CROSSWINDS APARTMENTS HVAC CALCULATIONS

ONE BEDROOM UNIT 1A:

Project Crosswinds Apartments Unit 1A - One Bedroom HVAC Calculations
Thu Dec 3 11:07:09 EST 2009

Btuh Gain for 26.66 SqFt of Double Pane Glass = 2932.6
Btuh Gain for 21.09 SqFt of Windows in Doors = 278.388

Btuh Gain for 261 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 600.3
Btuh Gain for 274.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 631.35
Btuh Gain for 301.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 693.45
Btuh Gain for 301.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 693.45

Btuh Gain for 921 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 3684
Btuh Gain for 2 People = 20
Btuh Gain for 921 SqFt of Area Lighting in an Apartment = 2763
Wattage for 1 Coffee Machine = 470

Total Outside Fresh Air CFM = 180
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 13894.538
Total Tons of HVAC needed = 1.658 or 2 Tons

ONE BEDROOM UNIT 1A-HC:

Project Crosswinds Apartments Unit 1A-HC - One Bedroom Handicap HVAC Calculations
Thu Dec 3 11:10:07 EST 2009

Btuh Gain for 26.66 SqFt of Double Pane Glass = 2932.6
Btuh Gain for 21.09 SqFt of Windows in Doors = 278.388

Btuh Gain for 261 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 600.3
Btuh Gain for 274.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 631.35
Btuh Gain for 301.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 693.45
Btuh Gain for 301.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 693.45

Btuh Gain for 921 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 3684
Btuh Gain for 2 People = 20
Btuh Gain for 921 SqFt of Area Lighting in an Apartment = 2763
Wattage for 1 Coffee Machine = 470

Total Outside Fresh Air CFM = 180
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 13894.538
Total Tons of HVAC needed = 1.658 or 2 Tons

ONE BEDROOM UNIT 1B:

Project Crosswinds Apartments Unit 1B - One Bedroom HVAC Calculations
Thu Dec 3 11:20:14 EST 2009

Btuh Gain for 89.9 SqFt of Double Pane Glass = 9889

Btuh Gain for 274.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 631.35
Btuh Gain for 301.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 693.45
Btuh Gain for 292.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 672.75
Btuh Gain for 292.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 672.75

Btuh Gain for 968 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 3872
Btuh Gain for 2 People = 20
Btuh Gain for 968 SqFt of Area Lighting in an Apartment = 2904
Wattage for 1 Coffee Machine = 470

Total Outside Fresh Air CFM = 180
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 20953.3
Total Tons of HVAC needed = 1.746 or 2 Tons

CROSSWINDS APARTMENTS HVAC CALCULATIONS

TWO BEDROOM UNIT 2A:

Project Crosswinds Apartments Unit 2A - Two Bedroom HVAC Calculations
Thu Dec 3 12:34:34 EST 2009

Btuh Gain for 56.634 SqFt of Double Pane Glass = 6229.74
Btuh Gain for 21.09 SqFt of Windows in Doors = 278.388

Btuh Gain for 382.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 879.75
Btuh Gain for 382.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 879.75
Btuh Gain for 301.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 693.45
Btuh Gain for 292.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 672.75

Btuh Gain for 1324 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 5296
Btuh Gain for 3 People = 30
Btuh Gain for 1324 SqFt of Area Lighting in an Apartment = 3972
Wattage for 1 Coffee Machine = 470

Total Outside Fresh Air CFM = 245
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 20539.828
Total Tons of HVAC needed = 2.312 or 2 1/2 Tons

TWO BEDROOM UNIT 2A-HC:

Project Crosswinds Apartments Unit 2A-HC - Two Bedroom Handicap HVAC Calculations
Thu Dec 3 12:34:34 EST 2009

Btuh Gain for 56.634 SqFt of Double Pane Glass = 6229.74
Btuh Gain for 21.09 SqFt of Windows in Doors = 278.388

Btuh Gain for 382.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 879.75
Btuh Gain for 382.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 879.75
Btuh Gain for 301.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 693.45
Btuh Gain for 292.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 672.75

