

“REPLY TO BIDDERS QUERIES AND AMENDMENT TO TENDER”:-

Construction of Hospital Buildings, Academic Block & Student’s Hostel with associated Services Under phase-1 for Comprehensive Redevelopment Plan for Lady Hardinge Medical College & Associated Hospitals, New Delhi :- Reply of Bidder’s queries raised during Prebid meeting held on 11/02/2011 at Lady Hardinge Medical College & Associated Hospitals, New Delhi.

Clarification- General Queries

S.No.	Queries Raised	Reply
1	Joint Ventures/ consortium to be allowed,	No change in tender terms and conditions
2	To relax the qualification criteria in line with AIIMS projects	No change in tender terms and conditions
3.	Please clarify whether the service tax is applicable on this contract or not.	Please refer Clause No. 2.3.7 of Vol. I (NIT & PQ) page no. 18 and Clause No.37 of Vol II (GCC) page no.56
4	The time given for preparing the bid is insufficient, we hereby request you to kindly extend the date of submission by at least 30 days.	No change in tender terms and conditions
5	Please provide copy of soil investigation report.	Please refer Clause No. 1.17 in tender Vol. I (NIT & PQ) page no. 9 & Section III Scope of work point No 3 at PG No 29 in tender Vol. I (NIT & PQ)
6	Whether the electricity & water for construction and other site activities to be provided by the client or the contractor needs to make its own arrangements. Is the bore well allowed to be dug at site?	Please refer Clause No. 42.2.4 in tender Vol. III (SCC) page no. 52, Arrangements of water, electricity is to be made by contractor at his own cost.
7	Please clarify whether labour Cess will be reimbursed to Contractor if becomes Applicable	Labour Cess has already been deposited by Principal Employer. Please refer Tender Vol. – I (NIT & PQ) Clause no. 2.3.7 Page no. 18
6	Please Consider to make maximum amount of LD to 5% instead of existing provision of 10%	No change in tender terms and conditions
9	Please provide BOQ & Autocad copy of structural & architectural drawings in soft copy:	Soft copy of the BOQ & drawings cannot be issued.
10	Minimum payment of Rs 10 Crore:- Please consider to make minimum payment payment of Rs 3 to 5 Crores.	No Change in Tender terms & Conditions
11	Environmental Clearance:- Please specify status of Environmental clearance & other clearances for the Project.	All the statutory clearance for starting the project obtained by LHMC
12	We presume there is no restriction of working time in day & night times.	As per Labour Bylaws and other Local rules and regulations
13	Acceptance of additional Querries:- We request you to accept additional queries for 7-10 days	Not permitted
14	Please provide base rate of Cement, Steel	As issued under the authority of Director

S.No.	Queries Raised	Reply
	& Structural steel materials under 10 CA	General (Works) CPWD applicable for Delhi on the last stipulated date of receipt of tenders. Please refer clause No 10CA, GCC Vol-II.
15	Para 5 of section III on Pg 29 Vol-1:- Please clarify who will pay the fee payable to local bodies for obtaining the approvals/NOC. All expenditure to be paid by Contractor. But as per provisions under 42.1 (b) on pg 47 & 48 the fee to be paid to be pad to local authority is reimbursable both these provisions are contradictory provision, Please clarify	All the statutory expenditure incurred towards payment to the local body for obtaining statutory approvals for Employer will be reimbursed on the production of proof of payment
16	Please allow secured advance @ 90%	No Change in Tender terms & Conditions
17	Provision of 10C may please be made applicable instead of not applicable as mentioned in schedule F	No Change in Tender terms & Conditions
18	Shifting of utilities at site like electricity, water and sewerage pipe line etc.	The shifting of Underground services / Utilities found and required to be shifted, if any, will be done by the contractor to whom this construction work is awarded and payment for the same will be made extra as per the provisions of Contract.
19	Land for store, site office, batching plant, etc.: We presume free of cost land will be provided for store, site office, etc. at project site.	Land as per availability will be provided at site; however contractor will have no claim in this regards.
20	Permission if any and cost for tree cutting should be in Client scope	Permission for cutting of trees, already taken by LHMC. Cutting of tree is in Contractors scope. Refer item under subhead Landscaping works
21	Part of Earnest deposited i.e. 20 Lacs in DD may please be converted to FDR	No change in tender terms and conditions
22	GCC Vol-II, Cl 1A, Pg-7 :- There shall be no cash retention from interim payments. We shall submit BG towards retention valid upto Contract period	No change in tender terms and conditions
23	Final bill to be paid within a period of 60 days from the date of submission including the time required for its checking & certification	No change in tender terms and conditions
24	Whether fly ash is allowed	All Concrete & finishing work shall be carried out as per BOQ items & relevant specifications.
25	Payment on Intermediate Certificate:- Please confirm the period of certification from the date of submission of bill	Refer GCC Vol-II Clause No 6A & 7
26	Payment on Intermediate Certificate:-	

