

MARK		AR-0	
LOCATION		MECHANICAL 010	
SERVES		BASEMENT, 1ST & 2ND FLOORS	
DRAW THRU / BLOW THRU	UNIT TYPE	DRAW THRU	
COOL / HEAT / COOL & HEAT		COOL & HEAT	
VAV / DUAL DUCT / MULTI-ZONE		VAV WIREHEAT	
COOL MED / HEAT MED		CHILLED WATER/HOT WATER	
HORIZONTAL / VERTICAL		HORIZONTAL	
FLOOR MOUNTED / CEILING SUSPENDED		FLOOR MOUNTED	
DISCHARGE		SIDE	
PRESSURE CLASS (LOW / MED / HIGH)		LOW	
NOMINAL COIL FACE AREA (SQ. FEET)			
MANUFACTURER		TRANE	
MODEL NUMBER			
UNIT COMPONENT CONFIGURATION (ORDER IS IN DIRECTION OF AIRFLOW)		AIR MIXING SECTION PREFILTR FILTER SECTION HOT WATER COIL ACCESS SECTION CHILLED WATER COIL ACCESS SECTION SUPPLY FAN	

MARK	SP-1	
AIRFLOW CFM	7.000	
EXTERNAL S.P. (IN. OF WATER)	3	
TOTAL S.P. (IN. OF WATER)	5.3	
RPM / RPM	8.8/1900	
VARIABLE CONTROL	VFD	
UNIT VIBRATION ISOLATORS	SPRING TYPE ISOLATOR	
WHEEL (NO / SIZE / BLADE TYPE)	24.5 INCH DIRECT DRIVE PLENUM	
MANUFACTURER	TRANE	
MODEL NUMBER		

MARK	FILTER ASSEMBLY	PF-1	
BOX CONSTRUCTION			
FILTER TYPE		FLAT FILTER	
RATED EFFICIENCY		MERV 5/MERV 14	
FACE VELOCITY (FPM)		307	
INITIAL / FINAL A.P.D. (IN. OF WATER)		0.566/0.757	

MARK	HC-1
FACE AREA (SQ. FEET)	18.8
FACE VELOCITY (FPM)	448
AIRFLOW CFM	7,500
ENTERING AIR TEMP. D.B. (°F)	60F
LEAVING AIR TEMP. D.B. (°F)	72.5F
MAXIMUM A.P. DROP (IN. OF WATER)	0.1
MINIMUM ROWS	2
MAXIMUM FINS (PER FOOT)	72
TOTAL CAPACITY (MBH)	232
CFM	18.8
WATER TEMP. E.W.T. / L.W.T. (°F)	100/90
MAX. A.P. DROP (FEET OF WATER)	0.35
MANUFACTURER	TRANE
MODEL NUMBER	

MARK	CC-1
FACE AREA (SQ. FEET)	15.8
FACE VELOCITY (FPM)	448
AIRFLOW CFM	7,500
ENTERING AIR TEMP. D.B. / W.B. (°F)	82.5/57.8
LEAVING AIR TEMP. D.B. / W.B. (°F)	10.9/48.6
MAXIMUM A.P. DROP (IN. OF WATER)	0.3
MINIMUM ROWS	6
MAXIMUM FINS (PER FOOT)	54
TOTAL CAPACITY (MBH)	205
SENSIBLE CAPACITY (MBH)	205
GPM	36
WATER TEMP. S.W.T. / L.W.T. (°F)	1
MAX. WATER P.D. (FEET OF WATER)	6.7
MANUFACTURER	TRANE
MODEL NUMBER	

REMARKS:	DATE: 01-01-2017	
1.	SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ELECTRICAL DATA.	
2.	UNIT SECTIONS MUST BE ABLE TO FIT THROUGH A STANDARD 36" DOOR OPENING.	
3.	MANUFACTURER AND MODEL NO. LISTED AS BASIS OF DESIGN.	
4.	AIR HANDLING UNIT SHALL HAVE FACTORY MOUNTED TRANE TRACER SUMMIT CONTROLS.	
5.	SF-1 VFD TO BE FACTORY MOUNTED.	

