming a part of our bid, except only to the extent of deviations furnished in this statement.

Dated:

Signature and seal of the Manufacturer / Bidder

NOTE:

- Where there is no deviation, the statement should be returned duly signed with an endorsement indication **"NO DEVIATIONS"**

FORMAT-B: Bidding Terms Deviation Statement Form

(2) The following are the particulars of deviations from the requirements of the bidding conditions / terms:

CLAUSE REFERENCE	DEVIATION	JUSTIFICATION	REMARKS

Dated:

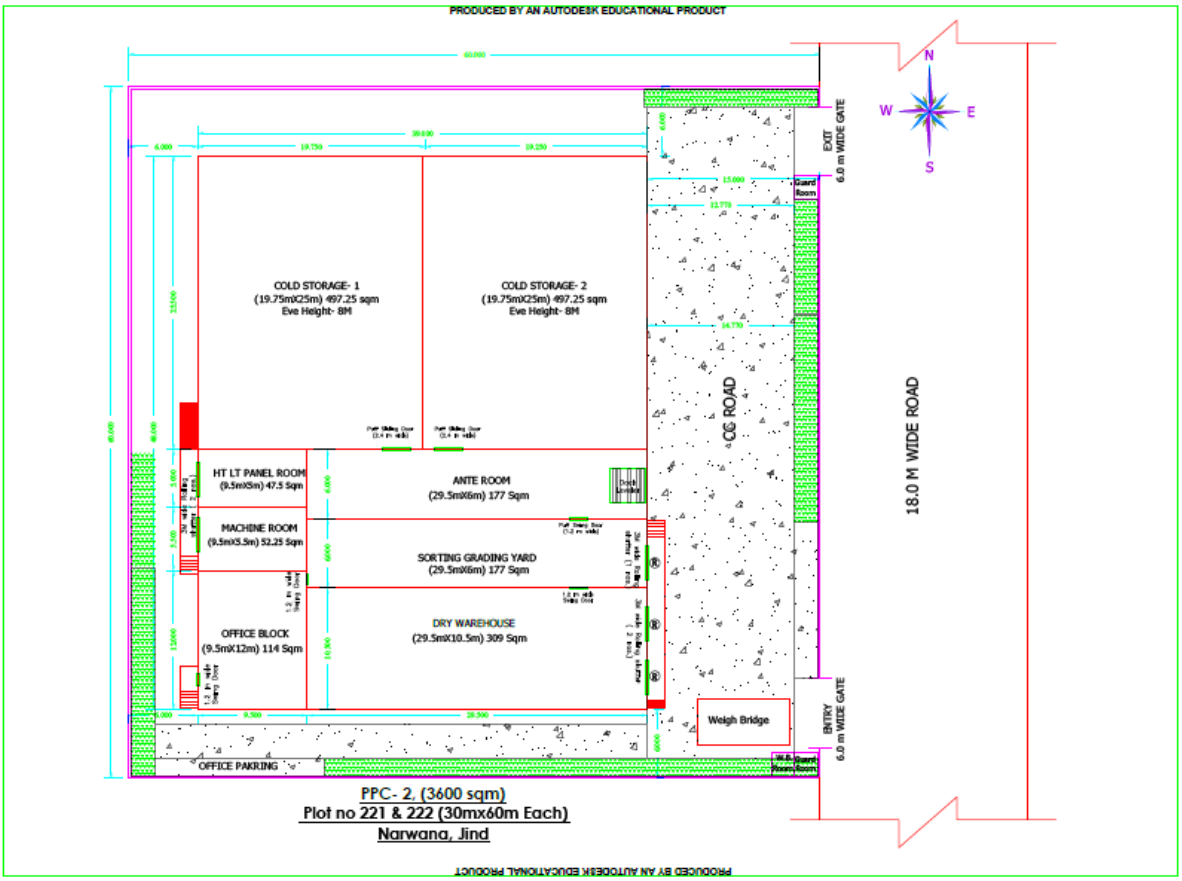
Signature and seal of the

Manufacturer / Bidder

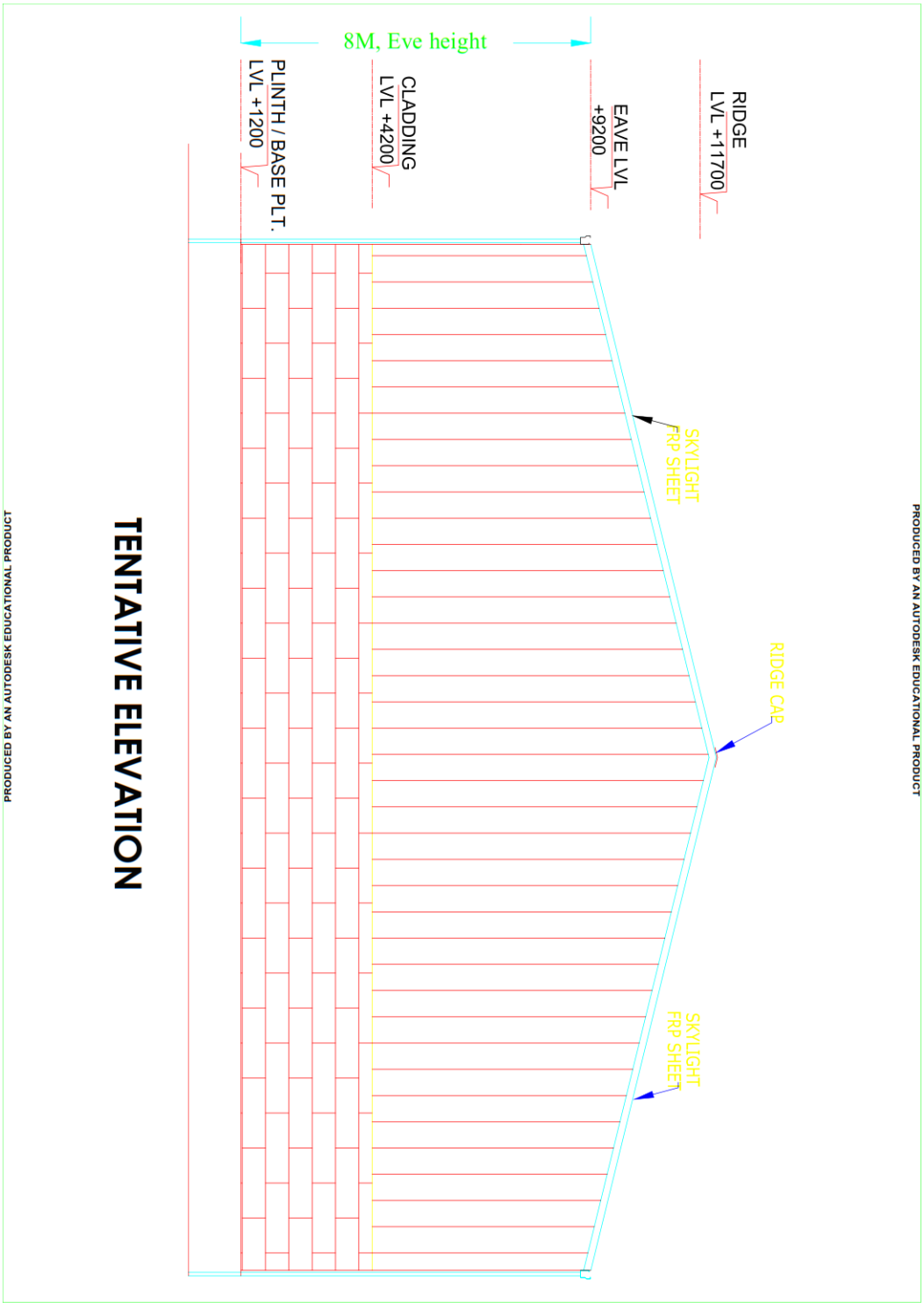
NOTE:

(1) Where there is no deviation, the statement should be returned duly signed with an endorsement indication **"NO DEVIATIONS"**

SECTION- 9 (Layout of Plot and BoQ of Construction Works)



The layout is for indicative purpose. The bidders are advised to propose their own design fulfilling the capacity and government norms.



