

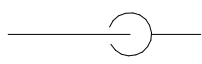
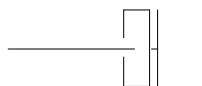
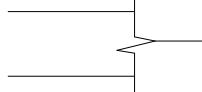
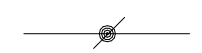
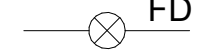
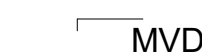
PACKAGED AC UNIT SCHEDULE			
① DX, COOLING ONLY			
UNIT NO	AHU-1	AHU-2	
TYPE	①	①	
MANUFACTURER	AAON	AAON	
MODEL NO	RN-25	RN-30	
SERVICE	MULTIPURPOSE	FACILITIES	
APPROX. DIMENSIONS (LxWxH)	128"x101"x60"	128"x101"x60"	
APPROX. WEIGHT WITHOUT CURB	3,400 LBS	3,400 LBS	
SUPPLY FAN			
TOTAL CFM	6,950	7,775	
MIN. O.A. CFM	1,800	3,750	
MAX O.A. CFM	6,950	7,775	
E.S.P. (IN. H2O)	3.0"	3.0"	
T.S.P. (IN H2O)	4.5"	4.5"	
MIN. MOTOR HP	10 *	10 *	
VFD	YES	YES	
RELIEF FAN			
TOTAL CFM	5,150	4,025	
T.S.P. (IN H2O)	0.25"	0.25"	
MIN. MOTOR H.P.	2 *	2 *	
VFD	YES	YES	
COOLING			
TOTAL (MBH)	305,400	353,500	
SENSIBLE (MBH)	213,300	242,900	
E.A.T. DB/WB (DEG F)	80.5°F / 86.6°F	84.3°F / 89.1°F	
L.A.T. DB/WB (COIL) (DEG F)	51.5°F / 51.2°F	54.5°F / 54.3°F	
MAX FACE VELOCITY (FPM)	400	400	
ROWS / FPI	6 / 12	6 / 12	
HEATING			
TYPE	NONE	NONE	
INPUT CAPACITY (KW)			
E.A.T. DB (DEG F)			
L.A.T. DB (DEG F)			
ELECTRICAL			
VOLTAGE/PHASE	460/3/60	460/3/60	
TOTAL FLA	60	69	
M.C.A.	65	75	
MAX FUSE SIZE	80	90	
ELECTRICAL RATING	65 KAIC SCCR	65 KAIC SCCR	
HOT GAS REHEAT			
REFRIGERANT TYPE	NONE	NONE	
AIRSIDE ECONOMIZER	YES	YES	
CO2 DEMAND VENTILATION CYCLE	YES	NO	
REMARKS:			
1.	BASIS OF DESIGN: AAON RN, DX A/C WITH MODULATING COMPRESSORS.		
2.	ALL FAN MOTORS TO BE HIGH EFFICIENCY.		
3.	UNITS TO INTERFACE TO CENTRAL EMS SYSTEM.		
4.	PROVIDE SIDE DISCHARGE CURB. OPERATING WEIGHTS DO NOT INCLUDE SUPPORT CURB.		
5.	UNIT TO BE INSTALLED TO MAINTAIN MANUFACTURER'S RECOMENDED CLEARANCES.		
6.	UNIT TO HAVE SINGLE POINT POWER CONNECTION W/ STARTER, CONTROL TRANSFORMER COMPLETE WITH MICROPROCESSOR CONTROLLER.		
7.	PROVIDE 4" MERV 11 PRE-FILTERS.		
8.	PROVIDE STAINLESS STEEL DRAIN PAN.		
9.	PROVIDE DIRECT DRIVE SUPPLY FAN WITH PIEZOMETER.		
10.	PROVIDE PARAGON SUPPLY AND OUTSIDE AIR FLOW MONITORING STATIONS.		
11.	DOUBLE WALL CABINET CONSTRUCTION WITH R-13 INSULATION.		

LOUVERED-FACE CEILING DIFFUSER SCHEDULE							
SYMBOL	ADAPTER/NECK SIZE	FACE SIZE	MAX CFM	MAX NC	MAX SP	THROW	RUNOUT SIZE
SA	6"ø / 9"x9"	12"x12"	110	20	.07	4-WAY BLOW	6"ø / 8"x4"
SB	8"ø / 9"x9"	15"x15"	230	20	.07	4-WAY BLOW	8"ø / 10"x6"
SC	10"ø / 12"x12"	15"x15"	420	25	.08	4-WAY BLOW	10"ø / 12"x8"
SD	12"ø / 12"x12"	24"x24"	500	28	.10	4-WAY BLOW	12"ø / 16"x8"
SE	12"ø / 15"x15"	24"x24"	650	26	.09	4-WAY BLOW	12"ø / 18"x18"
PERFORMANCE BASIS:							
1. DIFFUSERS DESIGNATED WITH A SYMBOL ONLY ARE TITUS TMS OR EQUAL (EXAMPLE SA).							
2. CONTRACTOR TO USE DUCT SPIN-IN FITTINGS WITH MANUAL VOLUME DAMPER EQUAL TO FLEXMASTER CBD OR FLEXMASTER STOD (OR APPROVED EQUAL) FOR CIRCULAR DUCT AND STANDARD SIDE TAKE OFF WITH MANUAL VOLUME DAMPER FOR RECTANGULAR RUNOUT. SEE DETAIL.							
3. FACE SIZE SHALL BE 24"x24" IN ALL LAY IN CEILING LOCATIONS TO FIT WITHIN GRIDS.							

RETURN & EXHAUST REGISTERS						
SYMBOL	NECK	FACE	CFM	MAX SP	MAX NC	RUNOUT
RA/EA	6" SQ	8"x8"	75	.04	28	8"x4" / 6"ø
RB/EB	8" SQ	10"x10"	200	.05	28	10"x6" / 8"ø
RC/EC	10" SQ	12"x12"	300	.05	27	14"x6" / 10"ø
RD/ED	12" SQ	14"x14"	540	.06	28	16"x8" / 12"ø
RE/EE	14" SQ	18"x18"	700	.07	28	18"x8" / 14"ø
RF/EF	18" SQ	20"x20"	1250	.07	27	24"x10" / 16"ø
RG/EG	22" SQ	24"x24"	2000	.06	25	28"x12" / 18"ø
PERFORMANCE BASIS:						
1. TITUS MODEL 50-F5 WITH 1/2"x1/2" EGG-CRATE CORE OR EQUAL (EXAMPLE RA)						
2. CONTRACTOR TO USE DUCT SPIN-IN FITTINGS WITH MANUAL VOLUME DAMPER EQUAL TO FLEXMASTER CBD OR FLEXMASTER STOD (OR APPROVED EQUAL) FOR CIRCULAR DUCT AND STANDARD SIDE TAKE OFF WITH MANUAL VOLUME DAMPER FOR RECTANGULAR RUNOUT. SEE DETAIL.						
3. FACE SIZE TO BE 24"x24" IN ALL LAY IN CEILING LOCATIONS TO FIT WITHIN THE GRID.						

AC UNIT SCHEDULE			① DUCTLESS WALL MOUNTED
(D-X SPLIT SYSTEM HEAT PUMP)			
DESIGNATION	A/C-1		A/C-2
AREA SERVED	ELECTRICAL ROOM		COMM. ROOM
TYPE	①		①
MANUFACTURER	SAMSUNG		SAMSUNG
INDOOR UNIT MODEL	AC024MN		AC024MN
TOTAL COOLING CAPACITY BTUH	24,000		24,000
HEATING CAPACITY BTUH @ 47°F	27,000		27,000
INDOOR FAN TOTAL CFM - HIGH SPEED	551		551
HORSEPOWER	FRACTIONAL		FRACTIONAL
POWER	POWER BY COND. UNIT		POWER BY COND. UNIT
M.C.A.	N.A.		N.A.
O.C.P.D.	N.A.		N.A.
CONDENSING UNIT MODEL	AC024JX		AC024JX
ELECTRICAL	208/60/1		208/60/1
COMPRESSOR RLA	9.0		9.0
M.C.A.	12.5		12.5
M.O.C.P.	20		20
REFRIGERANT	R410A		R410A
REFRIGERANT PIPING SIZE LIQUID - SUCTION	1/4" - 5/8"		1/4" - 5/8"
MAX REFRIGERANT RUN	164 FT.		164 FT.
MAX REFRIGERANT RUN - VERTICAL	98 FT.		98 FT.
ACCESSORIES			
FILTER	YES		YES
LOW AMBIENT COOLING - °F	YES - 10°		YES - 10°
CONDENSER PRESSURE CONTROL	YES		YES
REMARKS:			
1. PROVIDE PROGRAMMABLE WALL MOUNTED THERMOSTAT.			
2. PROVIDE CONDENSATE PUMP.			
3. INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT.			
4. COOLING CAPACITY BASED ON 95° OUTDOOR DB, 80° EADB / 67° EAWB.			

VARIABLE/CONSTANT VOLUME TERMINAL BOX SCHEDULE												
DESIGNATION	1-1	1-2	1-3	1-4	1-5	1-6	TOTAL	2-1	2-2	2-3	2-4	TOTAL
COOLING MAX SUPPLY CFM	1,800	1,050	2,100	400	550	1,050	6,950	1,925	550	3,800	1,500	7,775
COOLING MIN SUPPLY CFM	900	500	1,000	200	550	500	3,650	950	250	3,800	750	5,750
HEATING MAX SUPPLY CFM	1,800	1,050	2,100	400	550	1,050	6,950	1,925	550	3,800	1,500	7,775
HEATING MIN SUPPLY CFM	900	500	1,000	200	550	500	3,650	950	250	3,800	750	5,750
MAX SP-H2O	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"		0.5"	0.5"	0.5"	0.5"	
SOUND POWER LEVEL (NC)	35	35	35	35	35	35		35	35	35	35	
DUCT RUN-OUT SIZE	16"ø	12"ø	16"ø	8"ø	10"ø	12"ø		16"ø	10"ø	20"ø	14"ø	
ELECTRIC DUCT HEATER												
CAPACITY KW	12	7.0	12	1.5	7.0	6.0	47.5	15	4.5	21	12	52.5
ELECTRICAL	480V/3PH	480V/3PH	480V/3PH	480V/3PH	480V/3PH	480V/3PH		480V/3PH	480V/3PH	480V/3PH	480V/3PH	
HEATER STAGES	SCR	SCR	SCR	SCR	SCR	SCR		SCR	SCR	SCR	SCR	
EAT DB	51°	51°	51°	51°	51°	51°		45°	45°	45°	45°	
LAT DB	92°	94°	90°	68°	90°	88°		90°	90°	60°	90°	
REMARKS:												
1. ALL BOXES TO BE PRESSURE INDEPENDENT.												
2. DUCT RUN-OUT SIZE DOES NOT MEAN INLET BOX SIZE. A TRANSITION MAY BE REQUIRED.												

DUCTWORK LEGEND			
	RECTANGULAR DUCT TURNING DOWN		45 FULL RADIUS TURN
	ROUND DUCT TURNING DOWN		SQUARE ELBOW W/TURNING VANES
	DUCT TURNING DOWN TO SIDEWALL REGISTER AT FLOOR		FULL RADIUS TURN
	DOUBLE LINE TO SINGLE LINE DUCTWORK		ADJUSTABLE T'STAT
	BRANCH TAP OFF MAIN W/DUCT EXTRACTOR OR SPIN-IN FITTING W/DAMPER (LOW PRESSURE)		TEMP SENSOR
	TRANSITION IN DUCT (NOT DIRECTION OF AIRFLOW)		HUMIDISTAT
	CONTROL DAMPER		MANUAL VOLUME DAMPER
	FIRE DAMPER (SINGLE LINE DUCT) (LISTED TO MATCH PARTITION RATING)		SIDEWALL RETURN REGISTER
	FIRE DAMPER (DOUBLE LINE DUCT) (LISTED TO MATCH PARTITION RATING)		SIDEWALL SUPPLY REGISTER
	FIRE/SMOKE DAMPER (SINGLE LINE DUCT) (LISTED TO MATCH PARTITION RATING)		INDICATES A SIZE "B" SUPPLY DIFFUSER SET FOR 400 CFM
	FIRE/SMOKE DAMPER (DOUBLE LINE) (LISTED TO MATCH PARTITION RATING)		INDICATES A SIZE "B" RETURN REGISTER SET FOR 100 CFM
	SINGLE LINE DUCT ROUTED IN HORIZONTAL 2 HOUR SHAFT.		INDICATES A SIZE "A" EXHAUST REGISTER SET FOR 50 CFM
	DUCT TERMINATION		SUPPLY DIFFUSER (4-WAY)
	MANUAL VOLUME DAMPER		RETURN / EXHAUST GRILLE
			INDICATES NEW WORK TO BE CONNECTED TO EXISTING WORK AT THIS POINT.
			INDICATES EXISTING AIR DISTRIBUTION DEVICE TO BE REBALANCED TO 100 CFM EACH.

FAN SCHEDULE					① CENTRIFUGAL	③ HEATED AIR CURTAIN FAN
					② CENTRIFUGAL UPBLAST	
FAN NUMBER	EF1-1	EF2-1	EF2-2	EF2-3		
SERVICE	GEN. EXH.	GEN. EXH.	GEN. EXH.	BODY HOLD		
TYPE	①	①	①	②		
CFM	800	650	2,050	1,000		
SP-IN H2O	0.5"	0.5"	0.5"	0.5"		
MAX FAN RPM	1,270	1,300	810	1,264		
MAX OUTLET VEL/TS	3,698 FPM	3,787 FPM	3,921 FPM	4,323 FPM		
SIZE	G-100-VG	G-180-VG	G-100-VG	CUE-120-VG		
MIN MOTOR HP	1/4 HP	1/4 HP	3/4 HP	1/4 HP		
ELECTRICAL	120/1/60	120/1/60	120/1/60	120/1/60		
INLET SCREEN	NO	NO	NO	NO		
OUTLET SCREEN	YES	YES	YES	YES		
INLET DAMPER	BACKDRAFT	BACKDRAFT	BACKDRAFT	BACKDRAFT		
OUTLET DAMPER	NO	NO	NO	NO		
OTHER	CURB	CURB	CURB	CURB		
POWER TYPE	NORMAL	NORMAL	NORMAL	EMERGENCY		
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK		
INTERLOCK	AHU-1	AHU-2	AHU-2	CONTINUOUS		
REMARKS:						
1. REFER TO FAN DETAIL FOR ADDITIONAL FEATURES AND INSTALLATION REQUIREMENTS. PROVIDE SLOPED CURB. REFER TO ARCHITECTURAL DRAWINGS FOR ROOF SLOPE.						
2. EXHAUST FANS SHALL BE NOA RATED.						

DESIGN CRITERIA	
PROJECT LOCATION:	GAINESVILLE, FL
WEATHER STATION:	WMO:747560
SUMMER DESIGN CONDITIONS:	
COOLING 0.4% DB/MCWB (°F):	93.8°/75.9°
EVAPORATION 0.4% WB/MCDB (°F):	79.5°/87.9°
WINTER DESIGN CONDITIONS:	
HEATING 99.6% DB (°F):	29.6°
HEATING 99% DB (°F):	33.2°
REMARKS:	
WEATHER DATA FROM ASHRAE FUNDAMENTALS 2017.	

AIR CURTAIN FAN SCHEDULE		
FAN NUMBER	ACF-1	ACF-1
SERVICE	HK EQUIP	HK EQUIP
TYPE	HIGH VEL.	HIGH VEL.
MANUFACTURER	MARS AIR	MARS AIR
MODEL	HV296-2EHN	HV296-2EHN
UNIT WIDTH	96"	96"
CFM	4,900	4,900
MIN MOTOR HP	2 x 1 HP	2 x 1 HP
ELECTRICAL	480/3/60	480/3/60
HEATER KW	24	24
AMPS	34.2	34.2
POWER TYPE	NORMAL	NORMAL
INTERLOCK	DOOR SWITCH	DOOR SWITCH
MAX INSTALL HEIGHT	12'	12'
REMARKS:		
1. PROVIDE THERMOSTAT TO LOCK OUT ELECTRIC HEAT AT AMBIENT TEMPERATURES ABOVE 40° (ADJ.)		

GOVERNING CODES AND REGULATIONS	
FLORIDA BUILDING CODES: FLORIDA BUILDING CODE (2020) INCLUDING: FLORIDA ACCESSIBILITY CODE (2020) FLORIDA ENERGY COMPLIANCE CODE (2020) FBC TEST PROTOCOLS FOR HIGH VELOCITY HURRICANE ZONES (2020) FBC MECHANICAL CODE (2020) FBC PLUMBING CODE (2020) FBC FUEL GAS CODE (2020)	
FLORIDA ADMINISTRATIVE CODES (INCLUDING LIFE SAFETY CODES): Chapter 69A-3.012, Standards of the National Fire Protection Association and Other Standards Adopted FLORIDA FIRE PREVENTION CODE (2020) which includes: NFPA 1, UNIFORM FIRE CODE (2018 EDITION) NFPA 101, LIFE SAFETY CODE (2018 EDITION) SFM Uniform Fire Safety Rules: https://www.flrules.org/gateway/organization.asp?tid=359 or 850-413-3619 Chapter 633, Florida Statutes, Fire Prevention and Control: http://leg.state.fl.us/statutes/ or 850-413-3619 NFPA 90A, STANDARD FOR THE INSTALLATION OF AIR CONDITIONING SYSTEMS (2018) NFPA 90B, STANDARD FOR THE INSTALLATION OF WARM AIR HEATING SYSTEMS (2018)	

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ARCHITECT, INTERIOR DESIGN, GRAPHICS

