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Milwaukee Public Library Martin Luther King Jr. Library

310 W. Locust St. Milwaukee, WI 53212

Schematic Design Estimate June 23, 2023 For Owner Review June 26, 2023

Project: 2020A053

Prepared For: Moody Nolan 209 South LaSalle Street Suite 820 Chicago, IL 60604

<u>CONCORD</u> GROUP

Schematic Design Estimate 06/23/2023

NOTES REGARDING PREPARATION OF ESTIMATE

This estimate was prepared based on the following documents provided by Moody Nolan Architects:

- 1. MPL-MLK Library Schematic Design Drawings issued March 31, 2023.
- 2. MPL-MLK Library Schematic Design Narratives issued March 31, 2023.
- 3. Information regarding the project was also obtained via meetings, phone conversations, and email messages that clarified the project scope.

BIDDING PROCESS - MARKET CONDITIONS

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other work not covered in the drawings or specifications, as stated within this document. Unit rates have been generated from current material/labor rates, historical production data, and discussions with relevant subcontractors and material suppliers. The unit rates reflect current bid costs in the area. All unit rates relevant to subcontractor work include the subcontractors overhead and profit unless otherwise stated.

Pricing reflects probable construction costs obtainable in the Milwaukee, Wisconsin area on the bid date. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors with a minimum of 3 bidders for all items of subcontracted work and a with a minimum of 3 bidders for a general contractor. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since The Concord Group has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, this statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents The Concord Group's best judgment as professional construction cost consultants familiar with the construction industry. However, The Concord Group cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

CURRENT MARKET CONDITIONS

It should be noted that there is ongoing volatility in the construction materials market due to the effects of the pandemic on both the production and supply of materials. Due to the lack of in stock materials suppliers are struggling to fulfill orders in a timely manner, which in turn leads to much longer than normal lead times. The impact of ongoing global raw material shortages and fuel price increases adds to the overall spike in material pricing coupled with the increased demand for construction that the construction industry is now seeing. These factors should be considered when determining the bidding strategy and schedule for projects.

ASSUMED CONSTRUCTION PARAMETERS

The pricing is based on the following project parameters:

- 1. A construction notice to proceed date of January 15, 2024.
- 2. A substantial completion date of December 20, 2024.
- 3. The contract will be competitively bid to multiple contractors.
- 4. All contractors will be required to pay prevailing wages.
- 5. There are no phasing requirements.
- 6. The contractors will have full access to the site during normal working hours
- 7. Estimate detail includes pricing as of May 2023.

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EXCLUSIONS

The following are excluded from the cost of this estimate:

- 1. Professional Design Fees
- 2. Testing Fees
- 3. Owner Contingencies/Scope Changes
- 4. Construction Contingency
- 5. Premium Time / Restrictions on Contractor Working Hours
- 6. Cost Escalation
- 7. Finance and Legal Charges
- 8. Environmental Abatement Costs
- 9. Temporary Owner Facilities
- 10. Moisture Mitigation
- 11. Stairs
- 12. Fire Place
- 13. Equipment (Owner Furnished/Installed)
- 14. Artwork
- 15. Elevator
- 16. Third Party Commissioning
- 17. Telephone / Data Equipment
- 18. Contaminated Soil Removal
- 19. Structurally Unsuitable Soil Removal
- 20. Future Cost Impacts Based on Supply Chain Impacts

CONCORD For Owner Review GROUP-

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Milwaukee Public Library Martin Luther King Jr. Library

	COST SUMMARY	17,635 GS	F \$/SF	BU	ILDING TOTAL
01000 02000	GENERAL REQUIREMENTS EXISTING CONDITIONS		\$0.00 \$0.00		\$0 \$0
03000 04000 05000	CONCRETE MASONRY METALS		\$0.07 \$0.00 \$2.56		\$1,217 \$0 \$45,200
06000 07000 08000	WOODS, PLASTICS & COMPOSITES THERMAL & MOISTURE PROTECTION SYSTEM OPENINGS		\$12.93 \$0.34 \$13.53		\$227,974 \$5,925 \$238,575
09000 10000 11000	FINISHES SPECIALTIES EQUIPMENT		\$50.03 \$16.64 \$4.23		\$882,266 \$293,420 \$74,576
12000 13000 14000			\$16.57 \$0.00 \$0.00		\$292,261 \$0 \$0
21000 22000 23000	FIRE SUPPRESSION PLUMBING HEATING, VENTILATING & AIR CONDITIONING		\$2.13 \$10.19 \$58.43		\$37,474 \$179,730 \$1,030,432
26000 27000 28000	ELECTRICAL COMMUNICATIONS ELECTRONIC SAFETY AND SECURITY		\$33.17 \$25.58 \$12.11		\$584,956 \$451,169 \$213,555
31000 32000 33000	EARTHWORK EXTERIOR IMPROVEMENTS UTILITIES		\$0.00 \$0.00 \$9.53		\$84 \$0 \$168,149
	SUBTOTAL		\$268.04		\$4,726,964
	DESIGN CONTINGENCY GENERAL CONDITIONS/BOND/INSURANCE CONTRACTOR'S FEES ESCALATION TO MID-POINT OF CONSTRUCTION	10.00% 9.00% 3.50% 4.50%	\$26.80 \$26.54 \$11.25 \$14.97		\$472,696 \$467,969 \$198,367 \$263,970
	TOTAL ESTIMATED CONSTRUCTION COSTS		\$347.60		\$6,129,967
[ALTERNATES INCLUDING MARKUPS Alternate #1: MLK Letters and Bench Alternate #2: Underfloor Plumbing Alternate #3: Roofrop PV Panels and Conduits Alternate #4: Library Electrical Service Alternate #5: Geothermal Well Field Alternate #6: Central Boiler and Chiller Plant Alternate #7: Two (2) Dedicated EV Charging Stations			ADD ADD ADD ADD ADD ADD ADD	\$101,313 \$69,569 \$392,933 \$86,649 \$453,883 \$650,397 \$64,840
	HVAC SYSTEM OPTIONS INCLUDING MARKUPS (FOR HVAC Option #1: Distributed Geothermal Heat Pumps HVAC Option #2A: 4-Pipe System Fancoils w/ Geothermal HVAC Option #2B: 4-Pipe System Fancoils w/ Boiler/Chiller HVAC Option #3A: 4-Pipe System w/AHU & VAV w/ Geother HVAC Option #3B: 4-Pipe System w/AHU & VAV w/ Boiler/C	Plant rmal	<u>ON ONLY)</u>		\$1,877,366 \$2,073,247 \$1,791,573 \$2,330,220 \$2,033,372

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DESCRIPTION	QTY	UM	UNIT COST	TOTAL COST
BASE BID				
03000 CONCRETE 03900 Miscellaneous Concrete				
Formwork at stair landing	15	SQFT	10.33	155
Concrete slab on grade, 6" thk, with mesh reinforcement, stair landing	50	SQFT	6.34	317
Geofoam fill for stair landing	2	CUYD	125.78	252
Concrete fill at metal pan stair tread	15	LNFT	32.86	493
	SUBTOTAL: Misce	ellaneous	Concrete	\$1,217
TOTAL: CONCRETE				\$1,217
05000 METALS				
05100 Structural Steel				
Structural steel allowance at movable walls	2	TONS	5,842.37	11,685
	SUBTOTA	L: Structu	ıral Steel	\$11,685
05300 Stairs				
Metal pan stairs	15	LNFT	53.08	796
Steel railing system, painted	10	LNFT	122.50	1,225
	SUBTOTAL: Stairs		\$2,021	
05900 Miscellaneous Metals				. ,
Miscellaneous angles, channels, lintels, etc.	17,635	SQFT	1.79	31,494
	SUBTOTAL: Mis	-	us Metals	\$31,494
TOTAL: METALS				\$45,200
06000 WOODS, PLASTICS & COMPOSITES 06200 Rough Carpentry	5			
Miscellaneous wood blocking & rough carpentry	17,635	SQFT	1.83	32,269
	SUBTOTAL	Rough C	Carpentry	\$32,269
06300 Millwork				
Built-in wall seating	10	LNFT	449.96	4,500
P-lam base cabinets and solid surface countertops	58	LNFT	644.18	37,363
P-lam wall hung cabinets	45	LNFT	387.44	17,435
Interactive wall, 6'-6" h. x 2'-0". Wood veneer/PLam	28	LNFT	559.30	15,660
Interactive wall, 5-0" h. x 2'-0". Wood veneer/PLam	25	LNFT	385.26	9,631
Solid surface countertops	54	LNFT	233.58	12,613
Solid surface window sills	209	LNFT	131.30	27,442
Circualtion desk	44	LNFT	1,615.04	71,062
	SU	BTOTAL:	Millwork	\$195,705
TOTAL: WOODS, PLASTICS & COMPOSITES				\$227,974

07000 THERMAL & MOISTURE PROTECTION

07800 Caulking & Sealants

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CRIPTION	QTY	UM	UNIT COST	TOTAL COS
Miscellaneous caulking & sealants	17,635	SQFT	0.34	5,92
S	UBTOTAL: Ca	ulking &	Sealants	\$5,925
AL: THERMAL & MOISTURE PROTECTION				\$5,925
SUBTOTAL: Caulking & Sealants FHERMAL & MOISTURE PROTECTION O O OPENINGS 0 Interior Doors, Frames, & Hardware ame, 3'-0" × 7'-0" 1 EACH 634.30 ame, 4'-6" x 7'-0" 1 EACH 786.45 ame, 6'-0" x 7'-0" 6 EACH 821.45 oor, (2) 3'-0" x 7'-0" 4 EACH 1,274.30 door, (2) 3'-0" x 7'-0" 2 EACH 8,034.30 elses glass door, at office fronts, 3'-0" x 10'-0". Assume pivot hinges and 6 EACH 8,744.45 opils 0 SCHOPANICAN 1 EACH 1,209.30 oor, (2) 3'-0" x 7'-0" 13 EACH 1,209.30 1,209.30 oor, (2) 3'-0" x 7'-0" 1 EACH 1,209.30 1,3 EACH 1,209.30 1,3 EACH 1,209.30 1,3 EACH 1,209.30 1,3 EACH 1,084.30 1,3 EACH 1,084.30 1,4 1,000 EACH 1,000 EACH 1,000 EACH 1,000				
HM frame, 3'-0" x 7'-0"	13	FACH	634.30	8,24
HM frame, 4'-6" x 7'-0"				78
HM frame, 6'-0" x 7'-0"				4,92
				5,09
				16,06
				52,46
ladder pulls	0	LACH	0,741.45	52,70
WD door, 3'-0" x 7'-0"	13	EACH	767.15	9,97
-				1,20
				3,06
Hardware set, single			,	14,09
				12,38
			,	96
	TOF DOORS, FIG	imes, a n	laruware	\$129,28
08500 Interior Glazing				
Interior storefront	1,000	-	67.36	67,36
Vinyl graphic film on glass, 10'-0" h.	1,453	SQFT	20.03	29,09
	SUBTOTAL	: Interio	r Glazing	\$96,46
08800 Louvers & Vents				
Aluminum louvers	66	SQFT	194.43	12,83
	SUBTOTAL	-	s & Vents	\$12,83
AL: OPENINGS				\$238,57
				+,
09000 FINISHES				
09100 Plaster & Gypsum Board				
Gypsum board ceiling, suspended, GB-1	2,182	SQFT	12.12	26,4
Gypsum board ceiling, suspended, GB-2, moisture resistant	497	SQFT	12.12	6,02
Gypsum board soffit - quantity allowance at movable partition	2,500	SQFT	19.12	47,80
Gyp board bulkhead	1,136	SQFT	13.96	15,86
Partition standard - 1-hr; 3-5/8" metal studs, 5/8" type x gypboard each side, 3" mineral fiber blanket insulation, 1-hr rated, full-height	4,529	SQFT	13.34	60,43
Partition furring - 1-hr; 3-5/8" metal studs, 5/8" type x gypboard one side, 3" mineral fiber blanket insulation, 1-hr rated, full-height	113	SQFT	10.36	1,17
Partition standard; 3-5/8" metal studs, 5/8" type x gypboard each side, 3" minera fiber blanket insulation, full-height	al 12,117	SQFT	13.11	158,89
Partition plumbing; (2) 3-5/8" metal studs, 5/8" type x gypboard one side, (2) 3" mineral fiber blanket insulation, full-height	1,154	SQFT	19.69	22,72

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CRIPTION	QTY	UM	UNIT COST	TOTAL COST
Partition furring; 3-5/8" metal studs, 5/8" type x gypboard one side, 3" minera fiber blanket insulation, full-height	al 2,356	SQFT	10.13	23,869
Partition column enclosure; 3-5/8" metal studs, 5/8" type x gypboard one side full-height	, 2,671	SQFT	8.42	22,494
SUI	BTOTAL: Plaste	r & Gyps u	ım Board	\$385,716
09200 Floor Finishes				
Porcelain tile floor, PTF-1	3,768	SQFT	16.06	60,507
Porcelain tile base, PTF-2	819	LNFT	20.46	16,759
Luxury vinyl tile, LVT-1	3,462	SQFT	9.28	32,136
Rubber base, RB-1	2,060	LNFT	3.12	6,425
Rubber base, RB-2	300	LNFT	3.12	936
Carpet tile, CPT-1	879	SQFT	6.46	5,674
Carpet tile, CPT-2	1,190	SQFT	6.46	7,682
Carpet tile, CPT-1 & CPT-2	4,946	SQFT	6.46	31,927
Walk off carpet, WO-1	732	SQFT	33.28	24,364
	SUBTOT	AL: Floor	Finishes	\$186,410
09300 Wall Finishes				
Wood wall, WD-1	1,359	SQFT	32.29	43,886
Porcelain wall tile, CT-1	857	SQFT	15.77	13,515
Vinyl wall covering, WC-1	2,351	SQFT	4.36	10,239
Branding wall, 10'-0" high, custom wall graphic	328	SQFT	7.61	2,495
	SUBTO	AL: Wall	Finishes	\$70,135
09400 Ceiling Finishes				
ACT system, 2'x2', AC2	3,092	SQFT	8.40	25,969
ACT, 2'x8', AC3	4,114	SQFT	12.94	53,219
ACT, 2'x8', AC4	3,610	SQFT	11.59	41,823
Specialty ceiling, SP2. Perforated metal panel	360	SQFT	57.61	20,738
Felt baffle ceiling, 8" x 108", SP1	78	EACH	424.65	33,123
Specialty ceiling, felt panel, SP3	450	SQFT	50.86	22,888
	SUBTOTAI	.: Ceiling	Finishes	\$197,759
09600 Paints & Coatings				
Concrete sealer	2,075	SQFT	1.73	3,596
Paint walls, PT-1	21,167	SQFT	1.22	25,898
Paint gyp board ceiling/soffit, GB-1	5,367	SQFT	1.52	8,150
Paint gyp board ceiling/soffit, GB-2, moisture resistant	497	SQFT	1.52	755
Paint exposed structure, ES-1	2,198	SQFT	1.75	3,848
	SUBTOTAL:	Paints &	Coatings	\$42,247
AL: FINISHES			_	\$882,266
10000 SPECIALTIES				
10100 Visual Display Units Glass markerboard	2	EACH	456.20	912
Giuss mui Kelbudi u				
	SUBTOTAL: Vi	sual Disp	lay Units	\$912