Indicative Cost Summary of Construction Works- Refer Annexure A

Estimate for the Civil work of Construction of PPC Building in HAFED MFP, Narwana, Jind							
Civil Works							
S.No	**Item Source**	**Item Ref.**	**Description**	**Unit**	**Quantity**	**HSR 2021 & DSR-2021 Rate (Rs.)**	**Amount (Rs.) I/C CP**
			CIVIL WORKS				
			EXCAVATION				
1	HSR	4.12.1	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge. All kinds of soil	Cum	938.0	87.00	81,606.00
2	HSR	4.32	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	Cum	460.0	52.00	23,920.00
3	HSR	4.33	Excavating, supplying and filling of local earth (including royalty) by mechanical transport upto a lead of 1 km also including ramming and watering of the earth in layers not exceeding 20 cm in trenches, plinth, sides of foundation etc. complete.	Cum	5913.0	82.00	4,84,866.00
3a			Extra for lead upto 5km	cum	5913.0	107.42	6,35,174.46
4	DSR	2.27	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	188.00	2161.20	4,06,305.60
5	HSR	4.38.1	Supplying chemical emulsion in sealed containers including delivery as specified. Chlorpyriphos/ Lindaneemulsifiable concentrate of 20%	Per ltr	1030.0	221.00	2,27,630.00

6	HSR	4.39	Providing and injection chemical emulsion for PRE-CONSTRUCTIONAL antitermite treatment (excluding the cost of chemical emulsion) and creating a chemical barrier under and around the column pits, wall trenches, basement excavation, top surface of plinth filing junction of wall and floor, alongwith the external perimetre of building, expansion joints surrounding of pipes and conduiteetc, complete (plinth area of the building at ground floor only shall be measured) using Chlorpyriphos/ Lindaneemulsifiable concentrate of 20%	Sq Mt	2060.0	318.00	6,55,080.00
7	HSR	6.1.4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size)	Cum	371.0	3,260.00	12,09,460.00
							-
8	HSR	6.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1: 2 :4 (1 Cement :2 Coarse sand (zone-III) : 4 graded stone aggregate 20mm nominal size)	Cum	12.0	3,892.00	46,704.00

9	HSR	6.25.1	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works upto plinth lvl. (Note :- Cement content considered in this item is @ 330 kg/cum. Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix).	Cum	491.0	4,999.00	24,54,509.00
10	HSR	6.25.2	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works above plinth level upto floor IV level. (Note :- Cement content considered in this item is @ 330 kg/cum. Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix).	Cum	80.0	5,041.00	4,03,280.00
11		6.26.1	Providing M-30 grade concrete instead of M-25 grade BMC/ RMC. (Note:- Cement content considered in M-30 is @	Cum	571.0	66.00	37,686.00

12	HSR	6.29.1	Centering and shuttering including strutting, propping etc. and removal of form work for : **Foundations, footings, bases for columns**	Sqm	990.0	174.00	1,72,260.00
13	HSR	6.29.3	Centering and shuttering including strutting, propping etc. and removal of form work for : **Columns, piers, abutments, pillars, posts and struts**	Sqm	656.0	292.00	1,91,552.00
14	HSR	6.30.5	Centering and shuttering including strutting, propping etc. and removal of form for : **Lintels, beams, plinth beams, girders, bressumers and cantilevers**	Sqm	3091.0	332.00	10,26,212.00
15	HSR	6.29.2	Centering and shuttering including strutting, propping etc. and removal of form work for : **Retaining walls, return walls, walls (any thickness) including attached pilasters, buttresses, plinth and string courses fillets, kerbs and steps etc.**	Sqm	720.00	316.00	2,27,520.00
16	HSR	6.30.3	Centering and shuttering including strutting, propping etc. and removal of form for : **Suspended floors, roofs, landings, balconies and access platform**	Sqm	82.0	233.00	19,106.00
17	HSR	6.33.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. : **Thermo-Mechanically Treated bars of grade Fe-500D or more.**	Kg	81340.0	68.00	55,31,120.00
18	HSR	6.34.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.:**Thermo-Mechanically Treated bars of grade Fe-500D or more.**	Kg	10305.0	68.00	7,00,740.00
			BRICK WORK IN CEMENT MORTAR				-
19	HSR	7.21.1	Brick work with common burnt clay non-modular bricks of class designation 7.5 in foundation and plinth in: **Cement mortar 1:4 (1 cement : 4 coarse sand)**	Cum	346.0	4,135.00	14,30,710.00

20	HSR	7.23.1	Brick work with common burnt clay machine moulded perforated bricks of class designation 12.5 conforming to IS: 2222 in superstructure above plinth level up to floor four level in cement mortar 1:6 (1 cement : 6 coarse sand) : **With non-modular bricks**	Cum	235.0	4,449.00	10,45,515.00
21	HSR	7.28.1	Half brick masonry with common burnt clay non-modular bricks of class designation 7.5 in superstructure above plinth level up to floor IV level. : **Cement mortar 1:3 (1 cement :3 coarse sand)**	Sqm	35.0	581.00	20,335.00
			FLOORING				-
22	HSR	10.63.4	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete : **Size of Tile 1000x1000 mm**	Sqm	128.0	1,503.00	1,92,384.00
23	HSR	10.67.4	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours& shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete : **Size of Tile 1000x1000 mm**	sqm	8.0	1,523.00	12,184.00

24	HSR	10.37.1	Providing and fixing of Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) **: 25mm thick**	Sqm	27.0	885.00	23,895.00
25	HSR	10.38	Providing and fixing of Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	Sqm	6.0	936.00	5,616.00
26	HSR	10.43	Extra for Kota stone/ sand stone in treads of steps and risers using single length up to 1.05 metre. (labour rate only)	Sqm	6.0	16.00	96.00
27	HSR	10.42	Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab. (labour rate only)	Met er	20.0	89.00	1,780.00
28	HSR	10.57	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	Sqm	18.0	599.00	10,782.00
29	HSR	11.58	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	Sqm	141.0	603.00	85,023.00

30	HSR	11.39	Washed stone grit plaster on exterior walls height upto 10 metre above ground level, in two layers, under layer 12 mm cement plaster 1:4 (1 cement : 4 coarse sand), furrowing the under layer with scratching tool, applying cement slurry on the under layer @ 2 kg of cement per square metre, top layer 15 mm cement plaster 1:1/ 2:2 (1 cement: 1/2 coarse sand : 2 stone chipping 10 mm nominal size), in panels with groove all around as per approved pattern, including scrubbing and washing the top layer with brushes and water to expose the stone chippings ,complete as per specification and direction of Engineer-in-charge (payment for providing grooves shall be made separately).	sqm	783.0	346.00	2,70,918.00
31	HSR	11.43	Forming groove of uniform size from 12x12 mm and up to 25x15 mm in the top layer of washed stone grit plastered surface as per approved pattern, including providing and fixing aluminium channels of appropriate size and thickness (not less than 2 mm), nailed to the under layer with rust proof screws and nails and finishing the groove complete as per specifications and direction of the Engineer-in-Charge.	Met er	522.0	69.00	36,018.00
32	HSR	11.44	Extra for using white cement in place of ordinary cement in the top layar of the item of washed stone girt plaster	Sqm	783.00	81.00	63,423.00
33	HSR		Extra for using marble stone chips & Marble power instead of stone chips & Coarse sand in top layar 15mm thick washed stone grid plaster 1: 1/4:1/ 4 (1 Cement, 1/4 Marble power :1/4 Coarse snad, 2 marble chips & 2 Stone chipping 10 mm nominal size) complete as per specification and direction of Engineer-in- charge.	Sqm	783.00	61.51	48,162.33
34	HSR	11.1.1	6 mm cement plaster of mix : 1:3 (1 cement : 3 fine sand)	Sqm	36.0	73.00	2,628.00
35	HSR	11.5.2	12 mm thick cement plaster : 1:3 (1 cement: 3 fine sand) on walls.	Sqm	2345.4	108.00	2,53,303.36

36	HSR	11.6.1	15 mm cement plaster on the rough side of single or half brick wall of mix : **1:4 (1 cement: 4 fine sand)**	Sqm	118.0	114.00	13,452.00
37	HSR	9.10.1	Painting top of roofs with bitumen of approved quality @ 17kg per 10 sqm impregnated with a coat of coarse sand at 60 cudm per 10 sqm, including cleaning the slab surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil complete : **With residual type petroleum bitumen of grade VG -10**	Sqm	34.0	104.00	3,536.00
37a	HSR	9.12.1	10cm thick (average) mud phaska of damped brick earth on roofs laid to slope consolidated and plastered with 25 mm thick mud mortar with bhusha @ 35 kg per cum of earth and gobri leaping with mix 1:1 (1 clay : 1 cow-dung) and covered with machine moulded tile bricks, grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement and finished neat : **With machine moulded common burnt clay non-modular brick tiles of class designation 12.5, conforming to IS 2690**	Sqm	34.0	550.00	18,700.00
38	HSR	9.18	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	nos	6.0	165.00	990.00
39	HSR	9.17.1	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : **In 75x75 mm deep chase**	Rmt	24.0	125	3,000.00
40	HSR	9.55.5	Supplying and fixing in position 60 cm long G.I. pipe class 'B' spouts in chajjas and cantilevers : **50 mm internal dia** (Provision only)	Each	2.0	312	624.00

41	HSR	9.57.3	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				-
a			150mm diapvc pipe	Mtr	150.0	301.00	45,150.00
42	HSR	9.58.5.3	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.				-
a		(b)	150mm diapvc bend	Each	20.0	145.00	2,900.00
43	HSR	11.60	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	Sqm	2560.2	66.00	1,68,970.33
44	HSR	11.69.2	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content. : **With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre**	Sqm	2560.2	25.00	64,003.91
45	HSR	11.71.1	Wall painting on a cement plaster surface with acrylic emulsion paint of approved brand and manufacture to give an even shade : two or more coats on new work	Sqm	2560.2	61.00	1,56,169.54
		11.68	Applying priming coat:				
46	HSR	11.68.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works	Sqm	100.0	22.00	2,200.00
47	HSR	11.78	Painting two coats excluding priming coat with synthetic enamel paint in all shades on new wood work or metallic or plastered or concrete surfaces to give an even shade.	Sqm	100.0	35.00	3,500.00