S.No.	Queries Raised	Reply
	Request that the payment terms may be altered as given below Within 7 days of submission of Contractors Invoice, the Employer shall pay the Contractor 75% of Invoice amount	Interim Payment will be released within 10 days of submission of bill.
27	Mobilization Advance:- Request for interest free mobilization advance of 10% of tender value within 14 days of issue of letter of Award against submission of Advance payment Guarantee. Request for the commencement for recovery of Mobilization Advance after 20% of tender value is billed.	No change in tender terms and conditions
28	Deviation limit:- Request for deviation limit beyond which clause No 12.2 & 12.3 shall apply for building works as 15%	No change in tender terms and conditions
29	Please provide HVAC & Electrical Drawings	Kindly refer clause No 1.16 at Pg No 9 of Volume-I, NIT & PQ.

CLARIFICATION / AMENDMENT No. – 2 (Civil & PHE)

S.No.	Queries Raised	Reply
1.	Item No 1.05 BOQ Civil Works:- Transportation of disposal of excavated earth beyond 50 m or part thereof beyond 1st 50m upto 9 such additional leads – Please Clarify 9 such additional leads.	Rate to be quoted for every 50 m lead for 9 such leads.
2.	BOQ Civil Item 3.10 :- Providing and laying in position ready mixed concrete manufactured in fully automatic batching plant & transported to site of work in transit mixer for a lead upto 10 kms, Lead of RMC may be increased to 25 Km	10 Km lead to be replaced by “all leads” i.e. rates for RMC shall be inclusive of all leads.
3.	BOQ Civil Item 3.03:- Providing and laying expansion strip , 1.2 m wide at specified locations in the retaining wall & slabs as shown – Clarification regarding width of 1.2m is OK. , thickness of strip & material specification	The item stands deleted. Quantity executed against this item shall be measured against respective item of RCC
4.	Kindly Provide the flooring Pattern	Item to be executed as per specification & BOQ item
5.	BOQ Civil Item No 1.04,:- Please clarify about scope, Item does not specify lead. Please provided approved location for dumping of excavated earth	Civil BOQ item No 1.04 to be read as for Hospital Building works. Transportation & disposal of excavated earth, rock, debris, muck at an approved location and as per local norms, including loading, unloading & stacking with necessary statutory

S.No.	Queries Raised	Reply												
		<p>approvals & in consultation with Engineer Incharge</p> <p>Subhead Item & Revised Qty for Hospital Works</p> <table border="0" data-bbox="846 428 1442 659"> <thead> <tr> <th></th> <th style="text-align: right;">Unit</th> <th style="text-align: right;">Qty</th> </tr> </thead> <tbody> <tr> <td>a) For lead upto 1 Km</td> <td style="text-align: right;">Cum</td> <td style="text-align: right;">26752.00</td> </tr> <tr> <td>b) For lead upto 2 Km</td> <td style="text-align: right;">Cum</td> <td style="text-align: right;">17835.00</td> </tr> <tr> <td>c) Beyond 2Km to nearest dumping yard approved by statutory authorities.</td> <td style="text-align: right;">Cum</td> <td style="text-align: right;">133758.00</td> </tr> </tbody> </table>		Unit	Qty	a) For lead upto 1 Km	Cum	26752.00	b) For lead upto 2 Km	Cum	17835.00	c) Beyond 2Km to nearest dumping yard approved by statutory authorities.	Cum	133758.00
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c) Beyond 2Km to nearest dumping yard approved by statutory authorities.	Cum	133758.00												
6.	BOQ Civil item No 2.07:- Please clarify thickness of CC topping, Panel size, size of width, & depth of Groove, specification of groove filling material. We understand hardner is not required under this item. Please clarify	Work to be executed as per specification & drawings												
7.	BOQ Civil Item No 7.20 Lead lined doors:- Please provide approved agencies for lead lined doors	Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Engineer. Kindly refer SCC Clause No 16 <u>Quality of Materials, Workmanship and Test & GCC Vol-II Clause No 28</u>												
8.	BOQ Civil Item No 8.07 & 8.08 (SS Railing) Please provide drawings for these items	Refer drawing No DTL-01 & DTL02 in architectural drawings												
9.	Marble stone, BOQ Civil Item No 9.04:- We presume base rate given for marble stone is inclusive of all taxes, VAT, Octroi & transportation cost (i.e. FOR site) and price difference with actual market rate at the time of execution will be reimbursed. Please clarify the same.	Actual market rate may be considered & nothing extra shall be paid on this account. The Quality of material shall be 1 st quality & governed by specifications..												
10.	Ceramic Glazed tiles, BOQ Civil item No 9.09 in :- Please provide sizes of tiles as rates varies considerably with sizes of tiles	The work of tiling shall be carried out as per BOQ item, specifications & relevant IS codes.												
11.	BOQ Civil item No 10.03:- Please specify thickness of glass wool & specification of fixing the same.	50 mm thick Glass wool, wrapped in 200G virgin polythene bags placed over existing false ceiling and held in position by criss-cross GI wires.												
12.	BOQ Civil item No 11.13:- Please specify make & product name of Anti Bacterial Paint	Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Engineer. Kindly refer SCC Clause No 16 <u>Quality of Materials, Workmanship and Test & GCC Vol-II Clause No 28</u>												

