

HSCC (INDIA) LIMITED
 (A Subsidiary of NBCC (India) Limited)
 (A GOVERNMENT OF INDIA ENTERPRISE)

Dated: 31.01.2020

AMENDMENT No.- I

Project Name: Tender for “Construction of Hospital, Academic Block, Residential Campus and Allied Buildings, etc. and their Maintenance during Defect Liability Period on Comprehensive Design, Engineering, Procurement and Construction (EPC) basis for AIIMS, Rajkot”

Tender No. HSCC/AIIMS/Rajkot/EPC/2020 dated 17.01.2020

This has reference to subject work, the following Amendment may be noted, which shall be treated as a part of the contract to be uploaded along with tender/ bid:

(1) Clause No. 2.0. “Minimum Eligibility Criteria” of Vol. I (NIT / PQ) is amended as follows:

<u>As per existing provision</u>	<u>As per Amendment</u>
<p>2.0 Minimum Eligibility Criteria: The interested bidders should meet the following minimum qualifying criteria:</p> <p>A. Work Experience:</p> <p>i) Should have satisfactorily completed the following works in India during Seven (7) years ending previous day of last date of submission of tenders:</p> <p>a. Three *Similar Works each costing not less than</p>	<p>2.0 Minimum Eligibility Criteria: The interested bidders should meet the following minimum qualifying criteria:</p> <p>A. Work Experience:</p> <p>i) (I) Should have satisfactorily completed the following works in India during Seven (7) years ending previous day of last date of submission of tenders:</p> <p>a. Three *Similar Works each costing not less than 40% of the estimated cost put to tender, i.e.</p>

<p>40% of the estimated cost put to tender, i.e. Rs.301.20 crores</p> <p style="text-align: center;">OR</p> <p>b. Two *Similar Works each costing not less than 60% of the estimated cost put to tender, i.e., Rs.451.80 crores</p> <p style="text-align: center;">OR</p> <p>c. One *Similar Work costing not less than 80% of the estimated cost put to tender, i.e., Rs.602.40 crores</p> <p>* “Similar Work” shall mean construction of Non Industrial building Project(s) comprising Construction of a multistoried RCC framed structure having minimum Five Storeys (machine room and mumty shall not be counted as a storey) including finishing works, water supply, drainage & sanitary installations, electrical works, Firefighting, Lifts and Centralized HVAC all composite executed under one agreement..</p> <p style="text-align: center;">AND</p> <p>Should have satisfactorily completed one Super-Speciality/Multi-Speciality Allopathic Hospital Project of minimum 500 beds comprising construction of RCC framed structure including finishing works, water supply and sanitary installations, electrical works, firefighting, Centralized HVAC, Modular OT, MGPS all composite executed under one agreement. In case any of the qualifying similar work(s) given above also fulfills the criteria given herein, then the criteria given herein need</p>	<p>Rs.301.20 crores</p> <p style="text-align: center;">OR</p> <p>b. Two *Similar Works each costing not less than 60% of the estimated cost put to tender, i.e., Rs.451.80 crores</p> <p style="text-align: center;">OR</p> <p>c. One *Similar Work costing not less than 80% of the estimated cost put to tender, i.e., Rs.602.40 crores</p> <p>* “Similar Work” for building works shall mean “Residential/ Non-Residential buildings of any no. of storeys”.</p> <p style="text-align: center;">AND</p> <p>(II) One work (either part of (I) above or a separate one) costing not less than 40% of estimated cost of Project comprising “Construction of any multistoried RCC framed structure minimum five storeys (Machine room and mumty shall not be counted as a storey) including finishing works, internal water supply, sanitary installations & internal electrical installations, fire fighting and Centralized HVAC works all executed under one composite agreement.</p> <p style="text-align: center;">AND</p> <p>(III) The bidder should have successfully completed one work (either part of (I) or (II) above or a separate one) as mentioned below during the last 7 years ending previous day of last date of submission of tenders:</p> <p>“Hospital Project of minimum capacity of 500 beds”</p>
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<p>not be separately required to be fulfilled. Additionally, in case any of the qualifying similar work(s) given at (i) above also fulfills the criteria given herein, then the criteria given herein need not be separately required to be fulfilled.</p>	
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(2) Clause No. 17 A. ii) of Vol. III (SCC) is amended as follows:

<u>As per existing provision</u>	<u>As per Amendment</u>
<p>ii) The Contractor shall base its claim for interim payment for the work executed till the end of the month for which the payment is claimed, supported with necessary particulars and documents in accordance with this Agreement. The basis of payment on "Pro rata basis" shall be worked out on the percentage of work done of total scope of work under their activity/item for the respective Cost Centre/Stage payment schedule. The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than Rs.18 crores, in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved.</p>	<p>ii) The Contractor shall base its claim for interim payment for the work executed till the end of the month for which the payment is claimed, supported with necessary particulars and documents in accordance with this Agreement. The basis of payment on "Pro rata basis" shall be worked out on the percentage of work done of total scope of work under their activity/item for the respective Cost Centre/Stage payment schedule. The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than (a) Rs.5 Crores for 1st three R/A Bills and (b) Rs.18 crores for all intermediate bills (except 1st three R/A Bills and the final Bill), in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved.</p>

(3) The bidder may note that the table given in Clause No. 16 of Vol. III (SCC) is amended as follows:

S.No.	Milestone/Activity to be completed	Time allowed in months (from date of start)	Amount to be withhold from non achieving of each milestone (% of total awarded value)
1.	Submission of GFC drawings duly vetted by HSCC appointed consultant and proof checked by an institution approved by HSCC.	2 months	0.25%
2.	Substantial completion of RCC work upto plinth level for buildings of the Residential Campus and Academic Block	4 months	0.125%
3.	Substantial completion of RCC work upto plinth level for Hospital	6 months	0.125%
4.	Substantial Completion of RCC works upto Floor level 4 for all buildings of the Residential Campus and Academic Block	7 months	0.125%
5.	Substantial Completion of Civil Works for Services Buildings including AC Plant, Substation, etc	9 months	0.25%
6.	Completion of Civil Works of Underground Tank (UGT) and Sewage Treatment Plant (STP)	9 months	0.25%
7.	Preparation of Sample Toilet.	9 Months	0.25%
8.	Substantial Completion of RCC works upto Floor level 4 of Hospital	10 months	0.25%
9.	Substantial Completion of all RCC works upto Terrace level including mummy & machine room etc. and Brickwork upto Floor Level 4 for all buildings of the Residential Campus (except Type II quarters) and Academic Block .	11 months	0.25%
10.	Substantial Completion of Director Bungalow, Ayush Building, Night Shelter (Dharamshala) including services required to make them operational.	12 months	0.375%
11.	Substantial Completion of Road network and external Development works	12 Months	0.25%
12.	Substantial Completion of all RCC works upto Terrace level including mummy & machine room etc. and Brickwork upto Floor Level 5 of Hospital	14 months	0.25%
13.	Substantial Completion of all brick work & all Internal plaster, fixing of doors & Windows frames, flooring, all Sanitary Piping, Internal Plumbing, Piping & Electrical wiring and HVAC ducting works for all buildings of the Residential Campus (except Type 2 quarters) and Academic Block	14 Months	0.25%
14.	Substantial Completion of OPD (Out Patient Department) including services required to make them operational.	15 months	0.50%
15.	Substantial Completion of all works of Residential Campus and Hostels in all respects including internal/external including all civil, electrical and HVAC works, External development works, etc.	15 Months	0.25%
16.	Completion of all works of Academic Block (Medical College) in all respects including internal/external including all civil, electrical and HVAC works, External development works.	16 Months	0.50%
17.	Substantial Completion of all brick work & all Internal plaster, fixing of doors & Windows frames, flooring, Sanitary Piping, Internal Plumbing, Piping & Electrical wiring and HVAC ducting works of Hospital.	18 Months	0.25%
18.	Completion of all works in all respects including internal/external including all civil, electrical and HVAC works, External development works.	20 Months	0.50%

(4) The following Clause is added to the Volume III – SCC

“25. ARBITRATION

Except where otherwise provided in the contract, all disputes and claims relating to the meaning of the specifications, designs, drawings and instructions here- in- before mentioned and as to the quality of workmanship or materials used in the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the work or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned here-in-after.

If the Contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer-in-Charge on any matter in connection with or arising out of the contract or carrying out of the work to be unacceptable, he shall promptly within 15 days request the HSCC CGM Incharge of the work in writing for written instructions or decision.

Thereupon, the HSCC CGM Incharge of the work shall give his written instructions or decision within a period of one month from the receipt of the Contractor’s letter. If the HSCC CGM Incharge of the work fails to give his decision within the aforesaid period, or if any party is dissatisfied with the decision of the HSCC CGM Incharge of the work, then either party may within a period of 30 days from the receipt of the decision of the HSCC CGM Incharge of the work or from the last date prescribed above for the HSCC CGM Incharge of the work to give his decision if he delays or fails to give his decision, give notice to the HSCC CGM Incharge of the work for appointment of an arbitral tribunal on the proforma attached herewith, failing which the said decision shall be final, binding and conclusive, and not referable to adjudication by arbitration.

It is a term of contract that each party invoking arbitration must exhaust the aforesaid mechanism of settlement of disputes prior to invoking arbitration. Except where the decision has become final, binding and conclusive in terms of sub-para (i) above, disputes shall be referred for adjudication through arbitration by an arbitral tribunal.

The arbitral tribunal shall consist of three arbitrators chosen from a panel of seven arbitrators prepared by the HSCC CGM Incharge of the work. The panel will comprise of engineers retired from any government service from a position not below the level of Joint Secretary to the Government of India and having experience in the field of arbitration in construction contracts.

The HSCC CGM Incharge of the work shall within 30 days from the receipt of a request on prescribed proforma from either party for appointment of arbitral tribunal, shall appoint one arbitrator from the panel of seven arbitrators while one arbitrator from the panel of seven arbitrators shall be appointed by the Contractor. The two appointed arbitrators shall appoint the third arbitrator from the same panel, who shall

act as the presiding arbitrator.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the HSCC CGM Incharge of the work.

The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 (26 of 1996) or any statutory modifications or re- enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

It is also a term of this contract that the arbitral tribunal shall adjudicate on only such disputes as are referred to it by the appointing authority and give separate award against each dispute and claim referred to it and, in all cases, where the total amount of the claims by any party exceeds Rs.1,00,000/- the arbitral tribunal shall give reasons for the award.

The fees of the arbitral tribunal and the manner of its payment shall be determined by the arbitral tribunal after taking into consideration the rates specified in the Fourth Schedule of the Arbitration and Conciliation Act, 1996.

The seat of Arbitration shall be New Delhi.”

- (5) The bidders may note that the work includes a number of specialized Civil/Electrical/Mechanical/Electronic Engineering services, Medical Gas Pipeline System, Modular Operation Theatres etc. which are to be executed as integral part of the project by engaging specialized agencies after approval by the Engineer-in charge.
- (6) Reply to Pre Bid Queries raised by bidders during pre -bid meeting held on 27.01.2020 at HSCC, Head Office, Noida are attached at **Annexure – A**.
- (7) The Amended Quoting Sheet for the Bidder (BOQ) has been uploaded on HSCC e-tender portal <http://www.tenderwizard.com/HSCC>. **The Bidders are advised to quote in “Amended Quoting Sheet for the Bidder (BOQ)” only.**

All other terms & Conditions of the Tender shall remain unchanged.

Prospective bidders are advised to regularly scan through HSCC e-tender portal <http://www.tenderwizard.com/HSCC> & HSCC website <http://www.hsccltd.co.in> as corrigendum/amendments etc., if any, will be notified on this portal only and separate advertisement will not be made for this.

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DGM (Projects),
HSCC (India) Ltd.

Project Name : Tender for “Construction of Hospital, Academic Block, Residential Campus and Allied Buildings, etc. and their Maintenance during Defect Liability Period on Comprehensive Design, Engineering, Procurement and Construction (EPC) basis for AIIMS, Rajkot”

(A) Reply to Pre Bid Queries raised by bidders during pre -bid meeting held on 27.01.2020 at HSCC, Head Office, Noida

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
1	Scope of Work & Design Basis report	7. Contractor warranty of Design, Page 7 of 13	d) The contractor Warrants that the Works will, when completed, comply with enactments and regulations relevant to the works.	Request you to kindly rephrase the clause as below: “ The contractor Warrants that the Works will, when completed, comply with enactments and regulations prevailing before the date of Submission of tender relevant to the works”	No change, tender condition prevail(s)
2	Scope of Work & Design Basis report	27. Disposal of Surplus excavated earth/Spoils, Page 11 of 12	.....The Contractor shall also be deemed to have taken into account the credit to be given to HSCC in his quoted price for such surplus earth obtained free of cost.....	Based on a discussion with vendors we understand that there may not possibility of providing credit for the surplus earth. Hence, request you to kindly waive off this clause.	No change, tender condition prevail(s)
3	Scope of Work & Design Basis report	8. Project Management-Building Information Modelling (BIM), Page 8 of 12	9. The Contractor shall prepare phase wise (monthly) resource chart (materials, manpower and machinery) based on the project execution schedule linked to the 3D model through 5D simulation and update the same on monthly basis.	on going through the Requirement, the bidder understands that the 4D simulation is required for the project in place of 5D simulation. Kindly confirm.	No change, tender condition prevail(s)
4		Use of Crusher Sand		Please confirm, if Curusher sand shall be utilised for all Concreting works in the project.	As per CPWD Specification only
5		Fly ash utilization		Please confirm, if partial Replacement of Fly ash against Cement is allowed for Concreting works	As per CPWD Specification only
6	Scope of Work & Design Basis report	Form Finish	External façade has got fair finish concrete element and surfaces, which has to be done using aluminium formwork. GRC panel can also be used if fair finish not achieved satisfactorily.	Please confirm, if Alternate system shall be used in place of Aluminium formwork to achieve Form finish	As per CPWD Specification only
7		Active Harmonic Filter	Should have 3 level topology. AHF Shall have 3 level topology (12 IGBTs) to ensure low losses & higher quality voltage output (tripple should be very low).	All the approved OEMs are not offering for 3 Level topology. Hence please confirm shall we consider 2 Level topology as per approved OEMs offering.	standard design of manufacturer is acceptable.
8		Main LT, MV & FLOOR PANELS	Apparatus forming part of the Main/Sub Panels shall have the following minimum clearances. i. Between phases - 32 mm ii. Between phases and neutral - 26 mm iii. Between phases and earth - 26 mm iv. Between neutral and earth - 26 mm	Minimum Clearances between busbars shall be offered as per approved OEMs type tested design.	Minimum clearance as mentioned in the tender is for Sub Panels. However for the main panel as per IEC 61439 proposed clearance is acceptable.
9		AIR CIRCUIT BREAKERS	Auxiliary contacts 6 NO + 6 NC, of rating 16Amp at 415 volts 50Hz.	No of auxiliary contacts provided in breaker shall be considered as per approved OEMs standard offering.	shall be as per tender conditions.
10		Drives	List of Approved Makes for Variable Frequency Drive	Request to kindly include the following additional make in the list of approved maks for VFDs. 1. L&T	shall be as per tender conditions.
11	GCC	PROFORMA OF BANK GUARANTEE (PERFORMANCE), Page 121	(i) This guarantee shall be a continuing guarantee and irrevocable for all claims of HSCC as specified above and shall be valid during the period specified for the performance of the contract.	Request you to Rephrase as follows: Request to rephrase the clause as follows. “(i) This guarantee shall be a continuing guarantee during its currency and irrevocable for all claims of HSCC as specified above and shall be valid during the period specified for the performance of the contract or until (expiry date) whichever is earlier.”	No change. Shall be as per tender conditions
12	GCC	PROFORMA OF BANK GUARANTEE (PERFORMANCE), Page 121	(ii) This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever HSCC may now or at any time have in relation to the performance of the works/equipment and the company shall have full re-course to or enforce this security in performance to any other security or guarantee which the HSCC may have or obtained and there shall be no forbearance on the part of the company in enforcing or requiring enforcement of any other security which shall have the effect of releasing the Bank from its full liability. It shall not be necessary for HSCC to proceed against the said contractor/supplier before proceeding against the Bank.	Request you to Rephrase as follows: (iii) This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever HSCC may now or at any time have in relation to the performance of the works/equipment HSCC shall have full re-course to or enforce this security in performance to any other security or guarantee which the HSCC may have or obtained and there shall be no forbearance on the HSCC in enforcing or requiring enforcement of any other security shall have the effect of releasing the Bank from its liability hereunder. It shall not be necessary for HSCC to proceed against the said contractor/supplier before proceeding against the Bank.	The words ‘Company’ in para (iii) of the format of Performance Bank Guarantee may be read as ‘HSCC’.
13	GCC	PROFORMA OF BANK GUARANTEE (PERFORMANCE), Page 122	(iv) This guarantee/ undertaking shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier/ contractor, but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to HSCC in terms thereof are paid by the Bank.	Request to rephrase the clause as follows. (iv) This guarantee/ undertaking shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier/ contractor, but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to HSCC in terms thereof are paid by the Bank or until (expiry date) whichever is earlier	No change. Shall be as per tender conditions

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
14	GCC	PROFORMA OF BANK GUARANTEE (FOR MOBILIZATION ADVANCE), Page 123		Request to kindly include the following after clause. 1.0 This guarantee shall come into effect when the advance payment referred herein above shall be received by the contractor in his bank account number....with bank....., and once the funds are received, contractor will inform the same to the issuing Bank	No change. Shall be as per tender conditions
15	GCC	PROFORMA OF BANK GUARANTEE (FOR MOBILIZATION ADVANCE), Page 123	2.0. We Bank further agree that HSCC shall be the sole judge of and as to whether the amount claimed has fallen due to HSCC under the said agreement or whether the said Contractor has not utilized the said advance or any part thereof for the purpose of the Contract and the extent of loss or damage caused to or suffered by HSCC on account of the said advance together with interest not being recovered in full and the decision of HSCC that the amount has fallen due from contractor or the said Contractor has not utilized the said advance or any part thereto for the purpose of the contract and as to the amount or amounts of loss or damage caused to or suffered by HSCC shall be final and binding on us.	Request to rephrase the clause as follows. 2.0 We Bank further agree that HSCC shall be the sole judge of and as to whether the amount claimed has fallen due to HSCC under the said agreement or whether the said Contractor has not utilized the said advance or any part thereof for the purpose of the Contract and the extent of loss or damage caused to or suffered by HSCC on account of the said advance not being recovered in full and the decision of HSCC that the amount has fallen due from contractor or the said Contractor has not utilized the said advance or any part thereto for the purpose of the contract and as to the amount or amounts of loss or damage caused to or suffered by HSCC shall be final and binding on us.	No change. Shall be as per tender conditions
16	GCC	PROFORMA OF BANK GUARANTEE (FOR MOBILIZATION ADVANCE), Page 123	We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged and till HSCC certify that the said advance has been fully recovered from the said Contractor, and accordingly discharges this Guarantee subject, however, that HSCC shall have no claims under this Guarantee after the said advance has been fully recovered, unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank	Request to rephrase the clause as follows. We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged however not beyond (expiry date) and till HSCC certify that the said advance has been fully recovered from the said Contractor, and accordingly discharges this Guarantee subject or until (expiry date) whichever is earlier, however, that HSCC shall have no claims under this Guarantee after the said advance has been fully recovered subject or until (expiry date) whichever is earlier, unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.	No change. Shall be as per tender conditions
17	GCC	GCC- PROFORMA OF BANK GUARANTEE (IN LIEU OF SECURITY DEPOSIT), Page 125	.....We,..... (hereinafter called "The Bank") which expression shall include its successors and assigns hereby undertake and guarantee payment to HSCC forthwith on the same day on demand in writing and without protest or demur of any and all moneys payable by the supplier/contractor to HSCC under.....	Request to rephrase the clause as follows. We,..... (hereinafter called "The Bank") which expression shall include its successors and assigns hereby undertake and guarantee payment to HSCC forthwith on demand in writing and without protest or demur of any and all moneys payable by the supplier/contractor to HSCC under,	No change. Shall be as per tender conditions
18	GCC	GCC- PROFORMA OF BANK GUARANTEE (IN LIEU OF SECURITY DEPOSIT), Page 125	1. This Guarantee shall be continuing guarantee and shall remain valid and irrevocable for all claims of HSCC and liabilities of Supplier/Contractor arising upto and until midnight of.....	Request to rephrase the clause as follows. 1. This Guarantee shall be continuing guarantee during its currency and shall remain valid and irrevocable for all claims of HSCC and liabilities of Supplier/Contractor arising upto and until midnight of.....	No change. Shall be as per tender conditions
19	GCC	GCC- PROFORMA OF BANK GUARANTEE (IN LIEU OF SECURITY DEPOSIT), Page 126	4.0 This Guarantee shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier / contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to HSCC in terms thereof.	Request to rephrase the clause as follows. 4. This Guarantee shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier / contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to HSCC in terms thereof or until (expiry date) whichever is earlier.	No change. Shall be as per tender conditions
20	GCC	GCC- PROFORMA OF BANK GUARANTEE (FOR MOBILIZATION ADVANCE WITH INTEREST BEARING), Page 127		Request to kindly include the following after clause.1 paragraph 2. This guarantee shall come into effect when the advance payment referred herein above shall be received by the contractor in his bank account number....with bank....., and once the funds are received, contractor will inform the same to the issuing Bank	No change. Shall be as per tender conditions
21	GCC	GCC- PROFORMA OF BANK GUARANTEE (FOR MOBILIZATION ADVANCE WITH INTEREST BEARING),Page 127	3. We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged and till HSCC certify Contractor, and accordingly discharges this Guarantee subject, however, that HSCC shall have no claims under this Guarantee unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.	3. We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged however not beyond (expiry date) and till HSCC certify Contractor, and accordingly discharges this Guarantee subject or until (expiry date) whichever is earlier, however, that HSCC shall have no claims under this Guarantee unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.	No change. Shall be as per tender conditions
22	General	Arbitration		Considering the nature and volume/value of the job, we request you to kindly include Arbitration clause for dispute resolution. The Arbitration shall be before a three member tribunal with Employer and Contractor appointing one each and both the Arbitrators shall appoint the third arbitrator who shall act as the Presiding Arbitrator in line with Arbitration and Conciliation Act 1996 read with Arbitration and Conciliation (amendment) Act 2015.	Please refer to Amendment No.- 1.

