FAN SCHEDULE

DESIGNATION		SF-1	SF-2	SF-3	SF-4	SF-5
TYPE		SWSI UTILITY SET	SWSI UTILITY SET	SWSI UTILITY SET	SWSI UTILITY SET	INLINE
ORIENTATION		CLOCKWISE TOP HORIZONTAL	CLOCKWISE TOP HORIZONTAL	CLOCKWISE BOTTOM HORIZONTAL	CLOCKWISE BOTTOM HORIZONTAL	N/A
SERVICE		STAIR #1 PRESSURIZATION	STAIR #2 PRESSURIZATION	ELEVATORS #1 & #2 PRESSURIZATION	ELEVATOR #3 PRESSURIZATION	ELEVATOR MACHINE ROOM
AIR QUANTITY	CFM	45000	42000	20000	12000	200
STATIC PRESSURE	IN. H2O	1.1	1.5	1.2	1.3	0.3
FAN SPEED	RPM	658	648	970	1478	1161
FAN MOTOR	HP	25	25	15	10	1/6
FAN DRIVE		BELT	BELT	BELT	BELT	DIRECT
MOTOR SPEED	RPM	1725	1725	1725	1725	1075
DISCONNECT SWITCH-PREWIRED		NO	NO	NO	NO	YES
ELECTRICAL CHARACTERISTICS	V/PH	208/3	208/3	208/3	208/3	115/1
BIRDSCREEN		NO	NO	NO	NO	YES
BACKDRAFT DAMPER		PROVIDE	PROVIDE	PROVIDE	PROVIDE	PROVIDE
SOLID STATE SPEED CONTROLLER		NO	NO	NO	NO	YES
VARIABLE FREQUENCY DRIVE		YES	YES	YES	YES	NO
NOISE LEVEL	LwA	96	94	96	97	59
WEIGHT	LBS	1640	1640	950	650	107
MANUFACTURER		COOK	COOK	COOK	COOK	COOK
MODEL NUMBER		490CPA-A	490CPA-A	330CPA-A	245CPA-A	90SQN10D
NOTES		1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	12, 13, 14

NOTES:

1. PROVIDE ALUMINUM ACCESS DOOR – BOLTED
2. PROVIDE 1.5 TIMES # OF BELTS REQUIRED FOR OPERATION (MINIMUM OF 2 BELTS).
3. PROVIDE EXTENDED LUBE LINES.
4. PROVIDE ALUMINUM OSHA BELT GUARD / WEATHER COVER.
5. PROVIDE ALUMINUM DRAIN.
6. PROVIDE L10 200K BEARINGS.
7. PROVIDE ALUMINUM FLANGED INLET.
8. PROVIDE ALUMINUM OUTLET COMPANION FLANGE.
9. PROVIDE INSULATED ROOF CURB WITH PLYWOOD DECK AND COVER.
10. PROVIDE ALUMINUM INLET SAFETY SCREEN.
11. PROVIDE BELT TENSION ROTARY.
12. PROVIDE SPRING ISOLATORS (SC-70 OR APPROVED EQUAL).
13. PROVIDE SIDE DISCHARGE ARRANGEMENT.
14. PROVIDE INSULATED HOUSING.

AIR DISTRIBUTION

AxB	RECTANGULAR SHEET METAL DUCT
C#	ROUND SHEET METAL DUCT
	SUPPLY AIR DUCTWORK SECTION
	RETURN OR OUTSIDE AIR DUCTWORK SECTION
	EXHAUST AIR DUCTWORK SECTION
	AIR BALANCING DAMPER (MANUAL)
	AIR BALANCING DAMPER (MOTORIZED)
FD	FIRE DAMPER IN DUCT – SEE DETAIL – A/M501
FSD	FIRE/SMOKE DAMPER IN DUCT – SEE DETAIL – A/M501
	DUCTWORK FLEXIBLE CONNECTION
	DUCT ELBOW WITH SINGLE THICKNESS TURNING VANES
120	SIDEWALL REGISTER AND AIR FLOW (CFM) (SEE SCHEDULE FOR SIZES UNLESS NOTED OTHERWISE)
	LOUVER

OUTSIDE AIR FAN SCHEDULE

DESIGNATION		OAF-9
TYPE		PLENUM
SERVICE		OA SUPPLY
AIR QUANTITY	CFM	24,000
EXTERNAL STATIC PRESSURE (INCLUDING FILTER)	IN. H2O	1.5
FAN SPEED	RPM	1784
FAN MOTOR	HP – #	10 – 2
FAN DRIVE		BELT
MOTOR SPEED	RPM	1750
ELECTRICAL CHARACTERISTICS	V/PH	208/3
WEIGHT	LBS	5000
FILTERS		4" PLEATED MERV 8
MANUFACTURER		MCQUAY
MODEL NUMBER		OAC-038

NOTES:
1. PROVIDE STORM LOUVER.
2. PROVIDE OPPOSED BLADE MOTORIZED INLET DAMPERS.
3. PROVIDE SPRING ISOLATORS ON EACH FAN.

GRAVITY VENTILATOR SCHEDULE

DESIGNATION		GV-1, 2, 3, 4
SERVICE		RELIEF
AIRFLOW	CFM	450
THROAT SIZE DIAMETER	INCHES	12
HOOD DIAMETER	INCHES	28
WEIGHT	LBS	30
MANUFACTURER		COOK
MODEL NUMBER		12PR

NOTES:

1. PROVIDE PREFABRICATED ROOF CURB WITH WELDED CURB CAP CORNERS AND DAMPER TRAY.
2. PROVIDE BACKDRAFT DAMPER.
3. PROVIDE ALUMINUM BIRDSCREEN.