Btuh Gain for 1324 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 5296
Btuh Gain for 3 People = 30
Btuh Gain for 1324 SqFt of Area Lighting in an Apartment = 3972
Wattage for 1 Coffee Machine = 470

Total Outside Fresh Air CFM = 245
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 20539.828
Total Tons of HVAC needed = 2.312 or 2 1/2 Tons

CROSSWINDS APARTMENTS HVAC CALCULATIONS

THREE BEDROOM UNIT 3A:

Project Crosswinds Apartments Unit 3A - Three Bedroom HVAC Calculations
Thu Dec 3 12:56:33 EST 2009

Btuh Gain for 69.96 SqFt of Double Pane Glass = 7695.6
Btuh Gain for 21.09 SqFt of Windows in Doors = 278.388

Btuh Gain for 468 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 1076.4
Btuh Gain for 468 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 1076.4
Btuh Gain for 311.25 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 715.875
Btuh Gain for 311.25 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 715.875

Btuh Gain for 1482 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 5928
Btuh Gain for 4 People = 40
Btuh Gain for 1482 SqFt of Area Lighting in an Apartment = 4446
Wattage for 1 Coffee Machine = 470

Total Outside Fresh Air CFM = 260
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 23590.538
Total Tons of HVAC needed = 2.966 or 3 Tons

THREE BEDROOM UNIT 3A-HC:

Project Crosswinds Apartments Unit 3A-HC - Three Bedroom Handicap HVAC Calculations
Thu Dec 3 12:56:33 EST 2009

Btuh Gain for 69.96 SqFt of Double Pane Glass = 7695.6
Btuh Gain for 21.09 SqFt of Windows in Doors = 278.388

Btuh Gain for 468 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 1076.4
Btuh Gain for 468 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 1076.4
Btuh Gain for 311.25 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 715.875
Btuh Gain for 311.25 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 715.875

Btuh Gain for 1482 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 5928
Btuh Gain for 4 People = 40
Btuh Gain for 1482 SqFt of Area Lighting in an Apartment = 4446
Wattage for 1 Coffee Machine = 470

Total Outside Fresh Air CFM = 260
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 23590.538
Total Tons of HVAC needed = 2.966 or 3 Tons

CROSSWINDS APARTMENTS HVAC CALCULATIONS

LEASING BLDG./CLUBHOUSE-FIRST FLOOR- ZONE 1(Lease Office):

Project Crosswinds Apartments Lease Office/Club House-Zone 1 HVAC Calculations
Thu Dec 3 15:31:23 EST 2009

Btuh Gain for 28.43 SqFt of North Double Pane Glass = 852.9
Btuh Gain for 26.3 SqFt of East and West Double Pane Glass = 2893
Btuh Gain for 26.3 SqFt of South Double Pane Glass = 2104
Btuh Gain for 66.15 SqFt of Windows in Doors = 873.18

Btuh Gain for 324 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 745.2
Btuh Gain for 342 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 786.6
Btuh Gain for 342 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 786.6
Btuh Gain for 252 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 579.6

Btuh Gain for 1228 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 4912
Btuh Gain for 22 People = 220
Btuh Gain for 1228 SqFt of Area Lighting in an Office = 3684

Total Outside Fresh Air CFM = 119
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 18427.08
Total Tons of HVAC needed = 4.536 or 5 Tons

LEASING BLDG./CLUBHOUSE-FIRST FLOOR- ZONE 2 (Recreation):

Project Crosswinds Apartments Lease Office/Club House-Zone 2 HVAC Calculations
Thu Dec 3 15:47:54 EST 2009

Btuh Gain for 28.43 SqFt of North Double Pane Glass = 852.9
Btuh Gain for 39.45 SqFt of South Double Pane Glass = 3156
Btuh Gain for 18.9 SqFt of Windows in Doors = 249.48

Btuh Gain for 448.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 1031.55
Btuh Gain for 260.25 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 598.575
Btuh Gain for 483.75 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 1112.625
Btuh Gain for 216 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 496.8

