

1. ALL WORK & MATERIALS MUST BE IN ACCORDANCE WITH THE 2004 FLORIDA MECHANICAL CODE & ANY LOCAL BUILDING CODES & REGULATIONS.

2. MECHANICAL CONTRACTOR SHALL FURNISH ALL ITEMS COMPLETE INCLUDING MOTOR, STARTER, DRIVES, BELT GUARDS, ANTI VIBRATION INSULATORS, CONTROLS, TRAPS, DRAINS, ETC., AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.

3. MECHANICAL CONTRACTOR SHALL VERIFY ALL CLEARANCES AND ACCESS SPACE BEFORE FABRICATING OR INSTALLING HVAC EQUIPMENT. VERIFY ALL LOCATIONS AND DIMENSIONS IN FIELD BEFORE STARTING ANY WORK.

4. MECH CONTRACTOR SHALL NOT CUT ANY STRUCTURAL MEMBERS OF THE BUILDING WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

5. MECH CONTRACTOR SHALL FURNISH THE GENERAL CONTRACTOR EXACT DIMENSIONS OF OPENINGS REQUIRED FOR DUCTS, SLEEVES, ETC.

6. COOPERATION WITH UTILITIES, OWNER, GEN. CONTRACTOR AND OTHER SUBCONTRACTORS IS MANDATORY. HVAC SUBCONTRACTOR TO COORDINATE W/ FRAMING SUBCONTRACTOR. IN GENERAL, PLANS ARE DIAGRAMMATIC ONLY AND NOT TO BE SCALED. MECHANICAL CONTRACTOR SHALL COORDINATE ALL PLUMBING, HEATING AND ELECTRICAL WORK AT SITE SO AS NOT TO CONFLICT IN LOCATION WITH OTHER TRADES.

7. COORDINATE CEILING DIFFUSER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING AND LIGHTING PLANS.

8. LINE ALL RECTANGULAR SUPPLY AND RETURN DUCTS WITH 1" INSULATION. INCREASE DIMENSIONS SHOWN FOR INSULATION THICKNESS.

9. PROVIDE FLEXIBLE CONNECTIONS ON SUPPLY, RETURN AND EXHAUST AIR DUCTS CONNECTING TO UNIT RISERS.

10. ALL DIFFUSER NECKS SHALL BE INSULATED EXTERNALLY WITH 1" TO 2" DUCT WRAP.

11. CONTRACTOR SHALL PROVIDE ONE SET OF FILTERS IN ADDITION TO THOSE IN UNIT.

12. TEST AND BALANCE IN ACCORDANCE WITH AABC STANDARDS FOR FIELD MEASUREMENTS AND INSTRUMENTATION, FORM 81266, VOLUME ONE, THE ASSOCIATED AIR BALANCE COUNCIL.

13. CONTRACTOR SHALL REPLACE OR MAKE GOOD ANY DEFECTS DUE TO FAULTY WORKMANSHIP OR MATERIAL WHICH SHALL DEVELOP WITHIN ONE (1) YEAR FROM DATE OF ACCEPTANCE. THIS GUARANTEE SHALL COVER BOTH MATERIAL AND LABOR.

14. CONTRACTOR SHALL PAY FOR ANY COST ADDED TO THE TOTAL CONTRACT AS A RESULT OF AN UNAPPROVED SUBSTITUTION.

15. ALL METAL DUCT WORK, GAUGE, CONSTRUCTION AND SUPPORT SHALL CONFORM TO THE SMAGNA LOW VELOCITY DUCT MANUAL, LATEST EDITION, AND/OR LOCAL CODES. (SEE NOTE #48 - FIBROUS DUCT BOARD IS ALSO ACCEPTABLE)

16. FLEXIBLE DUCT WORK SHALL BE INSULATED AND LINED AND SHALL BE EQUAL TO THERMAFLEX MODEL M-KE:

A) FLEXIBLE DUCTS SHALL BE U.L. LABELED INSTALL PER MFGOR RECOMMENDATIONS.

B) FLEXIBLE DUCTING TO BE FIRE/SMOKE TESTED PRODUCT, APPLICABLE FOR THIS INSTALLATION.

C) FLEXIBLE DUCTING TO BE RUN IN CONTINUOUS LENGTHS (NO SPLICING) SHALL BE SUPPORTED MIN. EVERY 5'. SAG RATIO TO 1/2": 1'-0". FLEXIBLE DUCT SHALL BE ATTACHED WITH "THERMAFLEX" WRAP LOCK SERIES #0902 CLAMPS.

D) INSULATED FLEXIBLE DUCT TO COMPLY WITH 2004 FLORIDA MECHANICAL CODE REQUIREMENTS.

17. ALL METAL ROUND DUCT SHALL BE COVERED WITH 1" THICK FIBERGLASS INSULATION AND SEALED.

18. ALL REGISTERS TO BE BY CARNES (SERIES SK40) O.A.E., CODY 535W, RA-6F OR EQUAL. ALL REGISTERS ARE TO BE PREFINISHED WITH COLORS TO BE SELECTED BY OWNER/ARCHITECT.

19. ALL SUPPLY REGISTERS ARE TO HAVE THIN LINE 1-HR FIRE DAMPERS INSTALLED IN BOOT. PROVIDE RUSKIN CFD (OR EQUAL) FIRE DAMPERS WHEREVER DUCT WORK PENETRATES A FIRE RATED PARTITION OR CEILING. PROVISIONS SHALL BE MADE FOR SUFFICIENT ACCESS TO EACH FIRE DAMPER. ALL FIRE DAMPERS MUST BE RATED FOR APPLICABLE USE AND CARRY EVIDENCE OF UL APPROVAL. MAIN SUPPLY DUCT, AT CEILING PENETRATION ABOVE HVAC UNIT, MUST CONTAIN FIRE DAMPER WITH DUCT ACCESS DOOR SUCH AS RUSKIN TYPE ADHP-3 (OR EQUAL). ACCESS DOOR APPLIES ONLY TO THE MAIN SUPPLY DUCT ABOVE THE HVAC UNIT.

20. MECHANICAL CONTRACTOR MUST PROVIDE FIRESTATS OR SMOKE DETECTOR IN RETURN AIR DUCTS FOR UNITS OVER 2,000 CFM ONLY.

21. DUCT LOCATIONS MAY VARY SLIGHTLY DO TO TRUSS CHORD LOCATIONS.

22. MECH. CONT. TO PROVIDE PVC CONDUIT UNDER CONC. WALKS AT CONDENSER UNITS. INSTALL MECHANICAL CONDENSATE DRAIN ABOVE GRADE. COORDINATE W/ PLUMBING INSTALLER FOR CONNECTION TO UNDERGROUND DRAIN LINE IF APPLICABLE.

23. MECH. CONT. TO PROVIDE OUTSIDE AIR, AS REQUIRED, THRU INSULATED DUCTS. SEE PLANS FOR LOCATIONS.

24. MECH. CONT. TO SIZE LIQUID & SUCTION LINES FROM CONDENSER UNITS TO THE AIR HANDLER COILS.

25. REGISTERS/BRANCH DUCT IS SIZED FOR LISTED CFM. ALL DUCT DIMENSION SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.

26. BATH FAN EXHAUST TO BE 4" RD. GALV. PIPE (FAN BY ELECTRICAL CONTRACTOR).

27. ANY/ALL FLEXIBLE DUCTING PENETRATIONS INTO FIBROUS BOARD SHALL BE SEALED WITH NON-GAUZE MASTIC. (RCD-6)

28. CONDENSATION DRAIN LINES, ARE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR, TO BE 3/4" PVC.

29. REFRIGERATION LINE SETS TO BE RUN CONTINUOUSLY BETWEEN FLOORS AND EXIT OUT OF BUILDING THROUGH EXTERIOR WALL.

30. REFRIGERATION LINE SETS RUN IN INTERIOR WALLS TO BOTH BE INSULATED. LINE SETS MAYBE RUN UNDER BUILDING SLAB IN CONDUIT-COORDINATE WITH GENERAL CONTRACTOR

31. DRYER DUCT RUN IN ONE HOUR FLOOR SHALL BE ONE HOUR PROTECTED DRYER DUCT MUST BE RIGID METAL WITH LENGTH NOT TO EXCEED MANUFACTURERS SPECS. DRYER EXHAUST FANS ON TENANT SUPPLIED DRYERS SHALL BE ABLE TO EXHAUST AS FOLLOWS:

# OF 90° TURNS	MAX. LENGTH 4" METAL DUCT
0	90'
1	60'
2	45'
3	35'
4	25'

IT SHALL BE THE RESPONSIBILITY OF THE OWNER AND/OR MANAGEMENT TO VERIFY THAT THE EXHAUST FAN ON THE TENANT SUPPLIED DRYERS CAN MEET THE ABOVE REQUIREMENTS. SEE CHART AT RIGHT FOR ADDITIONAL INFORMATION.

32. PROVIDE EXTERIOR WEATHERPROOF CAP FOR DRYER DUCT.

33. ALL GAS VENTS (IF ANY ARE USED) THRU ROOF TO BE AT REAR OF BUILDINGS.

34. FIRE STOP AROUND ALL PENETRATIONS OF ONE HOUR RATED WALLS, CEILINGS, AND FLOORS. FIRE CAULK IS ACCEPTABLE.

35. DUCT EXHAUST FANS TO EXTERIOR WALL AT 1st & 2nd FLOORS & AT TOP FLOOR RUN DUCT TO RIDGE VENT.

36. ALL WALL MOUNTED THERMOSTATS SHALL BE INSTALLED AT A CENTER LINE ELEVATION OF 4'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS. LOCATION OF THE WALL MOUNTED THERMOSTAT SHALL BE COORDINATED WITH THE OTHER TRADES FOR A NEAT APPEARANCE. FINAL LOCATION OF THERMOSTAT SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT OR HIS REPRESENTATIVE IN THE FIELD.

