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Engineering

Fairchild Building  
Improvement -  
Design  
Development

Location:  
120 S. Fairchild St.  
Madison, WI 53703

Contract: 9135  
Project: 11078

Revisions  
No. Description

Schedules

M 400

### Hydronic Unit Heater Schedule

Mark	Description	Room Name	Room Number	Manufacturer	URL	Model	Deflector Type	Output	Mechanical										Electrical										Type Remark	Specific Remark	Specification
									Water Flow	Fluid	Pressure Drop	EWT	dT	Water Volume	EAT	Fan RPM	Airflow	Motor Size	Voltage	Poles	FLA	Apparent Power	Panel	Circuit Number	Weight						
UH-1	Horizontal Hydronic Unit Heater	Parking Utility Garage	100	Modine	www.modinehvac.com	HCH-170	60" Hood	159,807 Btu/h	7 GPM	30% Ethylene Glycol	1.40 psi	140 F	46 F	1.8 gal	45 F	1140	2870 CFM	0.33 hp	120 V	1	4.2 A	504 VA	145 lb	23 82 00 - Convexion Heating and Cooling Units		23 82 00 - Convexion Heating and Cooling Units					

### Gravity Ventilator Schedule

Mark	Description	Manufacturer	Model	URL	Airflow	Throat Length	Throat Width	Type Remark	Specific Remark	Specification
GV-1	Ball Valve Hood with Curt	Greenheck	FGRI	www.greenheck.com	21350 CFM	10'-0"	6'-0"	Blinkscreen		23 37 00 - Air Outlets and Inlets

### Pipe Accessories Schedule

Type Mark	Description	Size	Count	Specification
CVF-4"	Strainer Y - Flanged	4"	2	23 20 00 - HVAC Piping and Pumps
SF-4"		4"	4	23 20 00 - HVAC Piping and Pumps

### Boiler Schedule

Mark	Room Name	Room Number	Description	Manufacturer	URL	Model	Features	Mechanical										Electrical										Type Remark	Specific Remark	Specification
								Max. Input	Efficiency	Modulation	Design Flow	Max. Pressure	Relief Valve	Water Volume	Voltage	FLA	Apparent Power	Panel	Circuit Number	Weight	Remark									
B-1	Boiler	105	Condensing Boiler	Lochinvar	www.lochinvar.com	FCR2000	BACnet, O2 Sensor	1,899,000 Btu/h	96.2%	25.1	194 GPM	6.53 psi	160 psi	50 psi	111 gal	120 V	13 A	1,560 VA					2,263 lb		23 52 00 - Heating Boilers					

### Chemical Feeder Schedule

Mark	Description	Manufacturer	Model	URL	Pressure Rating	Water Volume	Dry Weight	Type Remark	Specific Remark	Specification
CF-1	Chemical Potbederw/ 25 micron Bag Filter	Griewald Water Systems	www.griewaldwatersystems.com		600 psi	2 gal	60 lb			23 20 00 - HVAC Piping and Pumps

### Air Handling Unit - Hydronic Heat

Mark	Description	Room Name	Room Number	Manufacturer	URL	Model	Length	Width	Height	Left Side Access	Mechanical										Electrical										Type Remark	Specific Remark	Specification	
											Airflow	External Static Pressure (ESP)	Fan AF	Design Fan RPM	Brake Horsepower	Efficiency (EF)	Filter	Output	Flowrate	Fluid	Pressure Drop	EWT	dT	EAT	LAT	Volume	Motor Type	Nominal Power	Voltage	Poles				FLA
AHU-1	Hydronic Heating AHU	Parking Utility Garage	100	Daikin	www.daikinac.com	Vision	7'-2"	4'-4"	2'-2"	No	3,100 CFM	0.5 in-wg	AF 14"	2402/3000	0.95 hp	1.53	MERV 8, 4"	206,491 Btu/h	14.5 GPM	30% Ethylene Glycol	1.8 Feet	140 F	30.7 F	-15 F	45.5 F	3 gal	ECM	2.5 hp	208 V	3	5.2 A	1,873 VA	516 lbm	23 73 00 - Indoor Central-Station Air-Handling Units

### Pump Schedule

Mark	Description	Room Number	Manufacturer	Model	Options	URL	Design Flow	Design Pressure	Design Gain	Fluid	Efficiency (Motor/Pump)	Voltage	Poles	FLA	Nominal Horsepower	Motor Type	Apparent Power	Actual Power Inc. Frequency Converter	RPM	Panel	Circuit	Weight	Type Remark	Specific Remark	Specification	
BP-5	Inline Pump	105	Grundfos	CRE 20		www.grundfos.com	0 GPM	0 psi		Water	86.2%	208 V	3	0 A	0 hp	ECM	0 VA	0 hp	0 kW	360 - 4,000			159 lb			23 20 00 - HVAC Piping and Pumps

