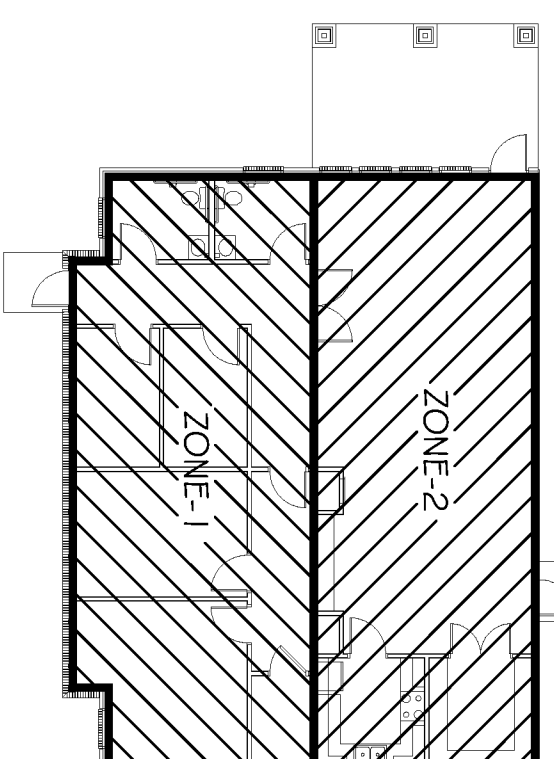


MECHANICAL PLAN  
SCALE: 1/4" = 1'

HVAC NOTES

1. CONCEALED DUCTWORK TO BE UL-181, CLASS 1, FIBERGLASS DUCTBOARD. DUCTS SHALL BE SIZED TO LIMIT AIR DUCTS TO 1000 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 1.25" FIRE-RATED 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 SWITCHES.
12. PROVIDE BACK DRIFT DAMPER.
13. PROVIDE AND INSTALL WATER FROOF GRILLE VENT IN PROPER ROOF LOCATION FOR PLUMBING FIXTURE EXHAUST.
14. ALL SUPPLY AIR VENTS SHALL BE EQUIPPED WITH AIR CONTROL DAMPERS.
15. LOCATE OUTDOOR UNITS AS SHOWN ON ARCH. DWGS.
16. REFRIGERANT LINES SHALL BE SIZED BY UNIT MANUFACTURER AND INSTALLED ACCORDING TO MANUFACTURERS' INSTRUCTIONS.
17. FRESH AIR SHALL BE SUPPLIED TO EACH AIR HANDLER THROUGH EXTERIOR WALL DUCT SUPPLIED WITH A CONTROL DAMPER.
18. INSTALL FIRE DAMPER WHERE 5.0" & R.A. DUCTS PENETRATE 1 HOUR RATED CEILING.
19. ALL ELECTRICAL, MECHANICAL, AND PLUMBING PENETRATING FIRE WALLS SHALL BE FIRE CALKED. PENETRATIONS THROUGH RATED CONSTRUCTION SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAME AND HOT GASES WHEN TESTED IN ACCORDANCE WITH ASTM E814.
20. ALL MECHANICAL SYMBOLS ARE DRAWN DIAGRAMMATICALLY. CONTRACTOR TO VERIFY WITH OWNER LOCATIONS OF VENTS, DAMPERS, REGISTERS, ETC.
21. REFER TO STRUCTURAL DRAWINGS TO COORDINATE 10'-0".
22. FLEXIBLE DUCTWORK LENGTH NOT TO EXCEED 10'-0".
23. REFER TO REFLECTED CEILING PLAN FOR FINAL GRILLE AND DIFFUSER LOCATIONS AND COORDINATE AS REQUIRED.
24. FINAL LOCATION OF TEMPERATURE CONTROLS TO BE COORDINATED WITH OWNER AT JOB SITE.
25. PROVIDE AND INSTALL SMOKE DETECTORS AS APPROVED BY LOCAL AHJ'S. PLACE NEAR RA AND S/A OPENINGS OF AHU AND PROVIDE, WITH ACCESS PANEL, WIRING BY ELECTRICAL CONTRACTOR.
26. 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.

KEY PLAN  
N.T.S.

