



**HVAC - NEW WORK PLAN - GROUND FLOOR**  
SCALE: 1/8" = 1'-0"

- GENERAL PLAN NOTES**
- SEE DRAWING M1 FOR SPECIFICATIONS. ANY NOTES ON THIS PLAN WILL SUPERCEDE THOSE FOUND ON M1 SHOULD A CONFLICT ARISE.
  - INTERNALLY SOUND-LINE ALL DUCT AS INDICATED ON THE PLANS. SOUND-LINER TO HAVE 1" THICKNESS W/VAPOR BARRIER. ANY DUCT NOT LINED WILL BE WRAPPED W/PAPER/FOIL INSULATION W/VAPOR BARRIER OR PAINTED.
  - ALL 45° AND 90° DUCT ELBOWS WILL HAVE TURNING VANES.
  - ALL DUCT TAKE-OFFS WILL HAVE VOLUME DAMPERS; PROVIDE VOLUME DAMPERS AT ALL OTHER AREAS AS INDICATED ON THE PLANS.
  - ALL HVAC SYSTEMS WILL BE AIR BALANCED BY A CERTIFIED BALANCING CONTRACTOR. TURN IN FINAL REPORT (ON NEBB OR AABC FORMS) TO DESIGN ENGINEER FOR REVIEW.
  - PROVIDE ACCESS DOORS AT ALL THOSE AREAS WHERE EQUIPMENT IS LOCATED BEHIND A CONCEALED CEILING.
  - ZONE CONTROLS MUST BE PROGRAMMABLE THERMOSTAT CAPABLE OF SETTING BACK TEMPERATURE TO 55°F DURING HEATING AND SETTING UP TO 85°F DURING COOLING.
  - THERMOSTAT MUST BE CAPABLE OF MAINTAINING A 5°F DEADBAND (A RANGE OF TEMPERATURE WHERE NO HEATING OR COOLING IS PROVIDED)

- KEYED PLAN NOTES**
- ALL WORK SHALL COMPLY WITH THE IMC AND AHSRAE 90.1.
- UNDERCUT TOILET DOOR 1" (TYPICAL).
  - VOLUME DAMPER (TYPICAL).
  - PROVIDE DUCT DETECTOR ON BOTH SUPPLY AND RETURN DUCTWORK.
  - SEE CAPTIVEAIRE SHEETS FOR FAN SPECIFICATIONS, OPERATION AND INSTALLATION.
  - FINAL LOCATION OF MAKE-UP AND EXHAUST FANS AND ROUTING OF DUCTWORK TO BE DETERMINED IN FIELD.
  - PROVIDE A 12X12 GREASE DUCT CLEANOUT OPENING. OPENING SHALL BE EQUIPPED WITH TIGHT-FITTING DOOR CONSTRUCTED OF STEEL HAVING A THICKNESS NOT LESS THAN THAT REQUIRED FOR THE DUCT. DOOR SHALL BE EQUIPPED WITH A SUBSTANTIAL METHOD OF LATCHING, SUFFICIENT TO HOLD THE DOOR TIGHTLY CLOSED. DOOR SHALL BE DESIGNED SO THAT IT IS OPERABLE WITHOUT THE USE OF A TOOL. DOOR ASSEMBLY, INCLUDING ANY FRAME, GASKETING, SHALL BE APPROVED FOR THE PURPOSE, AND SHALL NOT HAVE FASTENERS THAT PENETRATE THE DUCT. GREASE DUCTS SHALL BE CONSTRUCTED OF AN SUPPORTED BY CARBON STEEL NOT LESS THAN #16MSG OR STAINLESS STEEL NOT LESS THAN #18 THICKNESS IN ACCORDANCE WITH NFPA 96 7.5.1. DUCTWORK SHALL TERMINATE A MIN. 18-INCHES FROM ANY ROOF SURFACE. FAN DISCHARGE A MINIMUM OF 40-INCHES FROM ROOF SURFACE, AND A VERTICAL SEPARATION OF 3-FT BELOW ANY EXHAUST OUTLET FOR AIR INTAKES WITHIN 10-FT OF EXHAUST OUTLETS).
  - PROVIDE AUXILIARY DRAIN PAN AND DISCHARGE CONDENSATE FROM AHU'S TO NEAREST AREA DRAIN OR MOP SINK.
  - PROVIDE MOTORIZED DAMPER (MOD) ON FRESH AIR DUCT. INTERLOCK OPERATION WITH OPERATION OF EVAPORATOR FAN.
  - ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES TO HAVE APPROPRIATE RATED FIRE DAMPERS OR OTHER APPROVED MEANS.
  - FINAL LOCATION OF EXHAUST FANS TO BE DETERMINED IN FIELD.

**OSA CALCULATIONS**

CLASSIFICATION	AREA (A <sub>z</sub> )	CFM PER AREA FT <sup>2</sup> (R <sub>a</sub> )	PEOPLE PERSONS (P <sub>z</sub> )	CFM PER PERSON (R <sub>p</sub> )	ZONE EFFECTIVENESS (E <sub>z</sub> )	OSA REQ. CFM
DINING AND BAR	3300	0.18	129	7.5	0.8	1952
KITCHEN	1075	0.18	4	7.5	0.8	280
$V_{bz} = R_p P_z + R_a A_z$ $V_{oz} = V_{bz} / E_z$						
TOTAL REQUIRED:						2232
TOTAL SUPPLIED:						2240

**SPACE AIR BALANCE SCHEDULE**

MARK	OUTSIDE AIR CFM	EXHAUST AIR CFM
AHU-1	700	
AHU-2	700	
AHU-3	700	
EF-4		400
TOTAL	2100	400

**KITCHEN AIR BALANCE SCHEDULE**

MARK	OUTSIDE AIR CFM	EXHAUST AIR CFM	PRESSURE CFM
AHU-4	700		+700
MAU-1	4576		+4576
EF-1,2&3		6169	-6169
TOTAL	5276	6169	-893

THE CONTRACTOR SHALL VERIFY AND FIELD CHECK ALL DIMENSIONS AND CONDITIONS PRIOR TO THE START OF ANY WORK. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS FOR ANY CONDITIONS THAT MAY AFFECT HIS WORK AND REPORT TO THE ARCHITECT AND/OR ENGINEER ANY CONDITIONS OR DISCREPANCIES BEFORE REQUESTING A CLARIFICATION. PRIOR TO THE START OF ANY WORK, IT IS A WAIVER TO ANY CLAIM BY THE CONTRACTOR FOR ADDITIONAL EXPENSE MADE NECESSARY BY REASON OF LATER INTERPRETATION OF THE DRAWINGS.



**REVISION BLOCK**

NO.	DATE	DESCRIPTION

**REVISION DESCRIPTION**

MARK	DATE	DESCRIPTION

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**PROJECT TITLE**

DESCRIPTION

SEAL

**SHEET TITLE**

HVAC - NEW WORK PLAN

**ISSUE BLOCK**

DATE	DESCRIPTION
09/29/16	RELEASED FOR MEP WORK
09/27/16	CLIENT REVIEW PRELIMS

PROJECT NO: JERN5-001-16  
 DATE: 09/27/16  
 SCALE: AS NOTED  
 DRAWN BY: MMB FINAL REVIEW: MMB