S.No.	Queries Raised	Reply
13.	BOQ Civil item No 11.14 for:-Please provide drawing and agency for Aluminium rail retainer	Refer arch drawing No DTL-01, addl drawing for rail retainer enclosed. Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Engineer. Kindly refer SCC Clause No 16 <u>Quality of Materials, Workmanship and Test & GCC Vol-II Clause No 28</u>
14.	Supplying & stacking of stone aggregate, Stone Screening, Red Bajri in BOQ Civil Item No 12.05:- Please specify whether material stacked will be reduced for payment or paid as per stacked volume	Mode of measurement will be as per BOQ item & specifications.
15.	Road Pavement, BOQ Civil Item No 12.15:- Please specify thickness of road pavement, details of joint & specification of joint filling material	Item to be executed as per specification & drawings
16.	Landscaping, BOQ Civil item No 16.04 to 16.06:- Please confirm unit & quantity of these items , In CPWD tenders amount is derived by dividing product of rate & Qty by 100 Sqm	The unit is as per 100 Sqm. of work. The rate mentioned is for 100 Sqm. The quantity in sqm. will be divided by 100 and multiplied by the rate and final amount will be derived for payment to the contractor.
17.	BOQ Civil Item No 7.05:- Reference of item No 9.21	Reference of item No 7.04 to be considered instead of 9.21. a) On one side in item no. 7.04
18.	BOQ Civil Item No 7.06:- Reference of item No 9.20 & 9.21 in BOQ item No 7.06 at Civil BOQ Pg C-11	Item to be read as . Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of shutters (over all area of door shutter to be measured) Over item no. 7.04.
19.	BOQ Civil Item No 12.16:- the length of 110 mm dia UPVC pipe spouts may please be confirmed because unit is in Each	Length of UPVC pipe shall be upto 600mm
20.	BOQ Civil Item No 16.14:-Unit of corresponding should be each instead of L/s	Item stands deleted. Landscaping works are inclusive of maintenance, refer technical specification Pg No 39 & 40 under Horticulture works
21.	BOQ Civil Item No 16.15:-Unit of corresponding Item should be each instead of tree	The unit will be Each for corresponding items
22.	Provide contact information of agency for signages work	Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Engineer. Kindly refer SCC Clause No 16 <u>Quality of Materials, Workmanship and Test & GCC Vol-II Clause No 28</u>
23.	BOQ Civil Item No 9.17 :- Thickness of Tremix carpeting to be provided	Final thickness of Tremix carpet shall be 50 mm after dewatering. M-20 Grade concrete to