36a. USE PROGRAMMABLE THERMOSTATS FOR FLORIDA ENERGY CODE CREDITS.

37. ALL DUCT WORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF "SMAGNA" DUCT CONSTRUCTION STANDARDS AND COMPLY WITH THE LATEST "NFPA" 90A REQUIREMENTS.

38. OUTDOOR CONDENSING UNITS SHALL BE SET ON A 4" THICK CONCRETE PAD. PAD SHALL EXTEND 6" BEYOND UNITS ON ALL SIDES.

39. REFRIGERANT PIPING SHALL BE TYPE "L" COPPER. USE SIL-FLOS SOLDER. REFRIGERANT LINES SHALL BE SIZED AND INSULATED AS PER THE MANUFACTURER'S RECOMMENDATIONS. TEST PIPING, CLEAN, DEHYDRANT AND PROVIDE CRITICAL CHARGE OF GROUP "A1" REFRIGERANT AS PER EQUIPMENT MANUFACTURER'S RECOMMENDATION. PROVIDE FOR A COMPLETE AND READY TO OPERATE INSTALLATION. INCLUDE ACCESSIBLE SERVICE FITTINGS.

40. PROVIDE PIPE SLEEVES FOR REFRIGERANT AND CONDENSATE DRAIN LINES PENETRATING EXTERIOR WALLS. SEAL VOIDS WATER-TIGHT AROUND PIPING WITH A WEATHER TIGHT PERMANENT NON-SHRINKING SEALANT.

41. PROVIDE P-TRAPS AT ALL AIR HANDLING UNITS FOR CONDENSATE DRAIN LINE CONNECTIONS. SLOPE PVC DRAIN LINES TOWARD THE POINT OF DISCHARGE (MIN 1/8" FOOT). INSULATE CONDENSATE DRAIN LINES WITH 1/2" THICK "THERMAFLEX" PIPE INSULATION TO PREVENT PIPE SWEATING.

42. ALL VOLUME DAMPERS SHALL BE OPPOSED BLADE TYPE.

43. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

44. UNLESS OTHERWISE NOTED, ALL UNDERGROUND PIPING SHALL HAVE A MINIMUM OF 2'-0" OF COVER.

45. PROVIDE SECONDARY DRAIN PANS UNDER EACH AIR HANDLING UNIT. PROVIDE A FLOAT SWITCH IN THE PAN TO SHUT DOWN THE UNIT IF CONDENSATE REACHES A PRE-DETERMINED LEVEL IN THE PAN.

46. MECHANICAL INSTALLER SHALL NOTIFY THE OWNER, ARCHITECT OR HIS AUTHORIZED REPRESENTATIVE OF ANY DAMAGE TO THE EXISTING INSTALLATION BEFORE PROCEEDING WITH THE WORK.

47. LOW PRESSURE INSULATED FLEXIBLE DUCT SHALL BE DESIGNED IN ACCORDANCE WITH ACCA (AIR CONDITIONING CONTRACTORS OF AMERICA) DUCT SIZING CALCULATIONS, BASED ON A FRICTION LOSS OF 0.1. THE DEGREE AND AMOUNT OF RADIUS BENDS WILL ALSO AFFECT THE CALCULATED AIR FLOW. DO NOT OVAL FLEX DUCT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE FOLLOWING CHART IS BASED ON STRAIGHT RUNS AND IS TAKEN FROM THE ACCA DUCT SIZING CHART.

48. SEE #14 ABOVE - OWENS CORNING DUCT BOARD TYPE 475-1 SECURED WITH DUCT TAPE IS AN ACCEPTABLE ALTERNATE TO METAL LINED DUCTWORK. ANY/ALL FLEXIBLE DUCT PENETRATIONS INTO FIBROUS DUCT BOARD SHALL BE SEALED WITH NON-GAUZE MASTIC (RCD-6)

TYPICAL DUCT SIZES (OR AS NOTED ON THE MECH PLANS)

CFM	FLEXDUCT DIAMETER
0 - 100	6"
101 - 200	8"
201 - 360	10"
361 - 600	12"

HVAC SYMBOLS

- SUPPLY DUCT IN SECTION
- RETURN AIR DUCT IN SECTION
- DUCT SIZE FIRST DIMENSION AS VIEWED
- CEILING SUPPLY REGISTER
- EXHAUST AIR
- RETURN AIR
- THERMOSTAT
- SMOKE DETECTOR
- CEILING EXHAUST FAN
- FLEXIBLE DUCT
- RADIATION SHIELD FIRE DAMPER

NOTE: SEE DRYER DUCT LAYOUTS SHOWN ON M-1, M-2 & M-3 (CONFORMING TO IMC SEC 504.6.1) MAX DRYER DUCT LENGTH 25' UNLESS DRYER MAKE AND MODEL INFORMATION IS PROVIDED TO THE BUILDING OFFICIAL PER THE EXCEPTION RULE TO 504.6.1

INFILTRATION REDUCTION COMPLIANCE CHECKLIST

COMPONENTS	SECTION	REQUIREMENTS FOR EACH PRACTICE
EXTERIOR WINDOWS & DOORS	606.1.ABC.1.1	MAX: 3 CFM/50 FT WINDOW AREA; .5 CFM/50 FT DOOR AREA
EXTERIOR & ADJACENT WALLS	606.1.ABC.1.2.1	CAULK, GASKET, WEATHERSTRIP OR SEAL BETWEEN WINDOWS/DOORS & FRAMES. SURROUNDING WALL, FOUNDATION & WALL SOLE OR SILL PLATE. JOINTS BETWEEN EXTERIOR WALL PANELS AT CORNERS, CM JOINTS, PENETRATIONS BETWEEN WALL PANELS & TOP/BOTTOM PLATES, BETWEEN WALLS & FLOOR EXCEPT: FRAME WALLS WHERE A CONTINUOUS INFILTRATION BARRIER IS INSTALLED THAT EXTENDS FROM AND IS SEALED TO THE FOUNDATION TO THE TOP PLATE.
FLOORS	606.1.ABC.1.2.2	PENETRATIONS/OPENINGS > 1/8" SEALED UNLESS BACKED BY TRUSS OR JOINT MEMBERS. EXCEPTION: FRAME FLOORS WHERE A CONTINUOUS INFILTRATION BARRIER IS INSTALLED THAT IS SEALED TO THE PERIMETER, PENETRATIONS AND SEAMS.
CEILINGS	606.1.ABC.1.2.3	SEAL BETWEEN WALLS & CEILINGS. PENETRATIONS OF CEILING PLANE OF TOP FLOOR: AROUND SHAFTS, CHIMNEYS, SOFFITS, CHIMNEYS, CABINETS SEALED TO CONTINUOUS AIR BARRIER; GAPS IN GYP BOARD & TOP PLATE, ATTIC ACCESS. EXCEPTION: FRAME CEILINGS WHERE A CONTINUOUS INFILTRATION BARRIER IS INSTALLED THAT IS SEALED AT THE PERIMETER, AT PENETRATIONS AND SEAMS.
RECESSED LIGHTING FIXTURES	606.1.ABC.1.2.4	TYPE IC RATED WITH NO PENETRATIONS, SEALED; OR TYPE IC OR NON-IC RATED, INSTALLED INSIDE A SEALED BOX WITH 1/2" CLEARANCE & 3" FROM INSULATION; OR TYPE IC RATED WITH <2.0 CFM FROM CONDITIONED SPACES, TESTED.
MULTISTORY HOUSES	606.1.ABC.1.2.5	AIR BARRIER ON PERIMETER OF FLOOR CAVITY BETWEEN FLOORS.
ADDITIONAL INFILTRATION REQUIREMENTS	606.1.ABC.1.3	EXHAUST FANS VENTED TO OUTDOORS, DAMPERS; COMBUSTION SPACE HEATERS COMPLY WITH NFPA, HAVE COMBUSTION AIR.

OTHER PRESCRIPTIVE MEASURES (MUST BE MET OR EXCEEDED BY ALL RESIDENCES)

COMPONENTS	SECTION	REQUIREMENTS
WATER HEATERS	612.1	COMPLY WITH EFFICIENCY REQUIREMENTS IN TABLE 612.1.ABC.3.2. SWITCH OR CLEARLY MARKED CIRCUIT BREAKER (ELECTRIC) OR CUTOFF (GAS) MUST BE PROVIDED. EXTERNAL OR BUILT-IN HEAT TRAP REQUIRED FOR VERTICAL PIPE RISERS.
SHOWER HEADS	612.1	WATER FLOW MUST BE RESTRICTED TO NO MORE THAN 2.5 GALLONS PER MINUTE AT 80 PSIG.
AIR DISTRIBUTION SYSTEMS	610.1	ALL DUCTS, FITTINGS, MECHANICAL EQUIPMENT AND FLENUM CHAMBERS SHALL BE MECHANICALLY ATTACHED, SEALED, INSULATED, AND INSTALLED IN ACCORDANCE WITH THE CRITERIA OF SECTION 6.1.0. DUCTS IN UNCONDITIONED ATTICS: R-5 MINIMUM INSULATION.
HVAC CONTROLS	607.1	SEPARATE READILY ACCESSIBLE MANUAL OR AUTOMATIC THERMOSTAT FOR EACH SYSTEM.
INSULATION	604.1, 602.1	CEILINGS-MIN R-10. COMMON WALLS-FRAME R-11 OR CBS R-3 BOTH SIDES. COMMON CEILING & FLOORS R-11.