<u>GROUP</u>

CRIPTION	QTY	UM	UNIT COST	TOTAL CO
10200 Signage				
Exterior signage allowance	1	LSUM	20,000.00	20,0
Interior signage - allowance	17,365	SQFT	4.44	77,
	SU	BTOTAL:	Signage	\$97,0
10300 Movable Partitions				
Operable partition, solid, 10' high, approx 11' long	1	EACH	11,692.04	11,
Operable partition, glazed, assume 10' high including one (1) door, approx 2 long	5' 1	EACH	59,084.09	59,
Operable partition, glazed, assume 10' high including two (2) doors, approx long	44' 1	EACH	106,168.18	106,
	SUBTOTAL: N	1ovable P	artitions	\$176,9
10400 Toilet Accessories				
Toilet partition, accessible	2	EACH	1,584.30	3,
Toilet partition, standard	3	EACH	1,237.44	3,
Toilet paper dispenser, double roll	7	EACH	114.05	
Paper towel dispenser	2	EACH	103.58	
Napkin disposal, stainless steel, surface mounted	5	EACH	128.58	
Baby diaper changing station	3	EACH	786.26	2,
Soap dispenser	6	EACH	93.58	
Electric hand dryer	4	EACH	567.15	2,
Utility mop holder & shelf, stainless steel	1	EACH	194.05	
Grab bar set, three piece	4	EACH	290.73	1,
Mirror above sink	6	EACH	239.15	1,
	SUBTOTAL:	Toilet Ac	cessories	\$16,5
10600 Lockers & Benches				
Locker, two tier	6	EACH	333.58	2,
	SUBTOTAL: L	ockers &	Benches	\$2,0
AL: SPECIALTIES				\$293,4
11000 EOUIPMENT				
11000 EQUIPMENT 11200 Library Equipment				
Theft detection gates, dual corridor	2	EACH	33,123.20	66
Theft detection equipment, desensitizers	2	EACH	1,268.60	1
Book drop, through wall	1	EACH	3,937.20	3,
			-	
	SUBTOTAL: I	Ibrary Ec	luipment	\$71, 4
11900 Miscellaneous Equipment				
Microwave oven, break room, assumed CFCI	1	EACH	581.48	
Refrigerator, break room, assumed CFCI	1	EACH	972.47	
Undercounter refrigerator, lacation room, assume CFCI	1	EACH	704.39	
Dishwasher, break room, assumed CFCI	1	EACH	865.61	
			_	
SU	BTOTAL: Miscella	neous Ec	quipment	\$3,1



UM	UNIT COST	TOTAL COS
SQFT	9.37	23,5
-	Treatment	\$23,51
		+/
SOFT	15.24	268,7
-		
AL: LOOSE	e Furniture	\$268,74 \$292,26
		<i>\$252,2</i> 0
-		37,4
	\$37,47	
		\$37,47
EACH	1,797.72	12,5
EACH	5,945.52	35,6
EACH	2,345.52	2,3
EACH	1,803.51	3,6
EACH	-	2,2
	6,005.87	6,0
		2,1
Plumbin	g Fixtures	\$64,70
EACH	10,536.47	10,5
EACH	1,678.21	1,6
		5
	-	4,0
		3,5
		2,0
		9
oment & S	Specialties	\$23,28
	FF 27	20 -
		38,7
		2,7
		1,0
	20.25	14,1
	38.41	11,5
		14,1 5,4
	LNFT	LNFT 88.36

RIPTION	QTY	UM	UNIT COST	TOTAL CO
Pipe and valve tagging	750	LNFT	1.37	1,
System pressure testing, water pipe chlorination, and pipe flushing - domestic plumbing	1	LSUM	2,925.60	2,9
SUBTOTAL: Domestic Water, Waste &	Vent, & Stori	n Drainag	e Piping	\$91,7
AL: PLUMBING				\$179,73
23000 HEATING VENTILATION & AIR CONDITI	ONING			
23200 Ventilation & Exhaust				
DOAS AHU, 5 tons/2,000 cfm, w/energy recovery	1	EACH	35,784.00	35,
Humidifier, electric, 12 lbs/hr	1	EACH	3,164.00	3,
AC split system, MDF room, 1-1/2 tons	1	EACH	5,528.00	5,
Refrigeration tubing, AC split system	60	LNFT	21.53	1,
Pipe insulation, refrigeration piping, AC split system	60	LNFT	11.10	
Condensate drain piping - AC split system	30	LNFT	27.87	
Pipe insulation, condensate drain piping - AC split system	30	LNFT	10.07	
Condensate drain piping - water source heat pumps	400	LNFT	55.42	22,
Pipe insulation, condensate drain piping - heat pumps	400	LNFT	12.80	5,
Exhaust fan, rooftop, w/curb, backdraft damper	4	EACH	1,664.00	6,
Heat pump, water-air, 2-stage, 6 ton	2	EACH	15,892.00	31
Heat pump, water-air, 2-stage, 5 ton	1	EACH	14,392.00	14,
Heat pump, water-air, 2-stage, 4 ton	2	EACH	8,892.00	17
Heat pump, water-air, 2-stage, 2 ton	1	EACH	6,428.00	6
Heat pump, water-air, 2-stage, 1.5 ton	1	EACH	5,546.00	5
Heat pump connections - valves, fittings, and insulation	9	EACH	1,607.00	14
VVT zone dampers	9	EACH	741.00	6
Galvanized steel duct & insulation	17,635	SQFT	13.71	241
Registers, grilles and diffusers	150	EACH	113.20	16
Flexible duct, insulated	500	LNFT	23.55	11,
Louvers, OA	2	EACH	2,482.00	4
SUI	BTOTAL: Ven	tilation &	Exhaust	\$454,0
23300 Central Hydronic & Steam Equipment & Specialties	-	54.011	4 4 2 2 2 2 2 2	20
XXXX Heat pump, water-water, 5 ton	2	EACH	14,392.00	28
Geothermal circulating pump, inline	3	EACH	2,343.80	7
HW circulating pump, primary, inline	2	EACH	743.80	1,
HW circulating pump, secondary, inline	2	EACH	743.80	1,
Vibration isolation, pumps	7	EACH	1,818.80	12,
Isolation valves, pumps, butterfly, geothermal	7	EACH	542.06	3,
Flexible pump connections, geothermal pumps	14	EACH	184.90	2,
Triple duty valve, geothermal pumps	7	EACH	909.40	6,
Pump strainer, Y-type, geothermal pumps	7	EACH	257.35	1,
HW buffer tank	1	EACH	9,462.80	9,
Air separator, geothermal pumps	1	EACH	1,625.24	1,
Pressure fill/makeup water system	1	EACH	9,975.20	9,

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CRIPTION	QTY	UM	UNIT COST	TOTAL C
23400 Heating & Ventilating Terminals				
Cabinet unit heaters, HW hydronic	4	EACH	3,287.60	13
Unit heaters, HW hydronic	2	EACH	1,787.60	3
Fintube radiators, HW	216	LNFT	130.95	28
HW connections - valves, fittings, and specialties	6	EACH	593.80	3
SUBTOTAL: Hea	ting & Ven	tilating T	erminals	\$48,
23500 HVAC Piping	_	_		
Humidifier piping	50	LNFT	29.02	1
GTWS/R geothermal piping mains, std. wgt. blk. steel pipe, fittings, and supports	900	LNFT	114.92	103
GTWS/R geothermal condensing water runouts, type L copper, w/fittings, and	450	LNFT	28.08	12
supports			_0.00	
HHWS/R runout piping to perimeter heaters, type L copper	1,000	LNFT	44.66	44
Pipe insulation, humidifier piping	50	LNFT	9.62	
Pipe insulation, GTWS/R mains	900	LNFT	17.16	15
Pipe insulation, GTWS/R runouts to heat pumps	450	LNFT	10.07	2
Pipe insulation, HHWS/R runouts to perimeter heaters	1,000	LNFT	20.40	20
Pipe and valve tagging - interior bldg HVAC piping	2,400	LNFT	1.32	
	SUBTO ⁻	TAL: HVA	C Piping	\$206,
23600 Temperature Controls				
DDC controls - DOAS AHU	1	EACH	5,000.00	!
DDC controls - AC split system - MDF room	1	EACH	2,500.00	-
DDC controls - heat pumps, water source, water-air	7	EACH	4,000.00	28
DDC controls - humidifier unit	1	EACH	2,000.00	2
DDC controls - exhaust fans	4	EACH	2,500.00	10
DDC controls - VVTdampers	9	EACH	1,500.00	13
DDC controls - heat pumps, water source, water-water	2	EACH	4,000.00	{
DDC controls - hydronic pumps, variable speed	7	EACH	7,500.00	52
Thermostats/temperature sensors	10	EACH	500.00	5
CO2 sensors	9	EACH	500.00	2
Miscellaneous points & devices	1	LSUM	15,000.00	15
Utility meter interfaces	- 1	LSUM	15,000.00	15
Headend/central controls	- 1	LSUM	15,000.00	15
Interface with existing building BAS-DDC system	1	LSUM	7,500.00	-
Programming, testing, and training	1	LSUM	10,000.00	10
	TAL: Tem		-	\$193,
23700 Testing, Balancing, & Commissioning				<i>4_30</i>
Air testing and balancing	1	LSUM	18 000 00	10
Pipe system testing and balancing	1	LSUM LSUM	18,000.00 11,000.00	18
	1	LSUM		11
HVAC system commissioning assistance SUBTOTAL: Testing,			12,000.00	12 \$41,
		ALCOMMI	ssionind	\$41.

26000 ELECTRICAL

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QTY	UM	UNIT COST	TOTAL COST
1	EACH	8,037.76	8,038
1	EACH	4,960.88	4,961
1	EACH	4,960.88	4,961
1	EACH	4,138.88	4,139
1	EACH	38,217.76	38,218
30	LNFT	28.06	842
100	LNFT	34.03	3,403
200	LNFT	53.72	10,744
30	LNFT	61.78	1,853
AL: Main P	ower Dis	tribution	\$77,158
1	LSUM	7,606.53	7,607
		n System	\$7,607
		i oyoteini	<i></i> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
17 625	COFT	12.16	232,010
17,635	SQFT		38,317
17,635	SQFT	3.66	64,486
SU	BTOTAL:	Lighting	\$334,813
17,635	SQFT	0.82	14,522
17,635	SQFT	4.90	86,382
Power Distr	ibution &	Devices	\$100,904
1	EACH	2,700.00	2,700
1	EACH	1,200.00	1,200
1	EACH	3,500.00	3,500
4	EACH	2,500.00	10,000
2	EACH	2,600.00	5,200
2	FACH	2 200 00	4,400
2	Eneri	2,200.00	1,100
2	EACH	3,600.00	7,200
1	EACH	3,600.00	3,600
1	LACIT	0,000100	
	1 1 1 1 1 30 100 200 30 TAL: Main P 1 17,635 17,635 17,635 SUI 17,635 Power Distr 1 1 1 1 1 1 1 1 1 2 2	1 EACH 1 EACH 1 EACH 1 EACH 30 LNFT 100 LNFT 200 LNFT 30 SQFT 17,635 SQFT 17,635 SQFT 17,635 SQFT 17,635 SQFT Power Distribution 8 30 1 EACH 1 EACH 1 EACH 2 EACH 2 EACH 2 EACH	1 EACH 4,960.88 1 EACH 4,960.88 1 EACH 4,138.88 1 EACH 38,217.76 30 LNFT 28.06 100 LNFT 34.03 200 LNFT 53.72 30 LNFT 61.78 This is a strip of the strip

CONCORD GROUP

Milwaukee Public Library Martin Luther King Jr. Library

RIPTION		QTY	UM	UNIT COST	TOTAL COS
	ection, disconnect switches and associated feeders - Heat pump, -stage, 4 ton	2	EACH	3,200.00	6,40
Motors conr	nection, disconnect switches and associated feeders - Heat pump, r, 2-stage, 5 ton	2	EACH	3,600.00	7,20
Motors conr	section, disconnect switches and associated feeders - Heat pump, -stage, 2 ton	1	EACH	2,750.00	2,75
Motors conr	ection, disconnect switches and associated feeders - Heat pump, -stage, 1.5 ton	1	EACH	2,500.00	2,50
-	nection, disconnect switches and associated feeders - Humidifier,	1	EACH	1,200.00	1,20
	nection, disconnect switches and associated feeders - Domestic wate	r 1	EACH	850.00	85
	nection, disconnect switches and associated feeders - Electric water	1	EACH	375.00	37
coolery	SUBTOTAL: Mechanical Eq	uipment Conn	ections &	Feeders	\$64,47
AL: ELEC	TRICAL				\$584,956
27000	COMMUNICATIONS				
27200	Tele/Data Systems				
Provision fo	r IT room, plywood, cable tray, grounding, sleeves	1	EACH	5,802.67	5,80
MDF rack as	ssembly 3 racks, switching equipment by Owner	1	EACH	5,747.20	5,74
Telecommu	nication/Data & Television System, complete	17,635	SQFT	12.26	216,27
		SUBTOTAL: T	ele/Data	Systems	\$227,82
27300	Intercom & Public Address Systems				
Mass notific	ation system, complete	17,635	SQFT	3.61	63,62
	SUBTOTAL: Inte	ercom & Public	Address	Systems	\$63,62
27500	Clock System				
Wireless clo	ck system	17,635	SQFT	1.85	32,62
		SUBTOT	AL: Cloci	c System	\$32,62
27600	Audio/Visual & Television System			-	
Audio/visua	l System, complete	17,635	SQFT	7.21	127,09
	SUBTOTAL: A	udio/Visual &	Television	n System	\$127,09
AL: COM	MUNICATIONS				\$451,169
28000	ELECTRONIC SAFETY & SECURITY				
28200	Fire Alarm Systems				
Fire alarm s	ystem, complete	17,635	SQFT	3.83	67,58
		SUBTOTAL: Fi	ire Alarm	Systems	\$67,58
28300	Intrusion Detection & Access Control Systems				
Physical acc	ess control system, complete	17,635	SQFT	3.35	59,11
	SUBTOTAL: Intrusion Det	ection & Acces	s Control	Systems	\$59,11
28400	CCTV System				