S.No.	Queries Raised	Reply
		be used in this item.
24.	BOQ CIVIL In item No 13.09:- works specification of welded wire mesh and materials of posts not specified	Please refer BOQ Civil Item No 13.07 & 13.08.
	PHE	
25.	CI Pipes for soil waste & Vent pipes, BOQ Plumbing subhead II/ Item No 1.1 & 1.2:- Please provide class/ grade/pressure rating of CI pipes	Centrifugally cast iron as per IS 3989
26.	GI Pipes for waste water disposal, , Internal water supply, External water supply Please provide class/ grade/pressure rating of GI pipes	B- Class GI Pipes (Medium Class), Work to be executed as per specifications & relevant BIS.
27.	Approved agency, BOQ Plumbing subhead VII, IX & X: - Please provide specification & approved agencies for VII, IX & X	Already given in Specifications & list of approved makes. Approved makes for ETP will be same as that for STP
28.	BOQ Item No 15 under PHE subhead water supply in Hospital Works Existing Item Extra for covering with nitrle rubber insulation 9 mm thick insulation for gate valve as per specification. (10% of Price of Gate valve)	Item to be read as Extra for covering with nitrle rubber insulation 9 mm thick insulation for gate valve as per specification.
29.	BOQ Item No 12 under PHE subhead External Sewerage & Drainage in Hospital Works Existing Item Pipes, Cables etc. not exceeding 300mm dia but not exceeding 600 mm	Item to be read as Pipes, Cables etc. exceeding 300mm dia but not exceeding 600 mm dia
30.	BOQ Item No 26 in Hospital Building under PHE subhead External Sewerage & Drainage:- The item is for extra for each 1 m boring ----- for all the two bores i/c P/F PVC slotted pipe but connected item of bore is not there. Please clarify	The item is for boring for Rainwater recharge pit.
31.	PHE Works wherever class of Brick mentioned as 7.5 or 35	All Brickwork under this Contract shall be with 75 class designation bricks
32.	Model number for all the Ceramic & CP fittings to be provided	Sample will be approved out of one of the approved make suitable for technical specification.
33.	Providing & fixing soil waste & Vent pipes:- We understand that fittings for these items will be measured and paid separately.	Payment will be done as per BOQ item & specifications
34.	PHE, BOQ Item No 2 under subhead External Plumbing Work , P/L Ductile iron	Excavation & backfilling if required for this will be paid separately in relevant BOQ item

S.No.	Queries Raised	Reply
	pipe:- We understand that this item does not call for any civil works like excavation & back filling, Please confirm	
35.	ETP:- Kindly confirm the location of ETP, whether it is in basement or above Ground Level	ETP is outside the building. Major units of ETP will be covered & below ground except few as per design.
36.	STP:- Kindly confirm the location of STP, whether it is in basement or above Ground Level	STP is outside the building. Major units of STP will be covered & below ground except few as per design.
37	STP:- we understand that capacity of 625 cum per day is including ETP capacity 65 Kld/day. Kindly clarify	Yes
38.	FIRE FIGHTING INTERNAL - Sub Head - III - (Hydrants and Sprinklers) - Item no : 2. In specification hose for the internal hydrant is considered as 4nos of 7.5m long synthetic non percolating hose but in BOQ it is given that 2nos of 15m long synthetic non percolating hose. Kindly clarify.	Item to be executed as per BOQ, Unit will be Each
39.	FIRE FIGHTING INTERNAL - Sub Head - V - (Piping, Valves and Accessories) - Item no : 4. In specification under the sub head 3.0 Pipes & Fittings, Pg no : 81, material for exposed pipe and buried pipe is considered as MS but in BOQ it is given that GI Pipes.	Item to be executed as per BOQ
40.	EXTERNAL FIRE FIGHTING - Sub Head - III - (Hydrants and Sprinklers) -Item no : 5 In BOQ under EXTERNAL FIRE FIGHTING system - Sub Head - III - (Hydrants and Sprinklers) -Item no : 5, Only Hose cabinetof 36nos is given and 72nos of hose is given in item no :3 but the required 36nos of Hydrants and 36nos of branch pipe is not given in BOQ. Shall we included the missing hydrants and branch pipe in item no : 5	Item exist in internal fire fighting works
41	BOQ Firefighting Internal works, Sub Head – I, - (Wet Riser and Sprinkler System - Pumping Equipments), item No-1	Unit for this item is Set
42	BOQ Firefighting Internal works, Sub Head - II - (Motor Panels), Item No-1	Unit for this item is Set
43	BOQ Firefighting Internal works ,Sub Head - IV - (Fire Extinguishers), Item No 1.1 & 2	Unit for item No 1.1 is Nos Unit for item No 2 is Nos
44	Sub Head - V - (Piping, Valves and	Unit for item No 10.1 is Each

S.No.	Queries Raised	Reply
	Accessories), Item No 10.1	
45	External Firefighting, Sub Head - III - (Hydrants and Sprinklers), Item No -3	Unit for item No 3 is Each
46	External Firefighting, Sub Head - IV - (Piping, Valves and Accessories), Item NO Item No 5.1 Item NO 5.2	Unit Unit for item No 5.1 is Meter Unit for item No 5.2 is Meter
47	External Firefighting, Sub Head - IV - (Piping, Valves and Accessories), Item NO Unit for Item No 12.1 & 12.2	Unit for item No 12.2 is Each