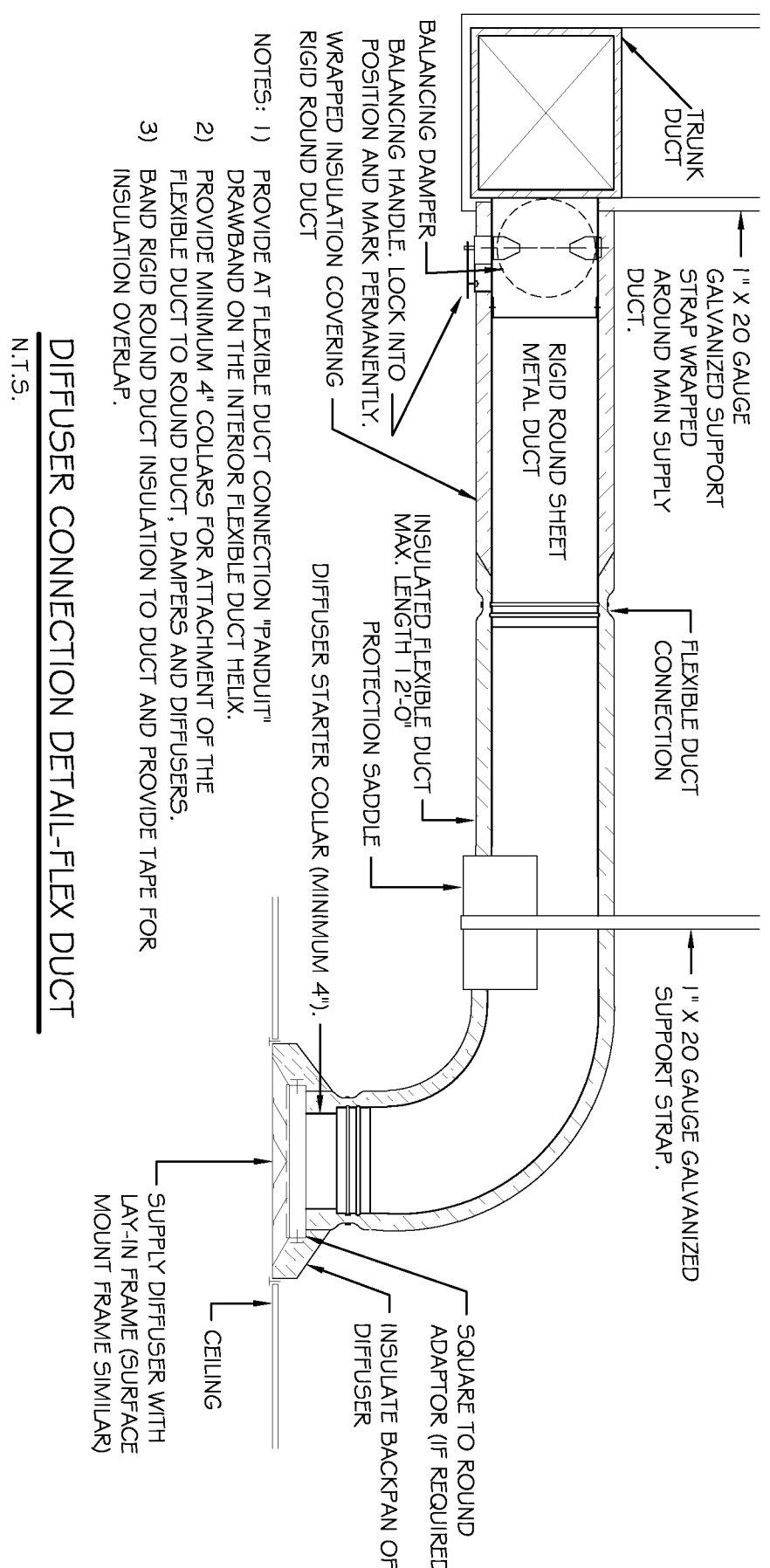


EXHAUST FAN SCHEDULE

NO.	LOCATION	CFM	VOLTAGE	TYPE	MANF.
E#1	RESTROOM 100	120	120	VENT	BROAN
E#2	RESTROOM 100	120	120	VENT	BROAN

FRESH AIR REQUIREMENTS PER AC TABLE 403.3

ROOM NAME	SQUARE FEET	O.A. FEET	ZONE	HEAT (KW)	COMMENTS
ZONE 1: 933 SQ FT					
FOYER 100	108	82	1	-	
WOMEN'S RESTROOM 102	61	61	1	-	
OFFICE 103	86	86	1	-	
OFFICE 104	87	87	1	-	
CORRIDOR 105	64	64	1	-	
OFFICE 107	91	91	1	-	
OFFICE 108	159	159	1	-	
ELECTRIC ROOM 109	190	190	1	-	
ZONE 2: 914 SQ FT					
WARMING KITCHEN 110	90	90	2	-	
SUPPLIES 111	87	87	2	-	
MEETING ROOM 112	737	737	2	-	



- NOTES:
- 1) PROVIDE AT EXHAUST DUCT CONNECTION, RAINOUT PREVENTION AND DUCT INSULATION.
  - 2) PROVIDE MINIMUM 4" COLLARS FOR ATTACHMENT OF THE FLEXIBLE DUCT TO ROUND DUCT, DAMPERS AND DIFFUSERS.
  - 3) BAND ROUND DUCT INSULATION TO DUCT AND PROVIDE TAPE FOR INSULATION OVERLAP.