### Air and Dirt Separators

Mark	Description	Manufacturer	Model	URL	Weight	Connection Size	Volume	Pressure Drop	Max. Pressure	Type Remark	Specific Remark	Specification
BP-7	Air and Dirt Separator w/ Removable Head	Sprotherom	VDN-400 FA	www.sprotherom.com	233 lb	4"	6.6 gal	0.52 psi	150 psi			23 20 00 - HVAC Piping and Pumps

### Hydronic System Feeders

Mark	Room Name	Room Number	Description	Manufacturer	Model	URL	Volume	Max. Pressure	Mass	Type Remark	Specific Remark	Specifications
SF-1	Boiler	105	Hydronic System Feeder w/ alarm monitoring - high pressure	Axiom Industries	SF-100-HP-RAG10-1-SAA	www.axiomind.com	55 gal	85 psi	545 lbm			23 20 00 - HVAC Piping and Pumps

### Isolation Valve Schedule

Type Mark	Description	Size	Est. Count	Specification
VF-2.5"	Ball Valve Flanged	2 1/2"	1	23 20 00 - HVAC Piping and Pumps
VF-4"	Ball Valve Flanged	4"	7	23 20 00 - HVAC Piping and Pumps
VS-3/8"	Ball Valve Soldered	3/8"	8	23 20 00 - HVAC Piping and Pumps
VS-1"	Ball Valve Soldered	1"	8	23 20 00 - HVAC Piping and Pumps
VS-1.5"	Ball Valve Soldered	1 1/2"	1	23 20 00 - HVAC Piping and Pumps
VS-1.5"	Ball Valve Soldered	1 1/2"	4	23 20 00 - HVAC Piping and Pumps
VS-2"	Ball Valve Soldered	2"	1	23 20 00 - HVAC Piping and Pumps

### Air Flow Meter

Mark	Description	System	Size	Remark	Specification
AFM-AHU 4	Air Flow Meter - Rectangular	AHU 4	12"x12"-12"x12"		23 09 00 - Instrumentation and Control For HVAC
AFM-EA3	Air Flow Meter - Rectangular	EA	48"x14"-48"x14"		23 09 00 - Instrumentation and Control For HVAC
AFM-EA 1	Air Flow Meter - Round	EA	24"x24"		23 09 00 - Instrumentation and Control For HVAC
AFM-EA 2A	Air Flow Meter - Rectangular	EA	60"x20"-60"x20"		23 09 00 - Instrumentation and Control For HVAC
AFM-EA 2B	Air Flow Meter - Rectangular	EA	60"x20"-60"x20"		23 09 00 - Instrumentation and Control For HVAC

### Balancing Damper Schedule

Type Mark	Description	Size	Est. Count	Specification
BD-RO	Balancing Damper - Round	6"ø-6"ø	2	23 31 00 - HVAC Duct and Casings
BD-RO	Balancing Damper - Round	6"ø-6"ø	1	23 31 00 - HVAC Duct and Casings
BD-RO	Balancing Damper - Round	10"ø-10"ø	1	23 31 00 - HVAC Duct and Casings
BD-RE	Balancing Damper - Rectangular	18"x18"-18"x18"	1	23 31 00 - HVAC Duct and Casings

### VAV Terminal Schedule

Mark	Manufacturer	Model	Size	Description	Insulated	Design Airflow	Design Pressuredrop	Min. Flow	Heating Max. Flow cfm	Cooling Max. Flow cfm	Weight	Type Remark	Specific Remark	Specification
VAV EAM	Acoustic	AVT4000-10	10" Round	VAV AirVolve	No	450 CFM	0.059 in-wg	0 CFM	NA	NA	14 lb			23 38 00 - Air Terminal Units

### Access Door Schedule

Type Mark	Description	Width	Height	Est. Count	Specification
					Exhaust Flow 23 38 00 - Air Terminal Units

### Expansion Tanks

Mark	Room Name	Room Number	Description	Manufacturer	Model	URL	Maximum Pressure	Acceptance Volume	Dry Weight	Type Remark	Specific Remark	Specification
EF-1	Boiler	105	Diaphragm Expansion Tank - ASME & Bladder Integrity Monitor	Wessels	NTA-180	www.westank.com	125 psi	73 gal	283 lb			23 20 00 - HVAC Piping and Pumps

### Louver Schedule

Mark	Description	Manufacturer	Model	URL	Airflow	Depth	Height	Width	Free Air Velocity [ft. sec. screen]	Pressure Drop	Type Remark	Specific Remark	Specification
L-1	Intake Louver - Rainproof	Greenheck	ESD 635	www.greenheck.com	4800 CFM	0'-6"	6'-4"	6'-4"	160 FPM	0.007 in-wg	3/4 in Aluminum Screen exterior mounted	NA	08 91 00 - Louvers