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SPACE DESIGN PARAMETERS - ANCILLARY BUILDING																								
ROOM NUMBER	ROOM NAME	AREA	VOLUME	ASHRAE 170 REQUIREMENTS					ASHRAE 62 REQUIREMENTS					DESIGN										
				MIN. TOTAL ACH	MIN. OA ACH	OACFM	PRESS. RELATION TO ADJ. SPACES	EXHAUST DIRECTLY TO OUTDOORS	OACFM / PERSON	PEOPLE	PEOPLE OACFM	OACFM / SF	AREA OACFM	SUPPLY AIR	SUPPLY ACH	RETURN AIR	EXHAUST AIR	EXHAUST ACH	OA ACH	ROOM BALANCE	PRESS. RELATION TO ADJ. SPACES	EXHAUST DIRECTLY TO OUTDOORS	MIN. REQUIRED OACFM	
1-LY459	AV	24 SF	420 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	1 CFM	400 CFM	57.2	400 CFM	0 CFM	0.0	14.8	0 CFM	NR	NR	1 CFM	
1-LY471	CORR	301 SF	2705 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	18 CFM	150 CFM	3.3	0 CFM	0 CFM	0.0	0.9	150 CFM	NR	NR	18 CFM	
1-LY470	CORR	459 SF	4135 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	28 CFM	300 CFM	4.4	0 CFM	0 CFM	0.0	1.1	300 CFM	NR	NR	28 CFM	
1-ES436	DIR OFF	99 SF	890 CF	NR	NR	0 CFM	NR	NR	1	2	2 CFM	0.06	6 CFM	200 CFM	13.5	200 CFM	0 CFM	0.0	3.5	0 CFM	NR	NR	8 CFM	
1-LY463	EDUC OFF	93 SF	839 CF	NR	NR	0 CFM	NR	NR	5	1	5 CFM	0.06	6 CFM	125 CFM	8.9	125 CFM	0 CFM	0.0	2.3	0 CFM	NR	NR	11 CFM	
1-LY464	EDUC OFF	94 SF	842 CF	NR	NR	0 CFM	NR	NR	5	1	5 CFM	0.06	6 CFM	125 CFM	8.9	125 CFM	0 CFM	0.0	2.3	0 CFM	NR	NR	11 CFM	
1-LY469	EVS	21 SF	294 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.00	0 CFM	0 CFM	0.0	0 CFM	150 CFM	30.6	0.0	-150 CFM	NR	NR	0 CFM	
1-ES435	EVS WORK	154 SF	1363 CF	NR	NR	0 CFM	NR	NR	5	3	15 CFM	0.06	9 CFM	300 CFM	13.2	300 CFM	0 CFM	0.0	3.4	0 CFM	NR	NR	24 CFM	
1-LY451	F LKR	92 SF	825 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	6 CFM	150 CFM	10.9	0 CFM	0 CFM	0.0	2.8	150 CFM	NR	NR	6 CFM	
1-LY462	F PUB TLT	165 SF	1486 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.00	0 CFM	100 CFM	4.0	0 CFM	250 CFM	10.1	1.0	-150 CFM	NR	NR	0 CFM	
1-LY450	LOUNGE	302 SF	2703 CF	NR	NR	0 CFM	NR	NR	5	6	30 CFM	0.06	18 CFM	450 CFM	10.0	450 CFM	0 CFM	0.0	2.6	0 CFM	NR	NR	48 CFM	
1-LY453	M LKR	92 SF	825 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	6 CFM	150 CFM	10.9	0 CFM	0 CFM	0.0	2.8	150 CFM	NR	NR	6 CFM	
1-LY461	M PUB TLT	173 SF	1553 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.00	0 CFM	100 CFM	3.9	0 CFM	250 CFM	9.7	1.0	-150 CFM	NR	NR	0 CFM	
1-LY458	MULTIPURPOSE ROOM	2516 SF	30192 CF	NR	NR	0 CFM	NR	NR	5	98	490 CFM	0.06	151 CFM	2,100 CFM	4.2	2,000 CFM	0 CFM	0.0	1.1	100 CFM	NR	NR	641 CFM	
1-LY468	PRE-FUNCTION	563 SF	6727 CF	NR	NR	0 CFM	NR	NR	5	6	30 CFM	0.06	34 CFM	1,500 CFM	13.4	850 CFM	0 CFM	0.0	3.5	650 CFM	NR	NR	64 CFM	
1-LY455	SERVE	232 SF	2090 CF	NR	NR	0 CFM	NR	NR	5	0	0 CFM	0.06	14 CFM	600 CFM	17.2	600 CFM	0 CFM	0.0	4.5	0 CFM	NR	NR	14 CFM	
1-LY456	STF TLT	50 SF	401 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.00	0 CFM	0 CFM	0.0	0 CFM	0 CFM	0.0	0.0	0 CFM	NR	NR	0 CFM	
1-LY457	STF TLT	50 SF	401 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.00	0 CFM	0 CFM	0.0	0 CFM	150 CFM	22.4	0.0	-150 CFM	NR	NR	0 CFM	
1-LY460	STORAGE	119 SF	1074 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.60	72 CFM	100 CFM	5.6	100 CFM	0 CFM	0.0	1.4	0 CFM	NR	NR	72 CFM	
1-LY454	T/S	55 SF	480 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.00	0 CFM	0 CFM	0.0	0 CFM	150 CFM	18.7	0.0	-150 CFM	NR	NR	0 CFM	
1-LY452	T/S	55 SF	483 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.00	0 CFM	0 CFM	0.0	0 CFM	150 CFM	18.6	0.0	-150 CFM	NR	NR	0 CFM	
AHU-1: 21		5708 SF												6,850 CFM		5,150 CFM	1,100 CFM			600 CFM			950 CFM	
1-FM411	BIO MED OFFICE	110 SF	989 CF	NR	NR	0 CFM	NR	NR	5	1	5 CFM	0.06	7 CFM	200 CFM	12.1	200 CFM	0 CFM	0.0	5.8	0 CFM	NR	NR	12 CFM	
1-FM410	BIOMED REPAIR/STAGING	493 SF	4436 CF	NR	NR	0 CFM	NR	NR	5	4	20 CFM	0.06	30 CFM	250 CFM	3.4	250 CFM	0 CFM	0.0	1.6	0 CFM	NR	NR	50 CFM	
1-LB430	BODY HOLD (8)	352 SF	5928 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.00	0 CFM	1,100 CFM	11.1	0 CFM	1,000 CFM	10.1	5.3	100 CFM	NR	NR	0 CFM	
1-MM400	BULK STORAGE	1546 SF	24238 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	93 CFM	1,225 CFM	3.0	1,125 CFM	0 CFM	0.0	1.5	100 CFM	NR	NR	93 CFM	
1-MM400D	CART STAGING	152 SF	2464 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	9 CFM	175 CFM	4.3	0 CFM	0 CFM	0.0	2.0	175 CFM	NR	NR	9 CFM	
1-ES432	CLEAN HOLD	439 SF	6463 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	26 CFM	400 CFM	3.7	300 CFM	0 CFM	0.0	1.8	100 CFM	NR	NR	26 CFM	
1-MM400C	CONTROL	187 SF	3198 CF	NR	NR	0 CFM	NR	NR	5	1	5 CFM	0.06	11 CFM	0 CFM	0.0	0 CFM	0 CFM	0.0	0.0	0 CFM	NR	NR	16 CFM	
1-LY473	CORR	272 SF	2450 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	16 CFM	250 CFM	6.1	0 CFM	0 CFM	0.0	2.9	250 CFM	NR	NR	16 CFM	
1-LY472	CORR	175 SF	1579 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	11 CFM	250 CFM	9.5	0 CFM	0 CFM	0.0	4.6	250 CFM	NR	NR	11 CFM	
1-MM400B	DECASING	122 SF	1880 CF	NR	NR	0 CFM	NR	NR	5	1	5 CFM	0.06	7 CFM	175 CFM	5.6	0 CFM	0 CFM	0.0	2.7	175 CFM	NR	NR	12 CFM	
1-ES437	EVS	35 SF	614 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	2 CFM	0 CFM	0.0	0 CFM	150 CFM	14.7	0.0	-150 CFM	NR	NR	2 CFM	
1-FM414	FACILITIES DIR OFF	128 SF	1148 CF	NR	NR	0 CFM	NR	NR	5	1	5 CFM	0.06	8 CFM	200 CFM	10.5	200 CFM	0 CFM	0.0	5.0	0 CFM	NR	NR	13 CFM	
1-FM415	FACILITIES OFF	173 SF	1558 CF	NR	NR	0 CFM	NR	NR	5	1	5 CFM	0.06	10 CFM	350 CFM	13.5	350 CFM	0 CFM	0.0	6.5	0 CFM	NR	NR	15 CFM	
1-FM412	FACILITIES REPAIR/STAGING	882 SF	7862 CF	NR	NR	0 CFM	NR	NR	5	14	70 CFM	0.06	53 CFM	950 CFM	7.3	950 CFM	0 CFM	0.0	3.5	0 CFM	NR	NR	123 CFM	
1-ES431	HK EQUIP STOR	313 SF	4681 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	19 CFM	600 CFM	7.7	0 CFM	700 CFM	9.0	3.7	-100 CFM	NR	NR	19 CFM	
1-LY467	MECH	42 SF	730 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.00	0 CFM	100 CFM	8.2	100 CFM	0 CFM	0.0	3.9	0 CFM	NR	NR	0 CFM	
1-MM402	OFFICE	177 SF	1593 CF	NR	NR	0 CFM	NR	NR	5	1	5 CFM	0.06	11 CFM	350 CFM	13.2	350 CFM	0 CFM	0.0	6.3	0 CFM	NR	NR	16 CFM	
1-ES434	PAPER STORAGE	205 SF	3521 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	12 CFM	200 CFM	3.4	200 CFM	0 CFM	0.0	1.6	0 CFM	NR	NR	12 CFM	
1-MM400A	RECEIVING	182 SF	2656 CF	NR	NR	0 CFM	NR	NR	5	1	5 CFM	0.06	11 CFM	0 CFM	0.0	0 CFM	0 CFM	0.0	0.0	0 CFM	NR	NR	16 CFM	
1-MM401	SECURE STORAGE	246 SF	4197 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	15 CFM	0 CFM	0.0	0 CFM	0 CFM	0.0	0.0	0 CFM	NR	NR	15 CFM	
1-ES433	SOILED HOLD	434 SF	6944 CF	NR	NR	0 CFM	NR	NR	0	0	0 CFM	0.06	26 CFM	1,000 CFM	8.6	0 CFM	1,200 CFM	10.4	4.1	-200 CFM	NR	NR	26 CFM	
AHU-2: 21		6664 SF												7,775 CFM		4,025 CFM	3,050 CFM			700 CFM			501 CFM	



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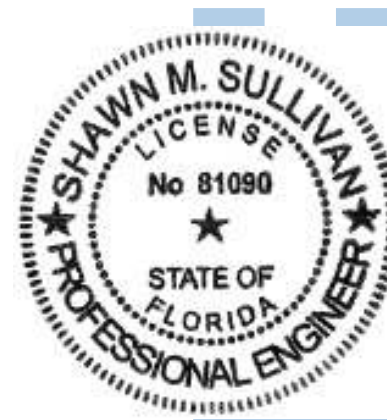
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Robins & Morton
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Brentwood, TN 37027



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by Shawn FL
Date:
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ANCILLARY BUILDING

LAKE CITY MEDICAL CENTER

340 NW Commerce Dr.
Lake City, FL 32055

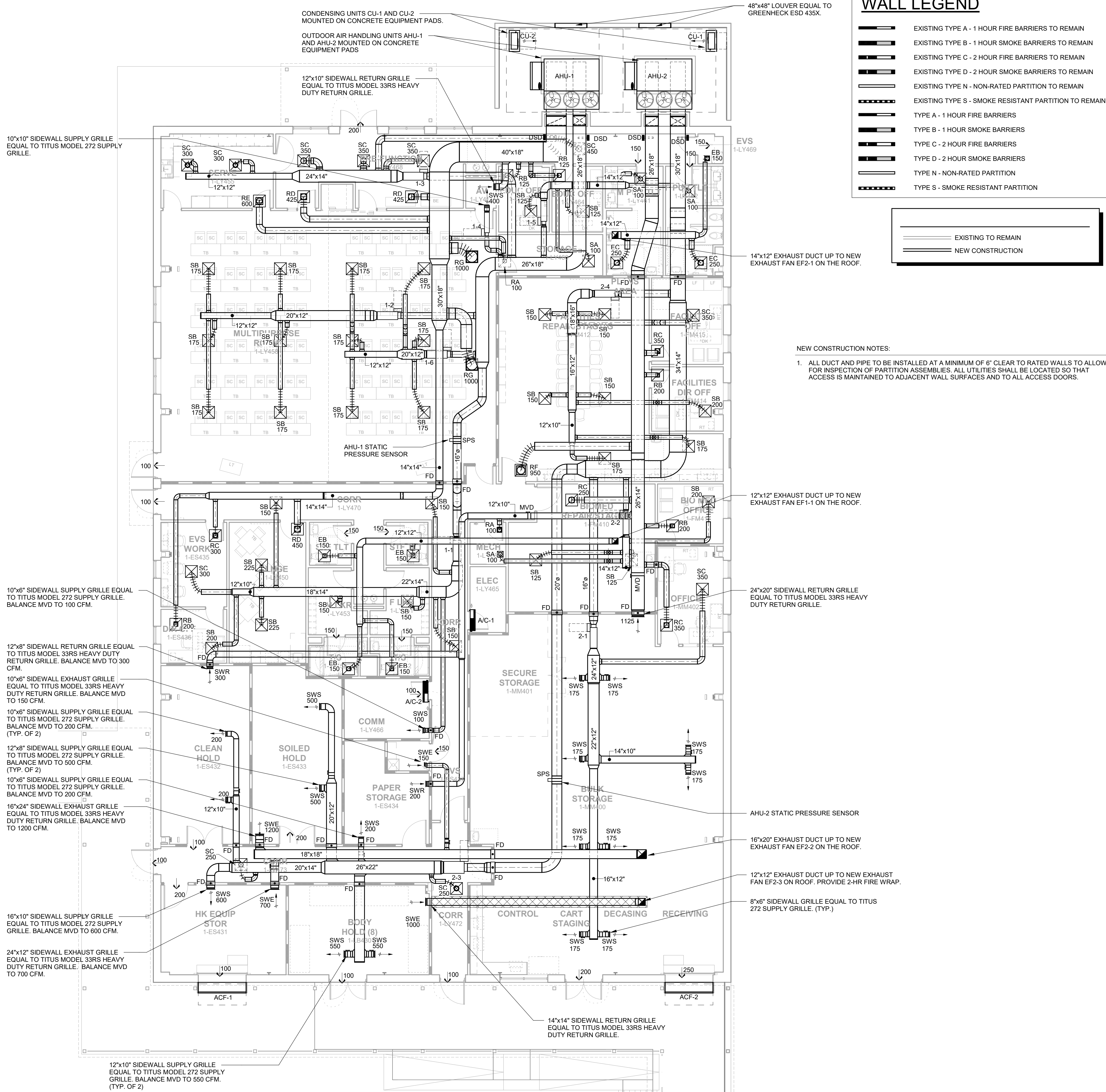
HCA Project No.: 3793800011

Revision		
No.	Date	Description

MECHANICAL -
SCHEDULES

M002.1

LINE IS 3 INCHES WHEN PRINTED FULL SIZE
FULL SHEET SIZE = 36"x42"



1 HVAC - FIRST FLOOR - ANCILLARY PLAN
1/8" = 1'-0"



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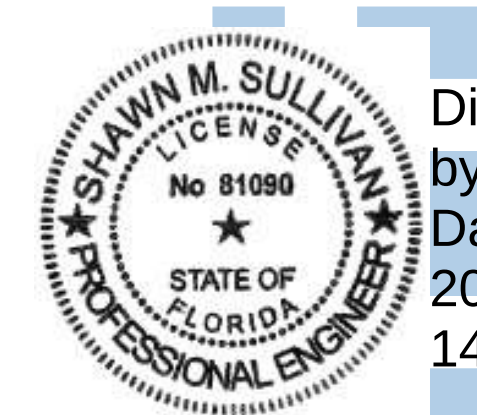


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ANCILLARY BUILDING

LAKE CITY MEDICAL CENTER
340 NW Commerce Dr.
Lake City, FL 32055
HCA Project No.: 3793800011

Revision		
No.	Date	Description

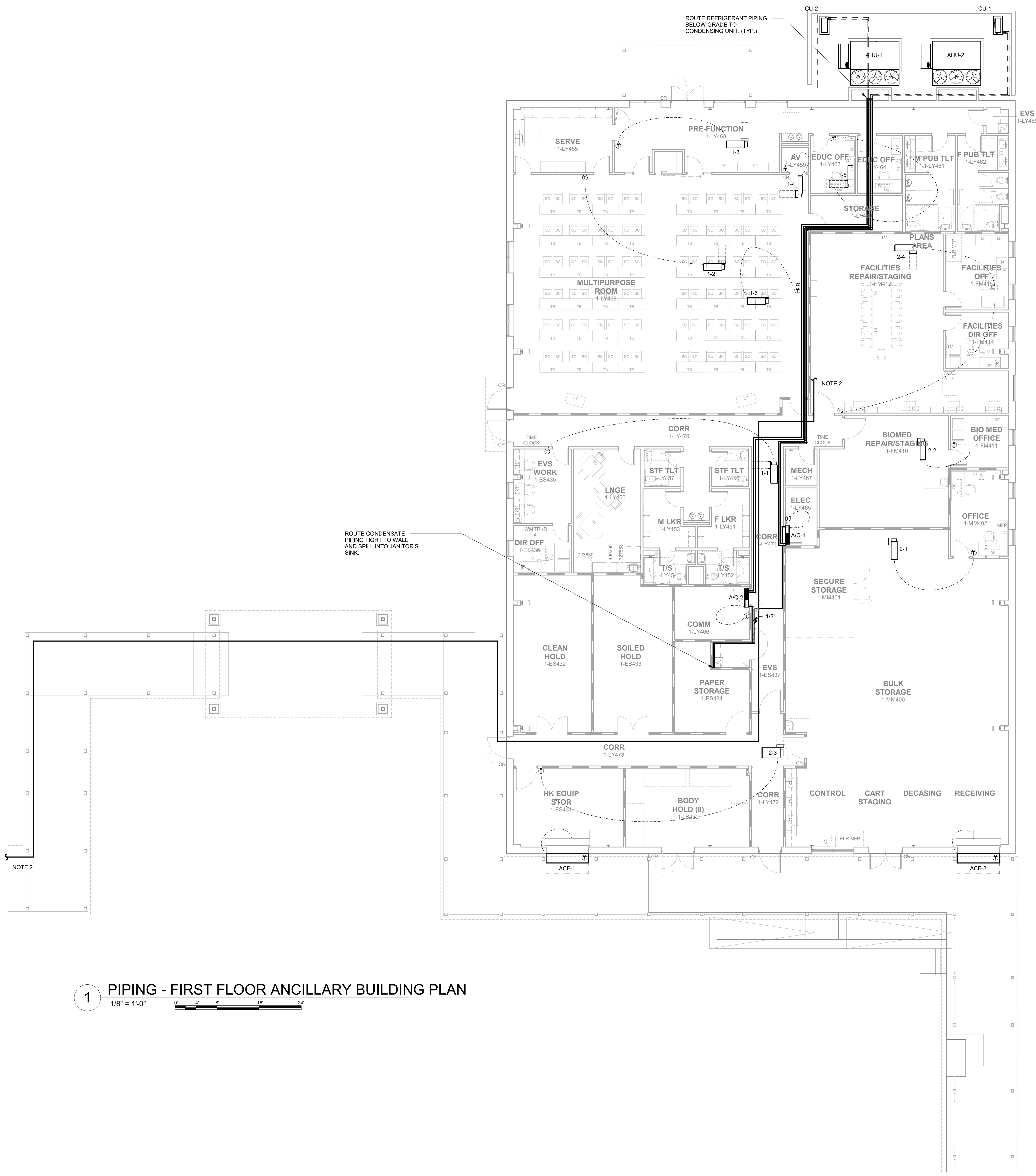
HVAC - FIRST FLOOR
ANCILLARY BUILDING
PLAN

M201C

LINE IS 3 INCHES WHEN PRINTED FULL SIZE
FULL SHEET SIZE = 30"x42"

Drawn By: Author
Checked By: Checker
Approved By: Approver

12/3/2021 4:45:22 PM BIM 360://45057.00 HCA Lake City Medical Center 10 bed med surg Expansion R21/LCT_210404_M21_Central.rvt



WALL LEGEND	
	EXISTING TYPE A - 1 HOUR FIRE BARRIERS TO REMAIN
	EXISTING TYPE B - 1 HOUR SMOKE BARRIERS TO REMAIN
	EXISTING TYPE C - 2 HOUR FIRE BARRIERS TO REMAIN
	EXISTING TYPE D - 2 HOUR SMOKE BARRIERS TO REMAIN
	EXISTING TYPE N - NON-RATED PARTITION TO REMAIN
	EXISTING TYPE S - SMOKE RESISTANT PARTITION TO REMAIN
	TYPE A - 1 HOUR FIRE BARRIERS
	TYPE B - 1 HOUR SMOKE BARRIERS
	TYPE C - 2 HOUR FIRE BARRIERS
	TYPE D - 2 HOUR SMOKE BARRIERS
	TYPE N - NON-RATED PARTITION
	TYPE S - SMOKE RESISTANT PARTITION

- NEW CONSTRUCTION:
- ALL DUCT AND PIPE TO BE INSTALLED AT A MINIMUM OF 6" CLEAR TO RATED WALLS TO ALLOW FOR INSPECTION OF PARTITION ASSEMBLIES. ALL UTILITIES SHALL BE LOCATED SO THAT ACCESS IS MAINTAINED TO ADJACENT WALL SURFACES AND TO ALL ACCESS DOORS.
 - PROVIDE NEW FUEL OIL AND MED GAS ALARM PANELS IN NEW ENGINEERING OFFICE. CONTRACTOR TO COORDINATE MOCKUPS WITH END USER TO DETERMINE FINAL LOCATION. ROUTE WIRING IN CONDUIT UNDER WALKWAY CANOPY. EXISTING PANELS TO BE REMOVED AFTER ANCILLARY BUILDING IS OCCUPIED.

