AIR COOLED CHILLER SCHEDULE

OWNER PROVIDED
CONTRACTOR INSTALLED

OWNER PROVIDED
CONTRACTOR INSTALLED

1. COMPRESSORS SHALL BE DIRECT DRIVE SEMI-HERMITCALLY SEALED ROTARY TWIN SCREW TYPE.
2. PROVIDE LOW AMBIENT CONTROLS TO ALLOW OPERATION DOWN TO 0 DEG. F. AMBIENT.
3. PROVIDE DIGITAL PROGRAMMABLE CONTROLLER WITH LCD TOUCHSCREEN ALLOWING ACCESS TO ALL OPERATIONAL INPUTS AND OUTPUTS.
4. PROVIDE FACTORY INSTALLED FLOW SWITCH.
5. PROVIDE FACTORY APPLIED 1" CLOSED CELL INSULATION ON ALL COLD PARTS.
6. PROVIDE WITH BACNET INTERFACE REMOTE COMMUNICATION OPTION.
7. EVAPORATOR TO BE AN ASME LISTED PRESSURE VESSEL WITH MINIMUM 235 PSIG REFRIGERANT PRESSURE RATING AND 150 PSIG WATER-SIDE PRESSURE RATING.
8. EVAPORATOR FOULING FACTOR = 0.000100
9. PROVIDE LOW SOUND CONDENSER FANS AND COMPRESSOR BLANKET FOR CHILLER.
10. PROVIDE A MINIMUM OF 2 COMPRESSORS.
11. PROVIDE CHILLER WITH HAIL GUARDS.
12. PROVIDE 120V CONTROL POWER TRANSFORMER AND UNIT MOUNTED, POWERED GFCI RECEPTACLE.
13. PROVIDE UNIT MOUNTED NON-FUSED MULTI-DISCONNECT SWITCH.
14. PROVIDE SINGLE POINT CONNECTION.
15. PROVIDE VARIABLE SPEED DRIVES FOR ALL COMPRESSOR AND CONDENSER FAN MOTORS.
16. PROVIDE MIN. 65kA SCCR RATING.
17. PROVIDE VIBRATION DAMPERS BETWEEN EQUIPMENT AND SUPPORTING STRUCTURE, KINETICS KIP PAD OR APPROVED EQUAL.
18. TYPICAL OF ALL AIR-COOLED CHILLERS. SCHEDULE ABBREVIATED FOR CLARITY.
19. PROVIDE 1 YEAR PARTS AND LABOR WARRANTY STARTING AFTER TESTING AND OWNER ACCEPTANCE.
20. OWNER WILL REQUEST A SEPARATE MAINTENANCE CONTRACT DURING BIDDING PHASE. COORDINATE WITH OWNER.
21. INCLUDE FACTORY ACCEPTANCE TESTING.
22. EQUIPMENT TO BE OWNER PROVIDED, CONTRACTOR INSTALLED.

MARK	TYPE	REF. TYPE	NAMEPLATE TONNAGE	NOMINAL TONNAGE	EER (Btu/Wh)	IPLV EER (Btu/Wh)	EVAPORATOR					CONDENSER					ELECTRICAL DATA					WEIGHT (LBS)	SOUND POWER LEVEL, DB	MANUFACTURER MAKE AND MODEL	REMARKS
							EVAP. FLUID TYPE	ENTERING WATER TEMP	LEAVING WATER TEMP	EVAPORATOR GPM	EVAPORATOR PRESSURE DROP, FT WG	SUMMER DESIGN D.B. (°F)	LOW AMBIENT AIR TEMP (°F)	HIGH AMBIENT AIR TEMP (°F)	CONDENSER FAN TOTAL AIRFLOW, CFM	TOTAL NUMBER OF FANS	V	PH	FREQ. (Hz)	MCA	MOCP				
CH-1	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-2	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-3	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-4	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-5	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-6	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-7	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-8	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-9	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-10	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-11	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22
CH-12 (FUTURE)	AIR COOLED VARIABLE SPEED DRIVE SCREW	R-134A	500	420	8.605	18.10	WATER, 30% PROPYLENE GLYCOL	56	42	763.3	17.6	105	0	125	301650	26	460	3	60	913 A	1200 A	29117	108	YORK YVAA	1 - 22

WATER TO WATER HEAT RECOVERY CHILLER SCHEDULE

OWNER PROVIDED
CONTRACTOR INSTALLED

OWNER PROVIDED
CONTRACTOR INSTALLED

1. COMPRESSORS SHALL BE DIRECT DRIVE SEMI-HERMITCALLY SEALED SCREW TYPE.
2. TWO PASS EVAPORATOR AND CONDENSER TUBE BUNDLES.
3. PROVIDE DIGITAL PROGRAMMABLE CONTROLLER WITH LCD TOUCHSCREEN ALLOWING ACCESS TO ALL OPERATIONAL INPUTS AND OUTPUTS.
4. PROVIDE FACTORY INSTALLED FLOW SWITCH.
5. PROVIDE FACTORY APPLIED 1" CLOSED CELL INSULATION ON ALL COLD PARTS.
6. PROVIDE WITH BACNET INTERFACE REMOTE COMMUNICATION OPTION.
7. EVAPORATOR TO BE AN ASME LISTED PRESSURE VESSEL WITH MINIMUM 235 PSIG REFRIGERANT PRESSURE RATING AND 150 PSIG WATER-SIDE PRESSURE RATING.
8. EVAPORATOR FOULING FACTOR = 0.000100
9. CONDENSER FOULING FACTOR = 0.000100
10. HEAT RECOVERY CHILLERS HOUSED IN A WEATHERPROOF ENCLOSURE AS MANUFACTURED BY CHIL-PAK, OR APPROVED EQUAL. ENCLOSURE BUILDING TO BE LARGE ENOUGH TO HOUSE ALL CHILLERS AND ASSOCIATED SUB-LOOP PUMPS.
11. PROVIDE 120V CONTROL POWER TRANSFORMER AND UNIT MOUNTED, POWERED GFCI RECEPTACLE.
12. PROVIDE UNIT MOUNTED NON-FUSED DISCONNECT SWITCH.
13. PROVIDE SINGLE POINT CONNECTION.
14. PROVIDE VARIABLE SPEED DRIVES FOR ALL COMPRESSOR MOTORS.
15. PROVIDE MIN. 65kA SCCR RATING.
16. PROVIDE VIBRATION DAMPERS BETWEEN EQUIPMENT AND SUPPORTING STRUCTURE, KINETICS KIP PAD OR APPROVED EQUAL.
17. TYPICAL OF ALL WATER TO WATER HEAT RECOVERY CHILLERS. SCHEDULE ABBREVIATED FOR CLARITY.
18. PROVIDE 1 YEAR WARRANTY STARTING AFTER TESTING AND OWNER ACCEPTANCE, WARRANTY TO INCLUDE PARTS AND LABOR.
19. OWNER WILL REQUEST A SEPARATE MAINTENANCE CONTRACT DURING BIDDING PHASE. COORDINATE WITH OWNER.
20. INCLUDE FACTORY ACCEPTANCE TESTING.
21. EQUIPMENT TO BE OWNER PROVIDED, CONTRACTOR INSTALLED.

MARK	TYPE	REF. TYPE	NAMEPLATE TONNAGE	NET COOLING CAPACITY (TONS)	NET HEATING CAPACITY (MBH)	HEATING COP (kW/kW)	COMBINED COP (kW/kW)	EVAPORATOR					CONDENSER					ELECTRICAL DATA					SOUND POWER LEVEL, DB	MANUFACTURER MAKE AND MODEL	REMARKS
								EVAP. WORKING FLUID TYPE	EVAPORATOR WATER ENT. °F	EVAPORATOR WATER LVG. °F	EVAPORATOR WATER GPM	EVAPORATOR PRESSURE DROP, FT WG	COND. WORKING FLUID TYPE	CONDENSER WATER ENT. °F	CONDENSER WATER LVG. °F	CONDENSER WATER GPM	CONDENSER WATER PRESSURE DROP, FT WG	V	PH	FREQ. (Hz)	MCA	MOCP			
HRCH-1	WATER TO WATER VARIABLE SPEED DRIVE SCREW	R-134A	300	272.6	4143	4.750	8.5	30% PROPYLENE GLYCOL	56	46.9	763.2	43.6	WATER	95	115	417	10.6	460	3	60	419 A	500 A	89	YORK YVWA	1 - 21
HRCH-2	WATER TO WATER VARIABLE SPEED DRIVE SCREW	R-134A	300	272.6	4143	4.750	8.5	30% PROPYLENE GLYCOL	56	46.9	763.2	43.6	WATER	95	115	417	10.6	460	3	60	419 A	500 A	89	YORK YVWA	1 - 21
HRCH-3	WATER TO WATER VARIABLE SPEED DRIVE SCREW	R-134A	300	272.6	4143	4.750	8.5	30% PROPYLENE GLYCOL	56	46.9	763.2	43.6	WATER	95	115	417	10.6	460	3	60	419 A	500 A	89	YORK YVWA	1 - 21
HRCH-4	WATER TO WATER VARIABLE SPEED DRIVE SCREW	R-134A	300	272.6	4143	4.750	8.5	30% PROPYLENE GLYCOL	56	46.9	763.2	43.6	WATER	95	115	417	10.6	460	3	60	419 A	500 A	89	YORK YVWA	1 - 21

PUMP SCHEDULE

OWNER PROVIDED
CONTRACTOR INSTALLED

OWNER PROVIDED
CONTRACTOR INSTALLED

1. OR APPROVED EQUAL.
2. VERTICAL IN LINE PUMP.
3. PROVIDE SAME MANUFACTURER SUCTION DIFFUSER TO MATCH PUMP.
4. PROVIDE WITH SAME MANUFACTURER STANCHION PUMP SUPPORT BRACKETS.
5. MOTOR SHALL BE NEMA PREMIUM EFFICIENCY, TEFC TYPE.
6. PROVIDE MIN. 65kA SCCR RATING FOR DRIVES OVER 60 AMPS.
7. PROVIDE VIBRATION ISOLATION VIA SPRING PUMP SUPPORTS, KINETICS PS OR APPROVED EQUAL.
8. PROVIDE MOTOR VFD WITH BYPASS SIZED FOR NON-OVERLOADING MOTOR HORSEPOWER, AS MANUFACTURED BY ABB, ALAN BRADLEY, DANFOSS, YASKAWA, OR APPROVED EQUAL.
9. PROVIDE 1 YEAR WARRANTY STARTING AFTER TESTING AND OWNER ACCEPTANCE, WARRANTY TO INCLUDE PARTS AND LABOR.
10. EQUIPMENT TO BE OWNER PROVIDED, CONTRACTOR INSTALLED.