DRYER EXHAUSTING INFORMATION - USE METAL DUCT ONLY

DOMESTIC DRYER MODELS	NUMBER OF 90° TURNS	BEST PERFORMANCE			
		MAXIMUM LENGTH OF 4" DIA. RIGID METAL DUCT		MAXIMUM LENGTH OF 4" DIA. FLEXIBLE METAL DUCT	
		EXHAUST HOOD TYPE "A"		EXHAUST HOOD TYPE "B"	
		CATALOG No. WXB59 (PREFERRED) "A" 4" OPENING	"B" 2 1/2" OPENING	CATALOG No. WXB59 (PREFERRED) "A" 4" OPENING	"B" 2 1/2" OPENING
FULL SIZE ALL ELECTRIC DRYERS	0	90 FT.	60 FT.	55 FT.	45 FT.
	1	60 FT.	45 FT.	40 FT.	30 FT.
	2	45 FT.	35 FT.	30 FT.	20 FT.
	3	35 FT.	25 FT.	20 FT.	15 FT.
FULL SIZE ALL GAS DRYERS	0	45 FT.	30 FT.	30 FT.	15 FT.
	1	35 FT.	20 FT.	20 FT.	10 FT.
	2	25 FT.	10 FT.	10 FT.	---
	3	15 FT.	---	---	---
SPACEMAKER MODELS DSKS433ET WSM2780T	0	46 FT.	37 FT.	30 FT.	24 FT.
	1	38 FT.	30 FT.	25 FT.	20 FT.
	2	31 FT.	22 FT.	20 FT.	14 FT.
SPACEMAKER MODELS DSKP233ET	0	43 FT.	36 FT.	30 FT.	24 FT.
	1	33 FT.	26 FT.	24 FT.	18 FT.
	2	23 FT.	16 FT.	16 FT.	10 FT.
SPACEMAKER MODELS WSM2700T	0	56 FT.	42 FT.	39 FT.	22 FT.
	1	46 FT.	36 FT.	32 FT.	14 FT.
	2	34 FT.	28 FT.	16 FT.	10 FT.
SPACEMAKER MODELS WSM2420T WSM2480T	0	43 FT.	36 FT.	30 FT.	24 FT.
	1	33 FT.	26 FT.	24 FT.	18 FT.
	2	23 FT.	16 FT.	16 FT.	10 FT.

MECHANICAL EQUIPMENT SCHEDULE

UNIT	HVAC UNITS	VOLTAGE/Hz/PHASE	COOLING	BREAKER *	MANUFACTURER
1 BR	MAGC-PAK 5MHP12-18	208-230/60/1	1.5 TON	40 AMP	LENNOX/ARMSTRONG/MAGC-PAK
2 BR	MAGC-PAK 7MHP12-24	208-230/60/1	2.0 TON	60 AMP	LENNOX/ARMSTRONG/MAGC-PAK
2 BR END UNITS & 3 BR	MAGC-PAK 10MHP12-30	208-230/60/1	2.5 TON	25 AMP & 50 AMP	LENNOX/ARMSTRONG/MAGC-PAK
1st THRU 4th FLR HALLWAYS	SPLIT SYSTEMS - 8 REQUIRED PER BUILDING AND #1 CARRIER FABRF024005 (6kw HEAT)	208-240/60/1	CU #1 2 TON CARRIER 38VCC0243	SEE ELECTRICAL PLANS	LENNOX, CARRIER, GOODMAN INDUSTRIES OR EQUAL

* ELECTRICAL CONTRACTOR TO VERIFY BREAKER SIZES REQUIRED FOR ACTUAL EQUIPMENT INSTALLED.

EXHAUST FAN SCHEDULE

MARK #	CFM	E.S.P.	AMP.	PHASES	EFFICIENCY	VOLTAGE	POLES	MOTOR TYPE	MOUNTING	OPERATION	NO. AND MAKE	LOCATION
EF-1	80	.125"	--	1	--	120	2	DIRECT	CEILING	WALL SWITCH	854 OR H809 BROWN	APT UNITS
EF-2	80	.125"	--	1	--	120	2	DIRECT	WALL OR CEILING	THERMOSTAT	ELEV. EQUIP. ROOM	ELEV. EQUIP. ROOM
EF-3	50	.125"	--	1	--	120	2	DIRECT	CEILING	WALL SWITCH		CABANA BLDG & MAINTENANCE BLDG

ALSO SEE M-6 FOR CLUBHOUSE EXHAUST FAN REQUIREMENTS

ARCHITECTS AND PLANNERS, LTD.

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REVISIONS

BELLA MARA APARTMENTS

JACKSONVILLE, FLORIDA

Job Number: 296029

File Reference: 10304020-10000-0000

Designed By: SBT
Drawn By: SBT

Date: 01/04/06

Scale:

MECHANICAL NOTES & SCHEDULES

Sheet Number:

M-0

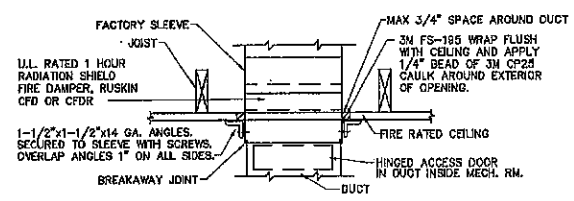
REVISIONS

BELLA MAIRA APARTMENTS
JACKSONVILLE, FLORIDA

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Date: 08/06
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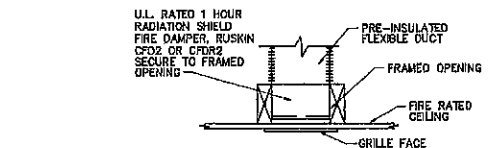
MECHANICAL DETAILS

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M-1



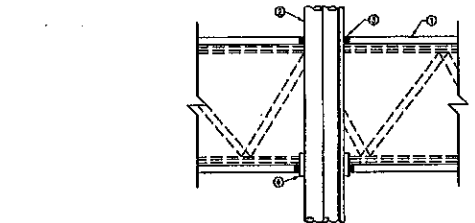
1 DUCT FIRESTOPPING
M-1
NO SCALE

NOTE:
ABOVE DETAIL TYPICAL FOR SUPPLY DUCTWORK CONNECTED TO AIR HANDLING UNITS.



2 DETAIL OF CEILING GRILLE FIRE DAMPER
M-1
NO SCALE

NOTE:
FURNISH VOLUME CONTROL TYPE CFDS AT ALL CEILING SUPPLY DIFFUSERS & OMIT OPPOSED BLADE DAMPER



3 REFRIGERANT LINE FIRESTOPPING (SINGLE LINE SET)
M-1
NO SCALE

NOTES:
1. ONE HOUR RATED WOOD FLOOR ASSEMBLY CONSISTING OF:
GYPSUM BOARD MEMBRANE WITH FASTENERS AND/OR FURRING STRIPS AS REQUIRED BY RATED FIRESTOP DESIGN.
JOISTS, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS WITH BLOCKING AS PER THE INDIVIDUAL U.L. FLOOR-CEILING DESIGN.
PLYWOOD SUB-FLOOR WITH FINISHED FLOOR AS REQUIRED.
2. AC LINE SETS CONSISTING OF:
MAX. 3/4\"/>

3. SPECIAL @ SERIES 100 SEALANT, MINIMUM 3/4\"/>

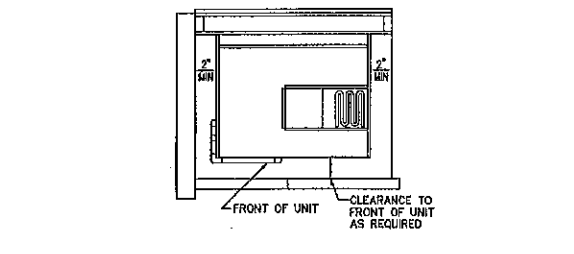
4. SPECIAL @ SERVICED WRAP STOP, ONE LAYER WRAPPED AROUND ENTIRE BUNDLE, SECURED WITH TWO LAYERS OF ALUMINUM FOIL TAPE (SSMT) AND CENTERED WITHIN CEILING.
5. PRODUCTS USED IN THIS DESIGN SYSTEM HAVE BEEN TESTED AS FOLLOWS:
ASTM E814 (UL147), REFER TO SYSTEM NO. FC-8011
ASTM E119 (TIME/TEMPERATURE EXPOSURE)
(COTTON WASTE IGNITION)
ANGULAR SPACE REQUIREMENTS