HVAC NOTES

1. INSTALL DUCTWORK, PIPING, ETC. AS HIGH AS POSSIBLE ABOVE CEILING.
2. INSTALLATION OF EQUIPMENT, DUCTWORK AND PIPING SHALL PROVIDE CONVENIENT ACCESS FOR REMOVAL OF FILTERS AND FOR MAINTENANCE.
3. DUCT SIZES GIVEN ARE SHEET METAL SIZES.
4. COORDINATE EXACT LOCATIONS OF AIR DISTRIBUTION EQUIPMENT WITH THE CEILING AND THE LIGHTING LAYOUT.
5. PROVIDE NEW AIR FILTERS IN EACH UNIT REQUIRING FILTERS WHEN THE PROJECT IS READY FOR TEST AND BALANCE. DO NOT OPERATE UNITS WITHOUT FILTERS DURING CONSTRUCTION. REPLACE FILTERS DURING CONSTRUCTION ACCORDING TO FILTER MANUFACTURER'S RECOMMENDATIONS. SEAL ALL OPEN ENDS OF DUCT WORK DURING CONSTRUCTION.
6. WHEREVER THE DEPTH OF THE TRUNK DUCT IS LESS THAN THE ROUND RUNOUT DUCT DIAMETER, PROVIDE TRANSITION FITTING OF EQUIVALENT AREA TO THE RUNOUT DUCT.
7. PROVIDE FLEXIBLE DUCT CONNECTIONS AT EACH EQUIPMENT CONNECTION.
8. PROVIDE FIRE DAMPER AT EVERY DUCT PENETRATION OF 1 HOUR OR MORE FIRE RATED CONSTRUCTION, WHETHER SHOWN ON THE DRAWINGS OR NOT.
9. INSTALL DUCT MOUNTED SMOKE DETECTOR (FURNISHED BY DIV. 26) IN SUPPLY AIR TRUNK DUCT BEFORE ANY TAKE-OFFS FOR AIR HANDLING UNITS WITH SUPPLY AIR CAPACITY GREATER THAN 2000 CFM AND WHERE INDICATED ON PLANS.
10. WHERE FIRE DAMPERS ARE REQUIRED, PROVIDE ACCESS PANELS TO ALLOW RE-LINKING OF DAMPER FUSIBLE LINKS. PANELS IN RATED CONSTRUCTION SHALL BEAR UL LABEL.
11. WHERE DUCT MOUNTED SMOKE DETECTORS ARE REQUIRED, PROVIDE ACCESS PANELS TO ALLOW VIEWING AND SERVICING. PANELS IN RATED CONSTRUCTION SHALL BEAR UL LABEL.
12. THE DUCTWORK AS SHOWN ON THE CONSTRUCTION DOCUMENTS IS DIAGRAMMATIC AND DOES NOT NECESSARILY INCLUDE ALL MODIFICATIONS REQUIRED TO AVOID THESE INTERFERENCES. BEFORE FABRICATING ANY DUCTWORK, CHECK THE PHYSICAL CONDITIONS AT THE JOB SITE AND MAKE CHANGES IN CROSS SECTIONS, ROUTING, OFFSETS AND SIMILAR ITEMS WHETHER SPECIFICALLY INDICATED OR NOT. VERIFY THAT SUFFICIENT CLEARANCES ARE AVAILABLE FOR INSTALLING DUCTWORK, PIPING, LIGHT FIXTURES, CEILING SYSTEMS AND TO PROVIDE EQUIPMENT SERVICE. COSTS REQUIRED TO CHANGE DUCTWORK TO FIT THE SPACE AVAILABLE AND AVOID INTERFERENCES CAUSED BY SPACE COMPETING SYSTEMS SHALL BE BORNE BY THE CONTRACTOR. NO ADDITIONAL REMUNERATION WILL BE PAID BY THE OWNER.
13. APPLY EXTERNAL INSULATION TO SINGLE WALL SUPPLY DUCTS, RETURN DUCTS AND OUTSIDE AIR DUCTS. DUCTS INDICATED ON PLANS TO HAVE INTERNAL DUCT LINER SHALL NOT RECEIVE EXTERNAL INSULATION.
14. PROVIDE ACCESS PANEL AT EACH LOCATION WHERE A VALVE, DAMPER OR OTHER DEVICE REQUIRING SERVICE IS LOCATED ABOVE AN INACCESSIBLE CEILING OR INSIDE A WALL. ACCESS PANEL SHALL BE FIRE RATED IF INSTALLED IN A FIRE RATED CEILING OR WALL.

MEASUREMENT AND CONTROLS

	ADJUSTABLE FREQUENCY DRIVE
DDC	DIRECT DIGITAL CONTROLLER
DP	DIFFERENTIAL PRESSURE SENSOR

MISCELLANEOUS

	POINT OF CONNECTION, NEW TO EXISTING
	POINT INDICATES LIMIT OF DEMOLITION

PIPING AND FITTINGS

CHWS	CHILLED WATER SUPPLY PIPING
CHWR	CHILLED WATER RETURN PIPING
CWS	CONDENSER WATER SUPPLY PIPING
CWR	CONDENSER WATER RETURN PIPING
	ELBOW TURNED UP
	ELBOW TURNED DOWN
	EXISTING PIPE TO REMAIN
HHWS	HEATING HOT WATER SUPPLY PIPING
HHWR	HEATING HOT WATER RETURN PIPING

SIDEWALL REGISTERS AND GRILLES

CFM	SUPPLY AIR		RETURN AIR OR EXHAUST AIR	
	REGISTER SIZE	RUNOUT DUCT	REGISTER SIZE	RUNOUT DUCT
0–95	8x6	8x6	8x6	8x6
100–195	10x6	10x6	10x6	10x6
200–295	12x6	12x6	18x6	18x6
300–395	16x6	16x6	24x6	24x6
400–495	18x8	18x8	30x8	30x8
500–595	18x10	18x10	30x10	30x10

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	HP	HORSEPOWER
AFR	ABOVE FINISHED ROOF	N/A	NOT APPLICABLE
AHU	AIR HANDLING UNIT	OA	OUTSIDE AIR
BD	BALANCING DAMPER	RPM	REVOLUTIONS PER MINUTE
BHP	BRAKE HORSEPOWER	SA	SUPPLY AIR
BTUH	BRITISH THERMAL UNITS PER HOUR	SAG	SUPPLY AIR GRILLE
CFM	CUBIC FEET PER MINUTE	SF	SUPPLY FAN
DDC	DIRECT DIGITAL CONTROL PANEL	SMS	SHEET METAL SIZE
DN	DOWN	SP	STATIC PRESSURE
EOR	ENGINEER OF RECORD	SWSI	SINGLE WIDTH SINGLE INLET
FD	FIRE DAMPER	TYP	TYPICAL
FSD	FIRE/SMOKE DAMPER	UNO	UNLESS NOTED OTHERWISE
		VFD	VARIABLE FREQUENCY DRIVE