MARK	SERVES	TYPE	GPM	TOTAL HEAD (FT. WG)	MOTOR HP	ELECTRICAL DATA			MANUFACTURER MAKE AND MODEL	REMARKS
						VOLTAGE	PHASE	FREQUENCY (Hz)		
CHP-1	PRIMARY CHILLED WATER LOOP	VERTICAL INLINE	1400	125	60	460	3	60	ARMSTRONG 4300	1 - 10
CHP-2	PRIMARY CHILLED WATER LOOP	VERTICAL INLINE	1400	125	60	460	3	60	ARMSTRONG 4300	1 - 10
CHP-3	PRIMARY CHILLED WATER LOOP	VERTICAL INLINE	1400	125	60	460	3	60	ARMSTRONG 4300	1 - 10
CHP-4	PRIMARY CHILLED WATER LOOP	VERTICAL INLINE	1400	125	60	460	3	60	ARMSTRONG 4300	1 - 10
CHP-5	PRIMARY CHILLED WATER LOOP	VERTICAL INLINE	1400	125	60	460	3	60	ARMSTRONG 4300	1 - 10
CHP-6	PRIMARY CHILLED WATER LOOP	VERTICAL INLINE	1400	125	60	460	3	60	ARMSTRONG 4300	1 - 10
CHP-7	PRIMARY CHILLED WATER LOOP	VERTICAL INLINE	1400	125	60	460	3	60	ARMSTRONG 4300	1 - 10
HRCHP-1	HEAT RECOVERY LOOP	VERTICAL INLINE	1000	60	25	460	3	60	ARMSTRONG 4300	1 - 10
HRCHP-2	HEAT RECOVERY LOOP	VERTICAL INLINE	1000	60	25	460	3	60	ARMSTRONG 4300	1 - 10
HRCHP-3	HEAT RECOVERY LOOP	VERTICAL INLINE	1000	60	25	460	3	60	ARMSTRONG 4300	1 - 10
HWP-1	PRIMARY HEATING WATER LOOP	VERTICAL INLINE	500	125	25	460	3	60	ARMSTRONG 4300	1 - 10
HWP-2	PRIMARY HEATING WATER LOOP	VERTICAL INLINE	500	125	25	460	3	60	ARMSTRONG 4300	1 - 10
HWP-3	PRIMARY HEATING WATER LOOP	VERTICAL INLINE	500	125	25	460	3	60	ARMSTRONG 4300	1 - 10

PIPE MATERIALS SCHEDULE

SCHEDULE NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. PIPE TYPES ARE LISTED IN ORDER OF PREFERRED USE. EXAMPLE: PIPE 1 THICKNESS PIPE 1 MATERIAL; PIPE 2 THICKNESS PIPE 2 MATERIAL.
3. PIPE FITTINGS ARE LISTED IN ACCORDANCE WITH PIPE TYPES IN ORDER. DO NOT MIX FITTING TYPES.
4. REFRIGERANT PIPING INSULATION ABOVE GRADE SHALL BE EDPM MANUFACTURED BY AEROFLEX OR APPROVED EQUAL. PIPING INSULATION SHALL BE ASTM C 534 PREFORMED FLEXIBLE ELASTOMERIC CELLULAR THERMAL INSULATION WITH ASTM C 177 AND C 518 PERFORMANCE OF K = 0.23 BTU-in/hr-ft2-deg F (R-4.35 PER INCH) AT 32°F.
5. INSULATION AND JACKETING SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR IN FIELD.

SYSTEM TYPE	LOCATION	SIZE RANGE	PIPE TYPE	FITTING	INSULATION MATERIAL	INSULATION THICKNESS	JACKETING	HANGERS
CHILLED WATER PIPING	INDOORS	2" AND SMALLER	TYPE L COPPER; SCHEDULE 40 BLACK STEEL	BRAZED OR PRESS SEAL; THREADED, SOCKET WELDED, OR PRESS SEAL	FIBERGLASS	1"	ASJ IN MEZZANINE, 30 MIL PVC JACKET AT SUPPLY AND RETURN PIPING RISER SERVING...	CLEVIS HANGERS AND PIPE SHIELDS
		2-1/2" AND LARGER	SCHEDULE 40 BLACK STEEL	FLANGED OR WELDED	FIBERGLASS	1.5"	ASJ IN MEZZANINE, 30 MIL PVC JACKET AT SUPPLY AND RETURN PIPING RISER SERVING...	CLEVIS HANGERS AND PIPE SHIELDS
	OUTDOORS	2" AND SMALLER	TYPE L COPPER; SCHEDULE 40 BLACK STEEL	BRAZED OR PRESS SEAL; THREADED, SOCKET WELDED, OR PRESS SEAL	FIBERGLASS	1"	ALUMINUM EXTERIOR JACKET	PIPE STANCHIONS WITH SADDLES AND PIPE SHIELDS
		2-1/2" AND LARGER	SCHEDULE 40 BLACK STEEL	FLANGED OR WELDED	FIBERGLASS	2"	ALUMINUM EXTERIOR JACKET	PIPE STANCHIONS WITH SADDLES AND PIPE SHIELDS
	OUTDOORS	UNDERGROUND CHILLER YARD	SDR11 HDPE	FUSION BUTT WELDED	POLYURETHANE FOAM K-0.16	2"	HDPE JACKET	NOT APPLICABLE
HOT WATER PIPING	INDOORS	2" AND SMALLER	TYPE L COPPER; SCHEDULE 40 BLACK STEEL	BRAZED OR PRESS SEAL; THREADED, SOCKET WELDED, OR PRESS SEAL	FIBERGLASS	1.5" FOR ≤1-1/4", 2" FOR ≥1-1/2"	ASJ IN MEZZANINE, 30 MIL PVC JACKET AT SUPPLY AND RETURN PIPING RISER SERVING...	ROLLER HANGERS AND PIPE SADDLES
		2-1/2" AND LARGER	SCHEDULE 40 BLACK STEEL	FLANGED OR WELDED	FIBERGLASS	2"	ASJ IN MEZZANINE, 30 MIL PVC JACKET AT SUPPLY AND RETURN PIPING RISER SERVING...	ROLLER HANGERS AND PIPE SADDLES
	OUTDOORS	2" AND SMALLER	TYPE L COPPER; SCHEDULE 40 BLACK STEEL	BRAZED OR PRESS SEAL; THREADED, SOCKET WELDED, OR PRESS SEAL	FIBERGLASS	1.5" FOR ≤1-1/4", 2" FOR ≥1-1/2"	ALUMINUM EXTERIOR JACKET	PIPE STANCHIONS WITH SADDLES AND PIPE SHIELDS
		2-1/2" AND LARGER	SCHEDULE 40 BLACK STEEL	FLANGED OR WELDED	FIBERGLASS	2"	ALUMINUM EXTERIOR JACKET	PIPE STANCHIONS WITH SADDLES AND PIPE SHIELDS
REFRIGERANT PIPING	INDOORS	2" AND SMALLER	TYPE M COPPER OR TYPE ACR COPPER	BRAZED OR PRESS SEAL	CLOSED CELL EDPM	1" (COMPLY WITH MANUFACTURER'S RECOMMENDATION)	30 MIL PVC JACKET	CLEVIS HANGERS AND PIPE SHIELDS
	OUTDOORS	2" AND SMALLER	TYPE M COPPER OR TYPE ACR COPPER	BRAZED OR PRESS SEAL	CLOSED CELL EDPM	1" (COMPLY WITH MANUFACTURER'S RECOMMENDATION)	ALUMINUM EXTERIOR JACKET	ROOF BLOCK STANCHIONS

AIR DIRT SEPARATOR SCHEDULE

1. OR APPROVED EQUAL.
2. DRY WEIGHT IS LISTED.
3. PROVIDE WITH REMOVABLE LOWER HEAD FOR INSPECTION AND CLEANING.
4. ASME SECTION VIII DIV. 1 RATED PRESSURE VESSEL, 150 PSI @ 240°F.

MARK	SERVES	PIPE SIZE IN.	DESIGN GPM	PRESSURE DROP, FT.W.C.	WEIGHT (LBS)	MANUFACTURER MAKE AND MODEL	REMARKS
ADS-1	CHILLED WATER	26	8400	3.23	7200	TACO 4900 ADR	1 - 4
ADS-2	HVAC HEATING WATER	10	1400	4.41	1155	TACO 4900 ADR	1 - 4

BUFFER TANK SCHEDULE

1. OR APPROVED EQUAL.
2. ASME SECTION VIII DIV. 1 WELDED HORIZONTAL CARBON STEEL HEATING WATER TANK.
3. PROVIDE EXTERIOR INSULATION GREATER OR EQUAL TO R-28. (TYPICALLY 4 INCH)
4. PROVIDE WITH 10" TANK INLET AND OUTLET ASME 125 FLANGED CONNECTIONS.

MARK	SERVES	TYPE	MIN. TANK VOLUME (GAL)	DRY WEIGHT (LBS)	EST. WET WEIGHT (LBS)	MANUFACTURER MAKE AND MODEL	REMARKS
BT-1	HVAC HEATING WATER	HORIZONTAL	10,000	11314	94615	HANSON TANK	1,2,3,4

EXPANSION TANK SCHEDULE

1. OR APPROVED EQUAL.
2. WATER FILLED WEIGHT IS LISTED.
3. GROUND MOUNTED EXPANSION TANK.
4. ASME SECTION VIII DIV. 1 RATED PRESSURE VESSEL,150 PSI @ 240°F.