PAUL REES OFFICE - HVAC CALCULATIONS

Project Paul Rees Office Building - Zone 1 & 2 HVAC Calculations  
Wed May 11 14:16:45 EDT 2011

AC UNIT SCHEDULE

NO.	TOTAL BTU	CFM	O.A.	HEAT ELEC.	VOLTAGE	MCA	CKT BRKR	YORK - VERIFY WITH OWNER
AC 1	42,000	1,400	82	10 KW	208V, 1Ø	26.2	LP-1.3, 2.4	
AC 2	42,000	1,400	285	10 KW	208V, 1Ø	26.2	LP-1.5, 7.6, 8.	

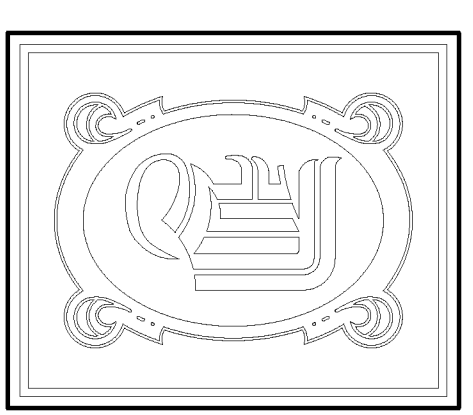
ZONE 1: 933 SqFt

The Buhn Gain for 17,25 SqFt of East and West Double Pane Glass = 1638.75  
The Buhn Gain for 49.5 SqFt of South Double Pane Glass = 3465  
The Buhn Gain for 15.6 SqFt of Windows in Doors = 205.92  
The Buhn Gain for 445.875 SqFt of Wood R-13 & 1/2" Gypsum Wall Number 1 = 1159.275  
The Buhn Gain for 180.75 SqFt of Wood R-13 & 1/2" Gypsum Wall Number 2 = 415.725  
The Buhn Gain for 180.75 SqFt of Mason Above Grade R-11 Wall Number 3 = 289.2  
The Buhn Gain for 445.875 SqFt of Mason Above Grade R-11 Wall Number 4 = 713.4  
The Buhn Gain for 953 SqFt of Roof Only 9" - 9.5" R-30; Ceiling Number 1 = 3049.6  
The Buhn Gain for 5 People = 50  
The Buhn Gain for 533 SqFt of Area Lighting in an Office = 2859  
Fresh Air Vbz = RqPz + RaAz  
Fresh Air Vbz = (5) (5) + (0.06) (953) = 82 cfm of Fresh Air  
The Buhn Gain for Outside Fresh Air #1 = 4002.6  
The Total BTUH Gain = 19652.39  
Minimum Tons of HVAC needed = 3.23

ZONE 2: 914 SqFt

The Buhn Gain for 74.75 SqFt of East and West Double Pane Glass = 7101.25  
The Buhn Gain for 15.6 SqFt of Windows in Doors = 205.92  
The Buhn Gain for 495.4167 SqFt of Wood R-13 & 1/2" Gypsum Wall Number 1 = 1139.4584  
The Buhn Gain for 184.5833 SqFt of Wood R-13 & 1/2" Gypsum Wall Number 2 = 424.54159  
The Buhn Gain for 184.5833 SqFt of Mason Above Grade R-11 Wall Number 3 = 295.33328  
The Buhn Gain for 495.4167 SqFt of Wood R-11 & 1/2" Gypsum Wall Number 4 = 1288.08342  
The Buhn Gain for 91.4 SqFt of Roof Only 9" - 9.5" R-30; Ceiling Number 1 = 2924.8  
The Buhn Gain for 46 People = 460  
The Buhn Gain for 91.4 SqFt of Area Lighting in an Office = 2742  
The wattage for 1 Gallon Coffee Machines = 470  
Fresh Air Vbz = RqPz + RaAz  
Fresh Air Vbz = (5) (46) + (0.06) (914) = 285 cfm of Fresh Air  
The Buhn Gain for Outside Fresh Air #1 = 3838.8  
The Total BTUH Gain = 22018.1867  
Minimum Tons of HVAC needed = 3.13

This in accordance with the International Mechanical Code 2006



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MECHANICAL  
PLAN

SCALE: AS NOTED  
JOB#: 2104  
DATE: 05-20-11  
SHEET 17