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
23	Scope of works & Design Basis Report (DBR)	Art work, Page 6, Scope of work	II) The total project cost includes 1% for Art work. Art work includes Murals, Sculptures, paintings etc. The work under this head is to be executed through agencies on recommendations of HSCC. In case, the short listed agencies has been directly engaged by HSCC on behalf of contractor then the expenditure amount to 1% of project/ completion cost will be spent & shall be paid and deducted from contractor/ bidder.	As contractor has prior experience of executing these work in the past, the contractor shall be able to execute the same. Hence, request you to kindly waive of this clause.	No change, tender condition prevail(s)
24	Scope of works & Design Basis Report (DBR)	Scope of Works Page No. 12/354	24. Guarantee/Warranty All plant/equipments/machinery installed/commissioned shall be guaranteed or warrantee (as per applicability of guarantee/warranty given in technical specifications for each plant/equipments/machinery) for a period of 24 months (minimum) from the date of acceptance and taking over of the installation by HSCC against unsatisfactory performance and/or breakdown due to defective design, material, manufacture, workmanship or installation.	Being Defect Liability Period is for 12 Months, Guarantee/Warranty shall be considered upto the DLP period only.	No change, tender condition prevail(s)
25	Autocad Drawings			Request you to kindly share the Autocad drawings with the Bidder	PDF drawings have already been uploaded with tender
26	Approved Make list	PHE	Heat Pump - Make are not available	Kindly provide Make for Heat Pump	As per Tender condition
27			STP,ETP,WTP,SYSTEM INTEGRATOR- Make are "Oxibee Solutions, Faith innovations.I2M, Jeo Miller AKSISCO,AMBER Amber"	Kindly provide additional make integrated for STP and WTP	As per Tender condition
28	Scope of works & Design Basis Report (DBR)	Clause :6.0 Irrigation system for lawns and gardens- Page 160 of 354	Gardens and lawns shall be irrigated in combination of Garden Hydrant System and Sprinkler Irrigation System.	Which area to be considered under garden hydrant and sprinkler irrigation system.	As per scope,the design has to be done
29	Scope of works & Design Basis Report (DBR)	Clause 2.0 Concept Planning- Page 163 of 354	Hot Water System for Pantry at academic block, Director Residence, Night Shelter, Guest House, club etc. by Energy Efficient BEE min. 3 star rated Geysers. Hot Water System for Hostels, staff residences by Solar Hot Water System with Electric Back Up.	Hospital and Laundry hot water source is not given . Kindly clarify along with capacity .	As per tender condition/ Laundry equipment specification
30	Scope of works & Design Basis Report (DBR)	Clause 1.4 Storm Water Drainage System & Rainwater Harvesting- Page 155 of 354	Disposal of storm water to rain water Harvesting Pits/ Soak galleries	Kindly provide the Harvesting pit detail and quantity to be followed.	As per By laws under EPC
31	General	EIA		Kindly provide EIA report	EIA approval awaited. Agency has to follow up to obtain EIA approval as per tender condition
32	Scope of works & Design Basis Report (DBR)	Clause 7.3 Effluent Treatment Plant System Clause 2.6.1 Under ground/Overhead Water Storage:-	As per PHE DBR there are 2 No's of STP and 2 No's of WTP /UG Sump indicated.	As per site plan 1no of STP & UG sumps is indicated. Location for other STP&UG sump is required.	Refer Master layout Plan
33	General			Kindly share the power distribution schematic.	As per comprehensive design by EPC contractor based on DBR & Concept drawings
34	Electrical & ELV Design Basis report	2.2, Page no:3	Establishing 66/11 KV Grid Substation by EPC Contractor with 2 X 16 MVA, 66/11 KV Power transformers	Kindly share master plan earmarked with Grid substation location.	Refer tenderdrawing no. M&E/site/01
35	Electrical & ELV Design Basis report	2.2, Page no:3	Establishing 66/11 KV Grid Substation by EPC Contractor with 2 X 16 MVA, 66/11 KV Power transformers	Kindly share the specification for the 66 KV side substation equipments and the power transformer	shall be as per CPWD/NBC/IS/ state electricity rules and fire safety rules of substation.
36	Electrical & ELV Design Basis report	2.2, Page no:3	Establishing 66/11 KV Grid Substation by EPC Contractor with 2 X 16 MVA, 66/11 KV Power transformers	Kindly share the location of the point of entry of 66 KV feeder within the campus premises.	Refer tenderdrawing no. M&E/site/01
37	Electrical & ELV Design Basis report	2.2, Page no:3	Establishing 66/11 KV Grid Substation by EPC Contractor with 2 X 16 MVA, 66/11 KV Power transformers	Kindly share the area required for the 66/11 KV Gridsubstation building the same is not covered in the area statement.	as per requirement by state electricity board and comprehensive Design by EPC contractor. Area is inclusive
38	Electrical & ELV Design Basis report	2.2, Page no:3	11KV HT APFC Panel to be installed to improve the power factor as per requirement /design.	As per the table on page no.4 of Electrical DBR,LT APFC ratings are given which takes care of power factor compensation.Further all the loads are on the LT side and hence HT APFC is not required.Kindly confirm	shall be as per tender conditions.
39	Electrical & ELV Design Basis report	2.2, Page no:3	ESS-2 Location	Kindly share master plan earmarking the location of ESS-2	Refer tenderdrawing no. M&E/site/01
40	Service Building Drawing	EL/SE/01	The space planing of the 5 Nos of Transformers and the associated equipmetns earmarked in the service building. As per the DBR 7 Nos of Transformer and the associated equipments required.	Kindly confirm whether the bidder can modify/increase the service building area to accommodate the equipments as per actual space requirements.	as per actual space requirement /for 7 no. transformers as per DBR.

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
41	Service Building Drawing	EL/SE/01	The space planing of the 5 Nos of Transformers and the associated equipmetns earmarked in the service building. As per the DBR 7 Nos of Transformer and the associated equipments required.	Kindly confirm if additional claim can be made if the area of service building is not adequate to install the Electrical and HVAC equipments inside.	shall be as per tender conditions.
42	Service Building Drawing	EL/SE/01	Diesel Generator	Kindly share the location of DG sets.	Refer tenderdrawing no. M&E/site/01
43	Service Building Drawing	EL/SE/01	Electrical rooms in Buildings	Electrical rooms are not earmarked in the shared floor plans. Kindly share the floor wise Electrical rooms/UPS rooms for the proposed buildings.	As per comprehensive design by EPC contractor based on DBR & Concept drawings
44	Electrical & ELV Design Basis report	2.3.3, Page no:5	All ACB shall be lcs+lcu=lcw=50kA/65kA for 1sec. Depending on transformer rating.	The equipment fault level shall be as per the actual calculation for the proposed power distribution from HT system to LT system. Kindly confirm	shall be as per tender conditions.
45	Electrical & ELV Design Basis report	2.3.6, pagee no:11	HSD (High Speed Diesel) UG Storage Tank	Kindly share master plan earmarking the location of HSD yard	Refer tenderdrawing no. M&E/site/01
46	Electrical & ELV Design Basis report	2.4, pagee no:12	From Main L.T. Panel & D.G Synchronizing Panel to Individual building, breaker rating 1250 Amp and Above shall be distributed through sandwich type aluminium bus duct.	Considering the distance between the substation and buildings,we propose buried underground cables instead of bus duct for power distribution.Kindly confirm	Substation to individual building buried underground cables shall be considered for Power supply accept Hospital block .
47	Electrical & ELV Design Basis report	2.4, pagee no:12	Each floor distribution system shall have Electrical panels with two incomer and Auto transfer switch.	Single point failure is higher in Auto transfer switch. Since two incomer are in floor distribution panels we are using contactor based autochange over system by eliminating the ATS. Kindly confirm.	shall be as per tender.
48	Electrical & ELV Design Basis report	2.4, pagee no:17	iv. d. 6A Plug Point / UPS Computer outlets (up to 3 outlets on one ckt.)	We presume to consider 4 Nos of 6A sockets/ circuit as per NBC/CPWD	shall be as per tender.
49	Electrical & ELV Design Basis report	2.4, pagee no:17	Conduits	Kindly confirm whether PVC conduits shall be used on Concealed areas.	No change, shall be as per tender.
50	Electrical & ELV Design Basis report	2.7.1 pagee no:30	All LED Lighting Fixture shall have luminous efficacy of more than 100 Lumens per watt.	Most of the Light fixtures models are with 80 Lumes / watt. Only few rangs are available with 100 Lumens / watt as per Manufacturer. Kindly confirm wheather the bidder can use the light fixtures as per market availability.	shall be as per tender.
51	Technical Specification	52, Page no:43	Motors and Starters for Fire Pumps: The starters shall be of DOL type.	As per NBC Soft starter/VFD starter shall be used. Kindly confirm.	shall be as per tender and local fire department requirement.
52	Technical Specification	9.5.6, Page no: 53 ,54	1. 5A Plug Wiring: Conduit of power SOCKET wiring can also be used for 5A socket outlet wiring, but both phase and neutral wires shall come directly from switchboard/power socketoutlet. Looping of neutral shall not be done. 2. 15A Power Plug Wiring: Wiring for all 15 A Socket Outlets/Gyser point shall be done with 2X4 sqmm PVC insulated copper wire in suitable size MS Conduit (including supplying and fixing MS Conduit) along with the earth wire as specified in the DBR/Drawings, directly from the MCB-Distribution Board or from one power socket outlet to another in case of computer power points. Looping shall not be done in general 15A power points (other than computer power points).	As per CPWD internal electrification 2013 Class 3.5 page no: 27 Wiring shall be done only by the looping system. Phase/libve conductors shall be looped at the switch box for point wiring, neutral/earth wire looping for the first point shall be done in the switch box and neutral/earth looping of subsequent points will be made from point outlets. Kindly confirm .	shall be as per tender.
53	Scope of works & Design Basis Report (DBR)	2.3.7 SCADA SYSTEM: (For Grid Substation, ESS-1 & ESS-2) Page : 193 / 354	The proposed system shall be compatible for existing system.	Existing System configuration shall be provided for comaptibility checking.	No existing system in SCADA.
54	Scope of works & Design Basis Report (DBR)	2.3.7 SCADA SYSTEM: (For Grid Substation, ESS-1 & ESS-2) Page : 193 / 354	The proposed system shall be compatible for existing system.	Bidder recommends OPC communication protocol for synchronising proposed SCADA with existing SCADA. Please clarify.	No existing system in SCADA.
55	Scope of works & Design Basis Report (DBR)	2. BMS & SCADA DBR, Page 265 / 354	2.2 Scope of Work for BMS & SCADA The proposed BMS & SCADA system will consist of the following: Central control station for monitoring, control and alarm through operator interface station (OIS). Software for building management system and energy management system.	Specification for Server, Operator station / HMI, Network components, FO cable, Cabinets shall be provided.	As per comprehensive design by EPC contractor based on DBR & Concept drawings
56	Scope of works & Design Basis Report (DBR)	2.7 - Internal electrification works,Page no 19 to 29	The electrical points and scale of amenities is provided for Hospital Block,Ayush Block,Hostels and residential blocks	We shall consider the socket outlets as per the prevailing industry standard practice.Kindly confirm	minimum has been provided in tender however more points as per prevailing industry standard practice may be required.

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57	Scope of works & Design Basis Report (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES Page No. 185/354	2.3.1 ESS-1 (NON RESIDENTIAL BUILDINGS) As per projected peak load demand on ESS-1, 7 Nos. Oil type Transformers with On Load Tap Changer of capacity 7 X 2000 KVA (6W+15) are proposed with RTCC Panels. 2.3.2 ESS-2 (RESIDENTIAL BLOCK) As per projected peak load demand on ESS-2, 2 Nos Oil Type Transformers with On Load Tap Changer of capacity 2 X 1000 KVA are proposed with RTCC Panels.	Being 66/11kV Substation is proposed, please confirm whether Distribution transformer shall be provided with OFTC tap links/switch.	shall be as per tender conditions.
58	Scope of works & Design Basis Report (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES Page No. 186/354	2.3.3 SUBSTATION GUIDELINES All Tested Assemblies shall be smart type having switchgears (Incoming and Outgoing - ACB & MCCB) communicating their release data over Ethernet.	All breakers shall be control wired to the PLC within the panel for communicating over ethernet. Please confirm.	shall be as per tender conditions.
59	Scope of works & Design Basis Report (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES Page No. 186/354	2.3.3 SUBSTATION GUIDELINES Main LT panel shall have all metering shall be done through display module being connected to each breaker release mounted on the panel door to achieve more fault tolerant system.	Shall be offered as per approved OEM's standard offerings/recommendations.	shall be as per tender conditions.
60	Scope of works & Design Basis Report (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES Page No. 186/354	2.3.3 SUBSTATION GUIDELINES Maximum allowable transformer losses at 50% & 100% load shall comply to Latest IS 1180 /ECBC and efficiency level as prevalent at the time of supply.	We presume to consider Level-2 losses as per IS 1180. Please confirm.	Level-3 losses as per IS 1180 / ammended upto date
61	Scope of works & Design Basis Report (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES Page No. 186/354	2.3.3 SUBSTATION GUIDELINES All LT Panels shall have 30% spare outgoing feeders for different rating of feeders.	As an Industrial practice we presume to consider 20% spare outgoing feeders in LT Panel Boards.	shall be as per tender conditions.
62	Scope of works & Design Basis Report (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES Page No. 187/354	2.3.3 SUBSTATION GUIDELINES Gas flooding system to be provided in HT/LT Panels as per requirement as per NBC/CPWD.	We presume only HT Panel and Main LT Panel Board in Substation shall be provided with Gas flooding system. Please confirm.	All HT/LT Panels/APFC panels/Sync. Panels etc. in Substation
63	Scope of works & Design Basis Report (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES Page No. 192/354	2.3.6 HSD (High Speed Diesel) UG Storage Tank: The supply of first fill of HSD Tanks, Buffer Diesel Tanks and DG Set fuel tanks shall be included in scope of works.	First fill of HSD shall be considered only for 990L Day fuel tank of DG Sets. Please confirm.	shall be as per tender conditions.
64	Scope of works & Design Basis Report (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES Page No. 193/354	2.4 ELECTRICAL POWER DISTRIBUTION Indoor/Outdoor type Aluminum Sandwich Bus Duct totally type tested as per IEC61439 including adaptor box, Tap-offs and other plug-in system of suitable capacity shall be provided from DG Set to Synchronizing Panel, Main L.T. Panel to Synchronizing Panel, Transformers to Main LT Panels, Main LT Panels to HVAC Panel & all Capacitor Panels. A	Tap-offs and plug-in system shall not be considered for busducts single point distribution between panels.	Yes, shall be as per requirement.
65	Scope of works & Design Basis Report (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES Page No. 8/354	XLVI. Bidder has to take consideration of Helipad top as well as implement and take necessary approvals for the same as indicated in concept plans.	Please confirm the location of Helipad.	The location of the Helipad is available in the uploaded Tender Drawings.
66	VOLUME -III / SPECIAL CONDITIONS OF CONTRACT (SCC)	SCHEDULE OF STAGE PAYMENT OF WORKS Page No. 26/30	IX External Electrical Works P. HT Cabling from 110KV Sub station to Grid Substation	We presume that this clause refers to 66kV HT Cabling within premises.	Payment against this stage shall be made, if and only if, the HT cabling from the substation of State Electricity Board to the proposed Meter Room of the 66kV Substation in the AIIMS campus is done by the EPC Contractor. The estimated length of cabling under this stage has been estimated as 7000 mts and payment shall be made on a pro-rata basis for the actual quantity, if executed.
67	Technical Specifications	ELECTRICAL WORKS Page No. 112/590	7.0 DIESEL GENERATOR SETS 7.3.5 Period of Operation/Duty Cycle: The set shall be capable of running at full load for not less than 300 hrs continuously or as per manufactures recommendations.	DG Set considered shall be of prime rated.	Yes. Shall be as per tender condition.
68	Technical Specifications	ELECTRICAL WORKS Page No. 112/590	8.0 BUS TRUNKING/ RISING MAINS 8.4.1 Technical Parameters: Bus trunking / Rising Main shall be designed to withstand short circuit current of 50 KA for one second.	Short Circuit rating of equipment shall be provided as per fault current calculations.	shall be as per tender conditions.
69	Technical Specifications	HVAC WORKS Page No. 262/590	1.15 Variable Frequency Drives 7 EMC Compliance (for emission and immunity) The VSD must have inbuilt EMC filters as standard. The range of VSDs shall conform to the European Union Electro Magnetic Compatibility (EMC) Directive, a requirement for CE marking. VSDs must comply with EMC Directive 89/336/EEC with supplements and Product Standard EN 61800-3 Class C2 (1st environment restricted distribution) as standard with inbuilt filters with minimum cable lengths of at least 75m.	Please confirm shall we consider Class C3 filters for VFDs.	shall be as per tender conditions.

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70	APPROVED MAKES LIST	L IST OF APPROVED MAKES FOR ELCTRICAL SYSTEM Page No. 12/26	Note- Approved HT panel Main LT Panel, Main HVAC Panel, APFC Panel, Active Harmonic Filter Panel will be fabricated in the workshop of OEM only.	LT Panel Boards shall be as per approved Makes and shall be fabricated in system House of OEM as per OEM design.	shall be as per tender conditions.
71	APPROVED MAKES LIST	L IST OF APPROVED MAKES FOR ELCTRICAL SYSTEM Page No. 12/26	2 Transformer - ABB/GE prolac/ Schneider/Alstom	Currently GE and ABB are same company and Similarly Alstom is not in manufacturing of Distribution Transformers. Hence request to kindly include the following additional makes in the approved list for Transformers. 1. Voltamp 2. Kirloskar 3. Raychem	shall be as per tender conditions.
72	APPROVED MAKES LIST	L IST OF APPROVED MAKES FOR ELCTRICAL SYSTEM Page No. 12/26	3 Main LT Panel/Main HVAC Panel / APFC panels / ActiveHarmonic Filter (AHF) - Siemens/L&T/ABB/Schneider/Legrand / SPC / ADLAC	Request to kindly include the following additional makes in the approved list for Main LT Panel/Main HVAC Panel / APFC panels / ActiveHarmonic Filter (AHF). 1. Authorised System Integrators of approved OEMs (L&T / ABB / Schneider / Siemens / Legrand)	shall be as per tender conditions.
73	APPROVED MAKES LIST	L IST OF APPROVED MAKES FOR ELCTRICAL SYSTEM Page No. 12/26	38 Solar Power system(PV Cell) TATA Power Solar, CEL, BHEL, BEL	Request to kindly include the following make in the List of approved makes for Solar power system. 1. MNRE approved Solar panel Vendors.	shall be as per tender conditions.
74	DBR	2.7.3 IPABX	RJ-45 Telephone socket outlets with suitable IP Phones instruments shall be provided in all blocks / buildings at convenient locations, as required.	Type of phones not indicated in the Drawings. Please Specify the no of IP Phones(Type-1 & Type-2) to be considered?	for Sr. Doctors/ HOD/ Sr. Officials Type-2 shall be considered.
75	Specification	2.7 INTERNAL ELECTRIFICATION, LV & ALLIED WORKS	Wiring & Conduiting (MS Conduits) for LV & Allied works, Cable & MATV	As a general Practice We shall provide M.S. Conduit for Open conduiting, PVC conduit for Concealed conduiting. Kindly confirm?	shall be as per tender conditions.
76	General			If any ELV / IT specifications are specific to one make, In such cases successful bidder shall proceed as per Makes list to meet only the functional requirements. Kindly confirm?	shall be as per tender conditions.
77	List Of Makes			Kindly provide the list of makes for Information Display System?	Latest version, as per Engineer approval.
78	General			ELV Schemes are not available. Kindly share the same?	As per comprehensive design by EPC contractor based on DBR & Concept drawings
79	Specification			Technical Specification for Public Address System & CCTV System Not available. Kindly Provide.	as per DBR and CPWD Specifications.
80	DBR	ii) MiscellaneousWorks Page 5 of 12	MiscellaneousWorks: XIII. Wi-Fi Multifunctional Poles	Please specify the no .of Wi-Fi Multifunctional Poles to be considered & also provide the specifications?	As per comprehensive design by EPC contractor based on DBR & Concept drawings
81	DBR	t) Central call bell system, Intercom Page 4 of 12	Central Call Bell System, Intercom	Kindly clarify on the Central Call Bell System & share the specifications for the same.	As per comprehensive design by EPC contractor based on DBR & Concept drawings
82	DBR	Clause 2.7.5	Landscape Garden Speaker of high frequency to be installed in outdoor area.	Kindly specify the locations? Please Specify the no of Garden Speakers to be considered & Provide the specifications	As per comprehensive design by EPC contractor based on DBR & Concept drawings
83	Drawings	Drawings		Please provide editable versions (AutoCAD) of the PDF Files. This is required for early quantifications.	PDF drawings have already been uploaded with tender
84	Fire NOC	Fire NOC		Please provide a copy of the provisional Fire NOC obtained for the development	Applied for the same
85	Clause XLVI	Stated in Scope of works		Confirm if any special firefighting measures are required to be in place for the helipad	As per NBC/Aviation guideline
86		Technical Specification	Specifications not included	Please incadate specifications for Deluge valves for Water Curtain System	As per respective IS code
87	Drawings	Fire Drawings	Fire Drawings	Please furnish basement floor layout	Refer tender drawing for Fire
88	Clause 6.0	Design Basis Report- Fire Fighting System	Motors with DOL/ Star Starters.	NBC 2016 - Part 4 Clause 5.1.2.2 indicates that fire pumps will be provided with soft starter or variable frequency drive starter. Please clarify.	As per NBC 2016