MARK	SERVES	TYPE	MIN. TANK VOLUME (GAL)	EST WET WEIGHT (LBS)	MANUFACTURER MAKE AND MODEL	REMARKS
ET-1	CHILLED WATER	BLADDER	1500	2000	TACO CA	1,2,3,4
ET-2	HVAC HEATING WATER	BLADDER	475	690	TACO CA	1,2,3,4

PROJECT EAGLE

15200 HERITAGE PKWY
FORT WORTH, TX 76177

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Seal / Signature

△	Date	Description
1	04/18/2025	SD PACKAGE 1
5	05/07/2025	SD PACKAGE 5
A	05/08/2025	REVISION A
B	05/23/2025	REVISION B

Project Name
PROJECT EAGLE 1

Project Number
096.4153.002

Description
MECHANICAL SCHEDULES

Scale

M0.002

OWNER PROVIDED
CONTRACTOR INSTALLED

CLEAN ROOM HYDRONIC AIR HANDLING UNIT WITH HOT WATER HEAT SCHEDULE

OWNER PROVIDED
CONTRACTOR INSTALLED

1. EXTERNAL STATIC PRESSURE ("WG") INCLUDES DUCTWORK, BALANCING DAMPERS AND AIR DEVICES ONLY
2. CAPACITIES LISTED ARE NET FROM UNIT DISCHARGE. UNITS SHALL PERFORM TO LISTED CAPACITIES. UNIT PERFORMANCE MUST SATISFY BOTH SENSIBLE AND LATENT CAPACITY REQUIREMENTS.
3. TEMTROL IS THE BASIS FOR DESIGN. ALTERNATE MANUFACTURER'S SHALL MEET EQUIVALENT SPECIFICATIONS AND ARE SUBJECT TO PRIOR APPROVAL. CONTRACTOR IS RESPONSIBLE FOR VARIATIONS IN FIT AND ELECTRICAL SERVICE. ANY SUBSTITUTIONS SHALL MEET FOOTPRINT DIMENSIONS OF SPECIFIED EQUIPMENT. UNIT SUBSTITUTION DIFFERENTIAL WEIGHT NOT TO EXCEED 10%.
4. PROVIDE AIR HANDLER WITH FACTORY SUPPLIED NON-FUSED DISCONNECT.
5. SEPARATE 120V WIRING FROM ELECTRICAL CONTRACTOR REQUIRED FOR CABINET LIGHTS, CONVENIENCE OUTLET, AND ACTUATOR CONTROLS.
6. UNIT SHALL BE INSTALLED ON STEEL PLATFORM, COORDINATE WITH STRUCTURAL.
7. PROVIDE 1 YEAR PARTS AND LABOR WARRANTY. WARRANTY PERIOD WOULD BEGIN AFTER TESTING AND ACCEPTANCE BY OWNER.
8. PROVIDE DOUBLE WALL CONSTRUCTION.
9. PROVIDE SINGLE POINT ELECTRICAL CONNECTION.
10. PROVIDE WITH SUPPLY AND RETURN DUCT SMOKE DETECTOR INTERLOCKED TO SUPPLY FAN AS REQUIRED BY CODE.
11. PROVIDE NEOPRENE VIBRATION ISOLATION SUPPORTS FOR MEZZANINE MOUNTED EQUIPMENT.
12. PROVIDE 1% AIR LEAKAGE @ +/-8" W.G. WITH L/240 DEFLECTION IN ACCORDANCE WITH AHRI 1350.
13. PROVIDE WITH 2" MERV 8 FILTER AND 4" MERV 14 FILTER IN SERIES UPSTREAM OF SUPPLY FAN. DRAW THRU CONFIGURATION.
14. HYDRONIC CONTROL VALVES SHALL BE 2-WAY PRESSURE INDEPENDENT CONTROL VALVES, BELIMO MODEL EPIV OR APPROVED EQUIVALENT. PROVIDE WITH 24V POWER, ELECTRONIC FAIL-SAFE: NORMALY CLOSED/ FAIL CLOSED.
15. PROVIDE WITH CONTROLS TERMINAL STRIP. CONTROLS CONTRACTOR TO INSTALL DDC CONTROLLER AND LOW VOLTAGE WIRING EXTERNAL TO CABINET.
16. PROVIDE STAINLESS STEEL CONDENSATE DRAIN PAN AND STAINLESS STEEL COIL CASING FOR CHILLED WATER COIL.
17. FILTER PRESSURE DROP TO BE ASSUMED AS DIRTY FOR STATIC PRESSURE DROP CALCULATIONS.
18. PROVIDE FAN ARRAY FOR AIR HANDLING UNIT WITH COPLANAR SILENCERS, BACKDRAFT DAMPERS AND EC MOTORS. REFER TO SCHEDULE FOR QUANTITY.
19. PROVIDE ATTIC STOCK FOR THE OWNER IN THE FOLLOWING QUANTITIES FOR THE PROJECT: (2) FANS FOR EVERY FAN MOTOR SIZE.
20. UNIT EQUIPPED WITH RETURN AIR DAMPER, MINIMUM OA DAMPER, AND OA DAMPER ALL WITH POWERED ACTUATORS. SEE SCHEDULE FOR QUANTITY AND VOLTAGE.
21. UNITS WITH OUTSIDE AIR SCHEDULED ARE PROVIDED WITH PRE-CONDITIONED OUTSIDE AIR FROM A DOAS UNIT.
22. UNIT DOES NOT CONTAIN A HEATING COIL.
23. PROVIDE 8" BASE RAIL.

MARK	ARRANGEMENT	DISCHARGE	SUPPLY FAN							ELECTRICAL							
			UNIT CFM	O/A CFM	FAN EXT. S.P.	FAN MOTOR KW	NO. OF FANS	DRIVE TYPE	TOTAL KW	V	PH	CIRCUIT 1 MCA	CIRCUIT 1 MOCP	SCCR (kA)	120V CONVENIENCE OUTLET (Y/N)	ACTUATOR VOLTAGE	ACTUATOR QUANITTY
AHU-CR1	HORIZONTAL	DOWNFLOW	50000	5365	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR2	HORIZONTAL	DOWNFLOW	35000	1425	1.2	3.5	9	ECMI	31.5	460	3	48.0	60	65	Y	120V	3
AHU-CR3	HORIZONTAL	DOWNFLOW	50000	5365	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR4	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR5	HORIZONTAL	DOWNFLOW	50000	5365	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR6	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR7	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR8	HORIZONTAL	DOWNFLOW	50000	5365	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR9	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR10	HORIZONTAL	DOWNFLOW	50000	5365	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR11	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR12	HORIZONTAL	DOWNFLOW	50000	2620	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR13	HORIZONTAL	DOWNFLOW	35000	2450	1.2	3.5	9	ECMI	31.5	460	3	48.0	60	65	Y	120V	3
AHU-CR14	HORIZONTAL	DOWNFLOW	35000	2455	1.2	3.5	9	ECMI	31.5	460	3	48.0	60	65	Y	120V	3
AHU-CR15	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR16	HORIZONTAL	DOWNFLOW	50000	2180	1.2	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR17	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR18	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3
AHU-CR19	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	9	ECMI	31.5	460	3	48.0	60	65	Y	120V	3
AHU-CR20	HORIZONTAL	DOWNFLOW	35000	1425	1.2	3.5	9	ECMI	31.5	460	3	48.0	60	65	Y	120V	3
AHU-CR21	HORIZONTAL	DOWNFLOW	50000	2620	0.8	3.5	9	ECMI	31.5	460	3	48.0	60	65	Y	120V	3
AHU-CR22	HORIZONTAL	DOWNFLOW	50000	0	0.8	3.5	12	ECMI	42	460	3	62.0	80	65	Y	120V	3

MARK	HOT WATER REHEAT COIL							CHILLED WATER COOLING (CHILLED WATER COIL 1)											CONTROLS			CABINET		WEIGHT	MANUFACTURER MAKE AND MODEL	REMARKS
	FLUID	EWT	LWT	GPM	MAX PD FT WG	WINTER EAT D.B.	WINTER LAT D.B.	EWT	LWT	FLUID	COOLING SENS CAP (MBH)	COOLING TOTAL CAP (MBH)	ENTERING D.B.	ENTERING W.B.	LEAVING D.B.	LEAVING WB	CHILLED WATER GPM	CHILLED WATER WPD, FT	24HR/7DAY PROG. T-STAT	HUMIDISTAT	DDC	MATERIAL	R-VALUE			
AHU-CR1	WATER	110	90	107	5.9	52.4	72	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26909	TEMTROL ITF	1-23
AHU-CR2	WATER	110	90	80	9.4	52.4	73.4	44	58	30% GLYC	762.6	797.4	72	60	52.2	51.7	120.6	16.7		X	X	GALV.	R13	18435	TEMTROL ITF	1-23
AHU-CR3	WATER	110	90	107	5.9	52.4	72	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26909	TEMTROL ITF	1-23
AHU-CR4	WATER	110	90	119	7.16	52.4	74.3	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26421	TEMTROL ITF	1-23
AHU-CR5		0	0	0	0	0	0	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26909	TEMTROL ITF	1-23
AHU-CR6	WATER	110	90	119	7.16	52.4	74.3	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26421	TEMTROL ITF	1-20, 23
AHU-CR7		0	0	0	0	0	0	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.9		X	X	GALV.	R13	26421	TEMTROL ITF	1-20,22-23
AHU-CR8		0	0	0	0	0	0	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26909	TEMTROL ITF	1-23
AHU-CR9		0	0	0	0	0	0	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26421	TEMTROL ITF	1-23
AHU-CR10		0	0	0	0	0	0	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26909	TEMTROL ITF	1-23
AHU-CR11		0	0	0	0	0	0	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26421	TEMTROL ITF	1-20,22-23
AHU-CR12	WATER	110	90	119	7.16	52.4	74.3	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26421	TEMTROL ITF	1-20,23
AHU-CR13	WATER	110	90	80	9.4	52.4	73.4	44	58	30% GLYC	762.6	797.4	72	60	52.2	51.7	120.6	16.7		X	X	GALV.	R13	18435	TEMTROL ITF	1-21,23
AHU-CR14	WATER	110	90	80	9.4	52.4	73.4	44	58	30% GLYC	762.6	797.4	72	60	52.2	51.7	120.6	16.7		X	X	GALV.	R13	18435	TEMTROL ITF	1-21,23
AHU-CR15	WATER	110	90	119	7.16	52.4	74.3	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26421	TEMTROL ITF	1-20, 23
AHU-CR16	WATER	110	90	119	7.16	52.4	74.3	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26396	TEMTROL ITF	1-21,23
AHU-CR17	WATER	110	90	102	7.16	52.4	74.3	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26421	TEMTROL ITF	1-20, 23
AHU-CR18	WATER	110	90	102	7.16	52.4	74.3	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26421	TEMTROL ITF	1-20, 23
AHU-CR19	WATER	110	90	119	7.16	52.4	74.3	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	25444	TEMTROL ITF	1-20, 23
AHU-CR20	WATER	110	90	80	9.4	52.4	73.4	44	58	30% GLYC	762.6	797.4	72	60	52.2	51.7	120.6	16.7		X	X	GALV.	R13	18435	TEMTROL ITF	1-21, 23
AHU-CR21	WATER	110	90	119	7.16	52.4	74.3	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	25444	TEMTROL ITF	1-21, 23
AHU-CR22		0	0	0	0	0	0	44	58	30% GLYC	1075.1	1107.8	72	60	52.5	52.0	167.4	11.3		X	X	GALV.	R13	26421	TEMTROL ITF	1-20, 23