PHE, BOQ Item No 25 under Subhead Water Supply for Hospital Building works :- RO water treatment Plant:- As per BOQ given RO system is smaller capacity whereas the technical specification says industrial application which is not applicable for smaller capacity RO system, Please Clarify

Item to be read as

Providing and fixing approved make & suitable model of R.O. plant (fully automatic operation) 40ltrs. Per hour flow rate having capacity to treat the raw water and average recovery not less than 35% . The operating voltage to 230 volt AC +/- 10% alongwith required capacity pump of approved make and solenoid valves, dry run protection of pump, automatic tank level control, inbuilt auto flush timer for periodic flushing of membranes, storage tank (3.0 mm (minimum) thick S.S. 304 sheet) 100 lts of suitable size and its supporting structure, over voltage and over current protection with switch mode power supply system complete in all respects including installation and fittings with the following provisions:

10 micron polypropylene sediment pre filter - 2 Nos.

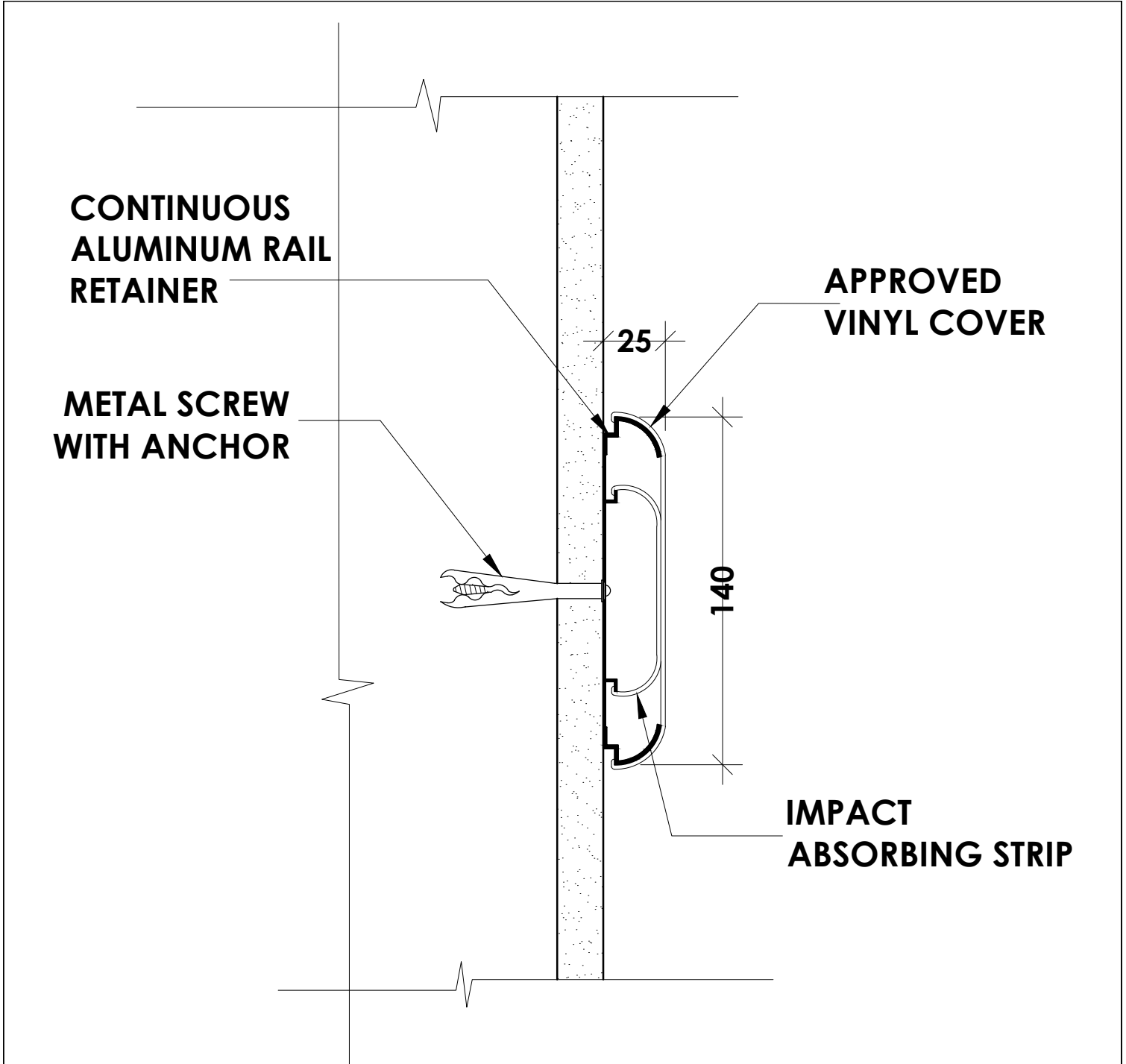
10 micron bacteriostatic activated carbon block on line micron filter with 5 micron rating