MARK	SERVES	TYPE	CFM	EXT. S.P.	IN. RPM	DRIVE	MAX. GONES	VARIABLE CONTROL	MANUFACTURER & MODEL NO.	REMARKS
RF-1	AIR RETURN RETURN AIR FAN	MIXED FLOW	8,325	1.50"	1,770	DIRECT	80.0	VFD	GREEN-ECK GEID-20-90-A50	1, 8
VAF-1	ELEVATOR EQUIPMENT ROOM	CEILING EXHAUST	150	0.40"	1,050	DIRECT	3.5	NA	GREEN-ECK SP-B150	1, 2, 4, 5, 7, 8
EF-1	2ND FLOOR RESTROOM	CEILING EXHAUST	150	0.40"	1,050	DIRECT	3.5	NA	GREEN-ECK SP-B150	1, 2, 5, 6, 9
EF-2	RESTROOM/COPY ROOM	DIRECT DRIVE CENTRIFUGAL FAN	1,100	1.50"	1,478	DIRECT	4.8	UNIT MOUNTED	GREEN-ECK SP-120-A	1, 3, 5, 6, 9
VAF-2	COMM ROOM	CEILING	210	0.40"	1,050	DIRECT	3.5	NA	GREEN-ECK SP-A290	1, 2, 4, 5, 7, 8

REMARKS:	
1.	SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ELECTRICAL DATA.
2.	UNIT TO BE HUNG FROM CEILING BY THREADED RODS. PROVIDE VIBRATION ISOLATION ON ROOF SUPPORTS.
3.	PROVIDE VARIABLE SPEED CONTROLLER SWITCH ON UNIT.
4.	PROVIDE WALL SWITCH FOR ON/OFF OPERATION.
5.	PROVIDE AUTOMATIC MOTORIZED BACK DRAFT DAMPER ON DISCHARGE DUCTWORK.
6.	PROVIDE BATHROOM EXHAUST TIMER SWITCH, MOUNTED NEAR ENTRANCE. COORDINATE INSTALLATION WITH ELECTRICAL.
7.	MOOT EXHAUST FAN AS HIGH AS POSSIBLE. COORDINATE HEIGHT WITH ARCHITECTURAL CEILING HEIGHT CALL OUTS.
8.	PROVIDE SPRING BASE ISOLATORS WHEN HUNG FROM STRUCTURE WITH MINIMUM 2" STATIC DEFLECTION.
9.	MANUFACTURER AND MODEL NO. LISTED AS BASIS OF DESIGN.

DESIGNATION	CH-1		
LOCATION	EXTERIOR NORTH SIDE		
SERVICE	CHILLED WATER SUPPLY		
TYPE	AIR-COOLED		
REFRIGERANT TYPE	R-410A		
CAPACITY, TONS	18.5		
ENTERING WATER TEMP., °F	EVAPORATOR	58	
LEAVING WATER TEMP., °F		44	
FLOW RATE, GPM		38	
WATER PRESSURE DROP, PSIG		8.5	
CONDENSER WATER TEMP., °F	N/A		
CONDENSER ENTERING WATER TEMP., °F	N/A		
NUMBER OF FANS	2		
FAN HORSEPOWER, HP	5		
NUMBER OF COMPRESSORS	2		
KILOWATTS, KW	23.9 KW		
ELECTRICAL VOLTS/PH/Hz	208/3/60		
OPERATING WEIGHT, LBS.	2,850		
MANUFACTURER	TRANE		
MODEL	OGAM 20		
REMARKS	1, 2, 3, 4, 5, 6, 7, 8		

REMARKS	
1.	SEE MECHANICAL/ELECTRICAL CONNECTION SCHEDULE FOR ADDITIONAL ELECTRICAL DATA.
2.	AIR-COOLED CHILLER SHALL BE FURNISHED WITH COMPLETE PACKAGED CONTROLS.
3.	AIR-COOLED CHILLER SHALL BE FURNISHED WITH SHUT-OFF PUMP PACKAGE, EXPANSION TANK, DRAIN VALVES AND ISOLATION / ISH-OUT VALVES.
4.	AIR-COOLED CHILLER SHALL BE FURNISHED WITH SINGLE POINT ELECTRICAL POWER CONNECTION.
5.	AIR-COOLED CHILLER SHALL BE FURNISHED WITH FREEZE PROTECTION DOWN TO -20 DEG. F.
6.	AIR-COOLED CHILLER SHALL BE FURNISHED WITH VARIABLE DRIVES FOR EACH PUMP.
7.	AIR-COOLED CHILLER SHALL BE FURNISHED WITH SOUND TREATMENT IF THE UNIT DOES NOT MEET THE MAXIMUM SPECIFIED SOUND PRESSURE LEVELS.
8.	AIR-COOLED CHILLER SHALL BE PACKAGED WITH CHILLED WATER BUFFER TANK, INSULATION AND AN MINIMUM 3 MINUTE-120 SEC CAPACITY. TANK SHALL BE INSULATED AND ELECTRIC HEAT FOR FREEZE PROTECTION.