OWNER PROVIDED
CONTRACTOR INSTALLED

HYDRONIC DOAS UNIT WITH HOT WATER HEAT AND ENERGY RECOVERY SCHEDULE - PART 1

OWNER PROVIDED
CONTRACTOR INSTALLED

1. EXTERNAL STATIC PRESSURE ("WG") INCLUDES DUCTWORK, BALANCING DAMPERS AND AIR DEVICES ONLY
2. CAPACITIES LISTED ARE NET FROM UNIT DISCHARGE. UNITS SHALL PERFORM TO LISTED CAPACITIES. UNIT PERFORMANCE MUST SATISFY BOTH SENSIBLE AND LATENT CAPACITY REQUIREMENTS.
3. TEMTROL IS THE BASIS FOR DESIGN. ALTERNATE MANUFACTURER'S SHALL MEET EQUIVALENT SPECIFICATIONS AND ARE SUBJECT TO PRIOR APPROVAL. CONTRACTOR IS RESPONSIBLE FOR VARIATIONS IN FIT AND ELECTRICAL SERVICE. ANY SUBSTITUTIONS SHALL MEET FOOTPRINT DIMENSIONS OF SPECIFIED EQUIPMENT. UNIT SUBSTITUTION DIFFERENTIAL WEIGHT NOT TO EXCEED 10%.
4. PROVIDE AIR HANDLER WITH FACTORY SUPPLIED NON-FUSED DISCONNECT.
5. SEPARATE 120V WIRING FROM ELECTRICAL CONTRACTOR REQUIRED FOR CABINET LIGHTS, CONVENIENCE OUTLET, AND ACTUATOR CONTROLS.
6. UNIT SHALL BE INSTALLED ON STEEL PLATFORM, COORDINATE WITH STRUCTURAL.
7. PROVIDE ATTIC STOCK FOR THE OWNER IN THE FOLLOWING QUANTITIES FOR THE PROJECT: (2) FANS FOR EVERY FAN MOTOR SIZE.
8. PROVIDE DOUBLE WALL CONSTRUCTION.
9. PROVIDE SINGLE POINT ELECTRICAL CONNECTION (INCLUDES ENERGY WHEEL).
10. PROVIDE WITH SUPPLY AND EXHAUST SMOKE DETECTOR INTERLOCKED TO SUPPLY FAN AS REQUIRED BY CODE.
11. PROVIDE NEOPRENE VIBRATION ISOLATION SUPPORTS FOR FLOOR OR MEZZANINE MOUNTED EQUIPMENT.
12. PROVIDE WITH FILTER ON THE EXHAUST AIRSTREAM BEFORE THE ENERGY WHEEL.
13. PROVIDE WITH CONTROLS TERMINAL STRIP. CONTROLS CONTRACTOR TO INSTALL DDC CONTROLLER AND LOW VOLTAGE WIRING EXTERNAL TO CABINET.
14. PROVIDE WITH 2" MERV 8 FILTER AND 4" MERV 14 FILTER IN SERIES UPSTREAM OF SUPPLY FAN. DRAW THRU CONFIGURATION. PROVIDE HEPA FINAL FILTER.
15. HYDRONIC CONTROL VALVES SHALL BE 2-WAY PRESSURE INDEPENDENT CONTROL VALVES, BELIMO MODEL EPIV OR APPROVED EQUIVALENT. PROVIDE WITH 24V POWER, ELECTRONIC FAIL-SAFE: NORMALY CLOSED/ FAIL CLOSED.
16. PROVIDE 1 YEAR PARTS AND LABOR WARRANTY. WARRANTY PERIOD WOULD BEGIN AFTER TESTING AND ACCEPTANCE BY OWNER.
17. PROVIDE STAINLESS STEEL CONDENSATE DRAIN PAN AND STAIN STEEL COIL CASING FOR CHILLED WATER COIL.
18. FILTER PRESSURE DROP TO BE ASSUMED AS DIRTY FOR STATIC PRESSURE DROP CALCULATIONS.
19. PROVIDE WITH SPRING ISOLATED BASE RAIL FOR FANS AND MOTORS.
20. PROVIDE FAN ARRAY FOR AIR HANDLING UNIT WITH COPLANAR SILENCERS, BACKDRAFT DAMPERS AND EC MOTORS. REFER TO SCHEDULE FOR QUANTITY.
21. PROVIDE 1% AIR LEAKAGE @ +/-8" W.G. WITH L/240 DEFLECTION IN ACCORDANCE WITH AHRI 1350.
22. FOR EVAPORATIVE MEDIA HUMIDIFIER, PROVIDE WITH DRAIN WATER COOLER STEAM DISTRIBUTION SYSTEM AND STEAM DISTRIBUTION HOSE. SYSTEM UTILIZES RO/DI WATER SERVED FROM THE PLANT.
23. PROVIDE 8" BASE RAIL.

MARK	ARRANGEMENT	DISCHARGE	SUPPLY FAN							ELECTRICAL						ACTUATOR VOLTAGE	ACTUATOR QTY
			UNIT CFM	O/A CFM	FAN EXT. S.P.	FAN MOTOR KW	NO. OF FANS	TOTAL FAN KW	DRIVE TYPE	V	PH	CIRCUIT 1 MCA	CIRCUIT 1 MOCP	SCCR (kA)	120V CONVENIENCE OUTLET (Y/N)		
DOAS-CR1	HORIZONTAL	HORIZONTAL	10500	10500	1	2.4	4	9.6	ECMI	460	3	19.0	25	65	Y	120V	1
DOAS-CR2	HORIZONTAL	HORIZONTAL	10500	10500	1	2.4	4	9.6	ECMI	460	3	19.0	25	65	Y	120V	1
DOAS-CR3	HORIZONTAL	HORIZONTAL	10500	10500	1	2.4	4	9.6	ECMI	460	3	19.0	25	65	Y	120V	1
DOAS-CR4	HORIZONTAL	HORIZONTAL	10500	10500	1	2.4	4	9.6	ECMI	460	3	19.0	25	65	Y	120V	1

MARK	HOT WATER HEATING													
	FLUID	HOT WATER PREHEAT COIL: WINTER DESIGN D.B.	WINTER LAT D.B.	HEATING OUTPUT (MBH)	ENTERING HOT WATER TEMP	LEAVING HOT WATER TEMP	GPM	HEATING MAX. PD FT WG	HOT WATER REHEAT COIL: ENTERING WATER TEMP	LEAVING WATER TEMP	GPM	MAX PD FT WG	WINTER EAT DB	WINTER LAT D.B.
DOAS-CR1	WATER	14.5	52.3	479	110	90	48.2	4.93	110	90	26	9.87	52.3	73.9
DOAS-CR2	WATER	14.5	52.3	479	110	90	48.2	4.93	110	90	26	9.87	52.3	73.9
DOAS-CR3	WATER	14.5	52.3	479	110	90	48.2	4.93	110	90	26	9.87	52.3	73.9
DOAS-CR4	WATER	14.5	52.3	479	110	90	48.2	4.93	110	90	26	9.87	52.3	73.9

MARK	CHILLED WATER COOLING																							
	SUMMER DEHUM DESIGN D.B.	SUMMER DEHUM DESIGN W.B.	EWT	LWT	FLUID	CHILLED WATER COIL 1: COOLING SENS CAP (MBH)	COOLING TOTAL CAP (MBH)	ENTERING D.B.	ENTERING W.B.	LEAVING D.B.	CHILLED WATER GPM	CHILLED WATER WPD, FT	CHILLED WATER COIL 2: COOLING TOTAL CAP (MBH)	COOLING SENS CAP (MBH)	ENTERING D.B.	ENTERING W.B.	LEAVING D.B.	LEAVING W.B.	CHILLED WATER GPM	CHILLED WATER WPD, FT	EWT	LWT		
DOAS-CR1	83.5	77.2	44	58	30% GLYC	305.6	749.9	83.5	77.2	56.4	113.3	14.5	235.6	100.2	56.4	56.4	48.0	48.0	123.9	16.8	44	48		
DOAS-CR2	83.5	77.2	44	58	30% GLYC	305.6	749.9	83.5	77.2	56.4	113.3	14.5	235.6	100.2	56.4	56.4	48.0	48.0	123.9	16.8	44	48		
DOAS-CR3	83.5	77.2	44	58	30% GLYC	305.6	749.9	83.5	77.2	56.4	113.3	14.5	235.6	100.2	56.4	56.4	48.0	48.0	123.9	16.8	44	48		
DOAS-CR4	83.5	77.2	44	58	30% GLYC	305.6	749.9	83.5	77.2	56.4	113.3	14.5	235.6	100.2	56.4	56.4	48.0	48.0	123.9	16.8	44	48		

OWNER PROVIDED
CONTRACTOR INSTALLED

HYDRONIC DOAS UNIT WITH HOT WATER HEAT AND ENERGY RECOVERY SCHEDULE - PART 2

OWNER PROVIDED
CONTRACTOR INSTALLED

REFER TO REMARKS SHOWN ON SCHEDULE ABOVE.