CRIPTION		QTY	UM	UNIT COST	TOTAL CO
		SUBTOT	AL: CCTV	System	\$86,8
AL: ELEC	CTRONIC SAFETY & SECURITY				\$213,5
31000	EARTHWORK				
31200	Site Grading				
Fine grading	g at bench area	125	SQFT	0.67	
		SUBTOT	AL: Site	Grading	\$
AL: EAR	THWORK				\$
33000	UTILITIES				
33200	Site Water Service				
Domestic w	ater service provisions	1	LSUM	82,210.97	82
		SUBTOTAL: S	ite Water	Service	\$82,2
33300	Site Sanitary & Storm Sewer				
Storm and s	sanitary sewer provisions	1	LSUM	83,547.00	83
	<i>,</i> .	SUBTOTAL: Site Sanitar	rv & Storn	-	\$83,!
33400	Natural Gas Service		,		+ <i>/</i> -
	gas service provision with local utility	1	LSUM	2,391.02	2
coordinate	gas service provision with local duilty	SUBTOTAL: Na		,	
		SUDIVIAL: Nd	lural Gas	Service	\$2,3
33800	Site Electrical	SURTOTA	AL: Site El	loctrical	
AL: UTIL	TTIES	5001014		lectrical	\$168,1
AL: BAS					\$4,726,9
	TE #1: MLK LETTERS & BENCH				φ-η/20/3
03000					
	CONCRETE				
03600	CONCRETE Precast Architectural Concrete				
03600	CONCRETE Precast Architectural Concrete crete seat and back, bench	1	EACH	5,385.43	5
03600	Precast Architectural Concrete	_		,	
03600 Precast con	Precast Architectural Concrete crete seat and back, bench	1 SUBTOTAL: Precast Archit		,	
03600 Precast con 03900	Precast Architectural Concrete crete seat and back, bench Miscellaneous Concrete	SUBTOTAL: Precast Archi	tectural C	oncrete	
03600 Precast con 03900 Formwork fr	Precast Architectural Concrete crete seat and back, bench Miscellaneous Concrete or strip footings, bench	SUBTOTAL: Precast Archit	sqft	Concrete 10.17	\$5,;
03600 Precast con 03900 Formwork for Formwork for	Precast Architectural Concrete crete seat and back, bench Miscellaneous Concrete or strip footings, bench or foundation walls, bench	SUBTOTAL: Precast Archi	SQFT SQFT	oncrete	\$5,;
03600 Precast com 03900 Formwork fr Reinforceme	Precast Architectural Concrete crete seat and back, bench Miscellaneous Concrete or strip footings, bench	SUBTOTAL: Precast Archit	sqft	concrete 10.17 10.98	\$5,:
03600 Precast com 03900 Formwork for Reinforcemore Reinforcemore	Precast Architectural Concrete crete seat and back, bench Miscellaneous Concrete or strip footings, bench or foundation walls, bench ent in strip footings, avg 65 lbs/cy, bench	SUBTOTAL: Precast Archit 80 344 130	SQFT SQFT LBS	concrete 10.17 10.98 1.63	\$5,:
03600 Precast com 03900 Formwork for Reinforcemon Reinforcemon Concrete in	Precast Architectural Concrete crete seat and back, bench Miscellaneous Concrete or strip footings, bench or foundation walls, bench ent in strip footings, avg 65 lbs/cy, bench ent in foundation walls, avg 115 lbs/cy, bench	SUBTOTAL: Precast Archit 80 344 130 460	SQFT SQFT LBS LBS	10.17 10.98 1.63 1.73	\$5,:
03600 Precast com 03900 Formwork for Reinforceme Concrete in Concrete in	Precast Architectural Concrete crete seat and back, bench Miscellaneous Concrete or strip footings, bench or foundation walls, bench ent in strip footings, avg 65 lbs/cy, bench ent in foundation walls, avg 115 lbs/cy, bench strip footings, bench	SUBTOTAL: Precast Archit 80 344 130 460 2 4	SQFT SQFT LBS LBS CUYD	10.17 10.98 1.63 1.73 238.62	\$5,:
03600 Precast com 03900 Formwork for Reinforcemer Concrete in Concrete in	Precast Architectural Concrete crete seat and back, bench Miscellaneous Concrete or strip footings, bench or foundation walls, bench ent in strip footings, avg 65 lbs/cy, bench ent in foundation walls, avg 115 lbs/cy, bench strip footings, bench foundation walls, bench	SUBTOTAL: Precast Archit 80 344 130 460 2 4	SQFT SQFT LBS LBS CUYD CUYD SQFT	10.17 10.98 1.63 1.73 238.62 246.28 6.34	5 \$5, 3 \$7,4

Schematic Deisgn Estimate 06/23/2023

CRIPTION	QTY	UM	UNIT COST	TOTAL COS
04100 Exterior Masonry				
Brick facade, modular, 2-2/3"x8"x4" thk, bench	78	SQFT	34.12	2,66
Cast stone coping, 18" wide x 4" deep, bench	20	LNFT	173.40	3,46
CMU backup, bench	78	SQFT	19.69	1,53
	SUBTOTAL:	Exterior I	Masonry	\$7,66
AL: MASONRY				\$7,665
05000 METALS				
05100 Structural Steel				
Structural steel beams, HSS Tubes, bench	374	LBS	4.10	1,53
	SUBTOTAL	: Structu	ral Steel	\$1,534
AL: METALS				\$1,534
10000 SPECIALTIES				
10200 Signage				
Monumental sign, "MLK" letters, 6'-0" high	1	EACH	55,000.00	55,00
	SU	BTOTAL:	Signage	\$55,000
AL: SPECIALTIES				\$55,000
31000 EARTHWORK				
31300 Foundation Excavation & Fill				
Excavate for bench foundation	23	CUYD	11.94	27
Backfill with imported material	12	CUYD	48.55	58
	L: Foundation			\$857
31700 Pavement Bases				
CA-6 base, 6" thk at bench	5	CUYD	50.53	25
	SUBTOTAL:			\$253
AL: EARTHWORK				\$1,110
AL: ALTERNATE #1: MLK LETTERS & BENCH				\$78,125
LTERNATE #2: UNDERFLOOR PLUMBING				+• • / ===
22000 PLUMBING 22400 Domestic Water, Waste & Vent, & Storm Drainage P	ining			
,,,,,,, _	1 ping 250	LNFT	85.02	21.25
Sanitary/waste pipe and fittings, CI hub and spigot, UG Storm drainage pipe and fittings, CI hub and spigot, UG	200		65.02 161.96	21,25 32,39
SUBTOTAL: Domestic Water, Waste 8				\$53,640
AL: PLUMBING	t vent, a stori		eriping	\$53,646
				\$53,646
ALC ALTEDNATE #2. HINDEDELOOD DI HIMPING				
AL: ALTERNATE #2: UNDERFLOOR PLUMBING LTERNATE #3: ROOFTOP PV PANELS & CONDUI				433,04

26000 ELECTRICAL

DESCRIPTION	QTY	UM	UNIT COST	TOTAL COST
26200 Main Power Distribution				
New photovoltaic system on roof, 119 KW	1	EACH	300,000.00	300,000
New photovoltaic system raceway from main panel to roof	1	EACH	3,000.00	3,000
SUBTOT	AL: Main P	ower Dis	tribution	\$303,000
FOTAL: ELECTRICAL				\$303,000
TOTAL: ALTERNATE #3: ROOFTOP PV PANELS & CONDUITS				\$303,000
ALTERNATE #4: LIBRARY ELECTRICAL SERVICE				
26000 ELECTRICAL				
26200 Main Power Distribution				
Main Distribution Switchboard 480/277V 3ph 4w 800A - MDP	1	EACH	23,902.67	23,903
Transient suppressor/voltage regulator, including connection to switchboard	1	EACH	1,821.68	1,822
Feeder installation 600 V, including conduit and XHHW wire, 800A UG (assumed	50	LNFT	291.86	14,593
lenght) SUBTOT	AL: Main P	ower Dis	tribution	\$40,317
TOTAL: ELECTRICAL				\$40,317
33000 UTILITIES				
33800 Site Electrical				
Utility company provisions and coordination,	1	EACH	6,500.00	6,500
Telecommunication duct bank (3) 4" PVC to existing utility manhole	1	EACH	20,000.00	20,000
	_	AL: Site E	,	\$26,500
TOTAL: UTILITIES				\$26,500
TOTAL: ALTERNATE #4: LIBRARY ELECTRICAL SERVICE				\$66,817
ALTERNATE #5: GEOTHERMAL WELL FIELD				
33000 UTILITIES				
33500 Site HVAC				
Geothermal wellfield, including bores, vaults, and field piping - per vertical Inft	14,000	VLFT	25.00	350,000
		TOTAL: Si	ite HVAC	\$350,000
TOTAL: UTILITIES				\$350,000
FOTAL: ALTERNATE #5: GEOTHERMAL WELL FIELD				\$350,000
ALTERNATE #6: CENTRAL BOILER & CHILLER PLAN	т			
23000 HEATING VENTILATION & AIR CONDITIO	NING			
23300 Central Hydronic & Steam Equipment & Specialties				
HW boilers, condensing, based on 400 mbh	2	EACH	29,876.00	59,752
CA duct, HW boilers	100	LNFT	22.43	2,243
			170.61	17,061
Boiler flue/vent	100	LNFT	170.01	17,001
Boiler flue/vent Chiller, 45 tons air-cooled	100 1	EACH	54,876.00	54,876