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
89	1.0 - General	Design Basis Report- Fire Fighting System	Pumps, Valves and Accessories shall be of UL listed and FM approved	As per Technical specification & also as per general practice, pumps, valves & accessories shall be provided in conformance with Indian Standards & Local fire authority requirements. Hence UL Listed & FM approval is not required. Kindly clarify.	As per NBC/Fire NOC
90	68.01	Performance Specification	At each landing valve, shut off valves and cast iron wheel shall be provided	Since landing valve itself is having shut-off provision, separate shut-off valves with Cast Iron wheel is not required. Kindly clarify.	As per NBC/Fire NOC
91	2.7.4 (h)	Design Basis Report Fire Detection / Alarm System	Fault isolator shall be provided with each detector / devices.	As per NFPA 72 & IS 2189, short circuit isolator shall be required for every 20 detectors / devices. Hence detector with in-built short circuit isolator is not required. Kindly clarify.	As per code/Fire NOC
92	2.7.4 (j)	Design Basis Report Fire Detection / Alarm System	Microprocessor IP based fire alarm control panel (fully redundant) for number of required loops with 24 hrs battery backup with LCP display etc.,	Since all fire alarm control panels are interconnected to common server with system and GUI interface, redundancy at fire alarm panel is not required. The data can be saved & restored from server itself. Kindly confirm.	As per tender condition
93	4.1	DBR - Gas based fire suppression system	For Server rooms & Data centre - The total room flooding system is proposed in all low voltage equipment rooms	Gas based fire suppression system is proposed for server rooms & data centers. Kindly confirm.	As per tender condition
94	4.2	DBR - Gas based fire suppression system	For Electrical panels: Tube based Fire protection system is used in the Electrical Panels to be installed in substations.	Please clarify if Lift control Panels are required to be installed with Tube based fire suppression systems	As per tender condition
95	HVAC & BMS DBR	Page no. 30	Proposed chiller plant details table : Chiller capacity : 5 x 1000 TR (4w+1s) Cooling tower (@3gpm/TR) : 5 x 1000 TR (4w+1s)	As per DBR, it's mentioned as chiller capacity & Cooling Tower capacity are same. Shall we consider the Cooling Tower as 1.25 times of the Chiller capacity i.e., [5 x 1250 TR (4w+1s)] for better efficiency & performance? Kindly confirm.	Cooling tower capacity is based on following parameters:- Flow rate @3gpm/TR, suitable for 1000 TR chillers. Cooling tower is always selected as per wet bulb, range and approach for proper heat rejection of chiller. It may be min 25% to 40% higher as per the conditions.
96	HVAC & BMS DBR	Page no. 10	Hospital building will have 4 pipe systems i.e., with cooling & heating simultaneously & balance buildings on central plant will have 2 pipe systems i.e., either cooling or heating.	4 pipe system shall be considered only for critical areas of Hospital building such as OT's, ICUs, Pre OP, Post OP, Minor OT. Other areas of Hospital building shall be considered with 2 pipe system. Kindly confirm.	Shall be as per tender conditions i.e. Complete hospital building shall be 04 pipe system.
97	HVAC & BMS DBR	Page no. 31	Proposed chiller plant details table : Heat Pump for Hospital + Academic Block (Winter Heating + Monsoon reheat) - 240 KW each - 3W+1S	The capacity of Heat Pump for Hospital + Academic Block for Winter heating & Monsoon Reheat mentioned is 240 KW x 3W+1S = 720 KW W +240 KW S. The capacity seems to be less. Kindly reconfirm the capacity.	Capacity mentioned is min however this will be as per actual requirements.
98	HVAC & BMS DBR	Page no. 5	Winter heating / Monsoon reheat shall be provided through Heat pumps in hospital, Academic buildings only.	Kindly reconfirm the Heat Pump capacity for Winter Heating. Since it seems to be less for such a huge requirement. Monsoon Reheat (4 pipe system) shall be provided only for critical areas of Hospital building such as OT's, ICUs, Pre OP, Post OP, Minor OT. Other areas of Hospital building & balance buildings on central plant shall be provided only with Winter Heating (2 pipe system). Kindly confirm.	Capacity mentioned is min however this will be as per actual requirements. Shall be as per tender conditions i.e. Complete hospital building shall be 04 pipe system.
99	Electrical & ELV Design Basis report	2.8. ESIGN BASIS REPORT- LIFTS / DUMBWAITERS AND ESCALATOR; PAGE-46	Type: with Machine room at top or without machine room as per architectural plan/requirement & gearless.	In drawing some building is with Machine Room and some building is shown Machine roomless; Please confirm, which type to be considered.	shall be as per architectural plans in tender.
100	Electrical & ELV Design Basis report	2.8. ESIGN BASIS REPORT- LIFTS / DUMBWAITERS AND ESCALATOR; PAGE-47. LIFT / ESCALATOR DETAIL DETAIL	7) Hospital Block:- 8 Nos (B+G+5) 12 Nos (G+5) 6 Nos (G+2) 2 Nos (2nd to 3rd)	As per drawing; Hospital Block:- 10 Nos (B+G+5) -> 2Nos. Increased in drawing 12 Nos (G+5) 6 Nos (G+2) and 2 Nos (2nd to 3rd)-> Not shown in drawing Please confirm the qty to be considered	shall be as per architectural plans provided in tender.
101	Electrical & ELV Design Basis report	-	-	Pease furnish Floor wise population detail for each building	shall be as per tender conditions/Hospital practice/ actual/arch. Requirement.

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102	Scope_of_Works_and_Design_Basis_Report_DBR SPECIALIZED SERVICES MEDICAL GASES PIPELINE SYSTEM (MGPS)	Page no: 305	Liquid Oxygen Tank shall be 20KL or above as per the suitability to the requirement of the hospital. Secondary and tertiary source of Oxygen shall be from the Gas Bank in the Manifold Room.	There is a contradiction from DBR & Technical specifications for secondary source of oxygen system. Secondary and tertiary source shall be gas manifold as per DBR according to order of precedence. Kindly confirm.	Primary source shall be from Liquid tank as 1 x 20 KL Liquid Oxygen with VIE vessel and another 1x10KL Liquid Oxygen VIE vessel. Secondary and tertiary source shall be from Cylinder banks in Manifold room
	Technical Specifications MGPS	Page no: 493	One vessel of 1 x 20 KL Liquid Oxygen VIE vessel system will be the primary (main) supply source another vessel of 1x10KL will be secondary source. In case of failure in liquid oxygen supply, it should automatically switch over to an emergency oxygen manifold having 2x20 Cylinder bank.		
103	Scope_of_Works_and_Design_Basis_Report_DBR SPECIALIZED SERVICES MEDICAL GASES PIPELINE SYSTEM (MGPS)	Page no: 308	The medical air compressors shall be of the totally oil-less air-cooled design/ Screw/Scroll.	There is a contradiction from DBR & Technical specifications for type of compressors. Type of compressor shall be designed based on the compressed air demand for hospital. Kindly confirm.	The medical air compressors shall be of the totally oil-less air-cooled design (Screw/Scroll typed)
	Technical Specifications MGPS	Page no: 468 C. MEDICAL COMPRESSED AIR SYSTEM	b)The medical air compressors should be of the totally oil-less reciprocating air cooled design.		
104	Technical Specifications MGPS	Page no: 488	Gas Outlets as per list attached	Kindly share the gas outlets matrix for each beds.	Preparation of Gas outlet matrix is in the scope of works of contractor. Gas outlets shall be considered for each bed of the hospital including Wards, ICU, HDU, NICU, PICU Diagnostic areas, Cath labs, Pre-op, Post-op and OTs as per standard mentioned in the technical specification.
105	Tender drawing_Part 2	Ayush block - Floor plan - A:-AYU-01		Medical gases are not required for ayush block. Kindly confirm.	Medical gases shall be considered for the Ayush block and gas outlets shall be for each bed of Wards, ICUs, HDUs, Pre-op, Post-op and OTs as per standard mentioned in the technical specification.
106	SCC	Status of Preconstruction Clearances, Clause 11.3, Page 4	The Contractor shall obtain all pre & post construction clearances/approvals from Environmental Authority, Municipal and other relevant statutory authorities/local bodies including Water supply agencies concerned, Electric Supply and Inspectorate. Agencies concerned, such as, but not limited to, Police and Security Agencies, Chief Controller of Explosives, Fire Department, Civil Aviation Department, concerned in accordance to prevailing rules, Building Bye-Laws, tree cutting etc., as the case may be with related to/ required for Construction/Completion..... The status of applications for pre-construction clearances submitted/applied to local authorities shall be provided to the contractor for obtaining clearances/approvals.	We presume that the pre construction clearance required for the commencement of the project are submitted to the relevant Competent authority. Request you to kindly share the list and status of preconstruction clearance like Environmental Clearance, local Government Agency ,etc	No change. Shall be as per tender conditions
107	NIT	Time Allowed for Completion of work, Clause 6, Page 9, Memorandum & NIT	Overall 20 Months as phases.	This Being a Design & Build project and complex nature of the job including campus Development, the minimum time line that would be required for the Completion of the project is 30 Months for overall completion	No change. Shall be as per tender conditions

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108	SCC	Phase wise Completion, Clause 1, Page 1 SCC	<table border="1"> <thead> <tr> <th>S.No</th> <th>Activity to be completed</th> <th>Time allowed in months (from date of start)</th> </tr> </thead> <tbody> <tr><td>1</td><td>Civil Works of Substation, AC Plant Rooms, UGT, STP and other Services Buildings</td><td>9 months</td></tr> <tr><td>2</td><td>Ayush Block</td><td>12 months</td></tr> <tr><td>3</td><td>Dharamshala (Night Shelter)</td><td>12 months</td></tr> <tr><td>4</td><td>Director's Bungalow</td><td>12 months</td></tr> <tr><td>5</td><td>OPD (Out Patient Department)</td><td>15 months</td></tr> <tr><td>6</td><td>Other buildings of Residential Campus (Type 2, 3, 4, 5 & 6 Quarters and Hostels)</td><td>15 months</td></tr> <tr><td>7</td><td>Academic Block</td><td>16 months</td></tr> <tr><td>8</td><td>Auditorium</td><td>20 months</td></tr> <tr><td>9</td><td>Hospital</td><td>20 months</td></tr> <tr><td>10</td><td>External Development & Road Network</td><td>12 months</td></tr> </tbody> </table>	S.No	Activity to be completed	Time allowed in months (from date of start)	1	Civil Works of Substation, AC Plant Rooms, UGT, STP and other Services Buildings	9 months	2	Ayush Block	12 months	3	Dharamshala (Night Shelter)	12 months	4	Director's Bungalow	12 months	5	OPD (Out Patient Department)	15 months	6	Other buildings of Residential Campus (Type 2, 3, 4, 5 & 6 Quarters and Hostels)	15 months	7	Academic Block	16 months	8	Auditorium	20 months	9	Hospital	20 months	10	External Development & Road Network	12 months	<p>Request you to kindly revise the milestone for phase wise completion as below:</p> <table border="1"> <thead> <tr> <th>S.No</th> <th>Activity to be completed</th> <th>Time allowed in months (from date of start)</th> </tr> </thead> <tbody> <tr><td>1</td><td>Civil Works of Substation, AC Plant Rooms,UGT, STP and other Services Buildings</td><td>18 months</td></tr> <tr><td>2</td><td>Ayush Block</td><td>18 months</td></tr> <tr><td>3</td><td>Dharamshala (Night Shelter)</td><td>18 months</td></tr> <tr><td>4</td><td>Director's Bungalow</td><td>18 months</td></tr> <tr><td>5</td><td>OPD (Out Patient Department)</td><td>30 months</td></tr> <tr><td>6</td><td>Other buildings of Residential Campus (Type 2, 3, 4, 5 & 6 Quarters and Hostels)</td><td>24 months</td></tr> <tr><td>7</td><td>Academic Block</td><td>20 months</td></tr> <tr><td>8</td><td>Auditorium</td><td>20 months</td></tr> <tr><td>9</td><td>Hospital</td><td>30 months</td></tr> <tr><td>10</td><td>External Development & Road Network</td><td>Progressively from 18 Months and Complete handover by 30 Months</td></tr> </tbody> </table>	S.No	Activity to be completed	Time allowed in months (from date of start)	1	Civil Works of Substation, AC Plant Rooms,UGT, STP and other Services Buildings	18 months	2	Ayush Block	18 months	3	Dharamshala (Night Shelter)	18 months	4	Director's Bungalow	18 months	5	OPD (Out Patient Department)	30 months	6	Other buildings of Residential Campus (Type 2, 3, 4, 5 & 6 Quarters and Hostels)	24 months	7	Academic Block	20 months	8	Auditorium	20 months	9	Hospital	30 months	10	External Development & Road Network	Progressively from 18 Months and Complete handover by 30 Months	No change. Shall be as per tender conditions
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109	NIT	Interest Free mobilization Advance, Clause 8, Page.no9, NIT	Simple Interest Rate of 10.50%(Ten point Five Percent only) Per Annum	Request you to kindly provide interest free mobilization advance.	No change. Shall be as per tender conditions																																																																		
110	SCC	Preconstruction Clearances, Clause 11.3, Page 4	<p>The Contractor shall obtain all pre & post construction clearances/approvals from Environmental Authority, Municipal and other relevant statutory authorities/local bodies including Water supply agencies concerned, Electric Supply and inspectorate. Agencies concerned, such as, but not limited to, Police and Security Agencies, Chief Controller of Explosives, Fire Department, Civil Aviation Department, concerned in accordance to prevailing rules, Building Bye-Laws, tree cutting etc., as the case may be with related to/ required for Construction/Completion.....</p> <p>The status of applications for pre-construction clearances submitted/applied to local authorities shall be provided to the contractor for obtaining clearances/approvals.</p>	This being a EPC Contract with Conceptual plans already provided by the client. Request you to kindly modify that the approvals shall be in the scope of the Client.	No change. Shall be as per tender conditions																																																																		
111	NIT	Time Allowed for Starting the work, Clause 13, Page 10, Memorandum & NIT	The date of start of contract shall be reckoned from 10 days after the date of issue of letter of Award/handing over of the site.	As the Time required for Obtaining the Pre - Construction approvals is not under the control of the contractor, request you to kindly revise the date of Starting the work as "Date of availability of all approvals required for the commencement of the work"	No change. Shall be as per tender conditions																																																																		
112	SCC	Payments, Clause 17, page 13, SCC	Minimum value of invoice 18 Crs	During initial 3 months and the last 3 months, the bill value shall not be amounting to 18 Crs. Hence ,Request you to waive of the requirement for First and Last Three bills.	Please refer to Amendment No.- 1.																																																																		
113	GCC	Mobilization Advance, Clause 4.0, Page 40, GCC	The mobilization Advance shall be paid in three installments	Request you to kindly pay the mobilization advance in a single installment after signing of Agreement and submission of Performance of Guarantee.	No change. Shall be as per tender conditions																																																																		
114	SCC	Consultant, Clause 8,Page 2. SCC	After award of work, the Contractor, under its own expenses, shall appoint consultants for architecture, structure, MEP Works and other related services.	We presume that this clause is not applicable for contractor with inhouse design capabilities. Please confirm.	Shall be as per tender conditions																																																																		
115	SCC	Compensation of delay in handing over of site, Clause 10.1,Page 2. SCC	The efforts will be made by the HSCC pursuing with Client to handover the site to the Contractor free of encumbrances. However, in case of any delay in handing over of the site to the Contractor by the Client then HSCC shall only consider suitable extension of time for the execution of the work. It should be clearly understood that the contractor will not be entitled for any extra claim on such account and HSCC shall not consider any revision in contract price or any other compensation whatsoever.	Request you to kindly compensate the contractor for any delay in handing over of site with time and cost both.	Shall be as per tender conditions																																																																		
116	SCC	10.2 Support/ Facilities for PSA/Medical Equipment suppliers, Page 2.	The contractor shall provide the required physical space and work fronts and support and facilitate the PSA/Medical Equipment supplier in installation and commissioning of various medical equipments. The Contractor shall also receive and take possession of the Medical Equipment supply as may be required from time to time and provide the security for safekeeping of the same.	Request you to kindly confirm the Facilities and support that the contractor shall provide to the PSA/Medical equipment supplier	The required provisions for plumbing/sanitary , electrical load and airconditioning services shall be made in the construction works.																																																																		

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
117	SCC	Soil investigation report, Page3, Clause 11.1 (d), SCC	The soil investigation report will be provided by HSCC to Contractor for reference purpose only. However, they are required to get it done independently to satisfy themselves as per design requirements.	Request you to kindly share the soil investigation report	Soil investigation report is enclosed with Amendment No.1 for reference only. No claim, whatsoever, shall be entertained in this regard. The Contractor are required to get the soil investigation done independently as per the design requirements. No claim, whatsoever, shall be entertained in this regard.
118	SCC	Any changes to be handled, Page3, Clause 11.1 (e), SCC	Any changes as per requirement of Client/HSCC will be done by agency with no extra charge and time overrun.	Any changes with respect to tender requirement shall be paid extra as per Clause 6.Deviation/Variation extent and pricing. Kindly confirm.	Shall be as per tender conditions
119	SCC	Any changes to be handled, Page 9, 15.1 Clause 6, Deviation/Variation extent and pricing , SCC	In the case of extra item(s), (items that are completely new, and are in addition to the items contained in the contract) the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis, for the work and the engineer-in-charge shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.	Request you to kindly compensate the contractor with time as well.	Shall be as per tender conditions
120	SCC	Additional costs, Page 9, 15.1 Clause 6, Deviation/Variation extent and pricing , SCC	Any operational incidental to or necessarily has to be in contemplation of tenderer while filing tender, or necessary for proper execution of the items included in the financial bid and schedule of payments whether or not specifically indicated in the description of the item and the relevant specifications shall be deemed to be included in the rate quoted by the tenderer or the rate given in the said schedule of rates as the case may be .Nothing extra shall be admissible for such operations.	Request you to kindly clarify the meaning of the clause.	The clause is self explanatory. Shall be as per tender conditions
121	SCC	(C) Final Bill Certificate and Payment, Page 14, SCC	Certification within 90 day and payment within 60 days from certification.	Request you to kindly Certify and make payment to the contractor within 60 days of submission of Bill.	Shall be as per tender conditions
122	SCC	(D) Production of Records,; Page 15, SCC	(D) Production of Records: a) The Contractor shall, whenever required by the Engineer, produce or cause to be produced for examination by the Engineer, any quotation, invoice, cost or other account books, vouchers, receipts, letters, memoranda or any copy of or extract from any such documents and also furnish information and returns, as may be required, relating to the execution of this Contract or relevant for verifying ascertaining the cost of execution of this Contract or ascertaining the Materials supplied Contractor are in accordance with the Specifications laid down in the contract. The Engineers in charge's decision on the question of relevancy of any document information or returns shall be final and binding on the parties. b) If any part or item of the work is allowed to be carried out by a subcontractor, assignee or any subsidiary or allied firm, the Engineer-in-charge shall have power to secure the books of such sub- Contractor, assignee or any subsidiary or allied firm through the Contractor, and shall have power to examine and inspect the same. The above obligations are without prejudice to the obligations of the Contractor under any statute, rules or order.	Request you to waive off this clause, since the accounts and records of the bidder is of confidential in nature.	Shall be as per tender conditions
123	SCC	Site Inspection ,Clause 21, Page 16, SCC	.....A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed/payable.....	The Contractor Shall bid based on the information available in the tender document furnished by Client. If there are any variation with respect to tender after the award of job, the same shall be paid as per Clause 6. Deviation/ Variations	No change. Shall be as per tender conditions
124	SCC	Deviation/ Variation of Area, Clause 22, page 16,17	Deviation/variation of Area with respect to quoted price: Any decrease in area with respect to prescribed in the tender, if approved by HSCC, shall be recovered proportionately. Additional cost on account of increase in area over and above prescribed area upto 2% shall not be payable and deemed to be included in the quoted price. However, increase in area, if approved by HSCC, by more than 2% over the prescribed area shall be paid proportionately. Area for this purpose shall be calculated as per CPWD norms.	Request you to kindly delete this clause and pay the contractor proportionately for any change in area both increase and decrease.	No change. Shall be as per tender conditions
125	GCC	Access Road, Clause 20.0, Page 15	..... Non-availability of access roads or approach to site, for the use of the contractor shall in no case condone any delay in the execution of work nor be the cause for any claim for compensation.	Request you to provide the access road made available to the contractor at the time of handing over of site to the Contract.	No change. Shall be as per tender conditions