MARK	HUMIDIFIER					CABINET		WEIGHT (LBS)	CONTROLS			MANUFACTURER MAKE AND MODEL	REMARKS
	HUMIDIFICATION CAP. LBS/HR	HUMIDIFIER TYPE	EAT D.B.	ENTERING RH	LAT D.B.	MATERIAL	R-VALUE		24HR/7 DAY PROG. T-STAT	HUMIDISTAT	DDC		
DOAS-CR1	307	EVAPORATIVE MEDIA	60	20	50	GALV.	R13	17356		X	X	TEMTROL ITF	1-23
DOAS-CR2	307	EVAPORATIVE MEDIA	60	20	50	GALV.	R13	17356		X	X	TEMTROL ITF	1-23
DOAS-CR3	307	EVAPORATIVE MEDIA	60	20	50	GALV.	R13	17356		X	X	TEMTROL ITF	1-23
DOAS-CR4	307	EVAPORATIVE MEDIA	60	20	50	GALV.	R13	17356		X	X	TEMTROL ITF	1-23

OWNER PROVIDED
CONTRACTOR INSTALLED

HYDRONIC AIR HANDLING UNIT WITH HOT WATER HEAT SCHEDULE

OWNER PROVIDED
CONTRACTOR INSTALLED

1. EXTERNAL STATIC PRESSURE ("WG") INCLUDES DUCTWORK, BALANCING DAMPERS AND AIR DEVICES ONLY
2. CAPACITIES LISTED ARE NET FROM UNIT DISCHARGE. UNITS SHALL PERFORM TO LISTED CAPACITIES. UNIT PERFORMANCE MUST SATISFY BOTH SENSIBLE AND LATENT CAPACITY REQUIREMENTS.
3. TEMTROL IS THE BASIS FOR DESIGN. ALTERNATE MANUFACTURER'S SHALL MEET EQUIVALENT SPECIFICATIONS AND ARE SUBJECT TO PRIOR APPROVAL. CONTRACTOR IS RESPONSIBLE FOR VARIATIONS IN FIT AND ELECTRICAL SERVICE. ANY SUBSTITUTIONS SHALL MEET FOOTPRINT DIMENSIONS OF SPECIFIED EQUIPMENT. UNIT SUBSTITUTION DIFFERENTIAL WEIGHT NOT TO EXCEED 10%.
4. PROVIDE AIR HANDLER WITH FACTORY SUPPLIED NON-FUSED DISCONNECT.
5. SEPARATE 120V WIRING FROM ELECTRICAL CONTRACTOR REQUIRED FOR CABINET LIGHTS, CONVENIENCE OUTLET, AND ACTUATOR CONTROLS.
6. UNIT SHALL BE INSTALLED ON STEEL PLATFORM, COORDINATE WITH STRUCTURAL.
7. PROVIDE 1 YEAR PARTS AND LABOR WARRANTY. WARRANTY PERIOD WOULD BEGIN AFTER TESTING AND ACCEPTANCE BY OWNER.
8. PROVIDE DOUBLE WALL CONSTRUCTION.
9. PROVIDE SINGLE POINT ELECTRICAL CONNECTION (INCLUDES ENERGY WHEEL).
10. PROVIDE WITH SMOKE DETECTOR INTERLOCKED TO SUPPLY FAN AS REQUIRED BY CODE.
11. PROVIDE NEOPRENE VIBRATION ISOLATION SUPPORTS FOR FLOOR OR MEZZANINE MOUNTED EQUIPMENT.
12. PROVIDE 1% AIR LEAKAGE @ +/-8" W.G. WITH L/240 DEFLECTION IN ACCORDANCE WITH AHRI 1350.
13. PROVIDE MIN. 65kAIC AND 65kA SCCR RATING FOR DRIVES OVER 100 AMPS.
14. PROVIDE WITH 2" MERV 8 PRE FILTER AND 4" MERV 13 FINAL FILTER.
15. HYDRONIC CONTROL VALVES SHALL BE 2-WAY PRESSURE INDEPENDENT CONTROL VALVES, BELIMO MODEL EPIV OR APPROVED EQUIVALENT. PROVIDE WITH 24V POWER, ELECTRONIC FAIL-SAFE: NORMALY CLOSED/ FAIL CLOSED.
16. PROVIDE 4" MERV 10 FILTER.
17. PROVIDE STAINLESS STEEL CONDENSATE DRAIN PAN AND STAIN STEEL COIL CASING FOR CHILLED WATER COIL.
18. FILTER PRESSURE DROP TO BE ASSUMED AS DIRTY FOR STATIC PRESSURE DROP CALCULATIONS.
19. PROVIDE WITH SPRING ISOLATED BASE RAIL FOR FANS AND MOTORS.
20. PROVIDE WITH NEW NIAGARA DDC SYSTEM CONTROLLER.
21. PROVIDE WITH CONTROLS TERMINAL STRIP. CONTROLS CONTRACTOR TO INSTALL DDC CONTROLLER AND LOW VOLTAGE WIRING EXTERNAL TO CABINET.
22. PROVIDE FAN ARRAY FOR AIR HANDLING UNIT WITH COPLANAR SILENCERS, BACKDRAFT DAMPERS AND EC MOTORS. REFER TO SCHEDULE FOR QUANTITY.
23. PROVIDE ATTIC STOCK FOR THE OWNER IN THE FOLLOWING QUANTITIES FOR THE PROJECT: (2) FANS FOR EVERY FAN MOTOR SIZE.
24. PROVIDE 8" BASE RAIL FOR UNIT.

MARK	ARRANGEMENT	DISCHARGE	SUPPLY FAN							ELECTRICAL					
			UNIT CFM	O/A CFM	FAN EXT. S.P.	FAN MOTOR KW	NO. OF FANS	DRIVE TYPE	TOTAL KW	V	PH	CIRCUIT 1 MCA	CIRCUIT 1 MOCP	SCCR (kA)	120V CONVENIENCE OUTLET (Y/N)
AHU-WH1	HORIZONTAL	DOWNFLOW	10000	1300	1	2.4	4	ECMI	9.6	460	3	19.0	25	65	Y
AHU-WH2	HORIZONTAL	DOWNFLOW	12000	1800	1	3.6	4	ECMI	14.4	460	3	25.0	30	65	Y
AHU-WH3	HORIZONTAL	HORIZONTAL	48000	300	1	3.5	12	ECMI	42	460	3	62.0	80	65	Y

MARK	HOT WATER PRE-HEAT								CHILLED WATER COOLING													
	FLUID	WINTER DESIGN D.B.	HEATING OUTPUT (MBH)	ENTERING D.B.	LEAVING D.B.	EWT	LWT	GPM	FLUID	SUMMER DESIGN D.B.	SUMMER DESIGN W.B.	EWT	LWT	CHILLED WATER COIL 1: COOLING SENS CAP (MBH)	COOLING TOTAL CAP (MBH)	ENTERING D.B.	ENTERING W.B.	LEAVING D.B.	LEAVING WB	CHILLED WATER GPM	CHILLED WATER WPD, FT	
AHU-WH1	WATER	14.5	270	60	85	110	90	27.0	30% GLYC	105	74.5	44	58	363.6	602.4	87.2	72.4	53	53.0	91.1	11.6	
AHU-WH2	WATER	14.5	324	60	85	110	90	32.4	30% GLYC	105	74.5	44	58	450.7	767.8	88.4	73.4	53	53.0	116.1	15	
AHU-WH3	WATER	14.5	518.4	60	70	110	90	51.8	30% GLYC	105	74.5	44	58	847.4	1243.3	86.1	70.1	53.1	53.1	177.6	15	

MARK	CONTROLS			CABINET		WEIGHT	MANUFACTURER MAKE AND MODEL	REMARKS
	24HR/7DAY PROG. T-STAT	HUMIDISTAT	DDC	MATERIAL	R-VALUE			
AHU-WH1		X	X	GALV.	R13	10728	TEMTROL ITF	1-24
AHU-WH2		X	X	GALV.	R13	11106	TEMTROL ITF	1-24
AHU-WH3		X	X	GALV.	R13	44000	TEMTROL ITF	1-13, 15-24

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SUMMIT CONSULTANTS, INC.

ENGINEER:
CHAD LEVERITT
LICENSE#: 102203
DATE: 05/23/2025

Seal / Signature

△	Date	Description
1	04/18/2025	SD PACKAGE 1
5	05/07/2025	SD PACKAGE 5
A	05/08/2025	REVISION A
B	05/23/2025	REVISION B