48	HSR	32.47	Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance ≥ 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 &7)in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T- sections used in false ceiling support system shall be pre-painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge. :				
a		32.47.1	With 16 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.55 to 0.6	Sqm	114.0	1,253.00	1,42,842.00
			JOINERY				-

49	HSR	12.157.1.3	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) : **Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)**	Kg	822.0	401.00	3,29,622.00
50	HSR	12.157	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :				-

a	HSR	12.157.2.3	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) : **Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)**	Kg	822.0	459.00	3,77,298.00
51	HSR	12.158.2	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade l Type ll, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge. Pre-laminated particle board with decorative lamination on both sides	Sqm	20.0	883.00	17,660.00
52	HSR	12.160.1	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-incharge. With stainless steel cover plate minimum 1.25 mm thickness	Each	4.0	2,126.00	8,504.00
53	HSR	12.159.2	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):				-

a	HSR	(b)	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	Sqm	65.4	1,034.00	67,623.60
54	HSR	12.162.3	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer-in-charge complete : (355 X 19 mm)	Each	24.0	265.00	6,360.00
55	HSR	12.166.2	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete : **Powder coated minimum thickness 50 micron aluminium**	Each	50.0	66.00	3,300.00
56	HSR	12.167.2	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in-charge : **Powder coated minimum thickness 50 micron aluminium**	Each	20.0	78.00	1,560.00
57	HSR	12.169.1	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete. : **Upto 5mm depth and 5 mm width**	meter	200.0	37.00	7,400.00
58	HSR	12.173	Providing and fixing bright finished 100 mm mortice lock with 6 levers without pair of handles of approved quality for aluminium door, with necessary screws etc complete as per direction of Engineer- in-charge.	Each	20.0	553.00	11,060.00

59	HSR	12.143	Providing and fixing Fiber Glass Reinforced plastic (FRP) Door Frames of cross-section 90 mm x 45 mm having single rebate of 32 mm x 15 mm to receive shutter of 30 mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat. Door frame laminate shall be 2mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fiber glass from all sides. M.S. stay shall be provided at the bottom to steady the frame.	Mtr	14.9	629	9,340.65
60	HSR	12.144.2	Providing and fixing to existing door frames- 30 mm thick Fiberglass Reinforced Plastic (F.R.P.) flush door shutter in different plain and wood finish made with fire retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate all around, with suitable wooden blocks inside at required places for fixing of fittings and polyurethane foam (PUF)/Polystyrene foam to be used as filler material throughout the hollow panel, casted monolithically with testing parameters of F.R.P. laminate conforming to table - 3 of IS: 14856, complete as per direction of Engineer-in-charge.	Sqm	6.0	3,643.0	21,858.00
61	HSR	13.37.1	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters.-				-

a	HSR		80x1.25 mm M.S. laths with 1.25 mm thick top cover	Sqm	105.0	2,232.00	2,34,360.00
b	HSR	13.38	Providing and fixing ball bearing for rolling shutters.	each	5.0	361.00	1,805.00
c	HSR	13.39.1	Extra for providing mechanical device chain and crank operation for operating rolling shutters- Exceeding 10.00 sqm and upto 16.80 sqm in the area	Sqm	105.0	1,050.00	1,10,250.00
d	HSR	13.40	Extra for providing grilled rolling shutters manufactured out of 8 mm dia M.S. bar instead of laths as per design approved by Engineer-in- charge, (area of grill to be measured).	Sqm	20.0	649.00	12,980.00
			External work				
62	**HSR**	6.1.4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : **1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size)**	Cum	243.0	3,260.00	7,92,180.00

63	**HSR**	6.24.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer-in-charge.:**All works upto plinth level** **(Note :- Less cement used as per design mix is recoverable.** **However no extra payment shall be made if excess cement is** **used as per design mix).**	Cum	405.0	5,002.00	20,25,810.00
64	HSR	6.26.3	Extra for providing richer mixes up to plinth and at all floor levels.: **Providing M-40 grade concrete instead of M-25 grade BMC/ RMC.(Note : Cement content considered in M-40 is @ 360 kg/ cum)**	Cum	405.0	199.00	80,595.00
65	HSR	6.39.1	Providing and fixing at or near ground level precast cement concrete in kerbs, edgings etc. as per approved pattern and setting in position with cement mortar 1:3 (1 Cement : 3 coarse sand), including the cost of required centering, shuttering complete.: 1:1½:3 (1 Cement: 1½ coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	48.0	4,631.00	2,22,288.00

66	HSR	13.42.1	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. M.S. Tube	kg	400.0	120.00	48,000.00
69	HSR	13.28	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kg	10273.0	84.00	8,62,932.00
70	HSR	6.13	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling& dressing & finishing the top smooth.	sqm	52.2	343.00	17,904.60
			AREA DEVELOPMENT				
	HSR	17.5	Compacting original ground below road crust				
71	HSR	17.5.1	Loosening of the ground up to a level of 500 mm below the road crust, watered, graded and compacted at OMC in layers to meet requirement of table 300-2 for embankment construction as per technical clause 305 of MORT&H specifications	Cum	486.0	59.00	28,674.00
			Compaction of Earthwork				
72	HSR	17.5.3	Compaction of & preparation of sub grade including loosening, levelling of earth 225 mm thick top layer, rough dressing of soil, final dressing of earth to give level, camber, watering, rolling with road roller, compacting the bed to achieve minimum dry density as given in the Table 3000-2 as per technical clause 305 of MORT&H specifications (in case of link roads earthwork to be done by villagers)	Sqm	1620.0	16.00	25,920.00

73	HSR	17.14.2	Construction of granular sub-base by providing Material as per Grading Ill (Table 400-1 of MORT&H 5th revision) mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per technical clause 401 of MORT&H specifications Grading II material	cum	243.0	1329.00	3,22,947.00
			TOTAL				**2,59,30,328.48**

Non-Scheduled items:

Sr. No	Type of Item	Item description	UoM	Quantity	Rates to be quoted by the vendor
67	NS	Providing and laying C.C. pavement of mix M-30 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately). to give an even shade :	cum	281.0	
68	NS	Providing and cuttting groove 10/5mm & to be filled with FIBEAL JSP 700 of Fibrex or equivalent make in a groove. Ensure that the groove or expansion joint to be treated should be free from all contaminants, dirt, dust, debris and unsound material in order to attain proper bonding. Moisture content should be less than 4%-6%. Apply masking tape on both edges of the groove or expansion joint in a straight line fashion.	cum	1100.0	

Estimate for the Electrical work of Construction of PPC Building ,NarwanaJind.							
Electrical Works							
S.No	**Item Source**	**Item Ref.**	**Description**	**Unit**	**Quantity**	**HSR & DSR E & M-2018 Rate (Rs.)**	**Amount (Rs.) I/C CP**
1			**MAIN PANEL**				
	DSR E&M	1.1	Supply with all standard accessories & fixtures including testing at Factory & at Site. Receiving, unloading, Storing, Shifting, installing, commissioning of incoming & outgoing cable at site location	Set	1	76,840.00	76,840.00
			INCOMER				
-			1No. 100A TPN MCCB (25KA)				
			METERING & INDICATION				
-			1 set of R,Y,B phase indicating lamps with 6Amp SP MCB (3nos)				
			CT Operated Dual resistor Multifunction meter 3 nos				
			BUS-BAR				
-			1 Set of 200A, TPN Aluminium Bus Bar with colour coded PVC Sleeves				
			OUTGOINGS				
-			8 Nos. 63A 4 pole C Curve				
			Supply of weatherproof 20/32A SPN Metal Clad Socket with DP 16/32 DP MCB				
2			**Industrial Socket Outlets**				

	DSR E & M 2018		Supply, installation, testing & commissioning of weather proof type (IP 65) industrial type plug and socket outlet with MCB's (10 KA motor duty) mounted In a factory fabricated enclosure including termination, earthingetc as required				
		DSR18(E &M) 2.18	20/32A metal clad SPN Socket outlet controlled by 16/20/32A DP MCB.	Set	4	1,232.00	4,928.00
3			**CABLES, SUB MAINS & CABLE TRAYS:**				
			LT Cables:				
a	HSR	24.2.2	Laying of underground cable 0.75 metre below ground level covered with sand and bricks including excavation and refilling of trenches.:-				
	HSR	24.2.2.2	16 Sq mm to 35 sqmm 2 to 4 Core	RM	260	204.00	53,040.00
4	HSR	24.2.2.4	185 sqmm to 240 sqmm 3 to 3½ Core	RM	180	199.00	35,820.00
			Cable Trays:				
5	HSR	23.23.6	Supply and erection of MS cable tray , duly pained as required including erection of the same on wall or ceiling with necessary fixture and other material required to complete the job in all respect up to the entire satisfaction of Engineer-in Charge of the work				
	HSR	23.23.6.3	MS perforated cable tray painted with powder coating 375 X 50 X2mm	RM	100	445.00	44,500.00
6			**GI Pipe**				