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC, INDICATIVE OF WORK TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
2. FIELD VERIFY DIMENSIONS AND CONDITIONS. IF THE CONTRACTOR IS UNABLE TO INTERPRET THE CONTRACT DOCUMENTS, HE IS RESPONSIBLE TO REQUEST CLARIFICATION IN WRITING TO THE ARCHITECT. IF HE PROCEEDS WITH ANY WORK BEFORE OBTAINING CLARIFICATION, HE SHALL BE HELD RESPONSIBLE FOR DEFICIENCIES ASSOCIATED THEREWITH.
3. BEFORE SUBMITTING FOR THE WORK, EACH BIDDER WILL BE RESPONSIBLE TO EXAMINE THE PREMISES AND SATISFY HIMSELF AS TO THE EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGATED TO OPERATE AND COMPLETE THE WORK UNDER THIS CONTRACT. NO ALLOWANCE WILL SUBSEQUENTLY BE MADE IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR OMISSION ON HIS PART.
4. THE CONTRACTOR SHALL PAY FOR INSPECTION PERMITS, CERTIFICATES, CONNECTION FEES, SYSTEM DEMAND CHARGES AND LICENSE FEES IN CONNECTION WITH HIS WORK.
5. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK OF SUBCONTRACTORS TO AVOID INTERFERENCES.
6. WORK SHALL COMPLY WITH APPLICABLE O.S.H.A. AND E.P.A. REGULATIONS AND GUIDELINES.
7. ERECT AND MAINTAIN REASONABLE PRECAUTIONS FOR SAFETY AND HEALTH INCLUDING POSTING DANGER SIGNS AND OTHER WARNINGS AGAINST HAZARDS INCLUDING PROMULGATING SAFETY REGULATIONS. PROVIDE SAFETY PRECAUTIONS AND BARRICADES FOR PEDESTRIANS AT CONSTRUCTION VEHICLE ACCESS AND EGRESS LOCATIONS.
8. COORDINATE AND SEQUENCE DEMOLITION, CLEANING AND CONSTRUCTION WORK. SUBMIT A COMPLETELY DETAILED CONSTRUCTION SCHEDULE PRIOR TO PRE-CONSTRUCTION CONFERENCE.
9. THE CONTRACTOR SHALL STRICTLY BE HELD TO THE PROJECT SCHEDULE. HE SHALL PROVIDE SUFFICIENT MANPOWER AND EQUIPMENT TO FULLY MOBILIZE, PROCEED WITH AND COMPLETE THE WORK.
10. THE CONTRACTOR SHALL BE RESTRICTED TO AREAS SPECIFIED BY THE OWNER FOR ON-SITE STORAGE OF CONSTRUCTION MATERIALS. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND SECURITY OF EQUIPMENT AND MATERIALS.
11. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK ENVIRONMENT AT ALL TIMES AND SHALL CLEAN CONSTRUCTION SITE OF DEBRIS AT COMPLETION OF THE JOB AND BEFORE FINAL PAYMENT IS MADE.
12. THE CONTRACTOR SHALL FURNISH "AS-BUILT" DRAWINGS TO THE ARCHITECT AT COMPLETION OF CONSTRUCTION.
13. CONTRACTOR'S USE OF AN APPROVAL STAMP ON DOCUMENTS SUBMITTED AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS CERTIFIES THAT THE CONTRACTOR HAS COMPLIED WITH THE CONTRACT DOCUMENT REQUIREMENTS RELATED TO "SHOP DRAWINGS, PRODUCT DATA AND SAMPLES".
14. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE ARCHITECT/ ENGINEER'S APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ARCHITECT/ENGINEER IN WRITING OF SUCH DEVIATION AT THE TIME OF SUBMITTAL AND THE ARCHITECT/ENGINEER HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS BY THE ARCHITECT/ENGINEER'S APPROVAL THEREOF.
15. PRIOR TO INSTALLATION, COORDINATE AND ADJUST THE FINAL LOCATION OF WALL MOUNTED DEVICES AND EQUIPMENT WITH ALL OTHER WALL MOUNTED FURNISHINGS.
16. NOTE ANY SPECIAL REQUIREMENTS INVOLVED IN INSTALLING THE EQUIPMENT IN THE BUILDING. DISMANTLING AND REASSEMBLING OF ANY EQUIPMENT SHALL BE DONE AS REQUIRED FOR ENTRY INTO THE BUILDING AND EQUIPMENT ROOMS.
17. PROTECT THE ROOF FROM DAMAGE WHENEVER ANY WORK ON THE ROOF IS REQUIRED.
18. SUPPORTS AND HANGERS SHALL PRESENT A NEAT, ORDERLY APPEARANCE.
19. ROOF MOUNTED EQUIPMENT SHALL BE SECURED TO STRUCTURE TO RESIST A 120 MPH WIND LOAD.
20. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF FIRE AND SMOKE WALL ASSEMBLIES AND ACOUSTICAL WALLS.
21. BEAM AND FLOOR PENETRATIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. BEAM SLEEVES AND BEAM REINFORCING APPROVED BY STRUCTURAL ENGINEER SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR.
22. CONTRACTOR SHALL FURNISH U.L. APPROVED DRAWINGS FOR EACH TYPE OF FIRE RATED ASSEMBLY PENETRATION BY DUCTS, PIPES OR CONDUITS. THESE DRAWINGS SHALL BE DISPLAYED ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION. SEE SPECIFICATIONS.
23. CONTRACTOR SHALL GUARANTEE THE WORK AND MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. THIS GUARANTEE SHALL BE IN ADDITION TO THE WARRANTIES PROVIDED BY MATERIAL SUPPLIERS AND MANUFACTURERS.
24. THE BUILDING WILL REMAIN OCCUPIED DURING CONSTRUCTION. THE OWNER WILL MAKE REASONABLE EFFORTS TO ASSIST THE CONTRACTOR IN COMPLETING THE WORK. COORDINATE WORK WITH THE OWNER'S DESIGNATED REPRESENTATIVE.
25. EXIT WAYS SHALL BE KEPT CLEAR. IF AN EXIT MUST BE TEMPORARILY BLOCKED, PROVIDE THE REQUIRED BARRICADE AND DIRECTIONAL SIGNS FOR TEMPORARY EXITING AND SAFETY.