Btuh Gain for 1285 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 5140
Btuh Gain for 15 People = 150
Btuh Gain for 1285 SqFt of Area Lighting in a Recreational Facility = 3855

Total Outside Fresh Air CFM = 420
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 16652.93
Total Tons of HVAC needed = 3.388 or 4 Tons

LEASING BLDG./CLUBHOUSE-FIRST FLOOR- ZONE 3 (Exercize Room):

Project Crosswinds Apartments Lease Office/Club House-Zone 3 HVAC Calculations
Thu Dec 3 16:01:00 EST 2009

Btuh Gain for 79.08 SqFt of North Double Pane Glass = 2372.4
Btuh Gain for 105.44 SqFt of East and West Double Pane Glass = 11598.4
Btuh Gain for 28.35 SqFt of Windows in Doors = 374.22

Btuh Gain for 343.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 790.05
Btuh Gain for 288 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 662.4
Btuh Gain for 343.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 790.05
Btuh Gain for 288 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 662.4

Btuh Gain for 1222 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 4888
Btuh Gain for 22 People = 220
Btuh Gain for 1222 SqFt of Area Lighting in an Excersize Facility = 3666

Total Outside Fresh Air CFM = 229
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 26023.92
Total Tons of HVAC needed = 4.569 or 5 Tons

LEASING BLDG./CLUBHOUSE-SECOND FLOOR- ZONE 4 (1 Bdr. Apartment):

Project Crosswinds Apartments Lease Office/Club House-Zone 4 HVAC Calculations Thu Dec 3 16:12:27 EST 2009

Btuh Gain for 41.58 SqFt of East and West Double Pane Glass = 4573.8
Btuh Gain for 39.45 SqFt of South Double Pane Glass = 3156
Btuh Gain for 9.45 SqFt of Windows in Doors = 124.74

Btuh Gain for 337.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 776.25
Btuh Gain for 204 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 469.2
Btuh Gain for 247.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 569.25
Btuh Gain for 337.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 776.25

Btuh Gain for 971 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 3884
Btuh Gain for 2 People = 20
Btuh Gain for 971 SqFt of Area Lighting in an Apartment = 2913
Wattage for 1 Coffee Machine = 470

Total Outside Fresh Air CFM = 188
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 18860.49
Total Tons of HVAC needed = 1.572 or 2 Tons

LEASING BLDG./CLUBHOUSE-SECOND FLOOR- ZONE 5 (2 Bdr. Apartment):

Project Crosswinds Apartments Lease Office/Club House-Zone 5 HVAC Calculations
Thu Dec 3 16:18:25 EST 2009

Btuh Gain for 8.7 SqFt of North Double Pane Glass = 261
Btuh Gain for 39.45 SqFt of South Double Pane Glass = 3156
Btuh Gain for 9.45 SqFt of Windows in Doors = 124.74

Btuh Gain for 480 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 1 = 1104
Btuh Gain for 337.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 2 = 776.25
Btuh Gain for 523.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 3 = 1204.05
Btuh Gain for 211.5 SqFt of Wood R-13 & 5/8" Gypsum Wall Number 4 = 486.45

Btuh Gain for 1477 SqFt of Ceiling and Roof Combo R-30; Ceiling Number 1 = 5908
Btuh Gain for 3 People = 30
Btuh Gain for 1477 SqFt of Area Lighting in an Apartment = 4431
Wattage for 1 Coffee Machine = 470

Total Outside Fresh Air CFM = 245
This is in accordance with International Mechanical Code 2006

Total BTUh Gain = 19079.49
Total Tons of HVAC needed = 2.589 or 3 Tons

APARTMENTS HEAT PUMP SCHEDULE

NO.	TOTAL BTU	CFM	O.A.	HEAT ELEC.	ELECTRICAL VOLTAGE	MCA	CKT BRKR	COMMENTS
1	24,000 2 TON	800	172	5 KW	208V, 1Ø	-	A/B/C-1,3	1 BEDROOM UNITS
2	30,000 2 1/2 TON	1000	247	7 1/2 KW	208V, 1Ø	-	D/G-1,3	2 BEDROOM UNITS
3	36,000 3 TON	1200	274	7 1/2 KW	208V, 1Ø	-	F/H-1,3	3 BEDROOM UNITS