Schematic Deisgn Estimate 06/23/2023

Flexible pump connections, HW, CHW pumps 8 EACH 411.80 3,29 Triple duty valve, CHW, HW pumps 4 EACH 1,215.55 4,486 Expansion tank 2 EACH 1,215.55 4,486 Expansion tank 2 EACH 4,215.25 4,486 Expansion tank 2 EACH 4,215.25 4,486 Chemical pot feeder 2 EACH 4,275.20 4,555 Sidestream filters 2 EACH 2,975.20 5,955 23500 HVAC Piping 1 EACH 2,975.20 5,955 23500 HVAC Piping 1 EACH 2,975.20 5,955 23500 HVAC Piping 100 LNFT 188.83 56,655 Valural gas piping, std. wgt. bik. steel pipe, fittings, and supports, threaded 100 LNFT 41.29 4,122 Pipe insulation, HWWS/R mains 300 LNFT 41.32 6,465 496 46,460 4,000.00 4,000 4,000 4,000.00 5,000	CRIPTION	QTY	UM	UNIT COST	TOTAL COST
Vibration isolation, pumps 4 EACH 1,843.80 7,372 Isolation valves, pumps, butterfly, HW, CHW pumps 4 EACH 1,1130.15 4,765 Ficibile pump connections, HW, CHW pumps 4 EACH 1,1130.15 4,765 Ficibile pump connections, HW, CHW pumps 4 EACH 1,215.35 4,866 Expansion tank 2 EACH 6,225.20 4,555 Sidestream filters 2 EACH 2,975.20 5,955 Chemical pot feeder 2 EACH 2,975.20 5,955 23500 HVAC Piping 1 EACH 9,487.60 9,488 23500 HVAC Piping 300 LNFT 18.83 56,657 Veided/flanged 300 LNFT 18.83 56,656 Veided/flanged 300 LNFT 1.84.83 56,657 Veided/flanged 300 LNFT 1.84.83 56,656 Pipe insulation, HWS/R mains 300 LNFT 1.84.83 56,656 Pipe insulation, HWS/R mains 300 LNFT 1.84.94 6,666	Variable frequency drive, pumps, (MC supply, EC install)	4	EACH	2,654.66	10,619
Isolation valves, pumps, butterfly, HW, CHW pumps 4 EACH 1,190.15 4,765 Flexible pump connections, HW, CHW pumps 8 EACH 3,739 Pump strainer, Y-type, CHW, HW pumps 4 EACH 3,739 Pump strainer, Y-type, CHW, HW pumps 4 EACH 1,215.33 4,865 Expansion tank 2 EACH 4,198.23 6,839 Chemical pot feeder 2 EACH 2,495.20 5,955 Sidestream filters 2 EACH 2,495.20 5,955 Pressure filt/makeup water system 1 EACH 9,497.20 9,487.50 23500 HVAC Piping 1 EACH 9,497.50 9,487.50 CHWS/R mech. room piping, std. wgt. bik. steel pipe, fittings, and supports, stong 300 LNFT 188.83 56,657.50 Pipe insulation, HHWS/R mains 300 LNFT 1.82.4 6,466.70 Pipe insulation, HHWS/R mains 300 LNFT 1.32.2 922 23600 Temperature Controls 1 EACH 7,500.00		4	EACH	1,843.80	
Flexible pump connections, HW, CHW pumps 8 EACH 411.80 3,29 Triple duty valve, CHW, HW pumps 4 EACH 1,215.55 4,486 Expansion tank 2 EACH 1,215.55 4,486 Expansion tank 2 EACH 4,215.25 4,486 Expansion tank 2 EACH 4,217.25 4,455 Sidestream filters 2 EACH 2,275.20 4,555 Sidestream filters 2 EACH 2,975.20 5,955 23500 HVAC Piping 1 EACH 2,975.20 5,955 23500 HVAC Piping 1 EACH 2,975.20 5,955 23500 HVAC Piping 100 LNFT 188.83 56,655 Valural qas piping, std. wgt. bik. steel pipe, fittings, and supports, threaded 100 LNFT 41.29 4,122 Pipe insulation, CHWS/R mains 300 LNFT 4.646 500 500 Pipe insulation, CHWS/R mains 300 LNFT 4.565 4.400.00 <td>Isolation valves, pumps, butterfly, HW, CHW pumps</td> <td>4</td> <td>EACH</td> <td>-</td> <td>4,761</td>	Isolation valves, pumps, butterfly, HW, CHW pumps	4	EACH	-	4,761
Triple duty valve, CHW, HW pumps 4 EACH 3,759.50 15,033 Pump strainer, Y-type, CHW, HW pumps 4 EACH 1,215.35 4,86 Expansion tank 2 EACH 6,225.20 12,445 Air separator, CHW, HW pumps 2 EACH 6,223.20 12,445 Air separator, CHW, HW pumps 2 EACH 4,2975.20 5,595 Pressure fill/makeup water system 1 EACH 2,975.20 5,595 Substortant filters 2 EACH 2,975.20 5,595 Substortant filters 2 EACH 2,975.20 5,985 Substortant filters 300 LNFT 188.83 56,655 Vestortant filters 300 LNFT 188.83 56,655 Vestortantand gas piping, std. wgt. bik. steel pipe, fittings, and supports, and outports, threaded 100 LNFT 188.83 56,655 Pipe insulation, HHWS/R mains 300 LNFT 1.82 46,66 Pipe insulation, HHWS/R mains 300 LNFT 1.32 56,557 Pipe insulation, HWS/R mains 300 LNFT 1.32<		8	EACH		3,294
Expansion tank 2 EACH 6,225.20 12,450 Air separator, CHW, HW pumps 2 EACH 4,198.23 8,399 Chemical pot feeder 2 EACH 2,975.20 5,595 Sidestream filters 2 EACH 2,975.20 5,595 Pressure fill/makeup water system 1 EACH 2,975.20 5,995 2 EACH 2,975.20 5,995 5,995 2 EACH 2,975.20 5,995 2 EACH 1,081.83 5,6,655 welded/flanged 100 LNFT 41.29 4,125 Pipe insuidation, HHWS/R mains 300 LNFT 1.254 6,465 Pipe insuidation, HHWS/R mains 300 LNFT	Triple duty valve, CHW, HW pumps	4	EACH	3,759.50	15,038
Expansion tank 2 EACH 6,225.20 12,450 Air separator, CHW, HW pumps 2 EACH 4,198.23 8,399 Chemical pot feeder 2 EACH 2,975.20 5,595 Sidestream filters 2 EACH 2,975.20 5,595 Pressure fill/makeup water system 1 EACH 2,975.20 5,995 2 EACH 2,975.20 5,995 5,995 2 EACH 2,975.20 5,995 2 EACH 1,081.83 5,6,655 welded/flanged 100 LNFT 41.29 4,125 Pipe insuidation, HHWS/R mains 300 LNFT 1.254 6,465 Pipe insuidation, HHWS/R mains 300 LNFT	Pump strainer, Y-type, CHW, HW pumps	4	EACH	1,215.35	4,861
Chemical pot feeder 2 EACH 2,275.20 4,550 Sidestream filters 2 EACH 2,975.20 5,955 Pressure fill/makeup water system 1 EACH 9,487.60 9,487. 23500 HVAC Piping SUBTOTAL: Central Hydronic & Steam Equipment & Specialtie \$238,556 23500 HVAC Piping NET 188.83 56,657 CHWS/K mech. room piping, std. wgt. bik. steel pipe, fittings, and supports, wedded/fianged 300 LNFT 188.83 56,657 Natural gas piping, std. wgt. bik. steel pipe, fittings, and supports, wedded/fianged 300 LNFT 188.83 56,657 Pipe insulation, CHWS/K mains 300 LNFT 188.83 56,657 Pipe insulation, CHWS/K mains 300 LNFT 1.21.54 6,466 Pipe and valve tagging - interior bidg HVAC piping 700 LNFT 1.32.92 927 23600 Temperature Controls 2 EACH 3,000.00 6,000 DDC controls - Hydronic pumps, variable speed 4 EACH 4,000.00 1,000 DDC controls - Hydronic pumps, variable spe	Expansion tank	2	EACH		12,450
Sidestream filters 2 EACH 2,975.20 5,955 Pressure fill/makeup water system 1 EACH 9,487.60 9,488 SUBTOTAL: Central Hydronic & Steam Equipment & Special Lies \$238,556 23500 HVAC Piping 1 188.83 56,555 CHW5/K mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged 300 LNFT 188.83 56,655 Natural gas piping, std. wgt. blk. steel pipe, fittings, and supports, threaded 100 LNFT 41.29 4,122 Pipe insulation, CHW5/K mains 300 LNFT 138.83 56,655 Pipe insulation, CHW5/K mains 300 LNFT 1.21.54 6,666 Pipe and valve tagging - interior bldg HVAC piping 700 LNFT 1.32 923 23600 Temperature Controls 1 EACH 3,000.00 6,000 DDC controls - HW bollers 2 EACH 3,000.00 6,000 DDC controls - Hydronic pumps, variable speed 1 ESUM 15,000.00 15,000 DDC controls - Hydronic pumps, variable Speed 1 LSUM 15,000.00 15,000	Air separator, CHW, HW pumps	2	EACH	4,198.23	8,396
Pressure fill/makeup water system 1 EACH 9,497.60 9,487.60 SUBTOTAL: Central Hydronic & Steam Equipment & Special Liss \$233,556 23500 HVAC Piping 300 LNFT 188.83 56,657 CHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, and supports, and supports, threaded 100 LNFT 41.29 41.22 Pile insulation, CHWS/R mains 300 LNFT 41.29 41.22 Pipe insulation, CHWS/R mains 300 LNFT 21.54 6.662 Pipe insulation, CHWS/R mains 300 LNFT 1.22 92 Pipe insulation, CHWS/R mains 300 LNFT 1.32 92 SUBTOTAL: HVAC Piping 700 LNFT 1.32 92 SUBCO Temperature Controls 700 LNFT 1.32 92 DDC controls - HW boilers 2 EACH 3,000.00 6,000 DDC controls - HW boilers 1 ESUM 15,000.00 15,000 DDC controls - HW boilers 1 LSUM 15,000.00 15,000 DDC controls - HW boilers 1 LSUM 15,000.00	Chemical pot feeder	2	EACH	2,275.20	4,550
SUBTOTAL: Central Hydronic & Steam Equipment & Specialties \$238,556 23500 HVAC Piping CHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged 300 LNFT 188.83 56,651 HWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged 300 LNFT 188.83 56,651 Natural gas piping, std. wgt. blk. steel pipe, fittings, and supports, threaded 100 LNFT 188.83 56,651 Pipe insulation, HHWS/R mains 300 LNFT 21.54 6,463 Pipe insulation, HHWS/R mains 300 LNFT 21.54 6,463 Pipe insulation, HHWS/R mains 300 LNFT 21.54 6,463 Pipe insulation, HHWS/R mains 300 LNFT 1.32 922 23600 Temperature Controls SUBTOTAL: Centrol 4,400.00 4,000 4,000 DC controls - HW boliers 2 EACH 7,500.00 30,000 DC controls - hydronic pumps, variable speed 4 EACH 7,500.00 15,000 Miceelane/central controls 1	Sidestream filters	2	EACH	2,975.20	5,950
23500 HVAC Piping CHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged 300 LNFT 188.83 56,650 Welded/flanged 100 LNFT 188.83 56,650 Natural gas piping, std. wgt. blk. steel pipe, fittings, and supports, threaded 100 LNFT 41.29 4,125 Pipe insulation, CHWS/R mains 300 LNFT 21.54 6,466 Pipe insulation, CHWS/R mains 300 LNFT 1.32 922 SUBTOTAL: HVAC Piping \$131,281 50,000 6,000 DDC controls - HW boliers 2 EACH 4,000.00 4,000 DDC controls - HW proine; pumps, variable speed 1 LSUM 15,000.00 15,000 DDC controls - hydronic pumps, variable speed 1 LSUM 15,000.00 15,000 Iterface with existing building BAS-DDC system 1 LSUM 15,000.00 15,000 Iterface with existing building BAS-DDC system 1 LSUM 10,000.00 10,000 Iterface with existing building BAS-DDC system 1	Pressure fill/makeup water system	1			9,488
CHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged 300 LNFT 188.83 56,650 HHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, threaded 100 LNFT 188.83 56,650 Natural gas piping, std. wgt. blk. steel pipe, fittings, and supports, threaded 100 LNFT 41.29 4,122 Pipe insulation, CHWS/R mains 300 LNFT 21.54 6,665 Pipe and valve tagging - interior bldg HVAC piping 700 LNFT 1.23 922 23600 Temperature Controls 2 EACH 3,000.00 6,000 DDC controls - hydronic pumps, variable speed 1 EXUM 15,000.00 15,000 DDC controls - hydronic pumps, variable speed 1 LSUM 15,000.00 15,000 Iterface with existing building BAS-DDC system 1	SUBTOTAL: Central Hydronic	& Steam Equip	nent & Sj	pecialties	\$238,556
welded/flanged 300 LNFT 188.83 56,657 HHWS/R, mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, threaded 100 LNFT 41.29 4,122 Pipe insulation, CHWS/R mains 300 LNFT 21.54 6,463 Pipe insulation, CHWS/R mains 300 LNFT 21.54 6,463 Pipe insulation, HHWS/R mains 300 LNFT 1.32 927 23600 Temperature Controls SUBTOTAL: HVAC Piping \$131,281 23600 Temperature Controls 2 EACH 3,000.00 6,000 DDC controls - HW boilers 2 EACH 3,000.00 6,000 DDC controls - hydronic pumps, variable speed 4 EACH 7,500.00 30,000 DDC controls - hydronic pumps, variable speed 1 LSUM 15,000.00 15,000 Ulithy meter interfaces 1 LSUM 15,000.00 15,000 Interface with existing building BAS-DDC system 1 LSUM 10,000.00 10,000 Programming, testing, and training 1 LSUM 1,000.00 10,000 Programming, te	23500 HVAC Piping				
welded/flanged Natural gas piping, std. wgt. blk. steel pipe, fittings, and supports, threaded 100 LNFT 41.29 4,122 Pipe insulation, CHWS/R mains 300 LNFT 21.54 6,466 Pipe insulation, HHWS/R mains 300 LNFT 21.54 6,466 Pipe insulation, HHWS/R mains 300 LNFT 21.54 6,466 Pipe and valve tagging - interior bldg HVAC piping 700 LNFT 1.32 922 SUBTOTAL: HVAC Piping \$131,281 23600 Temperature Controls 1 EACH 3,000.00 6,000 DDC controls - HW boilers 2 EACH 3,000.00 6,000 DDC controls - hydronic pumps, variable speed 1 EACH 4,000.00 4,000 DDC controls - hydronic pumps, variable speed 1 LSUM 15,000.00 15,000 Utility meter interfaces 1 LSUM 15,000.00 15,000 Miscellaneous points & devices 1 LSUM 15,000.00 15,000 Utility meter interfaces 1 LSUM 15,000.00 15,000 Programming, testing, and training </td <td>CHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged</td> <td>300</td> <td>LNFT</td> <td>188.83</td> <td>56,650</td>	CHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged	300	LNFT	188.83	56,650
Pipe insulation, CHWS/R mains 300 LNFT 21.54 6,466 Pipe insulation, HHWS/R mains 300 LNFT 21.54 6,466 Pipe and valve tagging - interior bldg HVAC piping 700 LNFT 1.32 927 SUBTOTAL: HVAC Piping \$131,281 23600 Temperature Controls DDC controls - HW boilers 2 EACH 3,000.00 6,000 DDC controls - HW boilers 2 EACH 4,000.00 4,000 DDC controls - hydronic pumps, variable speed 4 EACH 7,500.00 15,000 DDC controls - hydronic pumps, variable speed 1 LSUM 15,000.00 15,000 DDC controls - hydronic pumps, variable speed 1 LSUM 15,000.00 15,000 Utility meter interfaces 1 LSUM 15,000.00 15,000 Interfaces 1 LSUM 7,500.00 7,500 Programming, testing, and training 1 LSUM 10,000.00 10,000 Cottors - duilers, infine 1 EACH 7,800.00 7,800 AL: HEATING VENTILATION & AIR CON	HHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged	300	LNFT	188.83	56,650
Pipe insulation, HHWS/R mains 300 LNFT 21.54 6,46. Pipe and valve tagging - interior bldg HVAC piping 700 LNFT 1.32 927 SUBTOTAL: HVAC Piping \$131,281 23600 Temperature Controls DDC controls - HW boilers 2 EACH 3,000.00 6,000 DDC controls - HW boilers 2 EACH 3,000.00 6,000 DDC controls - HW boilers 2 EACH 4,000.00 4,000 DDC controls - HW boilers 2 EACH 7,500.00 30,000 DDC controls - hydronic pumps, variable speed 1 LSUM 15,000.00 15,000 Uilling meter interfaces 1 LSUM 15,000.00 15,000 Uilling meter interfaces 1 LSUM 10,000.00 10,000 Interface with existing building BAS-DDC system 1 LSUM 10,000.00 10,000 Interface with existing building BAS-DDC system 1 LSUM 10,000.00 10,000 Cotor connection, disconnect switches and associated feeders - Chillers	Natural gas piping, std. wgt. blk. steel pipe, fittings, and supports, threaded	100	LNFT	41.29	4,129
Pipe and valve tagging - interior bidg HVAC piping 700 LNFT 1.32 927 SUBTOTAL: HVAC Piping \$131,281 23600 Temperature Controls DDC controls - HW boilers 2 EACH 3,000.00 6,000 DDC controls - HW boilers 2 EACH 3,000.00 6,000 DDC controls - hydronic pumps, variable speed 4 EACH 7,500.00 30,000 DDC controls - hydronic pumps, variable speed 1 LSUM 15,000.00 15,000 Utility meter interfaces 1 LSUM 15,000.00 15,000 Headen/central controls 1 LSUM 7,500.00 7,500 Interface with existing building BAS-DDC system 1 LSUM 7,500.00 7,500 Programming, testing, and training 1 LSUM 10,000.00 10,000 10,000 CBCOOD ELECTRICAL \$102,500 \$102,500 \$102,500 \$102,500 AL: HEATING VENTILATION & AIR CONDITIONING KENCH 7,800.00 7,800 7,800 \$100,500 \$100,500	Pipe insulation, CHWS/R mains	300	LNFT	21.54	6,462
SUBTOTAL: HVAC Piping \$131,281 23600 Temperature Controls \$100,000 6,000 DDC controls - HW boilers 2 EACH 3,000,00 6,000 DDC controls - chiller, air-cooled 1 EACH 4,000,00 4,000 DDC controls - hydronic pumps, variable speed 4 EACH 7,500,00 30,000 Miscellaneous points & devices 1 LSUM 15,000,00 15,000 Utility meter interfaces 1 LSUM 15,000,00 15,000 Headend/central controls 1 LSUM 15,000,00 15,000 Interface with existing building BAS-DDC system 1 LSUM 10,000,00 10,000 Programming, testing, and training 1 LSUM 10,000,00 10,000 AL: HEATING VENTILATION & AIR CONDITIONING \$472,336 26000 ELECTRICAL 26700 7 ,800,00 7,800 20700 Mechanical Equipment Connections & Feeders 1 EACH 3,200,00 7,800 20700 Mechanical Sociated feeders - Chillers, inline 1 EACH 3,200,00 2,200	Pipe insulation, HHWS/R mains	300	LNFT	21.54	6,462
23600 Temperature ControlsDDC controls - HW boilers2EACH3,000.006,000DDC controls - chiller, air-cooled1EACH4,000.004,000DDC controls - hydronic pumps, variable speed4EACH7,500.0030,000Miscellaneous points & devices1LSUM15,000.0015,000Utility meter interfaces1LSUM15,000.0015,000Headend/central controls1LSUM15,000.0015,000Interface with existing building BAS-DDC system1LSUM7,500.007,500Programming, testing, and training1LSUM7,500.007,500 CL: HEATING VENTILATION & AIR CONDITIONING \$4722,336\$4722,336 26000 ELECTRICAL 26700 Mechanical Equipment Connections & Feeders1EACH7,800.007,800Motors connection, disconnect switches and associated feeders - CHW, HW4EACH3,200.0012,800pumps, inline4EACH3,200.0012,8002,200Motors connection, disconnect switches and associated feeders - HW boilers, 22EACH3,200.005,200condensing, 400 mbh1EACH850.003,4003,400Install VFD4EACH850.003,400	Pipe and valve tagging - interior bldg HVAC piping	700	LNFT	1.32	927
DDC controls - HW boilers 2 EACH 3,000.00 6,000 DDC controls - chiller, air-cooled 1 EACH 4,000.00 4,000 DDC controls - hydronic pumps, variable speed 4 EACH 7,500.00 30,000 Miscellaneous points & devices 1 LSUM 15,000.00 15,000 Utility meter interfaces 1 LSUM 15,000.00 15,000 Headend/central controls 1 LSUM 15,000.00 15,000 Interface with existing building BAS-DDC system 1 LSUM 7,500.00 7,500 Programming, testing, and training 1 LSUM 10,000.00 10,000 LE HEATING VENTILATION & AIR CONDITIONING \$472,336 26000 ELECTRICAL \$472,336 26700 Mechanical Equipment Connections & Feeders 1 EACH 3,200.00 12,800 Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 3,200.00 12,800 motors connection, disconnect switches and associated feeders - HW boilers, connection, disconnect switches and associated feeders - HW boilers, connection, disconnect switches and associated feeders - HW boilers, connection, disconn		SUBTO	TAL: HV/	AC Piping	\$131,281
DDC controls - chiller, air-cooled 1 EACH 4,000.00 4,000 DDC controls - hydronic pumps, variable speed 4 EACH 7,500.00 30,000 Miscellaneous points & devices 1 LSUM 15,000.00 15,000 Utility meter interfaces 1 LSUM 15,000.00 15,000 Headend/central controls 1 LSUM 15,000.00 15,000 Interface with existing building BAS-DDC system 1 LSUM 7,500.00 7,500 Programming, testing, and training 1 LSUM 10,000.00 10,000 Programming, testing building BAS-DDC system 1 LSUM 10,000.00 10,000 Programming, testing, and training 1 LSUM 10,000.00 10,000 AL: HEATING VENTILATION & AIR CONDITIONING \$472,336 \$472,336 26000 ELECTRICAL \$472,306 \$472,306 26700 Mechanical Equipment Connections & Feeders 1 EACH 7,800.00 7,800 air-cooled, 45 tons 1 EACH 3,200.00 12,800 12,800 12,800 12,800 pumps, inline	23600 Temperature Controls				
DDC controls - hydronic pumps, variable speed 4 EACH 7,500.00 30,000 Miscellaneous points & devices 1 LSUM 15,000.00 15,000 Utility meter interfaces 1 LSUM 15,000.00 15,000 Headend/central controls 1 LSUM 15,000.00 15,000 Interface with existing building BAS-DDC system 1 LSUM 7,500.00 7,500 Programming, testing, and training 1 LSUM 10,000.00 10,000 RL: HEATING VENTILATION & AIR CONDITIONING SUBTOTAL: Temperature Controls \$472,336 26000 ELECTRICAL \$472,336 26700 Mechanical Equipment Connections & Feeders 1 EACH 7,800.00 7,800 air-cooled, 45 tons 1 EACH 7,800.00 7,800 7,800 Motors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons 1 EACH 3,200.00 12,800 mupps, inline	DDC controls - HW boilers	2	EACH	3,000.00	6,000
Miscellaneous points & devices 1 LSUM 15,000.00 15,000.00 Utility meter interfaces 1 LSUM 15,000.00 15,000.00 Headend/central controls 1 LSUM 15,000.00 15,000.00 Interface with existing building BAS-DDC system 1 LSUM 7,500.00 7,500.00 Programming, testing, and training 1 LSUM 10,000.00 10,000.00 CBUBTOTAL: TETTETET Controls \$102,500.00 10,000.00 AL: HEATING VENTILATION & AIR CONDITIONING \$472,336.00 7,800.00 26000 ELECTRICAL \$472,336.00 7,800.00 26700 Mechanical Equipment Connections & Feeders 1 EACH 7,800.00 7,800.00 air-cooled, 45 tons 1 EACH 3,200.00 12,800.00 12,800.00 motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 3,200.00 12,800.00 pumps, inline	DDC controls - chiller, air-cooled	1	EACH	4,000.00	4,000
Utility meter interfaces 1 LSUM 15,000.00 15,000.00 Headend/central controls 1 LSUM 15,000.00 15,000.00 Interface with existing building BAS-DDC system 1 LSUM 7,500.00 7,500.00 Programming, testing, and training 1 LSUM 10,000.00 10,000.00 SUBTOTAL: TEMPERATURE VENTILATION & AIR CONDITIONING \$472,336 26000 ELECTRICAL \$472,336 26700 Mechanical Equipment Connections & Feeders \$472,336 Motors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons 1 EACH 7,800.00 7,800.00 Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 3,200.00 12,800 pumps, inline	DDC controls - hydronic pumps, variable speed	4	EACH	7,500.00	30,000
Headend/central controls1LSUM15,000.0015,000Interface with existing building BAS-DDC system1LSUM7,500.007,500Programming, testing, and training1LSUM10,000.0010,000SUBTOTAL: Temperature Controls\$102,500AL: HEATING VENTILATION & AIR CONDITIONING\$472,33626000 ELECTRICAL26700 Mechanical Equipment Connections & FeedersMotors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons1EACH7,800.007,800Motors connection, disconnect switches and associated feeders - CHW, HW4EACH3,200.0012,800pumps, inline	Miscellaneous points & devices	1	LSUM	15,000.00	15,000
Interface with existing building BAS-DDC system1LSUM7,500.007,500.00Programming, testing, and training1LSUM10,000.0010,000SUBTOTAL: Temperature Controls\$102,500Control & AIR CONDITIONING\$472,336Control & AIR CONDITIONING\$472,336Control & AIR CONDITIONING\$472,336Control & ELECTRICAL26700 Mechanical Equipment Connections & Feeders1EACH7,800.00Official Equipment Connections & FeedersMotors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons1EACH7,800.007,800Motors connection, disconnect switches and associated feeders - CHW, HW4EACH3,200.0012,800Motors connection, disconnect switches and associated feeders - HW boilers, condensing, 400 mbh2EACH2,600.005,200Install VFD4EACH850.003,400	Utility meter interfaces	1	LSUM	15,000.00	15,000
Programming, testing, and training1LSUM10,000.0010,000SUBTOTAL: Temperature Controls\$102,500SUBTOTAL: Temperature Controls\$102,500Controls\$472,336Controls\$472,336Controls\$26000ELECTRICALControls & FeedersMotors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons1EACH7,800.007,800Motors connection, disconnect switches and associated feeders - CHW, HW4EACH3,200.0012,800Motors connection, disconnect switches and associated feeders - HW boilers, condensing, 400 mbh2EACH2,600.005,200Install VFD4EACH850.003,400	Headend/central controls	1	LSUM	15,000.00	15,000
SUBTOTAL: Temperature Controls\$102,500AL: HEATING VENTILATION & AIR CONDITIONING\$472,33626000 ELECTRICAL26700 Mechanical Equipment Connections & Feeders126700 Mechanical Equipment Connections & Feeders1EACH7,800.007,800.007,800.00air-cooled, 45 tons1EACHMotors connection, disconnect switches and associated feeders - CHW, HW4EACH9,000 multiple10,00012,8009,000 multiple10,0005,20010,000 multiple10,0003,40010,000 multiple4EACH850.0010,000 multiple3,4003,400	Interface with existing building BAS-DDC system	1	LSUM	7,500.00	7,500
AL: HEATING VENTILATION & AIR CONDITIONING \$472,336 26000 ELECTRICAL 26700 Mechanical Equipment Connections & Feeders Motors connection, disconnect switches and associated feeders - Chillers, 1 EACH 7,800.00 7,800 air-cooled, 45 tons Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 3,200.00 12,800 pumps, inline Motors connection, disconnect switches and associated feeders - HW boilers, 2 EACH 2,600.00 5,200 condensing, 400 mbh Install VFD 4 EACH 850.00 3,400	Programming, testing, and training	1	LSUM	10,000.00	10,000
26000 ELECTRICAL 26700 Mechanical Equipment Connections & Feeders Motors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons 1 EACH 7,800.00 7,800 Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 3,200.00 12,800 Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 3,200.00 5,200 Motors connection, disconnect switches and associated feeders - HW boilers, condensing, 400 mbh 2 EACH 2,600.00 5,200 Install VFD 4 EACH 850.00 3,400	S	SUBTOTAL: Tem	perature	Controls	\$102,500
26700 Mechanical Equipment Connections & Feeders Motors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons 1 EACH 7,800.00 7,800 Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 3,200.00 12,800 Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 3,200.00 5,200 Motors connection, disconnect switches and associated feeders - HW boilers, condensing, 400 mbh 2 EACH 2,600.00 5,200 Install VFD 4 EACH 850.00 3,400	AL: HEATING VENTILATION & AIR CONDITIONING				\$472,336
Motors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons1EACH7,800.007,800Motors connection, disconnect switches and associated feeders - CHW, HW pumps, inline4EACH3,200.0012,800Motors connection, disconnect switches and associated feeders - HW boilers, condensing, 400 mbh2EACH2,600.005,200Install VFD4EACH850.003,400	26000 ELECTRICAL				
air-cooled, 45 tons Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 3,200.00 12,800 pumps, inline Motors connection, disconnect switches and associated feeders - HW boilers, 2 EACH 2,600.00 5,200 condensing, 400 mbh Install VFD 4 EACH 850.00 3,400	26700 Mechanical Equipment Connections & Feeders				
pumps, inline Motors connection, disconnect switches and associated feeders - HW boilers, 2 EACH 2,600.00 5,200 condensing, 400 mbh Install VFD 4 EACH 850.00 3,400		1	EACH	7,800.00	7,800
condensing, 400 mbh 4 EACH 850.00 3,400		4	EACH	3,200.00	12,800
	Motors connection, disconnect switches and associated feeders - HW boilers, condensing, 400 mbh	2	EACH	2,600.00	5,200
SUBTOTAL: Mechanical Equipment Connections & Feeders \$29,200	Install VFD	4	EACH	850.00	3,400
	SUBTOTAL: Mechanical	Equipment Conn	ections 8	k Feeders	\$29,200