DELEGATED DESIGN CALCULATION REQUIREMENTS

1. THESE MECHANICAL SYSTEM ENGINEERING DOCUMENTS REPRESENT THE DESIGN INTENT FOR ATTACHING AND SECURING THE STAIRWELL SHAFT AND ELEVATOR HOISTWAY PRESSURIZATION FANS TO ISOLATE VIBRATION AND RESIST WIND FORCES. THE DELEGATED ENGINEER IS RESPONSIBLE FOR PROVIDING A COMPLETE DESIGN, APPROVED BY THE AUTHORITY HAVING JURISDICTION, TO ATTACH AND SECURE THE STAIRWELL SHAFT, ELEVATOR HOISTWAY PRESSURIZATION FANS, AND ASSOCIATED ROOF CURBS.
2. DESIGN CRITERIA
   WIND SPEED: 120 MPH
   IMPORTANCE FACTOR: 1.0
3. DELEGATED ENGINEER SHALL PROVIDE SIGNED AND SEALED DATA TO THE ENGINEER OF RECORD AND AUTHORITY HAVING JURISDICTION INCLUDING THE FOLLOWING AS APPLICABLE, BUT NOT LIMITED TO: 1) DESIGN CALCULATIONS FOR STATIC AND DYNAMIC LOADING DUE TO EQUIPMENT WEIGHT AND OPERATION AND WIND FORCES REQUIRED TO SELECT VIBRATION ISOLATORS AND WIND RESTRAINT, AND 2) CURB DETAILS WITH ANCHORAGES AND ATTACHMENTS TO STRUCTURE AND TO SUPPORTED EQUIPMENT, INCLUDING AUXILIARY MOTOR SLIDES AND RAILS, BASE WEIGHTS, EQUIPMENT STATIC LOADS, POWER TRANSMISSION, COMPONENT MISALIGNMENT, AND CANTILEVER LOADS.

DRAWING INDEX

H2E ENGINEERING
114 EAST 5th AVENUE TALLAHASSEE, FL
32303 PHONE 850.224.7922
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H2E PROJECT No. 1109

Florida Certificate of Authorization #2485
Scott R. Drury, P.E. #59845

BARNETT FRONCZAK BARLOWE ARCHITECTS

Leon County Courthouse Annex (Bank of America) Stair & Elevator Pressurization

12062 Drawn By: RCT
Project Code Checked By: SRD

27 April 2012
Date

Construction Documents

Revisions

GENERAL NOTES & LEGEND - MECHANICAL

Tallahassee Florida

M001

225 South Adams St, Tallahassee, FL 32301
Phone 850 224-6301 Fax 850 561-6978

ELEVATOR HOISTWAY PRESSURIZATION ANALYSIS

HOISTWAY INFORMATION			ELEVATORS #1 & #2	ELEVATOR #3
# OF CARS IN HOISTWAY	#		2	1
# OF FLOORS SERVED	#		10	10
TOTAL HOISTWAY HEIGHT	FT		129	129
CROSS SECTIONAL AREA OF HOISTWAY	SF		112	55
FREE AREA AROUND ELEVATOR CAR	SF		40	19
FLOW COEFFICIENT FOR FLOW AROUND CAR			0.94	0.83
FLOW CALCULATIONS				
SUMMER RESULTS				
ELEVATOR DOORS OPEN ON LEVEL P1 (WITH EXTERIOR LOBBY DOORS OPEN ON LEVELS P1 & P2)				
AIRFLOW	CFM		15000	8000
MAXIMUM PRESSURE DIFFERENCE	IN. H20		0.11	0.11
MINIMUM PRESSURE DIFFERENCE	IN. H20		0.04	0.04
ALL ELEVATOR DOORS CLOSED (WITH EXTERIOR LOBBY DOORS OPEN ON LEVELS P1 & P2)				
AIRFLOW	CFM		8000	5000
MAXIMUM PRESSURE DIFFERENCE	IN. H20		0.16	0.18
MINIMUM PRESSURE DIFFERENCE	IN. H20		0.08	0.10
WINTER RESULTS				
ELEVATOR DOORS OPEN ON LEVEL P1 (WITH EXTERIOR LOBBY DOORS OPEN ON LEVELS P1 & P2)				
AIRFLOW	CFM		14000	8000
MAXIMUM PRESSURE DIFFERENCE	IN. H20		0.23	0.24
MINIMUM PRESSURE DIFFERENCE	IN. H20		0.04	0.04
ALL ELEVATOR DOORS CLOSED (WITH EXTERIOR LOBBY DOORS OPEN ON LEVELS P1 & P2)				
AIRFLOW	CFM		9000	5500
MAXIMUM PRESSURE DIFFERENCE	IN. H20		0.24	0.25
MINIMUM PRESSURE DIFFERENCE	IN. H20		0.04	0.05