Project Name
PROJECT EAGLE 1

Project Number
096.4153.002

Description
MECHANICAL SCHEDULES

Scale

M0.003

MULIT-ZONE VAV HYDRONIC AIR HANDLING UNIT WITH HOT WATER HEAT SCHEDULE

1. EXTERNAL STATIC PRESSURE ("WG") INCLUDES DUCTWORK, BALANCING DAMPERS AND AIR DEVICES ONLY
2. CAPACITIES LISTED ARE NET FROM UNIT DISCHARGE. UNITS SHALL PERFORM TO LISTED CAPACITIES. UNIT PERFORMANCE MUST SATISFY BOTH SENSIBLE AND LATENT CAPACITY REQUIREMENTS.
3. TEMTROL IS THE BASIS FOR DESIGN. ALTERNATE MANUFACTURER'S SHALL MEET EQUIVALENT SPECIFICATIONS AND ARE SUBJECT TO PRIOR APPROVAL. CONTRACTOR IS RESPONSIBLE FOR VARIATIONS IN FIT AND ELECTRICAL SERVICE. ANY SUBSTITUTIONS SHALL MEET FOOTPRINT DIMENSIONS OF SPECIFIED EQUIPMENT. UNIT SUBSTITUTION DIFFERENTIAL WEIGHT NOT TO EXCEED 10%.
4. PROVIDE AIR HANDLER WITH FACTORY SUPPLIED NON-FUSED DISCONNECT.
5. SEPARATE 120V WIRING FROM ELECTRICAL CONTRACTOR REQUIRED FOR CABINET LIGHTS, CONVENIENCE OUTLET, AND ACTUATOR CONTROLS.
6. UNIT SHALL BE INSTALLED ON STEEL PLATFORM, COORDINATE WITH STRUCTURAL.
7. PROVIDE 1 YEAR PARTS AND LABOR WARRANTY. WARRANTY PERIOD WOULD BEGIN AFTER TESTING AND ACCEPTANCE BY OWNER.
8. PROVIDE DOUBLE WALL CONSTRUCTION.
9. PROVIDE SINGLE POINT ELECTRICAL CONNECTION (INCLUDES ENERGY WHEEL).
10. PROVIDE WITH SMOKE DETECTOR INTERLOCKED TO SUPPLY FAN AS REQUIRED BY CODE.
11. PROVIDE NEOPRENE VIBRATION ISOLATION SUPPORTS FOR FLOOR OR MEZZANINE MOUNTED EQUIPMENT.
12. PROVIDE 1% AIR LEAKAGE @ +/-8" W.G. WITH L/240 DEFLECTION IN ACCORDANCE WITH AHRI 1350.
13. PROVIDE MIN. 65kAIC AND 65kA SCCR RATING FOR DRIVES OVER 100 AMPS.
14. PROVIDE 8" BASE RAIL FOR UNIT.
15. HYDRONIC CONTROL VALVES SHALL BE 2-WAY PRESSURE INDEPENDENT CONTROL VALVES, BELIMO MODEL EPIV OR APPROVED EQUIVALENT. PROVIDE WITH 24V POWER, ELECTRONIC FAIL-SAFE: NORMALY CLOSED/ FAIL CLOSED.
16. PROVIDE 4" MERV 13 FILTER.
17. PROVIDE STAINLESS STEEL CONDENSATE DRAIN PAN AND STAIN STEEL COIL CASING FOR CHILLED WATER COIL.
18. FILTER PRESSURE DROP TO BE ASSUMED AS DIRTY FOR STATIC PRESSURE DROP CALCULATIONS.
19. PROVIDE WITH SPRING ISOLATED BASE RAIL FOR FANS AND MOTORS.
20. PROVIDE WITH NEW NIAGARA DDC SYSTEM CONTROLLER.
21. PROVIDE WITH CONTROLS TERMINAL STRIP. CONTROLS CONTRACTOR TO INSTALL DDC CONTROLLER AND LOW VOLTAGE WIRING EXTERNAL TO CABINET.
22. PROVIDE FAN ARRAY FOR AIR HANDLING UNIT WITH COPLANAR SILENCERS, BACKDRAFT DAMPERS AND EC MOTORS. REFER TO SCHEDULE FOR QUANTITY.
23. PROVIDE ATTIC STOCK FOR THE OWNER IN THE FOLLOWING QUANTITIES FOR THE PROJECT: (2) FANS FOR EVERY FAN MOTOR SIZE.

MARK	ARRANGEMENT	DISCHARGE	SUPPLY FAN						ELECTRICAL						HOT WATER PRE-HEAT										CHILLED WATER COOLING												CONTROLS			CABINET		WEIGHT	MANUFACTURER MAKE AND MODEL	REMARKS
										CIRCUIT 1		CIRCUIT 2														CHILLED WATER COIL 1																		
			UNIT CFM	O/A CFM	FAN EXT. S.P.	FAN MOTOR KW	NO. OF FANS	DRIVE TYPE	TOTAL KW	V	PH	MCA	MOCP	MCA	MOCP	SCCR (kA)	120V CONVENIENCE OUTLET (Y/N)	FLUID	WINTER DESIGN D.B.	HEATING OUTPUT (MBH)	ENTERING D.B.	LEAVING D.B.	EWT	LWT	GPM	TOTAL PREHEAT CAPACITY	FLUID	SUMMER DESIGN D.B.	SUMMER DESIGN W.B.	EWT	LWT	COOLING SENS CAP (MBH)	COOLING TOTAL CAP (MBH)	ENTERING D.B.	ENTERING W.B.	LEAVING D.B.	LEAVING WB	CHILLED WATER GPM	CHILLED WATER WPD, FT	COIL QTY	24HR/7DAY PROG. T-STAT	HUMIDISTAT	DDC	MATERIAL	R-VALUE			
AHU-O1	HORIZONTAL	DOWNFLOW	12000	2400	1.5	5	4	ECMI	20	460	3	25.0	30	0 A	0 A	65	Y	WATER	14.5	194.4	61.3	75	110	90	19.4	324	30% GLYC	105	74.5	44	58	450.7	767.8	80	67	53	53.0	116.1	15	1		X	X	GALV.	R13	11106	TEMTROL ITF	1-23
AHU-O2	HORIZONTAL	DOWNFLOW	12000	2400	1.5	5	4	ECMI	20	460	3	25.0	30	0 A	0 A	65	Y	WATER	14.5	194.4	61.3	75	110	90	19.4	324	30% GLYC	105	74.5	44	58	450.7	767.8	80	67	53	53.0	116.1	15	1		X	X	GALV.	R13	11106	TEMTROL ITF	1-23
AHU-O3	HORIZONTAL	DOWNFLOW	12000	2400	1.5	5	4	ECMI	20	460	3	25.0	30	0 A	0 A	65	Y	WATER	14.5	194.4	61.3	75	110	90	19.4	324	30% GLYC	105	74.5	44	58	450.7	767.8	80	67	53	53.0	116.1	15	1		X	X	GALV.	R13	11106	TEMTROL ITF	1-23
AHU-O4	HORIZONTAL	DOWNFLOW	12000	2400	1.5	5	4	ECMI	20	460	3	25.0	30	0 A	0 A	65	Y	WATER	14.5	194.4	61.3	75	110	90	19.4	324	30% GLYC	105	74.5	44	58	450.7	767.8	80	67	53	53.0	116.1	15	1		X	X	GALV.	R13	11106	TEMTROL ITF	1-23
AHU-O5	HORIZONTAL	DOWNFLOW	12000	2400	1.5	5	4	ECMI	20	460	3	25.0	30	0 A	0 A	65	Y	WATER	14.5	194.4	61.3	75	110	90	19.4	324	30% GLYC	105	74.5	44	58	450.7	767.8	80	67	53	53.0	116.1	15	1		X	X	GALV.	R13	11106	TEMTROL ITF	1-23
AHU-O6	HORIZONTAL	DOWNFLOW	12000	2400	1.5	5	4	ECMI	20	460	3	25.0	30	0 A	0 A	65	Y	WATER	14.5	194.4	61.3	75	110	90	19.4	324	30% GLYC	105	74.5	44	58	450.7	767.8	80	67	53	53.0	116.1	15	1		X	X	GALV.	R13	11106	TEMTROL ITF	1-23

HYDRONIC FAN COIL SCHEDULE

1. EXTERNAL STATIC PRESSURE ("WG") INCLUDES DUCTWORK, BALANCING DAMPERS AND AIR DEVICES ONLY. DOES NOT INCLUDE FILTER OR UNIT LOSSES.
2. AAON IS THE BASIS FOR DESIGN. ACCEPTABLE ALTERNATE MANUFACTURER'S ARE: ENVIRO-TEC, TRANE, JCI, CARRIER, AND YORK - NO EXCEPTIONS. CONTRACTOR IS RESPONSIBLE FOR VARIATIONS IN FIT AND ELECTRICAL SERVICE.
3. PROVIDE FILTER RACK, PLACE AND ORIENT FOR EASY FILTER ACCESS.
4. PROVIDE WITH SMOKE DETECTOR INTERLOCKED TO SUPPLY FAN AS REQUIRED BY CODE.
5. MIN. 6 ROW COOLING COIL.
6. PROVIDE AUXILIARY DRAIN PAN SYSTEM WITH FLOAT SWITCH INTERLOCKED WITH THE CONTROL CIRCUIT OF THE UNIT.
7. PROVIDE UNIT WITH COIL KIT PER DETAILS.
8. PROVIDE WITH VFD.
9. PROVIDE DEHUMIDIFICATION SEQUENCE FOR MODULATING REHEAT. REFER TO CONTROLS DRAWINGS FOR MORE INFORMATION.

MARK	ARRANGEMENT	UNIT CFM	O/A CFM	FAN EXT. S.P.	FAN ELEC DATA			REHEAT COIL						COOLING COIL							WEIGHT (LBS)	CONTROLS			MANUFACTURER MAKE AND MODEL	REMARKS
					SUPPLY FAN MOTOR HP	V	PH	WINTER EAT D.B.	WINTER LAT D.B.	HEATING CAP (MBH)	MODULATING (Y/N)	WATER		HEATING GPM	HEATING MAX. PD FT WG	COOLING SENS CAP (MBH)	COOLING TOTAL CAP (MBH)	WATER		COOLING GPM	COOLING MAX. PD FT WG		24HR/7DAY PROG. T-STAT	HUMIDISTAT	DDC		
												ENTERING HOT WATER TEMP	LEAVING HOT WATER TEMP					ENTERING WATER TEMP	LEAVING WATER TEMP								
FCU-1	HORIZONTAL	1400	150	0.6	3	115	1	72 °F	86	21.2	Y	110	90	2.2	8	40.8	48	44	58	7 GPM	12	650		X	X	AAON H3	1,2,3,4,5,6,7,8,9
FCU-2	HORIZONTAL	1400	150	0.6	3	115	1	72 °F	86	21.2	Y	110	90	2.2	8	40.8	48	44	58	7 GPM	12	650		X	X	AAON H3	1,2,3,4,5,6,7,8,9
FCU-3	HORIZONTAL	1400	150	0.6	3	115	1	72 °F	86	21.2	Y	110	90	2.2	8	40.8	48	44	58	7 GPM	12	650		X	X	AAON H3	1,2,3,4,5,6,7,8,9
FCU-4	HORIZONTAL	1400	150	0.6	3	115	1	72 °F	86	21.2	Y	110	90	2.2	8	40.8	48	44	58	7 GPM	12	650		X	X	AAON H3	1,2,3,4,5,6,7,8,9