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
126	GCC	Handing over and Clearance of Site, Clause 21.3, Page. 15	Old structures on the proposed site, if required, shall be demolished by the contractor properly at his own cost unless and otherwise mentioned elsewhere in the tender document. The useful material obtained from demolition of structures & services shall be the property of the owner/HSCC and these materials shall be stacked in workmanship like at the place specified by the Engineer-in-charge.	This being as Green Field project. We presume that this clause may not be applicable for the bidder	No change. Shall be as per tender conditions
127	GCC	Handing over and Clearance of Site, Clause 21.3, Page. 15	Necessary arrangement including its maintenance is to be made by the contractor for temporary diversion of flow of existing drain and road, as the case may be. The existing drain, road would be demolished, wherever required, with the progress of work under the scope of proposed project. The existing Road and Drain which are not in the alignment of the said project but are affected and/ or need to be demolished during execution for smooth progress of the project, shall be rehabilitated to its original status and condition (including black topping) by the contractor at his own cost. The cost to be incurred by contractor in this regards shall be deemed to be included in the quoted rates of the bill of quantity items and contractor shall not be entitled for any extra payment whatsoever in this regard.	This being as Green Field project. We presume that this clause may not be applicable for the bidder	No change. Shall be as per tender conditions
128	GCC	Escalation, Clause 7.0, Page10	No escalation shall be applicable on this contract for entire contract period as well as extended period for completion of the works if any	Considering the duration of Project and volatility of material and Labour prices, request you to please provide Escalation due to variation in prices of materials and wages as per CPWD GCC clause 10 CA and clause 10CC.	No change. Shall be as per tender conditions
129	GCC	Clause 8.0, Compensation for Delay, Page 44	Compensation for delay of work @ 0.5% per week..... the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or	Request to kindly consider the Compensation for Delay as 0.25% per week, with maximum as 5% of the Contract value.	No change. Shall be as per tender conditions
130	GCC	Clause 12.0. CONTRACTOR LIABLE TO PAY COMPENSATION EVEN IF ACTION NOT TAKEN UNDER CLAUSE 11.0, Page 48,	In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under any clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final and binding on the contractor and/or direct the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.	As you will appreciate it is a usual phenomenon that in a construction site, there will be a huge investment by the Contractor including by way of deployment of plant and machinery which will comprise not only that of the contractor's own equipment but also hired equipment's. Any unilateral action as contemplated in clause 11.3 would put the Contractor to peril and subject to serious harm and grave prejudice.	Shall be as per tender conditions
131	GCC	Clause 13.0 CARRYING OUT PART WORK AT RISK & COST OF CONTRACTOR, Page 48,49	(iii) ... (a) Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or (b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.....	We request you to kindly appreciate this highly justified concern and approve deletion of clause 12, Para 5 of 13 & 13 (iii) of the General conditions of the contract.	Shall be as per tender conditions

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
132	GCC	Clause 13.0 CARRYING OUT PART WORK AT RISK & COST OF CONTRACTOR, Page 48,49	.....If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors' unused materials, constructional plant, implements, temporary building at site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract.....		Shall be as per tender conditions
133	GCC	Clause 14. 0 Suspension of works, page 51	b) ii) In the event of the Contractor treating the suspension as an abandonment of the Contract by HSCC, he shall have no claim to payment of any compensation on account of any profit or advantage which he may have derived from the execution of the work in full.....	We understand that in the event of the Contractor treating the suspension as an abandonment of the Contract by HSCC, we may be paid appropriately for the scope of works executed till date as per the payment terms in full and the additional cost of deployment of the resources on & off site including mobilization, demobilization, transport, etc and all other associated costs which a contractor might have spent for carrying out his scope of works. Request to confirm.	No change. Shall be as per tender conditions
134	GCC	Clause 23.2, Payments, Page. No. 56	It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between HSCC and the contractor; the contractor shall become entitled to payment only after HSCC has received the corresponding payment(s) from the client/Owner for the work done by the contractor. Any delay in the release of payment by the client/ Owner to HSCC leading to a delay in the release of the corresponding payment by HSCC to the contractor shall not entitle the contractor to any compensation/ interest from HSCC.	Request you to waive off this clause and kindly adhere and ensure interim payments are made to contractor inline with the clause " A. Stage Payment of Works" as per SCC.	Shall be as per tender conditions
135	GCC	Clause 23.5, Opening of Separate Bank account for the project, Page. No. 56	Opening of Separate Bank Account for the Project: The Contractor shall maintain a separate account with a Scheduled Bank for the purpose of receiving all the payments under the Contract and for utilization of payments received from the employer for disbursement to sub-contractors, sub-vendors, PRW's, suppliers etc. for this contract. The Contractor shall maintain separate books of account for all payments under this contract and the Engineer-in-Charge shall have access to it at all times. For tracking of utilization of funds received from the Employer, the Contractor shall submit a statement to the Engineer-in-charge certifying the transactions pertaining to the above account along with the purpose of such transactions whenever asked for by the Engineer. In case the Contractor wants to withdraw funds from the above bank account for any purpose other than the Contract, he shall be required to submit an undertaking to the Engineer-in-Charge certifying that all due statutory payments, labour payments and payments to all his sub-contractors/ vendors have been disbursed by him corresponding to the total payment received under the contract.	We being a corporate company and having a centralised system for Making payments to vendors across the country from a single point, it would be difficult for us to maintain a separate account for this project. Hence, request you to kindly waive off this clause.	No change. Shall be as per tender conditions
136	GCC	Clause 37.0, FORECLOSURE OF CONTRACT BY HSCC/OWNER, Page 66,67	If at any time after the commencement of the work the HSCC shall for any reason whatsoever is required to abandon the work or is not require the whole work thereof as specified in the tender to be carried out, the Engineer-in-Charge shall give notice in writing of the fact to the contractor, who shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the foreclosure of the whole or part of the works.	In the event of foreclosure of contract by HSCC / Owner, we may be paid appropriately for the scope of works executed till date as per the payment terms in full and the additional cost of deployment of the resources on & off site including mobilization, demobilization, transport, etc and all other associated costs which a contractor might have spent for carrying out his scope of works. The contractor be entitled to be paid the additional expenses incurred as the foreclosure was done at the behest of the Employer and not the Contractor. Please confirm	Shall be as per tender conditions

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
137	GCC	Clause 39.0 ,SUBLETTING / SUB-CONTRACTING, Page 67	.....However, for major sub-contracts (each costing Rs. 50 Lacs or above), it will be obligatory on the part of the Contractor to obtain consent of HSCC. HSCC will give its consent after assessing and satisfying itself of the capability, experience and equipment resources of the sub-contractor. In case HSCC intends to withhold its consent, then HSCC will inform the Contractor within 15 days to enable the Contractor to make alternative arrangement to fulfil his programme. Sub-contracting any part of work, however, does not absolve contractor from his responsibility for quality of final product.....	Request you to kindly rephrase the same a below.....However, for major sub-contracts (each costing Rs. 5 Crore or above), it will be obligatory on the part of the Contractor to obtain consent of HSCC. HSCC will give its consent after assessing and satisfying itself of the capability, experience and equipment resources of the sub-contractor. In case HSCC intends to withhold its consent, then HSCC will inform the Contractor within 15 days to enable the Contractor to make alternative arrangement to fulfil his programme. Sub-contracting any part of work, however, does not absolve contractor from his responsibility for quality of final product.....	Shall be as per tender conditions
138	GCC	Clause 45.0 , WATER AND ELECTRICITY, Page 67	The contractor shall make his own arrangement for Water & Electrical Power for construction and other purposes at his own cost and pay requisite electricity and water charges. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.	Request you to provide electricy required for construction and site infrastructure at one single point at free of cost basis.	Shall be as per tender conditions
139				We presume that contractor will be allowed to dig bore well for availing water required for construction and other workks related to the project. Kindly confirm.	Shall be as per tender conditions
140	GCC	Clause 73.2 Payment of wages, 78	73.2. Payment of Wages: .....(iii) The contractor shall transfer/ credit the wages/salary of all labourers/workers preferably in their bank accounts. He shall be responsible for opening of bank accounts of all labourers/workers employed by the contractor at work site in this regard.	we will try to effect the payments of the workmen through bank, we can achieve it maximum upto 40% to 50%. Moreover this we can implement only after the workmen continuously works for more than 2 months.Request you to kindly allow the same.	Shall be as per tender conditions
141	GCC	Clause 73.4.3 Observation of Labour laws, Page.80	The Contractor shall submit proof of having valid ESI registration for Construction site workers located in the ESI implemented areas for every construction site worker before his/her engagement on the HSCC site of works as per requirement of ESI act, 1948 amended up to date and rules made thereunder. The contractors are required to ensure that in ESI implemented areas, every construction site worker has been registered online and they are required to ensure that these workers and.....	As ESIC is currently under stay by Supreme court order. Hence, we are considering the same in our offer. Kindly confirm, that the same shall be paid extra, if it becomes applicable after the award of project.	Shall be as per the tender conditions. The contractor shall comply with all relevant laws, acts, rules and regulations.
142	DBR -Structure	Structural System - Super structure Page 4 of 13	The proposed structural framing comprises of conventional Beam-Slab system with RC column for all buildings including infill walls as per relevant approved drawings as per NDMG-2016. Hospital building having cantilever of 7.5m (approx.) as proposed in architectural drawings shall be designed as per relevant code provisions. It may be designed with PT System or MS steel structure. Also where span is more than 15m, that can be designed as PT System, MS/Concrete Girder during detail design.	as per NDMG - Chapter 5 - Clause 5.4.1 (b) (iv) Large cantilever, long span structures & Pre-stressed floor system are Prohibited - Please clarify	Structural framing shall be suitably modified during detailed engineering to meet the requirement of NDMG-2016
143	DBR -Structure	Clause 14- NDMG 2016 Guide lines	The structural system of new hospital buildings shall be followed as per NDMG Guidelines.	as per NDMG - Chapter 5 - Clause 5.4.1 e) the hospital building shall be designed for the horizontal acceleration coefficient $A_h = Z_I / R$ whereas as per IS 1893-2016, the $A_h = Z_I / 2R$. Kindly confirm the A_h formula to be considered for seismic base shear computation.	Latest BIS code and NDMG provisions as applicable shall be followed
144	Vol 03- SCC	Clause 11.1 (d) Page no:3	The soil investigation report will be provided by HSCC to Contractor for reference purpose only.	Kindly provide the available soil investigation report to design the appropriate foundation system before the tender submission date of 5th Feb2020	The Topographical survey, Geotechnical investigation, Hydraulic survey, other invetigation(s) as required/desired shall be in the scope of Contractor. Detailed design and engineering shall be done accordingly. Soil investigation report is attached for information/reference only. No claim, whatsoever, shall be entertained in this regard.
145	Tender_Drawings_Part 1	Drawing no: A-HOS-04	At thrid floor plan, cantilever of 6.8m shown from grid Y22 to Y23 in block A & E and the same is visible in hospital 3D views.	As per structural drawing S-HOP-03 , columns are shown in Grid Y23 in block A& E. We are following the design as per structural drawing and accordingly 3D view shall be changed- Please confirm.	Structural framing shall be suitably modified during detailed engineering to meet the requirement of Architectural plan and 3D View as approved
146	Technical Specification	Page no: 68 to 70	Water proofing builtup given for Basement, Toilet and Podium.	Kindly provide the water proofing builtup for Terrace.	Revised Technical Specification for water proofing attached at Annexure -B

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
147	Scope_of_Works_and_Design_Basis_Report_DBR	3.2. Page 2 of 13 (DBR -Structure)	The grade slab (ground floor in buildings) shall comprise of the following layers: a) 100mm thick consolidated fine sand layer b) 75mm thick M-10 cement concrete layer. c) 150mm thick M-20 RCC reinforced with single layer 8mm dia 200mm C/C reinforcement bars in each direction. d) Floor finish as per specifications	As an EPC contractor can we change the Grade slab built-up to suit the design & functional requirements - Please Confirm	No change, tender condition prevail(s)
148	Scope_of_Works_and_Design_Basis_Report_DBR	3.3. Page 4 of 13 (DBR -Structure)	Soil investigation report of the project site, the Bore log shows fractured basalt in pieces followed by highly weathered rock 3 - 6m below NGL and then after moderately weathered to fresh basalt core. Ground water table is not encountered up to a depth of 10m below ground level.	Soil investigation report (with borehole location map w.r.t structure location, EGL of borehole and results of chemical analysis on water & soil is not attached with tender document. Please Provide.	The Topographical survey, Geotechnical investigation, Hydraulic survey, other investigation(s) as required/ desired shall be in the scope of Contractor. Detailed design and engineering shall be done accordingly. Soil investigation report is attached for information only. No claim, whatsoever, shall be entertained in this regard.
149	Tender_Drawings_Part 3	Drawing no: A-TYP DET 05	Road builtup given as GSB, WBM, PCC & Concrete Road	As an EPC contractor can we design the road built-up as per IRC:SP - 62. Kindly confirm	Rigid Pavements shall be designed as per IRC: 58-2002
150	DBR-Scope of work	Clause 3.JJ - Page 6 of 12	All roads shall be of C.C. pavement of mix M-30 with ready mixed concrete from batching plant and/or Bituminous road as approved.	Kindly confirm the type of road for the project whether it is CC pavement or Bituminous. Also please provide as the the area of road since it is not possible to measure from PDF drawing.	No change, tender condition prevail(s)
151	Volume - III	SCC - Page no. 3 - Clause 22	Competent Architect having adequate experience in Planning and Design of Hospitals & Medical college.	Kindly confirm whether In house Architect having adequate experience in Planning & Design of Hospitals & Medical college is allowed to develop detail design and drawing based on the concept drawing given by HSCC.	Shall be as per tender conditions
152	Tender drawings	Tender drawings	Tender drawings - Architecture, Structure, PHE & FPS, Electrical & HVAC	All discipline Tender drawings are in .PDF file Please provide AutoCAD file of all drawings to workout the estimation accurately	PDF drawings have already been uploaded with tender
153	Tender drawings	Tender drawings - Architecture	Architecture concept Drawings - AYUSH BLOCK - A-AJU-01	In the provided Tender drawing Ayush Block -Elevation & Section drawing is not available, provide the same	Detailed architectural planning, design and engineering shall be in the scope of contractor as per relevant clause(s) of tender provision(s) and approval of competent authority
154	Tender drawings	Tender drawings - Architecture	Architecture concept drawings	In the provided Tender drawing Auditorium block Elevation & Section drawing is not available. Please provide the same	Detailed architectural planning, design and engineering shall be in the scope of contractor as per relevant clause(s) of tender provision(s) and approval of competent authority
155	Tender drawings	Tender drawings - Architecture	Architecture concept drawings	In the provided all blocks concept Elevation drawing the exterior finishes like cladding, Painting, Glazing area marking detail is not mentioned. Furnish all blocks all sides elevation with demarcation of exterior finishing for bidder to consider in the scope of work.	Detailed architectural planning, design and engineering shall be in the scope of contractor as per relevant clause(s) of tender provision(s) and approval of competent authority
156	Tender drawings	Tender drawings - Architecture	Architecture concept drawings	In the provided Architecture Floor Plan in some blocks at each floor level MEP services like Electrical, ELV, AHU rooms nos are shown very minimum or it is not available. Please clarify whether bidder is allowed to add the same considering the requirements by reducing some existing facility.	Detailed architectural planning, design and engineering shall be in the scope of contractor as per relevant clause(s) of tender provision(s) and approval of competent authority
157	Approved make list	Approved make list	List of Approved make list	Considering the local availability, whether bidder is allowed add any additional makes apart from provided list. Please confirm	Shall be as per tender condition.
158	Scope of works & design basis report		Site photographs Showing the existing electrical transmission lines at site	We assume that existing electrical transmission lines crossing across the proposed site shall be re-routed and the scope of re-routing transmission line shall not be considered under bidder's scope.	Shall be as per tender condition.
159	Scope of works & design basis report	Civil & structure	The structural design and drawings shall be primarily based on the latest Indian Codes of practice, National Building Codes (NBC) including NDMG - 2016 guidelines for Hospital Safety as applicable.	We assume that NDMG codes are applicable only for the structural design / dwgs and are not to be followed for architecture and other services.	No change, tender condition prevail(s)
160	Vol2_GCC	29.0 MATERIALS AND SAMPLES Page no. 61	The materials/products used on the works shall be one of the approved make/ brands out of list of manufacturers / brands /makes given in the tender documents. The contractor shall submit samples/ specimens out of approved makes of materials/ products to the Engineer-in-Charge for prior approval.	Samples shall be submitted for the HVAC visible items inside the Conditioned Space like Grilles & Diffusers & Valves only. Please Confirm.	Shall be as per tender conditions .

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
161	Technical Specs	HVAC 1.1 Water Cooled Centrifugal Water Chilling Machine with VFD 1.1.3 Chiller Design Duty Page no.10	Power shall be supplied to the chiller at 415 volts - 3 phase - 50 Hertz. The chiller shall use R-134a / 1233zdE refrigerant.	1) We would like to request the approval of HFO Refrigerant R514a. 2) This refrigerant is already approved by CPWD approved list of refrigerant, approved in National Building Code, approved by US SNAP EPA etc. Although R514a has been designated B1 under ASHRAE 34, it has been given same code classification "Neither - for Highly Toxic or Toxic Under code classification" as per ASHRAE standard 34-2013. HFC R134a approved refrigerant here also has "Neither- for Highly Toxic or Toxic Under code classification". 3) R514a is already approved even in major prestigious government projects including ITPO Pragati Maidan, AIIMS Kalyani, AIIMS Guntur, AIIMS , Airport Authority of India, NBCC etc...NoteR514a is also a HFO refrigerant which has an Ultra Low GWP as that of R123Zd(E). 4) There have been numerous chillers installed and running for years safe with B1 classified refrigerant.	Shall be as per tender conditions. The refrigerant shall be A1 classified as per ASHRAE34. 1233zdE is also a HFO.
162	Tech Specs	1.1.3 C- Chiller Design Duty	The cooler shall be selected for maximum pressure drop of 6.5 mtr on cooler and 7.5 mtr on condenser	Pressure drop of 6.5 mtr on cooler and 7.5 mtr on condenser is very low for 1000 TR Chiller. As per CPWD 2017 specs, max pressure drop for cooler and condenser should be 10 mtrs. Request you to kindly allow max pressure drop of 10 mtr on cooler and condenser.	Max pressure drop of 10 m for cooler and condenser both is acceptable.
163	Tech Specs	1.1.6 Compressor Motor	Chiller shall be supplied with Unit mounted/ free standing VFD	Factory fitted unit mounted VFD is authentic and global product of all approved manufacturers in tender, hence only this should be allowed. Since VFD is integral part of chiller (like motor, compressor, cooler and condenser), VFD shall also be factory fitted and unit mounted only, to have assured performance of chiller. Further unit mounted VFD's are liquid cooled which helps reduce VFD size and ensures proper cooling of IGBT's and Transistors for extended life and reliability of operation.	Standard design of manufacturer is acceptable.
164	Tech Specs	1.1.4	Oil cooling shall be done Refrigerant cooled/water cooled oil cooler.	Water cooled oil cooler are site installed and there is loss in chiller performance and capacity as some quantity of chiller water is used for cooling of oil. Refrigerant cooled oil cooler and factory fitted and hence there is no loss of efficiency or capacity. Kindly approve ref cooled oil cooler only for uniform evaluation of capacity and efficiency.	Standard design of manufacturer is acceptable.
165	Tech Specs		An externally mounted 1/2 micron replaceable cartridge oil filter equipped with service valves shall filter oil.	Kindly confirm if factory fitted online standby oil filter is required, to allow filter replacement while chiller is under operation.	Shall be as per tender conditions.
166	Tech Specs		The unit shall be selected so that it can operate from 100- 25% load at design constant entering condenser water temperature without stall or surge.	Kindly specify if use of hot gas by pass or envelop stability control can be used or not.	Shall be as per tender conditions. Without hot gas bypass or Envelop stability control.
167	Tech Specs	1.1.6 Compressor Motor	Compressor motor shall have IP 54 protection and shall be either open or semi-hermetic	Please note standard water cooled chillers by all manufacturers (open or semi-hermetic) Comply with IP 23 protection only (for overall chiller) and different enclosure/protection for a motor does not help as it is installed on main chiller skid in enclosed plant room. The design of chillers with air cooled motor which shall be with SPDP type protection relevant for indoor application. The same is approved in CPWD and all HSCC jobs like AIIMS Guntur, AIIMS Nagpur, AIIMS Kalyani, Chandrapur medical College, etc. Kindly approve air cooled SPDP open drive motors with IP 23 protection.	Standard design of manufacturer is acceptable.
168	Tech Specs	1.1.10 Compressor Motor Stator	The chiller should have THDI less than 5 % at equipment level	Kindly confirm THDI less than 5 % is required at all loads (100-25%) at chiller source.	Yes.
169	Tech Specs	1.1.13 Performance Rating	Max I kw/TR should be 0.65	Since these are high efficiency VFD chillers max efficiency at site conditions for 6.5 COP shall be 0.63 Kw/TR. Kindly approve max Ikw/TR of 0.63 .	Ikw/TR mentioned is min. Lower Ikw/TR is acceptable.
170	Tech Specs	1.1.10 Compressor Starter	VFD shall be provided with Unit mounted/ free standing VFD	Kindly confirm if same VFD used for testing to be supplied along with chiller, Also confirm if physical inspection of all VFD along with active harmonic filter is required at chiller OEM factory before dispatch of all chillers.	Shall be as per Tender conditions.
171	Tech Specs	1.1.3 C- Chiller Design Duty	Max sound level of chillers as per AHRI 575 is not mentioned	Kindly confirm if max sound levels of 85 d BA (1 mtr distance) to be considered at constant entry condenser temperature of 90 deg F.	Max sound level of chiller as per AHRI std is required.
172	Tech Specs	1.1.13 Performance Rating	Max NPLV of 0.45	Since these are high efficiency VFD chillers max NPLV at site conditions for 6.5 COP shall be 0.36. Kindly approve max NPLV of 0.36 kw/TR at design conditions.	NPLV mentioned is min. Lower NPLV is acceptable.