	HSR	22.91	Providing and fixing G.I. pipes complete with G.I. fittings including trenching up to 0.30m to 1.00m depth and refilling etc.				
	HSR	22.91.8	80 mm dia nominal bore	RM	75	690.00	51,750.00
7			**WIRING**				
a	HSR	23.2.1	Wiring for Light/Fan/call bell point with modular type switch/socket and GI box, Modular type face plate etc in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick MS conduit pipe.				
	HSR	23.2.1.1	Group A	Each	20	722	14,440.00
	HSR	23.2.1.2	Group B	Each	30	836	25,080.00
	HSR	23.2.1.3	Group C	Each	50	1047	52,350.00
b	DSR 2018 (EM)	1.12	Wiring for light/ power plug with 2X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit along with 1 No. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Mtr	600	200.00	1,20,000.00
c	DSR 2018(EM)	1.13	Wiring for light/ power plug with 4X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit alongwith 2 Nos. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Mtr	600	308.00	1,84,800.00

d	DSR 2018(EM)	1.14	Wiring for circuit / submain wiring alongwith earth wire with the following sizes of FR PVC insulated copper conductor single core cables in surface/recessed PVC conduit complete as required				
		1.14.3	2 X 4 sq. mm + 1 X 4 sq. mm earth wire - Ground Floor	mtr	600	200	1,20,000.00
8			SUBMAIN WIRING				
a	DSR 2018(EM)	1.14.9	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	mtr	500	394	1,97,000.00
b	DSR 2018(EM)	1.14.10	4 X 10 sq. mm + 2 X 6 sq. mm earth wire	mtr	500	543	2,71,500.00
9	HSR	23.8.10	Providing and fixing GI concealed sheet metal boxes with inner and outer face plate including concealing the box in wall and fixing in position with inner plate and face plate with all labour and material required for the job complete in all respects.				
a	HSR	23.8.10.1	1 & 2 Modules including combined plate for Telephone and data	Each	10	104	1,040.00
b	HSR	23.8.10.2	3 Modules	Each	10	142	1,420.00
c	HSR	23.8.10.3	4 Modules	Each	20	157	3,140.00
d	HSR	23.8.10.4	6 Modules	Each	20	208	4,160.00
e	HSR	23.8.10.5	8 Modules	Each	30	261	7,830.00
f	HSR	23.8.10.6	12 Modules	Each	20	316	6,320.00

9	HSR	23.8.11	Providing and fixing modular type accessories of approved make in existing box including fixing and making necessary connections, complete in all respect.				
a	HSR	23.8.11.1	5 amp 1 way switch	Each	50	46	2,300.00
b	HSR	23.8.11.2	5 amp 2 way switch	Each	40	83	3,320.00
c	HSR	23.8.11.3	15 amp 1 way switch	Each	50	92	4,600.00
d	HSR	23.8.11.4	5 amp Socket	Each	50	92	4,600.00
e	HSR	23.8.11.5	15 amp 6 pin Socket	Each	30	139	4,170.00
f	HSR	23.8.11.6	Bell Push	Each	1	86	86.00
g	HSR	23.8.11.7	step type Fan Regulator 2 modules 300 watt	Each	12	288	3,456.00
h	HSR	23.8.11.10	Blanking plate	Each	50	20	1,000.00
			CONDUITS				
10	HSR	23.7.6	Supply and erection of PVC CONDUIT ISI marked (Medium) recessed in wall/ceiling etc. including the cost of PVC bends, inspection boxes, iron hooks and cement concrete etc. complete in all respect up to the entire satisfaction of Engineer-in-Charge of work				
a	HSR	23.7.6.3	PVC pipe of 32 mm dia.	mtr	250	50.00	12,500.00
11	HSR	23.8.12	Supply and Fixing 3 mm thick Bakelite sheet cover on existing MS/PVC junction box/tee etc including fixing with brass screws and washers.	Each	20	9.00	180.00
			VERTICAL/MULTITIER DISTRIBUTION BOARD				`

12	HSR	23.22.4	Supply and erection of double door sheet steel enclosure distribution board suitable for MCBS and ELCBS etc. recessed in wall including bonding to earth with all labour and material required to complete the job in all respect up to the entire satisfaction of the Engineer-in-Charge of the work.				
a	HSR	23.22.4.2	SPN DB Double Door 8 way (2 incoming and 6 outgoing)	Each	2	1,574.00	3,148.00
b	HSR	23.22.4.3	SPN DB Double Door 12 way (2 incoming and 10 outgoing)	Each	2	1,910.00	3,820.00
13	HSR	23.22.5	Supply and erection of miniature circuit Breaker 240/415 V in the existing distribution board including making necessary connections:-				
a	HSR	23.22.5.1	6 amp. to 32 amp Single Pole	nos	20	162.00	3,240.00
b	HSR	23.22.5.3	6 amp. to 32 amp Double POLE	nos	20	477.00	9,540.00
c	HSR	23.22.5.5	6 amp. to 32 amp MCB's TRIPLE POLE	Set	40	764.00	30,560.00
15			**EARTHING PITS & LIGHTENING CONDUCTOR**				
	HSR	**24.1**	**Earthing and Lightening Arrestor**				
a	HSR	24.1.1	Earthing with GL earth pipe 4.5 m long and 40 mm dia with masonry enclosures on the top etc. (but without charcoal or coke and salt) as required.	each	4	3,074.00	12,296.00
b	HSR	24.1.2	Extra for using salt and char coal/coke for pipe earth electrode as required.	each	4	730.00	2,920.00

c	HSR	24.1.4	Earthing with G.I. earth plate 600 mmx 600 mm x 6 mm thick including accessories and providing masonry enclosures with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required.	Set	6	9,267.00	55,602.00
d	HSR	24.1.16	Supply and erection of 25mm dia 1.5 metre long lightning GI. tube rod tapered into a point at the top with 16cm x 16cm x 3mm thick G.I. base plate and necessary nuts and bolts with washers.	each	6	1,006.00	6,036.00
e	HSR	24.1.9	Providing and fixing 25 mm x5 mm copper strip in 40 mm dia G.I. pipe from earth electrode as required.	RM	40	818.00	32,720.00
			External light				
16	HSR	24.4.8	Supply and erection of Hot Dip Galvanized octagonal pole of 3mm thickness, with base plate including cost of nut and bolts , earthing studs, Integral Cable termination arrangement 5 mm thick Bakelite base plate on suitable welded MS/GI bracket 32 A four way connector 2 no 1 O A SP MCB , end cover and all accessories as supplied by the manufacture including Providing RCC foundation of M25 grade (1 Cement:1 Stone aggregate: 2 Coarse sand) i/c excavation, steel reinforcement (Fe 500) @80 kg/cum of concrete contents, concrete cover 50mm, anchor bolts etc. over a bed ofPCC 1 :5: 1 O of required dimensions for octagonal poles of various heights as per following specifications complete in all respects and as per directions of Engineer-in-charge				

a	HSR	24.4.8.5	7 Metre Long pole with top dia 75 0mm and bottom dia 150 mm with base plate of size 300 x 300 x 20 mm	Each	20	17,564.00	3,51,280.00
		24.4.15	**B.S.E.N.10025 High Masts**				
17	HSR	24.4.15.2	Supply, installation, testing and commissioning of 16 mtr. long High Mast manufactured from B.S.E.N. 10025 or equivalent grade material in, 2 (two) section hot dip, galvanized inside and outside in single dip, suitable for wind velocity as per IS 875 Part-3 suitable for 9/12 nos. luminaire loading fully motorized (power tool) with starter & cable complete along with standard accessories supplied by the manufacturer with 3 nos. steel wire rope double drum system and twin dome aviation light with LED without foundation but including cost of set of foundation nut and bolts, installation at site complete in all respect upto entire satisfaction of Engineer -in-Charge Thickness of Top and Bottom Section = 3 mm & 4mm (minimum) Top Dia= 150 mm and Bottom Dia= 410mm Thickness of Galvanization - Top = 65 micron (minimum) and Bottom = 85 micron (minimum)	each	1	1,86,683.00	1,86,683.00
	HSR	24.4.9	Erection of High mast (Labour only) on existing CC foundation (foundation to be paid separately and foundation bolt shall be provided)				
	HSR	24.4.9.2	16 metre High mast	each	1	5,806.00	5,806.00
	HSR	24.9	**RCC FOUNDATIONS FOR HIGH MAST OCTAGONAL POLES**				

18	HSR		Providing RCC foundation of M25 grade (1 Cement:1 Stone aggregate: 2 Coarse sand) i/c excavation, steel reinforcement (Fe 500) @ 75 kg/cum of concrete contents, concrete cover 50mm, anchor bolts etc. over a bed of PCC 1:5:10 of required dimensions for high mast octagonal poles of various heights as per following specifications complete in all respects and as per directions of Engineer-in-charge				
	HSR	24.9.2	16m high mast pole	per foundation	1	57,517.00	57,517.00
19	HSR	24.5.2	S/E mark double walled corrugated (DWC) HDPE, pipe 10 Kg/Cm2 ,laid 0.75 Mtr below ground level including diging and refilling of earth including cost of suitable size socket/cuppler for HDPE pipe including the cost of labour and material required to complete the job in all respect up to the entire satisfaction of Engineer in charge of the work				
		24.5.2.3	HDPE pipe 63/50 mm outer dia/ inner dia	Mtr	260	139.00	36,140.00
			Total Electrical Works				**26,13,780.20**

