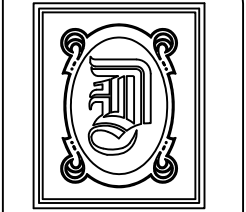


**HVAC CALCULATIONS**

Green State Farm Retail Complex HVAC Calculations  
Fri Apr 9 11:44:16 EDT 2010

**SUITE A 3000 SqFt**  
 The Btuh Gain for 225 SqFt of NorthEast and NorthWest Double Pane Glass = 15750  
 The Btuh Gain for 1600 SqFt R-13 Wall = 3680  
 The Btuh Gain for 3000 SqFt Ceiling / Roof Combo R-19= 15600  
 The Btuh Gain for 30 People = 300  
 Fresh Air Vbz = RpPz + RaAz  
 Vbz = (5) (30) + (0.06) (3000) = 330 cfm  
 The Btuh Gain for Outside Fresh Air = 9900  
 The Total BTUh Gain = 45230  
 The Total Tons of HVAC needed = 3.770

**SUITE E 1200 SqFt**  
 The Btuh Gain for 163 SqFt of NorthEast and NorthWest Double PaneGlass = 11410  
 The Btuh Gain for 1000 SqFt R-13 Wall = 2300  
 The Btuh Gain for 1200 SqFt Ceiling / Roof Combo R-19= 6240  
 The Btuh Gain for 12 People = 120  
 Fresh Air Vbz = RpPz + RaAz  
 Vbz = (5) (12) + (0.06) (1200) = 132 cfm  
 The Btuh Gain for Outside Fresh Air = 3960  
 The Total BTUh Gain = 24030  
 The Total Tons of HVAC needed = 2.002



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ARCHITECTURE  
ENGINEERING  
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INVESTIGATION  
EXPERT WITNESS

GREEN-STATEFARM  
RETAIL COMPLEX  
GAUSE  
BLVD., WEST  
SLIDELL, LA

MECHANICAL  
PLAN

REV:  
SCALE: AS NOTED  
JOB#: 2057  
DATE: 04-19-10  
SHEET

M-1

OF

**HVAC NOTES**

1. CONCEALED DUCTWORK TO BE UL-181, CLASS 1, FIBERGLASS DUCTBOARD. DUCTS SHALL BE SIZED TO LIMIT AIR FLOWS TO 2000 CFM & SECONDARY DUCTS TO 800 CFM. TO BE INSTALLED PER SMACNA STANDARDS.
2. EXPOSED DUCTWORK TO BE GALVANIZED SHEET METAL PER SMACNA STANDARDS. LINE WITH NEOPRENE COATED 1.0" 1.5 POUNDS PER CUBIC FOOT DUCT INSULATION.
3. ROUND FLEXIBLE DUCT TO BE UL-181, CLASS 1, AIR DUCT MATERIALS.
4. DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.
5. IN ALL SYSTEMS 2000 CFM AND OVER, BUT LESS THAN 15,000 CFM, SMOKE DETECTORS SHALL BE INSTALLED, IN ACCORDANCE WITH NFPA 72E & NFPA 90A, IN THE RETURN DUCT DOWNSTREAM OF THE AIR HANDLING UNIT AND ALL FILTERS TO AUTOMATICALLY STOP THE FAN.
6. PROVIDE U.L. LISTED 125' F FIRESTAT IN RETURN AIR OF EACH SYSTEM UNDER 2000 CFM TO SHUT DOWN THE FAN IN THE EVENT OF FIRE.
7. PROVIDE U.L. RATED FIRE DAMPERS WHERE REQUIRED AT ALL DUCT PENETRATIONS OF FIRE-RATED ASSEMBLIES AND WHERE REQUIRED BY CODE, INCLUDING OUTSIDE AIR INTAKES.
8. CONDENSATE DRAINS TO BE PVC PIPE RUN TO PLUMBERS P-TRAP WITHIN FIVE FEET OF AIR HANDLING UNITS.
9. ALL AIR HANDLING SYSTEMS TO BE BALANCED TO ASSURE PROPER AIR FLOWS PER PLANS.
10. ALL THERMOSTATS TO BE AUTOMATIC CHANGEOVER WITH HEAT SWITCH.
11. EXHAUST FAN EQUAL TO BROAN MODEL NO. 100 CF. OR EQUAL. FAN SHALL BE CONTROLLED BY A SWITCH ON THE WALL IN THE SAME LOCATION AS LIGHT SWITCH(S). PROVIDE BACK DRAFT DAMPER.
12. PROVIDE AND INSTALL WATER PROOF GRILLE VENT IN PROPER ROOF LOCATION FOR PLUMBING FIXTURE EXHAUST.
13. ALL SUPPLY AIR VENTS SHALL BE EQUIPPED WITH AIR CONTROL DAMPERS.
14. LOCATE OUTDOOR UNITS AS SHOWN ON ARCH. DWGS.
15. REFRIGERANT LINES SHALL BE SIZED BY UNIT MANUFACTURER AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
16. FRESH AIR SHALL BE SUPPLIED TO EACH AIR HANDLER THROUGH EXTERIOR WALL DUCT SUPPLIED WITH A CONTROL DAMPER.
17. INSTALL FIRE DAMPER WHERE S.A. & R.A. DUCTS PENETRATE 1 HOUR RATED CEILINGS.
18. ALL ELECTRICAL, MECHANICAL, AND PLUMBING PENETRATING FIRE WALLS SHALL BE FIRE CAULKED. (PENETRATIONS THROUGH RATED CONSTRUCTION SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN TESTED IN ACCORDANCE WITH ASTM-E8-14).
19. ALL MECHANICAL SYMBOLS ARE DRAWN DIAGRAMATICALLY, CONTRACTOR TO VERIFY WITH OWNER LOCATIONS OF VENTS, DAMPERS, REGISTERS, ETC.
20. REFER TO STRUCTURAL DRAWINGS TO COORDINATE LOCATION(S) & MOUNTING OF MECHANICAL EQUIPMENT.
21. FLEXIBLE DUCTWORK LENGTH NOT TO EXCEED 10'-0".
22. REFER TO REFLECTED CEILING PLAN FOR FINAL GRILLE AND DIFFUSER LOCATIONS AND COORDINATE AS REQUIRED.
23. FINAL LOCATION OF TEMPERATURE CONTROLS TO BE COORDINATED WITH OWNER AT JOB SITE.
24. PROVIDE AND INSTALL SMOKE DETECTORS AS APPROVED BY LOCAL AHJ'S. PLACE NEAR R/A AND S/A OPENINGS OF AHU AND PROVIDE WITH ACCESS PANEL, WIRING BY ELECTRICAL CONTRACTOR.
25. FRESH AIR INTAKES ARE REQUIRED TO HAVE MOTORIZED OR GRAVITY DAMPERS TO SHUT OFF WHEN SYSTEM IS NOT RUNNING. ALL THERMOSTATS MUST BE PROGRAMMABLE. SEE SECTIONS 502.4.4 OR 503.2.4.3 OF THE 2006 INTERNATIONAL ENERGY CODE.

