

VENTILATION CALCULATIONS:

IN ACCORDANCE WITH ASHRAE 62.1-2007 UNLESS OTHERWISE NOTED

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AREA BASIS						OCCUPANCY BASIS					
A	B	C	D	E	F	G	H	I	J	K	
SYSTEM	ROOM	TYPE OF USE	AREA SQ FT	CFM / SQ FT	REQUIRED CFM (D X E)	# OF PEOPLE	CFM / PERSON	REQUIRED CFM (G X H)	(F + I)	DESIGN VENT.	EXHAUST CFM
XFRN-1	STUDIO	SPORTS, HEALTH CLUB, AEROBICS	886	0.06	53	26*	20	520	573	644 CFM USE 645 CFM	
	SITTING	OFFICE, RECEPTION	320	.06	19	10	5	50	69		
	UTILITY	RETAIL, STORAGE	14	.12	2	0	0	0	2		
TOTAL			1220			36			644	645 CFM	

* PURE BARRE CORPORATE POLICY LIMITS CLASS SIZE TO 25 CLIENTS FOR ONE INSTRUCTOR.

HVAC LOAD CALCULATIONS SUMMARY (XFRN-1)

AMBIENT CONDITIONS: (CLIMATE ZONE 6A)
 SUMMER: 86.8°F (DB) / 71.3°F (WB)
 WINTER: 0.1°F (dB)

INTERIOR CONDITIONS:
 SUMMER: 75.0°F (dB) / 50% RH
 WINTER: 70°F (dB)

SYSTEM PARAMETERS:
 NET CONDITIONED SPACE: 1,220 SQ. FT.
 TOTAL SYSTEM SUPPLY AIR: 2,000 CFM
 TOTAL SYSTEM VENTILATION AIR (MAXIMUM): 645 CFM

COOLING:
 ENVELOPE LOADS: 0 Btu/hr
 VENTILATION LOADS (SENSIBLE): 6,361 Btu/hr
 VENTILATION LOADS (LATENT): 9,338 Btu/hr
 LIGHTING LOADS: 4,452 Btu/hr
 PEOPLE LOADS (SENSIBLE): 11,160 Btu/hr
 PEOPLE LOADS (LATENT): 16,979 Btu/hr
 EQUIPMENT LOADS: 365 Btu/hr
 TOTAL SENSIBLE LOAD: 22,339 Btu/hr
 TOTAL LATENT LOAD: 29,453 Btu/hr
 TOTAL LOAD: 51,792 Btu/hr

HEATING:
 ENVELOPE LOADS: 0 Btu/hr
 VENTILATION LOADS (SENSIBLE): -48,508 Btu/hr
 TOTAL SENSIBLE LOAD*: -48,508 Btu/hr

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AREA BASIS						OCCUPANCY BASIS					
A	B	C	D	E	F	G	H	I	J	K	
SYSTEM	ROOM	TYPE OF USE	AREA SQ FT	CFM / SQ FT	REQUIRED CFM (D X E)	# OF PEOPLE	CFM / PERSON	REQUIRED CFM (G X H)	(F + I)	DESIGN VENT.	EXHAUST CFM
HP1-1	RECEPTION	RETAIL	901	.12	108	14	7.5	105	213	218 CFM USE 225 CFM	
	FITTING	RETAIL	40	.12	5	0	7.5	0	5		
	TOILET	PUBLIC, TOILET	50	0	0	0	0	0	0		
	TOILET	PUBLIC, TOILET	60	0	0	0	0	0	0		
TOTAL			1051			14			218	225 CFM	225

HVAC LOAD CALCULATIONS SUMMARY (HPI-2)

AMBIENT CONDITIONS: (CLIMATE ZONE 6A)
 SUMMER: 86.8°F (DB) / 71.3°F (WB)
 WINTER: 0.1°F (dB)

INTERIOR CONDITIONS:
 SUMMER: 75.0°F (dB) / 50% RH
 WINTER: 70°F (dB)

SYSTEM PARAMETERS:
 NET CONDITIONED SPACE: 1,051 SQ. FT.
 TOTAL SYSTEM SUPPLY AIR: 1,200 CFM
 TOTAL SYSTEM VENTILATION AIR (MAXIMUM): 225 CFM