4 REFRIGERANT LINE FIRESTOPPING (MULTIPLE LINE SETS)
M-1
NO SCALE

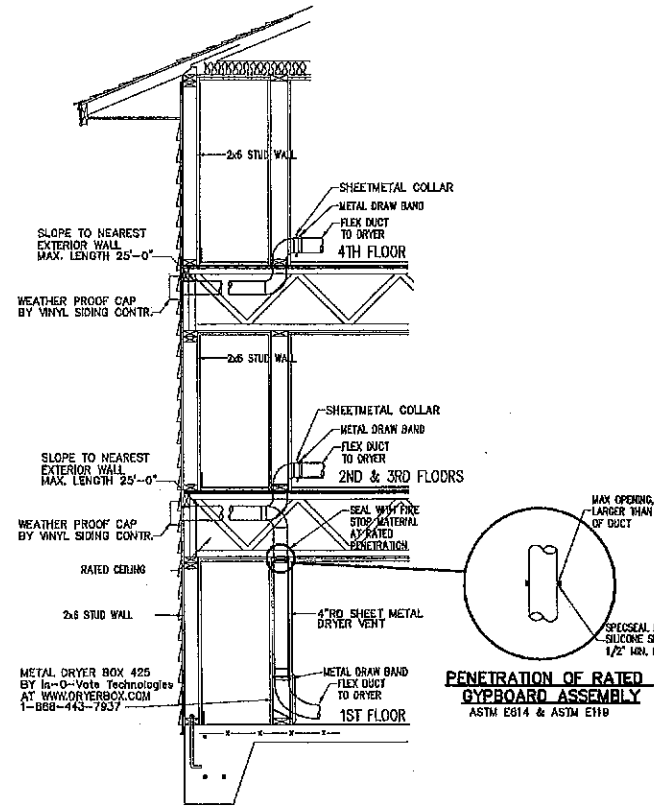
NOTES:
1. ONE HOUR RATED WOOD FLOOR ASSEMBLY CONSISTING OF:
GYPSUM BOARD MEMBRANE WITH FASTENERS AND/OR FURRING STRIPS AS REQUIRED BY RATED FIRESTOP DESIGN.
JOISTS, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS WITH BLOCKING AS PER THE INDIVIDUAL U.L. FLOOR-CEILING DESIGN.
PLYWOOD SUB-FLOOR WITH FINISHED FLOOR AS REQUIRED.
2. AC LINE SETS CONSISTING OF MULTIPLE:
MAX. 3/4\"/>

3. SPECIAL @ SERIES 100 SEALANT INSTALLED WITHIN TOP ANNULUS TO 3/4\"/>

4. SPECIAL @ SERVICED WRAP STOP, ONE LAYER WRAPPED AROUND PENETRANT BUNDLE, ENCLOSED WITH 30 GAUGE STEEL RESTRAINING COLLAR (SSMCL), SECURE COLLAR WITH THREE #20/14\"/>