3 Nos. and adequate size of reverse osmosis membrane with 0.0001 micron pore size energy saving poly amide type

UV lamp of minimum capacity 40LPM and minimum lamp wattage 9W

Antiscalant dosing system for self flushing/cleaning. Pressure switches, Digital TDS meter, Digital pH meter, electric panel and necessary instrumentation

All other terms & conditions of bid documents shall remain unchanged.



WALL GUARD DETAIL

CONTENT OF SHEET <h2 style="text-align: center; margin: 0;">WALL GUARD DETAIL</h2>	DESCRIPTION OF PROPOSAL :- COMPREHENSIVE REDEVELOPMENT PLAN OF LADY HARDINGE MEDICAL COLLEGE AND ASSOCIATED HOSPITALS, SHAHEED BHAGAT SINGH MARG. NEW DELHI.	CLIENTS : LADY HARDINGE MEDICAL COLLEGE & ASSOCIATED HOSPITAL	G. D. SAMBHARE & CO. <small>GOLDEN BUNGLOW, 7th FLOOR, JUHU ROAD, SANTACRUZ [WEST], MUMBAI 400 054. Tel : 022-26614321 [3 Lines] Fax : 022-26613142 email : mail@gds.net.in website : www.gds.net.in</small>
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CLARIFICATION/AMENDMENTS – 3 (ELECTRICAL WORKS)

S.NO.	QUERY	REPLY
1	For VCB panel Pg:E-5, panel is specified as 5 board, however as per external BOQ Page:1, item no:1.01, it is specified as 3 board.	The VCB Panel shall be 5 boards as mentioned in the BOQ.
2	For VCB panel Pg:E-5 panel is specified as 1500 MVA, however as per external BOQ Pg:1 item no:1.01 it is specified as 750 MVA.	The VCB Panel fault level shall be 750 MVA in place of 1500 MVA.
3	VCB panel end flanges is specified .Please confirm whether it is required or not.	These shall be as per actual requirement. (Item to be executed as per BOQ).
4	Please specify the fault current details.	Fault current 13.14 KA
5	In 33 kv HT panel, incomer is specified as 400A in specification Pg:9; however in BOQ it is specified as 630A in pg:1.	Item to be executed as per BOQ, Incomer shall be 630A.
6	In specification Pg:E-17 specified as test certificate to be provided. Please specify the type of test certificates required	The type test certificate shall be required as per IS : 2026.
7	In specification Pg:E-17 oil transformer tapping's mentioned as 1.87% however as per BOQ pg:11 it is specified as +/-2.5%.	The tapping is +/- 1.87% for 33 /11 KV Transformer +/- 2.5 % for 11KV/415 KV transformers.
8	For 11 KV board in specification pg: 21, the fault current specified as 500 MVA, however as per BOQ Pg:9 it is shown as 350 MVA .	The fault level for 11 KV boards to be taken 350 MVA as given in the BOQ.
9	Master Single line Diagram need to be provided	Refer Clause No 1.17, NIT&PQ Vol-1
10	Please specify the Capacity and Static Pressure for Air washer for Item No. 7.10 of External Electrical BOQ (Page no. 28)	The capacity and the size of the Air washer is to be design by the vendors as per the room size and the DG set layout provided in the drawing.
11	Electrical BOQ (Meter Boards & Distribution Boards) most places the breaking Capacity of MCCB is 15kA mentioned. But actually 16kA is available in market. So Kindly Clarify.	The requirement is for breaking capacity (I _{sc}) of the MCCB is 15 KA however 16 KA is also acceptable.
12	Electrical BOQ (Meter Boards & Distribution Boards) item No. 1.02 (ix), the breaking capacity of DP MCB is 15kA mentioned. 15kA breking capacity is not available so kindly consider 10kA breaking capacity	Item n. 1.02 Internal Electrical works- Breaking capacity for MCB. 15 KA shall be read as 10 KA.