STAIRWELL PRESSURIZATION ANALYSIS

STAIRWELL INFORMATION		STAIR #1 (CURRENT)	STAIR #1 (FUTURE)	STAIR #2
# OF FLOORS SERVED	#	9	10	9
TOTAL STAIRWELL HEIGHT	FT	113	125	111
CROSS SECTIONAL AREA OF STAIRWAY	SF	129	129	129
# OF INTERIOR DOORS	#	8	8	8
# OF EXTERIOR DOORS	#	1	2	1
INTERIOR OPEN DOORS	#	2	2	2
EXTERIOR OPEN DOORS	#	0	1	1
FLOW CALCULATIONS				
SUMMER RESULTS				
EXTERIOR DOOR OPEN ON LEVEL P2 (WITH INTERIOR DOORS OPEN ON LEVELS 1 & 2)				
AIRFLOW	CFM	16000	24000	24000
PRESSURE DIFFERENCE AT TOP OF STAIRWELL	IN. H20	0.06	0.05	0.06
PRESSURE DIFFERENCE AT BOTTOM OF STAIRWELL	IN. H20	0.18	0.35	0.25
EXTERIOR DOOR OPEN ON LEVEL P2 (WITH ALL INTERIOR DOORS CLOSED)				
AIRFLOW	CFM	4500	11000	10000
PRESSURE DIFFERENCE AT TOP OF STAIRWELL	IN. H20	0.16	0.07	0.05
PRESSURE DIFFERENCE AT BOTTOM OF STAIRWELL	IN. H20	0.21	0.12	0.10
WINTER RESULTS				
EXTERIOR DOOR OPEN ON LEVEL P2 (WITH INTERIOR DOORS OPEN ON LEVELS 7 & 8)				
AIRFLOW	CFM	30000	40000	37000
PRESSURE DIFFERENCE AT TOP OF STAIRWELL	IN. H20	0.22 (NOTE 1)	0.26 (NOTE 2)	0.27
PRESSURE DIFFERENCE AT BOTTOM OF STAIRWELL	IN. H20	0.05	0.05	0.05
EXTERIOR DOOR OPEN ON LEVEL P2 (WITH ALL INTERIOR DOORS CLOSED)				
AIRFLOW	CFM	5500	13500	12000
PRESSURE DIFFERENCE AT TOP OF STAIRWELL	IN. H20	0.30	0.35	0.30
PRESSURE DIFFERENCE AT BOTTOM OF STAIRWELL	IN. H20	0.06	0.06	0.09

NOTES:

1. PRESSURE DIFFERENCE ACROSS PENTHOUSE EXTERIOR DOOR = 0.40 INCHES OF WATER. DOOR SWINGS OUTWARD FROM STAIRWELL. PENTHOUSE DOOR IS NORMALLY LOCKED AND IS NOT A MEANS OF EGRESS. ALL STAIRWELL DOORS SERVING OCCUPIED FLOORS MEET PRESSURE DIFFERENCE REQUIREMENTS.
2. PRESSURE DIFFERENCE ACROSS PENTHOUSE EXTERIOR DOOR = 0.53 INCHES OF WATER. DOOR SWINGS OUTWARD FROM STAIRWELL. PENTHOUSE DOOR IS NORMALLY LOCKED AND IS NOT A MEANS OF EGRESS. ALL STAIRWELL DOORS SERVING OCCUPIED FLOORS MEET PRESSURE DIFFERENCE REQUIREMENTS.

DESIGN CONDITIONS

WIND SPEED	MPH	18
SUMMER TEMPERATURES		
DESIGN COOLING DAY	°db-°wb	95-77
EXTREME COOLING DAY	°db	105
INDOOR DESIGN CONDITION	°db	75
STAIRWELL SHAFT TEMPERATURE (BOTTOM TO TOP)	°db-°db	75-84
ELEVATOR HOISTWAY TEMPERATURE (BOTTOM TO TOP)	°db-°db	75-84
WINTER TEMPERATURES		
DESIGN HEATING DAY	°db-GRAINS / LBdo	25-10
EXTREME HEATING DAY	°db	7
INDOOR DESIGN CONDITION	°db	70
STAIRWELL SHAFT TEMPERATURE (BOTTOM TO TOP)	°db-°db	63-68
ELEVATOR HOISTWAY TEMPERATURE (BOTTOM TO TOP)	°db-°db	63-68

SMOKE CONTROL SYSTEM DESIGN ANALYSIS

PRESSURE DIFFERENCE DUE TO STACK EFFECT		
NORMAL STACK EFFECT (UPFLOW)	IN. H20	0.11
REVERSE STACK EFFECT (DOWNFLOW)	IN. H20	-0.03
TEMPERATURE EFFECT OF FIRE		
PRESSURE DIFFERENCE FROM FIRE COMPARTMENT TO SURROUNDINGS	IN. H20	0.02
WIND EFFECT		
PRESSURE COEFFICIENT (WINDWARD SIDE)		0.7
PRESSURE COEFFICIENT (LEEWARD SIDE)		-0.7
OUTSIDE AIR DENSITY	LBM / CF	0.075
WIND EXPONENT		0.33
WIND BOUNDARY LAYER THICKNESS	FT	1500
PRESSURE EXERTED BY WIND (WINDWARD SIDE)	IN. H20	0.11
PRESSURE EXERTED BY WIND (LEEWARD SIDE)	IN. H20	-0.11
SMOKE BARRIER CONSTRUCTION		
CONSTRUCTION TIGHTNESS		AVERAGE
LEAKAGE AREA RATIO OF EXTERIOR BUILDING WALLS		0.00017
LEAKAGE AREA RATIO OF STAIRWELL WALLS		0.00011
LEAKAGE AREA RATIO OF ELEVATOR SHAFT WALLS		0.00084
LEAKAGE AREA RATIO OF FLOORS		0.000052
LEAKAGE AREAS		
INTERIOR STAIRWELL DOORS		
DOOR DIMENSIONS (HEIGHT X WIDTH)	INCHES	80 X 36
AVERAGE CRACK WIDTH	INCHES	0.125
LEAKAGE AREA (CLOSED)	SQ FT	0.21
LEAKAGE AREA (OPEN)	SQ FT	20
EXTERIOR STAIRWELL DOORS		
DOOR DIMENSIONS (HEIGHT X WIDTH)	INCHES	80 X 36
AVERAGE CRACK WIDTH	INCHES	0.125
LEAKAGE AREA (CLOSED)	SQ FT	0.21
LEAKAGE AREA (OPEN)	SQ FT	20
ELEVATOR DOORS		
DOOR DIMENSIONS (HEIGHT X WIDTH)	INCHES	84 X 42
LEAKAGE AREA (CLOSED)	SQ FT	0.40
LEAKAGE AREA (OPEN)	SQ FT	6
DOOR OPENING FORCES		
MAXIMUM ALLOWABLE PRESSURE DIFFERENCE	IN. H20	0.35
MINIMUM ALLOWABLE PRESSURE DIFFERENCE	IN. H20	0.05
FORCE TO OVERCOME DOOR CLOSER	LBS	10
DISTANCE FROM DOOR HANDLE TO LATCH EDGE OF DOOR	INCHES	3.5
TOTAL DOOR OPENING FORCE	LBS	30
ELEVATOR HOISTWAY DESIGN		
ELEVATOR CAR VELOCITY	FPM	350
CRITICAL PRESSURE DIFFERENCE	IN. H20	0.01
MAXIMUM ALLOWABLE PRESSURE DIFFERENCE	IN. H20	0.25
MINIMUM ALLOWABLE PRESSURE DIFFERENCE	IN. H20	0.01