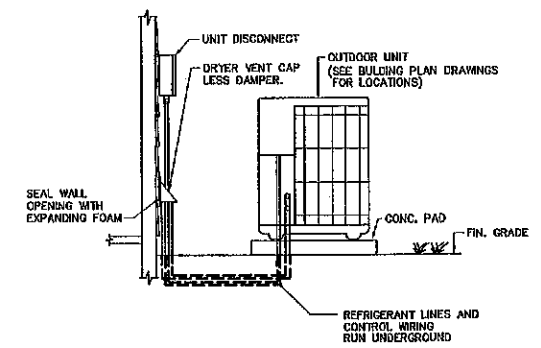


5 MHP UNIT INSTALLATION DETAILS
M-1
NO SCALE
(PVC UNIT INSTALLATION DETAILS-SIMILAR)

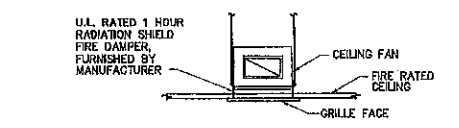


6 TYPICAL DRYER VENT DETAIL
M-1
NO SCALE

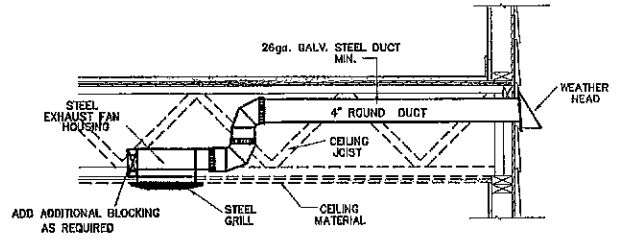
PENETRATION OF RATED GYPSUM BOARD ASSEMBLY
ASTM E814 & ASTM E119



7 DETAIL OF REFRIGERANT LINES AT EXTERIOR WALL
M-1
NO SCALE



8 DETAIL OF CEILING FAN FIRE DAMPER
M-1
NO SCALE



9 TYPICAL R.R. FAN EXHAUST VENT
M-1
NTS

REVISIONS

BELLA MIRA
APARTMENTS

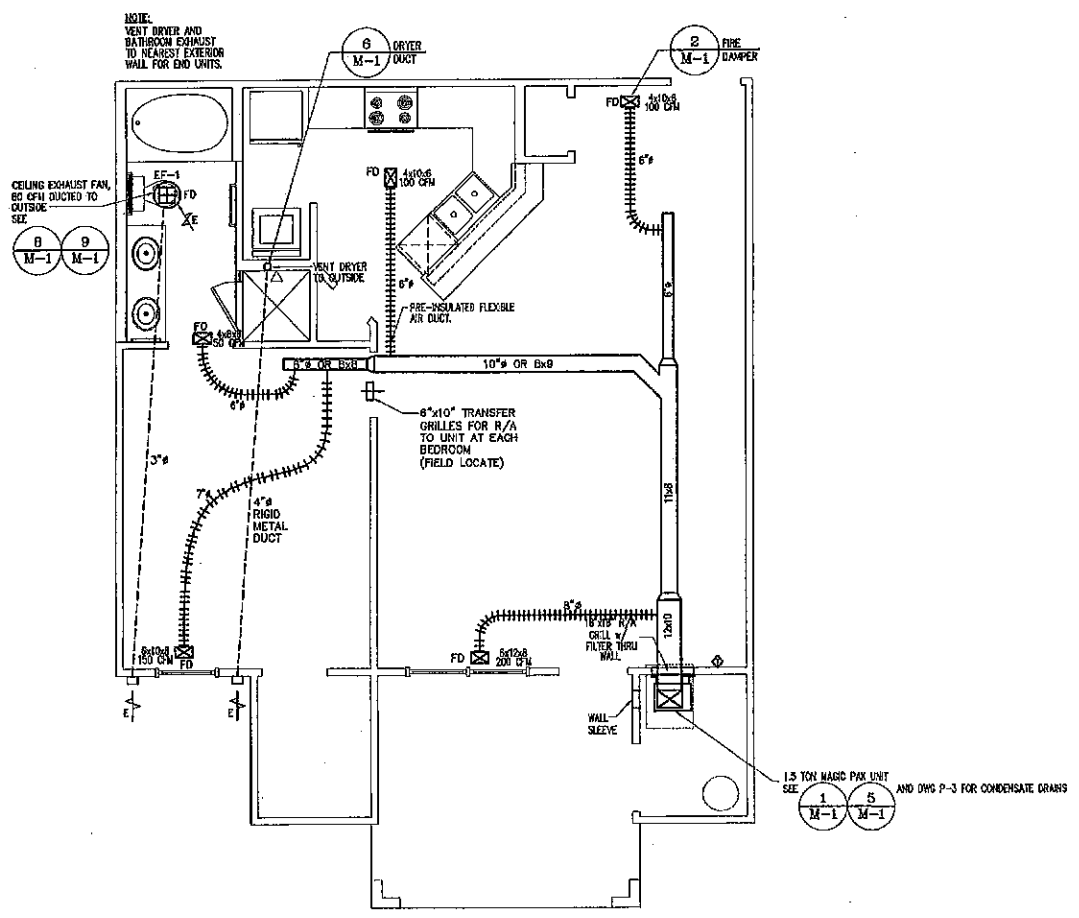
JACKSONVILLE, FLORIDA

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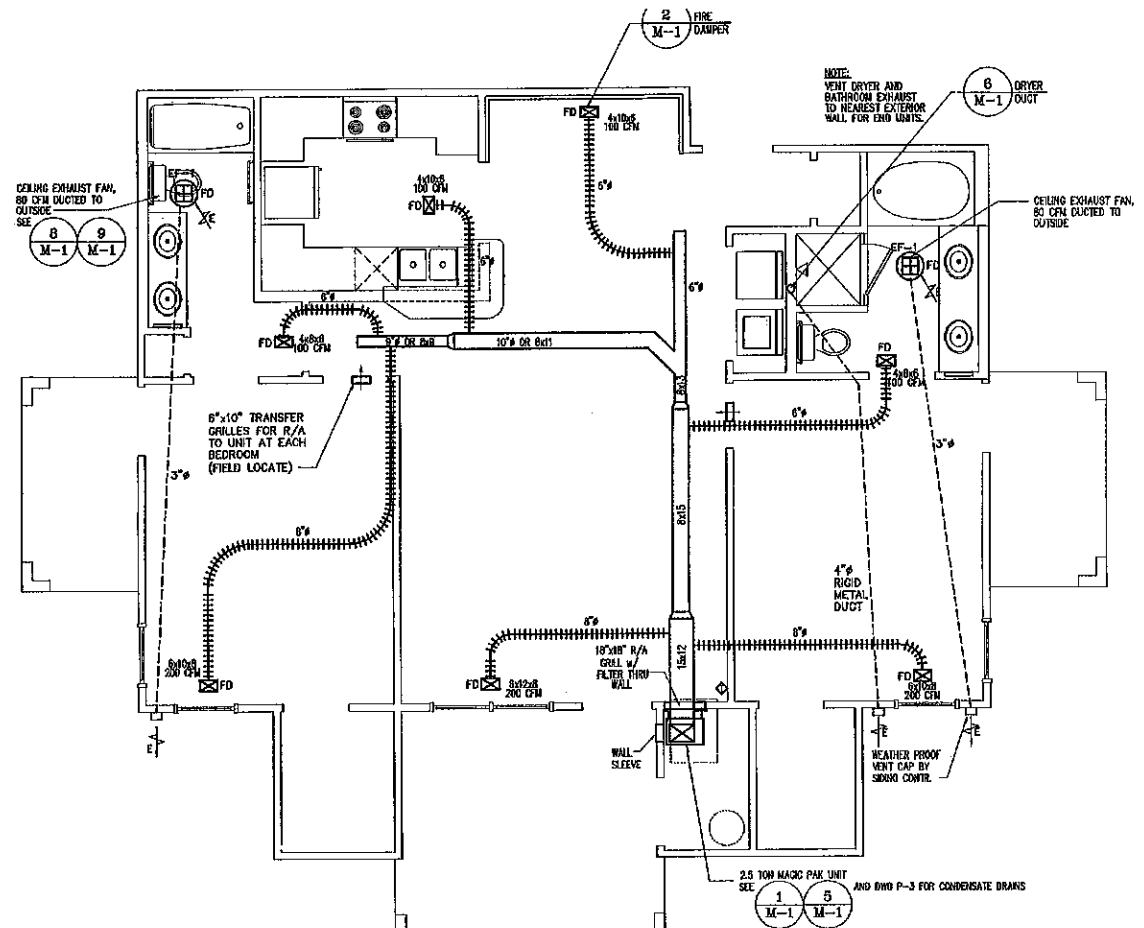
MECHANICAL UNIT PLANS

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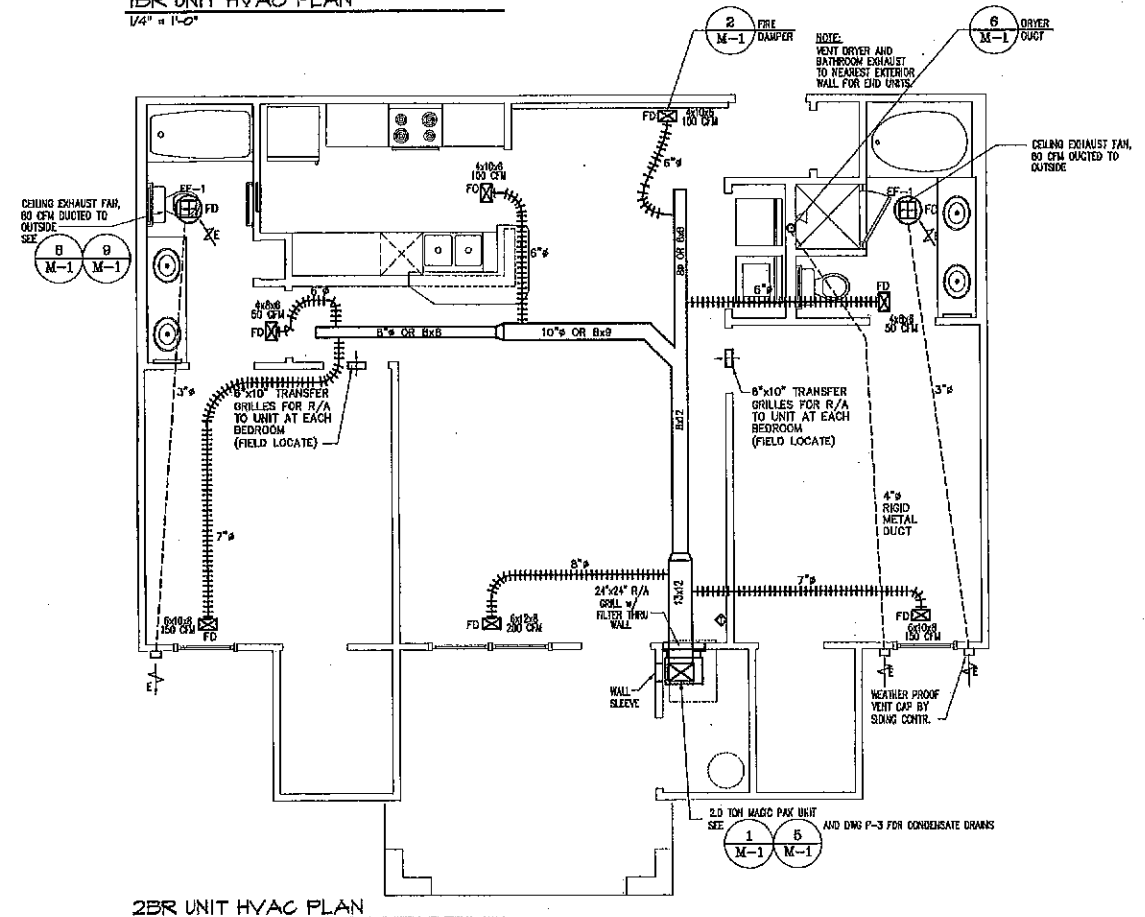
M-2



1BR UNIT HVAC PLAN
1/4" = 1'-0"

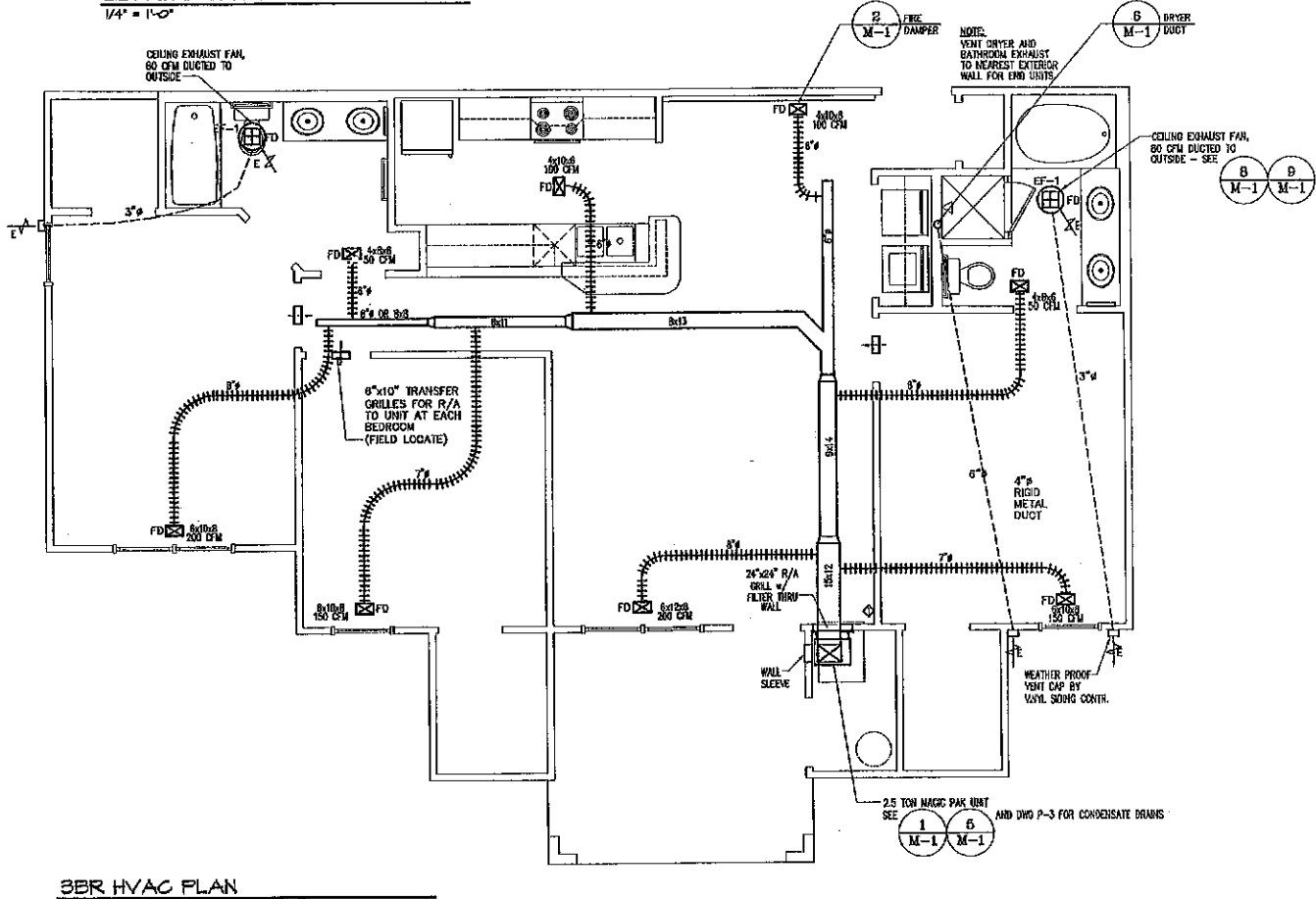


2BR END UNIT HVAC PLAN
1/4" = 1'-0"



2BR UNIT HVAC PLAN
1/4" = 1'-0"