Non-Scheduled Items

Sr. No	Type of items	LIGHT FIXTURES	UoM	Qty.	Rates to be quoted by the vendor
14		Supply following type of light fixtures with installation arrangement & proper support etc. complete as required. (Light Fixture Hang From the ceiling Height upto 11mtr or as per site requirement)			
a	NS	High bay Led 100W 240 v 0.440 A PF >0.95 THD <10 CT 5700K CRI >70 10000 lm	each	15	
b	NS	supply and fixing of 1'X1' 24 WAtt LED light of Rossete /philips complete	each	20	
c		72 watt LED with lens S/2 litting with having min. Of 7200 lumens & lumen efficence100 LPW, fitting should be IP/66/65 irrgress protection with interval lurge protection of min 5 KV Make-BAJAJ/Philips/Crompton /Halomix/ Jaquar/Surya Roshni	each	20	

Providing and installing Pre Engineered Building (PEB) comprising of pre-fabricated steel portals with rod / angle bracings as per drawing. 26 G Colored Galvalume 0.5mm thick TCT wall sheeting. 26 G Bare Galvalume 0.5mm thick TCT (Total Coated Thickness) roof sheeting with daylight panel on 2% of Roof Area & turbo vents for ventilation. All primary and secondary members with Red Oxide primer and synthetic enamel paint. And The shed shall be supplied with all necessary fittings, fasteners, EPDM gaskets / washers & flashings & rain water pipes (0.5mm thick colour coated galvalume sheet). The pre-fab shed wok should be carried out by a specialized approved agency having in house manufacturing facility and having ISO : 9001 certification for both manufacturing and contracting. The design and engineering and supply and installation shall be in the scope of the vendor.

S.No.	Description of Item	Qty**	Unit	Supply Charges (Rates to be quoted by the vendor)		Erection Charges (Rates to be quoted by the vendor)		
				Rate	Amount	Rate	Amount	Final Cost
1	**Structural Steel -** Primary & Secondary Steel complete with primer & 2 coats of synthetic enamel paint (applied at site)	39900	Kg.					
2	**Roofing** - HI RIB SMP 0.50 Galvalume with screws	1710	Sq.mtr.					
3	**Insulation - 50**mm thick 16 kg/m3 density Alum Foil	1710	Sq.mtr.					
4	**Cladding** - HI RIB SMP 0.50 Galvalume with screws	2123	Sq.mtr.					
5	**Day Light Panels** - Polycarbonate 2.00mm	51.3	Sq.mtr.					
6	**Turbo Ventilators 600mm**	18	Nos.					
	Total							
	ADD 18% GST							
	Total							

****The quantities mentioned here are minimum quantities which are required to be executed in this building. However, if as per vendor's design, quantities are increased, cost of the same is to bear by the vendor**

Estimate for the plumbing work of Construction of PPC Building in Mega Food Park at Indl. Estate, Narwana							
PLUMBING WORKS							
S.No	**Item Source**	**Item Ref.**	**Description**	**Unit**	**Quantity**	**HSR & DSR-2021 Rate (Rs.)**	**Amount (Rs.) I/C CP**
1	HSR	22.24	Providing and fixing white vitreous chinaware pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous chinaware flushing cistern & C.P. flush bend with fittings & C.I. brackets, 40 mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :				
		22.24.1	W.C. pan with ISI marked white solid plastic seat and lid	each	3	4,912.00	14,736.00
2	HSR	22.42	Providing and fixing toilet paper holder :				
		22.42.2	vitreous chinaware	each	3	284.00	852.00
3	HSR	22.1	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:				
	b	22.1.1	White vitreous chinaware Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	each	3	2270	6,810.00
4	HSR	22.14.1.1	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete. (semi girid pipe): 32 mm dia	each	3	51	153.00
5	HSR	22.17.1	Providing and fixing 40mm i/d chromium plated trap with chromium plated pipe to wall with walflange completed for use with sinks: With Bottle Trap (Indian make)	each	6	859	5,154.00
6	HSR	22.35	Providing and fixing G.I. inlet connection for flush pipe connecting with W.C. pan.	each	3	90	270.00

7	HSR	22.26	Providing and fixing white vitreous chinaware flat back half stall urinal of size 580x380x350 mm with white PVC flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556, C.I. trap with outlet grating and other couplings in C.P. brass, including painting of fittings and cutting and making good the walls and floors wherever required :				
a		22.26.2	Single half stall urinal with manually operated5 litre P.V.C. flushing cistern and manually operated stop cock/ angle valve	each	3	5,391.00	16,173.00
8	HSR	22.119.2	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour. : 600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms.	each	2	403.00	806.00
9	HSR	22.10.1.3	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required : kitchen shink with drain board				
a		a	510x1040 mm bowl depth 200 mm	each	1	4,581.00	4,581.00
10	HSR	22.210.4	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :				
a		a(ii)	Rectangular shape 1500x450 mm	each	3	1,428.00	4,284.00
11	HSR	22.20.2	Providing and fixing in position C.I. plain Nahani Trap conforming to I.S.I. specifications and of self cleaning design with C.P. brass hinged grating with frame complete With 75 mm internal diameter outlet	each	6	1,310.00	7,860.00

12	HSR	22.81	Cutting chases in brick masonry walls for following diameter sand cast iron/centrifugally cast (spun) iron pipes and making good the same with cement concrete 1 :3:6 (1 cement : 3 coarse sand :6 graded stone aggregate 12.5 mm nominal size), including necessary plaster and pointing in cement mortar 1 :4 (1 cement : 4 coarse sand) :				
a		22.81.1	100 mm dia	metre	3	232.00	696.00
13	HSR	22.92.2	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting andthreading the pipe etc. complete : 50 to 80 mm nominal bore	each	3	950.00	2,850.00
14	HSR	22.105.1	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.				
a		c	15 mm nominal bore	each	3	573.00	1,719.00
15	HSR	22.106.1	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
a		a	15 mm nominal bore	each	3	512.00	1,536.00
16	HSR	22.38	Providing and fixing 8 mm dia C.P. / S.S. Jet with flexible tube upto 1 metre long with S.S. triangular plate to Eureopean type W.C. of quality and make as approved by Engineer - in - charge.	each	3	270.00	810.00
17	HSR	22.107.1	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.				
a		a	15 mm nominal bore.	each	3	569.00	1,707.00
18	HSR	22.12.1	Providing and fixing CP Brass Single lever telephonic wall mixer of quality & make as approved by Engineer in charge.				
a		b	15 mm nominal dia	each	3	5,872.00	17,616.00
19	HSR	22.51.1.	Providing and fixing soil, waste and vent pipes :				

		1					
a		a	(100 mm dia) Sand cast iron S&S pipe as per IS: 1729	metre	105	928.00	97,440.00
20	HSR	22.54.1	Providing and fixing M.S. holder bat clamp of approved design to sand cast iron/ cast iron (spun) pipes comprising of M.S. flat brackets made of 50x5 mm flat of specified shape, projecting 75 mm outside the wall surface and fixed on wall with 4Nos., 6mm dia expansion hold fasteners, including drilling necessary holes in brick wall/ CC/ RCC surface and the cost of bolts etc. The pipes shall be fixed to the already fixed brackets with the help of 30 mm x1.6 mm galvanised M.S. flats of specified shape and of total length 420 mm and shall be fixed with M.S. nuts, bolts, & washers of size 25x6 mm, one bolts on each side of the pipe.				
		b	Total bracket length 580mm of approved shape and design for single 100 mm dia pipe	each	20	199.00	3,980.00
a		22.57.1.1	Providing and fixing heel rest sanitary bend : Sand cast iron S&S as per IS - 1729- 100 mm dia	each	6	462.00	2,772.00
b		22.58.1.1	Providing and fixing double equal junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete : 100x100x100x100 mm- Sand cast iron S&S as per IS - 1729	each	6	963.00	5,778.00
c		22.60.1.1	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.: 100x100x100x100 mm- Sand cast iron S&S as per IS - 1729	each	6	561.00	3,366.00
d		22.55.1.1	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete. : 100 mm dia : Sand cast iron S&S as per IS - 1729	each	6	425.00	2,550.00
g		22.76.1.1	Providing and fixing collar :: 100 mm dia : Sand cast iron S&S as per IS - 1729	each	12	331.00	3,972.00