COOLING:
 ENVELOPE LOADS: 21,202 Btu/hr
 VENTILATION LOADS (SENSIBLE): 2,469 Btu/hr
 VENTILATION LOADS (LATENT): 4,358 Btu/hr
 LIGHTING LOADS: 3,840 Btu/hr
 PEOPLE LOADS (SENSIBLE): 3,745 Btu/hr
 PEOPLE LOADS (LATENT): 2,940 Btu/hr
 EQUIPMENT LOADS: 365 Btu/hr
 TOTAL SENSIBLE LOAD: 31,622 Btu/hr
 TOTAL LATENT LOAD: 7,298 Btu/hr
 TOTAL LOAD: 38,920 Btu/hr

HEATING:
 ENVELOPE LOADS: -12,227 Btu/hr
 VENTILATION LOADS (SENSIBLE): -16,948 Btu/hr
 TOTAL SENSIBLE LOAD*: -29,175 Btu/hr

HEATING PROVIDED BASED ON 85°F MINIMUM DISCHARGE TEMPERATURE.

EXISTING SPLIT SYSTEM SCHEDULE: GAS FURNACE & COOLING COIL W/ NEW ACCESSORIES

MARK	BRAND	MODEL	EVAPORATOR FAN				COOLING				HEATING			UNIT ELECTRICAL				ACCESSORIES & NOTES			
			CFM		HP	ESP (IWC)	SPEED TAP	TEMPERATURE (°F)				TEMP. (°F)		AFUE %	VOLTAGE (VOLTS-PHASE-HERTZ)	MCA (AMPS)	MOCP (AMPS)		WEIGHT (LBS)		
			SA	OA				ENT. AIR DB	LVG. AIR WB	OD AMB.	ENT. DB	LVG. DB									
XFRN 1	BRYANT/CARRIER	340AAV060120 FURNACE (10 YRS) CARMP6024ACAAAAA COOLING COIL (10 YRS OLD)	2000	645	3/4	0.5	HIGH	78.8	65.5	-	-	86.8	47.5	99.1	120/112	92.1	115-1-60	14.8	20	246 + 69 (NEW ECONOMIZER) = 315	SEE BELOW

- NEW ACCESSORIES:
 1. PROVIDE ECONOMIZER: MICROMETL "CUBE" MODEL MB-GP-2000 (INCLUDES DAMPERS, ACTUATORS, AND HONEYWELL JADE 7220 CONTROLLER)
 2. PROVIDE COMPATIBLE ENTHALPY SENSORS (TWO FOR COMPARATIVE ENTHALPY CONTROL)
 3. PROVIDE 7 DAY PROGRAMMABLE THERMOSTAT WITH 55°F HEATING SETBACK, 85°F COOLING SETBACK, 2HR OVERRIDE, 10HR BACKUP, AND AUTO CHANGE OVER WITH 5°F DEADBAND. VERIFY COMPATIBILITY WITH ECONOMIZER CONTROLLER.
 4. PROVIDE RETURN DUCT MOUNTED SMOKE DETECTOR (IF NOT EXISTING). DETECTOR MUST SHUT DOWN UNIT UPON DETECTION OF SMOKE AND SIGNAL BUILDING FIRE ALARM SYSTEM. COORDINATE WITH EXISTING BUILDING FIRE ALARM SYSTEM.
 5. PROVIDE NEW FILTER RACK & FILTERS BETWEEN EXISTING FURNACE AND NEW ECONOMIZER.

- NOTES:
 1. CAPACITIES ARE ESTIMATED BASED ON CORRESPONDING CONDENSING UNIT. SEE CONDENSING UNIT SCHEDULE ON THIS SHEET.
 2. EXISTING DISCONNECT SWITCH TO REMAIN.
 3. EXISTING CONDENSATE PUMP TO REMAIN. COORDINATE WITH PLUMBER TO RE-ROUTE DISCHARGE LINE TO NEW MOP SINK PER PLAN ON SHEET MP1.
 4. EXISTING FACTORY INSTALLED TXV.