SMOKE CONTROL SYSTEM DESIGN

1. THE SMOKE CONTROL SYSTEMS ARE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE SECTION 909 AND THE METHODOLOGY DESCRIBED IN ASHRAE's "PRINCIPLES OF SMOKE MANAGEMENT". SPECIFICALLY, THE ELEVATOR HOISTWAY PRESSURIZATION SYSTEMS ARE DESIGNED IN ACCORDANCE WITH AN APPROVED ALTERNATE DESIGN METHOD UNDER FLORIDA BUILDING CODE SECTION 1004.11. THE ALTERNATE DESIGN METHOD IS BASED ON THE REQUIREMENTS OF FLORIDA BUILDING CODE SECTION 708.____ MAINTAINING PRESSURE DIFFERENTIALS BETWEEN A CALCULATED CRITICAL PRESSURE DIFFERENCE TO PREVENT SMOKE FROM MIGRATING INTO THE HOISTWAY DUE TO PISTON EFFECT AND A MAXIMUM PRESSURE DIFFERENCE OF 0.25 INCHES OF WATER.
2. THE SMOKE CONTROL SYSTEMS CONSIST OF TWO (2) STAIRWELL PRESSURIZATION SYSTEMS AND TWO (2) ELEVATOR HOISTWAY PRESSURIZATION SYSTEMS.
3. EACH STAIRWELL PRESSURIZATION SYSTEM CONSISTS OF ONE (1) SUPPLY FAN EQUIPPED WITH A VARIABLE FREQUENCY DRIVE (VFD). THE VFD MODULATES THE FAN SPEED TO MAINTAIN THE PRESSURE DIFFERENTIALS ACROSS THE STAIRWELL DOORS BETWEEN MINIMUM AND MAXIMUM VALUES, AS MEASURED BY SEVERAL DIFFERENTIAL PRESSURE SENSORS LOCATED THROUGHOUT THE SHAFT. ADDITIONALLY, THE EXTERIOR STAIRWELL DOOR AT THE BOTTOM OF THE STAIRWELL IS AUTOMATICALLY POWERED OPEN.
4. EACH ELEVATOR HOISTWAY PRESSURIZATION SYSTEM CONSISTS OF ONE (1) SUPPLY FAN EQUIPPED WITH A VARIABLE FREQUENCY DRIVE, ONE (1) MOTORIZED DAMPER IN HOISTWAY VENT, AND AUTOMATICALLY POWERED-OPEN DOORS IN ELEVATOR LOBBIES ON THE PARKING LEVELS. UPON SIGNAL FROM THE FIRE ALARM CONTROL PANEL, THE SUPPLY FAN IS ENABLED, THE MOTORIZED DAMPER IS CLOSED, AND ONE (1) LOBBY DOOR ADJACENT TO BUILDING EXTERIOR IS OPEN ON EACH SIDE OF THE PARKING LEVEL ELEVATOR LOBBIES. THE VFD MODULATES THE FAN SPEED TO MAINTAIN THE PRESSURE DIFFERENTIALS ACROSS THE HOISTWAY DOORS BETWEEN MINIMUM AND MAXIMUM VALUES, AS MEASURED BY SEVERAL DIFFERENTIAL PRESSURE SENSORS LOCATED THROUGHOUT THE HOISTWAY. UPON DETECTION OF SMOKE IN THE HOISTWAY, THE SUPPLY FAN IS DISABLED AND THE MOTORIZED DAMPER IS OPENED.

NOTE:
STAIR #1 DOES NOT CURRENTLY HAVE A DOOR DISCHARGING TO THE EXTERIOR OF THE BUILDING. A FUTURE PROJECT (NOT IN THE SCOPE OF THIS PROJECT) IS PLANNED TO EXTEND THE STAIRWELL DOWN TO THE PARKING LEVEL BELOW WITH A DOOR TO THE EXTERIOR. THE SYSTEM IS DESIGNED TO MEET CURRENT CONDITIONS (NO EXTERIOR DOOR OPEN) AND FUTURE CONDITIONS (EXTERIOR DOOR POWERED OPEN).

STAIRWELL PRESSURIZATION TESTING NOTES

SCOPE OF TESTING

A. THE SMOKE CONTROL SYSTEM SHALL BE TESTED BY A SPECIAL INSPECTOR.

B. TESTING SHALL COMPLY WITH F.B.C. SECTION 909 REQUIREMENTS AS WELL AS NFPA 92A

C. QUALIFICATIONS – SPECIAL INSPECTION AGENCIES FOR SMOKE CONTROL SYSTEM TESTING SHALL HAVE EXPERTISE IN FIRE PROTECTION ENGINEERING, MECHANICAL ENGINEERING, AND CERTIFICATION AS AIR BALANCERS. SUBMIT TO PROFESSIONAL ENGINEER OF RECORD FOR APPROVAL PRIOR TO TESTING.