21	HSR	22.85	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. : internal work- exposed on wall				
a		22.85.6	50 mm nominal outer dia Pipes	metre	50	726.00	36,300.00
b		22.85.5	40 mm nominal outer dia Pipes	metre	15	481.00	7,215.00
c		22.85.4	32 mm nominal outer dia Pipes	metre	15	348.00	5,220.00
d		22.85.3	25 mm nominal outer dia Pipes	metre	40	261.00	10,440.00
e		22.85.2	20 mm nominal outer dia Pipes	metre	50	203.00	10,150.00
f		22.85.1	15 mm nominal outer dia Pipes	metre	50	147.00	7,350.00
22		22.87	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge: External work				
		22.87.1	15 mm nominal outer dia Pipes	metre	10	115.00	1,150.00
		22.87.2	20 mm nominal outer dia Pipes	metre	10	164.00	1,640.00
		22.87.3	25 mm nominal outer dia Pipes	metre	10	225.00	2,250.00
		22.87.4	32 mm nominal outer dia Pipes	metre	30	305.00	9,150.00
		22.87.5	40 mm nominal outer dia Pipes	metre	50	418.00	20,900.00
		22.87.6	50 mm nominal outer dia Pipes	metre	100	663.00	66,300.00

23	HSR	22.78	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of diameter :				
		22.78.1	100 mm	each	20	272	5,440.00
		22.78.2	75 mm	each	15	234	3,510.00
		22.78.3	50 mm	each	10	195	1,950.00
24	HSR	22.98	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
a		22.98.1	25 mm nominal bore	each	6	464.00	2,784.00
b		22.98.2	20 mm nominal bore	each	5	430.00	2,150.00
c		22.98.3	32 mm nominal bore	each	2	543.00	1,086.00
d		22.98.4	40 mm nominal bore	each	2	635.00	1,270.00
e		22.98.5	50 mm nominal bore	each	2	818.00	1,636.00
25		22.99	Providing and fixing gun metal non- return valve of approved quality (screwed end) :				
a		22.99.1.1	25 mm nominal bore - Horizontal	each	1	440.00	440.00
b		22.99.1.2	25 mm nominal bore - Vertical	each	1	466.00	466.00
c		22.99.2.1	32 mm nominal bore - Horizontal	each	1	597.00	597.00
d		22.99.2.2	32 mm nominal bore - Vertical	each	1	662.00	662.00
e		22.99.3.1	40 mm nominal bore - Horizontal	each	1	741.00	741.00
f		22.99.3.	40 mm nominal bore - Vertical	each	1	923.00	

		2					923.00
g		22.99.4.1	50 mm nominal bore - Horizontal	each	1	1,080.00	1,080.00
h		22.99.4.2	50 mm nominal bore - Vertical	each	1	1,184.00	1,184.00
26	HSR	22.179.0	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design: **With common burnt clay non-modular bricks of class designation 7.5**				
a		22.179.1.1	Inside dimensions 455x610 mm and 45 cm deep for single pipe line :	each	3	4,249.00	12,747.00
b		22.179.2.1	Inside dimensions 500x700 mm and 45 cm deep for pipe line with one or two inlets :	each	3	4,894.00	14,682.00
c		22.179.3.1	Inside dimensions 600x 850 mm and 45 cm deep for pipe line with three or more inlets :	each	3	5,581.00	16,743.00
27		22.180.0	Extra for depth beyond 45 cm of brick masonry chamber : With common burnt clay non-modular bricks of class designation 7.5				
a		22.180.1.1	For 455x610 mm sizer	Mtr	3	3,187.00	9,561.00
b		22.180.2.1	For 500x700 mm size	Mtr	3	3,472.00	10,416.00
c		22.180.3.1	For 600x850 mm size	Mtr	3	4,037.00	12,111.00

28	HSR	22.181	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	litre	2,000	8.00	16,000.00
29	HSR	22.164.0	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all- round S.W. pipes including bed concrete as per standard design :				
a		22.164.1	100 mm diameter S.W. pipe	metre	50	363.00	18,150.00
b		22.164.2	150 mm diameter S.W. pipe	metre	75	444.00	33,300.00
c		22.164.3	200 mm diameter S.W. pipe	metre	195	518.00	1,01,010.00
d		22.164.4	250 mm diameter S.W. pipe	metre	50	599.00	29,950.00
30	HSR	22.163.0	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :				
a		22.163.1	100 mm diameter	metre	50	262.00	13,100.00
b		22.163.2	150 mm diameter	metre	75	400.00	30,000.00
c		22.163.3	200 mm diameter	metre	195	504.00	98,280.00
d		22.163.4	250 mm diameter	metre	50	742.00	37,100.00
31	HSR	22.21	Constructing brick masonry road gully chamber 50x45x60 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design : With common burnt clay non-modular bricks of class designation 7.5				
a		22.205.1	With common burnt clay non-modular bricks of class designation 7.5	each	2	3,158.00	

							6,316.00
			TOTAL FOR PHE WORKS (PLUMBING)				**8,71,921.00**
			PART-2				
			RCC Pipe				
1	HSR	21.95.1	Providing lowering, cutting jointing and testing RCC pipe class NP3 as per IS-458-2003 which Spigot &socketted joints manufactured with ISI marked sulphate Resistance Cement as per ISI 12330 with rubber rings ISI marked antitermite as required at site, into trenches, for all depths and laying out the same to correct alignment and cutting of concrete bed and sides of trenches, if required, jointing with rubber rings in trenches and jointing with 1:1 1/2 cement sand mortar and with end dowels filled with 1:1 1/2 cement sand mortar and finishing the joints cutting and finishing the cut surface to a uniform finish etc. as fully described in HSR item No. 29.38, 29.44, 29.45 & 29.46 including cartage loading and unloading complete in all respects. the internal diametric of the sewer being				
		21.95.1	350mm	per mtr	50	1110	55,500.00
						Total	**55,500.00**
			Part -3				
			Detailed Estimate- Rain water harvesting pit				
1	HSR	33.6	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level.				
(a)	HSR	33.6.1	All types of soil				

	HSR	33.6.1.1	300 mm dia	metre	120.0	572.00	68,640.00
2	HSR	33.8	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				
(a)	HSR	33.8.3	200 mm nominal size dia	metre	100.0	1030.00	1,03,000.00
3	HSR	33.12	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	cum	4.8	1164.00	5,622.12
4	HSR	33.13	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	cum	4.8	1164.00	5,622.12
5	HSR	33.14	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer -in-charge.	cum	4.8	1164.00	5,622.12
6	HSR	33.15	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	cum	4.8	1306.00	6,307.98

7	HSR	33.19	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire &labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	Hrs	24.00	1153.00	27,672.00
8	HSR	33.16.2	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:				
(a)		33.16.2	150 mm dia	each	2.0	205.00	410.00
9	HSR	33.17	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.				
(a)		33.17.2	150 mm clamp	each	2.0	1334.00	2,668.00
10	HSR	33.18	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).				
(a)	HSR	33.18.2	150 mm dia	each	2.0	264.00	528.00
11	HSR	22.201.3	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality: H D - 20				
12	HSR	22.201.3.1	Circular shape 560 mm internal diameter (H D - 20)	each	1.0	1224.00	1,224.00
			SH-1: E A R T H W O R K				

13	HSR	4.12.1	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge. All kinds of soil	Cum	78.45	87.00	6,825.15
			SH-2: C O N C R E T E W O R K				
15	HSR	6.1.4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size)	Cum	1.58	3,260.00	5,134.50
			SH-3: REINFORCED CEMENT CONCRETE				
16	HSR	6.29	Centering and shuttering including strutting, propping etc. and removal of form work for :				
	HSR	6.29.1	Foundations, footings, bases for columns	Sqm	16.47	174.00	2,865.78
17	HSR	6.29.2	Retaining walls, return walls, walls (any thickness) including attached pilasters, buttresses, plinth and string courses fillets, kerbs and steps etc.	Sqm	138.80	316.00	43,860.80
18		6.33	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				-
	HSR	6.33.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	2,431.00	68.00	1,65,308.00
							-

19		6.2	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor four level, excluding the cost of centering, shuttering and finishing:				-
		6.2.1	1:1½:3 (1 cement : 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	22.10	4,459.00	98,543.90
			GROSS TOTAL				**5,49,854.47**
			TOTAL FOR PHE WORKS (PLUMBING) &				**14,77,275.47**

NAME OF PROJECT :- PPC HAFED			
SUMMARY OF COST FOR FIRE FIGHTING WORK			
S. No.	**DESCRIPTION**	**MR Amount (Rs.)**	**In Electrical scope**
1	SUB HEAD - I - (PUMPING EQUIPMENTS)		
2	SUB HEAD - II - (HYDRANTS SYSTEM)		
3	SUB HEAD - III - (PIPING, VALVES AND ACCESSORIES)		
4	SUB HEAD - IV - (FIRE EXTINGUISHERS)		
5	SUB HEAD - V - (MOTOR CONTROL PANELS)		
6	SUB HEAD -VI - (SPRINKLERS ACCESSORIES)		
7	APPROVALS		
	TOTAL		

NAME OF PROJECT :- PPC HAFED

DETAILED ESTIMATE FOR FIRE FIGHTING EQUIPMENT , RING

Item No		Description Of Item	Qty.	Unit	Rate (Rs)	Amount (Rs)
		SUB HEAD - I - (PUMPING EQUIPMENTS)				
	DSR _AOR2019	**FIRE FIGHTING SYSTEM**				
1	1	**Fire Pumps and Accessories**				
		Supplying, installation, testing and commissioning of Electric driven Main Fire Pump suitable for automatic operation and consisting of following, complete in all respects, as required :				
	a)	Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520.				
	b)	Suitable HP Squirrel cage induction motor, TEFC, synchronous speed 1500 RPM, suitable for operation on 415 volts, 3 phase 50 Hz, AC supply with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.				
	c)	M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.				
	d)	Suitable cement concrete foundation duly plastered with anti vibration pads.				
	1.8	1620 lpm at 70 m Head	1	Set	330204.00	330204.00
		Note: Contractor shall include in his rates for providing pressure switches, pressure guages, wiring, cabling from pressure switch to panel etc. complete as required to operate the system automatic/manual. Pump shall be protected against running dry.				
2	DSR _AOR 2019 / 2	Supplying, Installation, Testing and Commissioning of **diesel engine driven main fire pumping set** complete in all respect as required suitable for automatic operation and consisting of following:				
		Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520.				