1 PIPING - FIRST FLOOR ANCILLARY BUILDING PLAN
1/8" = 1'-0"



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ANCILLARY BUILDING

LAKE CITY MEDICAL CENTER
340 NW Commerce Dr.
Lake City, FL 32055
HCA Project No.: 3793800011

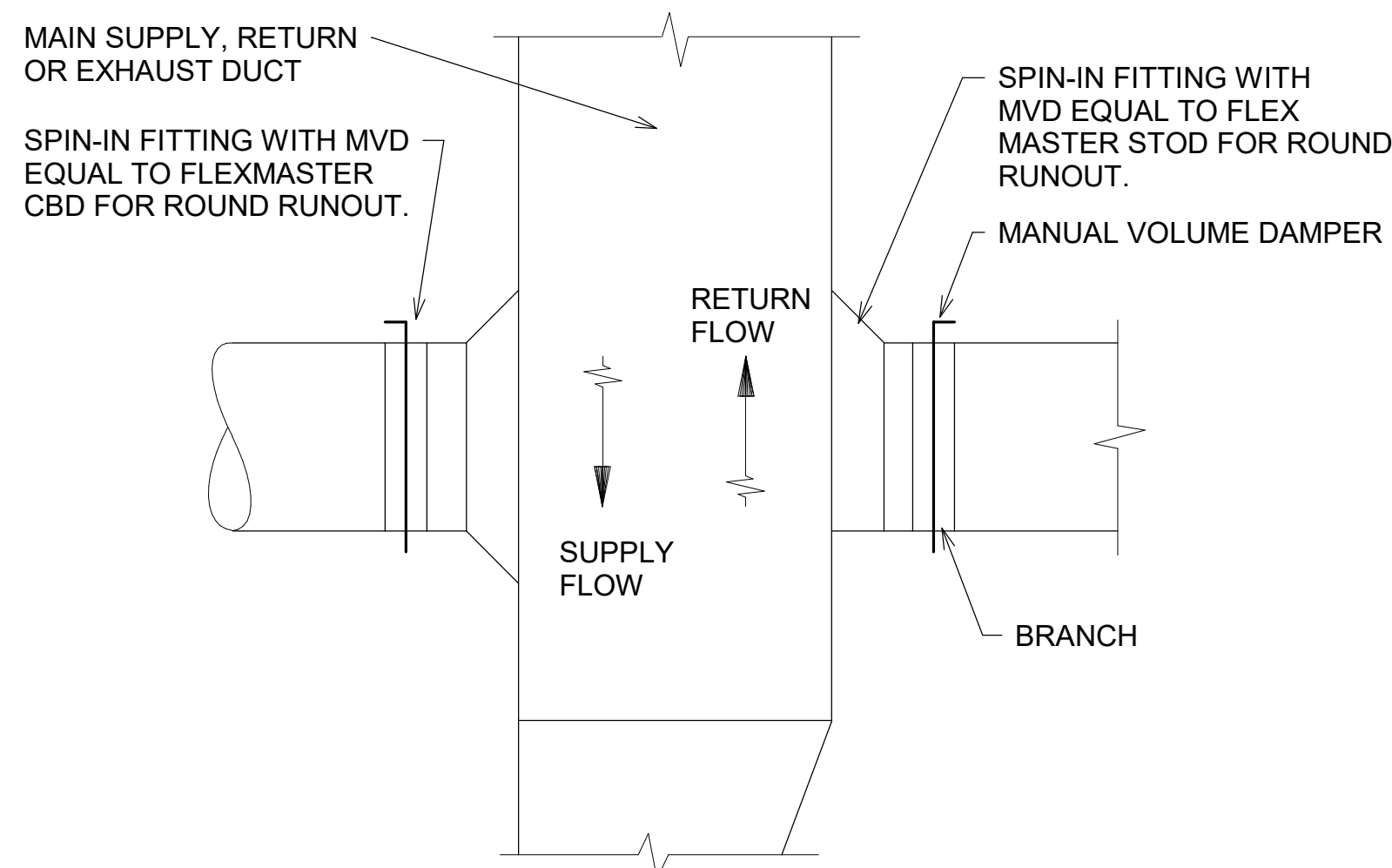
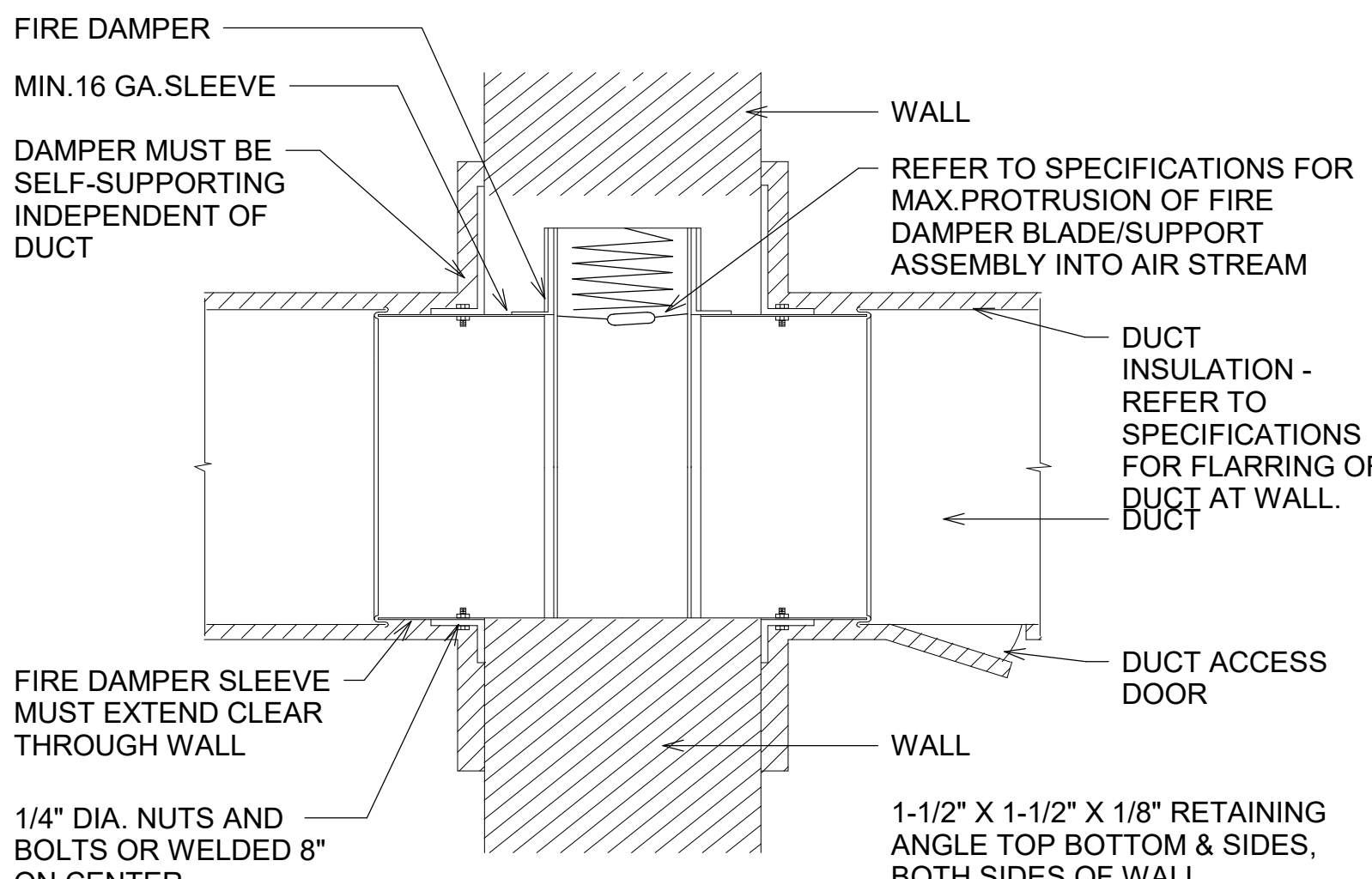
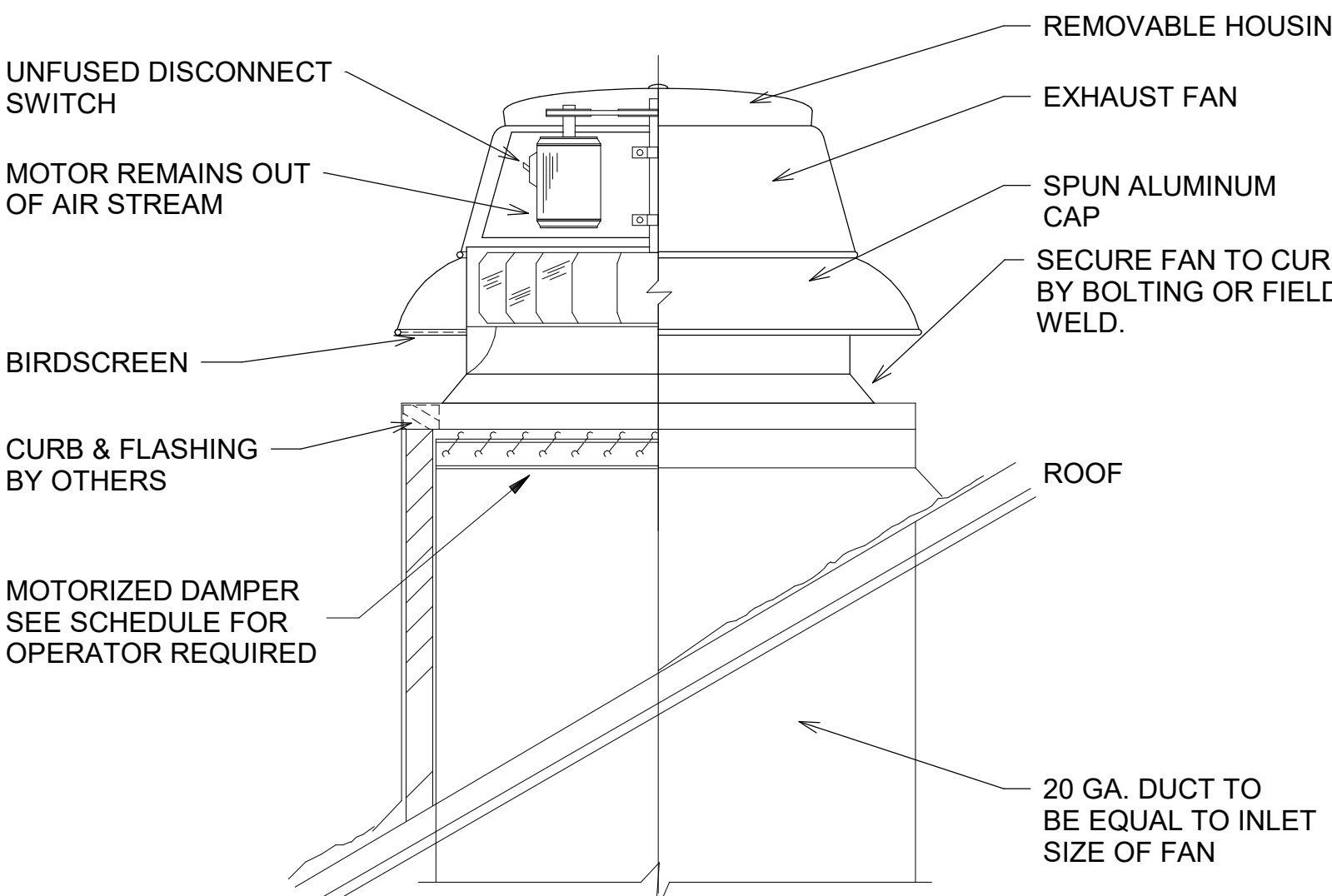
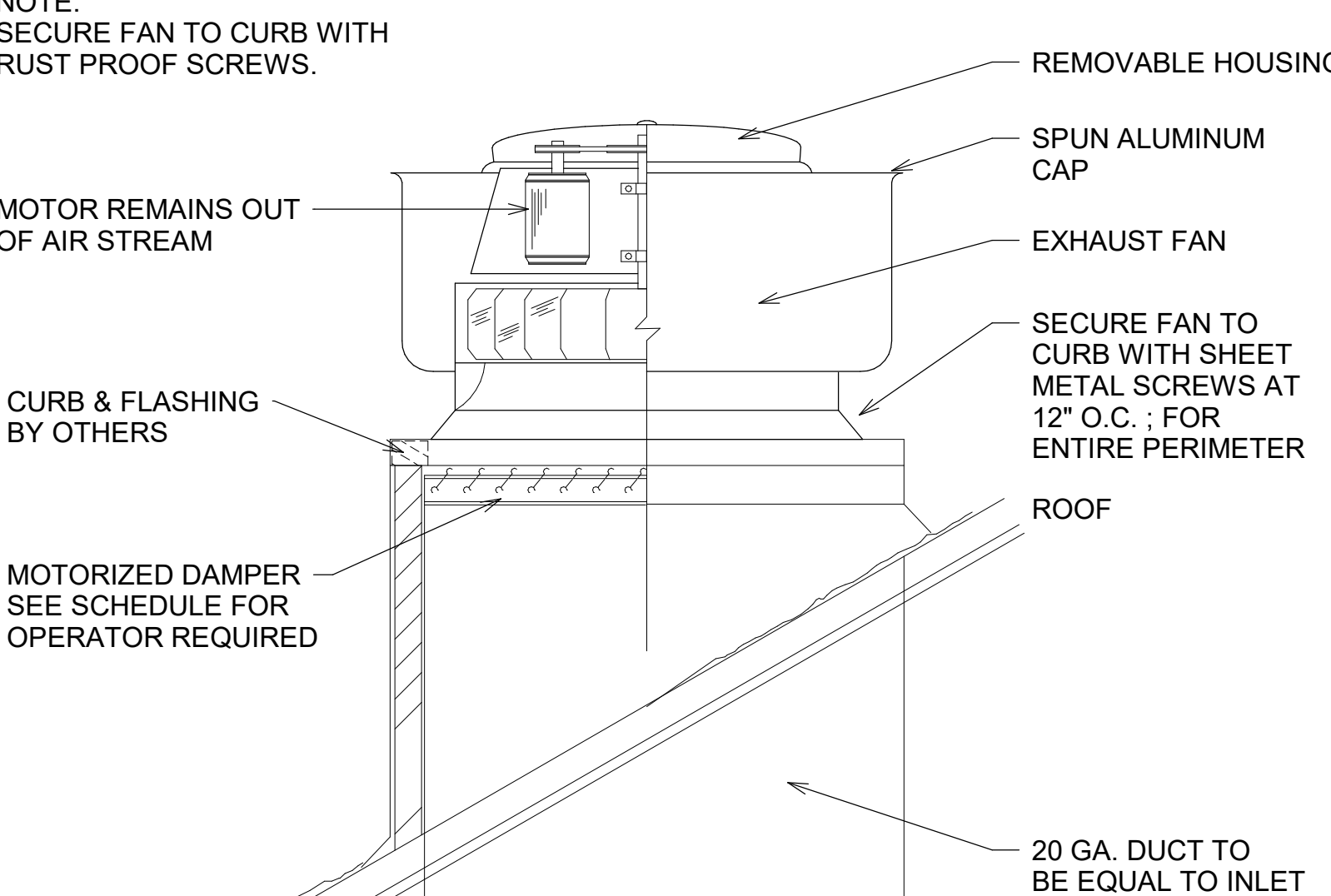
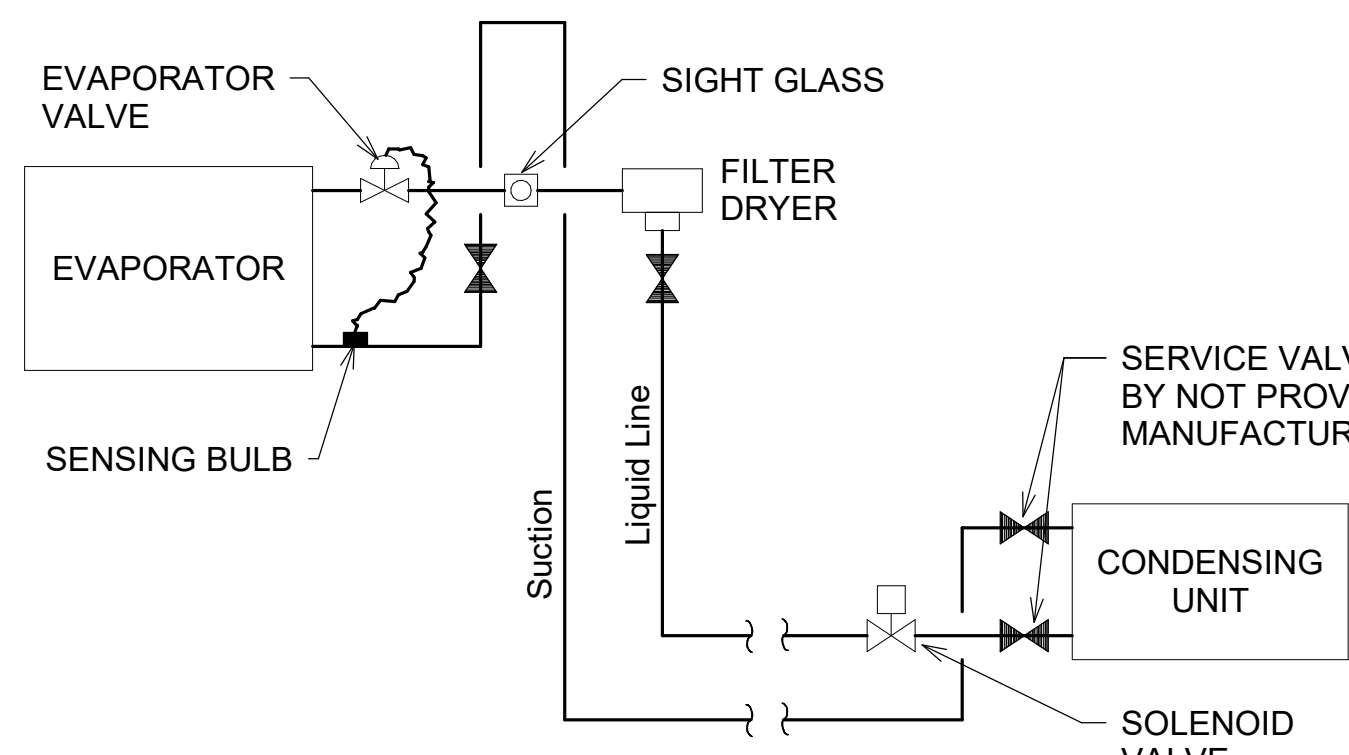
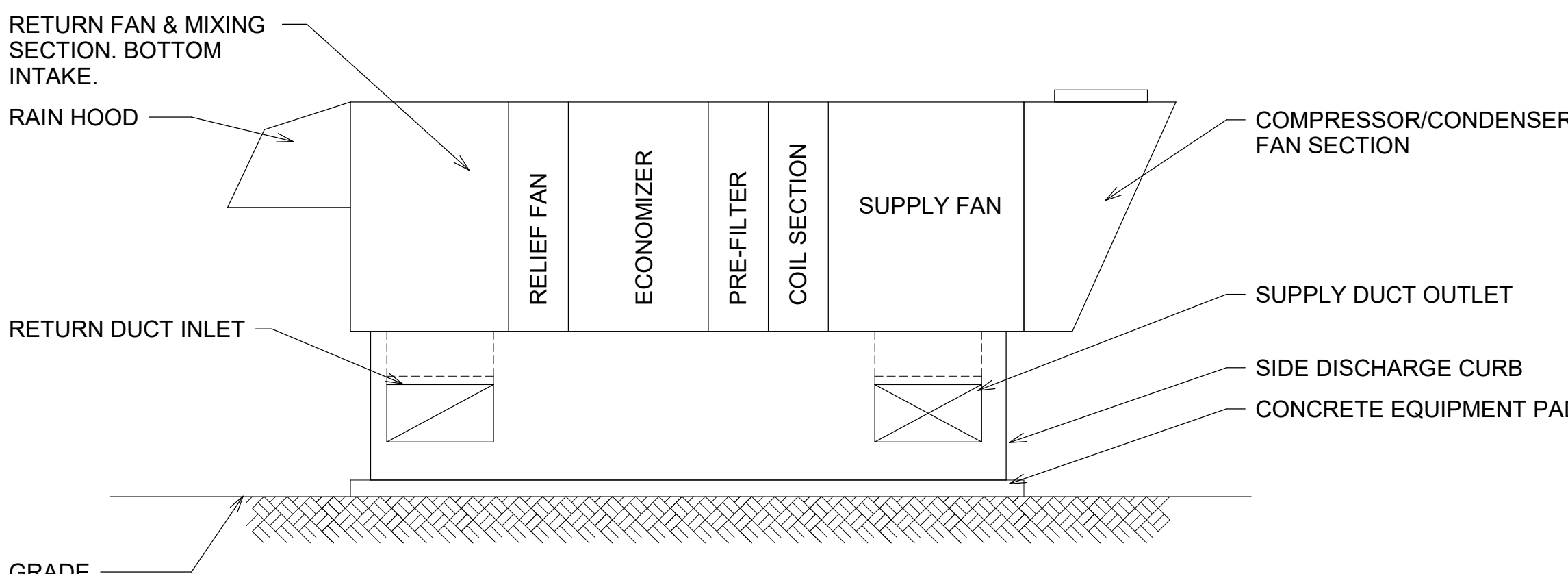
Revision		
No.	Date	Description