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
173	Tech Specs	1.6 Double Skinned Air Handling Unit 1.6.2 Standards	Complete AHU shall be AHRI Standard 410-2001 or Latest Edition / Euro-Vent BS EN 1886 : 1998 or Latest Edition, certified for minimum followings category:		Shall be as per Tender conditions.
174	Tech Specs	1.6 Double Skinned Air Handling Unit 1.6.2 Standards	b) Filter Bypass Leakage-Class -F9 / BS EN 1886 : 1998 Clause : 6 shall be required.	As understood from the approved manufacturers, the Filter Bypass leakage class -F9 / BS EN 1886 : 1998 Clause : 6 is not applicable for AHRI certified Units. Please delete the clause.	Shall be as per Tender conditions.
175	Tech Specs	1.6 Double Skinned Air Handling Unit 1.6.2 Standards	c) Thermal Transmittance- T1 / BS EN 1886 : 1998 Clause : 7 shall be required. d) Mechanical Strength - D1 / BS EN 1886 : 1998 Clause : 4 shall be required. e) Casing Air Leakage -L2 / BS EN 1886 : 1998 Clause : 5 shall be required. f) Thermal Bridging -Class TB2 / BS EN 1886 : 1998 Clause : 7 shall be required.	As understood from the approved manufacturers, the following is applicable for AHRI Certified Air Handling Unit. c) Thermal Transmittance- CT2 / BS EN 1886 : 1998 Clause : 7 shall be required. d) Mechanical Strength - CD4 / BS EN 1886 : 1998 Clause : 4 shall be required. e) Casing Air Leakage -CL6 / BS EN 1886 : 1998 Clause : 5 shall be required. f) Thermal Bridging -Class CB2 / BS EN 1886 : 1998 Clause : 7 shall be required. Please confirm.	Shall be as per Tender conditions.
176	Tech Specs	1.6 Double Skinned Air Handling Unit d) AHRI Certified Cooling / Heating Coils	The cooling & heating coil shall be made of aluminum fins and copper tubes of dia.12.5mm or 16mm OD. The minimum no. of fins / cm for cooling coils shall be 4.7 & for heating coil it shall be 2.4. The bonding of aluminum fins with copper should be done hydraulically. The tube thickness shall be 26 G & fin thickness shall be 37 G. The cooling/heating coil should be tested for leaks at a hydraulic pressure of at least 10 Kg / sq.cm. for a minimum period of 3 hours at works.	As confirmed by the approved Manufacturers, Please confirm the following: > The minimum no of fins per inch shall be 11-13 FPI > The tube thickness shall be 0.41 cm . > The cooling/heating coil should be tested for leaks at a hydraulic pressure of 21 Kg / sq.cm. for a minimum period of 3 hours at works.	Shall be as per Tender conditions.
177	Tech Specs	1.7 Fan Coil Units 1.7.2 The horizontal Type of Fan Coil	The cooling coil shall be 3 row deep cooling coil & 1 row deep heating coil having minimum 4.7 fins / cm. The fins configuration of Sigma flow or plain fin shall be acceptable. The OD of copper tube shall be 9.5 mm minimum & wall thickness of 0.5 mm. The Fan Coil Unit shall be powder coated both internally & externally.	As confirmed by the approved Manufacturers, Please confirm the following: > The minimum no of fins per inch shall be 11-13 FPI > The OD of copper tube shall be 9.5 mm & wall thickness of 0.35 cm. > The Fan Coil Unit shall be powder coated in externally only.	For FCU wall thickness of 0.41 is acceptable.
178	Tech Specs	1.7 Fan Coil Units 1.7.3 Technical Requirements of Fan Coil Units	b) Fan Static pressure -----6 - 8 MM External----- c) Face area of cooling Coil -----to suit the requirement at 500 FPM----- d) Minimum no. of fins / cm -----4.7-----	As confirmed by the approved Manufacturers, Please confirm the following: > The Available Fan static pressure -----4 - 5 mm External > Face area of cooling Coil -----to suit the requirement at 350 FPM > The minimum no of fins per inch shall be 11-13 Fins per Inch.	Acceptable.
179	Tech Specs	HVAC 1.5.6 Samples and Prototypes Page no.26	The Contractor shall submit samples of items such as grilles/ diffusers, controls and/ or any other parts or equipment as required by the Engineer-in-charge for prior approval in writing before placing the order. The Contractor shall also construct prototype or samples of work as laid down in the Contract or as instructed by the Engineer-in-charge.	Samples shall be submitted for the HVAC visible items inside the Conditioned Space like Grilles & Diffusers & Valves only. Please Confirm.	Shall be as per Tender conditions.
180	Technical Specs	HVAC 1.7 Testing, Commissioning & Handing Over 1.7.1 Testing Page no.27	All types of specified & routine tests of the equipments shall be carried out at the works of the EPC Contractor or the manufacturers of the components. The Department shall be free to witness any or all tests, if they so desired. The EPC Contractor has to inform to the department before dispatch of any material / equipment.	We presume only Chiller (One number of each type) shall be witness tested by Client/Consultant at Manufacturers work. And for other items/equipments only test certificates shall be submitted. Please confirm.	Shall be as per Tender conditions.
181	Technical Specs	HVAC 1.7.4 Final Performance and Capacity Test Page no.27	In addition to the above testing, final performance and capacity tests shall be carried out on the equipment as per the "Testing Schedules" during the defects liability period as follows:- a) Peak summer / monsoon test during the period from 15th may to 31st July.....The duration of the test shall be 72 hours.	Testing shall be done once prior to commissioning. Please confirm.	Shall be as per Tender conditions.

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
182		Prebid Queries		This being a Design & Build tender, we need sufficient time read the documents and Raise queries for clarification. Kindly allow us to raise further queries	No change. Shall be as per tender conditions
183		Extension of Bid Submission		Considering the Design & build Nature of the Project involving many specialised packages for which we have to collect quotes from vendors. Request you to kindly extend the bid submission by atleast 6 week .i.e. upto 04-03-2020.	No change. Shall be as per tender conditions
184	NIT/Page No. 2	Period of Completion	Overall 20 (Twenty) Months as per phases mentioned in SCC. This includes completion of the following buildings/areas including all services required to make them functional as detailed below : Ayush Block - 12 months Dharamshala (Night Shelter) - 12 months Director's Bungalow - 12 months External Development and Road Network - 12 months OPD (Out Patient Department) - 15 months Other Residential Quarters and Hostel Blocks - 15 months Academic Block - 16 months	We understand that completion period of project of this size is too less, request to keep it 27 months. Different completion period is mentioned for buildings. Kindly clarify that Defect Liability Period of the stated building will be reckoned from the date of completion of individual building. We request to keep the completion period not less than 15 months from start of project for any building.	No change. Shall be as per tender conditions
185	NIT/Page No. 3	Last date & time of submission of Online Tender	Up to 05/02/2020 by 15:00 hrs (IST)	Date of submission is too early with respect to Design and Build (EPC Mode) tender. Requested to extend the bid submission date by 15 working days.	No change. Shall be as per tender conditions
186		Quoting Sheet for the bidder	No reference/section given to Horticulture and Landscaping work separately.	As a general practice , Horticulture and Landscaping works are separately executed and paid instead of clubbing in Building packages. Additionnly Tender drawings for Horticulture and Landscaping works may please be issued / uploaded.	No change. Shall be as per tender conditions. Refer Site Layout Plan Drawing No. E-01.
187		Tender drawings in PDF		Kindly issue upload tender drawings in autocad format.	PDF drawings have already been uploaded with tender
188	Page No.10 / 18 (NIT) & Page No.10 of 12 / 24 (Scope Of Works)	DLP & Guarantee/Warranty	Defect Liability Period (CC/38.0) 12 months from the date of taking over the works by the HSCC or clients whichever is later. & 24. Guarantee/Warranty All plant/equipments/machinery installed/commissioned shall be guaranteed or warrantee (as per applicability of guarantee/warranty given in technical specifications for each plant/equipments/machinery) for a period of 24 months (minimum) from the date of acceptance and taking over of the installation by HSCC.	There is contradiction in NIT & Scope of work, We request you to please confirm that we shall quote as per NIT or Scope of Works, Please clarify/confirm.	Provision of 10 years warranty/CMC (5 years warranty followed by 5 years CMC) support for complete equipment systems of MGPS, MOT (including Integration), CSSD & Mortuary with back to back similar warranty CMC support commitment from OEM for major components of MGPS and MOT systems. For other works, the provisions for Defects Liability, Guarantee/Warranty shall be as per tender conditions.
189	Page No. 2 / 2 (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES HOSPITAL	DESIGN BASIS REPORT OF ELECTRICAL AND LV WORKS 2. SCOPE OF WORK Any other item missed out but essential for work will also be consider.	We will provide all the items/ scope of works defined in the DBR & all other items required if any shall be treated as extra item else please specify or define those items at pre bid stage only, please confirm/clarify.	shall be as per tender conditions.
190	Page No. 3 (DBR)	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES HOSPITAL	DESIGN BASIS REPORT OF ELECTRICAL AND LV WORKS 2.2 SCOPE OF WORK 66/11KV Grid Substation with 2x16MVA Power Transformers.	Request to clarify/ confirmation regarding the 66/11KV Grid Substation on following point:	Reply as mentioned below:
191			1	The List of approved makes & Technical specifications of 66KV/11KV Grid Substation are not in the Tender document. The specification given in the tender document are based on 11KV Substation Equipment only.Plesae furnish.	shall be as per CPWD/NBC/IS/ state electricity rules and fire safety rules of substation.
192			2	The 66KV/11KV Grid substation will be GIS/ Air insulated type, Please clarify/confirm.	shall be GIS type.as per CPWD/NBC/IS/ state electricity rules and fire safety rules of substation.
193	Page No. 6 / 2.3.3	DESIGN BASIS REPORT ELECTRICAL & ELV SERVICES HOSPITAL	Gas flooding system to be provided in HT/LT Panels as per requirement as per NBC/CPWD.	We request you to confirm this is applicable for the Main LT panels installed inside Sub-Station building only Please clarify/confirm.	All HT/LT Panels/APFC panels/Sync. Panels etc.in Substation
194	Page No. 14 / 1	ELECTRICAL POWER DISTRIBUTION	Electrical Power Distribution System: h) Meter box with enery meter (doble source) shall be provided for each Housing Unit and Shop.	Kindly note, Dual source energy meter shall not be required as DG power supply to residential buildings is not being provided.2Nos 180 KVA Capacity DG sets are installed in ESS-2 for partial loads. Please clarify/confirm.	shall be as per tender conditions.
195	Page No. 18 / 2.7.b.xvii	DESIGN BASIS REPORT - INTERNAL ELECTRIFICATION, LV & ALLIED WORKS - Raceway	xvii. SS Raceways (SS 304 or SS 316) with all accessories shall be provided in DATA Server room, ELV Rooms of various buildings as per requirements.	Generally GI Raceways are used for carrying cables but in this clause SS Raceways are mentioned, We request you to accept GI Raceways, Please clarify/confirm.	shall be as per tender conditions.
196	Page No. 30 / 2.7.1	DESIGN BASIS REPORT - Lighting Design & Lighting Fixture - Lighting Fixtures	All LED lighting Fixture shall have luminous efficacy of more than 100 Lumens per watt.	We request you to allow us the luminous efficay as per standard manufacturing practice of lighting fixture manufacturer, Please confirm.	shall be as per tender conditions.

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
197	Page No. 38 / 2.7.10	DESIGN BASIS REPORT-UPS	UPS	The minimum capacity of UPS to be define/ indicate for defferent requirements, Please clarify/confirm.	shall be as per comprihensive design based on DBR.
198	Page No. 39 / 2.7.11	DESIGN BASIS REPORT SOLAR PHOTOVOLTAIC POWER SYSTEM	The total Capacity of Solar Power System to be provided shall be minimum 2.5 % of the Internal Lighting & HVAC Load or as per GRIHA Norms requirement.	We request you to confirm, 2.5 % of maximum demand load or connected loads, Please clarify/confirm.	shall be as per tender conditions.
199	Page No. 39 / 2.8 I	DESIGN BASIS REPORT DUMBWAITERS	Passenger cum Bed lifts, Passenger lifts, service lifts, dumbwaiter etc.	We request you to provide Capacity of Dumbwaiter, Please clarify/confirm.	Shall be minimum 250 KG/as per comprihensive design based on DBR
200	Page No. 39 / 2.8 II	DESIGN BASIS REPORT ESCALATOR	2 No. indoor type commercial Escalator to be installed in Hospital Block from Ground Floor to first Floor.	We request you to confirm the Escalator is Heavy Duty(Outdoor Installation) or Light duty (Indoor Installation), Please clarify/confirm.	Heavy duty type.
201	Page No. 2 / 2 a	IT INFRASTRUCTURE DBR (DLP & Warranty)	2. SCOPE OF WORK a) Establishment of Wired & Wireless Network Infrastructure: - Supply, Installation, Configuration, Testing and Commissioning of Local Area Network (LAN), Wide Area Network (WAN) & Wi-Fi Network with 5 years onsite warranty as per the requirement.	There is contradiction in NIT & Scope of work, We request you to please confirm that we shall quote as per NIT or Scope of Works, Please clarify/confirm.	No Change. Tender condition prevails.
202	Page No. 9 / 4	H.T. PANEL - Technical Specifications) - TYPE TEST	4.1 The equipment shall be tested at independent laboratory as per IEC 62271-100/200 For the following minimum tests.	We will provide Type Test Certificate carried out on same or higher rating equipment carried out earlier at the time of approval, Please confirm.	shall be as per tender conditions.
203	Page No. 34 / 7.4.4.iv	DIESEL GENERATOR SETS - Technical Specifications -Lubrications	Necessary temperature and pressure gauges and other instruments shall be supplied and fitted on the lubrication system.	Lube oil temperature facility is not possible. Lube oil pressure can measure in controller, Please clarify/confirm.	shall be as per tender conditions.
204	Page No. 34 / 7.4.10.iii	DIESEL GENERATOR SETS - Technical Specifications -Noise Level	Noise level of the set shall not exceed 115-120dba at one meter distance of the engine.	We will provide 25db insertion loss will be provide as per CPCB norms, Please clarify/confirm.	Shall be as per CPCB norms.
205	Page No. 35 / 7.4.12.b	DIESEL GENERATOR SETS - Technical Specifications - Battery Stand.	The battery shall be provided with good quality teakwood stand painted with acid proof black paint with min 3mm thick rubber mat below the batter.	We will provide the battery stand as per manufacturer standard, Please confirm.	shall be as per tender conditions.
206	Page No. 36 / 7.4.14	DIESEL GENERATOR SETS - Technical Specifications - Fuel Pumps	Fuel Pumps - Priming & Transfer	Single fuel pump will provide as per manufacturer standard, different pump for operation is not required, Please confirm.	shall be as per tender conditions.
207	Page No. 38 / 7.5.8	DIESEL GENERATOR SETS - Technical Specifications - Fuel Pumps	The sound control system designed to suppress the sound level to 75 db maximum at 1 meters distance in open environment.	25db insertion loss will be provide as per CPCB norms, Please confirm.	shall be as per tender conditions.
208	Page No. 73 / 12.01	NURSE CALL SYSTEM - Technical Specifications	Enhanced Device Intelligence Communications and patient terminals should be equipped for receiving up to 32 audio streams (e.g. radio programmes or in-house programmes). Furthermore, every system switch should contain an interface to an external TV device, which can be assigned to a specific room via the configuration.	This is primarily a Nurse Call System & Patient Safety Device, streaming of any other audio communication, other than nursing staff and patient communication is not relevant. TV control is applicable only with medical grade device, Please Clarify/Confirm.	shall be as per tender conditions.
209	Page No. 74 / 12.01	NURSE CALL SYSTEM - Technical Specifications	Integration with Other Systems There should be possibility to integrate nurse call system with other system like fire alarm, EPBAX, HIS etc.	As this is primarily a Patient Safety Device, its highly recommended internationally not to integrate directly with firealarm or HIS etc, Please Clarify/Confirm.	shall be as per tender conditions.
210	Page No. 74 / 12.01	NURSE CALL SYSTEM - Technical Specifications	Management Server For uploading the firmware and the system configuration, for operating interfaces to foreign systems, for logging of all system events and as a central location for system configuration and remote maintenance and is an interface to all other foreign systems.CPU: Intel Xeon Dual core, 2.3 GHz, RAM: 4GB DDR2-800 1xSATA HDD 300 GB, 2xPCI, 2x1GB LAN Supply voltage: 115/230 VAC, Operating system: Linux (SUSE Server 10.x) Electrical safety conforming to EN 60950-1Software	Management server is not required for the functioning of NCS. We require only computer system/server to upload firmware, Please Clarify/Confirm.	shall be as per tender conditions.
211	Page No. 75 / 12.01	NURSE CALL SYSTEM - Technical Specifications	Software for integration with IPBX system This interface used Voice over IP technology in accordance with the standard H.323 or SIP and is used for telecommunications between the patient terminals and the public telephone network as well as to other in-house extensions.	Communication between patient terminal and public telephone network is not possible as UL1069 does not allow it. As it's a life safety device, so communication is desirable only between nursing staff/doctor & patient, Please Clarify/Confirm.	shall be as per tender conditions.
212	Page No. 75 / 12.01	NURSE CALL SYSTEM - Technical Specifications	Nurse Station Terminal: For use as a communications and information centre within a ward and for use in the relevant staff area or Nurse Stations. Range of functions: • Minimum 6" touch screen large LC display with 2way speech facility, inbuilt speaker, microphone. • Displays date and time	As per international standards,Nurse console of sufficient display size is provided. Communication facility is possible only between 'console to console' and 'console to patient/doctor' or vice versa, Please ammend.	shall be as per tender conditions.
213	Page No. 76 / 12.01	NURSE CALL SYSTEM - Technical Specifications	RJ45 for connecting a laptop belonging to the patient: The patient thereby has access to the WWW via the system's Internet server.	No connection module is provided to connect patient laptop to surf internet. It's a life saving device, its not for entertainment, Please amend.	shall be as per tender conditions.
214	Page No. 76 / 12.01	NURSE CALL SYSTEM - Technical Specifications	Integrated contact-free smart card reader, Mechanism for inserting a smart card	No facility for inserting smart card or smart card reader , as it's an exclusive communication device, Please amend.	shall be as per tender conditions.