DUCTWORK SYSTEM	ACOUSTICAL LINER	FLEXIBLE FIBERGLASS	RIGID FIBERGLASS	THICKNESS (INCHES)	REMARKS
RETURN AIR DUCTWORK - CONCEALED	NA	NA	NA		1
SUPPLY AIR DUCTWORK - CONCEALED		X		1 1/2	1
SUPPLY AIR DUCTWORK - EXPOSED			X	1 1/2	1
RETURN AIR DUCTWORK - EXPOSED	NA	NA	NA		1
RECTANGULAR SUPPLY, RETURN, OUTSIDE AND EXHAUST AIR IN THE EQUIPMENT ROOMS			X	2	1
ROUND SUPPLY AIR IN THE EQUIPMENT ROOMS		X		2	1
VAV BOX WITH REHEAT COIL		X		1 1/2	1
EXHAUST AIR DUCTWORK FROM ROOF/WALL TO 10 FEET INSIDE OF BUILDING		X		1 1/2	1
RETURN AIR DUCTWORK - ROOM TO CEILING PLENUM TRANSFER DUCT	X			1	1,2

REMARKS:					
1.	SEE SPEC SECTION 23 31 00 "HVAC DUCTS AND CASINGS" FOR ACOUSTICAL LINER SPECIFICATIONS & SEE SECTION 23 07 19 "MECHANICAL INSULATION" FOR OTHER DUCT INSULATION SPECIFICATIONS.				
2.	ACOUSTICAL DUCT LINER SHALL ONLY BE INSTALLED IN THE RETURN AIR TRANSFER DUCTS WHERE NOTED ON THE DRAWINGS.				

MARK	MIN. CFM	MAX. CFM	MAX ΔPS	MANUFACTURER & MODEL NO.	AIR PRESSURE DROP IN. W.C.	REHEAT COIL	REMARKS
VAV-1	65	350	0.241	KRUEGER MODEL LAHNS SINGLE DUCT BOX, 8 INCH INLETSIZE	0.08	2 - ROW	1, 2, 3, 4, 5
VAV-2	80	200-400	.092 - .472	KRUEGER MODEL LAHNS SINGLE DUCT BOX, 6 INCH INLETSIZE	0.36	2 - ROW	1, 2, 3, 4, 5
VAV-3	145	400-750	.147 - .452	KRUEGER MODEL LAHNS SINGLE DUCT BOX, 8 INCH INLETSIZE	0.39	2 - ROW	1, 2, 3, 4, 5

REMARKS:	
1.	TERMINAL UNITS TO BE FURNISHED WITH FIBRE FREE DUCT LINER.
2.	TERMINAL UNITS TO BE FURNISHED LESS CONTROLS, AND ACTUATORS.
3.	FLOW SENSOR TO BE FACTORY MOUNTED , AND READY FOR CONNECTION TO FIELD INSTALLED CONTROL SYSTEM AND ACTUATORS.
4.	HOT WATER REHEAT COIL TO BE SHIPPED SEPARATE. PROVIDE ACCESS DOOR IN DUCT BETWEEN REHEAT COIL AND UNIT.
5.	MANUFACTURER AND MODEL NO. LISTED AS BASIS OF DESIGN.

MARK	SERVES	PRESSURE RANGE		CAPACITY (LBS/HR)	RELIEF SIZE	MANUFACTURER & MODEL NO.	REMARKS
		FIRST STAGE	SECOND STAGE				
PRV-1	HEATING HOT WATER HEAT EXCHANGER	20-15	N/A	483	4000 LBS/HR	SPENCE - SELF ACTUATED TYPE EDS	1

REMARKS:

1 MANUFACTURER AND MODEL LISTED AS BASIS OF DESIGN

2 PRESSURE REDUCING STATIONS SHALL BE EXTERNAL PILOT TYPE.

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1	MANUFACTURER AND MODEL LISTED AS BASIS OF DESIGN
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need line size
steam pressure in
& out