CONTROLS - FIRST
FLOOR ANCILLARY
BUILDING PLAN

M301C

LINE IS 3 INCHES WHEN PRINTED FULL SIZE
FULL SHEET SIZE = 30"x42"

PROJECT: 45057.00
DATE: 12/6/2021

				NOTES (VERTICAL MOUNTING SHOWN - HORIZONTAL MOUNTING SIMILAR) - DAMPER SHALL BE SECURED TO COLLAR WITH 1/4" DIAMETER NUTS AND BOLTS; OR WELDED IN THE MOUNTING HOLES PROVIDED; OR No. 10 SHEET METAL SCREWS 8" ON CENTER; OR 3/16" STEEL POP RIVETS. - ANGLES SHALL BE A MINIMUM OF 1-1/2"x1-1/2"x1/8". FASTEN TO COLLAR ONLY WITH 1/4" DIAMETER NUTS AND BOLTS; OR WELDING 8" ON CENTER; OR No. 10 SHEET METAL SCREWS 8" ON CENTER; OR 3/16" STEEL POP RIVETS. SEE NOTE 5 FOR CLEARANCE AND OVERLAP. - COLLARS SHALL BE MINIMUM 16 GAUGE FOR DAMPERS UP TO 36"Wx24"H AND 14 GAUGE IF WIDTH EXCEEDS 36" OR HEIGHT EXCEEDS 24". GAUGES SHALL CONFORM TO SMACNA DUCT STANDARDS FOR HEAVIER GAUGES. - THE FOLLOWING DUCT-COLLAR CONNECTIONS MAY BE USED ON ALL SYSTEMS: A. PLAIN "S" SLIP B. BAR SLIP C. REINFORCED BAR SLIP (CLEAT) D. ANGLE SLIP E. DRIVE SLIP - DAMPERS SHALL HAVE A CLEARANCE OF 1/4" PER FOOT ON HEIGHT AND WIDTH, AND ANGLES SHALL INCREASE IN SIZE PROPORTIONATELY SO THAT THERE WILL BE A MINIMUM OF 1" OVERLAP ON THE PARTITION. - AS WITH ALL JOINTS, CONTRACTOR MUST SEAL COLLAR IN FIELD AFTER INSTALLATION. - CAULK THE EXTERIOR OF THE FIRE/SMOKE AND SMOKE DAMPER RETAINING ANGLES TO PREVENT THE PASSAGE OF SMOKE. CAULK TO BE EQUAL TO 3M FIRE BARRIER CP-25.						
LOW PRESSURE ROUND BRANCH DUCT RUNOUT No Scale		1	TYPICAL FIRE DAMPER DETAIL No Scale		2	FIRE DAMPER MOUNTING NOTES No Scale		3		
 NOTE: 1. PROVIDE RUBBER VIBRATION ISOLATORS TO PREVENT MOTOR AND BEARING NOISE FROM TRANSMITTING TO THE FAN HOUSING. 2. ROUTE POWER LEADS TO FAN INSIDE CORNER OF CURB. 3. BELT DRIVEN CENTRIFUGAL EXHAUST FAN SHOWN. DETAIL IS SIMILAR FOR DIRECT DRIVE CENTRIFUGAL EXHAUST FAN. 4. SUPPORT CURB TO BE PERMANENTLY ATTACHED TO BUILDING STRUCTURE BY BOLTING OR WELDING.		 NOTE: 1. PROVIDE RUBBER VIBRATION ISOLATORS TO PREVENT MOTOR AND BEARING NOISE FROM TRANSMITTING TO THE FAN HOUSING. 2. ROUTE POWER LEADS TO FAN INSIDE CORNER OF CURB. 3. BELT DRIVEN CENTRIFUGAL EXHAUST FAN SHOWN. DETAIL IS SIMILAR FOR DIRECT DRIVE CENTRIFUGAL EXHAUST FAN.								
CENTRIFUGAL EXHAUST FAN No Scale		4	UPLAST CENTRIFUGAL EXHAUST FAN No Scale		5	REFRIGERANT PIPING SCHEMATIC No Scale		6		
									AIR HANDLING UNIT ON GRADE No Scale	7

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ANCILLARY BUILDING

LAKE CITY MEDICAL CENTER
340 NW Commerce Dr.
Lake City, FL 32055
HCA Project No.: 3793800011

Revision		
No.	Date	Description

MECHANICAL - DETAILS

M502.1

LINE IS 3 INCHES WHEN PRINTED FULL SIZE
FULL SHEET SIZE = 30"x42"

SYSTEM NO. C-AJ-5080
AUGUST 23, 2004
F RATING - 2 HR
T RATING - 0 HR
W RATING - CLASS 1 (SEE ITEM 4)

- FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 7-1/2 IN. SEE CONCRETE BLOCK (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- THROUGH-PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:
 - STEEL PIPE - NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
 - COPPER TUBING - NOM 3 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
 - COPPER PIPE - NOM 3 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
- PIPE INSULATION - PLASTICS# - NOM 1/2 TO 3/4 IN. THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. AN ANNULAR SPACE OF MIN 1/4 IN. TO MAX 1-1/4 IN. IS REQUIRED WITHIN THE FIRESTOP SYSTEM. SEE PLASTICS (QMF22) CATEGORY IN THE PLASTICS RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT PIPE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL 94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.
- FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
 - FILL, VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE STRIPS. ONE NOM 2 IN. WIDE STRIP TIGHTLY-WRAPPED AROUND PIPE INSULATION WITH THE FOIL SIDE EXPOSED AND SLID INTO THROUGH OPENING SUCH THAT THE TOP EDGE IS FLUSH WITH TOP SURFACE OF FLOOR OR EXTENDING A MAX OF 1 IN. ABOVE THE TOP SURFACE OF FLOOR. WHEN INSULATED PIPE IS INSTALLED IN THROUGH OPENINGS WITH A MAX ANNULAR SPACE BETWEEN THE INSULATED PIPE AND THE PERIPHERY OF THE OPENING OF 1/4 TO 3/8 IN., THE WRAP STRIP LAYER MAY BE SECURED IN PLACE WITH PRESSURE-SENSITIVE FOIL TAPE. IN ALL OTHER SITUATIONS, THE WRAP STRIP LAYER SHALL BE SECURED IN PLACE WITH MIN NO. 18 GAUGE GALV STEEL TIE WIRE. IN WALL ASSEMBLIES, THE WRAP STRIP LAYER IS TO BE INSTALLED ON THE INSULATED PIPE IN THE SAME MANNER USED FOR FLOOR ASSEMBLIES BUT SHALL BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL.
3M COMPANY - TYPE FS-195+
 - PACKING MATERIAL - MIN 1 IN. THICKNESS OF MIN 4 PCF MINERAL WOOL BATT INSULATION TIGHTLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
 - FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - MIN 1 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL ASSEMBLY. A MIN 1/4 IN. DIAM BEAD OF CAULK SHALL BE APPLIED TO EDGE OF WRAP STRIP ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL ASSEMBLY.
3M COMPANY - CP 25WB+ OR FB-3000 WT

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USED.)
*BEARING THE UL CLASSIFICATION MARKING
#BEARING THE UL RECOGNITION MARKINGS LAST UPDATED ON 2004-08-23

UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTS PRODUCTS CERTIFIED FOR CANADA

SYSTEM NO. C-AJ-5017
AUGUST 23, 2004
(FORMERLY SYSTEM NO. 395)
F RATING - 3 HR
T RATINGS - 1/2 AND 1 HR (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT
W RATING - CLASS 1 (SEE ITEM 6)

- FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX AREA OF SQUARE, RECTANGULAR OR CIRCULAR OPENING IS 45 SQ IN. WITH MAX DIMENSION OF 9 IN. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- PIPE - NOM 3 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE OR NOM 2-1/2 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. ONE OR MORE INSULATED PIPES MAY BE INSTALLED WITH A MIN CLEARANCE OF 1/2 IN. MAINTAINED BETWEEN INSULATED PIPES AND WITH A MIN CLEARANCE OF 1/4 IN. MAINTAINED BETWEEN INSULATED PIPE AND SIDES OF THROUGH OPENING. PIPES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
- PIPE INSULATION - PLASTICS# - NOM 3/4 IN. THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING WITH SKIN. WHEN NOM 2-1/2 OR 3 IN. DIAM INSULATED STEEL OR COPPER PIPE IS USED, T RATING IS 1/2 HR. WHEN MAX 2 IN. DIAM INSULATED STEEL OR COPPER PIPE IS USED, T RATING IS 1 HR. SEE PLASTICS (QMF22) CATEGORY IN THE RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.
- FILL, VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE STRIPS. ONE NOM 2 IN. WIDE STRIP TIGHTLY-WRAPPED AROUND PIPE INSULATION (ITEM 3) WITH THE FOIL SIDE EXPOSED AND SLID INTO THROUGH OPENING SUCH THAT THE TOP EDGE IS FLUSH WITH TOP SURFACE OF FLOOR. WHEN A SINGLE INSULATED PIPE IS INSTALLED IN A CIRCULAR THROUGH OPENING AND WHEN THE MAX ANNULAR SPACE BETWEEN THE INSULATED PIPE AND THE SIDES OF THE THROUGH OPENING IS 3/8 IN., THE WRAP STRIP LAYER MAY BE SECURED IN PLACE WITH PRESSURE-SENSITIVE TAPE. IN ALL OTHER SITUATIONS, THE WRAP STRIP LAYER SHALL BE SECURED IN PLACE WITH MIN NO. 18 GAUGE GALV STEEL TIE WIRE. IN WALL ASSEMBLIES, THE WRAP STRIP LAYER IS TO BE INSTALLED ON THE INSULATED PIPE IN THE SAME MANNER USED FOR FLOOR ASSEMBLIES BUT SHALL BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL.
3M COMPANY - TYPE FS-195+
- PACKING MATERIAL - MIN 1 IN. THICK MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING WITH ITS TOP SURFACE RECESSED MIN 1 IN. FROM TOP SURFACE OF THE FLOOR. IN WALL ASSEMBLIES, PACKING MATERIAL TO BE FIRMLY PACKED INTO OPENING ON BOTH SIDES OF WALL AND RECESSED MIN 1 IN. FROM WALL SURFACE. WHEN A SINGLE INSULATED PIPE (WITH WRAP STRIP LAYER) IS INSTALLED IN A CIRCULAR THROUGH OPENING AND WHEN THE MAX ANNULAR SPACE BETWEEN THE WRAP STRIP LAYER AND THE SIDES OF THE THROUGH OPENING IS 1/8 IN., NO FORMING MATERIAL IS REQUIRED.
- FILL, VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - APPLIED TO FILL THROUGH OPENING TO A MIN DEPTH OF 1 IN. IN FLOOR ASSEMBLIES, FILL MATERIAL TO BE INSTALLED FLUSH WITH TOP SURFACE OF FLOOR. IN WALL ASSEMBLIES, FILL MATERIAL TO BE INSTALLED FLUSH WITH WALL SURFACE ON BOTH SIDES OF WALL.
3M COMPANY - CP 25WB+ OR FB-3000 WT.

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USED.)
*BEARING THE UL CLASSIFICATION MARK
LAST UPDATED ON 2004-08-23

UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTS PRODUCTS CERTIFIED FOR CANADA

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SYSTEM NO. C-AJ-1001
MARCH 05, 2007
F RATING - 3 HR
T RATING - 0 HR
W RATING - CLASS 1 (SEE ITEM 4)

- FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. (114 MM) THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF CIRCULAR THROUGH OPENING IS 32-1/2 IN. (826 MM).
- SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- 1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. (51 MM) FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL.
2. THROUGH - PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 6 IN. (6 MM, POINT CONTACT) TO MAX 1-3/8 IN. (35 MM). PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
 - STEEL PIPE - NOM 30 IN. (762 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
 - IRON PIPE - NOM 30 IN. (762 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
 - CONDUIT - NOM 6 IN. (152 MM) DIAM (OR SMALLER) RIGID STEEL CONDUIT.
 - CONDUIT - NOM 4 IN. (152 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
- PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOM 1 IN. (25 MM) THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF SOLID CONCRETE OR CONCRETE BLOCK WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAX PIPE SIZE IS 10 IN. (254 MM) DIAM AND WHEN MAX ANNULAR SPACE IS 1 IN. (25 MM), A MIN 1 IN. (25 MM) THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OR MINERAL WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN 1/2 IN. (13 MM) FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF SOLID CONCRETE WALL.
- FILL, VOID OR CAVITY MATERIALS* - CAULK - APPLIED TO FILL THE ANNULAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:

Maximum Pipe Diameter Inches	Maximum Annular Space Inches	Packing Material Type (a)	Minimum Caulk Thickness Inches
10 (254)	1 (25)	BR, CF, GF or MW	1/2 (13) (B)
10 (254)	1 (25)	CF or MW	1/2 (13) (C)
30 (762)	2 1/2 (64)	BR, CF, GF or MW	1 (25) (B)

(A) BR=POLYETHYLENE BACKER ROD.
CF=CERAMIC FIBER BLANKET.
GF=GLASS FIBER INSULATION.
MW=MINERAL-WOOL BATT.

(B) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL
(C) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACE OF SOLID (NON-CONCRETE BLOCK) WALL

3M COMPANY - TYPE CP 25WB+ OR FB-3000 WT

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USED.)

*BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2007-03-05

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THROUGH-PENETRATION FIRESTOP SYSTEMS
C-AJ-5080

No Scale

1

THROUGH-PENETRATION FIRESTOP SYSTEMS
C-AJ-5017

No Scale

2

THROUGH-PENETRATION FIRESTOP SYSTEMS
C-AJ-1001

No Scale

1

Gresham Smith

GreshamSmith.com

ARCHITECT, INTERIOR DESIGN, ME&P

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1966

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Digitally signed by Shawn FL

Date: 2021.12.06 14:27:17-06'00'

MECHANICAL - DETAILS

LAKE CITY MEDICAL CENTER

340 NW Commerce Dr.

Lake City, FL 32055

HCA Project No.: 3793800011

Revision

No.	Date	Description

PROJECT: 45057.00

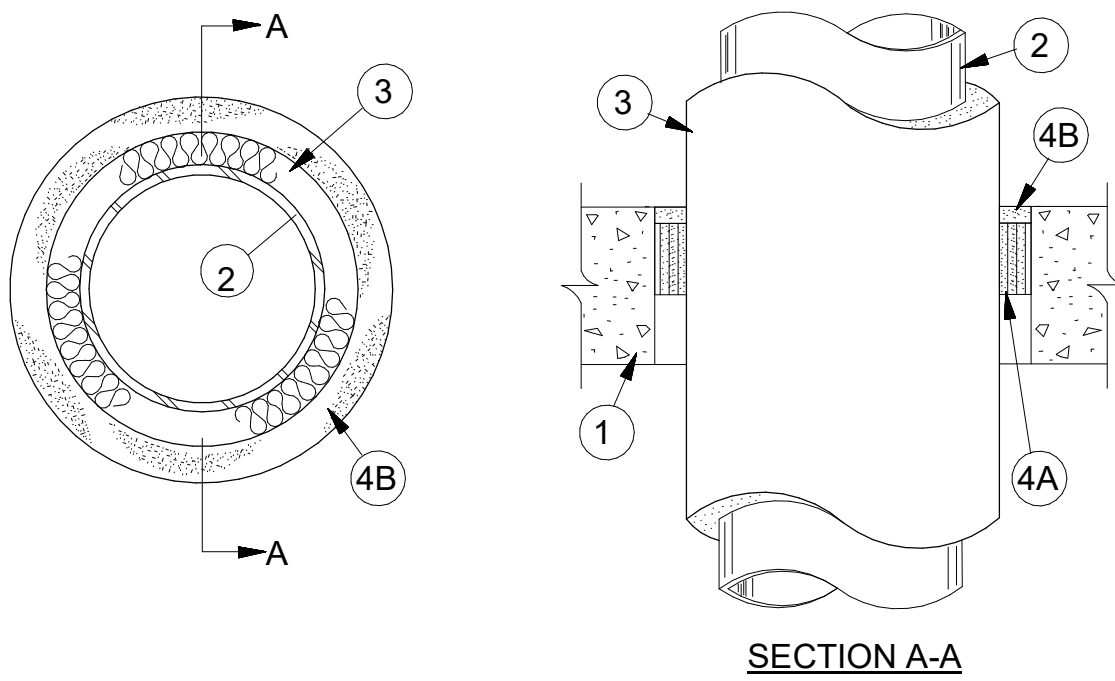
DATE: 12/6/2021

M503.1

LINE IS 3 INCHES WHEN PRINTED FULL SIZE

FULL SHEET SIZE = 36"x42"