D. REPORTS – A COMPLETE REPORT OF TESTING SHALL BE PREPARED BY THE SPECIAL INSPECTOR OR SPECIAL INSPECTION AGENCY. THE REPORT SHALL INCLUDE IDENTIFICATION OF ALL SMOKE CONTROL SYSTEM DEVICES, INCLUDING: MANUFACTURER, NAMEPLATE DATA, DESIGN VALUES, AND IDENTIFICATION TAG OR MARK. THE REPORT SHALL BE REVIEWED BY THE RESPONSIBLE REGISTERED PROFESSIONAL ENGINEER OF RECORD AND, WHEN SATISFIED THAT THE DESIGN INTENT HAS BEEN ACHIEVED, SEAL, SIGN AND DATE THE REPORT.

E. REPORT FILING – A COPY OF THE FINAL REPORT SHALL BE FILED WITH THE FIRE CODE OFFICIAL AND AN IDENTICAL COPY SHALL BE MAINTAINED IN AN APPROVED LOCATION AT THE BUILDING. CHARTS, DRAWINGS, AND OTHER DOCUMENTS IDENTIFYING AND LOCATING EACH COMPONENT OF THE SMOKE CONTROL SYSTEM, AND DESCRIBING ITS PROPER FUNCTION AND MAINTENANCE REQUIREMENTS SHALL BE MAINTAINED AT THE BUILDING AS AN ATTACHMENT TO THE REPORT LISTED ABOVE. SMOKE CONTROL SYSTEM DEVICES SHALL BE TAGGED WITH A UNIQUE IDENTIFICATION AND SHALL BE DATED INDICATING THE LAST TIME THEY WERE TESTED AND BY WHOM.

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BARNETT FRONCZAK BARLOWE ARCHITECTS

Leon County Courthouse Annex (Bank of America) Stair & Elevator Pressurization

12062 Drawn By: RCT
Project Code Checked By: SRD

27 April 2012
Date

Construction Documents

Revisions

SCHEDULES - MECHANICAL

Tallahassee Florida

M002

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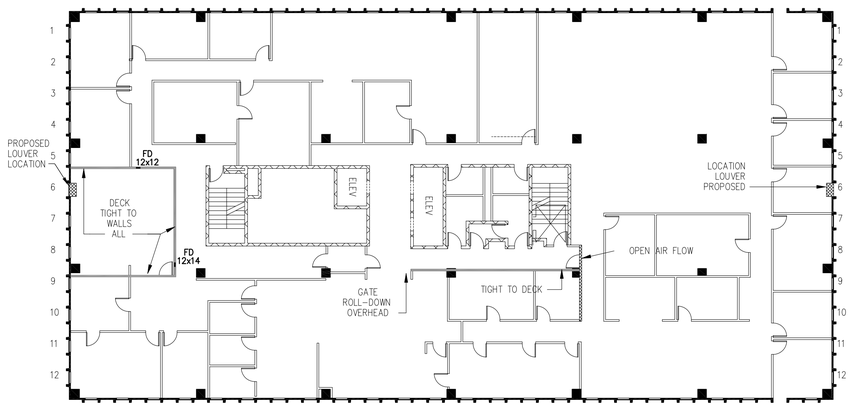
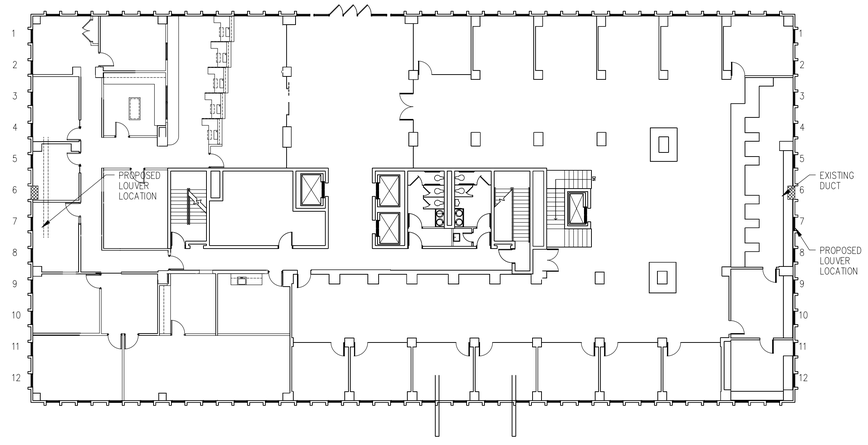


3 M101 Third Floor
1/16" = 1'-0"



1 M101 First Floor
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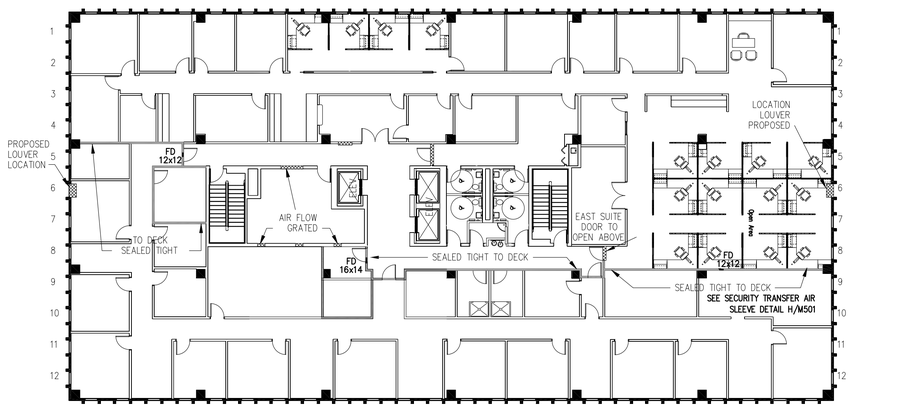

4 M101 Fourth Floor
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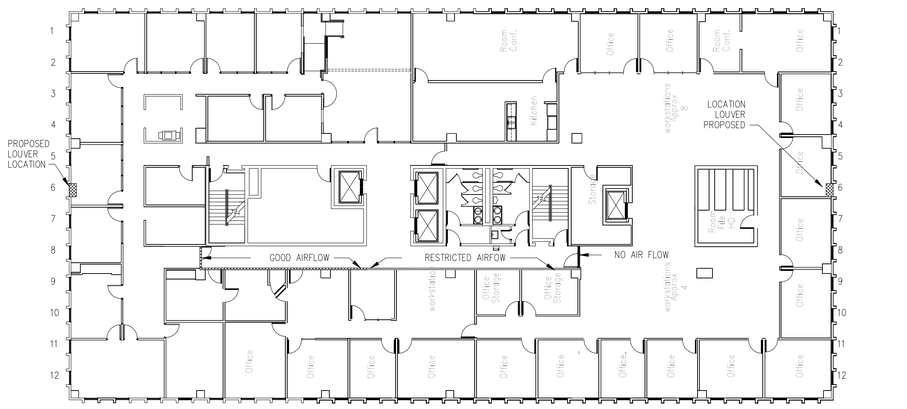

2 M101 Second Floor
1/16" = 1'-0"

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FLOOR PLAN - LEVELS 1-4 - MECHANICAL