CONCORD GROUP

DESCRIPTION	QTY	UM	UNIT COST	TOTAL COST
TOTAL: ELECTRICAL				\$29,200
TOTAL: ALTERNATE #6: CENTRAL BOILER & CHILLER PI	LANT			\$501,536
ALTERNATE #7: TWO (2) DEDICATED EV CHAI STATIONS	RGING			
26000 ELECTRICAL				
26200 Main Power Distribution				
Dual EV charging station and associated feeder	1	EACH	50,000.00	50,000
5	SUBTOTAL: Main I	Power Dist	tribution	\$50,000
TOTAL: ELECTRICAL				\$50,000
TOTAL: ALTERNATE #7: TWO (2) DEDICATED EV CHARG	ING STATIONS			\$50,000
HVAC OPTION #1: DISTRIBUTED GEOTHERM				
PUMPS				
23000 HEATING VENTILATION & AIR CON	DITIONING			
23200 Ventilation & Exhaust				
DOAS AHU, 5 tons/2,000 cfm, w/energy recovery	1	EACH	35,784.00	35,784
Humidifier, electric, 12 lbs/hr	1	EACH	3,164.00	3,164
AC split system, MDF room, 1-1/2 tons	1	EACH	5,528.00	5,528
Refrigeration tubing, AC split system	60	LNFT	21.53	1,292
Pipe insulation, refrigeration piping, AC split system	60	LNFT	11.10	666
Condensate drain piping - AC split system	30	LNFT	27.87	836
Pipe insulation, condensate drain piping - AC split system	30	LNFT	10.07	302
Condensate drain piping - water source heat pumps	400	LNFT	55.42	22,169
Pipe insulation, condensate drain piping - heat pumps	400	LNFT	12.80	5,121
Exhaust fan, rooftop, w/curb, backdraft damper	4	EACH	1,664.00	6,656
Heat pump, water-air, 2-stage, 6 ton	2	EACH	15,892.00	31,784
Heat pump, water-air, 2-stage, 5 ton	1	EACH	14,392.00	14,392
Heat pump, water-air, 2-stage, 4 ton	2	EACH	8,892.00	17,784
Heat pump, water-air, 2-stage, 2 ton	1	EACH	6,428.00	6,428
Heat pump, water-air, 2-stage, 1.5 ton Heat pump connections - valves, fittings, and insulation	1 9	EACH EACH	5,546.00 1,607.00	5,546
VVT zone dampers	9	EACH	741.00	14,463 6,669
Galvanized steel duct & insulation	17,635	SQFT	13.71	241,707
Registers, grilles and diffusers	150	EACH	113.20	16,980
Flexible duct, insulated	500	LNFT	23.55	11,775
Louvers, OA	2	EACH	2,482.00	4,964
	SUBTOTAL: Ver			\$454,010
23300 Central Hydronic & Steam Equipment & Special				+ ·• ·/• 1 0
XXXX Heat pump, water-water, 5 ton	2	EACH	14 303 00	28,784
Geothermal circulating pump, inline	2	EACH	14,392.00 2,343.80	7,031
HW circulating pump, primary, inline	2	EACH	743.80	1,488
The circulating pump, primary, mille	Σ.	LACH	73.00	1,700

Schematic Deisgn Estimate 06/23/2023

RIPTION	QTY	UM	UNIT COST	TOTAL COST
HW circulating pump, secondary, inline	2	EACH	743.80	1,488
Vibration isolation, pumps	7	EACH	1,818.80	12,732
Isolation valves, pumps, butterfly, geothermal	7	EACH	542.06	3,794
Flexible pump connections, geothermal pumps	14	EACH	184.90	2,589
Triple duty valve, geothermal pumps	7	EACH	909.40	6,366
Pump strainer, Y-type, geothermal pumps	7	EACH	257.35	1,801
HW buffer tank	1	EACH	9,462.80	9,463
Air separator, geothermal pumps	1	EACH	1,625.24	1,625
Pressure fill/makeup water system	1	EACH	9,975.20	, 9,975
SUBTOTAL: Central Hydronic & Ste	eam Equipr	nent & Sp	-	\$87,136
23400 Heating & Ventilating Terminals				. ,
Cabinet unit heaters, HW hydronic	4	EACH	3,287.60	13,150
Unit heaters, HW hydronic	2	EACH	1,787.60	3,575
Fintube radiators, HW	216	LNFT	130.95	28,285
HW connections - valves, fittings, and specialties	6	EACH	593.80	3,563
SUBTOTAL: Hea				\$48,574
23500 HVAC Piping		inating i		ų iojo / i
Humidifier piping	50	LNFT	29.02	1,451
GTWS/R geothermal piping mains, std. wgt. blk. steel pipe, fittings, and supports	900	LNFT	114.92	103,431
			28.08	
GTWS/R geothermal condensing water runouts, type L copper, w/fittings, and supports	450		20.00	12,635
HHWS/R runout piping to perimeter heaters, type L copper	1,000	LNFT	44.66	44,661
Pipe insulation, humidifier piping	50	LNFT	9.62	481
Pipe insulation, GTWS/R mains	900	LNFT	17.16	15,446
Pipe insulation, GTWS/R runouts to heat pumps	450	LNFT	10.07	4,534
Pipe insulation, HHWS/R runouts to perimeter heaters	1,000	LNFT	20.40	20,397
Pipe and valve tagging - interior bldg HVAC piping	2,400	LNFT	1.32	3,178
	SUBTO	TAL: HVA	\$206,213	
23600 Temperature Controls				
DDC controls - DOAS AHU	1	EACH	5,000.00	5,000
DDC controls - AC split system - MDF room	1	EACH	2,500.00	2,500
DDC controls - heat pumps, water source, water-air	7	EACH	4,000.00	28,000
DDC controls - humidifier unit	1	EACH	2,000.00	2,000
DDC controls - exhaust fans	4	EACH	2,500.00	10,000
DDC controls - VVTdampers	9	EACH	1,500.00	13,500
DDC controls - heat pumps, water source, water-water	2	EACH	4,000.00	8,000
DDC controls - hydronic pumps, variable speed	7	EACH	7,500.00	52,500
Thermostats/temperature sensors	10	EACH	500.00	5,000
CO2 sensors	9	EACH	500.00	4,500
Miscellaneous points & devices	1	LSUM	15,000.00	15,000
Utility meter interfaces	- 1	LSUM	15,000.00	15,000
Headend/central controls	- 1	LSUM	15,000.00	15,000
	-		,000.00	10,000
Interface with existing building BAS-DDC system	1	LSUM	7,500.00	7,500