SYSTEM NO. C-AJ-5002
SEPTEMBER 03, 2004
(FORMERLY SYSTEM NO. 91-B)
F RATINGS - 2 AND 3 HR (SEE ITEMS 1A AND 4)
T RATINGS - 0, 1/2 AND 1 HR (SEE ITEMS 1A AND 4)
L RATING AT AMBIENT - 2 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 36 IN. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- 1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 36 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO MIN 4-1/2 IN. THICK CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL. WHEN STEEL SLEEVE IS USED, F RATING IS 2 HR AND T RATING IS 0 HR.
2. PIPE - NOM 4 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE, NOM 15 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 30 IN. DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE OR NOM 30 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE CENTERED IN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.
3. PIPE COVERING* - NOM 1, 2 OR 3 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT.
- SEE PIPE AND EQUIPMENT COVERING - MATERIALS* (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
- A. FILL, VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE BY 24 IN. LONG STRIPS. NOM 2 IN. WIDE STRIPS TIGHTLY-WRAPPED AROUND PIPE COVERING (FOIL SIDE EXPOSED) TO FILL ANNULAR SPACE. EACH LAYER OF WRAP STRIP IS TO BE INSTALLED WITH A BUTTED SEAM, WITH THE BUTTED SEAMS IN SUCCESSIVE LAYERS STAGGERED. WRAP STRIP LAYERS SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLIDE INTO ANNULAR SPACE SUCH THAT THE TOP EDGES ARE RECESSED MIN 1/2 IN. FORM TOP SURFACE OF FLOOR. IN WALL ASSEMBLIES, THE WRAP STRIP LAYERS SHALL BE INSTALLED IN THE SAME MANNER USED FOR FLOOR ASSEMBLIES BUT SHALL BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL. THE MIN NUMBER OF WRAP STRIP LAYERS REQUIRED IS DEPENDENT UPON THE MAX PIPE SIZE AND THE PIPE COVERING THICKNESS, AS SHOWN IN THE FOLLOWING TABLE:

Minimum Floor or Wall Thickness In.	Maximum Pipe Diameter Inches	Nominal Pipe Covering Thkns In.	Annular Space Inches	Min No. of Wrap Strip Layers	F Rating Hour	T Rating Hour
2-1/2	6	1	1/4 to 3/8	1	2	1
2-1/2	6	2	1/2 to 5/8	2	2	1
2-1/2	12	1	1/4 to 3/8	1	2	1/2
4-1/2	12	1	1/4 to 3/8	1	2	1
4-1/2	12	2	1/2 to 5/8	2	2	1
4-1/2	20	1	1/2 to 1	2	3	1
4-1/2	30	2	3/4 to 1 1/4	3	2	1
4-1/2	20	3	1 to 1 1/2	4	2	1

3M COMPANY - FS-195+

B. FILL, VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE (OVER EDGES OF WRAP STRIP LAYERS) TO A MIN DEPTH OF 1/2 IN. FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL.

3M COMPANY - CP 25WB+ OR FB-3000 WT

*BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2004-09-03

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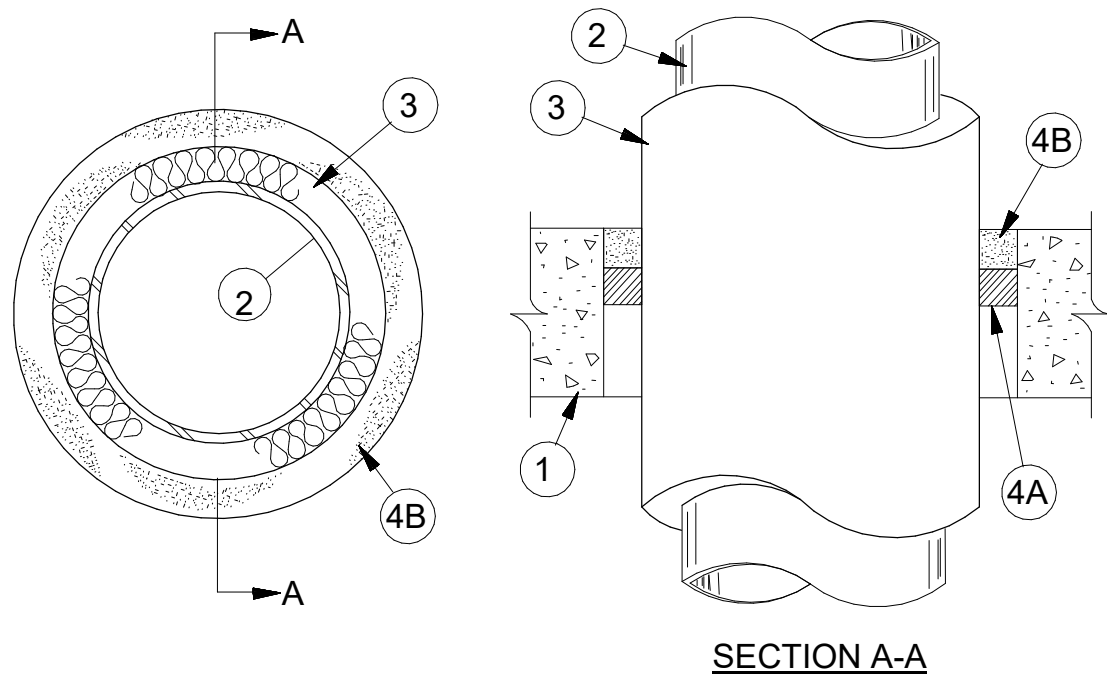
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THROUGH-PENETRATION FIRESTOP SYSTEMS
C-AJ-5002

No Scale

1

SYSTEM NO. C-AJ-5001
MARCH 05, 2007
F RATINGS - 1 1/2, 2 AND 3 HR (SEE ITEM 4)
T RATINGS - 0, 1/2, 3/4 AND 1 HR (SEE ITEMS 1A AND 4)
L RATING AT AMBIENT - 2 CFM PER SQ FT
L RATING AT 400 F - LESS THAN 1 CFM PER SQ FT



1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 18 IN. (457 MM) SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- 1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 10 IN. (254 MM) (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 2 IN. (51 MM) ABOVE TOP OF FLOOR OR BEYOND EITHER SURFACE OF WALL. T RATING IS 0 HR WHEN SLEEVE IS USED.
2. THROUGH PENETRANT - NOM 4 IN. (102 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE, NOM 12 IN. (305 MM) DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. (305 MM) DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE OR NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE CENTERED IN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.
3. PIPE COVERING* - NOM 1/2 TO 2 IN. (13 TO 51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT.
- SEE PIPE AND EQUIPMENT COVERING - MATERIALS* (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
- A. PACKING MATERIAL - MIN 1 IN. (25 MM) THICKNESS OF FIRMLY PACKED MINERAL WOOL BATT INSULATION USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR SLEEVE OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM B).
- B. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SLEEVE OR FLUSH WITH BOTH SURFACES OF WALL. WHEN NOM PIPE COVERING THICKNESS IS 2 IN. (51 MM), MIN THICKNESS OF CAULK FILL MATERIAL IS 2 IN. (51 MM). WHEN NOM PIPE COVERING THICKNESS IS 1-1/2 IN. (38 MM) OR LESS, MIN THICKNESS OF CAULK FILL MATERIAL IS 1 IN. (25 MM). THE HOURLY F AND T RATINGS OF THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE THICKNESS OF THE FLOOR OR WALL. THE SIZE OF PIPE, THE THICKNESS OF PIPE COVERING MATERIAL AND THE SIZE OF THE ANNULAR SPACE (BETWEEN THE PIPE COVERING MATERIAL AND THE EDGE OF THE CIRCULAR THROUGH OPENING), AS SHOWN IN THE FOLLOWING TABLE:

Minimum Floor or Wall Thickness In.	Maximum Pipe Diameter Inches	Nominal Pipe Covering Thkns In.	Annular Space Inches	F Rating Hour	T Rating Hour
2-1/2 (64)	4 (102)	1 or 1 1/2(25 or 38)	1/2 to 2 3/8(13 to 60)	2	1
4-1/2 (114)	4 (102)	2 (51)	1/4 to 3 5/8 (6 to 92)	2	1/2
2-1/2 (64)	12 (305)	1 (25)	1/2 to 1 1/2(13 to 38)	2	1/2
4-1/2 (114)	12 (305)	1 (25)	1/2 to 2 3/8(13 to 60)	3	1
2-1/2 (64)	12 (305)	1/2 (13)	1/2 to 2 3/8(13 to 60)	2	0

3M COMPANY - CP 25WB+ OR FB-3000 WT

*BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2007-03-05

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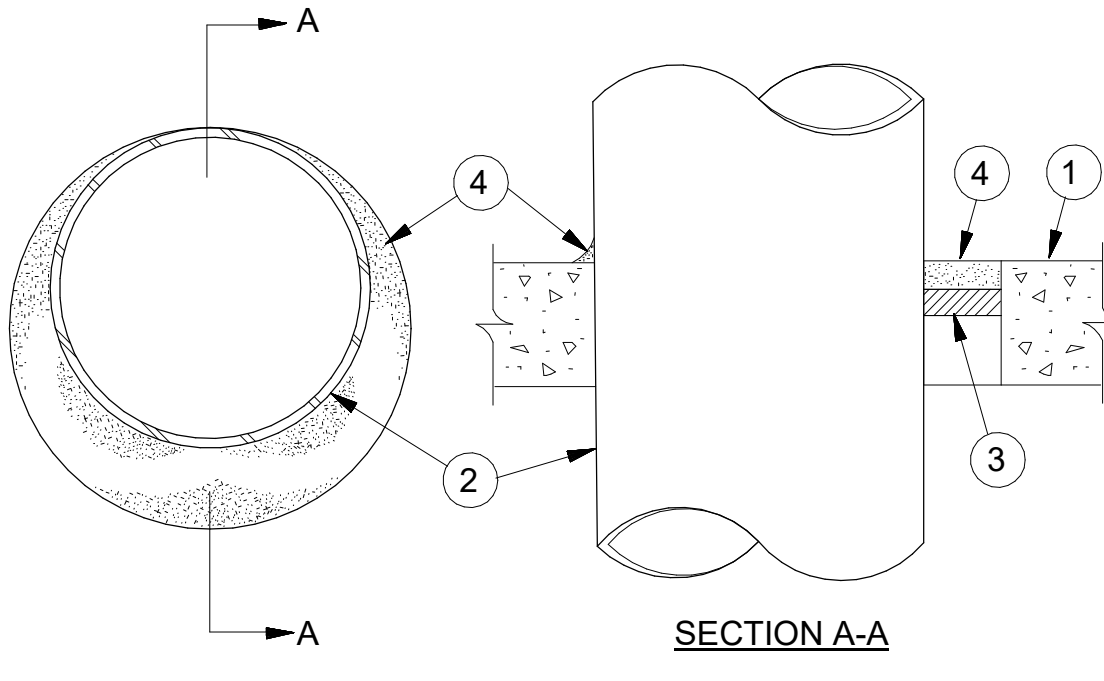
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THROUGH-PENETRATION FIRESTOP SYSTEMS
C-AJ-5001

No Scale

2

SYSTEM NO. C-AJ-1001
MARCH 05, 2007
F RATING - 3 HR
T RATING - 0 HR
W RATINGS - CLASS 1 (SEE ITEM 4)



1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. (114 MM) THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF CIRCULAR THROUGH OPENING IS 32-1/2 IN. (826 MM).
- SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- 1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. (51 MM) FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL.
2. THROUGH - PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (0 MM, POINT CONTACT) TO MAX 1-3/8 IN. (35 MM). PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
- A. STEEL PIPE - NOM 30 IN. (762 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
- A1. IRON PIPE - NOM 30 IN. (762 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
- B. CONDUIT - NOM 6 IN. (152 MM) DIAM (OR SMALLER) RIGID STEEL CONDUIT.
- C. CONDUIT - NOM 4 IN. (152 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
3. PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOM 1 IN. (25 MM) THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF SOLID CONCRETE OR CONCRETE BLOCK WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAX PIPE SIZE IS 10 IN. (254 MM) DIAM AND WHEN MAX ANNULAR SPACE IS 1 IN. (25 MM), A MIN 1 IN. (25 MM) THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OR MINERAL WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN 1/2 IN. (13 MM) FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF SOLID CONCRETE WALL.
4. FILL, VOID OR CAVITY MATERIALS* - CAULK - APPLIED TO FILL THE ANNULAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:

Maximum Pipe Diameter Inches	Maximum Annular Space Inches	Packing Material Type (a)	Minimum Caulk Thickness Inches
10 (254)	1 (25)	BR, CF, GF or MW	1/2 (13) (B)
10 (254)	1 (25)	CF or MW	1/2 (13) (C)
30 (762)	2 1/2 (64)	BR, CF, GF or MW	1 (25) (B)

- (A) BR=POLYETHYLENE BACKER ROD.
CF=CERAMIC FIBER BLANKET.
GF=GLASS FIBER INSULATION.
MW=MINERAL-WOOL BATT.
- (B) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL
- (C) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACE OF SOLID (NON-CONCRETE BLOCK) WALL

3M COMPANY - TYPE CP 25WB+ OR FB-3000 WT

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USED.)

*BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2007-03-05

UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTS PRODUCTS CERTIFIED FOR CANADA

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THROUGH-PENETRATION FIRESTOP SYSTEMS
C-AJ-1001

No Scale

3



GreshamSmith.com

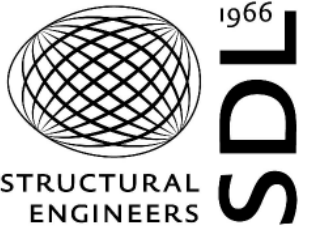
ARCHITECT, INTERIOR DESIGN, ME&P GRAPHICS
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615.770.8100
FL Qualifier No. 38970
FL Qualifier No. AR0013420
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Architect/Interior Designer of Record:
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Project Architect: Eric Snyder
Project Coordinator: Traci Myers
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Plum/Fire P. Designer:
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Florida Registration #79384
Proj Mgr: Chris Akers
Landscape AOR: Charlie Johnson
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HCA Design Mgr.: Nicole Hoch
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General Contractors
Robins & Morton
5500 Maryland Way, Suite 100
Brentwood, TN 37027



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by Shawn FL
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2021.12.06
14:27:30-06'00'

ANCILLARY BUILDING

LAKE CITY MEDICAL CENTER

340 NW Commerce Dr.
Lake City, FL 32055
HCA Project No.: 3793800011

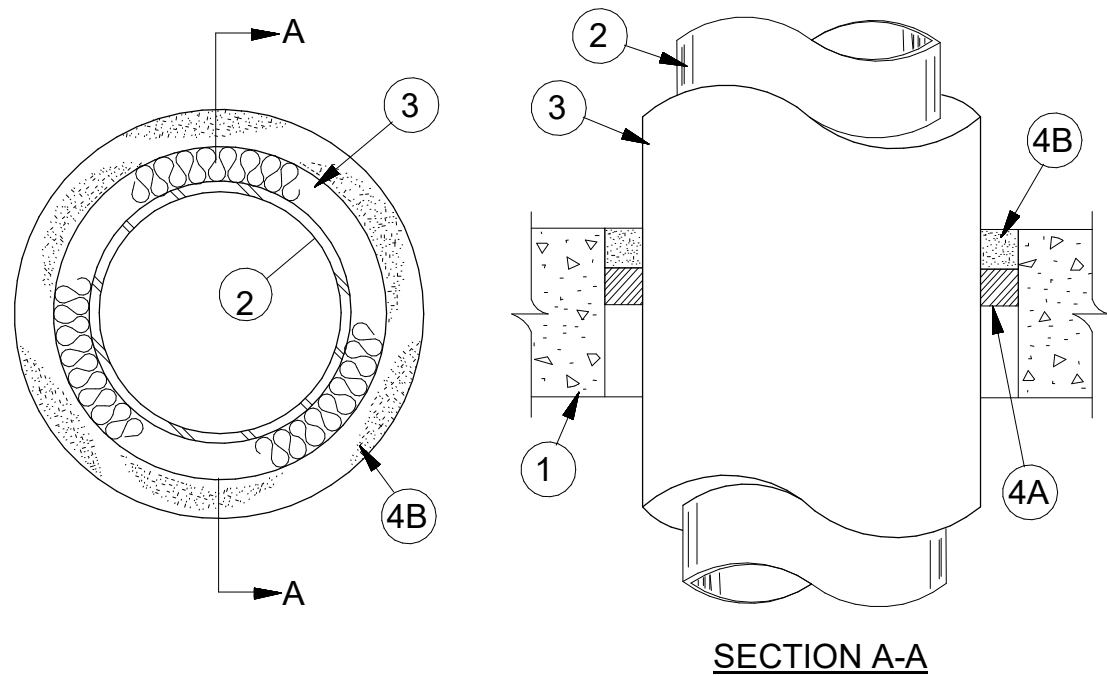
Revision		
No.	Date	Description

MECHANICAL - DETAILS

M503.2

LINE IS 3 INCHES WHEN PRINTED FULL SIZE
FULL SHEET SIZE = 36"x42"

SYSTEM NO. C-AJ-5001
MARCH 05, 2007
F RATINGS - 1 1/2 , 2 AND 3 HR (SEE ITEM 4)
T RATINGS - 0, 1/2, 3/4 AND 1 HR (SEE ITEMS 1A AND 4)
L RATING AT AMBIENT - 2 CFM PER SQ FT
L RATING AT 400 F - LESS THAN 1 CFM PER SQ FT



1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 18 IN. (457 MM)
SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- 1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 10 IN. (254 MM) (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 2 IN. (51 MM) ABOVE TOP OF FLOOR OR BEYOND EITHER SURFACE OF WALL. T RATING IS 0 HR WHEN SLEEVE IS USED.
2. THROUGH PENETRANT - NOM 4 IN. (102 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE, NOM 12 IN. (305 MM) DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. (305 MM) DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE OR NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE CENTERED IN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.
3. PIPE COVERING* - NOM 1/2 TO 2 IN. (13 TO 51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT.
SEE PIPE AND EQUIPMENT COVERING - MATERIALS* (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
- A. PACKING MATERIAL - MIN 1 IN. (25 MM) THICKNESS OF FIRMLY PACKED MINERAL WOOL BATT INSULATION USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR SLEEVE OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM B).
- B. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SLEEVE OR FLUSH WITH BOTH SURFACES OF WALL. WHEN NOM PIPE COVERING THICKNESS IS 2 IN. (51 MM), MIN THICKNESS OF CAULK FILL MATERIAL IS 2 IN. (51 MM). WHEN NOM PIPE COVERING THICKNESS IS 1-1/2 IN. (38 MM) OR LESS, MIN THICKNESS OF CAULK FILL MATERIAL IS 1 IN. (25 MM). THE HOURLY F AND T RATINGS OF THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE THICKNESS OF THE FLOOR OR WALL, THE SIZE OF PIPE, THE THICKNESS OF PIPE COVERING MATERIAL AND THE SIZE OF THE ANNULAR SPACE (BETWEEN THE PIPE COVERING MATERIAL AND THE EDGE OF THE CIRCULAR THROUGH OPENING), AS SHOWN IN THE FOLLOWING TABLE:

Minimum Floor or Wall Thickness In.	Maximum Pipe Diameter Inches	Nominal Pipe Covering Thkns In.	Annular Space Inches	F Rating Hour	T Rating Hour
2-1/2 (64)	4 (102)	1 or 1 (2/25 or 38)	1/2 to 2 3/8 (13 to 60)	2	1
4-1/2 (114)	4 (102)	2 (51)	1/4 to 3 5/8 (6 to 92)	2	1/2
2-1/2 (64)	12 (305)	1 (25)	1/2 to 1 1/2(13 to 38)	2	1/2
4-1/2 (114)	12 (305)	1 (25)	1/2 to 2 3/8 (13 to 60)	3	1
2-1/2 (64)	12 (305)	1/2 (13)	1/2 to 2 3/8 (13 to 60)	2	0

3M COMPANY - CP 25WB+ OR FB-3000 WT

*BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2007-03-05

UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTS PRODUCTS CERTIFIED FOR CANADA

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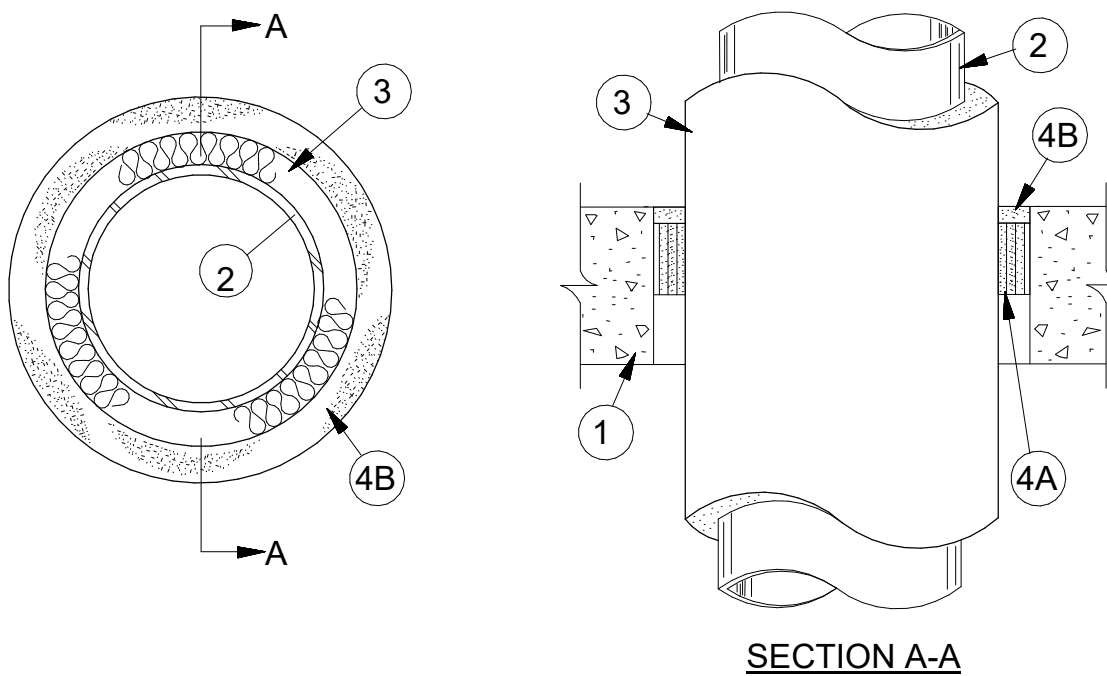
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THROUGH-PENETRATION FIRESTOP SYSTEMS C-AJ-5001

No Scale

1

SYSTEM NO. C-AJ-5002
SEPTEMBER 03, 2004
(FORMERLY SYSTEM NO. 91-B)
F RATINGS - 2 AND 3 HR (SEE ITEMS 1A AND 4)
T RATINGS - 0, 1/2 AND 1 HR (SEE ITEMS 1A AND 4)
L RATING AT AMBIENT - 2 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 36 IN.
SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- 1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 36 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO MIN 4-1/2 IN. THICK CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL. WHEN STEEL SLEEVE IS USED, F RATING IS 2 HR AND T RATING IS 0 HR.
2. PIPE - NOM 4 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE, NOM 15 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 30 IN. DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE OR NOM 30 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE CENTERED IN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.
3. PIPE COVERING* - NOM 1, 2 OR 3 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT.
- SEE PIPE AND EQUIPMENT COVERING - MATERIALS* (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
- A. FILL, VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE BY 24 IN. LONG STRIPS, NOM 2 IN. WIDE STRIPS TIGHTLY-WRAPPED AROUND PIPE COVERING (FOIL SIDE EXPOSED) TO FILL ANNULAR SPACE. EACH LAYER OF WRAP STRIP IS TO BE INSTALLED WITH A BUTTED SEAM, WITH THE BUTTED SEAMS IN SUCCESSIVE LAYERS STAGGERED. WRAP STRIP LAYERS SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLIDE INTO ANNULAR SPACE SUCH THAT THE TOP EDGES ARE RECESSED MIN 1/2 IN. FORM TOP SURFACE OF FLOOR. IN WALL ASSEMBLIES, THE WRAP STRIP LAYERS SHALL BE INSTALLED IN THE SAME MANNER USED FOR FLOOR ASSEMBLIES BUT SHALL BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL. THE MIN NUMBER OF WRAP STRIP LAYERS REQUIRED IS DEPENDENT UPON THE MAX PIPE SIZE AND THE PIPE COVERING THICKNESS, AS SHOWN IN THE FOLLOWING TABLE:

Minimum Floor or Wall Thickness In.	Maximum Pipe Diameter Inches	Nominal Pipe Covering Thkns In.	Annular Space Inches	Min No. of Wrap Strip Layers	F Rating Hour	T Rating Hour
2-1/2	6	1	1/4 to 3/8	1	2	1
2-1/2	6	2	1/2 to 5/8	2	2	1
2-1/2	12	1	1/4 to 3/8	1	2	1/2
4-1/2	12	1	1/4 to 3/8	1	2	1
4-1/2	12	2	1/2 to 5/8	2	2	1
4-1/2	20	1	1/2 to 1	2	3	1
4-1/2	30	2	3/4 to 1 1/4	3	2	1
4-1/2	20	3	1 to 1 1/2	4	2	1

3M COMPANY - FS-195+

B. FILL, VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE (OVER EDGES OF WRAP STRIP LAYERS) TO A MIN DEPTH OF 1/2 IN., FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL.

3M COMPANY - CP 25WB+ OR FB-3000 WT

*BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2004-09-03

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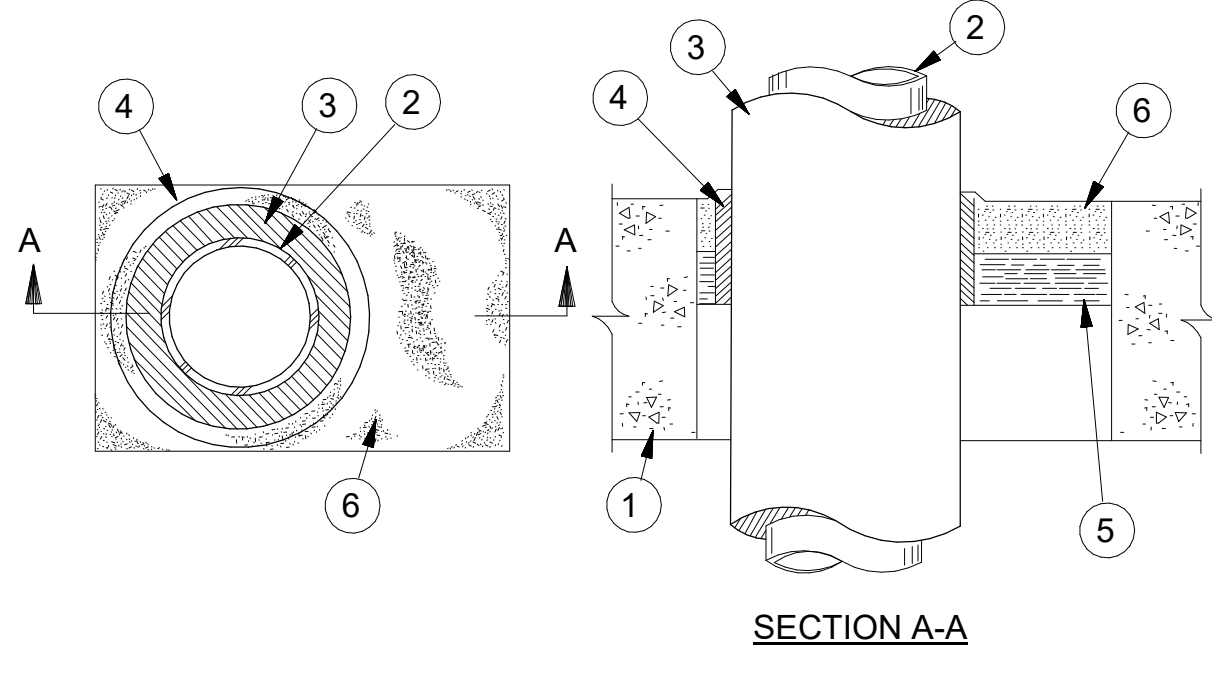
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THROUGH-PENETRATION FIRESTOP SYSTEMS C-AJ-5002

No Scale

2

SYSTEM NO. C-AJ-5017
AUGUST 23, 2004
(FORMERLY SYSTEM NO. 395)
F RATINGS - 3 HR
T RATINGS - 1/2 AND 1 HR (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT
W RATING - CLASS 1 (SEE ITEM 6)



1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS* MAX AREA OF SQUARE, RECTANGULAR OR CIRCULAR OPENING IS 45 SQ IN. WITH MAX DIMENSION OF 9 IN.
SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. PIPE - NOM 3 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE OR NOM 2-1/2 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. ONE OR MORE INSULATED PIPES MAY BE INSTALLED WITH A MIN CLEARANCE OF 1/2 IN. MAINTAINED BETWEEN INSULATED PIPES AND WITH A MIN CLEARANCE OF 1/4 IN. MAINTAINED BETWEEN INSULATED PIPE AND SIDES OF THROUGH OPENING. PIPES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
3. PIPE INSULATION - PLASTICS# - NOM 3/4 IN. THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING WITH SKIN, WHEN NOM 2-1/2 OR 3 IN. DIAM INSULATED STEEL OR COPPER PIPE IS USED, T RATING IS 1/2 HR, WHEN MAX 2 IN. DIAM INSULATED STEEL OR COPPER PIPE IS USED, T RATING IS 1 HR.
SEE PLASTICS# (QMF22) CATEGORY IN THE RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.
4. FILL, VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE STRIPS, ONE NOM 2 IN. WIDE STRIP TIGHTLY-WRAPPED AROUND PIPE INSULATION (ITEM 3) WITH THE FOIL SIDE EXPOSED AND SLID INTO THROUGH OPENING SUCH THAT THE TOP EDGE IS FLUSH WITH TOP SURFACE OF FLOOR. WHEN A SINGLE INSULATED PIPE IS INSTALLED IN A CIRCULAR THROUGH OPENING AND WHEN THE MAX ANNULAR SPACE BETWEEN THE INSULATED PIPE AND THE SIDES OF THE THROUGH OPENING IS 3/8 IN., THE WRAP STRIP LAYER MAY BE SECURED IN PLACE WITH PRESSURE-SENSITIVE TAPE. IN ALL OTHER SITUATIONS, THE WRAP STRIP LAYER SHALL BE SECURED IN PLACE WITH MIN NO. 18 GAUGE GALV STEEL TIE WIRE. IN WALL ASSEMBLIES, THE WRAP STRIP LAYER IS TO BE INSTALLED ON THE INSULATED PIPE IN THE SAME MANNER USED FOR FLOOR ASSEMBLIES BUT SHALL BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL.
3M COMPANY - TYPE FS-195+
5. PACKING MATERIAL - MIN 1 IN. THICK MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING WITH ITS TOP SURFACE RECESSED MIN 1 IN. FROM TOP SURFACE OF THE FLOOR. IN WALL ASSEMBLIES, PACKING MATERIAL TO BE FIRMLY PACKED INTO OPENING ON BOTH SIDES OF WALL AND RECESSED MIN 1 IN. FROM WALL SURFACE. WHEN A SINGLE INSULATED PIPE (WITH WRAP STRIP LAYER) IS INSTALLED IN A CIRCULAR THROUGH OPENING AND WHEN THE MAX ANNULAR SPACE BETWEEN THE WRAP STRIP LAYER AND THE SIDES OF THE THROUGH OPENING IS 1/8 IN., NO FORMING MATERIAL IS REQUIRED.
6. FILL, VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - APPLIED TO FILL THROUGH OPENING TO A MIN DEPTH OF 1 IN. IN FLOOR ASSEMBLIES, FILL MATERIAL TO BE INSTALLED FLUSH WITH TOP SURFACE OF FLOOR. IN WALL ASSEMBLIES, FILL MATERIAL TO BE INSTALLED FLUSH WITH WALL SURFACE ON BOTH SIDES OF WALL.
3M COMPANY - CP 25WB+ OR FB-3000 WT.

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USED.)

*BEARING THE UL CLASSIFICATION MARK
LAST UPDATED ON 2004-08-23

UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTSPRODUCTS CERTIFIED FOR CANADA

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THROUGH-PENETRATION FIRESTOP SYSTEMS C-AJ-5017

No Scale

3



Gresham Smith

GreshamSmith.com

ARCHITECT, INTERIOR DESIGN, ME&P
GRAPHICS
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222 2nd Avenue South, Suite 1400
Nashville, TN 37201-2308
615-770-8100
FL Qualifier No. 38970
FL Qualifier No. AR0013420
FL Registry No. RY3806
Architect/Interior Designer of Record:
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Florida Registration #96197
Project Principal: Rob Hamby
Project Architect: Eric Snyder
Project Coordinator: Traci Myers
Interior Designer: Morgan Black
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FL Qualifier No. 39200
FL Registry No. 1329
Project Principal/Engineer:
Mark Hilder
Structural Engineer of Record:
Michael E. Corrin
Florida Registration #62025

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MEP Proj Mgr: Paul C. McKinney
Mech Engineer of Record:
Shawn Sullivan
Florida Registration #81099
Plum/Fire P. Designer:
Donna Seigal
Elec. Engineer of Record:
Paul C. McKinney
Florida Registration #56699

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850-553-3500
FL Qualifier No. 49629
FL Registry No. 696
EOR: Kelsey Lewis, PE
Florida Registration #79384
ProJ Mgr: Chris Akers
Landscape AOR: Charlie Johnson
Florida Reg #667402



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HCA Constr. Mgr.: Ben McAlpin

General Contractors
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5500 Maryland Way, Suite 100
Brentwood, TN 37027



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ANCILLARY BUILDING

LAKE CITY MEDICAL CENTER

340 NW Commerce Dr.
Lake City, FL 32055

HCA Project No.: 3793800011

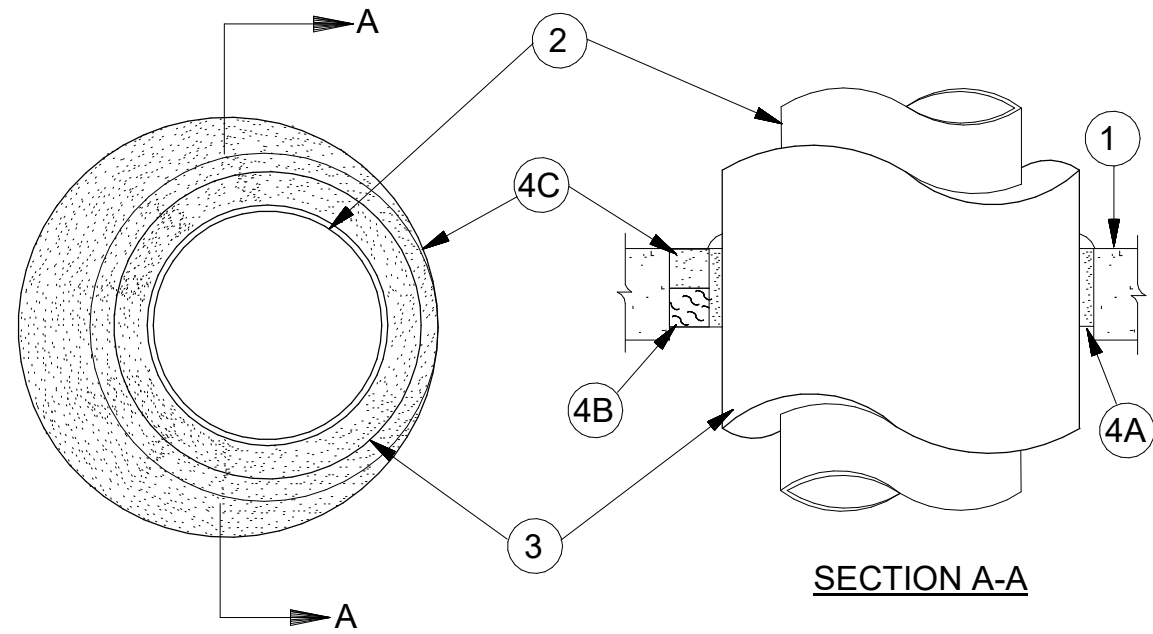
Revision		
No.	Date	Description

MECHANICAL - DETAILS

M503.3

LINE IS 3 INCHES WHEN PRINTED FULL SIZE
FULL SHEET SIZE = 36"x42"

SYSTEM NO. C-AJ-5080
AUGUST 23, 2004
F RATING - 2 HR
T RATING - 0 HR
W RATING - CLASS 1 (SEE ITEM 4)



- FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 7-1/2 IN. SEE CONCRETE BLOCK (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- THROUGH-PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:
 - STEEL PIPE - NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
 - COPPER TUBING - NOM 3 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
 - COPPER PIPE - NOM 3 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
- PIPE INSULATION - PLASTICS# - NOM 1/2 TO 3/4 IN. THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. AN ANNULAR SPACE OF MIN 1/4 IN. TO MAX 1-1/4 IN. IS REQUIRED WITHIN THE FIRESTOP SYSTEM. SEE PLASTICS (QMF22) CATEGORY IN THE PLASTICS RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTURERS. ANY RECOGNIZED COMPONENT PIPE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL 94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.
- FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
 - FILL, VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE STRIPS. ONE NOM 2 IN. WIDE STRIP TIGHTLY WRAPPED AROUND PIPE INSULATION WITH THE FOIL SIDE EXPOSED AND SLID INTO THROUGH OPENING SUCH THAT THE TOP EDGE IS FLUSH WITH TOP SURFACE OF FLOOR OR EXTENDING A MAX OF 1 IN. ABOVE THE TOP SURFACE OF FLOOR. WHEN INSULATED PIPE IS INSTALLED IN THROUGH OPENINGS WITH A MAX ANNULAR SPACE BETWEEN THE INSULATED PIPE AND THE PERIPHERY OF THE OPENING OF 1/4 TO 3/8 IN., THE WRAP STRIP LAYER MAY BE SECURED IN PLACE WITH PRESSURE-SENSITIVE FOIL TAPE. IN ALL OTHER SITUATIONS, THE WRAP STRIP LAYER SHALL BE SECURED IN PLACE WITH MIN NO. 18 GAUGE GALV STEEL TIE WIRE. IN WALL ASSEMBLIES, THE WRAP STRIP LAYER IS TO BE INSTALLED ON THE INSULATED PIPE IN THE SAME MANNER USED FOR FLOOR ASSEMBLIES BUT SHALL BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL.