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
215	Page No. 1 / 1	LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM	HT VCB Panel Board/ RMU - Siemens/L&T/ABB/Schneider	We request you to approve System House of the given makes, Please Confirm	shall be as per tender conditions.
216	Page No. 1 / 2	LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM	Transformer - ABB/GE prolac/ Schneider/Alstom	We request you to approve KEC/CGL/VOLTAMP also. Since ABB do not manufacture OIL TYPE Transformers, Please approve/confirm.	shall be as per tender conditions.
217	Page No. 3 / 34	LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM	LED light fitting & Fixture Philips / Crompton Greaves/Bajaj/ Osram	We request you to approve of Wipro, Havells, Polycab make also, Please confirm.	shall be as per tender conditions.
218	Page No. 4 / 38	LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM	Solar Power system(PV Cell) - TATA Power Solar, CEL, BHEL, BEL	We request you to approve MNRE approved vendor also, Please confirm.	shall be as per tender conditions.
219	Page No. 4 / 44	LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM	UPS system Schneider- MG , APC/ Eaton Power ware/ Emerson	We request you to approve Numeric & Reillo also, Please confirm.	shall be as per tender conditions.
220	Page No. 6 / 60	LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM	Lifts/ Dumb Waiters/Escalators Otis /Kone/ Mitsubishi/ Scheindler	We request you to approve Johnson also, Please Approve/Confirm.	"Johnson" is added to the list of Approved makes for Lifts/Elevators
221	Page No. 6 / 67	LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM	EPBAX , SOLAR SYSTEM INTEGRATOR AKSISCO,AMBER	We request you to approve MNRE approved vendor also, Please confirm.	shall be as per tender conditions.
222	Page No. 1 / 12	List of approved makes for IT Work	UPS System - APC/Eaton Power ware/Emerson/Schneider	We request you to approve Numeric & Reillo also, Please confirm.	shall be as per tender conditions.
223		GENERAL	Drawings are in PDF Format	We request you to provide all drawings in AutoCAD, Please confirm.	PDF drawings have already been uploaded with tender
224			Data Sheet & Compliance	We request you to allow us to submit data sheet & compliance after award of work, Please Allow.	shall be as per tender conditions.
225	1.1.3 C- Chiller Design Duty	Tech Specs	The cooler shall be selected for maximum pressee drop of 6.5 mtr on cooler and 7.5 mtr on condenser	Pressure drop of 6.5 mtr on cooler and 7.5 mtr on condenser is very low for 1000 TR Chiller. As per CPWD 2017 specs, max pressure drop for cooler and condense should be 10 mtrs. Request you to kindly allow max pressure drop of 10 mtr on cooler and condenser.	Max pressure drop of 10 m for cooler and condenser both is acceptable.
226	1.1.3 C- Chiller Design Duty	Tech Specs	An externally mounted 1/2 micron replacable catridge oil filter equipped with service valves shall filter oil.	Kindly confirm if factory fitted online stanby oil filter is required, to allow filter replacement while chiller is under operation.	Shall be as per tender conditions.
227	1.1.3 C- Chiller Design Duty	Tech Specs	The unit shall be selected so that it can operate from 100- 25% load at design constant entering condenser water temperature without stall or surge.	Kindly specify if use of hot gas by pass or envelop stability control can be used or not.	Shall be as per tender conditions. Without hot gas bypass or Envelop stability control.
228	1.1.6 Compressor Motor	Tech Specs	Compressor motor shall have IP 54 protection and shall be either open or semi-hermetic	Please note standard water cooled chillers by all manufacturers (open or semi-hermetic) Comply with IP 23 protection only (for overall chiller) and different enclosure/protection for a motor does not help as it is installed on main chiller skid in enclosed plant room. We design our chillers with air cooled motor which shall be with SPDP type protection relevant for indoor application. The same is approved in CPWD and all HSCC jobs like AIIMS Guntur, AIIMS Nagpur, AIIMS Kalyani, Chandrapur medical College, etc. Kindly approve air cooled SPDP open drive motors with IP 23 protection.	Standard design of manufacturer is acceptable.
229	1.1.10 Compressor Motor Stator	Tech Specs	The chiller should have THDi less than 5 % at equipment level	Kindly confirm THDi less than 5 % is required at all loads (100-25%) at chiller source.	Yes.
230	1.1.13 Perfomance Rating	Tech Specs	Max I kw/TR shoud be 0.65	Since these are high efficeincy VFD chillers max efficeincy at site conditions for 6.5 COP shall be 0.63 Kw/TR. Kindly approve max lkw/TR of 0.63 .	IKW/TR mentioned is min. Lower IKW/TR is acceptable.
231	1.1.10 Compressor Starter	Tech Specs	VFD shall be provided with Unit mounted/ free standing VFD	Kindly confirm if same VFD used for testing to be supplied along with chiller. Also confirm if physical inspection of all VFD along with active harmonic filter is required at chiller OEM factory before dispatch of all chillers.	Shall be as per Tender conditions.
232	1.1.3 C- Chiller Design Duty	Tech Specs	Max sound level of chillers as per AHRI 575 is not mentioned	Kindly confirm if max sound levels of 85 d BA (1 mtr distance) to be considered at constant entry condenser temperature of 90 deg F.	Max sound level of chiller as per AHRI std is required.
233	1.1.13 Perfomance Rating	Tech Specs	Max NPLV of 0.45	Since these are high efficeincy VFD chillers max NPLV at site conditions for 6.5 COP shall be 0.36. Kindly approve max NPLV of 0.36 kw/TR at design conditions.	NPLV mentioned is min. Lower NPLV is acceptable.

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
234	Clause 1.1.3. A. Water Cooled Centrifugal Chillers,	Technical Specifications (HVAC)	Refrigerant shall be R 134 A/R-1233zd	Kindly note that Trane doesn't manufacture Centrifugal Chillers with R-134a refrigerant. However, Trane can offer R-514A chillers with a Global Warming Potential of less than 2 to offer for your prestigious project. Kindly note that R-514As are also included in National Building Code 2016 released on 15th March, 2016 and also approved by CPWD via office memorandum number. DG/AMENDMENT SPECIFICATIONS (E&M)/01 DATED 10.10.2017. These refrigerants are also approved in multiple government projects like, World Trade Centre (10,800 TR), WTC Nauroji Nagar (NBCC), Delhi; ITO, Pragati Maidan (9475 TR), Delhi; 2400 Seater Auditorium (1900 TR), Kolkata; AIIMS, Kalyani (5,000 TR), AIIMS, Guntur (5,000 TR), AIIMS, Nagpur (5,000 TR), AIIMS, Delhi (1,275 TR), etc. Putting ASHRAE safety classification of A1 restricts the competition and there are lots of AIIMS (PAN India) and other hospitals which are running with B1 classification of ASHRAE by various manufacturers. Hence, we request you to please don't limit competition and request you to kindly incorporate R-514A in your project.	Shall be as per tender conditions. The refrigerant shall be A1 classified as per ASHRAE34. 1233zdE is also a HFO.
235	Clause 1.1.1. -A. Water Cooled Centrifugal Chillers	Technical Specifications (HVAC)	Air Cooled VFD	We have offered water cooled VFD for 1000TR chiller as per our international design. Request to accept the same	Standard design of manufacturer is acceptable.
236	Clause 1.1.1. -A. Water Cooled Centrifugal Chillers	Technical Specifications (HVAC)	IP54 enclosure	IP protection shall be NEMA 1 as per international design for unit mounted VFD for indoor application. Request to accept the same	Standard design of manufacturer is acceptable.
237	Water Cooled Centrifugal Chillers	Technical Specifications (HVAC)	Evaporator pressure drop as 5m	Our optimized chiller deliver evaporator pressure drop as 7.5m. However, we are offering better efficiency as per requested in tender. Request to accept the same	Max pressure drop of 10 m for cooler and condenser both is acceptable.
238	Sr. no- 10 & 14 - Air Handling Units (High Static) with cooling coils	LIST OF APPROVED MAKES AND MANUFACTURERS- HVAC	Carrier/Caryaire/Blue-star/Systemair/Voltas/VTS/Flaktwood/ Waves/Edgtech /Zeco	We request you to kindly also approved "Unique" make in AHUs and FCUs approved list of make.	Shall be as per tender conditions.
239	Sr. no- 19 - Centrifugal /Axial Flow Fans/Tube Axial (AMCA Certified)	LIST OF APPROVED MAKES AND MANUFACTURERS- HVAC	Flakt/ Nicotra/ Kruger /System air /Air flow/ Comefri	We request you to kindly also approved "Greenheck" make in Centrifugal /Axial Flow Fans/Tube Axial (AMCA Certified) approved list of make.	Shall be as per tender conditions.
240	Sr. no- 23 - VRF/VRF	LIST OF APPROVED MAKES AND MANUFACTURERS- HVAC	Hitachi/Daikin//Toshiba/Mitsubishi /Voltas	We request you to kindly also approved "Carrier" make in VRF/ VRF approved list of make.	Shall be as per tender conditions.
241	Sr. no- 25- Inline Fan	LIST OF APPROVED MAKES AND MANUFACTURERS- HVAC	Flakt/ Nicotra/ Comefri/ Kruger/ SystemAir	We request you to kindly also approved "Ostberg " make in Inline Fan approved list of make.	Shall be as per tender conditions.
242	NIT/PQ	Similar nature of works		This is with reference to your NIT No. HSCC/AIIMS/Rajkot/EPC/2020 dated 17.01.2020 dated 17.01.2020. We note that there is change in the definition of similar work from the previous NIT for the same work. For broad based participation and for fair competition. You are requested to keep same definition of similar work and additional requirements as in the previous NIT. Further you may like to add services like internal and external Electrical work and internal water supply, sanitary installation, Fire fighting, HVAC, Modular OT, Gas Manifold system for the completed work of 500 Beds. You are requested to consider the above for making eligibility requirement more broad based.	Eligibility criteria has been amended. Please refer to Amendment No.1
243		Plant and Machinery Advance	An advance for Plant and Machinery	Requested to provide advance payment for the Plant and Machinery brought to site and same shall be deducted from RA Bills and as per CPWD Clause 10B(iii).	No change. Shall be as per tender conditions
244		SCC, clause 11.2 (Page No. 4,5) Statutory approvals	As per SCC, clause 11.2, All statutory approvals are in the scope of bidder	Keeping in mind the complete project completion schedule of 20 months, it will be very difficult to obtain the statutory approvals civil & structural including MEP services etc and complete the entire scope of works. Keep 4 months exclusively for the approval plus 24 months for the completion. Kindly confirm.	No change. Shall be as per tender conditions
245		SCC, Clause (ii)Page no.- 13, Payment of RA Bill	Minimum RA Bill of Rs.18.00 Crores	i) Being and EPC Project, it is very difficult to submit bill of min. Rs.18 Cr. In the 3-6 months (Design & Approval Stage). Hence, we request you to exempt first three RA and last two RA from this minimum billing ceiling. ii) Further, we also request you to make provision: a) 70% Adhoc payment of each RA bill within 7 days from the date of submission. b) Balance 30% within 21 days from the date of submission. In case of any delay beyond the above prescribed time frame, owner will liable to pay interest on this delay payment as per CPWD condition. Kindly confirm.	Please refer to Amendment No.- 1.

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
246		Drawings	Drawings provided along with Tender is in PDF format	We request you to provide all drawing in Auto Cad format, which will help us Structural designing work and quantifying the BOQ	No change. Shall be as per tender conditions
247		Cl. 10CA, GCC, Page 31	No escalation shall be applicable on this contract. The Price quoted by contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works.	Bidder request to allow the escalation as per CPWD Cl. 10CA for Steel & Cement and 10CC for other materials and labour. As the contract period is more than 12 months all the CPWD projects including Hospital projects implemented by HSCC allowed the escalation as per CPWD formula.	Supply of Medical Equipment is not in scope of the tender except as detailed in the DBR. However, space planning and execution has to be executed as per requirement of various departments.
248			Medical equipment	Please provide the list of approved makes for medical equipment.	No change. Shall be as per tender conditions
249			Drawings	Please provide the Auto cad drawings for services, quantity calculations.	PDF drawings have already been uploaded with tender
250		GCC Clause 46.1,page no.69	46.0 LAND FOR LABOUR HUTS/ SITE OFFICE AND STORAGE ACCOMMODATION	We request you to provide us sufficient land for contractor's site office work shop , storage sheds Batching Plant and fabrication yard and labour camp etc within the premises of work.	Spaces for contractor's site office work shop , storage sheds Batching Plant and fabrication yard may be provided depending upon availability. The bidder shall not have any claim whatsoever reason in case the space is not provided. Bidder should visit and examine the site before submitting the bid.
251		General	Extension of time for bid submission	You are aware that proposed Tender is EPC contract ie Scope of work includes survey, investigation, preparation of Architectural design, Structural design and design of all buildings required services in bidder scope. In this regard we need some more time for preparation of drawings, quantities for all items and we have to get competitive offers from potential vendors which require time for getting quotations and further evaluations. In this regard we request you to extend the bid submission by at least two weeks from the date of receipt of submit our most competitive offer.	No change. Shall be as per tender conditions
252	NIT/PQ	Eligibility Criteria		The "Minimum Eligibility Criteria" as per 2.0 Page No.3, is not in line with previous Tenders. Hence, we are requested you to kindly modify the Minimum Eligibility Criteria mentioned in the bid documents as per earlier tender.	Eligibility criteria has been amended. Please refer to Amendment No.1
253	General	General		Kindly provide the Autocad drawings of all the Drawings/ Documents provided with tender for our ready ref and further action.	PDF drawings have already been uploaded with tender
254	General	General		Kindly confirm about the Statuatory approval related to project. Kindly confirm about the any scope related to any approval which is in bidder/ Contractor scope.	No change. Shall be as per tender conditions
255	Notice Inviting Tender	Last date & time of submission of Online Tender		The given project is on EPC basis and it requires more time for the exact estimation of BOQ and to get vendor code for the procurement items, hence we hereby request you to extend the bid submission upto 11/03/2020.	No change. Shall be as per tender conditions
256	NIT/PQ	Eligibility Criteria		We request your kind self to revised the NIT eligibility criteria mentioned as per clause 2.0, page no.03 i.e Minimum Eligibility Criteria One work of 80%, twoworks of 60% & three works of 40% of estimated cost. Therefore, we request you to revise the above criteria as on e work of 50% , two works of 30% & three works of 20% of estimated cost for better competition of work.	Eligibility criteria has been amended. Please refer to Amendment No.1
257	4.0.4, Pg.No. 20	Active Harmonic Filter	Should have 3 level topology	Level of topography is specific to manufacturer. Kindly consider minimum level 2 topography.	shall be as per tender conditions.
258	4.0.2.1.4 Pg.No. 20	Active Harmonic Filter	AHF Shall have 3 level topology (12 IGBTs) to ensure low losses & higher quality voltage output (tripple should be very low).	Level of topography is specific to manufacturer. Kindly consider minimum level 2 topography.	shall be as per tender conditions.
259	5.1 Pg.No. 21	Main LT, MV & FLOOR PANELS	Applicable Standard	Latest applicable standard for LT Panel is IS/IEC 61439. Design verified assembly Kindly consider IS/IEC 61439.	shall be as per tender conditions.

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
260	5.2 Pg.No. 22	Main LT, MV & FLOOR PANELS	Apparatus forming part of the Main/Sub Panels shall have the following minimum clearances. i. Between phases - 32 mm ii. Between phases and neutral - 26 mm iii. Between phases and earth - 26 mm iv. Between neutral and earth - 26 mm	Minimum clearances required as per IEC 61439 shall be min. 14 mm. Kindly consider clearances as below:- i. Between Phases: 25mm ii. Between phase and earth: 19 mm iii. Between phase and neutral: 19mm Kindly consider clearances as below:- i. Between Phases: 25mm ii. Between phase and earth: 19 mm iii. Between phase and neutral: 19mm	shall be as per tender conditions.
261	6.1.6.1 Pg.No. 24	AIR CIRCUIT BREAKERS - Accessories	Auxiliary contacts 6 NO + 6 NC, of rating 16Amp at 415 volts 50Hz.	L&T offers standard auxiliary contacts as 4 NO + 4NC Kindly consider 4NO + 4NC	shall be as per tender conditions.
262	6.2.2 Pg.No. 28	MOULDED CASE CIRCUIT BREAKERS. FRAME SIZES	The MCCBs shall have the following frame sizes subject to meeting the fault level or as per manufacturer's standard practice. a. Upto 100A rating 100A frame. b. Above 100A upto 200A 200A frame. c. Above 200A up to 250A 250A frame. d. Above 250A up to 400A 400A frame. e. Above 400A up to 630Aq 630A frame. f. Above 630A to 800A 800A frame.	Frame sizes are specific to manufacturer. Kindly consider multi fold design only.	shall be as per tender conditions.
263	1.1.7 Pg.No. 16 HVAC	Drives Varietal Frequency Drive	List of Approved Makes for Variable Frequency Drive	L&T make has been missed out in list of approved makes for Variable Frequency Drives. Kindly consider Kindly approve L&T	shall be as per tender conditions.
267	NIT/PQ	Pre-Qualification Criteria	a. Three *Similar Works each costing not less than 40% of the estimated cost put to tender, i.e. Rs.301.20 crores OR b. Two *Similar Works each costing not less than 60% of the estimated cost put to tender, i.e., Rs.451.80 crores OR c. One *Similar Work costing not less than 80% of the estimated cost put tender, i.e., RS.602.40	Very few agencies will have this much of Experience so we request to consider below mentioned criteria for healthy competition as some Govt. Department also follows same: a. Three *Similar Works each costing not less than 20% of the estimated cost put to tender, i.e. Rs.150.60 crores OR b. Two *Similar Works to tender, i.e., RS.602.40 each costing not less 30% of the estimated cost put to tender, i.e., Rs.225.90 crores OR c. One *Similar Work costing not less than 50% of the estimated cost put to tender, i.e., Rs.376.50 crores	Eligibility criteria has been amended. Please refer to Amendment No.1
268	NIT,	Last Date to time of submission of online tenderr	Up to 05/02/2020 by 15:00 hrs (IST)	We require more time to study the tender documents and to prepare the details designs drawings as of said tender work is to tender be carried out on EPC bases. we are herewith kindly requesting your good selves to extend the last date of submission of tender documents for further 15 days.	No change. Shall be as per tender conditions
269	Vol. III SCC	Schedule stages of payments	As per Schedule given 10% of Amount of Contract Price with held upto Testing and Commissioning and Handover	We request to consider 10% amount with held only on Electric, MGPS, HVAC, OT, Fire Services amount as most of Machineries Installation to be execute under this portion.	No change. Shall be as per tender conditions
270	NIT, Pg No 10	Escalation or Price Variation	No escalation shall be applicable on this contract period as well as extended period for completion of the works if any	This clause should be applicable because of duration of work project is 20 months and fluctuation in prices for core material is high so it is difficult to consider for long time.	No change. Shall be as per tender conditions
271	NIT / PQ	Period for completion	Overall 20 (Twenty) Months	As per Quantum of Work, It should be completion Extend minimum 10 Months	No change. Shall be as per tender conditions
272	NIT / PQ	Pre Qualification Criteria	Self certified copy of Bank Solvency Certificate issued from Nationalised or any Schedule Bank should be at least 40% of Estimated Cost of the Project put to tender.	We request you to consider All Credit facility from Bankers instead of Bank Solvency Certificates	No change. Shall be as per tender conditions
273	Tender drawings	Tender Document Drawing Part-I	Drawing Part-I Drawing Title: Survey Plan	Figure on Survey plan could not be readable so Kindly provide drawing good readable survey Drawing	PDF drawings have already been uploaded with tender
274	Tender drawings	Tender Document Drawing Part-I	Drawing Part-I Drawing Title: Site Layout Plan	Dining and Kitchen Block Could not see on Layout Plan Please provide more clear drawing in which structure location can clearly identify	Please refer Drawing Title: Site Layout Plan, Drg. No. A: Survey 01
275	Vol. III SCC	Pg. No. 01 Scope of Work	External Development & Road Network	Please Clarify In Detail Scope of External Work	No change. Shall be as per tender conditions

S.No.	Document ref.	Clause, Page Ref.	As per Tender Provision	Bidders Queries/ Request	HSCC Reply / to be Amended
276	NIT / PQ	Pre Qualification Criteria: Cl.No. 2.0		We attached herewith your past Hospital projects in Nagpur wherein you have not mentioned any requirements of Centralized HVAC work in "similar work" definition. Then why similar treatment has not been given in this Project Tender?	Eligibility criteria has been amended. Please refer to Amendment No.1
277	NIT / PQ	Pre Qualification Criteria: Cl.No. 2.0		Kindly appreciate the fact that normally no residential campus Project(s), particularly such Government Residential Projects, would have central HVAC and alternatively, you may please let us know of any such residential Project(s), which has central HVAC. Therefore, we request you to please clarify in such regard and remove the requirement of Centralized HVAC work from the definition of "similar work".	Eligibility criteria has been amended. Please refer to Amendment No.1
278	NIT / PQ	Pre Qualification Criteria: Cl.No. 2.0		If any of the Govt. Project Contractor has execute single Project under two contracts (for the same Project building) merely to facilitate Contracting Authority's finance / budget (i.e. civil work is one contract and finishing work as second contract for same Project Building), can it be considered as composite agreement to fall within definition of "similar work"? Pls clarify and amend accordingly.	Eligibility criteria has been amended. Please refer to Amendment No.1
279	Apporoved Make List	<u>Water Supply</u> Sl.No. 47 : Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside (IS:15905)			Shall be read as follows: Neco, SKF, RPF, HEPCO
280	Apporoved Make List	<u>Water Supply</u> Sl.No. 49 : STP,ETP,WTP,SYSTEM INTEGRATOR			Shall be read as follows: AKSYSCO, AMBER
281	Apporoved Make List	<u>Fire Fighting</u> Sl.No.32 : FIRE FIGHTING SYSTEM INTEGRATOR			Shall be read as follows: AKSYSCO, AMBER
282	Apporoved Make List	<u>Electrical</u> Sl.No. 49 : EPBAX , SOLAR SYSTEM INTEGRATOR			Shall be read as follows: AKSYSCO, AMBER

BASEMENT WATERPROOFING	
Waterproofing of Raft	
<p>Horizontal Areas (Below Raft): Supplying and installing 1.2mm thick self-adhesive HDPE membrane having the following technical properties-Puncture resistance 1000 N (\pm 5 to 10%) as per ASTM E 154 ,Tensile strength of 25 Mpa as per ASTM D412,Elonagtion of >500% as per ASTM D 412, Resistance to hydrostatic head > 60M as per ASTM D 5385,Peel adhesion to concrete 880N/m as per ASTMD903. Low temperature flexibility of – 25 degree C Pass as per ASTMD 1970, 45 Days UV Exposure test-Pass. The system should be fully bonded to the RCC and consists of highly resilient HDPE layer, a pressure sensitive adhesive layer which is covered by a weather proof protective layer. The membrane shall have minimum of 100mm side and end laps which shall be sealed with double sided adhesive tape. The size of the membrane should not be less than 3Mtr. x 20 Mtr. to minimize the joints.</p>	
<p>Providing and fixing Swell able water bar 20 X 10mm at construction joint and junction of raft and retaining wall. The procedure involves spot bonding the water bar between the reinforcement with requisites per manufacturer’s methodology</p>	
Waterproofing of Retaining Wall	
<p>Supplying and applying two component 100% pure polyurethane based waterproofing coating having elongation of >600% and tensile strength of >6MPa (as per ASTM D 412) applied to achieve a minimum of 1.5mm DFT. The system includes base preparation of cleaning, brushing and removal of flacky materials, grouting the porous area with cementitious grout, proper coving between slab and wall junctions and priming the surface with PU/epoxy primer (or equivalent) applied @ 150gms/Sqm.</p>	
<p>Providing & Fixing of 8mm thick dimple board of compressive strength not less than 200kN/m2.</p>	
<p>Termination: Supplying and applying aluminium strip flashing with fasteners at the top and sealing the joints with PU sealant.</p>	

TERRACE WATERPROOFING AND INSULATION

Sl.No	Item Description
i	Repairing cracks by cutting & making V groove in 25x25 mm, with polymer modified mortar, filling the groove with CM (1:3) mixed with polymer @10% by weight of cement.
ii	Supplying and applying a base coat of highly elastomeric, single component polyurethane based waterproofing coating, having elongation of 400% and tensile strength of 2-4Mpa, applied at 1.5 kg/Sqm at the corners above the mother slab for a length of 150mm both horizontally and vertically.
iii	Supplying and applying instant setting spray applied Polyurethane Foam of density 55-60 kg/m ³ at an avg 10mm thick waterproofing system as per the manufacturer's recommendations. The applied polyurethane foam shall have the following properties: i) Thermal Conductivity: 0.029 W/mK at 25C mean temperature as per ASTM C-518/91 ii) Closed cell content: 96-98% as per ASTM D-2856 iii) Fire resistance property: Confirming to Class - B2 as per DIN 4102

iv	Over the polyurethane foam, supplying and applying highly elastomeric, single component polyurethane based waterproofing coating, having elongation of 400% and tensile strength of 2-4 MPa (as per ASTM D 412) applied at 1.5 kg/Sqm.
v	Supplying & laying 150 gsm Geotextile (non woven polyester) over the entire membrane maintaining proper overlaps.
vi	A filler board of 10mm thickness for construction joints shall be placed vertically to form a rectangular bay not exceed 12m ² .
vii	Supplying and applying avg of 75 mm thick M20 fibrated grade concrete screed including control joints of 3M X 4M size , making angle fillet of 50mmX50mm using M20 grade concrete at the corners. Exposed filler boards shall be cut by mechanical means and filling the groove with Polysulphide Sealant. The width of sealant fill shall not exceed 10mm.
viii	Termination: Supplying and applying aluminium strip flashing with fasteners at the top and sealing the joints with PS sealant.