		Suitable HP, 1500 RPM water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12 /24 volts electric starting equipment, diesel tank, exhaust pipe extended upto 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required.				
		M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required				
		Suitable cement concrete foundation duly plastered and with anti vibration pads.				
	2.8	1620 lpm at 70 m Head	1	Set	590426.00	5,90,426.00
		Note: Contractor shall include in his rates for providing pressure switches, pressure guages, wiring, cabling from pressure switch to panel etc. complete as required to operate the system automatic/manual. Pump shall be protected against running dry.				
3	DSR _AOR 2019 / 3	Supplying, installation, testing and commissioning of electric driven pressurisation pump suitable for automatic operation and consisting of following, complete in all respects, as required : (Jockey Pump)				
		Horizontal type, multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS : 1520.				
		Suitable HP squirell cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz AC supply with IP 55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS : 325.				
		M.S.fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.				
		Suitable cement concrete foundation duly plastered and with anti vibration pads.				
	3.2	180 lpm at 70 m Head	1	Set	102391.00	1,02,391.00
		Note: Contractor shall include in his rates for providing pressure switches, pressure guages, wiring, cabling from pressure switch to panel etc. complete as required to operate the system automatic/manual. Pump shall be protected against running dry.				

		TOTAL				**1069350.00**
		SUB HEAD - II - (HYDRANTS SYSTEM)				
9	DSR_AOR_2019/ 23	Providing & fixing flow switch in following sizes M.S. pipe including connection etc as required				
	23.1	100 mm Dia	4	Each	7362	29,448.00
	23.2	150 mm. Dia	1	Each	8869	8,869.00
	DSR_AOR_2019/ 7	Providing, laying, testing & commissioning of **'C' class heavy duty MS Pipe** conforming to IS 3589 and 1239 including fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc., fixing the pipe on the wall/ceiling with suitable clamps and painting with two or more coats of synthetic enamel paint over one or two coat of primer of required shade complete as required. **(For Sprinkler system)**				
	a)	25 mm dia (Nominal Bore)	300	RM	471	1,41,300.00
	b)	32 mm dia (Nominal Bore)	50	RM	527	26,350.00
	c)	40 mm dia (Nominal Bore)	50	RM	651	32,550.00
	d)	50 mm dia (Nominal Bore)	50	RM	787	39,350.00
	e)	65 mm dia (Nominal Bore)	50	RM	1004	50,200.00
	f)	80 mm dia (Nominal Bore)	50	RM	1122	56,100.00
50	g)	100 mm dia (Nominal Bore)	50	RM	1499	74,950.00
	5.0	Providing and applying two coat of 4 mm thick 'PYPKOTE' antirust protection including primer and lap of 25 mm on M.S. pipe in trenches or complete including surface preparation coating and wrapping shall be confirm to ISI 10221 including conducting required Test.				
	b)	80 mm dia	20	RM	200	4000.00

	c)	100 mm dia	10	RM	220	2200.00
	d)	150 mm dia	20	RM	300	6000.00
		TOTAL				**566783.00**
		SUB HEAD - III - (PIPING, VALVES AND ACCESSORIES)				
		SLTC of M.S. pipe on surface				
1.	DSR_AOR_2019/ 6	Providing laying, testing & commissioning of 'C' class heavy duty MS Pipe conforming to IS 1239 / 3589 i/ cfittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. in ground including welding, excavation & providing cement concrete blocks as supports, anticorrosive treatment with coaltar /as phalttape as per IS 10221, refilling the trench etc. of following sizes complete as required.				
1.3	6.1	200 mm. dia (wall thickness = 6.3 mm)	5	Metre	3169.00	15,845.00
1.4	6.2	150 mm dia	428	Metre	2376.00	10,16,928.00
3	DSR_AOR_2019/ 11	Providing, Fixing , testing and commissioning of butterfly valve of rating PN 1.6 with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets, conforming to I.S:13095 of following sizes as required.				
3.1	11.6	150mm dia	1	Each	8699.00	8,699.00
3.2	11.5	100mm dia	6	Each	6454.00	38,724.00
3.3	11.4	80mm dia	1	Each	4842.00	4,842.00
4	DSR_AOR_2019/ 14	Providing, installation, testing and commissioning of dual plate **non-return valve of following sizes** confirming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc. as required.				
4.1		100 mm dia	2	Each	10836	21,672.00

6	DSR_AOR_2019/ 13	Supplying andfixing orifice plate made out of 6 mm thick stainless steel (Grade 304) with orifice of required size to be fitted between flange& landing valve of external and internal hydrant store duce pressure at the out let to the level of 3.5 kg / cm 2 complete as required.	4	Each	1291.00	5,164.00
7	DSR_AOR_2019/ 22	Providing & fixing of pressure switch in M.S. Pipe line including connection etc. as required	4	Each	1508.00	6,032.00
8	DSR_AOR_2019/ 15	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricate d out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with stainless steel flange.				
8.1		150 mm dia	2	Each	10659.00	21,318.00
10	DSR_AOR_2019/ 12	Supplying, fixing, testing & commissioning of double flanged sluice valve of rating PN 1.6 with non rising spindle, bronze/ gun metal seat, ISI marked complete with nuts, bolts, washers, gasket sand conforming to IS 780 of following sizes as required :				
10.1		65 mm dia	1	Each	9084.00	9,084.00
10.2		80 mm dia	1	Each	10549.00	10,549.00
10.3		150 mm dia	2	Each	22550.00	45,100.00
12	DSR_AOR_2019/ 16	Supplying and fixing 63 mm dia, 15 mtr. long **RRL hose pipe** with 63 mm dia Male and Female SS couplings duly binded with GI wire, rivets etc. coforming to IS 636 (type-A) as required.				
	16.1	Gun Metal	4	Each	5188	20,752.00
E		**SUB HEAD - V - (MOTOR CONTROL PANELS)**				
1		**Control Panel**				

	DSR_ AOR 2019/ 5	Fabrication, Supplying, Installation, Testing and Commissioning of **electrical control panel** of cubical construction, floor mounted type, fabricated out of 2mm. Thick CRCA sheet, compartmentalised with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, inter-connection, having switchgears and accessories mounting and internal wiring, earth terminals, numbering etc. complete in all respect, suitable for operation on 415 V, 3 phase, 50 Hz. AC supply with enclosure protection class IP 42 as required.				
	5.6	**COMMON PANEL IN FIRE PUMP HOUSE**				
		250A, 50kA 4 Pole MCCB, Ics=100% Icu rating				
		Digital Voltmeter 0-500V with selector switch				
		Digital Ammeter (0-250 A) with selector swtich& CTs				
		LED type RYB phase indicating lamps, ON, OFF, trip				
		indicating lamps				
		Set of Copper Bus Bar 300A				
i)		**OUTGOING (Note : All outgoing feeders for pumps should have digital Ammeter with selector switches, and LED type ON, OFF, trip indicating lamps)**				
		Main Fire Pump				
ii)		125 A, 50kA TPN MCCB, Ics=100% Icu, with fully automatic Star/Delta starter suitable for 60 HP pump with overload protection, current sensing type single phase preventor complete with all acceessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.				
iii)		**Jockey Pump**				
iv)		63 A, 50kA TPN MCCB, Ics=100% Icu, with suitable HP fully automatic Star/Delta starter with overload protection, current sensing type single phase preventor complete with all acceessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.				
v)		**Diesel Engine Control.**				

vi)		Control for diesel engine comprising - Automatic/Manual selctor switch & 3 attempts starting device, timers and relays as required, push buttons, start/stop in manual mode Indicating lamp for high/ Low Lub. Oil pressure, High Water Temp and Engine on indication Battery charger suitbale for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC volt meter, and 0-20 A DC Ammeter All standard relays and accessories for automatic **operation of diesel engine** **System Controller** Designing, Supply, Installation, Testing and commissioning of system controller to control operation of main electric fire pump, diesel pump, Pressurization pump, Terrace pump in sequence as per specification consisting of relays, timers. Sensors, annunciation window for fault indication, complete as per specification				
		Fire panel as above	1	Set	5,75,711.00	575711.00
		TOTAL				**575711.00**
		SUB HEAD-VI (SPRINKLERS ACCESSORIES)				
1	DSR_AOR_2019/ 21	Providing fixing testing and commissioning of 15 mm size **quartzoid bulb type sprinklers,** of rating 68 degree C. pendent with required accessories				
	21.1	Pendent Sprinkler	340	Nos	484.00	1,64,560.00