3M COMPANY - TYPE FS-195+
 - PACKING MATERIAL - MIN 1 IN. THICKNESS OF MIN 4 PCF MINERAL WOOL BATT INSULATION TIGHTLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
 - FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - MIN 1 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL ASSEMBLY. A MIN 1/4 IN. DIAM BEAD OF CAULK SHALL BE APPLIED TO EDGE OF WRAP STRIP ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL ASSEMBLY.
3M COMPANY - CP 25WB+ OR FB-3000 WT(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USED.)
*BEARING THE UL CLASSIFICATION MARKING LAST UPDATED ON 2004-08-23

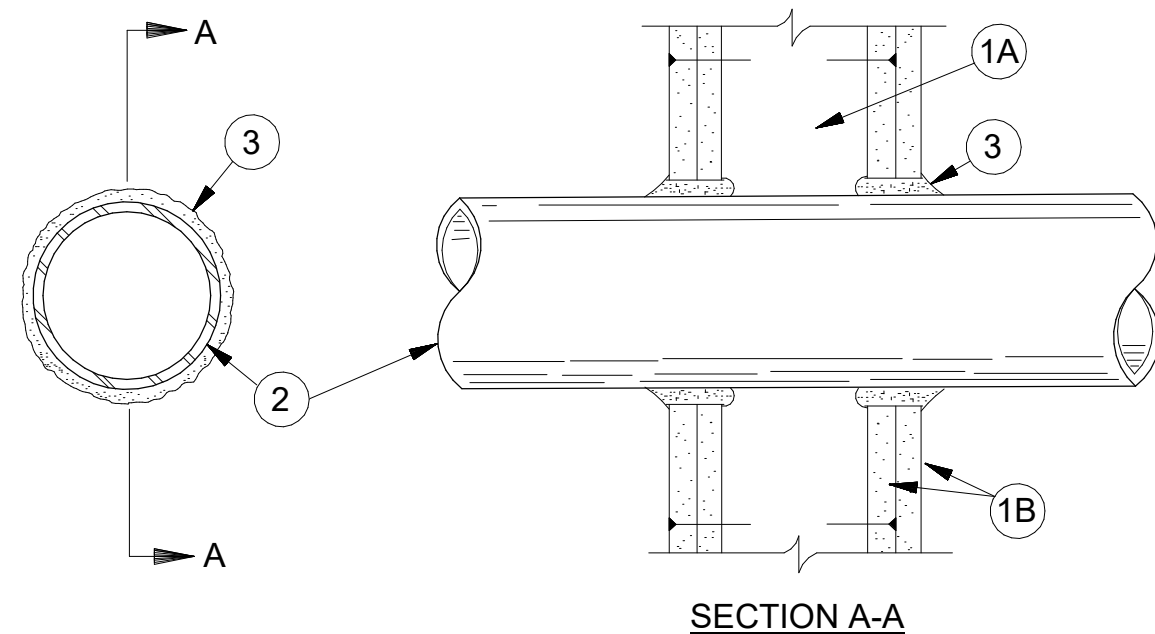
UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTS PRODUCTS CERTIFIED FOR CANADA

THROUGH-PENETRATION FIRESTOP SYSTEMS
C-AJ-5080

No Scale

1

SYSTEM NO. W-L-1001
JUNE 15, 2005
F RATINGS - 1, 2, 3 AND 4 HR (SEE ITEMS 2 AND 3)
T RATINGS - 0, 1, 2, 3, AND 4 HR (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



- WALL ASSEMBLY - THE 1, 2, 3 OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
 - STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 H FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC WITH NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. (92 MM) WIDE BY 1-3/8 IN. (35 MM) DEEP CHANNELS SPACED MAX 24 IN. (610 MM) OC.
 - GYPSUM BOARD* - NOM OR.HN. (13 OR 16 MM) THICK, 4 FT. (122 H 1/20CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 26 IN. (660 MM).
- THROUGH-PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (0 MM). (POINT CONTACT) TO MAX 2 IN. (51 MM) PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
 - STEEL PIPE - NOM 24 IN. (610 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
 - IRON PIPE - NOM 24 IN. (610 MM) DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN (305 MM) DIAM (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE.
 - CONDUIT - NOM 6 IN. (152 MM) DIAM (OR SMALLER) STEEL CONDUIT OR NOM 4 IN (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING
 - COPPER TUBING - NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING
 - COPPER PIPE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
 - THROUGH PENETRATING PRODUCT* - FLEXIBLE METAL PIPING THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:
 - NOM 2 IN. (51 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. OMEGA FLEX INC
 - NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OFFLOOR OR WALL ASSEMBLY. GASITITE, DIV OF TITFLEX
 - NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. WARD MFG INC
- FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - MIN 5/8. , 1-1/4, 1-7/8 AND 2-1/2 IN. (16, 32, 48 AND 64 MM) THICKNESS OF CAULK FOR 1, 2, 3 AND 4 HR RATED ASSEMBLIES, RESPECTIVELY. APPLIED WITHIN ANNULUS, FLUSH 1/4 IN. (6 MM) DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OFWALL. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:

Maximum Pipe or Conduit Diameter Inches	F Rating Hours	F Rating Hours
1 (25)	1 or 2	0+, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0
12 (305)	1 or 2	0

+WHEN COPPER PIPE IS USED, T RATING IS 0
H:3M COMPANY - CP 25WB+ OR FB-3000 WT.

*BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2005-06-15

UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTS PRODUCTS CERTIFIED FOR CANADA

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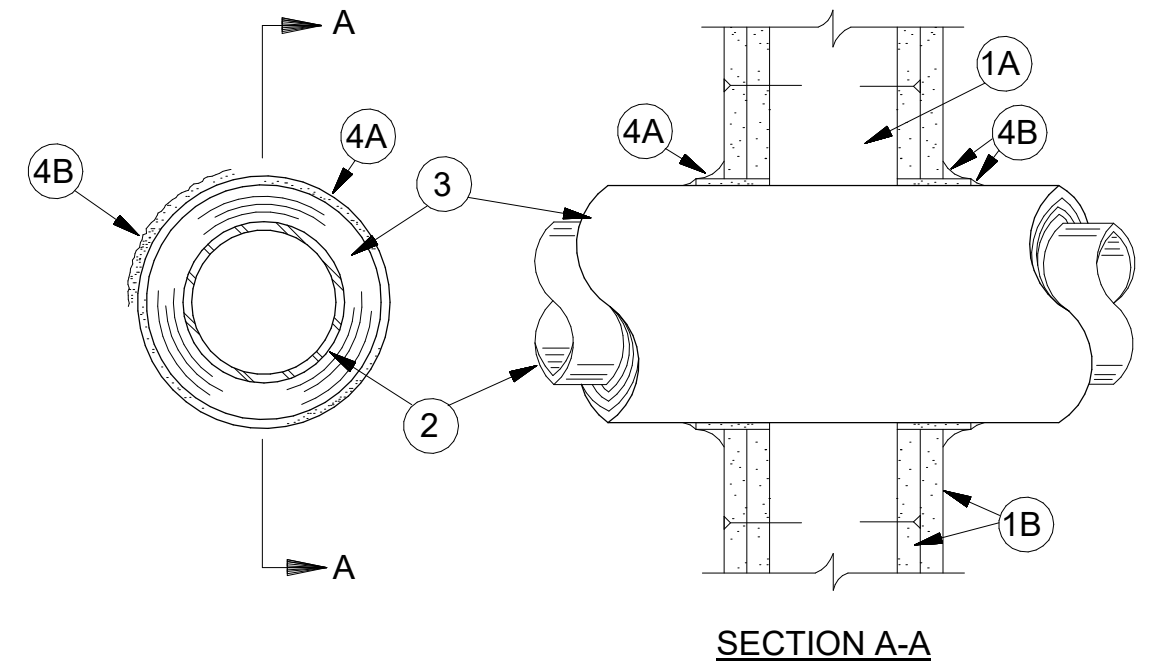
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THROUGH-PENETRATION FIRESTOP SYSTEMS
W-L-1001

No Scale

2

SYSTEM NO. W-L-5001
MAY 19, 2005
F RATINGS - 1 AND 2 HR (SEE ITEM 1)
T RATINGS - 3/4 , 1 AND 1 1/2 HR (SEE ITEM 3)
L RATING AT AMBIENT - 2 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



- WALL ASSEMBLY - THE 1 OR 2 HR FIRE-RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
 - STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC WITH NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. (92 MM) WIDE BY 1-3/8 IN. (35 MM) DEEP CHANNELS SPACED MAX 24 IN. (610 MM) OC.
 - GYPSUM BOARD* - NOM 5/8 IN. (16 MM) THICK, 4 FT (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 14-1/2 (368MM) IN FOR WOOD STUD WALLS AND 18 IN. (457 MM) FOR STEEL STUD WALLS. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS 1 HR WHEN INSTALLED IN A 1 HR FIRE RATED WALL AND 2 HR WHEN INSTALLED IN A 2 HR FIRE RATED WALL.
- THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:
 - STEEL PIPE - NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
 - COPPER TUBING - NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
 - COPPER PIPE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
- PIPE COVERING* - NOM 1 OR 2 IN. (25 OR 51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT. WHEN NOM 1 IN. (25 MM) THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/4 IN. (6 MM) TO MAX 3/8 IN. (10 MM) WHEN NOM 2 IN. (51 MM) THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM BOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/2 IN. (13 MM) TO MAX 3/4 IN. (19 MM) SEE PIPE AND EQUIPMENT COVERING MATERIALS (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 3/4 HR WHEN NOM 1 IN. (25 MM) THICK PIPE COVERING IS USED. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 1 HR AND 1-1/2 HR WHEN NOM 2 IN. (52 MM) THICK PIPE COVERING IS USED WITH 1 HR AND 2 HR FIRE RATED WALLS, RESPECTIVELY.
- FIRESTOP SYSTEM - INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:

- FILL, VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. (6 MM) THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. (51 MM) WIDE STRIPS. NOM 2 IN. (51 MM) WIDE STRIP TIGHTLY WRAPPED AROUND PIPE COVERING (FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO ANNULAR SPACE APPROX 1-1/4 IN. (32 MM) SUCH THAT APPROX 3/4 IN. (19 MM) OF THE WRAP STRIP WIDTH PROTRUDES FROM THE WALL SURFACE. ONE LAYER OF WRAP STRIP IS REQUIRED WHEN NOM 1 IN. (25 MM) THICK PIPE COVERING IS USED. TWO LAYERS OF WRAP STRIP ARE REQUIRED WHEN NOM 2 IN. (51 MM) THICK PIPE COVERING IS USED.

3M COMPANY - FS-195+
 - FILL, VOID OR CAVITY MATERIALS* - CAULK OR SEALANT 15/32 MIN 1/4 IN. (6 MM) DIAM CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL INTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER APPROX 3/4 IN. (19 MM) FROM THE WALL SURFACE.
3M COMPANY - CP 25WB+, IC 15WB+, FIREDAM 150+ CAULK OR FB-3000 WT SEALANT
- *BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2005-05-19
- UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTS PRODUCTS CERTIFIED FOR CANADA

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THROUGH-PENETRATION FIRESTOP SYSTEMS
W-L-5001

No Scale

3



GreshamSmith.com

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5500 Maryland Way, Suite 100
Brentwood, TN 37027



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by Shawn FL
Date:
2021.12.06
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ANCILLARY BUILDING

LAKE CITY MEDICAL CENTER

340 NW Commerce Dr.
Lake City, FL 32055

HCA Project No.: 3793800011

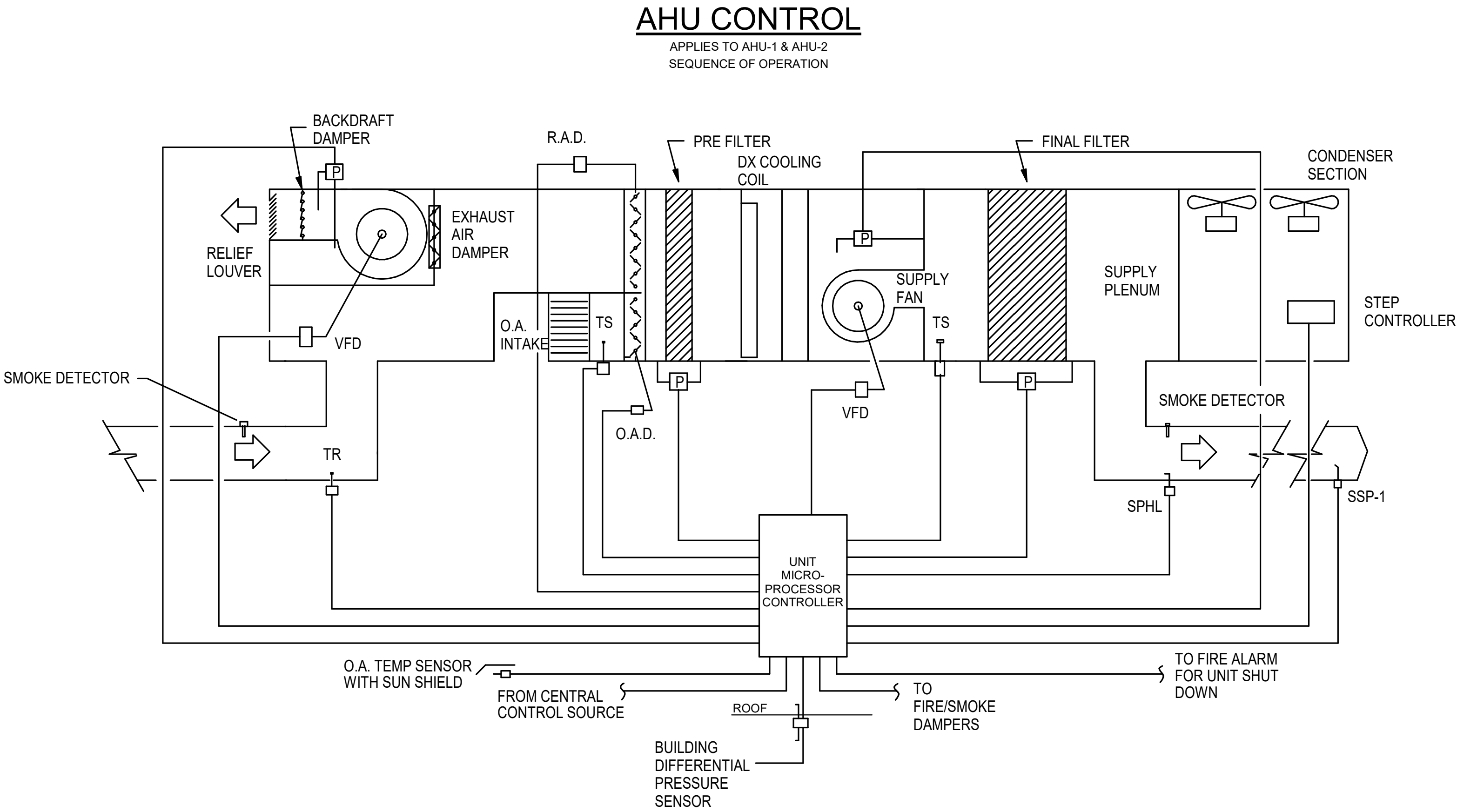
Revision		
No.	Date	Description

MECHANICAL - DETAILS

M503.4

LINE IS 3 INCHES WHEN PRINTED FULL SIZE
FULL SHEET SIZE = 36"x42"

EMS POINT SUMMARY AIR HANDLING UNIT AHU-1 & AHU-2	HARDWARE																		SOFTWARE																									
	OUTPUT (O)						INPUT (T,D,V,C)						ALARMS						FUNCTIONS																									
	DIGITAL		ANALOG				DIGITAL		ANALOG				DIGITAL		ANALOG																													
	Control Relay	Solenoid	Contactor	Discharge Temp Control	DCC Control Signal	HUMIDITY CONTROL	F&B Pre-heat Control	Differential Press Switch	Flow Switch	Switch Closure	Auxiliary Contact	KW	Alarm Condition	Temperature	Relative Humidity	in H2O	Position	Flow	Amperes	Equipment Status	Maintenance	High Limit	Low Limit	Run Time	Log Data	Scheduled Start/Stop	Supply Fan Start/Stop	Duty Cycling	Demand Limiting	Day/Night Setback	Humidity Control	Exhaust Fan Control	Temperature Control	Enthalpy	Sup Air Temp Reset	F&B Pre-heat Control	Building Press. Ctrl	Hot Water Boiler Opt.	HW OA Reset	VFD Control	Alarm Condition			
POINT DESCRIPTION																																												
SUPPLY FAN VFD																																												
SUPPLY FAN START/STOP																																												
SUPPLY FAN STATUS																																												
EXHAUST FAN VFD																																												
EXHAUST FAN START/STOP																																												
EXHAUST FAN STATUS																																												
DISCHARGE AIR TEMP.																																												
RET. AIR TEMP. & HUMIDITY																																												
OUTSIDE AIR TEMP. & HUMIDITY																																												
DISCHARGE AIR TEMP. CONTROL																																												
DUCT STATIC PRESSURE																																												
FILTER STATUS (PRE)																																												
FILTER STATUS (FINAL)																																												
FIRE ALARM																																												
BUILDING DIFFERENTIAL PRESSURE SENSOR																																												
ECONOMIZER																																												
ECONOMIZER STATUS																																												



AHU-1 CONTROL
(AHU-2 SIMILAR)
SEQUENCE OF OPERATION

- SELF-CONTAINED AIR HANDLING UNIT ON GRADE TO BE CONTROLLED BY STAND ALONE MICRO-PROCESSOR BASED CONTROLLER. RESPECTIVE AIR HANDLING UNIT CONTROLLERS TO BE INTERFACED WITH CENTRAL BUILDING CONTROLLER. CENTRAL BUILDING CONTROLLER TO BE CONNECTED TO INDIVIDUAL AIR HANDLING UNIT CONTROLLER UTILIZING A TWISTED PAIR OF SHIELDED CABLE. CENTRAL CONTROLLER TO HAVE AT THE MINIMUM THE FOLLOWING CAPABILITIES: MONITOR UNIT OPERATION, RESET OF UNIT DISCHARGE AIR TEMPERATURE, SCHEDULING AND DIAGNOSTICS.
- CONTROLLER SENSING DISCHARGE AIR TEMPERATURE WILL OPERATE EITHER THE MECHANICAL COOLING COMPONENTS THROUGH RELAY STAGES OR MODULATE THE OUTDOOR AND RETURN AIR DAMPERS BETWEEN THE MINIMUM AND FULL OPEN SETTINGS TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT.
- ECONOMIZER CYCLE IS ENERGIZED BY CONTROLLER WHEN OUTDOOR ENTHALPY IS BELOW THE SET POINT. DURING ECONOMIZER OPERATION THE CONTROLLER WILL MODULATE THE OUTDOOR AND RETURN AIR DAMPERS TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT. IF COOLING DEMAND CANNOT BE MET BY THE FULL OPEN OUTDOOR AIR DAMPER, MECHANICAL COOLING IS ACTIVATED. AT OUTDOOR AIR TEMPERATURE ABOVE THE ENTHALPY SET POINT, MECHANICAL COOLING ONLY IS UTILIZED AND OUTDOOR AIR DAMPER REMAINS AT MINIMUM POSITION.
- CENTRAL FIRE ALARM PANEL CONTACT TO STOP AIR HANDLING UNIT WHEN ALARM CONDITION EXISTS. SEE ELECTRICAL DRAWINGS.
- SUPPLY FAN IS ENERGIZED BY HAND-OFF-AUTOMATIC LOCATED IN UNIT CONTROL PANEL WHEN IN THE HAND POSITION OR BY UNIT CONTROLLER WHEN IN THE AUTOMATIC POSITION.
- EXHAUST FAN IS ENERGIZED BY HAND-OFF-AUTOMATIC LOCATED IN UNIT CONTROL PANEL WHEN IN THE HAND POSITION OR BY BAS CONTACT WHEN IN THE AUTOMATIC POSITION. EXHAUST FAN VFD TO ENERGIZE FAN AS REQUIRED TO MAINTAIN BUILDING PRESSURE TO A MAXIMUM OF +0.02" H2O.
- ALL COMBINATION FIRE/SMOKE DAMPERS ASSOCIATED WITH THIS AIR HANDLING UNIT ARE OPENED WHEN UNIT IS ENERGIZED AND CLOSED WHEN UNIT IS DE-ENERGIZED BY EMS CONTROL FROM F/A SIGNAL.
- WHEN FREEZESTAT SENSES ABNORMALLY LOW TEMPERATURE AIR ENTERING COOLING COIL, OUTDOOR AND RETURN AIR DAMPERS ARE CLOSED TO MINIMUM POSITION.
- STATIC PRESSURE SENSOR SPHL SENSES HIGH DUCT STATIC IN EVENT OF FIRE DAMPER CLOSURE AND STOPS A/C UNIT.
- ZONE EXHAUST FANS ARE INTERLOCKED WITH AIR HANDLING UNIT THROUGH UNIT CONTROL.
- SUPPLY FAN STATIC PRESSURE SENSOR TO PERFORM THE FOLLOWING FUNCTIONS:
 - CONTROL SUPPLY AIR CAPACITY