WATERPROOFING OF WATER TANKS & STP

	Providing and applying a two component polymer based cementitious waterproofing system in following sequence;
1	Cleaning the internal surface areas thoroughly so that they are free of all contaminants like dirt and laitance & to remove all the loose materials by various mechanical means.
2	Removal of all surface imperfections, protrusions, loose concrete & filling of cracks using Polymer Modified Mortar in the ratio Cement: Sand (1:4) and 5% by weight of cement.
3	Providing & grouting at construction joints cementitious grout into each nozzles(1 mtr c/c) at regular intervals as per the requirements.
4	Providing and making fillets at the junction of the walls and the slabs using cement mortar of 1:4 mix admixed with 5 % of SBR latex by weight of cement.
5	Applying 3 coats of 2 component, pre-packed, polymer modified cementitious coating of tensile strength of 1.0 N/Sq.mm as per ASTM D 412, elongation of 120% as per ASTM D 412 ,crack bridging of 2mm as per ASTM C836, applied @ 3kg/sq.mtr all over the slab including the angular fillets and extendable over the vertical walls .Finally sprinkling sand over the third coat for better adhesion with plaster. The interval between each coat of coating application is 6-8 hrs.
6	Providing & laying a protection layer of 25 mm thick cement mortar admixed with integral waterproofing compound as per IS 2645 .
ADDITIONAL FOR POTABLE WATER TANKS	
1	Providing & applying two coats of antibacterial antifungal food grade epoxy coating at a consumption of 3 Sq.mtr/kg as per CFTRI 21 CFR 175 - 300 of US - FDA , Water absorption nil as per ASTM C 870:90, adhesion strength of 2.5 N/mm ² as per ASTM D4541:02 applied with an interval of 6-8 hrs between each coat over the cured plastered surface as per manufacturer's instruction.
ADDITIONAL FOR STP TANKS	
1	Providing & applying 2 coats of Coal Tar Epoxy at a consumption of 3 sq.mtr/Kg with Bonding / adhesion of 1.2 to 1.4 N/mm ² as per ASTM D 4541 ,Water resistance, immersion – 7 days passes as per ASTM D 870-09, Chemical resistance, immersion in dilute acid alkali & salt solutions – 7 days -Passes as per ASTM 868 as per manufacturer's instruction

TOILET WATERPROOFING
<p>Supplying and applying 2 component Hybrid Polyurea Polyurethane liquid applied elastomeric seamless membrane based waterproofing that can be applied by brush, roller or spray having elongation of >600% and tensile strength of >6MPa (as per ASTM D 412) applied to achieve a minimum of 1.5mm DFT. The system includes base preparation of cleaning, brushing and removal of flaky materials, grouting the porous area with cementitious grout, proper coving between slab and wall junctions and priming the surface with PU/epoxy primer(or equivalent) applied @ 150gms/Sqm. The coating shall be continued to the entire horizontal area and should be terminated at 300mm above the FFL.</p>
<p>Providing and laying 120gsm Geotextile over the entire horizontal area maintaining proper overlaps.</p>
<p>Horizontal protection: Supplying and applying slope making protection with 40 mm avg thick M20 screed</p>
<p>Vertical Protection: Providing and applying 15 mm thick with CM 1:4 for wall plastering admixed with integral waterproofing compound, Dr. Fixit Pidiproof LW+ admixed @ 0.2litre/bag of cement as per manufacturer's specifications including curing etc.</p>
<p>NOTE: The entire work should be done by the principal manufacturer and should be warranted by the principal manufacturer for a minimum period of 10 years.</p>
All Borepackings
<p>Bore Packing :- All the pipes to be placed / inserted in the core cut areas, shall be placed appropriately to be grouted around the cut bores. Grouting the gaps between the pipe and the core cutting by an expansive cementitious grout that shall be poured into the gaps after fixing in place an effective leak-free shuttering.</p>
<p>upto 75 mm Dia</p>
<p>110 mm Dia</p>
<p>150-200 mm Dia</p>

WALL INSULATION
<p>Providing and applying 15 mm thick CM 1:4 polymeric waterproof plastering admixed with polymer modified mortar, @2Litre/bag of cement over the prepared blockwork as per manufacturer's specification.</p>

OR

Providing and applying two component acrylic polymer modified cementitious flexible waterproofing, having minimum elongation of 80% as per ASTM D 412. The system includes base preparation of cleaning, brushing and removal of flacky materials, grouting the porous area with cementitious grout, proper coving between slab and wall junctions and applying in two coats @ 3kg/M2. Coating shall be done on the entire vertical area as per Manufacturer's methodology and specification.

Supplying & applying Polymer Modified Adhesive layer @ 2.8 kgs/sqm.

Supplying & applying **50 mm thick Insulation board** having density of 15-18 kg/m³ and Thermal Conductivity of 0.030 - 0.033 W/m K (As approved by the adhesive manufacturer) over the adhesive layer.

Supplying & applying Polymer Modified Basecoat layer @ 2.0 kgs/sqm over the EPS board including reinforcing the polymer mortar with alkali resistant blue coated **Glass Fibre Reinforcing Standard Mesh** of 150 GSM.

For high impact area, using additional layer of high grade impact resistance 700 GSM reinforcing mesh. **(only up to 2m height from GL)**

The entire system should be certified for fire resistance confirming to BS 8414 resulting in BR 135, duly certified by LPCB to LPS 1581 and holds BBA certification.
Approved Brands : Dr. Fixit or equivalent

Finishes

Supplying & applying **water-based acrylic primer** applied at 0.2kgs/sqm to reinforced basecoat layer.

Supplying & applying 1.0mm thick finish coat (Proven Mildew Resistance) applied at 2.06 kgs/sqm to primer layer.

PODIUM WATERPROOFING

Cleaning and making necessary surface preparation by compressed air/ mechanical scarifier to remove any dust and laitance etc., chasing open the construction joints and sealing the same to form a U shaped groove of approx. 20 mm width and 20 mm depth, using SBR latex polymer modified mortar carrying out injection grouting at the construction joints, honeycombs, etc., by injecting cement slurry grout admixed with expandable grout additive to full saturation wherever necessary thereafter, providing & applying one coat of two component solvent free epoxy primer @ 0.15-0.20 kg/ m², followed by providing & applying 2 component Hybrid Polyurea polyurethane liquid applied elastomeric seamless membrane by roller /brush or spray with a total consumption of 2.0- 2.2 kg/ m² to form a total system DFT of 1.50 mm thickness, having Tensile strength of > 6 N/mm², Elongation of min 600%, Solids content of 90% & Shore A Hardness of over 40 ,applied on horizontal surfaces and on verticals upto 300mm height above the FFL, ponding with water for 2 days to test the water tightness etc complete.

Providing & laying 150 gsm geotextile layer over the Pu coating.

Further laying protective concrete screed of average 75 mm using M20 grade concrete with minimum thickness of 40 mm at the rain water outlet and a slope of 1:120, making wattas at the junctions of horizontal and vertical surfaces to a float finish, well compacted, curing for 7 days etc. complete.**(RMC with pump shall be provided by contractor free of cost at site).**

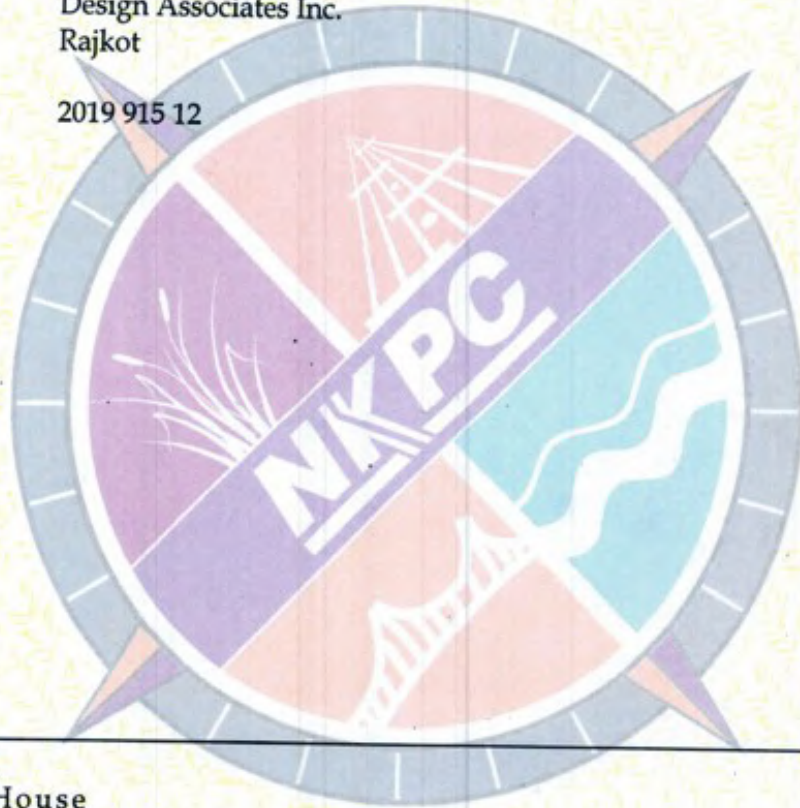
Landscape Areas

Supply and installation of Rolled Matrix Soil Filter cum surface drainage System as per manufacturers specifications. It consist of dimple raised, moulded polypropylene sheet bonded to a high strength polypropylene geotextile fabric This geotetile fabric composite allows passage of moisture through fabric while preventing fine soil from entering to drainage channel.

Geotechnical Investigation Report For AIIMS at Rajkot

Client : Design Associates Inc.
Rajkot

Job No. 2019 915 12



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1.0 Introduction

Design Associates Inc. Rajkot has planned to construct AIIMS at Rajkot . For foundation analysis of the structures to be built on this site, it is necessary..

- To determine the Soil Profile of site.
- To know physical properties and strength characteristics of soils at various depth and to find SBC (Safe Bearing Capacity).

For this purpose the geo-technical investigation for the site was entrusted to us. The following points were decided.

- Bore hole 5 No.
- Depth of bore hole as in bore hole details
- Collecting disturbed samples.
- Collecting undisturbed samples.
- To find physical properties and strength characteristics of undisturbed samples.
- Strength characteristics for core samples.

2.0 Investigation

2.1 Field Investigation

- Drilling Bore hole
- Standard Penetration Tests
- Collection of soil samples (Disturbed & Undisturbed)
- Collection of core samples

2.2 Laboratory Investigation

- Bulk density & Moisture content
- Grain size analysis
- Index properties
- Shear Tests

2.3 Recommendations

Based on above investigations, the result were obtained. The recommendations are based on interpretation of Results, Analysis and computation as per relevant Indian Standards.

3.0 Field Investigation

3.1 Drilling

The field work consisted for five No. of bore hole. Bore hole was drilled by rotary drilling machine. The depth of test bore and lithology at proposed location is shown in Fig No. 1 to 5



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3.2 Sampling

3.2.1 Disturbed Samples

Disturbed samples were collected during boring and also from the split spoon sampler. The samples were logged, labled and placed in polythene bags and sent to laboratory for testing.

3.2.2 Undisturbed Samples

Undisturbed Samples were collected in thin walled shelby tubes as per IS 2132. The samples were sealed with wax labled and transported to laboratory at Rajkot for testing.

3.3 Standard Penetration Test

The Standard Penetration Test were conducted in accordance with IS 2131 using Indian Standard Split Spoon Sampler driven by 63.5 kg. hammer falling freely from a height for 75 cm. through a guide rod. The standard size of spoon sampler is 35mm internal and 50.8 mm outer diameter. The blow count is made three times for every 15 cm penetration of the spoon. If full penetration is obtained, the number of blows for the first 15 cm of penetration is neglected due to possible caving and disturbance of soil into the hole. The number of blows for next 30 cm. (15 cm. intervals) penetration are recorded as N values of the soil at the depth of tests.

4.0 Laboratory Investigation

The following laboratory tests were conducted on undisturbed and disturbed soil samples collected from various depths to find physical properties and strength characteristics.

Measurement of Soil Properties in Laboratory			
Sr.	Test	Recommended Procedure	Type of Samples
1	Samples Preparation	IS 2720 Pt.-I	DS/UDS
2	Moisture Content	IS 2720 Pt.-II	DS/UDS
3	Dry Unit Weight	Lambe	UDS
4	Specific Gravity	IS 2720 Pt.-III	DS
5	Liquid Limit	IS 2720 Pt.-V	DS
6	Plastic Limit	IS 2720 Pt.-V	DS
7	Grain Size Analysis	IS 2720 Pt.-IV	DS
8	Soil Classification	IS 1488	-
9	Box Shear Test	IS 2720 Pt.-VI	UDS
10	Uniaxial Compression		Core/Rock



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4.1 Location

Design Associates Inc.
Rajkot

5.0 Results & Discussion

The SPT values are given in Bore Log No. 1 to 5
The bore log details are shown in Fig. No. 1 to 5
SBC were calculated on basis of soil and rock strata

SBC Calculation
As per attached sheet

CBR Results :

Bore No.	Depth (m)	Soaked CBR (%)
1	0.5	32.6
2	0.5	29.4
3	0.5	24.8
4	0.5	25.3
5	0.5	31.9

6. Conclusion :

1. For 35000Sq m Ground coverage area and more than 20 nos. of building, five (05) nos. borehole are not sufficient for further conclusion.
2. The modulus of subgrade reaction (k) is assumed to be more than 3000KN/m³ as per the hardrock encountered during the drilling, the field test is necessary to find the exact K value at footing depth.

7.0 Acknowledgment

Lot of thanks to , Client and Contractor's staff for their kind cooperation during the execution of work in time schedule.

Place : Rajkot

Date : 26.12.19

For NKPC



BORE LOG BH 01

Location X=-512549.5312 Y=308105.0066

Total Depth (M) 10

Water Level (M) -

Casing (M) -

Elevation (M) -

Bore dia (mm) 100 / NX

Scale 1:100

Method of boring: Core drilling

Date -

Project No. 2019 915 12

Undisturbed Sample

SPT

Disturbed Sample

Description	Depth (M)	Lithology	Thickness of layer (M)	Elevation (M)	Type of Sample	Size of Core (mm) Pieces					Structral Condition	Core Recovery %				RQD %	Penetration N (SPT) Value
						<10	10 to 25	25 to 75	75 to 150	>150							
												20	40	60	80		
Fractured Basalt: Small fractured Basalt pieces	0 - 2.00	▽▽▽▽	2.00	2.00	□											100	
Weathered Basalt: Highly weathered rock powder	2.00 - 4.00	○	2.00	2.00	□											100	
Basalt: Moderately weathered to fresh Basalt core	4.00 - 5.00	■		4.00	□						48				42	100	
	5.00 - 6.00										52				49	100	
	6.00 - 7.00										55				48	100	
	7.00 - 8.00										59				52	100	
	8.00 - 9.00										64				57	100	
	9.00 - 10.00			6.00							69				63	100	



BORE LOG BH 02

Location X=-610449.5312 Y=207592.5190

Total Depth (M) 10

Water Level (M) -

Casing (M) -

Elevation (M) -

Bore dia (mm) 100 / NX

Scale 1:100

Method of boring: Core drilling

Date -

Project No. 2019 915 12

Undisturbed Sample

SPT

Disturbed Sample

Description	Depth (M)	Lithology	Thickness of layer (M)	Elevation (M)	Type of Sample	Size of Core (mm) Pieces					Structral Condition	Core Recovery %				RQD %	Penetration N (SPT) Value
						<10	10 to 25	25 to 75	75 to 150	>150		20	40	60	80		
Fractured Basalt: Small fractured Basalt pieces	0 - 1.00	▽▽▽	1.00		□												
Weathered Basalt: Highly weathered rock powder	1.00 - 4.00	○○○○	4.00		□											>100	
Basalt: Moderately weathered to fresh Basalt core	4.00 - 10.00	■■■■	5.00		□						36				34		
											40				33		
											43				38		
											48				43		
											51				48		



BORE LOG BH 03

Location X=-796569.9693 Y=373909.4194

Total Depth (M) 10

Water Level (M) -

Casing (M) -

Elevation (M) -

Bore dia (mm) 100 / NX

Scale 1:100

Method of boring: Core drilling

Date -

Project No. 2019 915 12

Undisturbed Sample

SPT

Disturbed Sample

Description	Depth (M)	Lithology	Thickness of layer (M)	Elevation (M)	Type of Sample	Size of Core (mm) Pieces					Structral Condition	Core Recovery %				RQD %	Penetration N (SPT) value
						<10	10 to 25	25 to 75	75 to 150	>150		20	40	60	80		
Weathered Basalt: Highly weathered rock powder	0 - 1		1.00	0	<input type="checkbox"/>												
Fractured Basalt: Small fractured Basalt pieces	1 - 2		2.00	1	<input type="checkbox"/>											>100	
Basalt: Moderately weathered basalt rock	2 - 3			2	<input type="checkbox"/>											>100	
	3 - 4			3	<input type="checkbox"/>						32					29	
	4 - 5			4	<input type="checkbox"/>						35					29	
	5 - 6		5.00	5							38					33	
	6 - 7			6							41					39	
Basalt: Fresh Amygdoloidal Basalt rock	7 - 8			7							44					39	
	8 - 9			8							49					45	
	9 - 10		2.00	9							54					46	



BORE LOG BH 04

Location X=-1240656.2951 Y=201809.8557

Total Depth (M) 10

Water Level (M) -

Casing (M) -

Elevation (M) -

Bore dia (mm) 100 / NX

Scale 1:100

Method of boring: Core drilling

Date -

Project No. 2019 915 12

Undisturbed Sample

SPT

Disturbed Sample

Description	Depth (M)	Lithology	Thickness of layer (M)	Elevation (M)	Type of Sample	Size of Core (mm) Pieces					Structral Condition	Core Recovery %				RQD %	Penetration N (SPT) Value
						<10	10 to 25	25 to 75	75 to 150	>150		20	40	60	80		
Weathered Basalt: Highly weathered rock powder	0 - 1		2.00	0	<input type="checkbox"/>											>100	
Fractured Basalt: Small fractured Basalt pieces	1 - 3		3.00	1	<input type="checkbox"/>											>100	
Basalt: Moderately weathered to fresh Basalt core	3 - 10		5.00	3	<input type="checkbox"/>											>100	
											33				26		
											37				32		
											39				32		
											42				40		
											46				38		

Client Design Associates Inc.



BORE LOG BH 05

Location X=-903522.3449 Y=600878.6293

Total Depth (M) 10

Water Level (M) -

Casing (M) -

Elevation (M) -

Bore dia (mm) 100 / NX

Scale 1:100

Method of boring: Core drilling

Date

Project No. 2019 915 12

Undisturbed Sample

SPT

Disturbed Sample

Description	Depth (M)	Lithology	Thickness of layer (M)	Elevation (M)	Type of Sample	Size of Core (mm) Pieces					Structural Condition	Core Recovery %				RQD %	Penetration N (SPT) Value
						<10	10 to 25	25 to 75	75 to 150	>150		20	40	60	80		
Weathered Basalt: Highly weathered rock powder	0 - 2		2.00	10	<input type="checkbox"/>												>100
Fractured Basalt: Small fractured Basalt pieces	2 - 6		4.00	4	<input type="checkbox"/>												>100
Basalt: Moderately weathered Basalt rock	6 - 28		22.00	6	<input type="checkbox"/>												>100
	7										20					15	
	8										23					18	
	9										26					22	
	10										28					23	
	11										31					24	
	12										33					25	
	13										37					25	
	14										41					28	
	15										45					26	
	16										49					30	
	17										53					32	
	18										56					34	
	19										60					38	
	20										63					46	
	21										67					44	
	22										72					40	
	23										75					52	
	24										77					56	
	25										82					62	
	26										84					67	
	27										86					70	
	28										88					72	



NKPC

Project : AIIMS at Rajkot

B.H.No.2

Client : Design Associates Inc.