PPC HAFED TANK ESTIMATE	

					CIVIL WORK	
S. No	**HSR**	**Description of Items**	**Unit**	**Rate**	**Qty.**	**Amount**
						In Figure
1		**SH-1: E A R T H W O R K**				
1	4.12.1	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge. All kinds of soil	Cum	87.00	104.72	9,110.64
2		**SH-2: C O N C R E T E W O R K**				
	6.1.4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level				
1		1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size)	Cum	3,260.00	4.28	13,946.28
3		**SH-3: REINFORCED CEMENT CONCRETE**				
		Centering and shuttering including strutting, propping etc. and removal of form for :				
1	6.29.1	Centering and shuttering including strutting, propping etc. and removal of form work for : **Foundations, footings, bases for columns**	sqm	174.00	110.00	19,140.00
2	6.29.2	Centering and shuttering including strutting, propping etc. and removal of form work for : **Retaining walls, return walls, walls (any thickness) including attached pilasters, buttresses, plinth and string courses fillets, kerbs and steps etc.**	Sqm	316.00	220.00	69,520.00

3		Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth & above plinth level.				
(a)	6.33.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. : **Thermo-Mechanically Treated bars of grade Fe-500D or more.**	QTL	68.00	2,728.00	1,85,504.00
4	6.25.1 + 6.26.1	Providing and laying in position machine batched and machine mixed design mix M-30 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works upto plinth lvl. (Note :- Cement content considered in this item is @ 330 kg/cum. Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix).	cum	4,999.00	24.80	1,23,975.20
	6.26.1	Providing M-30 grade concrete instead of M-25 grade BMC/ RMC. (Note:- Cement content considered in M-30 is @	cum	66.00	24.80	1,636.80
5		**SH-8: FINISHING WORK**				
1	11.6.1	15 mm cement plaster on the rough side of single or half brick wall of mix : **1:4 (1 cement: 4 fine sand)**	Sqm	114.00	80.00	9,120.00

	11.58	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	sqm	603.00	220.00	1,32,660.00
	22.200.3	Supplying and fixing C.I. cover without frame for manholes : 560 mm diameter C.I. cover (heavy duty) the weight of the cover to be not less than 108 kg	Nos	1,216.00	2.00	2,432.00
		Total				**6,01,072.92**

Non-Scheduled items:

Sr No	Source of Item	Item description	Qty.	UoM
5	**MR**	Fabricating, Supplying, Installation, Testing and Commissioning **Air Vessel** of continuous welded construction with flanged discharge header on the top of each riser fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve complete with suitable drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes:		
5.1		1.2 Meter high and 250 mm dia.	1	Each
6	**MR**	Fabricating, Supplying, Installation, Testing and Commissioning **Air Vessel** of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes:		
6.1		2 Meter high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump	1	Each
7	**MR**	Supply, Installation, testing and commissioning of pressure switches for Hydrant / Diesel Engine Driven Pump / Jockey Pumps, diaphragm type, adjustable range from 0-9 bar and a regulation range of 0.1 1.5 bar direct mounted SNAP acting type made from die cast aluminium with epoxy powder coated finish and SS316 diaphragm and other wetted parts, including necessary wiring upto control panel & other materials as required as per specifications.	3	Each
Water Proofing				

1	NS	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3 mm thick water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ litre and viscocity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc, and preparing the surface complete. The membrane parameter : Joint strength in longitudinal and transverse direction at 23°C as 650/ 450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147 : 3 mm thick.	sqm	425.35	
2	MR	Providing & fixing 25mm dia. UL listed gunmetal inspector test and drain valve with integral sight glass connected to drain line complete in all respects.	Nos	20	
3	MR	Providing and fixing electrically operated flow indicating switches model System Sensor in sprinkler branch line on each floor with necessary junction box installed in accessible place (Wiring from switches to panel and stair case pressurization not included)			
a.		100/65/50 mm dia.	20	Nos	
4	MR	Providing and fixing gunmetal installation valve with turbine type automatic alarm to be connected with control valve , drain valve, test valve and piping as per manufacturer's specifications complete in all respects.			
a.		150 mm dia.	4	Nos	
5	MR	Providing and fixing UL/Fm listed powder coated finish Escutcheon plate complete including fixing in position on pipe and ceiling complete in all respects. (Size=15NB)	50	Each	

6	MR	Providing and fixing UL/Fm listed SS braided flexible pipe with accessories complete with all accessories specified in technical specifications(Size=15B)			
		a. 780mm long	10	Each	
		b. 1000mm long	10	Each	
		APPROVALS			
7	MR	Providing NOC/approvals from statutory authorities including preparation of shop drawings, approval drawings, report etc as may be required for approval.	1	LS	
13	MR	Providing and fixing weather proof lockable cabinet of size not less than 0.9 x 0.6 x 0.5 mtr made out of MS sheet 2mm thick having central opening and 6 mm thick glazed glass doors (Two nos.) suitably marked on the outside with the letters "FIRE HOSE" including necessary locking arrangement and shall be painted with one coat of primer and two coats of synthetic enamel paint of approved shade as required as per specifications.	2	Each	
14	MR	Supply, Installation, Testing and Commissioning External Yard Hydrant Stand Post comprising of MS pipe 80 mm dia (heavy duty C class) from existing ring main to about 1 meter above ground level and Single Headed Yard Hydrant Valve with 80 mm dia flanged inlet, instantaneous SS coupling of 63 mm dia with cast iron wheel ISI marked, conforming to IS : 5290 (Type A), with ABS cap and chain etc. complete with all accessories as required.	4	Each	
1	MR	Supply, installation, testing and commissioning of ISI marked (IS:15638) portable chemical fire extinguisher, water (gas pressure) type capacity 9 litres with gun metal cap and nozzle and complete in all respects including initial fill and wall suspension brackets as required as per specifications.	4	Each	

2	MR	Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224 mark internal discharge tube, 1 meter long high pressure discharge hose, non-conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed.			
2.1		4.5kg capacity cylinder	4	Each	
3	MR	ABC type extinguisher with cylinder fully charged with 4 Kg. capacity.	4	Each	
5	MR	Providing, Installation, Testing and Commissioning of Gun Metal / Bronze Ball Valves with brass body chrome plated of following sizes as required.			
5.1		50 mm dia	2	Each	
5.2		40 mm dia	2	Each	
9	MR	Supplying and Fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926	4	Each	
10	MR	Supplying and fixing 4 way 63 mm instantaneous Fire Brigade Inlet Connection (FBIC) comprising of gunmetal body and gunmetal instantaneous male inlet coupling confirming to IS:904 with plug and cap with chain as required with nuts & bolts and high pressure rubber gasket, suitable for 150 mm dia MS pipe connection etc. complete as required.	1	Each	
4	MR	Supplying and Fixing First Aid Hose Reel, wall mounting swinging type complete with drum & bracket of MS construction, spray painted in Post office Red, confirming to IS 884/1995 with upto date amendments, complete with the following as required.			
(a)		36 Meter long 20 mm dia water hose Thermoplastic (Textile reinforced) Type - 2 as per IS : 12585			
(b)		25 mm dia ball valve & nozzle.			
(c)		Drum and brackets for fixing the equipments on wall.			

(d)		Connection from riser with stop valve (gun metal) & M.S. Pipe	4	Each	
5	MR	SITC weather proof M.S cabinet size 1200 mm x 2100 mm x 600mm			
		Supplying, installation, testing and commissioning of weather proof M.S cabinet size 1200 mm x 2100 mm x 600mm deep fabricated from 1.6mm thick M.S. sheets and M.S angle 40mmx40mmx6mm complete with glass, locking arrangements to accommodate the following: -			
a)		Gunmetal single headed Hydrant valve - 1 No.			
b)		Fire Hoses 63mm, 15 M long with accessories - 2 Nos.			
c)		Short branch - 1 No.			
d)		First Aid hose Reel - 1 No.			
e)		Fire Extinguisher - 2 Nos.			
f)		Fireman's Axe - 1 No.			
g)		Pressure Gauge - 1 No.			
		The cabinet shall be painted with one coat of primer and 2 coats of synthetic enamel paint of approved shade.	4	Each	
6	**MR**	Providing and fixing **single gunmetal suction collecting head** as per IS: 904-1983, hose coupling (draw out connection) with female outlet as per 903 complete with 150 mm dia. G.I. Suction pipe (with puddle flange) with a foot valve with strainer complete as per drawings.	1	Each	
1	**MR**	Supplying and fixing **Single Headed Internal Hydrant Valve** oblique patternwith instantaneous Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked, conforming to IS : 5290 (Type A), with 80 mm dia flanged inlet, with ABS cap and chain complete with all accessories etc. as required.	4	Each	
2	**MR**	Supply, Installation, Testing and Commissioning of 100% synthetic **flax canvas** Non-percolating FIRE hose (Type A), I.S.I marked 63mm dia x 15m long with stainless steel male & female couplings (ISI marked) bound & riveted to hose pipes with copper rivets and copper wire as required.	4	Each	