### Control Damper Schedule

Mark	Description	Size	Specification
CD-AHU 4	Rectangular Control Damper - Insulated	12"x12"-12"x12"	23 31 00 - HVAC Duct and Casings
CD-AHU 3	Rectangular Control Damper - Insulated	54"x38"-54"x38"	23 31 00 - HVAC Duct and Casings
CD-EA 1	Rectangular Control Damper - Insulated	24"x24"-24"x24"	23 31 00 - HVAC Duct and Casings
CD-EA 2A	Rectangular Control Damper	60"x20"-60"x20"	23 31 00 - HVAC Duct and Casings
CD-EA 2B	Rectangular Control Damper	60"x20"-60"x20"	23 31 00 - HVAC Duct and Casings
CD-EA 3	Rectangular Control Damper	48"x14"-48"x14"	23 31 00 - HVAC Duct and Casings

### Fire and Smoke Damper Schedule

Type Mark	Description	Size	Rating (hr)	Est. Count	Specification
FD-RF-1.5	Fire Damper - Rectangular	24"x24"-24"x24"	1.5	1	23 31 00 - HVAC Duct and Casings
FD-RF-1.5	Fire Damper - Rectangular	72"x50"-72"x50"	1.5	1	23 31 00 - HVAC Duct and Casings

### Control Valve Schedule

Mark	Description	Flowrate	Failure Mode	Type Remark	Specific Remark	Specification
CV-AHU 1	Control Valve Threaded - Pressure Independent	14.5 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-AHU 23	Control Valve Threaded - Pressure Independent	7 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-AHU 26	Control Valve Threaded - Pressure Independent	5 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-AHU 29	Control Valve Threaded - Pressure Independent	3 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-AHU 58	Control Valve Flanged - Isolation	160 GPM				Full Port Ball Valve - highest available Cv
CV-AHU-2	Pressure Independent Control Valve	55.4 GPM	Closed			23 09 00 - Instrumentation and Control for HVAC
CV-AHU-3	Control Valve Threaded - Pressure Independent	28.7 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-AHU-4	Control Valve Threaded - Pressure Independent	3.8 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH 10	Control Valve Threaded - Pressure Independent	7 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-04	Control Valve Threaded - Pressure Independent	5 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-05	Control Valve Threaded - Pressure Independent	5 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-06	Control Valve Threaded - Pressure Independent	5 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-07	Control Valve Threaded - Pressure Independent	5 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-08	Control Valve Threaded - Pressure Independent	5 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-09	Control Valve Threaded - Pressure Independent	2 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-11	Control Valve Threaded - Pressure Independent	2 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-12	Control Valve Threaded - Pressure Independent	2 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-13	Control Valve Threaded - Pressure Independent	2 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-14	Control Valve Threaded - Pressure Independent	3 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-15	Control Valve Threaded - Pressure Independent	2 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-16	Control Valve Threaded - Pressure Independent	7 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-18	Control Valve Threaded - Pressure Independent	7 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-19	Control Valve Threaded - Pressure Independent	8 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-20	Control Valve Threaded - Pressure Independent	5 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC
CV-UH-21	Control Valve Threaded - Pressure Independent	2 GPM	Last Position			23 09 00 - Instrumentation and Control for HVAC

### AC Indoor Units

Mark	Room Name	Room Number	Description	Manufacturer	URL	Model	Features	Mechanical										Type Remark	Specific Remark	Specification
								Refrigerant	Output Cooling	Output Heatpump	Efficiency	Weight								
ACI-1	Parks Office	301	Wall Indoor Units - Heat Pump	Mitsubishi Electric	www.mitsubishicomfort.com	PKA-A24KA7		R 410A	10,000 - 24,000 Btu/h	26,000 Btu/h @ 47°F	15,200 Btu/h @ 5°F	SEER 21.4, COP 4.35 @ 47°F	46 lb	Powered by Outdoor Unit		23 81 00 - Decentralized Unitary HVAC Equipment				

### AC Outdoor Units

Mark	Room Name	Room Number	Description	Manufacturer	URL	Model	Features	Mechanical										Type Remark	Specific Remark	Specification
								Refrigerant	Ambient Conditions	Poles	Voltage	FLA	Apparent Power	Panel	Circuit Number	Weight				
ACO-1	Parks Maintenance Garage	300	Single Split AC w/ Wall Unit	Mitsubishi	www.mitsubishicomfort.com	PUZ-A24NH7		R 410A	10,000 - 24,000 Btu/h	29,000 Btu/h @ 47°F	13,000 Btu/h @ 5°F	SEER 24.2, COP 4.35 @ 47°F	56 lb	Powered by Outdoor Unit		23 81 00 - Decentralized Unitary HVAC Equipment				

### Fan Schedule

Mark	Description	Room Name	Room Number	Manufacturer	URL	Model	Special Features	Mechanical										Electrical										Type Remark	Specific Remark	Specification
								Airflow	Static Pressure	Fan Type	Design Fan RPM	Brake Horsepower	Efficiency (FE)	Motor Type	Nominal Power	Voltage	Poles	FLA	Apparent Power	Panel	Circuit Number	Weight								
EF-1	Plenum Fan	Property Storage	318	Daikin	www.daikin.com	Vision		21600 CFM	1.00 in-wg	6x14" Plenum Airfoil	2723/3000	1.74 hp	1.38	ECM	4.83 hp	208 V	3	29.8 A												