ENERGY RECOVERY VENTILATOR SCHEDULE

1. EXTERNAL STATIC PRESSURE ("WG") INCLUDES DUCTWORK, BALANCING DAMPERS AND AIR DEVICES ONLY.
2. CAPACITIES LISTED ARE NET FROM UNIT DISCHARGE. UNITS SHALL PERFORM TO LISTED CAPACITIES. UNIT PERFORMANCE MUST SATISFY BOTH SENSIBLE AND LATENT CAPACITY REQUIREMENTS.
3. AAON IS THE BASIS FOR DESIGN. ALTERNATE MANUFACTURER'S SHALL MEET EQUIVALENT SPECIFICATIONS AND ARE SUBJECT TO PRIOR APPROVAL. CONTRACTOR IS RESPONSIBLE FOR VARIATIONS IN FIT AND ELECTRICAL SERVICE. ANY SUBSTITUTIONS SHALL MEET FOOTPRINT DIMENSIONS OF SPECIFIED EQUIPMENT. UNIT SUBSTITUTION DIFFERENTIAL WEIGHT NOT TO EXCEED 10%.
4. PROVIDE WITH NON-FUSED DISCONNECT.
5. UNIT SHALL BE INSTALLED ON STEEL PLATFORM, COORDINATE WITH STRUCTURAL.
6. PROVIDE ATTIC STOCK FOR THE OWNER IN THE FOLLOWING QUANTITIES FOR THE PROJECT: (2) FANS FOR EVERY FAN MOTOR SIZE.
7. PROVIDE DOUBLE WALL CONSTRUCTION.
8. PROVIDE SINGLE POINT ELECTRICAL CONNECTION.
9. PROVIDE NEOPRENE VIBRATION ISOLATION SUPPORTS FOR FLOOR OR MEZZANINE MOUNTED EQUIPMENT.
10. PROVIDE WITH CONTROLS TERMINAL STRIP. CONTROLS CONTRACTOR TO INSTALL DDC CONTROLLER AND LOW VOLTAGE WIRING EXTERNAL TO CABINET.
11. PROVIDE WITH 2" MERV 11 FILTER IN OUTSIDE AIR STREAM AND 2" MERV 11 FILTER IN RETURN AIR STREAM.
12. PROVIDE 1 YEAR PARTS AND LABOR WARRANTY. WARRANTY PERIOD WOULD BEGIN AFTER TESTING AND ACCEPTANCE BY OWNER.
13. PROVIDE 1% AIR LEAKAGE @ +/-8" W.G. WITH L/240 DEFLECTION IN ACCORDANCE WITH AHRI 1350.
14. FILTER PRESSURE DROP TO BE ASSUMED AS DIRTY FOR STATIC PRESSURE DROP CALCULATIONS.
15. PROVIDE WITH SPRING ISOLATED BASE RAIL FOR FANS AND MOTORS.
16. PROVIDE FILTER MONITOR FOR BOTH AIRSTREAMS.
17. ENERGY RECOVERY VENTILATOR IS ENTHALPY WHEEL TYPE.

MARK	ARRANGEMENT	DISCHARGE	SUPPLY FAN					EXHAUST FAN				ELECTRICAL				ERV COOLING CAPACITY (MBH)	ERV HEATING CAPACITY (MBH)	ERV MAT COOLING DEG F	ERV MAT HEATING DEG F	OUTSIDE AIR D.B.	OUTSIDE AIR W.B.	RETURN AIR D.B.	RETURN AIR W.B.	CABINET		WEIGHT (LBS)	CONTROLS			MANUFACTURER MAKE AND MODEL	REMARKS
			FAN CFM	O/A CFM	FAN EXT. S.P.	FAN MOTOR HP	DRIVE TYPE	FAN CFM	FAN EXT. S.P.	FAN MOTOR HP	DRIVE TYPE	V	PH	MCA	MOCP									MATERIAL	R-VALUE		24HR/7 DAY PROG. T-STAT	HUMIDISTAT	DDC		
ERV-1	HORIZONTAL	HORIZONTAL	10500	10500	0.8	15	ECM	10500	0.8	10	ECM	460	3	41.0	60	185.0	472.2	84.3	43.6	105	80	75	62	GALV.	R13	2888			X	AAON RNA	1-17
ERV-2	HORIZONTAL	HORIZONTAL	10500	10500	0.8	15	ECM	10500	0.8	10	ECM	460	3	41.0	60	185.0	472.2	84.3	43.6	105	80	75	62	GALV.	R13	2888			X	AAON RNA	1 - 17
ERV-3	HORIZONTAL	HORIZONTAL	10500	10500	0.8	15	ECM	10500	0.8	10	ECM	460	3	41.0	60	185.0	472.2	84.3	43.6	105	80	75	62	GALV.	R13	2888			X	AAON RNA	1-17
ERV-4	HORIZONTAL	HORIZONTAL	10500	10500	0.8	15	ECM	10500	0.8	10	ECM	460	3	41.0	60	185.0	472.2	84.3	43.6	105	80	75	62	GALV.	R13	2888			X	AAON RNA	1-17

EXHAUST FAN SCHEDULE

1. LOREN COOK IS THE BASIS FOR DESIGN. ACCEPTABLE ALTERNATE MANUFACTURER'S ARE: GREENHECK, TWIN CITY, AND CAPTIVEAIRE - NO EXCEPTIONS. CONTRACTOR IS RESPONSIBLE FOR VARIATIONS IN FIT AND ELECTRICAL SERVICE.
2. PROVIDE FAN WITH INTEGRAL DISCONNECT
3. PROVIDE INSULATED FACTORY ROOF CURB TO MATCH ROOF TYPE AND SLOPE. CURB TO BE MINIMUM 10" ABOVE ADJACENT ROOF SURFACE.
4. PROVIDE ELECTROSTATICALLY APPLIED, BAKED POLYESTER POWDER COATING
5. FAN OPERATION TO BE INTERLOCKED WITH LIGHTING CONTROLS
6. PROVIDE OSHA APPROVED GUARDS
7. PROVIDE A GRAVITY BACKDRAFT DAMPER.
8. PROVIDE A MOTORIZED DAMPER. PROVIDE DAMPER TRAY. PROVIDE HINGED BASE KIT FOR ACCESS TO MOTORIZED DAMPER.
9. SUSPEND FROM STRUCTURE ABOVE, USE FAN MANUFACTURER'S HANGING VIBRATION ISOLATOR KIT
10. PROVIDE A WHITE, ALUMINUM GRILLE FOR CEILING MOUNT
11. IN-LINE CABINET FAN, CENTRIFUGAL
12. PROVIDE A VENTED ROOF CURB
13. PROVIDE SPARK RESISTANCE RATING CLASS A
14. PROVIDE WITH VENTED EXTENSION ON EXHAUST OUTLET.
15. MOTOR LOCATED OUTSIDE OF EXHAUST AIRSTREAM.
16. FAN HOUSING CONSISTS OF POLYPROPYLENE: ALL MOVING PARTS SHALL BE CONSTRUCTED OF NON-FERROUS MATERIALS.
17. FAN HOUSING CONSISTS OF ALUMINUM. ALL MOVING PARTS SHALL BE CONSTRUCTED OF NON-FERROUS MATERIALS.
18. PLASTEC IS THE BASIS FOR DESIGN. CONTRACTOR MAY RECOMMEND ALTERNATIVE BRANDS, SUBJECT TO ENGINER APPROVAL. CONTRACTOR IS RESPONSIBLE FOR VARIATIONS IN FIT AND ELECTRICAL SERVICE.
19. FAN SHALL OPERATE CONTINUOUSLY.
20. INTERLOCK FAN WITH DEDICATED SWITCH AT REFLOW OVENS. FAN SHALL OPERATE AT LOW/HIGH SPEEDS BASED ON NUMBER OF OVENS IN USE. SCHEDULED CFM IS FOR HIGH OPERATION.
21. INTERLOCK FAN WITH DEDICATED SWITCH AT VERTICAL OVEN.
22. PROVIDE FANS ON VFD. FAN SHALL CONTROL TO MAINTAIN DUCT STATIC PRESSURE READING.
23. PROVIDE EPOXY COATED FAN BLADES AND EXPLOSION PROOF RATING.
24. PROVIDE HOUSE KEEPING PAD.