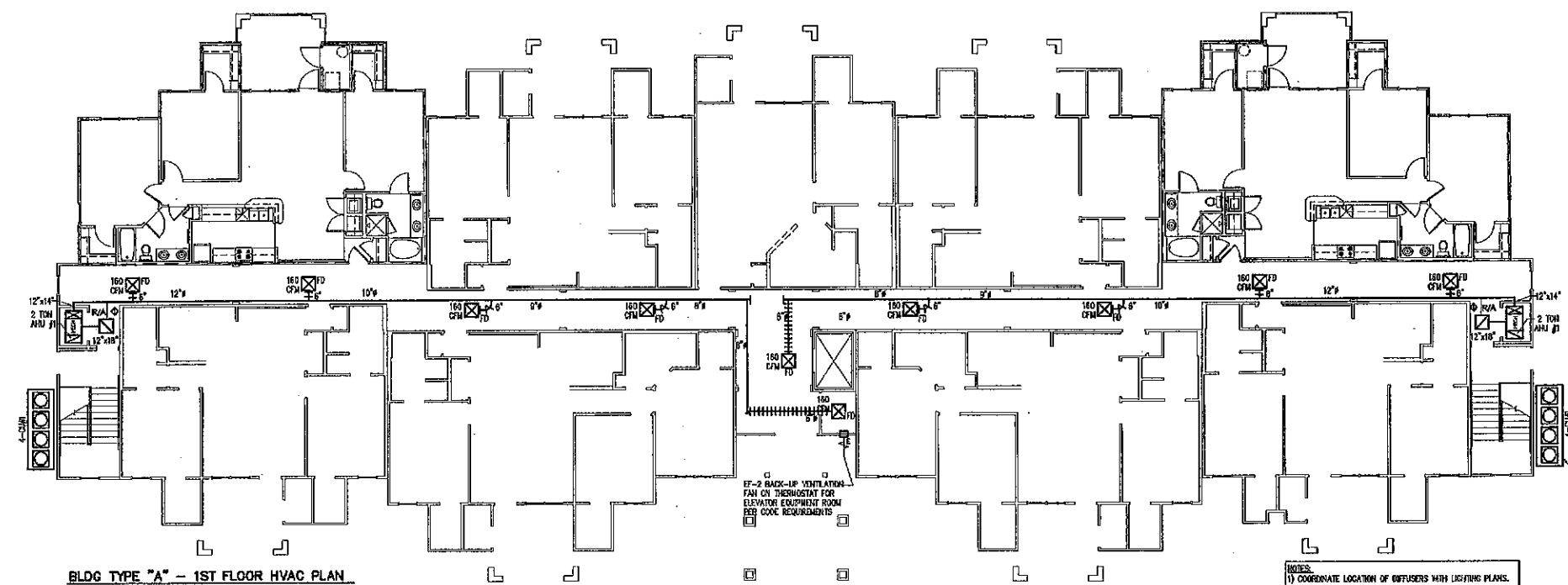
NOTE: H.C. UNITS SIMILAR



3BR HVAC PLAN
1/4" = 1'-0"

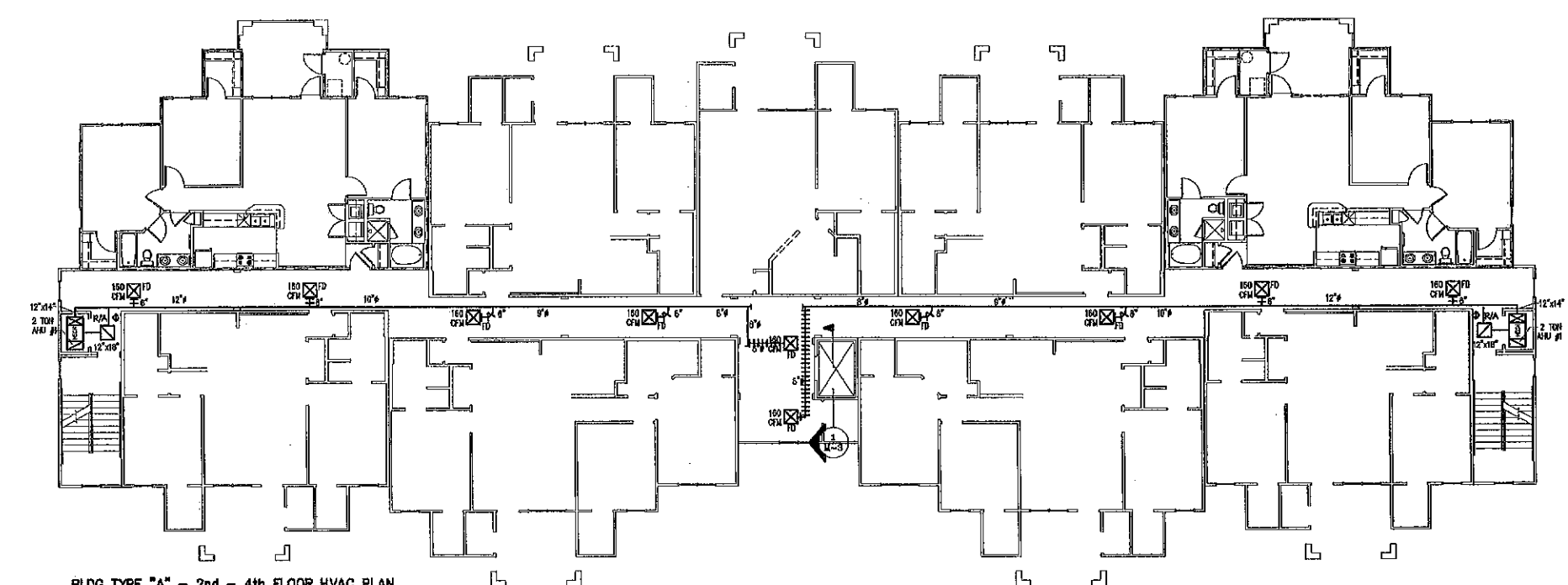
NOTE: H.C. UNITS SIMILAR

REVISIONS

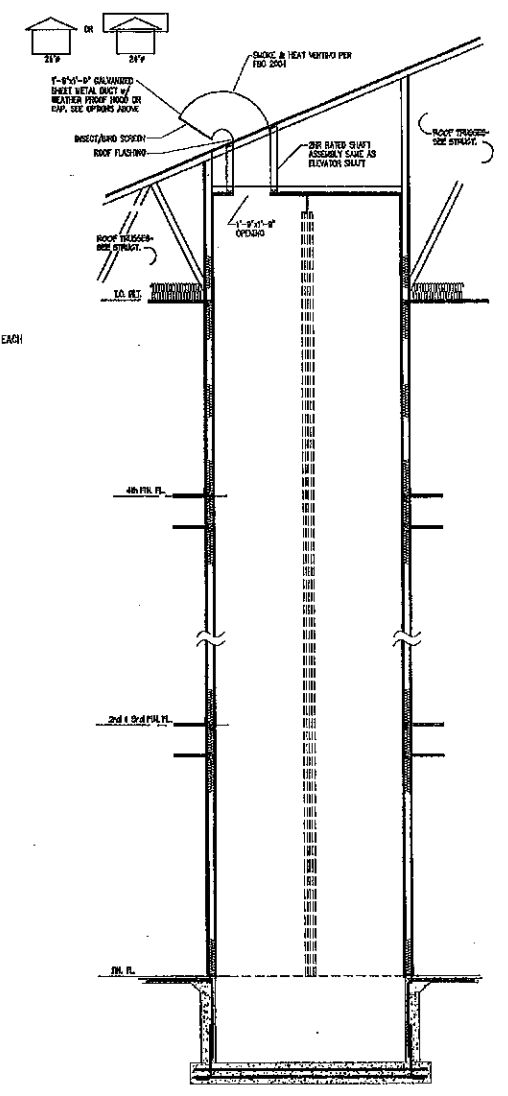


BLDG TYPE "A" - 1ST FLOOR HVAC PLAN
 3/8" = 1'-0"

- NOTES:
- 1) COORDINATE LOCATION OF DIFFUSERS WITH LIGHTING PLANS.
 - 2) DIFFUSER SELECTION BY ARCHITECT/OWNER.
 - 3) SEE DWG 44-1 FOR FIRE DAMPER DETAILS.
 - 4) SEE PLUMBING DRAWINGS, CORRECT COMPENSATE GRABS TO VENT STACK OR AS REQUIRED BY LOCAL CODE.