<u>GROUP</u>

CRIPTION	QTY	UM	UNIT COST	TOTAL COS
SUBTO	TAL: Tem	perature	Controls	\$193,50
23700 Testing, Balancing, & Commissioning				
Air testing and balancing	1	LSUM	18,000.00	18,00
Pipe system testing and balancing	1	LSUM	11,000.00	11,00
HVAC system commissioning assistance	1	LSUM	12,000.00	12,00
SUBTOTAL: Testing, E	Balancing,	& Commi	issioning	\$41,00
AL: HEATING VENTILATION & AIR CONDITIONING				\$1,030,43
26000 ELECTRICAL				
26700 Mechanical Equipment Connections & Feeders				
Motors connection, disconnect switches and associated feeders - DOAS AHU, 5	1	EACH	3,500.00	3,5
tons/2,000 cfm				
Motors connection, disconnect switches and associated feeders - AC split system,	1	EACH	2,700.00	2,70
MDF room, 1-1/2 tons				
Motors connection, disconnect switches and associated feeders - HW circulating	2	EACH	2,600.00	5,20
pump, primary, inline				
Motors connection, disconnect switches and associated feeders - Exhaust fan,	4	EACH	2,500.00	10,0
rooftop	2	FACU	2 200 00	
Motors connection, disconnect switches and associated feeders - HW system pump	2	EACH	2,200.00	4,4
Motors connection, disconnect switches and associated feeders - Geothermal	3	EACH	1,800.00	5,4
circulating pump, inline Motors connection, disconnect switches and associated feeders - Heat pump,	1	EACH	2,500.00	2,5
water-air, 2-stage, 1.5 ton	T	LACIT	2,500.00	2,5
Motors connection, disconnect switches and associated feeders - Heat pump,	1	EACH	2,750.00	2,7
water-air, 2-stage, 2 ton	-	2.1011	_,,	_//
Motors connection, disconnect switches and associated feeders - Heat pump,	2	EACH	3,200.00	6,4
water-air, 2-stage, 4 ton			,	
Motors connection, disconnect switches and associated feeders - Heat pump,	1	EACH	3,600.00	3,6
water-air, 2-stage, 5 ton				
Motors connection, disconnect switches and associated feeders - Heat pump,	2	EACH	3,600.00	7,2
water-air, 2-stage, 6 ton				
Motors connection, disconnect switches and associated feeders - Heat pump,	2	EACH	3,600.00	7,2
water-water, 2-stage, 5 ton				
Motors connection, disconnect switches and associated feeders - Humidifier,	1	EACH	1,200.00	1,2
electric,	-			
Motors connection, disconnect switches and associated feeders - HW circulating	2	EACH	2,600.00	5,2
pump, secondary, inline	_			
SUBTOTAL: Mechanical Equipm	nent Conn	ections &	Feeders	\$67,25
AL: ELECTRICAL				\$67,25
33000 UTILITIES				
33500 Site HVAC				
Geothermal wellfield, including bores, vaults, and field piping - per vertical Inft	14,000	VLFT	25.00	350,0
	SUB1	TOTAL: S	ite HVAC	\$350,00

Milwaukee Public Library Martin Luther King Jr. Library

DESCRIPTION	QTY	UM	UNIT COST	TOTAL COST
TOTAL: HVAC OPTION #1: DISTRIBUTED GEOTHERMAL HEA	AT PUMPS			\$1,447,682
HVAC OPTION #2A: 4-PIPE SYSTEM FANCOILS W GEOTHERMAL	1/			
23000 HEATING VENTILATION & AIR CONDIT	IONING			
23200 Ventilation & Exhaust				
DOAS AHU, 5 tons/2,000 cfm, w/energy recovery	1	EACH	35,784.00	35,784
Humidifier, electric, 12 lbs/hr	1	EACH	3,164.00	3,164
AC split system, MDF room, 1-1/2 tons	1	EACH	5,528.00	5,528
Refrigeration tubing, AC split system	60	LNFT	21.53	1,292
Pipe insulation, refrigeration piping, AC split system	60	LNFT	11.10	666
Condensate drain piping - AC split system	30	LNFT	27.87	836
Pipe insulation, condensate drain piping - AC split system	30	LNFT	10.07	302
Condensate drain piping - 4-pipe fancoils	400	LNFT	55.42	22,169
Pipe insulation, condensate drain piping - 4-pipe fancoils	400	LNFT	12.80	5,121
Exhaust fan, rooftop, w/curb, backdraft damper	4	EACH	1,664.00	6,656
Fancoil units, 4-pipe hydronic, 6 tons	2	EACH	7,602.50	15,205
Fancoil units, 4-pipe hydronic, 4 tons	1	EACH	5,602.50	5,603
Fancoil units, 4-pipe hydronic, 1.5 tons	1	EACH	3,502.50	3,503
Fancoil units, 4-pipe hydronic, 1 tons	7	EACH	3,302.50	23,118
FCU coil connections - valves, fittings, and insulation	22	EACH	1,607.00	35,354
VVT zone dampers	11	EACH	741.00	8,151
Galvanized steel duct & insulation	17,635	SQFT	13.71	241,707
Registers, grilles and diffusers	150	EACH	113.20	16,980
Flexible duct, insulated	500	LNFT	23.55	11,775
Louvers, OA	2	EACH	2,482.00	4,964
	JBTOTAL: Vent	ilation &		\$447,876
23300 Central Hydronic & Steam Equipment & Specialties				
Heat pump plant, 45-tons skid-mounted, (4) 15-ton modular units w/6-pipe header	1	EACH	97,801.60	97,802
CHW, HW pumps, inline	4	EACH	4,460.24	17,841
Geothermal circulating pump, inline	3	EACH	2,343.80	7,031
Variable frequency drive, pumps, (MC supply, EC install)	4	EACH	2,654.66	10,619
Vibration isolation, pumps	7	EACH	1,818.80	12,732
Isolation valves, pumps, butterfly, HW, CHW pumps	4	EACH	1,190.15	4,761
Isolation valves, pumps, butterfly, geothermal	3	EACH	542.06	1,626
Flexible pump connections, HW, CHW pumps	8	EACH	411.80	3,294
Flexible pump connections, geothermal pumps	6	EACH	184.90	1,109
Triple duty valve, CHW, HW pumps	4	EACH	3,759.50	15,038
Triple duty valve, geothermal pumps	3	EACH	909.40	2,728
Pump strainer, Y-type, CHW, HW pumps	4	EACH	1,215.35	4,861
Pump strainer, Y-type, geothermal pumps	3	EACH	257.35	772
Expansion tank	2	EACH	6,225.20	12,450
Air separator, CHW, HW pumps	2	EACH	4,198.23	8,396
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CRIPTION	QTY	UM	UNIT COST	TOTAL COST
Air separator, geothermal pumps	1	EACH	1,625.24	1,625
Chemical pot feeder	2	EACH	2,275.20	4,550
Sidestream filters	2	EACH	2,975.20	5,950
Pressure fill/makeup water system	1	EACH	9,975.20	9,97
SUBTOTAL: Central Hydronic 8	& Steam Equip	nent & Sp	ecialties	\$223,163
23400 Heating & Ventilating Terminals				
Cabinet unit heaters, HW hydronic	4	EACH	3,287.60	13,150
Unit heaters, HW hydronic	2	EACH	1,787.60	3,57
Fintube radiators, HW	216	LNFT	130.95	28,28
HW connections - valves, fittings, and specialties	6	EACH	593.80	3,563
	Heating & Ven	tilating T	erminals	\$48,574
23500 HVAC Piping				
Humidifier piping	50	LNFT	29.02	1,45
CHWS/R, HWS/R piping mains, std. wgt. blk. steel pipe, fittings, and supports	1,000	LNFT	114.92	114,923
CHWS/R, HWS/R runouts, type L copper, w/fittings, and supports	550	LNFT	28.08	15,443
HHWS/R runout piping to perimeter heaters, type L copper	1,000	LNFT	44.66	44,66
Pipe insulation, humidifier piping	50	LNFT	9.62	48
Pipe insulation, CHWS/R, HWS/R mains	1,000	LNFT	17.16	17,16
Pipe insulation, CHWS/R, HWS/R runouts to heat pumps	550	LNFT	10.07	5,54
Pipe insulation, HHWS/R runouts to perimeter heaters	1,000	LNFT	20.40	20,39
Pipe and valve tagging - interior bldg HVAC piping	2,600	LNFT	1.32	3,442
	SUBTO	TAL: HVA	C Piping	\$223,501
23600 Temperature Controls				
DDC controls - DOAS AHU	1	EACH	5,000.00	5,00
DDC controls - AC split system - MDF room	1	EACH	2,500.00	2,50
DDC controls - fancoil units	11	EACH	2,500.00	27,50
DDC controls - humidifier unit	1	EACH	2,000.00	2,00
DDC controls - exhaust fans	4	EACH	2,500.00	10,000
DDC controls - VVTdampers	11	EACH	1,500.00	16,500
DDC controls - hydronic pumps, variable speed	7	EACH	7,500.00	52,500
Thermostats/temperature sensors	12	EACH	500.00	6,000
CO2 sensors	12	EACH	500.00	6,00
Miscellaneous points & devices	1	LSUM	15,000.00	15,00
Utility meter interfaces	1	LSUM	15,000.00	15,00
Headend/central controls	1	LSUM	15,000.00	15,00
Interface with existing building BAS-DDC system	1	LSUM	7,500.00	7,50
Programming, testing, and training	1	LSUM	10,000.00	10,000
S	UBTOTAL: Tem	perature	Controls	\$190,500
23700 Testing, Balancing, & Commissioning				
Air testing and balancing	1	LSUM	18,000.00	18,00
	1	LSUM	15,000.00	15,00
Pipe system testing and balancing				
Pipe system testing and balancing HVAC system commissioning assistance	1	LSUM	15,000.00	15,000

DESCRIPTION	QTY	UM	UNIT COST	TOTAL COST
TOTAL: HEATING VENTILATION & AIR CONDITIONING				\$1,181,613
26000 ELECTRICAL				
26700 Mechanical Equipment Connections & Feeders				
Motors connection, disconnect switches and associated feeders - Heat pump plant, 45-tons	1	EACH	10,166.94	10,167
Motors connection, disconnect switches and associated feeders - AC split system, MDF room, 1-1/2 tons	1	EACH	2,700.00	2,700
Motors connection, disconnect switches and associated feeders - CHW, HW pumps, inline	2	EACH	2,600.00	5,200
Motors connection, disconnect switches and associated feeders - DOAS AHU, 5 tons/2,000 cfm	1	EACH	3,500.00	3,500
Motors connection, disconnect switches and associated feeders - Exhaust fan, rooftop	4	EACH	2,500.00	10,000
Motors connection, disconnect switches and associated feeders - HW system pump	2	EACH	2,200.00	4,400
Motors connection, disconnect switches and associated feeders - Fancoil units, 4-pipe hydronic, 1 tons	7	EACH	1,500.00	10,500
Motors connection, disconnect switches and associated feeders - Fancoil units, 4-pipe hydronic, 4 tons	1	EACH	2,750.00	2,750
Motors connection, disconnect switches and associated feeders - Fancoil units, 4-pipe hydronic, 1.5 tons	1	EACH	1,500.00	1,500
Motors connection, disconnect switches and associated feeders - Fancoil units, 4-pipe hydronic, 6 tons	2	EACH	3,200.00	6,400
Motors connection, disconnect switches and associated feeders - Humidifier, electric,	1	EACH	1,200.00	1,200
Motors connection, disconnect switches and associated feeders - Geothermal circulating pump, inline	3	EACH	1,800.00	5,400
Install VFD	4	EACH	850.00	3,400
SUBTOTAL: Mechanical Equipm	ent Conn	ections &	Feeders	\$67,117
TOTAL: ELECTRICAL				\$67,117
33000 UTILITIES				
33500 Site HVAC				
Geothermal wellfield, including bores, vaults, and field piping - per vertical Inft	14,000	VLFT	25.00	350,000
	SUBT	OTAL: S	ite HVAC	\$350,000
TOTAL: UTILITIES				\$350,000
TOTAL: HVAC OPTION #2A: 4-PIPE SYSTEM FANCOILS W/ GEOT	HERMAL			\$1,598,730
HVAC OPTION #2B: 4-PIPE SYSTEM FANCOILS W/ BOILER/CHILLER PLANT				
23000 HEATING VENTILATION & AIR CONDITION	ING			
23200 Ventilation & Exhaust				
DOAS AHU, 5 tons/2,000 cfm, w/energy recovery	1	EACH	35,784.00	35,784
Humidifier, electric, 12 lbs/hr	1	EACH EACH	3,164.00	3,164
AC split system, MDF room, 1-1/2 tons	1		5,528.00	5,528

Schematic Deisgn Estimate 06/23/2023

RIPTION	QTY	UM	UNIT COST	TOTAL COS
Refrigeration tubing, AC split system	60	LNFT	21.53	1,2
Pipe insulation, refrigeration piping, AC split system	60	LNFT	11.10	6
Condensate drain piping - AC split system	30	LNFT	27.87	8
Pipe insulation, condensate drain piping - AC split system	30	LNFT	10.07	3
Condensate drain piping - 4-pipe fancoils	400	LNFT	55.42	22,1
Pipe insulation, condensate drain piping - 4-pipe fancoils	400	LNFT	12.80	5,1
Exhaust fan, rooftop, w/curb, backdraft damper	4	EACH	1,664.00	6,6
Fancoil units, 4-pipe hydronic, 6 tons	2	EACH	7,602.50	15,2
Fancoil units, 4-pipe hydronic, 4 tons	1	EACH	5,602.50	5,6
Fancoil units, 4-pipe hydronic, 1.5 tons	1	EACH	3,502.50	3,5
Fancoil units, 4-pipe hydronic, 1 tons	7	EACH	3,302.50	23,1
FCU coil connections - valves, fittings, and insulation	22	EACH	1,607.00	35,3
VVT zone dampers	11	EACH	741.00	8,1
Galvanized steel duct & insulation	17,635	SQFT	13.71	241,7
Registers, grilles and diffusers	150	EACH	113.20	16,9
Flexible duct, insulated	500	LNFT	23.55	11,7
Louvers, OA	2	EACH	2,482.00	4,9
	SUBTOTAL: Ven	tilation &	Exhaust	\$447,8
23300 Central Hydronic & Steam Equipment & Specialtic	es			
HW boilers, condensing, based on 400 mbh	2	EACH	29,876.00	59,2
CA duct, HW boilers	100	LNFT	22.43	2,2
Boiler flue/vent	100	LNFT	170.61	17,0
Chiller, 45 tons air-cooled	1	EACH	54,876.00	54,8
CHW, HW pumps, inline	4	EACH	4,460.24	17,8
Variable frequency drive, pumps, (MC supply, EC install)	4	EACH	2,654.66	10,6
Vibration isolation, pumps	4	EACH	1,818.80	7,2
Isolation valves, pumps, butterfly, HW, CHW pumps	4	EACH	1,190.15	4,7
Flexible pump connections, HW, CHW pumps	8	EACH	411.80	3,2
Triple duty valve, CHW, HW pumps	4	EACH	3,759.50	15,0
Pump strainer, Y-type, CHW, HW pumps	4	EACH	1,215.35	4,8
Expansion tank	2	EACH	6,225.20	12,4
Air separator, CHW, HW pumps	2	EACH	4,198.23	8,3
Chemical pot feeder	2	EACH	2,275.20	4,5
Sidestream filters	2	EACH	2,975.20	5,9
Pressure fill/makeup water system	1	EACH	9,975.20	9,9
SUBTOTAL: Central Hydronic	c & Steam Equipn	nent & Sp	ecialties	\$238,9
23400 Heating & Ventilating Terminals				
Cabinet unit heaters, HW hydronic	4	EACH	3,287.60	13,
Unit heaters, HW hydronic	2	EACH	1,787.60	3,
Fintube radiators, HW	216	LNFT	130.95	28,2
HW connections - valves, fittings, and specialties	6	EACH	593.80	3,5