13	Block schematic diagram of LV& IBMS package is required	The BMS data summary is enclosed herewith at Annexure-1
14	Kindly specify the make for Capacitor Panel	Makes for Capacitor panel shall be as per Item No 29.05 of Specifications
15	Fire alarm panel is asking for zones, which is available in conventional Fire alarm system. In Addressable systems pin point locations can be identified by unique addressed assigned to devices. Kindly change the specifications as per Addressable fire alarm system.	The Panels and devices description shall be followed from BOQ description. The Panel shall be UL listed in NFPA 72010 Compliance.
16	In UL Listed system Sounders are separately powered. So kindly change it as per UL Listed brands as asked in tender to normal sounders	The UL listed sounder as per notifications device circuit is also acceptable
17	In Edwards Fire Alarm Panel, Loop capacity is 125 detectors and 125 devices per loop. In Specifications also, tender is asking for 125 nos. I(Pg no. E143) Loop capacity 159 detectors and 159 devices as mentioned in the tender. We request you to allow 125 detectors and 125 devices also. kindly change it to 125 and make it general for all the products.	As per BOQ, the capacity of the loop is as per IS: 2189 and entire system (loop & cables etc) are based on the same. Item to be executed as per BOQ
18	It is not essential to have Address switch on detector from technical point of view. Kindly change it to soft addressing/ Address Switch	Item to be executed as per BOQ
19	Laser Type Very Early Warning smoke detector, this wording is used by only a specific manufacturer for their product. In Tender specifications, it is asking for Multisensor as mentioned on Pg (E147). Kindly change it to Multisensor with Soft Addressing/Address Switch.	As per BOQ, the UL listed Laser detector are required as per NFPA recommendation. However any other detector with minimum sensitivity of 0.03% obscuration/ ft. is also accepted.
	CCTV	
20	Specify Digital zoom Ratio for CCTV	The zoom ratio for PTZ camera to be 18X. as mentioned in BOQ
21	Kindly change IR cameras to Low lux Day/night Cameras	Change IR Cameras to low light day night cameras with 3.6mm lens.
22	Type of Camera: Analog Dome Camera with IR - LED	Change analog dome camera with IR –LED to Low lux day night camera.
23	PA System	Item to be executed as per BOQ

DATA POINTS SUMMARY

Sr. No.	Function	Qty	AI	DI	AO	DO	Remarks
A	Chilled water system						
1	CHILLER	6					
	Chiller On / Off command					6	Relay output
	Common Chilled water supply / condenser water supply header temperature		6				Immersion Type Temperature Sensor
	Common Chilled water return / condenser water return header temperature		6				Immersion Type Temperature Sensor
	Auto Manual Switch			6			Potential free contacts of selector switch.
	Chiller microprocessor (software) integration for Chiller-intrinsic parameter monitoring						Software connectivity
	Sub Total for Chillers		12	6	0	6	
2	Primary Chilled Water Pumps	8					
	Primary Chilled Water Pump on / off command					8	Relay output
	Primary Chilled water Pump run Status			8			Current relay
	Primary Chilled water Pump trip Status			8			Potential free contacts of contactor.
	Auto Manual Switch			8			Potential free contacts of selector switch.
	Sub Total for CHW pumps		0	24	0	8	
3	Secondary Chilled Water Pumps	8					
	Secondary Chilled Water Pump on / off command(VFD)					8	Potential free contacts in VSPS panel for each set of pumps
	Auto Manual Switch			16			Potential free contacts of selector switch.
	Sub Total for Secondary CHW pumps		0	16	0	8	
4	Condenser Water Pumps	8					
	Condenser Water Pump on / off command					8	Relay output
	Condenser water Pump run Status			8			Current relay
	Condenser Chilled water Pump trip Status			8			Potential free contacts of contactor.
	Auto Manual Switch			8			Potential free contacts of selector switch.
	Sub Total for CDW pumps		0	24	0	8	
5	Cooling Tower	6					
	Cooling Tower fans on / off command					6	Relay output
	Cooling Tower fan run status			6			Current relay
	Trip Status			6			Potential free contacts.
	Cooling Tower sump water low level			6			Level Switch
	CT Make Up Water Tank Level (high/low)			12			Level Switch
	Auto manual switch			6			Potential free contacts of selector switch.
	Sub Total for Cooling Towers		0	36	0	6	
6	AHUs/Ventilation System						
	AHUs.	180					
	Fan Start/Stop					180	Relay output
	Return Air Filter Status			180			Differential Pressure Switch - Air
	Run Status			180			Differential Pressure Switch - Air
	Return Air Temperature monitoring		180				Duct mount temp sensor
	2 Way Modulating Valve for Chilled water Line.				180		Output signal from the DDC Controller
	Auto manual selector switch			180			Potential free contacts of selector switch.
	Sub total for AHUs with Cooling Coil only.		180	540	180	180	
7	Air Washers	22					
	Air Washer Start/Stop					22	Relay output
	Air Washer Run Status			22			Differential Pressure Switch - Air
	Sub total for Air Washers		0	22	0	22	
8	VENTILATION FANS	50					
	Fan run status			50			Current relay
	Fan Start/Stop					50	Relay output
	Sub Total for Ventilation/Exhaust Fan		0	50	0	50	