2019 915 12

Location : X=-610449.5312 Y= 207592.5190

Note: Water Table not encountered during Drilling.

Summary of Results of Laboratory Tests on Soil Samples

Lab No.	Type of Sample	Depth (m)	Density		Particulate Size				Consistency Properties			Soil		Strength Test					Swell Test		
			Bulk g/cm ³	Dry g/cm ³	Water Contents (%)	Graeval (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	IS Classification	Specific Gravity G	Type of Test	c = Cohesion kg/cm ²	θ Degree	φ kg/cm ²	Shrinkage Limit (%)	Swelling Pressure kg/cm ²	Free Swell (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	RM	3.00	1.93	1.74	11.2	52	36	12	-	N.P.	-	GP	2.66	BS	0	27					
2	RM	4.00	1.94	1.77	9.8	58	33	9	-	N.P.	-	GP	2.66	BS	0	28					
3	UDS	5.00	Moderately weathered to fresh f																		
			UCS = Unconfined Compressive Strength Test																		
			BS = Box Shear Test																		
			UU = Triaxial Shear Test (Unconsolidated Undrained)																		
			RM: Remoulded Sample																		



NKPC

Project : AIIMS at Rajkot

B.H.No.3

Client : Design Associates Inc.

2019 915 12

Location : X=-796569.9693 Y= 373909.4194

Note: Water Table not encountered during Drilling.

Summary of Results of Laboratory Tests on Soil Samples

Lab No.	Type of Sample	Depth (m)	Density			Particulate Size				Consistency Properties			Soil		Strength Test					Swell Test	
			Bulk g/cm ³	Dry g/cm ³	Water Contents (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	IS Classification	Specific Gravity G	Type of Test	c = Cohesion kg/cm ²	θ Degree	φ kg/cm ²	Shrinkage Limit (%)	Swelling Pressure kg/cm ²	Free Swell (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	UDS	3.00	Moderately weathered to fresh E																		
2	UDS	4.00	Moderately weathered to fresh E																		40
3	UDS	5.00	Moderately weathered to fresh E																		52
																					84
UCS = Unconfined Compressive Strength Test																					
BS = Box Shear Test																					
UU = Triaxial Shear Test (Unconsolidated Undrained)																					
			RM: Remoulded Sample																		



NKPC

Project : AIIMS at Rajkot

B.H.No.4

Client : Design Associates Inc.

2019 915 12

Location : X=-1240656.2951 Y= 201809.8557

Note: Water Table not encountered during Drilling.

Summary of Results of Laboratory Tests on Soil Samples

Lab No.	Type of Sample	Depth (m)	Density			Particulate Size				Consistency Properties			Soil		Strength Test					Swell Test	
			Bulk g/cm ³	Dry g/cm ³	Water Contents (%)	Graevl (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	IS Classification	G	Type of Test	c = Cohesion kg/cm ²	θ Degree	φ kg/cm ²	Shrinkage Limit (%)	Swelling Pressure kg/cm ²	Free Swell (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	RM	3.00	1.89	1.71	10.8	49	40	11	-	N.P.	-	GP	2.65	BS	0	27					
2	RM	4.00	1.92	1.75	9.6	61	31	8	-	N.P.	-	GP	2.66	BS	0	28					
3	UDS	5.00	Moderately weathered to fresh f															62			
UCS = Unconfined Compressive Strength Test																					
BS = Box Shear Test																					
UU = Triaxial Shear Test (Unconsolidated Undrained)																					
			RM: Remoulded Sample																		



NKPC

Project : AAIMS at Rajkot

B.H.No.5

Client : Design Associates Inc.

2019 915 12

Location : X=-903522.3449 Y= 600878.6293

Note: Water Table not encountered during Drilling.

Summary of Results of Laboratory Tests on Soil Samples

Lab No.	Type of Sample	Depth (m)	Density			Particulate Size				Consistency Properties			Soil		Strength Test				Swell Test		
			Bulk g/cm ³	Dry g/cm ³	Water Contents (%)	Graevl (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	IS Classification	Specific Gravity G	Type of Test	c = Cohesion kg/cm ²	θ Degree	φ kg/cm ²	Shrinkage Limit (%)	Swelling Pressure kg/cm ²	Free Swell (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	RM	3.00	1.90	1.7	11.6	44	43	13	-	N.P.	-	GP	2.64	BS	0	27					
2	RM	4.00	1.93	1.74	10.8	62	26	12	-	N.P.	-	GP	2.66	BS	0	28					
3	RM	5.00	1.94	1.79	8.4	65	28	7	-	N.P.	-	GP	2.67	BS	0	28					
UCS = Unconfined Compressive Strength Test																					
BS = Box Shear Test																					
UU = Triaxial Shear Test (Unconsolidated Undrained)																					
			RM: Remoulded Sample																		



N.K.P.C. Boring House, Prabalad Road, Rajkot 360 001

APPENDIX - I

Calculation of Safe Bearing Capacity based on Shear Parameter C - ϕ

$$q_u = 1 / FS (C . N_c . D_c . S_c . i_c + y_d (N_d - 1) S_q d_q i_q + 0.5 y B N_y S_y d_y i_y W_y)$$

Project: AIMS At Rajkot
Job No. 2019 915 12

For Isolated Footing

Sr. No.	L = Length of footing m.	B = Width of footing m.	Df = Depth of footing m.	C ton/m ²	ϕ degree	Nc	Sc=1 +0.2B /L	Dc=1+0 .2(Df/B) SQRO OTN \downarrow	ic gmic	γ Nq-1 Sq	dq=1+ 0.2(Df /B)SQ ROOT N \downarrow	i _q	0.5 y N _y	sY=1- 0.4B/ L	dq=1+ 0.1(Df /B)SQ ROOT N \downarrow	Wate r Table SBC t/m ² W _y			
B.H.NO.1	2	2	3	0.00	27	24.49	1.2	1.469	1	12.72	1.2	1.244	1	0.5	15.49	1.1	1.244	0.5	27
B.H.NO.1	3	3	3	0.00	27	24.49	1.2	1.326	1	12.72	1.2	1.163	1	0.5	15.49	1.1	1.163	0.5	27
B.H.NO.1	7	5	3	0.00	27	24.49	1.143	1.196	1	12.72	1.143	1.098	1	0.5	15.49	1.071	1.098	0.5	26
B.H.NO.1	8	7	3	0.00	27	24.49	1.175	1.140	1	12.72	1.175	1.07	1	0.5	15.49	1.088	1.07	0.5	32
B.H.NO.2	2	2	3	0.00	27	24.49	1.2	1.469	1	12.72	1.2	1.244	1	0.5	15.49	1.1	1.244	0.5	27
B.H.NO.2	2	2	4	0.00	28	26.37	1.2	1.665	1	14.28	1.2	1.332	1	0.5	17.79	1.1	1.332	0.5	42
B.H.NO.2	3	3	3	0.00	27	24.49	1.2	1.326	1	12.72	1.2	1.163	1	0.5	15.49	1.1	1.163	0.5	27
B.H.NO.2	3	3	4	0.00	28	26.37	1.2	1.443	1	14.28	1.2	1.222	1	0.5	17.79	1.1	1.222	0.5	41
B.H.NO.2	7	5	3	0.00	27	24.49	1.143	1.196	1	12.72	1.143	1.098	1	0.5	15.49	1.071	1.098	0.5	28
B.H.NO.2	7	5	4	0.00	28	26.37	1.143	1.266	1	14.28	1.143	1.133	1	0.5	17.79	1.071	1.133	0.5	40
B.H.NO.2	8	7	3	0.00	27	24.49	1.175	1.140	1	12.72	1.175	1.07	1	0.5	15.49	1.088	1.07	0.5	32
B.H.NO.2	8	7	4	0.00	28	26.37	1.175	1.190	1	14.28	1.175	1.095	1	0.5	17.79	1.088	1.095	0.5	44



Sr. No.	L = Length of footing m.	B = Width of footing m.	Df = Depth of footing m.	C ton/m ²	φ degree	Nc	Sc=1 +0.2B /L	dc=1+0 .2(D/B) /SO OTN φ	lc gm/c ³	γ gm/c ³	Sq Nq-1	dq=1+ 0.2(Df /B)SQ ROOT N φ	iq	0.5 γ	Nr	sγ=1- 0.4B/ L	dq=1+ 0.1(Df /B)SQ ROOT N φ	White r Table	SBC t/m ²	
B.H.NO.4	2	2	3	0.00	27	24.49	1.2	1.489	1	1	12.72	1.2	1.244	1	0.5	15.49	1.1	1.244	0.5	27
B.H.NO.4	2	2	4	0.00	28	26.37	1.2	1.665	1	1	14.28	1.2	1.332	1	0.5	17.79	1.1	1.332	0.5	42
B.H.NO.4	3	3	3	0.00	27	24.49	1.2	1.326	1	1	12.72	1.2	1.163	1	0.5	15.49	1.1	1.163	0.5	27
B.H.NO.4	3	3	4	0.00	28	26.37	1.2	1.443	1	1	14.28	1.2	1.272	1	0.5	17.79	1.1	1.272	0.5	41
B.H.NO.4	7	5	3	0.00	27	24.49	1.143	1.196	1	1	12.72	1.143	1.098	1	0.5	15.49	1.071	1.098	0.5	28
B.H.NO.4	7	5	4	0.00	28	26.37	1.143	1.266	1	1	14.28	1.143	1.133	1	0.5	17.79	1.071	1.133	0.5	40
B.H.NO.4	8	7	3	0.00	27	24.49	1.175	1.140	1	1	12.72	1.175	1.07	1	0.5	15.49	1.088	1.07	0.5	32
B.H.NO.4	8	7	4	0.00	28	26.37	1.175	1.190	1	1	14.28	1.175	1.095	1	0.5	17.79	1.088	1.095	0.5	44
B.H.NO.5	2	2	3	0.00	27	24.49	1.2	1.489	1	1	12.72	1.2	1.244	1	0.5	15.49	1.1	1.244	0.5	27
B.H.NO.5	2	2	4	0.00	28	26.37	1.2	1.665	1	1	14.28	1.2	1.332	1	0.5	17.79	1.1	1.332	0.5	42
B.H.NO.5	2	2	5	0.00	28	26.37	1.2	1.831	1	1	14.28	1.2	1.416	1	0.5	17.79	1.1	1.416	0.5	54
B.H.NO.5	3	3	3	0.00	27	24.49	1.2	1.326	1	1	12.72	1.2	1.163	1	0.5	15.49	1.1	1.163	0.5	27
B.H.NO.5	3	3	4	0.00	28	26.37	1.2	1.443	1	1	14.28	1.2	1.222	1	0.5	17.79	1.1	1.222	0.5	41
B.H.NO.5	3	3	5	0.00	28	26.37	1.2	1.554	1	1	14.28	1.2	1.277	1	0.5	17.79	1.1	1.277	0.5	51
B.H.NO.5	7	5	3	0.00	27	24.49	1.143	1.196	1	1	12.72	1.143	1.098	1	0.5	15.49	1.071	1.098	0.5	28
B.H.NO.5	7	5	4	0.00	28	26.37	1.143	1.266	1	1	14.28	1.143	1.133	1	0.5	17.79	1.071	1.133	0.5	40
B.H.NO.5	7	5	5	0.00	28	26.37	1.143	1.332	1	1	14.28	1.143	1.166	1	0.5	17.79	1.071	1.166	0.5	49
B.H.NO.5	8	7	3	0.00	27	24.49	1.175	1.140	1	1	12.72	1.175	1.07	1	0.5	15.49	1.088	1.07	0.5	32
B.H.NO.5	8	7	4	0.00	28	26.37	1.175	1.190	1	1	14.28	1.175	1.095	1	0.5	17.79	1.088	1.095	0.5	44
B.H.NO.5	8	7	5	0.00	28	26.37	1.175	1.237	1	1	14.28	1.175	1.119	1	0.5	17.79	1.088	1.119	0.5	53



S.B.C Based on UCS

Project :		AIIMS at Rajkot-BH-1			Job No. 2019 915 12	
Sr. No.	BH No.	Lab No.	Depth of footing	Size of footing	Q kg/cm ²	(Allowable Bearing Pressure t/m ² ^{2.A} per IS 12070-1987
			m	m		
1	BH 1	a	3.00	2x2		27
2	BH 1	b	4.00	2x2	48	40
3	BH 1	c	5.00	2x2	66	55
4	BH 1	d	3.00	3x3		27
5	BH 1	e	4.00	3x3	48	40
6	BH 1	f	5.00	3x3	66	55
7	BH 1	g	3.00	7x5		28
8	BH 1	h	4.00	7x5	48	40
9	BH 1	i	5.00	7x5	66	55
10	BH 1	j	3.00	8x7		32
11	BH 1	k	4.00	8x7	48	40
12	BH 1	l	5.00	8x7	66	55

0.5=Correction factor for fully saturation
 3= factor of safety
 Q=unconfined compressive strength in kg/cm²
 $SBC = (Q \cdot 10^{0.5} \cdot 0.5) / 3$



S.B.C Based on UCS

Project :		AIIMS at Rajkot - BH-2			Job No.	2019 915 12
Sr. No.	BH No.	Lab No.	Depth of footing	Size of footing	Q kg/cm ²	(Allowable Bearing Pressure $\gamma/m^{2,As}$ per IS 12070-1987)
			m	m		
1	BH 2	a	3.00	2x2		27
2	BH 2	b	4.00	2x2		42
3	BH 2	c	5.00	2x2	65	54
4	BH 2	d	3.00	3x3		27
5	BH 2	e	4.00	3x3		41
6	BH 2	f	5.00	3x3	65	54
7	BH 2	g	3.00	7x5		28
8	BH 2	h	4.00	7x5		40
9	BH 2	i	5.00	7x5	65	54
10	BH 2	j	3.00	8x7		32
11	BH 2	k	4.00	8x7		44
12	BH 2	l	5.00	8x7	65	54

0.5=Correction factor for fully saturation

3=factor of safety

Q=unconfined compressive strength in kg/cm²

$$SBC = (Q \cdot 10 \cdot 0.5 \cdot 0.5) / 3$$



S.B.C Based on UCS

Project :		AIIMS at Rajkot- BH-3			Job No.	2019 915 12	
Sr. No.	BH No.	Lab No.	Depth of footing	Size of footing	Q kg/cm ²	(Allowable Bearing Pressure t/m ² per IS 12076-1987	
			m	m			
1	BH 3	a	3.00	2x2	40	33	
2	BH 3	b	4.00	2x2	52	43	
3	BH 3	c	5.00	2x2	84	70	
4	BH 3	d	3.00	3x3	40	33	
5	BH 3	e	4.00	3x3	52	43	
6	BH 3	f	5.00	3x3	84	70	
7	BH 3	g	3.00	7x5	40	33	
8	BH 3	h	4.00	7x5	52	43	
9	BH 3	i	5.00	7x5	84	70	
10	BH 3	j	3.00	8x7	40	33	
11	BH 3	k	4.00	8x7	52	43	
12	BH 3	l	5.00	8x7	84	70	

0.5=Correction factor for fully saturation

3=factor of safety

Q=unconfined compressive strength in kg/cm²

$$SBC = (Q \cdot 10 \cdot 0.5 \cdot 0.5) / 3$$



S.B.C Based on UCS

Project :	AIIMS at Rajkot-BH-4	Job No.	2019 915 12
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Sr. No.	BH No.	Lab No.	Depth of footing	Size of footing	Q kg/cm ²	(Allowable Bearing Pressure γ/m^2 per IS 12070-1987)
			m	m		
1	BH 4	a	3.00	2x2		27
2	BH 4	b	4.00	2x2		42
3	BH 4	c	5.00	2x2	62	52
4	BH 4	d	3.00	3x3		27
5	BH 4	e	4.00	3x3		41
6	BH 4	f	5.00	3x3	62	52
7	BH 4	g	3.00	7x5		28
8	BH 4	h	4.00	7x5		40
9	BH 4	i	5.00	7x5	62	52
10	BH 4	j	3.00	8x7		32
11	BH 4	k	4.00	8x7		44
12	BH 4	l	5.00	8x7	62	52

0.5=Correction factor for fully saturation

3= factor of safety

Q=unconfined compressive strength in kg/cm²

$$SBC = (Q \cdot 10 \cdot 0.5 \cdot 0.5) / 3$$



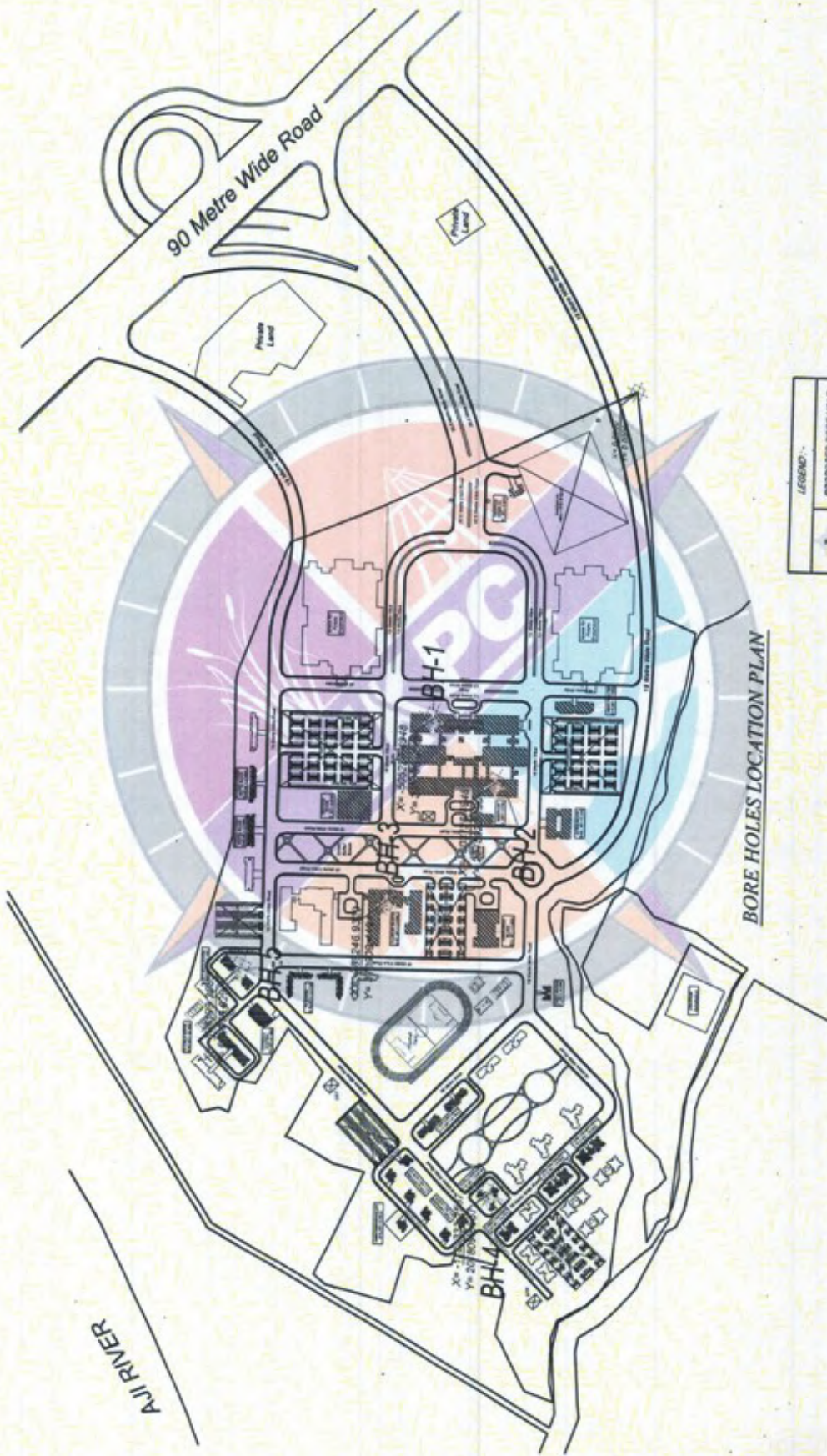
S.B.C Based on UCS

Project :	AIIMS at Rajkot -BH-5	Job No.	2019 915 12
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Sr. No.	BH No.	Lab No.	Depth of footing	Size of footing	Q kg/cm ²	(Allowable Bearing Pressure γ/m^2 ^{2. As} per IS 12070-1987
			m	m		
1	BH 5	a	3.00	2x2		27
2	BH 5	b	4.00	2x2		42
3	BH 5	c	5.00	2x2		54
4	BH 5	d	3.00	3x3		27
5	BH 5	e	4.00	3x3		41
6	BH 5	f	5.00	3x3		51
7	BH 5	g	3.00	7x5		28
8	BH 5	h	4.00	7x5		40
9	BH 5	i	5.00	7x5		49
10	BH 5	j	3.00	8x7		32
11	BH 5	k	4.00	8x7		44
12	BH 5	l	5.00	8x7		53

0.5=Correction factor for fully saturation
 3= factor of safety
 Q=unconfined compressive strength in kg/cm²
 $SBC = (Q \cdot 10 \cdot 0.5 \cdot 0.5) / 3$





ALL RIVER

90 Metre Wide Road

BORE HOLES LOCATION PLAN

LEGEND:-

★	PROPOSED BORE HOLE
□	WATER
□	WELL