SEE SPECIFICATIONS

LEASING OFFICE/CLUBHOUSE HEAT PUMP SCHEDULE

NO.	TOTAL BTU	CFM	O.A.	HEAT ELEC.	ELECTRICAL VOLTAGE	MCA	CKT BRKR	COMMENTS
1	24,000 2 TON	800	177	5 KW	208V, 1Ø	-	K-1,3	ZONE 4(UPSTAIRS)
2	36,000 3 TON	1200	235	7 1/2 KW	208V, 1Ø	-	J-1,3	ZONE 5(UPSTAIRS)
3	48,000 4 TON	1500	416	15 KW	208V, 1Ø	-	EP-1,3	ZONE 2(KITCHEN)
4	60,000 5 TON	2000	869	20 KW *	208V, 1Ø	-	EP-9,11	ZONE 3(EXCERSIZE)
5	60,000 5 TON	2000	117	20 KW *	208V, 1Ø	-	EP-2,4	ZONE 1(LEASING)

SEE SPECIFICATIONS

NOTES:
* 20 KW HEAT UNIT COMPOSED OF 2 EA. 10 KW HEATER ELEMENTS.
** CONTRACTOR SHALL ASSERTAIN & INSTALL CORRECT SIZE ELECTRICAL EQUIPMENT AND WIRING TO MEET REQUIREMENTS OF EQUIPMENT PURCHASED.

APARTMENTS
FRESH AIR REQUIREMENTS PER IMC 2006, TABLE 403.3

APARTMENT SIZE & NUMBER / ROOM DESC.	SQUARE FEET	OCCUPANTS	CFM O.A. / OCC.	TOTAL REQ. O.A. (cfm)
HP-1 = 2 TON				180
1 BEDROOM UNIT 1A				
LIVING AREAS	745	2	15	30
KITCHEN	107		100	100
BATHROOM	69		50cfm / W.C.	50
OVERALL	921	2		180
1 BEDROOM UNIT 1A-HC				
LIVING AREAS	737	2	15	30
KITCHEN	107		100	100
BATHROOM	77		50cfm / W.C.	50
OVERALL	921	2		180
1 BEDROOM UNIT 1B				
LIVING AREAS	745	2	15	30
KITCHEN	115		100	100
BATHROOM	108		50cfm / W.C.	50
OVERALL	968	2		180
HP-2 = 2 1/2 TON				245
2 BEDROOM UNIT 2A				
LIVING AREAS	1,033	3	15	45
KITCHEN	99		100	100
BATHROOMS (2)	192		50cfm / W.C.	100
OVERALL	1,324	3		245
2 BEDROOM UNIT 2A-HC				
LIVING AREAS	1,037	3	15	45
KITCHEN	99		100	100
BATHROOMS (2)	188		50cfm / W.C.	100
OVERALL	1,324	3		245
HP-3 = 3 TON				260
3 BEDROOM UNIT 3A				
LIVING AREAS	1,231	4	15	60
KITCHEN	110		100	100
BATHROOMS (2)	141		50cfm / W.C.	100
OVERALL	1,482	4		260
3 BEDROOM UNIT 3A-HC				
LIVING AREAS	1,223	4	15	60
KITCHEN	110		100	100
BATHROOMS (2)	149		50cfm / W.C.	100
OVERALL	1,482	4		260