23500 HVAC Piping

CONCORD GROUP

Milwaukee Public Library Martin Luther King Jr. Library

Schematic Deisgn Estimate 06/23/2023

RIPTION	QTY	UM	UNIT COST	TOTAL CO
Humidifier piping	50	LNFT	29.02	1,
CHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged	300	LNFT	188.83	56,
CHWS/R, HWS/R piping mains, std. wgt. blk. steel pipe, fittings, and supports	1,000	LNFT	114.92	114,
CHWS/R, HWS/R runouts, type L copper, w/fittings, and supports	550	LNFT	28.08	15,
HHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged	300	LNFT	188.83	56,
HHWS/R runout piping to perimeter heaters, type L copper	1,000	LNFT	44.66	44
Natural gas piping, std. wgt. blk. steel pipe, fittings, and supports, threaded	100	LNFT	41.29	4
Pipe insulation, humidifier piping	50	LNFT	9.62	
Pipe insulation, CHWS/R mains	300	LNFT	21.54	6
Pipe insulation, CHWS/R, HWS/R mains	1,000	LNFT	17.16	17
Pipe insulation, CHWS/R, HWS/R runouts to heat pumps	550	LNFT	10.07	5
Pipe insulation, HHWS/R runouts to perimeter heaters	1,000	LNFT	20.40	20
Pipe insulation, HHWS/R mains	300	LNFT	21.54	6
Pipe and valve tagging - interior bldg HVAC piping	3,300	LNFT	1.32	4
	SUBTO	TAL: HVA	C Piping	\$354,2
23600 Temperature Controls				
DDC controls - DOAS AHU	1	EACH	5,000.00	5
DDC controls - AC split system - MDF room	1	EACH	2,500.00	2
DDC controls - fancoil units	11	EACH	2,500.00	27
DDC controls - humidifier unit	1	EACH	2,000.00	2
DDC controls - exhaust fans	4	EACH	2,500.00	10
DDC controls - VVTdampers	11	EACH	1,500.00	16
DDC controls - HW boilers	2	EACH	3,000.00	6
DDC controls - chiller, air-cooled	1	EACH	4,000.00	4
DDC controls - hydronic pumps, variable speed	4	EACH	7,500.00	30
Thermostats/temperature sensors	12	EACH	500.00	6
CO2 sensors	12	EACH	500.00	6
Miscellaneous points & devices	1	LSUM	15,000.00	15
Utility meter interfaces	1	LSUM	15,000.00	15
Headend/central controls	1	LSUM	15,000.00	15
Interface with existing building BAS-DDC system	1	LSUM	7,500.00	7
Programming, testing, and training	1	LSUM	10,000.00	10
SU	BTOTAL: Tem	perature	Controls	\$178,0
23700 Testing, Balancing, & Commissioning				
Air testing and balancing	1	LSUM	18,000.00	18
Pipe system testing and balancing	1	LSUM	15,000.00	15
HVAC system commissioning assistance	1	LSUM	15,000.00	15
SUBTOTAL: Testin	ig, Balancing,	& Commi	ssioning	\$48,0
				\$1,316,1

26000 ELECTRICAL

26700 Mechanical Equipment Connections & Feeders

Milwaukee Public Library Martin Luther King Jr. Library

Schematic Deisgn Estimate 06/23/2023

CRIPTION	QTY	UM	UNIT COST	TOTAL COST
Motors connection, disconnect switches and associated feeders - AC split system, MDF room, $1-1/2$ tons	1	EACH	2,700.00	2,700
Motors connection, disconnect switches and associated feeders - CHW, HW pumps, inline	4	EACH	2,600.00	10,400
Motors connection, disconnect switches and associated feeders - DOAS AHU, 5 tons/2,000 cfm	1	EACH	3,500.00	3,500
Motors connection, disconnect switches and associated feeders - Exhaust fan, rooftop	4	EACH	2,500.00	10,000
Motors connection, disconnect switches and associated feeders - Humidifier, electric,	1	EACH	1,200.00	1,200
Motors connection, disconnect switches and associated feeders - Fancoil units, 4-pipe hydronic, 6 tons	2	EACH	3,200.00	6,400
Motors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons	1	EACH	7,800.00	7,800
Notors connection, disconnect switches and associated feeders - Fancoil units, 1-pipe hydronic, 4 tons	1	EACH	2,750.00	2,750
Notors connection, disconnect switches and associated feeders - HW boilers, condensing, 400 mbh	2	EACH	2,600.00	5,200
Motors connection, disconnect switches and associated feeders - Fancoil units, 4-pipe hydronic, 1.5 tons	1	EACH	1,500.00	1,500
Motors connection, disconnect switches and associated feeders - Fancoil units, 4-pipe hydronic, 1 tons	7	EACH	1,500.00	10,500
Install VFD	4	EACH	850.00	3,400
SUBTOTAL: Mechanical Equipn	nent Conne	ections &	Feeders	\$65,350

TOTAL: ELECTRICAL

TOTAL: HVAC OPTION #2B: 4-PIPE SYSTEM FANCOILS W/ BOILER/CHILLER PLANT

\$65,350 \$1,381,525

HVAC OPTION #3A: 4-PIPE SYSTEM W/AHU & VAV W/ GEOTHERMAL

23000 HEATING VENTILATION & AIR CONDITIONING 23200 Ventilation & Exhaust

23200 Ventilation & Exhaust				
Air handling unit, based on 25,000 cfm, CHW, HW coils, humidifiers, fans, filters	1	EACH	190,670.59	190,671
CHW coil connections, AHU - valves, fittings, specialties, and pipe insulation	1	EACH	7,371.05	7,371
HW coil connections, AHU - valves, fittings, specialties, and pipe insulation	1	EACH	6,286.36	6,286
Energy recovery unit, 4500 cfm, energy wheel	1	EACH	65,415.38	65,415
Humidifier, electric, 24 lbs/hr	1	EACH	3,564.00	3,564
Return air fan	1	EACH	22,670.59	22,671
AC split system, MDF room, 1-1/2 tons	1	EACH	5,528.00	5,528
Refrigeration tubing, AC split system	60	LNFT	21.53	1,292
Pipe insulation, refrigeration piping, AC split system	60	LNFT	11.10	666
Condensate drain piping - AC split system	30	LNFT	27.87	836
Pipe insulation, condensate drain piping - AC split system	30	LNFT	10.07	302
Exhaust fan, rooftop, w/curb, backdraft damper	4	EACH	1,664.00	6,656
Variable air volume terminals w/ HW reheat coil	15	EACH	1,302.00	19,530
Reheat coil connections, VAV - valves, fittings, and insulation	15	EACH	1,082.00	16,230

RIPTION	QTY	UM	UNIT COST	TOTAL COST
Galvanized steel duct & insulation	17,635	SQFT	13.71	241,707
Registers, grilles and diffusers	150	EACH	113.20	16,980
Flexible duct, insulated	500	LNFT	23.55	11,775
Louvers, OA	2	EACH	2,482.00	4,964
SUBT	OTAL: Ven	tilation &	Exhaust	\$622,444
23300 Central Hydronic & Steam Equipment & Specialties				
Heat pump plant, 45-tons skid-mounted, (4) 15-ton modular units w/6-pipe header	1	EACH	97,801.60	97,802
CHW, HW pumps, inline	4	EACH	4,460.24	17,841
Geothermal circulating pump, inline	3	EACH	2,343.80	7,031
Variable frequency drive, pumps, (MC supply, EC install)	7	EACH	2,654.66	18,583
Vibration isolation, pumps	7	EACH	1,818.80	12,732
Isolation valves, pumps, butterfly, HW, CHW pumps	4	EACH	1,190.15	4,761
Isolation valves, pumps, butterfly, geothermal	3	EACH	542.06	1,626
Flexible pump connections, HW, CHW pumps	8	EACH	411.80	3,294
Flexible pump connections, geothermal pumps	6	EACH	184.90	1,109
Triple duty valve, CHW, HW pumps	4	EACH	3,759.50	15,038
Triple duty valve, geothermal pumps	3	EACH	909.40	2,728
Pump strainer, Y-type, CHW, HW pumps	4	EACH	1,215.35	4,861
Pump strainer, Y-type, geothermal pumps	3	EACH	257.35	772
Expansion tank	2	EACH	6,225.20	12,450
Air separator, CHW, HW pumps	2	EACH	4,198.23	8,396
Air separator, geothermal pumps	1	EACH	1,625.24	1,625
Chemical pot feeder	2	EACH	2,275.20	4,550
Sidestream filters	2	EACH	2,975.20	5,950
Pressure fill/makeup water system	1	EACH	9,975.20	9,975
SUBTOTAL: Central Hydronic & St	eam Equipn	nent & Sp	ecialties	\$231,127
23400 Heating & Ventilating Terminals				
Cabinet unit heaters, HW hydronic	4	EACH	3,287.60	13,150
Unit heaters, HW hydronic	2	EACH	1,787.60	3,575
Fintube radiators, HW	216	LNFT	130.95	28,285
HW connections - valves, fittings, and specialties	6	EACH	593.80	3,563
SUBTOTAL: He	ating & Ven	tilating T	erminals	\$48,574
23500 HVAC Piping				
Humidifier piping	50	LNFT	29.02	1,451
CHWS/R, HWS/R piping mains, std. wgt. blk. steel pipe, fittings, and supports	1,000	LNFT	114.92	114,923
HWS/R runouts to VAV's, type L copper, w/fittings, and supports	500	LNFT	28.08	14,039
HHWS/R runout piping to perimeter heaters, type L copper	1,000	LNFT	44.66	44,661
Pipe insulation, humidifier piping	50	LNFT	9.62	481
Pipe insulation, CHWS/R, HWS/R mains	1,000	LNFT	17.16	17,162
Pipe insulation, HWWS/R runouts to VAV's	500	LNFT	10.07	5,037
Pipe insulation, HHWS/R runouts to perimeter heaters	1,000	LNFT	20.40	20,397
Pipe and valve tagging - interior bldg HVAC piping	2,550	LNFT	1.32	3,376

SCRIPTION	QTY	UM	UNIT COST	TOTAL COST
	SUBTO	TAL: HVA	C Piping	\$221,527
23600 Temperature Controls				
DDC controls - air handling units	1	EACH	35,000.00	35,000
DDC controls - energy recovery units	1	EACH	5,000.00	5,000
DDC controls - return air fans	1	EACH	5,000.00	5,000
DDC controls - AC split system - MDF room	1	EACH	2,500.00	2,500
DDC controls - humidifier unit	1	EACH	2,000.00	2,000
DDC controls - exhaust fans	4	EACH	2,500.00	10,000
DDC controls - VAV terminals w/reheat coil	15	EACH	1,800.00	27,000
DDC controls - hydronic pumps, variable speed	7	EACH	7,500.00	52,500
Thermostats/temperature sensors	16	EACH	500.00	8,000
CO2 sensors	15	EACH	500.00	7,500
Miscellaneous points & devices	1	LSUM	15,000.00	15,000
Utility meter interfaces	1	LSUM	15,000.00	15,000
Headend/central controls	1	LSUM	15,000.00	15,000
Interface with existing building BAS-DDC system	1	LSUM	7,500.00	7,500
Programming, testing, and training	1	LSUM	10,000.00	10,000
	TAL: Tem	perature	Controls	\$217,000
23700 Testing, Balancing, & Commissioning				
Air testing and balancing	1	LSUM	18,000.00	18,000
Pipe system testing and balancing	1	LSUM	15,000.00	15,000
HVAC system commissioning assistance	1	LSUM	15,000.00	15,000
SUBTOTAL: Testing, I	Balancing,	& Commi	ssioning	\$48,000
TAL: HEATING VENTILATION & AIR CONDITIONING				\$1,388,672
26000 ELECTRICAL				
26700 Mechanical Equipment Connections & Feeders				
Motors connection, disconnect switches and associated feeders - Heat pump plant,	1	EACH	10,166.94	10,167
45-tons	-	Entern	10/100191	10/10/
Motors connection, disconnect switches and associated feeders - AC split system, MDF room, 1-1/2 tons	1	EACH	2,700.00	2,700
Motors connection, disconnect switches and associated feeders - CHW, HW pumps, inline	4	EACH	2,600.00	10,400
Motors connection, disconnect switches and associated feeders - Exhaust fan, rooftop	4	EACH	2,500.00	10,000
Motors connection, disconnect switches and associated feeders - Energy recovery unit, 4500 cfm	1	EACH	3,000.00	3,000
Motors connection, disconnect switches and associated feeders - Air handling unit, based on 25,000 cfm	1	EACH	6,200.00	6,200
Motors connection, disconnect switches and associated feeders - Geothermal circulating pump, inline	3	EACH	1,800.00	5,400
Motors connection, disconnect switches and associated feeders - Humidifier, electric,	1	EACH	1,200.00	1,200
Motors connection, disconnect switches and associated feeders - Return air fan	1	EACH	3,200.00	3,200

DESCRIPTION	QTY	UM	UNIT COST	TOTAL COST
SUBTOTAL: Mechanical Equip	ment Conn	ections &	Feeders	\$58,217
TOTAL: ELECTRICAL				\$58,217
33000 UTILITIES 33500 Site HVAC				
Geothermal wellfield, including bores, vaults, and field piping - per vertical Inft	14,000	VLFT	25.00	350,000
	SUB	TOTAL: Si	te HVAC	\$350,000
TOTAL: UTILITIES				\$350,000
TOTAL: HVAC OPTION #3A: 4-PIPE SYSTEM W/AHU & VAV W/	GEOTHER	MAL		\$1,796,889
HVAC OPTION #3B: 4-PIPE SYSTEM W/AHU & VAV W/ BOILER/CHILLER PLANT				
23000 HEATING VENTILATION & AIR CONDITIO	NING			
23200 Ventilation & Exhaust				
Air handling unit, based on 25,000 cfm, CHW, HW coils, humidifiers, fans, filters	1	EACH	190,670.59	190,671
CHW coil connections, AHU - valves, fittings, specialties, and pipe insulation	1	EACH	7,371.05	7,371
HW coil connections, AHU - valves, fittings, specialties, and pipe insulation	1	EACH	6,286.36	6,286
Energy recovery unit, 4500 cfm, energy wheel	1	EACH	65,415.38	65,415
Humidifier, electric, 24 lbs/hr	1	EACH	3,564.00	3,564
Return air fan	1	EACH	22,670.59	22,671
AC split system, MDF room, 1-1/2 tons	1	EACH	5,528.00	5,528
Refrigeration tubing, AC split system	60	LNFT	21.53	1,292
Pipe insulation, refrigeration piping, AC split system	60	LNFT	11.10	666
Condensate drain piping - AC split system	30	LNFT	27.87	836
Pipe insulation, condensate drain piping - AC split system	30	LNFT	10.07	302
Exhaust fan, rooftop, w/curb, backdraft damper	4	EACH	1,664.00	6,656
Variable air volume terminals w/ HW reheat coil	15	EACH	1,302.00	19,530
Reheat coil connections, VAV - valves, fittings, and insulation	15	EACH	1,082.00	16,230
Galvanized steel duct & insulation	17,635	SQFT	13.71	241,707
Registers, grilles and diffusers	17,055	EACH	113.20	16,980
Flexible duct, insulated	500	LNFT	23.55	11,775
Louvers, OA	2	EACH	2,482.00	4,964
	Z OTAL: Ven			\$622,444
23300 Central Hydronic & Steam Equipment & Specialties				
HW boilers, condensing, based on 400 mbh	2	EACH	29,876.00	59,752
CA duct, HW boilers	100	LNFT	22.43	2,243
Boiler flue/vent	100	LNFT	170.61	17,061
Chiller, 45 tons air-cooled	1	EACH	54,876.00	54,876
CHW, HW pumps, inline	4	EACH	4,460.24	17,841
Variable frequency drive, pumps, (MC supply, EC install)	4	EACH	2,654.66	10,619
Vibration isolation, pumps	4	EACH	1,843.80	7,375
Isolation valves, pumps, butterfly, HW, CHW pumps	4	EACH	1,190.15	4,761
	4			
Flexible pump connections, HW, CHW pumps	0	EACH	411.80	3,294