CLARIFICATION / AMENDMENT No. – 4 (HVAC Works)

Chiller & Plant Manager

1. Water cooled centrifugal chillers shall be provided with VFD (Unit mounted/Free standing-Standalone) and without soft starter.
2. COP and energy consumption for centrifugal chillers shall be as per latest ECBC norms and relevant adjustment for site conditions as per ASHRAE 90.1(latest).Similarly IKW/TR should be in the range of 0.65to 0.67.
3. Factory testing of the chillers shall include 04 persons from Client /Consultants/Authorized representative of client/consultant.
4. For Chillers No deviation in the Approved list of makes shall be entertained.
5. Makes for Chiller Plant Manager: Siemens/ Honeywell/Johnson Control

Pumps

6. All chilled water primary pumps have to be End suction type and Hot water pumps mono block type with TEFC squirrel cage induction motor.
7. No deviation in the Approved list of makes shall be entertained.

AHUs & Fans

8. All AHUs shall be having 0.8 mm thick inner and outer sheet as specified in BOQ. Similarly coil thickness shall be as per BOQ.
9. Hepa filters for the OTs shall be included in the AHU cost. However Separate price of the HEPA filters also have to be quoted as per BOQ.
10. No deviation in the Approved list of makes shall be entertained.
11. For fire rated fans (Lift well/ stair case press./Basement exhaust) has to be fire rated with minimum 2 hours @ 250 deg C.
12. FCU shall be provided with 2 pipe system.
13. Fan selection shall be done as per BOQ and Specifications.

Valves & Piping

14. All valves shall be of PN-16 type.
15. PID balancing valves Approved makes are: - Flowcon USA/ Danfoss/ Belimo.
16. No deviation in the Approved list of makes (For other type of valves) shall be entertained.
17. Cost of Aluminum cladding shall be included in chilled water piping (Inside the building/AHU rooms/AC Plant rooms etc.) as mentioned in BOQ.
18. Pressure gauge and thermometer have to be quoted separately also incase of Pumps/AHU included in the items.
19. PVC eliminators are not required in AHUs.
20. AHU motors shall be with class 'F' insulation and IP 55 Protection.
21. Cost for POT strainers should be inclusive of 04 set of butterfly valves of same dia for bypass arrangement.

22. All pipe sizes up to 150 mm dia shall be heavy class as per IS 1239 and above 150 mm dia shall be minimum 6 mm thick as per IS-3589 with latest amendments.
23. Item no.16.1.3 shall be read as for 300 mm dia instead of 400 mm dia as in boq of Hospital Block.

Ducting & Insulation

24. All Factory fabricated ducts have to be manufactured and supplied as per Specifications.
25. Factory fabricated ducts have to be provided with TDF flanges.
26. No deviation in the Approved list of makes shall be entertained.
27. Duct Insulation shall be as per BOQ and Specifications.

Ozone & UVGI

28. UVGI & Ozone system has to be Duct mounted type. With UL standards.
29. No deviation in the Approved list of makes shall be entertained

Operation & Maintenance

30. Item no. 1 of part 'E' Operation and maintenance (routine and preventive) and breakdown maintenance of high side and low side of the airconditioning plant comprising of all the machinery, has to be for defect liability period only.
31. Item no.2 of part 'E' for Academic Block and similarly Item no.1.1 to item no 1.5 of part 'E' of hospital block HVAC works stands deleted. These will be covered in Part 'B' of tender i.e. 'Cost of operation and comprehensive maintenance of services for five years'
32. Necessary civil works has to be carried out by the principal contractor.

All other terms & conditions of bid documents shall remain unchanged.