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by Shawn FL
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2021.12.06
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ANCILLARY BUILDING

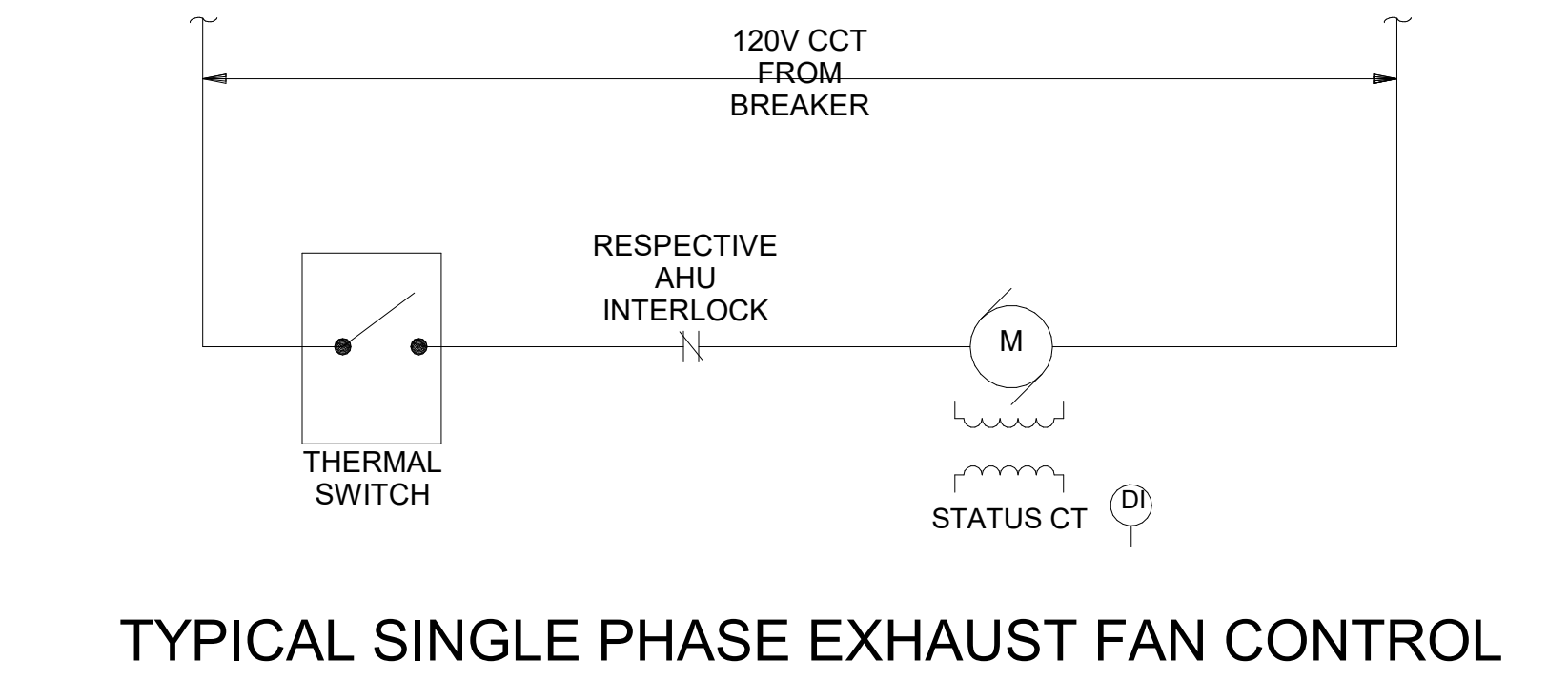
LAKE CITY MEDICAL CENTER
340 NW Commerce Dr.
Lake City, FL 32055
HCA Project No.: 3793800011

Revision		
No.	Date	Description

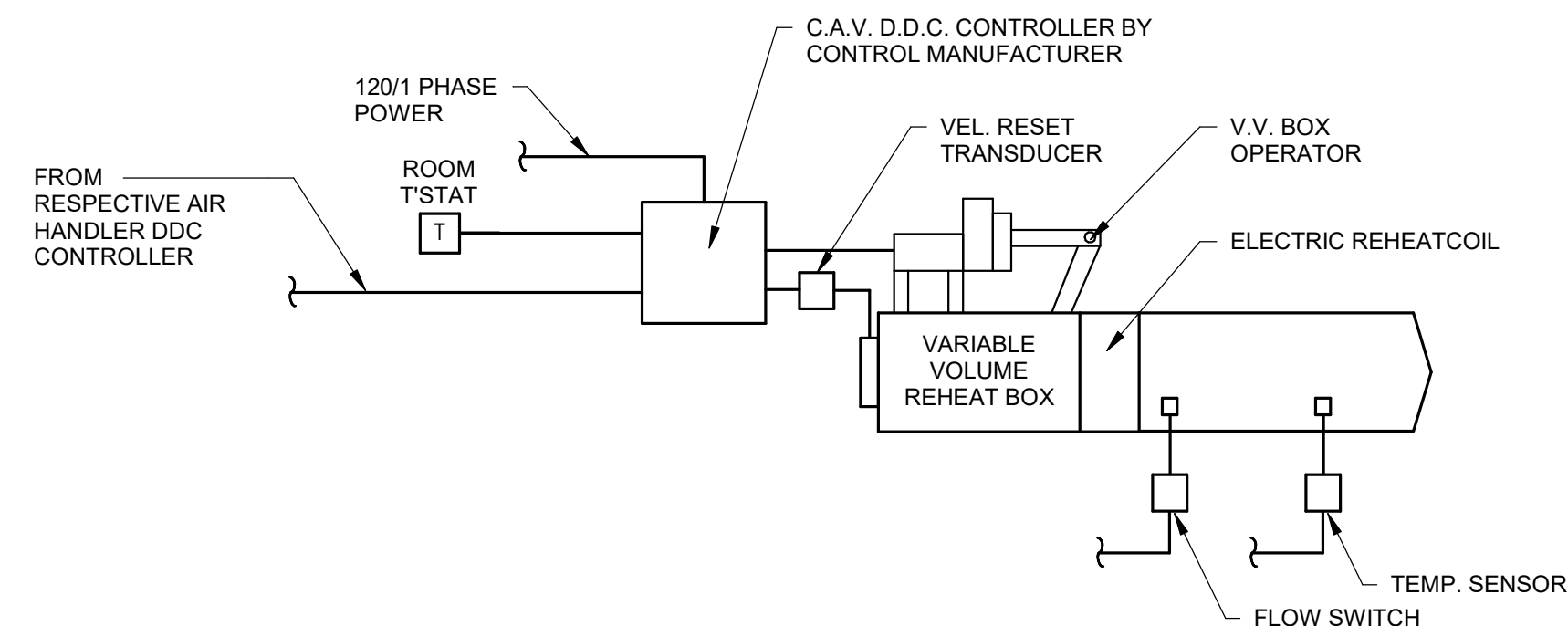
HVAC - CONTROLS

M601.1

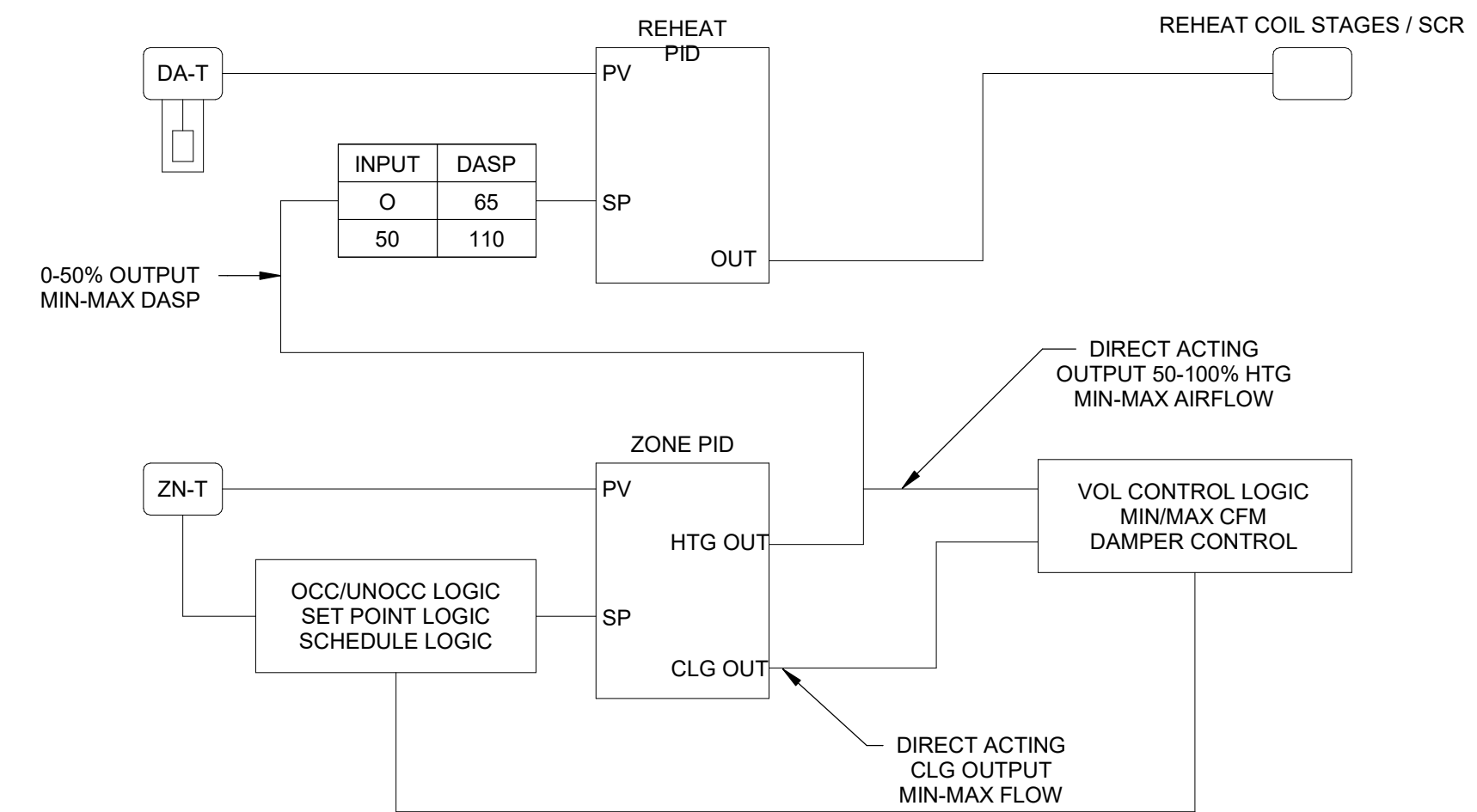
LINE IS 3 INCHES WHEN PRINTED FULL SIZE
FULL SHEET SIZE = 30"x42"

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TYPICAL SINGLE PHASE EXHAUST FAN CONTROL

[illegible]

TYPICAL VARIABLE VOLUME REHEAT BOX CONTROL



DUAL PID TERMINAL UNIT - ELEMENTAL LOGIC DETAIL

DUAL PID VAV SEQUENCE OF OPERATION:

1. PROVIDE A 2" F MINIMUM DEADBAND BETWEEN THE HEATING AND COOLING SPACE TEMPERATURE SETPOINTS. WHEN THE SPACE TEMPERATURE IS IN THE DEAD BAND, THE VAV SHALL PROVIDE MINIMUM COOLING AIR FLOW AND THE REHEAT COIL SHALL BE DEREGULATED.
- COOLING MODE:**
1. ON A RISE IN ROOM TEMPERATURE ABOVE THE COOLING SETPOINT THE LOCAL CONTROLLER WILL SHIFT TO COOLING CONTROL LOGIC AFTER AN ADJUSTABLE TIME DELAY (5 MIN).
2. AFTER THE TIME DELAY HAS EXPIRED AND THE MODE HAS CHANGED TO COOLING, THE FLOW SETPOINT WILL CHANGE TO THE COOLING MINIMUM CFM SETPOINT.
3. ON AN INCREASE IN THE ZONE PID COOLING OUTPUT, THE VOLUME CONTROL SHALL INCREASE FROM THE MINIMUM COOLING FLOW TO THE MAXIMUM COOLING FLOW.
4. ON A DECREASE IN THE ZONE PID COOLING OUTPUT, THE INVERSE CONTROL WILL OCCUR AND REDUCE THE COOLING FLOW FROM MAXIMUM COOLING FLOW TO MINIMUM COOLING FLOW. ON A FURTHER REDUCTION IN ZONE TEMPERATURE BELOW THE ZONE HEATING SETPOINT THE VAV CONTROLLER WILL SHIFT THE MODE TO THE HEATING CONTROL LOGIC AFTER AN ADJUSTABLE TIME DELAY (5 MIN).
- HEATING MODE:**
1. ON A DROP IN ROOM TEMPERATURE BELOW THE HEATING SETPOINT THE ZONE PID CONTROL HEATING OUTPUT WILL INCREASE.
2. ON AN INCREASE IN THE ZONE PID HEATING OUTPUT FROM 0-50%, THE REHEAT PID DISCHARGE SETPOINT WILL INCREASE FROM MINIMUM TO MAXIMUM DISCHARGE AIR TEMPERATURE SETPOINT, INITIALLY SET AT 65° (MIN - ADJ.) AND 110°F (MAX - ADJ.). THE BOX CONTROLLER WILL MODULATE THE REHEAT COIL STAGES FROM 0 TO 100% IN RESPONSE TO PID HEATING OUTPUT.
3. WITH THE HEATING COIL AT FULL CAPACITY, AND ON A FURTHER INCREASE IN THE ZONE PID HEATING OUTPUT FROM 50-100% THE VOLUME CONTROL SHALL INCREASE FROM THE MINIMUM HEATING AIR FLOW TO THE MAXIMUM HEATING AIR FLOW.
4. ON AN INCREASE IN ZONE TEMPERATURE THE INVERSE CONTROL WILL OCCUR: FIRST REDUCING HEATING AIR VOLUME FROM MAXIMUM TO MINIMUM HEATING AIR FLOW, THEN REDUCING THE REHEAT PID LOOP SETPOINT AND REHEAT COIL STAGES MAXIMUM TO MINIMUM. WITH THE REHEAT COIL AT MINIMUM TEMPERATURE WITHIN THE DEADBAND REGION AND THE ZONE HEATING OUTPUT AT 0%, THE VAV BOX WILL OPERATE AT MINIMUM HEATING FLOW WITH MINIMUM REHEAT PID SETPOINT.

UNOCCUPIED MODE/OCCUPANCY
OVERRIDE:

1. THE SEQUENCES ABOVE DESCRIBE THE OCCUPIED COOLING AND HEATING OPERATION MODES. VAV BOX CONTROLS SHALL INCLUDE THE FOLLOWING SEQUENCE TO MAINTAIN ROOM TEMPERATURE SET POINTS BASED ON A PRESET SCHEDULE TO A USER ADJUSTABLE UNOCCUPIED COOLING AND HEATING SET POINT.
 - 2. WHEN ACTIVATED BY BAS TIME SCHEDULE, THE VAV BOX SHALL OPERATE WITH COOLING AND HEATING MODES AS DESCRIBED ABOVE WITH ROOM TEMPERATURE SETPOINT EQUAL TO UNOCCUPIED COOLING AND UNOCCUPIED HEATING SETPOINTS INITIALLY SET AT 80°F COOLING (ADJ.) AND 65°F HEATING (ADJ.).
 - 3. AN OVERRIDE PUSHBUTTON ON THE THERMOSTAT SHALL SWITCH THE SPACE TO OCCUPIED MODE FOR A TIME PERIOD OF 4 HOURS WHEN APPLIED. THE APPLICATION OF THE OCCUPIED OVERRIDE SWITCH SHALL COMMAND ASSOCIATED AIR HANDLING INTO OCCUPIED MODE. REFER TO AHU SEQUENCE OF OPERATION FOR REQUIRED OCCUPIED/UNOCCUPIED MODE OF OPERATION.
4. ALL SPACES EXCEPT FOR THE FOLLOWING ARE TO BE PROVIDED WITH UNOCCUPIED MODE AND OCCUPANCY OVERRIDE

NOTES:

1. OUTPUT TO THE REHEAT CONTROL SHALL BE SPANNED BETWEEN THE LOWER AND UPPER BOUNDS OF THE FUNCTIONAL RANGE OF THE FUNCTIONAL RANGE CONTROL. TYPICALLY THE FUNCTIONAL RANGE IS BETWEEN 20% AND 80% OPEN TRAVEL RANGE ABOVE OR BELOW THESE BOUNDS DO NOT RESULT IN A CHANGE OF FLOW.
2. MULTIPLE TERMINAL UNITS SERVED FROM A SINGLE THERMOSTAT SHALL OPERATE FROM ONE MASTER CONTROLLER. REMAINING CONTROLLERS TO BE SLAVE AND SHALL OPERATE TO MAINTAIN THE MASTER CONTROLLER OUTPUT FOR REHEAT AND DAMPER POSITION.
3. ELECTRIC HEAT STAGES PER TERMINAL BOX SCHEDULE.
4. PROVIDE ELECTRIC HEATER WITH THERMAL CUTOFF. ELECTRIC HEAT SHALL NOT ENERGIZE IF FLOW SWITCH DOES NOT SENSE AIR MOVEMENT. ELECTRIC HEAT SHALL BE DE-ENERGIZED IF FLOW SWITCH DOES NOT SENSE AIR MOVEMENT.



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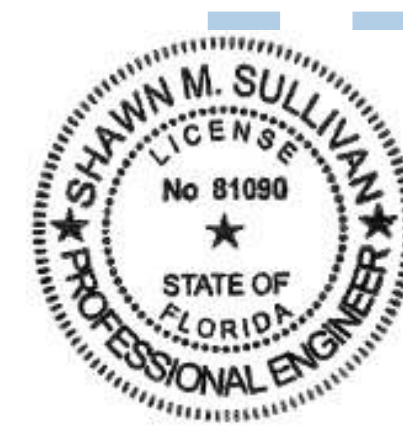
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