MARK	SERVES	QTY	UNIT CFM	FAN EXT. S.P.	FAN HP (WATTS)	V	PH	DRIVE	SONES	WEIGHT (LBS)	MANUFACTURER MAKE AND MODEL	REMARKS
EF-1-1	RESTROOM	1	600	0.6	.125	115	1	DIRECT	8.5	60	LOREN COOK SQND	1,2,4,5,7,9,11
EF-1-2	RESTROOM	1	600	0.6	.125	115	1	DIRECT	8.5	60	LOREN COOK SQND	1,2,4,5,7,9,11
EF-1-3	RESTROOM	1	750	0.6	.333	115	1	DIRECT	15.5	71	LOREN COOK SQND	1,2,4,5,7,9,11
EF-1-4	RESTROOM	1	300	0.6	.167	115	1	DIRECT	9.9	56	LOREN COOK SQND	1,2,4,5,7,9,11
EF-1-5	RESTROOM	1	375	0.6	.25	115	1	DIRECT	8.8	62	LOREN COOK SQND	1,2,4,5,7,9,11
EF-2-1	RESTROOM	1	450	0.25	.125	115	1	DIRECT	8.5	47	LOREN COOK ACED	1,2,3,4,5,6,7,8,12
EF-2-2	RESTROOM	1	600	0.25	.125	115	1	DIRECT	8.9	53	LOREN COOK ACED	1,2,3,4,5,6,7,8,12
EF-2-3	RESTROOM	1	675	0.25	.125	115	1	DIRECT	8.9	53	LOREN COOK ACED	1,2,3,4,5,6,7,8,12
EF-2-4	RESTROOM	1	750	0.25	.125	115	1	DIRECT	10.8	54	LOREN COOK ACED	1,2,3,4,5,6,7,8,12
EF-BES-1	BUILDING EXHAUST	1	3500	2.5	3	460	3	BELT	10	230	LOREN COOK 165 CPA-A	1,2,3,4,6,7,8,17,22,23,24
EF-BES-2	BUILDING EXHAUST	1	3500	2.5	3	460	3	BELT	10	230	LOREN COOK 165 CPA-A	1,2,3,4,6,7,8,17,22,23,24
EF-BES-3	BUILDING EXHAUST	1	3500	2.5	3	460	3	BELT	10	230	LOREN COOK 165 CPA-A	1,2,3,4,6,7,8,17,22,23,24
EF-BES-4	BUILDING EXHAUST	1	3500	2.5	3	460	3	BELT	10	230	LOREN COOK 165 CPA-A	1,2,3,4,6,7,8,17,22,23,24
EF-BES-5	BUILDING EXHAUST (REDUNDANT)	1	3500	2.5	3	460	3	BELT	10	230	LOREN COOK 165 CPA-A	1,2,3,4,6,7,8,17,22,23,24
EF-FC-1	FLAMMABE LIQUID STORAGE CABINET	TBD	50	0.5	.333	460	3	DIRECT	13	19	PLASTEC P15XT	2,3,6,7,8,12,13,14,15,16,18,19
EF-FC-2	FLAMMABE LIQUID STORAGE CABINET	TBD	100	0.5	.333	460	3	DIRECT	13	19	PLASTEC P15XT	2,3,6,7,8,12,13,14,15,16,18,19
EF-FC-3	FLAMMABE LIQUID STORAGE CABINET	TBD	200	0.5	.333	460	3	DIRECT	12	28	PLASTEC P20XT	2,3,6,7,8,12,13,14,15,16,18,19
EF-FC-4	FLAMMABE LIQUID STORAGE CABINET	TBD	300	0.5	0.5	460	3	DIRECT	25	29	PLASTEC P25XT	2,3,6,7,8,12,13,14,15,16,18,19
EF-K-1	MEAL DISPENSE	1	410	0.6	.25	115	1	DIRECT	7.8	60	LOREN COOK SQND	1,2,4,5,7,9,11
EF-L-1	LOCKERS	1	750	0.6	.333	115	1	DIRECT	15.5	71	LOREN COOK SQND	1,2,4,5,7,9,11
EF-L-2	LOCKERS	1	460	0.6	.25	115	1	DIRECT	7.7	60	LOREN COOK SQND	1,2,4,5,7,9,11
EF-PG-1	PG STORAGE CABINET	TBD	200	0.6	.167	115	1	DIRECT	5.3	48	LOREN COOK SQND	1,2,4,5,7,9,11
EF-PG-2	PG STORAGE CABINET	TBD	300	0.6	.167	115	1	DIRECT	8.7	58	LOREN COOK SQND	1,2,4,5,7,9,11

ADDITIONAL PRICING DIRECTION TO CONTRACTOR:

CHILLERS, PUMPS, AND MOST AIR HANDLERS, (REFER TO SCHEDULE FOR MORE INFORMATION) ARE OWNER PROVIDED CONTRACTOR INSTALLED.

PROVIDE PRICING FOR 65 VAV BOXES WITH ELECTRIC HEAT. ASSUME 35 BOXES ARE PARALLEL FAN POWERED AND THE REMAINING ARE SINGLE DUCT.

REFER TO FLOOR PLANS FOR LOCATIONS OF AIR CURTAINS.

PROVIDE PRICING FOR FORCED RETURN AIR CHASE FANS. 250 FRAC FANS IN THE CLEAN ROOM. REFER TO AIRSIDE SINGLE LINE DIAGRAMS FOR REFERENCE.

PROVIDE PRICING FOR FULL FLUSHING AND PASSIVATION. PROVIDE FULL CHEMICAL TREATMENT SYSTEM WITH 1-YEAR MAINTENANCE CONTRACT.

DUCTWORK SCHEDULE

SCHEDULE NOTES:
1. SYSTEM INSTALLATION SHALL COMPLY WITH THE LATEST VERSION OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS ON DUCT CONSTRUCTION, JOINING METHODS, FITTINGS AND WORKMANSHIP.
2. PROVIDE WITH 1" ACOUSTIC FIBER GLASS DUCT LINER, KNAUF PERFORMANCE PLUS OR APPROVED EQUIVALENT. ADJUST DUCT DIMENSIONS TO ACHIEVE SPECIFIED INNER DUCT CLEAR DIMENSIONS ON PLANS.
3. TYPE I KITCHEN GREASE DUCT SYSTEM IN ACCORDANCE WITH 2021 IMC SECTION 506, MINIMUM 16 GAUGE STEEL THICKNESS, NON-COMBUSTIBLE INSULATION ONLY, REFER TO SPECIFICATIONS. DUCT SHALL BE LIQUID-TIGHT AND TESTED IN ACCORDANCE WITH 2021 IMC SECTION 506.3.2.5 AS REQUIRED BY AHJ INSPECTOR.
4. DUCT INSULATION SHALL BE NON-COMBUSTIBLE FIBER GLASS WITH A MINIMUM DENSITY OF 1.5 LB/FT3.
5. DUCT STRAP DUCT SUPPORTS ARE ONLY ALLOWED FOR CONCEALED DUCTWORK ABOVE A CEILING.
6. PROVIDE WEATHER-PROOF CLADDING SYSTEM OVER EXTERIOR DUCTWORK COMPRISED OF UV STABLE 1000 MICRON HIGH IMPACT RESISTANT TITANIUM INFUSED VINYL MEETING ASTM D-4226 AND ASTM D-4216. EXTERIOR CLADDING SHALL BE WHITE IN FINISH. INNER PANEL SHALL BE CLOSED CELL RIGID PHENOLIC FOAM PANEL COMPLYING WITH UL 181. THERMOSET RESIN THERMALLY BONDED TO A FACTORY APPLIED ALUMINUM FOIL FACING REINFORCED WITH A FIBERGLASS SCRIM. UV STABLE, IR REFLECTIVE 1000-MICRON HIGH IMPACT RESISTANT TITANIUM INFUSED VINYL SHALL BE FACTORY BONDED USING A FULL LAMINATION PROCESS TO THE OUTER SURFACE OF THE PHENOLIC FOAM PANEL. EXTERIOR DUCTWORK SHALL BE MANF. BY THERMADUCT EXTERIOR INSULATION SYSTEM OR APPROVED EQUAL. INSTALL CLADDING SYSTEM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE COMPLETE PRODUCT SUBMITTAL DURING SUBMITTAL PHASE. ALL EXTERIOR DUCTWORK AND/OR INSULATION REGARDLESS OF SIZE SHALL BE FORMED IN A MANNER THAT WATER SHEDS OFF THE TOP OF THE DUCT.
7. LISTED R-VALUE (FT2*F*HR/BTU) AT 75F AND INSTALLED CONDITION (ASSUMED 25% COMPRESSION).
8. THIS SCHEDULE APPLIES UNLESS SPECIFICALLY NOTED ON PLAN.
9. PROVIDE CLOSED CELL EPDM INSULATION FOR DUCTWORK AT WALL PENETRATIONS. EXTEND INSULATION FROM EXTERIOR WALL PENETRATION 6FT IN BOTH DIRECTIONS. FOR INSULATION ON EXTERIOR OF BUILDING, PROVIDE ALUMINUM JACKETING

EQUIPMENT	APPLICATION	MATERIAL	CONSTRUCTION TYPE	PRESSURE CLASS	SEAL CLASS	MIN. INSULATION R-VALUE	REMARKS
AHU-OR1 THRU 22	LOW PRESSURE INDOOR/CONCEALED	G90 GALVANIZED	SINGLE WALL, WRAPPED	1"	A	6	1
DOAS-OR1,2,3,4	LOW PRESSURE SUPPLY INDOOR/CONCEALED	G90 GALVANIZED	SINGLE WALL, WRAPPED	1"	A	6	1
AHU-OFFICES	MEDIUM PRESSURE SUPPLY INDOOR/CONCEALED	G90 GALVANIZED	SINGLE WALL, WRAPPED	2"	A	6	1
	MEDIUM PRESSURE SUPPLY INDOOR/EXPOSED	G90 GALVANIZED	DOUBLE WALL	2"	A	6	1
	LOW PRESSURE SUPPLY INDOOR/CONCEALED	G90 GALVANIZED	SINGLE WALL, WRAPPED	1"	A	6	1
	LOW PRESSURE RETURN INDOOR/EXPOSED	G90 GALVANIZED	DOUBLE WALL	1"	A	6	1
WH FCU'S	LOW PRESSURE RETURN INDOOR/EXPOSED	G90 GALVANIZED	SINGLE WALL, WRAPPED	1"	A	6	1
AHU-WH1,2,3,4	LOW PRESSURE INDOOR/CONCEALED	G90 GALVANIZED	SINGLE WALL, WRAPPED	1"	A	6	1
	LOW PRESSURE INDOOR/EXPOSED	G90 GALVANIZED	SINGLE WALL, WRAPPED	1"	A	6	1,2
TERMINAL UNITS	LOW PRESSURE INDOOR/CONCEALED	G90 GALVANIZED	SINGLE WALL, WRAPPED	1"	A	6	1
	LOW PRESSURE INDOOR/EXPOSED	G90 GALVANIZED	SINGLE WALL, LINED	1"	A	6	1,2
EXHAUST FANS	LOW PRESSURE INDOOR/CONCEALED	G90 GALVANIZED	SINGLE WALL	1"	A	-	1
	LOW PRESSURE INDOOR/EXPOSED	G90 GALVANIZED	SINGLEWALL	1"	A	-	1
	LOW PRESSURE OUTDOOR/EXPOSED	G90 GALVANIZED	SINGLE WALL	1"	A	-	1,9

PROJECT EAGLE

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SUMMIT CONSULTANTS, INC.

ENGINEER:
CHAD LEVERITT
LICENSE#: 102203
DATE: 05/23/2025

Seal / Signature

△	Date	Description
1	04/18/2025	SD PACKAGE 1
5	05/07/2025	SD PACKAGE 5
A	05/08/2025	REVISION A
B	05/23/2025	REVISION B

Project Name
PROJECT EAGLE 1

Project Number
096.4153.002

Description
MECHANICAL SCHEDULES

Scale

M0.004