BLDG TYPE "A" - 2nd - 4th FLOOR HVAC PLAN
 3/8" = 1'-0"



ELEVATOR SHAFT MECHANICAL PLAN
 3/8" = 1'-0"

BELLA MARA APARTMENTS

JACKSONVILLE, FLORIDA

Job Number:	20400
File Reference:	2/20/2004/20400.dwg
Designed By:	SM
Drawn By:	SM
Date:	06/20/04
Scale:	

BLDG "A" MECHANICAL PLANS

Sheet Number:

M-3

INDOOR UNIT	CFM	CFM O.A.	E.S.P.	H.P.	KW	RTEPS	ELECTRICAL			AIR HANDLING UNIT MODEL NO. AND MAKE	OUTDOOR UNIT	COOLING			HEATING			ELECTRICAL		HEAT PUMP					
							MCA	MCP	SUPPLY			ENTERING AIR D.B.	W.B.	COND.	SH MPH	JH MBH	OUTSIDE AIR	INSIDE AIR	MBH		MCA	MCP	SUPPLY	MODEL NO. AND MAKE	
AHU-1	1200	320	.45	3/4	5.0	1	25.7/28	30/30	14-80C-20B/240V	FA4BNF038005	CARRIER	HP-1	80F	67F	85F	44.2	59.0	47F	70F	44.0	23.9	35	14-80C-20B/240V	38YCC0363	CARRIER
AHU-2	2000	622	.45	3/4	6.0	1	52/56.8	60/60	14-80C-20B/240V	FA4BNF060010	CARRIER	HP-2	80F	67F	85F	44.2	59.0	47F	70F	44.0	38.9	60	14-80C-20B/240V	38YCC0803	CARRIER

- NOTE:**
- EXTERNAL STATIC PRESSURE INCLUDES DUCTS AND GRILLES. MANUFACTURER SHALL ADD FOR ALL INTERNAL LOSSES TO INCLUDE ELEC, HEAT COIL.
 - INDOOR AIR HANDLING UNITS SHALL BE SINGLE POINT POWER CONNECTION.
 - ALL MECHANICAL UNITS TO COMPLY WITH FLORIDA ENERGY CODE REQUIREMENTS.

SYMBOLS

- ↑ HAND DAMPER
- LS LOW SIDEWALL
- SD SMOKE DETECTOR
- RETURN AIR
- OUTSIDE AIR
- EXHAUST AIR
- ⊕ THERMOSTAT
- CONDENSATE DRAIN
- REFRIGERANT LINE SET
- PRE-INSULATED FLEXIBLE AIR DUCT
- ⊗ CEILING SUPPLY DIFFUSER
- ⊕ CEILING RETURN/TRANSFER GRILLE
- ⊖ CEILING EXHAUST FAN

FLORIDA ENERGY EFFICIENCY CODE REQUIREMENTS FOR COMMERCIAL BLDG

COMPONENTS	SECTION	REQUIREMENTS FOR EACH PRACTICE
OPERATIONS MANUAL	102.1.410.413	OPERATIONS MANUAL PROVIDED TO OWNER.
WINDOWS & DOORS	406.1.ABC.1.1	GLAZED SWINGING ENTRANCE & REVOLVING DOORS: MAX 1.0 CFM/SQFT; ALL OTHER PRODUCTS: 0.4 CFM/SQFT.
JOINTS/CRACKS	406.1.ABC.1.2	TO BE CAULKED, GASKETED, WEATHERSTRIPPED OR OTHERWISE SEALED.
DROPPED CEILING CAVITY	408.1.ABC.1.4	VENTED; SEAL & INSULATED CEILING, UNVENTED SEAL & INSULATE ROOF & SIDE WALLS.
REHEAT	407.1.BC	ELECTRIC RESISTANCE REHEAT PROHIBITED.
HVAC EFFICIENCY	407.1, 408.1	MINIMUM EFFICIENCY: COOLING TABLES 407.1.ABC.3.2A-D; HEATING TABLES 407.1.ABC.3.2D, 408.1.ABC.3.2D, 408.1.ABC.3.2E (TRU) 408.1.ABC.3.2G.
HVAC CONTROLS	407.1.ABC.2	ZONE CONTROLS PREVENT REHEAT (EXCEPTIONS); SEPARATE THERMOSTATIC CONTROL PER ZONE; COMBINED HAC CONTROL OF DEADBAND (EXCEPTIONS).
VENTILATION	408.1.ABC.3	MOTORIZED DAMPERS REQD EXCEPT GRAVITY DAMPERS OR IN: 1) EXHAUST SYSTEMS AND 2) SYSTEMS WITH DESIGN OUTSIDE AIR INTAKE OR EXHAUST CAPACITY ≤ 300 CFM.
HVAC DUCTS	410.1.ABC	AIR DUCTS, FITTINGS, MECHANICAL EQUIPMENT & PLENUM CHAMBERS SHALL BE MECHANICALLY ATTACHED, SEALED, INSULATED & INSTALLED PER SEC. 410.1.ABC FAN POWER LIMITATIONS.
BALANCING	410.1.ABC.4	HVAC DISTRIBUTION SYSTEM(S) TESTED & BALANCED. REPORT IN CONSTRUCTION DOCUMENTS.
PIPING INSULATION	411.1.ABC	IN ACCORDANCE WITH TABLE 411.1.ABC.2.
WATER HEATERS	412.1.ABC	PERFORMANCE REQUIREMENTS IN ACCORDANCE WITH TABLE 412.1.ABC.3. HEAT TRAP REQUIRED.
SWIMMING POOLS	412.1.ABC.2.6	COVER ON HEATED POOLS; TIME SWITCH (EXCEPTIONS); READILY ACCESSIBLE ON/OFF SWITCH.
HOT WATER PIPE INSULATION	412.1.ABC.2.8	COVER ON HEATED POOLS; TIME SWITCH (EXCEPTIONS); READILY ACCESSIBLE ON/OFF SWITCH.
WATER FIXTURES	412.1.ABC.2.5.2	SHOWER HEAT WATER FLOW RESTRICTED TO 2.5 GPM AT 80 PSI. PUBLIC LAVATORY FIXTURE MAX. FLOW 0.5 GPM IF SELF-CLOSING VALVE. 0.25 GALLON CIRCULATING, 0.5 GALLON NONCIRCULATING.
LIGHTING CONTROLS	413.1.ABC	AUTOMATIC CONTROL REQUIRED FOR INTERIOR LIGHTING IN BUILDINGS < 5,000 S.F.; SPACE CONTROL; EXTERIOR PHOTO SENSOR; TANDEN WIRING WHERE 1-3 LINEAR FLUORESCENT LAMPS > 30W.

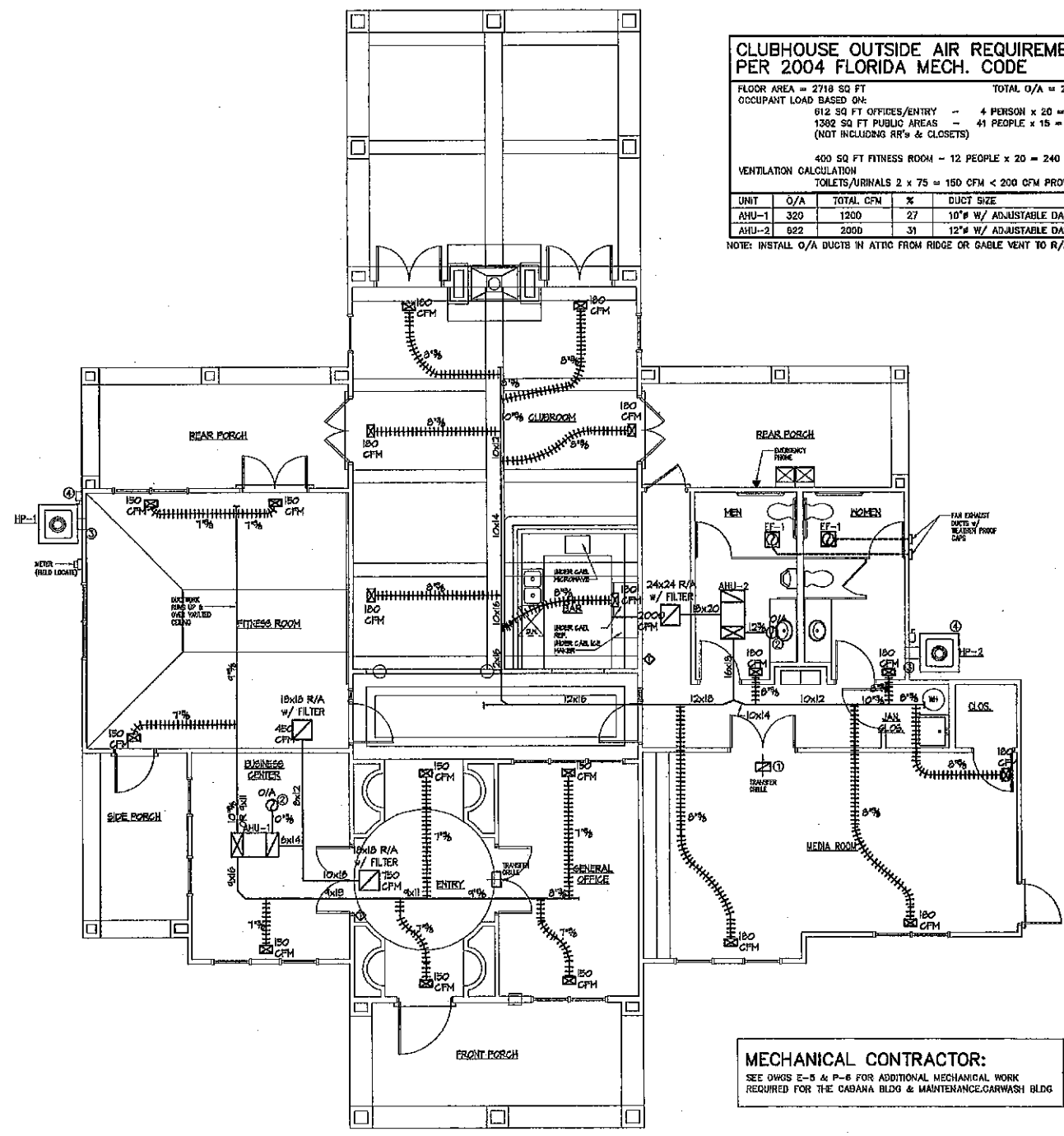
CLUBHOUSE OUTSIDE AIR REQUIREMENTS PER 2004 FLORIDA MECH. CODE

FLOOR AREA = 2718 SQ FT TOTAL O/A = 280 CFM
OCCUPANT LOAD BASED ON:
812 SQ FT OFFICES/ENTRY - 4 PERSON x 20 = 80 CFM
1382 SQ FT PUBLIC AREAS - 41 PEOPLE x 15 = 612 CFM
(NOT INCLUDING RR'S & CLOSETS)