**MECHANICAL PLAN**

SCALE: 3/16" = 1'

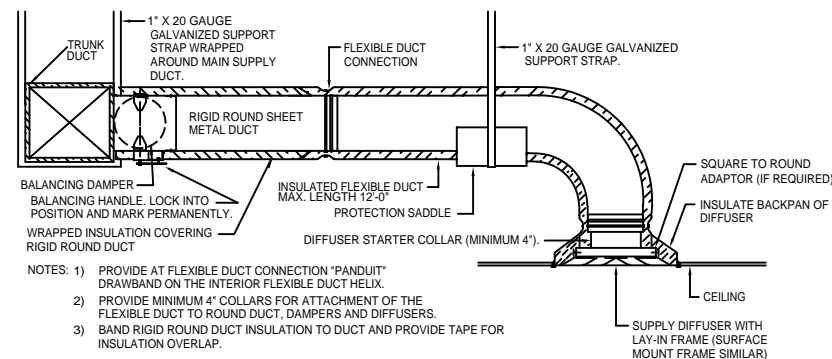


**EXHAUST FAN SCHEDULE**

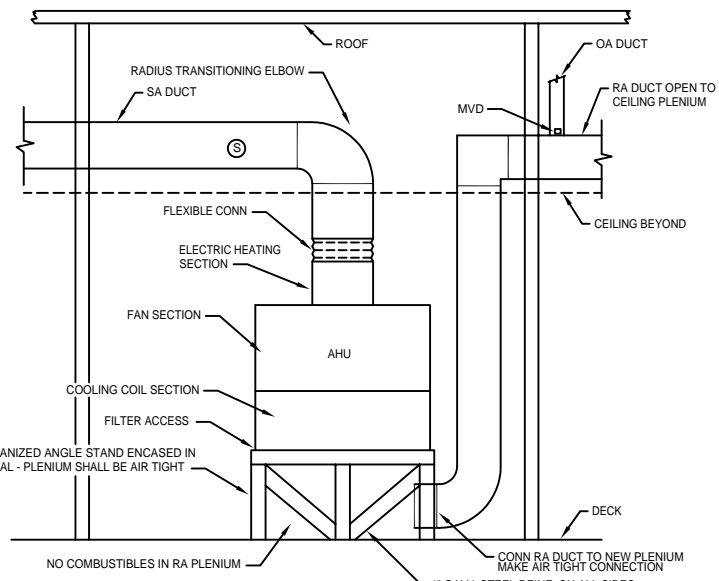
NO.	LOCATION	CFM	VOLTAGE	TYPE	MANF.
EF1	RESTROOM	75	120	VENT	BROAN

**A/C UNIT SCHEDULE**

NO.	TOTAL BTU	CFM	O.A.	HEAT ELEC.	ELECTRICAL			COMMENTS
					VOLTAGE	MCA	CKT BRKR	
A/C 1	48,000 4 TON	1,600	180	7.5 KW	208V, 1Ø	-	-	YORK - (VERIFY WITH OWNER)
A/C 2	48,000 4 TON	1,600	180	7.5 KW	208V, 1Ø	-	-	"
A/C 3	36,000 3 TON	1,200	140	1.3KW	208V, 1Ø	-	-	"



DIFFUSER CONNECTION DETAIL-FLEX DUCT  
N.T.S.



NOTES:  
1. ON UNITS UNDER 5 TONS PROVIDE FIRESTAT IN THE RETURN AIR WIRED TO SHUT DOWN THE UNIT WHEN TEMPERATURE IS EXCEEDED.  
2. ON UNITS 5 TONS AND LARGER, PROVIDE A SMOKE DETECTOR IN THE SUPPLY AND THE RETURN AIR DUCTS WIRED TO SHUT DOWN THE UNIT WHEN SMOKE IS DETECTED. THE SMOKE DETECTOR IN THE RETURN AIR DUCT MAY BE ELIMINATED IF CONTRACTOR RECEIVES APPROVAL FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

AIR HANDLING UNIT INSTALLATION DETAIL  
N.T.S.

**PRELIMINARY (NOT FOR CONSTRUCTION)**