EXISTING SPLIT SYSTEM SCHEDULE: CONDENSING UNIT

MARK	BRAND	MODEL	COOLING						UNIT ELECTRICAL				ACCESSORIES & NOTES	
			NOM. TON	OUT DOOR AMB. °F	TOTAL NET CAPACITY KBTU/HR	NET SENSIBLE CAPACITY KBTU/HR	LATENT CAPACITY KBTU/HR	SEER	REFRIGERANT	VOLTAGE (VOLTS-PHASE-HERTZ)	MCA (AMPS)	MOCP (AMPS)		WEIGHT (LBS)
XCU 1	BRYANT	561CJ060 (11 YRS OLD)	5	86.8	57	47	10	10	R-22	208/230-1-60	37.4	60	231	SEE BELOW

- NOTES:
 1. CAPACITIES ESTIMATED BASED ON SIMILAR COOLING COIL. SEE FURNACE & COOLING COIL SCHEDULE ON THIS SHEET.
 2. EXISTING DISCONNECT TO REMAIN. (FUSED AT 40 AMPS)
 3. EXISTING SIGHT GLASS WITH MOISTURE INDICATOR AND LIQUID LINE FILTER/DRYER TO REMAIN.

SPLIT SYSTEM SCHEDULE: HEAT PUMP INDOOR UNIT

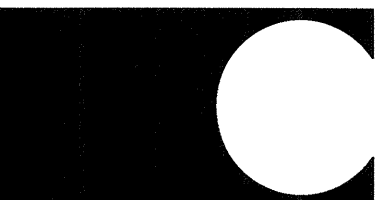
MARK	BRAND	MODEL	EVAPORATOR FAN				COOLING				HEATING			UNIT ELECTRICAL				ACCESSORIES & NOTES			
			CFM		NOM. HP	ESP (IWC)	RPM	TEMPERATURE (°F)				SUPP. ELEC HEAT KW	VOLTAGE (VOLTS-PHASE-HERTZ)	MCA (AMPS)	MOCP (AMPS)	WEIGHT (LBS)					
			SA	OA				ENT. AIR DB	LVG. AIR WB	OD AMB.	ENT. DB						LVG. DB		OD AMB.		
HPI 1	CARRIER	FX4DNF043L	1400	225	1/2	0.5	1379 (TAP 5)	76.9	64.0	57.0	54.4	86.8	58.8	87.2*	0.1	7.5KW@208V (10KW@240V)	208-1-60	50.4	60	157+ ACCES.	SEE BELOW

- NOTES:
 1. SUPPLEMENTAL ELECTRIC HEATING COILS SHALL STAGE AFTER COMPRESSIVE HEATING.
 2. * LEAVING TEMP. INCLUDES SUPPLEMENTAL ELECTRIC HEAT.
 3. PROVIDE FIELD SUPPLIED/INSTALLED DISCONNECT. REFER TO ELECTRICAL SHEETS.
 4. PROVIDE FACTORY INSTALLED TXV.
 5. PROVIDE 7 DAY PROGRAMMABLE THERMOSTAT WITH 55°F HEATING SETBACK, 85°F COOLING SETBACK, 2HR OVERRIDE, 10HR BACKUP, AUTO CHANGE OVER WITH 5°F DEAD BAND, AND AUXILIARY OCCUPIED/UNOCCUPIED OUTPUT.
 6. PROVIDE 2" DEEP OVERFLOW PAN UNDER UNIT, AND FLOAT SWITCH SHUT-OFF. SEE DETAIL ON SHEET MP2.
 7. PROVIDE OPERATION AND MAINTENANCE MANUAL TO BUILDING OWNER.
 8. NO PROPOSED SUBSTITUTION WILL BE REVIEWED WITHOUT A COMPLETE MANUFACTURER'S SUBMITTAL SHOWING ALL INFORMATION LISTED IN THIS SCHEDULE, INCLUDING PERFORMANCE AT ACTUAL DESIGN CONDITIONS. (CAPACITIES AT ARI CONDITIONS ARE NOT ACCEPTABLE.) NO SUBSTITUTION THAT DOES NOT MEET OR EXCEED SCHEDULED PERFORMANCE DATA WILL BE APPROVED.