400 SQ FT FITNESS ROOM - 12 PEOPLE x 20 = 240 CFM
VENTILATION CALCULATION
TOILETS/URINALS 2 x 75 = 150 CFM < 200 CFM PROVIDED

UNIT	O/A	TOTAL CFM	%	DUCT SIZE
AHU-1	320	1200	27	10" W/ ADJUSTABLE DAMPER
AHU-2	622	2000	31	12" W/ ADJUSTABLE DAMPER

NOTE: INSTALL O/A DUCTS IN ATTIC FROM RIDGE OR GABLE VENT TO R/A ON UNITS



CLUBHOUSE MECHANICAL FLOOR PLAN
SCALE 3/16" = 1'-0"
(CONDITIONED SPACE = 2718 SQFT)

MECHANICAL CONTRACTOR:
SEE DWGS E-5 & P-6 FOR ADDITIONAL MECHANICAL WORK REQUIRED FOR THE CABANA BLDG & MAINTENANCE/CARWASH BLDG

EXHAUST FAN SCHEDULE

TAG	CFM	REQUIRED CFM	E.S.P.	AMP.	PHASES	EFFICIENCY	VOLTAGE	POLES	MOTOR TYPE	AMOUNTING	OPERATION	NO. AND MAKE
EF-1	200	2 TOILETS = 150 CFM	.125"	1.0	1	.65	120	2	DIRECT	CEILING	INTERLOCK W/ LIGHTS	QT200 NUTONE

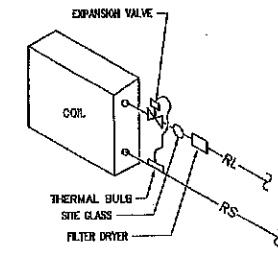
NOTE:
1. ALL FANS SHALL BE FURNISHED WITH DISCONNECT SWITCH, BACKDRAFT DAMPER AND SPEED CONTROL.

PLAN NOTES

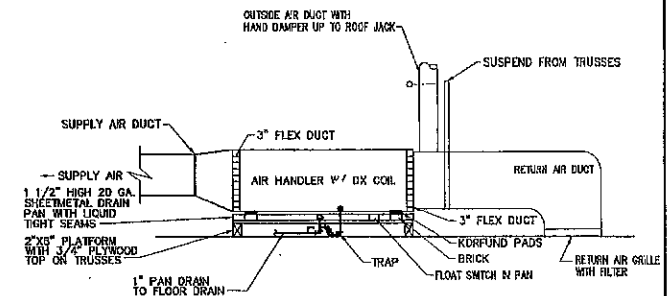
- UNDER CUT DOOR 3/4" OR INSTALL TRANSFER GRILLES BY GENERAL CONTRACTOR
- 10" or 12" OUTSIDE AIR DUCT TO WALL VENT WITHOUT BACKDRAFT DAMPER. NO OUTSIDE AIR INTAKES SHALL BE CLOSER THAN 10'-0" FROM ANY EXHAUST VENT OR WASTE PIPE VENT.
- REFRIGERANT LINES UP TO AIR HANDLING UNITS IN ATTIC RESPECTIVELY. BRACKET LINES TO WALL. (SEE DETAILS 7/M-1)
- CONCRETE PAD BY GENERAL CONTRACTOR

GENERAL NOTES

- HVAC CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR CONSTRUCTION DETAILS, DIMENSIONS, INTERFERENCES, ETC.
- COORDINATE INSTALLATION OF HVAC SYSTEM WITH GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2004 FLORIDA MECHANICAL CODE.
- COORDINATE GRILLE AND DIFFUSER LAYOUT WITH LIGHTING LAYOUT.
- SEE DWG M-0 FOR ADDITIONAL GENERAL NOTES MECHANICAL.



REFRIGERANT COIL PIPING DETAIL
NO SCALE



AHU-1 & AHU-2 AIR HANDLER DETAIL
NO SCALE

REVISIONS

BELLA MARRA APARTMENTS
JACKSONVILLE, FLORIDA

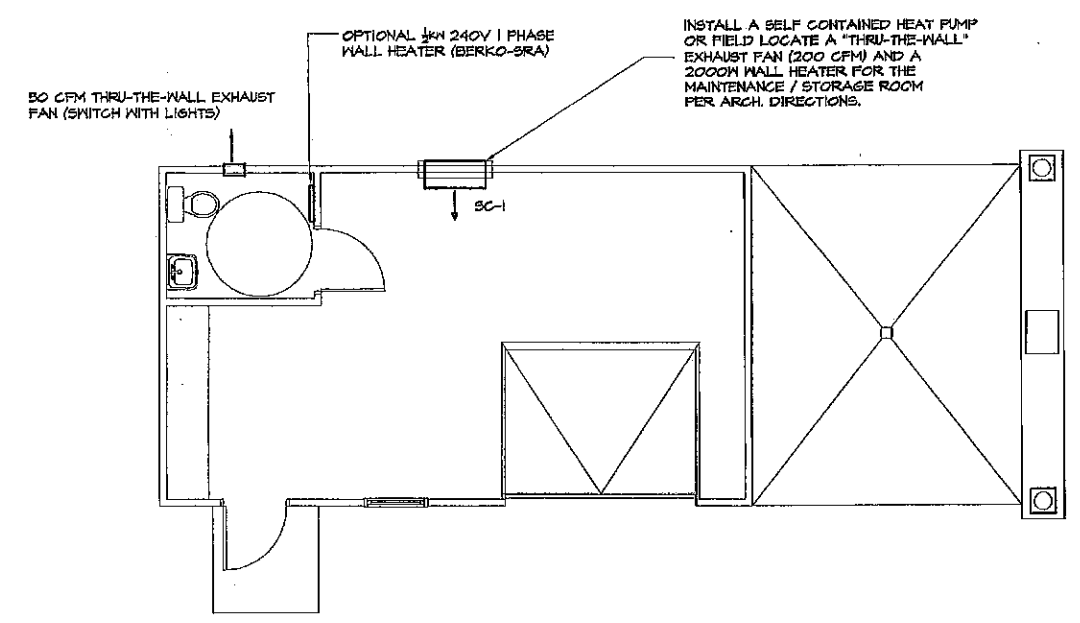
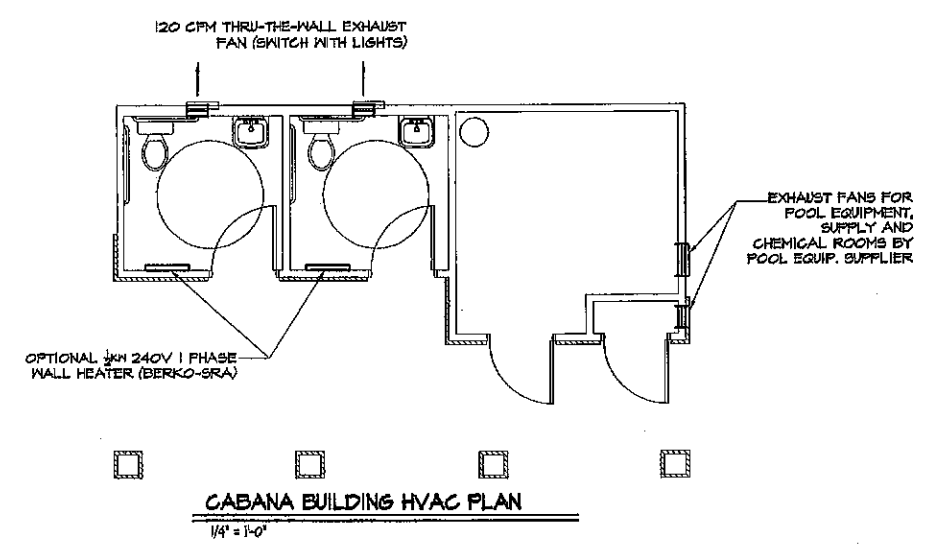
Job Number: 20502
File Reference: 2004092020502-11
Designed By: Drawn By:
Date: 11/11/04
Scale: 1/4" = 1'-0"

CLUBHOUSE MECHANICAL PLAN

Sheet Number:

M-5

REVISIONS



(OPTIONAL) SELF-CONTAINED UNIT SCHEDULE (HEAT PUMP)

UNIT	CFM	COOLING RTUH	HEATING		VOLTAGE	NO. AND MAKE
			MBH	KW		
SC-1	250	7.0	8.3	2.3	208/230V 1Ø	GENERAL ELECTRIC OR EQUAL 3800 SERIES HEAT PUMP AZ38H7D

BELLA MARA APARTMENTS

JACKSONVILLE, FLORIDA

Job Number:

File Reference:
0618/AC6

Designed By: TAR
Drawn By: CBB

Date:

Scale:
1/4" = 1'-0"

CABANA & MAINTENANCE BLDG. HVAC PLAN

Sheet Number:

M-6