LEASING BLDG./CLUBHOUSE
FRESH AIR REQUIREMENTS PER IMC 2006, TABLE 403.3

ROOM/AREA DESCRIPTION	SQUARE FEET	OCCUPANTS	CFM O.A. / OCC.	TOTAL REQ. O.A. (cfm)
HP-1 = 2 TON				155
1 BDR. APARTMENT - ZONE 4				UPSTAIRS
LIVING AREAS	647	2	15	30
KITCHEN	131		100	100
BATHROOM	65		50cfm / W.C.	50
HALLWAY	39		0.06 cfm / sq ft	2.3
STAIR CORRIDOR	89		0.06 cfm / sq ft	5.3
OVERALL	971	2		188
HP-2 = 3 TON				245
2 BDR. APARTMENT - ZONE 5				UPSTAIRS
LIVING AREAS	1,179	3	15	45
KITCHEN	147		100	100
BATHROOMS (2)	151		50cfm / W.C.	100
OVERALL	1,477	3		245
HP-3 = 4 TON				420
KITCHEN/RECREATION - ZONE 2				
RECREATION AREA	630	13	10	130
KITCHEN	159		100	100
HALLWAY	171		0.06 cfm / sq ft	10
MAINTENANCE	70	1	5	5
MEDIA ROOM	99	1	25	25
MENS RESTROOM	78		75cfm / W.C.	75
WOMENS RESTROOM	78		75cfm / W.C.	75
OVERALL	1,285	15		420
HP-4 = 5 TON				229
EXCERSIZE/VENDING - ZONE 3				
EXCERSIZE ROOM	1,076	22	10	220
HALLWAY	67		0.06 cfm / sq ft	4
VENDING/RISER	79		5	5
OVERALL	1,222	22		229
HP-5 = 5 TON				119
LEASING OFFICE - ZONE 1				
MANAGER'S OFFICE	168	1	5	5
ASSISTANT MANAGER	181	1	5	5
RECEPTION AREA	207	6	5	30
LEASE AREA	413	13	5	65
COPY/FILE ROOM	110	1	5	5
HALLWAY	70		0.06 cfm / sq ft	4.2
STAIR CORRIDOR	79		0.06 cfm / sq ft	4.7
OVERALL	1,228	22		119

HVAC NOTES

1. CONCEALED DUCTWORK TO BE UL-181, CLASS 1, FIBERGLASS DUCTBOARD. DUCTS SHALL BE SIZED TO LIMIT MAIN DUCTS TO 1000 CFM & SECONDARY DUCTS TO 800 CFM TO BE INSTALLED PER SMACNA STANDARDS.
2. EXPOSED DUCTWORK TO BE GALVANIZED SHEET METAL PER SMACA 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 OVER 2000 CFM AND LESS THAN 15,000 CFM, SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72E 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 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 ARCHITECTURAL DRAWINGS.
15. REFRIGERANT LINES SHALL BE SIZED BY UNIT MANUFACTURER AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
16. FRESH AIR SHALL BE SUPPLIEDTO EACH AIR HANDLER THROUGH EXTERIOR WALL DUCT SUPPLIED WITH A CONTROL DAMPER.
17. INSTALL FIRE DAMPER WHERE SUPPLY AIR & RETURN AIR 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 AUTHORITIES. PLACE NEAR RETURN AIR AND SUPPLY AIR OPENINGS OF AHU AND PROVIDE, WITH ACCESS PANEL, WIRING BY ELECTRICAL CONTRACTOR.
25. FRESH AIR INTAKES SHALL HAVE GRAVITY DAMPERS TO SHUT OFF WHEN SYSTEM IS NOT RUNNING. ALL THERMOSTATS MUST BE PROGRAMABLE. SEE SECTIONS 502.4.4 OR 503.2.4.3 OF THE 2006 INTERNATIONAL ENERGY CODE.

EXHAUST FAN SCHEDULE

LOC	CFM	VOLTAGE	TYPE	MANUFACTURER
TOILETS	100	120	VENT/LIGHT	BROAN, NUTONE, OR PANASONIC

DAMMON
ENGINEERING, INC.

CHIEF ENGINEER
EMMETT
DAMMON, P.E.

CHIEF ARCHITECT
ROBERT
WILTSE

1095 FLORIDA AVENUE
SLIDELL, LA. 70458
OFFICE: 985-649-5832
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CROSSWINDS APARTMENTS
HAMMOND, LA

MECHANICAL CALCULATIONS, SCHEDULES, & NOTES

REV:

SCALE: AS NOTED

JOB#: 08112.13

DATE: 12-16-09

SHEET

M-1

OF