Schematic Deisgn Estimate 06/23/2023

RIPTION	QTY	UM	UNIT COST	TOTAL COST
Triple duty valve, CHW, HW pumps	4	EACH	3,759.50	15,038
Pump strainer, Y-type, CHW, HW pumps	4	EACH	1,215.35	4,861
Expansion tank	2	EACH	6,225.20	12,450
Air separator, CHW, HW pumps	2	EACH	4,198.23	8,396
Chemical pot feeder	2	EACH	2,275.20	4,550
Sidestream filters	2	EACH	2,975.20	5,950
Pressure fill/makeup water system	1	EACH	9,487.60	9,488
SUBTOTAL: Central Hydronic & S	team Equipr	nent & Sp	ecialties	\$238,556
23400 Heating & Ventilating Terminals				
Cabinet unit heaters, HW hydronic	4	EACH	3,287.60	13,150
Unit heaters, HW hydronic	2	EACH	1,787.60	3,575
Fintube radiators, HW	216	LNFT	130.95	28,285
HW connections - valves, fittings, and specialties	6	EACH	593.80	3,563
SUBTOTAL: He	eating & Ven	tilating T	erminals	\$48,574
23500 HVAC Piping				
Humidifier piping	50	LNFT	29.02	1,451
CHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged	300	LNFT	188.83	56,650
CHWS/R, HWS/R piping mains, std. wgt. blk. steel pipe, fittings, and supports	1,000	LNFT	114.92	114,923
HWS/R runouts to VAV's, type L copper, w/fittings, and supports	500	LNFT	28.08	14,039
HHWS/R mech. room piping, std. wgt. blk. steel pipe, fittings, and supports, welded/flanged	300	LNFT	188.83	56,650
HHWS/R runout piping to perimeter heaters, type L copper	1,000	LNFT	44.66	44,661
Natural gas piping, std. wgt. blk. steel pipe, fittings, and supports, threaded	100	LNFT	41.29	4,129
Pipe insulation, humidifier piping	50	LNFT	9.62	481
Pipe insulation, CHWS/R mains	300	LNFT	21.54	6,462
Pipe insulation, CHWS/R, HWS/R mains	1,000	LNFT	17.16	17,162
Pipe insulation, HWWS/R runouts to VAV's	500	LNFT	10.07	5,037
Pipe insulation, HHWS/R runouts to perimeter heaters	1,000	LNFT	20.40	20,397
Pipe insulation, HHWS/R mains	300	LNFT	21.54	6,462
Pipe and valve tagging - interior bldg HVAC piping	3,250	LNFT	1.32	4,303
	SUBTO	TAL: HVA	C Piping	\$352,808
23600 Temperature Controls				
DDC controls - air handling units	1	EACH	35,000.00	35,000
DDC controls - energy recovery units	1	EACH	5,000.00	5,000
DDC controls - return air fans	1	EACH	5,000.00	5,000
DDC controls - AC split system - MDF room	1	EACH	2,500.00	2,500
DDC controls - humidifier unit	1	EACH	2,000.00	2,000
DDC controls - exhaust fans	4	EACH	2,500.00	10,000
DDC controls - VAV terminals w/reheat coil	15	EACH	1,800.00	27,000
DDC controls - HW boilers	2	EACH	3,000.00	6,000
DDC controls - chiller, air-cooled	1	EACH	4,000.00	4,000
DDC controls - hydronic pumps, variable speed	- 4	EACH	7,500.00	30,000
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Schematic Deisgn Estimate 06/23/2023

Miscellaneous points & devices 1 LSUM 15,000.00 15, Utility meter interfaces 1 LSUM 15,000.00 15, Interface with existing building BAS-DDC system 1 LSUM 15,000.00 15, Interface with existing building BAS-DDC system 1 LSUM 10,000.00 10, Programming, testing, and training 1 LSUM 10,000.00 18, Programming, testing, and balancing 1 LSUM 15,000.00 18, Pipe system testing and balancing 1 LSUM 15,000.00 15, RVAC system commissioning assistance 1 LSUM 15,000.00 15, RVAC HEATING VENTILATION & AIR COMPACIDITIONING \$ \$ \$ \$ ROBOT CON, 1-1/2 tom 1 EACH 2,700.00 2, \$ Mobris connection, disconnect switc	CRIPTION	QTY	UM	UNIT COST	TOTAL COS
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Headend/central controls 1 LSUM 15,000.00 15, Interface with existing building BAS-DDC system 1 LSUM 7,500.00 7, Programing, testing, and training 1 LSUM 10,000.00 10, SUBTOTAL: Temperature Controls \$204,5 23700 Testing, Balancing, & Commissioning Air testing and balancing 1 LSUM 15,000.00 15, Pipe system testing and balancing 1 LSUM 15,000.00 15, RVAC system commissioning assistance 1 LSUM 15,000.00 15, SUBTOTAL: Testing, Balancing, & Commissioning \$15,000.00 15, AL: HEATING VENTILATION & AIR CONDITIONING \$10,000.00 15, Commection, disconnect switches and associated feeders - AC split system, non, 1-1/2 tons EACH 2,000.00 6, Motors connection, disconnect switches and associated feeders - Air handling unit, 1 EACH 2,000.00 10, Mobr sconnection, disconnect switches and associated feeders - CHW, HW 4 EACH 2,000.00 3, Motors connection, disconnect switches and associated feeders - Energy recovery in teACH<	Miscellaneous points & devices	1	LSUM	15,000.00	15,0
Interface with existing building BAS-DDC system 1 LSUM 7,500.00 7, Programming, testing, and training 1 LSUM 10,000.00 10, SUBTOTAL: Temperture Controls \$204,5 23700 Testing, Balancing, & Commissioning 1 LSUM 18,000.00 18, Pipe system testing and balancing 1 LSUM 15,000.00 15, HVAC system commissioning assistance 1 LSUM 15,000.00 15, CAL: HEATING VENTILATION & AIR CONDITIONING SUBTOTAL: Testing, Balancing, & Commissioning \$48,0 CAC Hechanical Equipment Connections & Feeders \$1 EACH 2,700.00 2, MDF room, 1-1/2 tons Motors connection, disconnect switches and associated feeders - AC split system, 1 EACH 2,600.00 10, Motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH 2,500.00 10, Motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH 2,500.00 10, Motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH 2,500.00 10, Mo	Utility meter interfaces	1	LSUM	15,000.00	15,0
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SUBTOTAL: Temperature Controls \$204,5 23700 Testing, Balancing, & Commissioning 1 LSUM 18,000.00 18, Pipe system testing and balancing 1 LSUM 15,000.00 15, HVAC system commissioning assistance 1 LSUM 15,000.00 15, RUETOTAL: Testing, Balancing, & Commissioning \$48,00 AL: HEATING VENTILATION & AIR CONDITIONING \$1,514,88 26000 ELECTRICAL \$1,500,00 2, MDF conn, 1-1/2 tons Notors connection, disconnect switches and associated feeders - Air handling unit, 1 EACH 2,200.00 6, based on 25,000 cfm Notors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 2,600.00 10, pumps, inline Motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH 2,500.00 10, Motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH 2,500.00 10, Motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH 2,500.00 10, Motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH	Interface with existing building BAS-DDC system	1	LSUM	7,500.00	7,5
23700 Testing, Balancing, & Commissioning Air testing and balancing 1 LSUM 18,000.00 18, Pipe system testing and balancing 1 LSUM 15,000.00 15, HVAC system commissioning assistance 1 LSUM 15,000.00 15, EVAC system commissioning assistance 1 LSUM 15,000.00 15, CAL: HEATING VENTILATION & AIR CONDITIONING \$48,00 \$48,00 CAL: Mechanical Equipment Connections & Feeders \$1 EACH 2,700.00 2, Motors connection, disconnect switches and associated feeders - AC split system, 1 EACH 2,700.00 6, Dasc on 12,000 fm 10, 10, 10, 10, pumps, inline 1 EACH 2,500.00 10, Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 2,600.00 3, motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH 2,500.00 10, pumps, inline 1 EACH 2,500.00 10, 10, 10, 10, 10, 10, 10, 10, 10, </td <td>Programming, testing, and training</td> <td>1</td> <td>LSUM</td> <td>10,000.00</td> <td>10,0</td>	Programming, testing, and training	1	LSUM	10,000.00	10,0
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HVAC system commissioning assistance 1 LSUM 15,000.00 15,000.00 SUBTOTAL: Testing, Balancing, & Commissioning \$48,00 AL: HEATING VENTILATION & AIR CONDITIONING \$1,514,88 26000 ELECTRICAL \$1,500.00 26700 Mechanical Equipment Connections & Feeders Notors connection, disconnect switches and associated feeders - AC split system, 1 EACH 2,700.00 2, Motors connection, disconnect switches and associated feeders - AC split system, 1 EACH 2,600.00 6, based on 25,000 cfm	Air testing and balancing	1	LSUM	18,000.00	18,0
SUBTOTAL: Testing, Balancing, & Commissioning \$48,00 AL: HEATING VENTILATION & AIR CONDITIONING \$1,514,8 Composition of the experiment connections & Feeders \$1,514,8 Deform Mechanical Equipment Connections & Feeders 1 EACH 2,700.00 2, Motors connection, disconnect switches and associated feeders - AC split system, 1-1/2 tons EACH 2,600.00 6, Motors connection, disconnect switches and associated feeders - AIr handling unit, 1 EACH 6,200.00 6, Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 2,600.00 10, Motors connection, disconnect switches and associated feeders - Exhaust fan, 4 EACH 2,500.00 3, Motors connection, disconnect switches and associated feeders - Exhaust fan, 4 EACH 7,800.00 3, Motors connection, disconnect switches and associated feeders - Chillers, 1 EACH 7,800.00 7, air-cooled, 45 tons 1 EACH 7,800.00 7, Motors connection, disconnect switches and associated feeders - HW boilers, 2 EACH 3,200.00 3, Motors connection, disconnect switches and associated feeders - HW boilers, 2 EACH 3,200.00 3,	Pipe system testing and balancing	1	LSUM	15,000.00	15,0
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26000 ELECTRICAL 26700 Mechanical Equipment Connections & Feeders Motors connection, disconnect switches and associated feeders - AC split system, 1 EACH 2,700.00 2, MDF room, 1-1/2 tons 1 EACH 2,700.00 6, based on 25,000 cfm 1 EACH 2,600.00 10, motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 2,600.00 10, pumps, inline . <td< td=""><td>SUBTOTAL: Testing, B</td><td>alancing,</td><td>& Commi</td><td>issioning</td><td>\$48,00</td></td<>	SUBTOTAL: Testing, B	alancing,	& Commi	issioning	\$48,00
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Motors connection, disconnect switches and associated feeders - Air handling unit, 1 EACH 6,200.00 6, based on 25,000 cfm Motors connection, disconnect switches and associated feeders - CHW, HW 4 EACH 2,600.00 10, pumps, inline Motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH 3,000.00 3, unit, 4500 cfm Motors connection, disconnect switches and associated feeders - Exhaust fan, 4 EACH 2,500.00 10, Motors connection, disconnect switches and associated feeders - Exhaust fan, 4 EACH 2,500.00 10, Motors connection, disconnect switches and associated feeders - Chillers, 1 EACH 2,500.00 7, air-cooled, 45 tons 1 EACH 1,200.00 1, Motors connection, disconnect switches and associated feeders - Humidifier, 1 EACH 2,600.00 5, condensing, 400 mbh A EACH 3,200.00 3, Install VFD 4 EACH 850.00 3, 3, SUBTOTAL: Mechanical Equipment Connections & Feeders \$53,1 C	Motors connection, disconnect switches and associated feeders - AC split system,	1	EACH	2,700.00	2,7
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pumps, inline Motors connection, disconnect switches and associated feeders - Energy recovery 1 EACH 3,000.00 3, unit, 4500 cfm Motors connection, disconnect switches and associated feeders - Exhaust fan, 4 EACH 2,500.00 10, rooftop Motors connection, disconnect switches and associated feeders - Chillers, 1 EACH 7,800.00 7, air-cooled, 45 tons Motors connection, disconnect switches and associated feeders - Humidifier, 1 EACH 1,200.00 1, electric, Motors connection, disconnect switches and associated feeders - Humidifier, 2 EACH 2,600.00 5, condensing, 400 mbh Motors connection, disconnect switches and associated feeders - Return air fan 1 EACH 3,200.00 3, Install VFD 4 EACH 850.00 3, SUBTOTAL: Mechanical Equipment Connections & Feeders \$53,1 At: ELECTRICAL					
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rooftop Motors connection, disconnect switches and associated feeders - Chillers, air-cooled, 45 tons Motors connection, disconnect switches and associated feeders - Humidifier, electric, Motors connection, disconnect switches and associated feeders - HW boilers, condensing, 400 mbh Motors connection, disconnect switches and associated feeders - Return air fan Install VFD 4 EACH 3,200.00 3, Install VFD 4 EACH 850.00 3, CUBTOTAL: Mechanical Equipment Connections & Feeders • \$53,1 CAL: ELECTRICAL		1	EACH	3,000.00	3,0
air-cooled, 45 tons Motors connection, disconnect switches and associated feeders - Humidifier, 1 EACH 1,200.00 1, electric, Motors connection, disconnect switches and associated feeders - HW boilers, 2 EACH 2,600.00 5, condensing, 400 mbh Motors connection, disconnect switches and associated feeders - Return air fan 1 EACH 3,200.00 3, Install VFD 4 EACH 850.00 3, SUBTOTAL: Mechanical Equipment Connections & Feeders \$\$53,1 TAL: ELECTRICAL \$\$53,1		4	EACH	2,500.00	10,0
Motors connection, disconnect switches and associated feeders - Humidifier, 1 EACH 1,200.00 1, electric, Notors connection, disconnect switches and associated feeders - HW boilers, 2 EACH 2,600.00 5, condensing, 400 mbh Motors connection, disconnect switches and associated feeders - Return air fan 1 EACH 3,200.00 3, Install VFD 4 EACH 850.00 3, SUBTOTAL: Mechanical Equipment Connections & Feeders \$53,1 AL: ELECTRICAL		1	EACH	7,800.00	7,8
Motors connection, disconnect switches and associated feeders - HW boilers, condensing, 400 mbh 2 EACH 2,600.00 5, condensing, 400 mbh Motors connection, disconnect switches and associated feeders - Return air fan 1 EACH 3,200.00 3, 100 Install VFD 4 EACH 850.00 3, 200.00 3, 2	Motors connection, disconnect switches and associated feeders - Humidifier,	1	EACH	1,200.00	1,2
Motors connection, disconnect switches and associated feeders - Return air fan 1 EACH 3,200.00 3, Install VFD 4 EACH 850.00 3, SUBTOTAL: Mechanical Equipment Connections & Feeders \$53,1 TAL: ELECTRICAL		2	EACH	2,600.00	5,2
Install VFD 4 EACH 850.00 3, SUBTOTAL: Mechanical Equipment Connections & Feeders \$53,1 AL: ELECTRICAL \$53,1		1	EACH	3,200.00	3,2
SUBTOTAL: Mechanical Equipment Connections & Feeders \$53,1 AL: ELECTRICAL \$53,1		4	EACH		, 3,4
AL: ELECTRICAL \$53,1	SUBTOTAL: Mechanical Equipm	nent Conn	ections &	Feeders	\$53,1
	AL: ELECTRICAL				
					\$1,567,98

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