SPLIT SYSTEM SCHEDULE: HEAT PUMP OUTDOOR UNIT

MARK	BRAND	MODEL	REF.	NOM. TON	OUT DOOR AMB. °F	TOTAL NET CAPACITY KBTU/HR	NET SENSIBLE CAPACITY KBTU/HR	LATENT CAPACITY KBTU/HR	SEER	OUT DOOR AMB. °F	REVERSE CYCLE KBTU/HR	HSPF (HIGH)	UNIT ELECTRICAL				ACCESSORIES & NOTES
													VOLTAGE (VOLTS-PHASE-HERTZ)	MCA (AMPS)	MOCP (AMPS)	WEIGHT (LBS)	
HPO 2	CARRIER	25HCE442C003	410A	3.5	86.8	40.2	30.2	10.0	14	0.1	17.5	8.2	208/230-1-60	31.2	50	203+ ACCESS.	SEE BELOW

- NOTES:
 1. FACTORY FURNISHED COATED COIL FOR COASTAL APPLICATION.
 2. FACTORY FURNISHED, FIELD INSTALLED HAIL GUARDS.
 3. FACTORY FURNISHED, FIELD INSTALLED LIQUID LINE SOLENOID VALVE AND KIT. (VERIFY INSTALLATION REQUIREMENTS WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.)
 4. PROVIDE FIELD SUPPLIED/INSTALLED CONVENIENCE OUTLET. REFER TO ELECTRICAL SHEETS.
 5. PROVIDE FIELD SUPPLIED/INSTALLED DISCONNECT. REFER TO ELECTRICAL SHEETS.
 6. UNIT SHALL BE EQUIPPED WITH HIGH AND LOW PRESSURE CUT OUT SWITCHES.
 7. PROVIDE SIGHT GLASS WITH MOISTURE INDICATOR AND BI-DIRECTIONAL FLOW LIQUID LINE FILTER/DRYER SUITABLE FOR HEAT PUMP APPLICATION.
 8. REFRIGERANT LINE SIZING SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE INSULATION FOR SUCTION LINE. PROVIDE UV RESISTANT COATING WHERE EXPOSED TO SUNLIGHT.
 9. PROVIDE SUPPORT RAILS FOR UNIT MOUNTING. SEE DETAIL ON SHEET MP2.
 10. PROVIDE OPERATION AND MAINTENANCE MANUAL TO BUILDING OWNER.
 11. NO PROPOSED SUBSTITUTION WILL BE REVIEWED WITHOUT A COMPLETE MANUFACTURER'S SUBMITTAL SHOWING ALL INFORMATION LISTED IN THIS SCHEDULE, INCLUDING PERFORMANCE AT ACTUAL DESIGN CONDITIONS. (CAPACITIES AT ARI CONDITIONS ARE NOT ACCEPTABLE.) NO SUBSTITUTION THAT DOES NOT MEET OR EXCEED SCHEDULED PERFORMANCE DATA WILL BE APPROVED.



CASCO
 10877 WATSON ROAD
 ST. LOUIS, MO 63127
 PROJECT MANAGERS

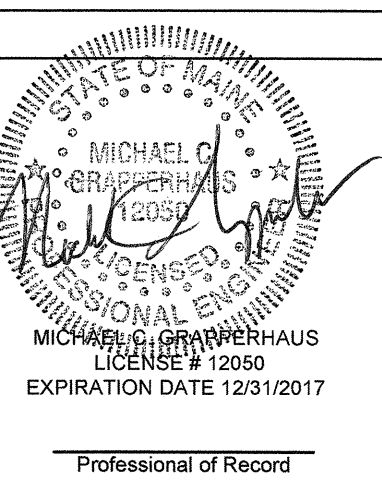
ISSUED DATES

OWNER	11-23-16
BID/PERMIT	11-28-16

REVISIONS

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pure barre
 PURE BARRE
 492 CONGRESS STREET
 PORTLAND, ME 04101



DRAWN BY
 JCD

CHECKED BY
 MCG

PROJECT NUMBER
 316157

SHEET NAME
 MECH/PLUMB SCHEDULES

SHEET NUMBER

MP4