Tallahassee Florida

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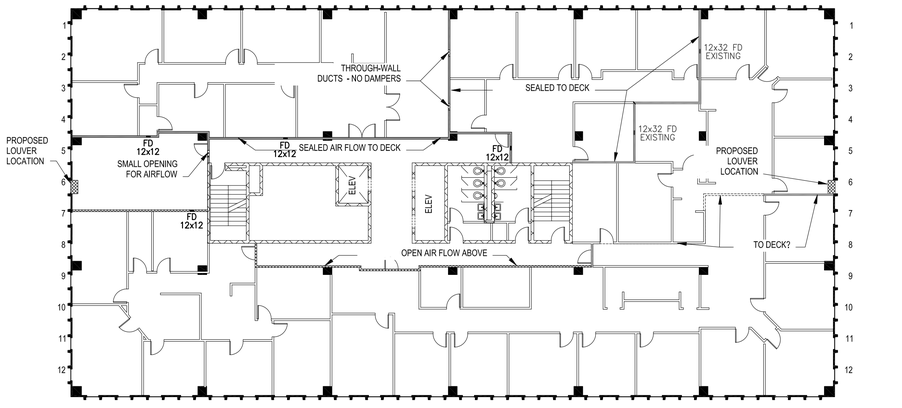
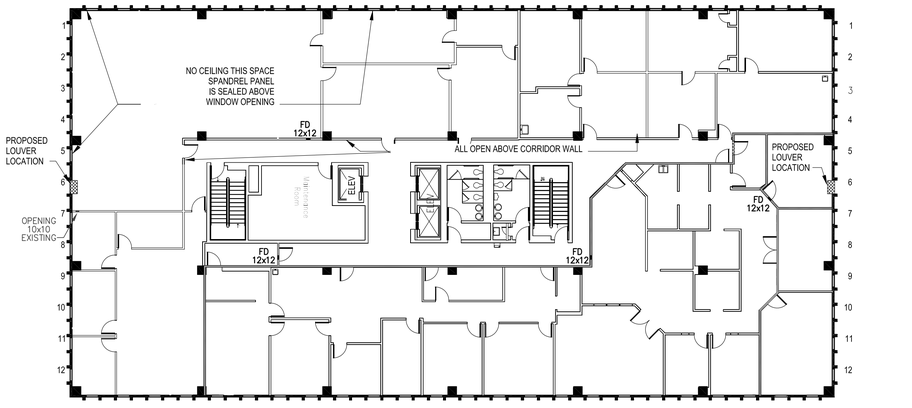
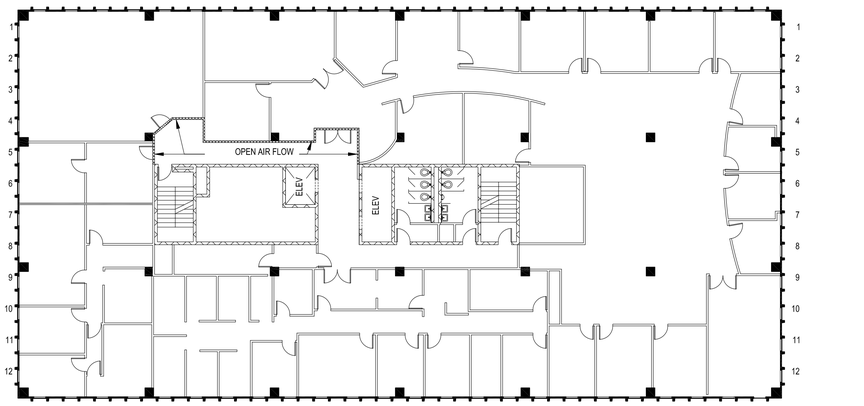


3 M102 Seventh Floor
1/16" = 1'-0"



1 M102 Fifth Floor
1/16" = 1'-0"



4 M102 Eighth Floor
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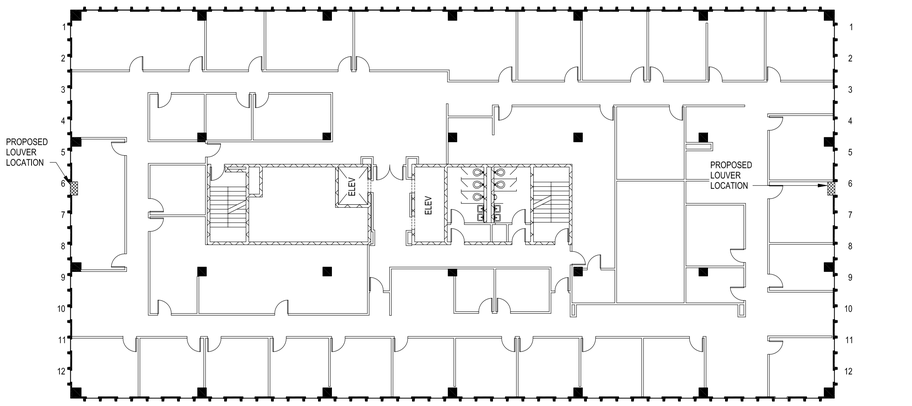

2 M102 Sixth Floor
1/16" = 1'-0"

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FLOOR PLAN - LEVELS 5-8 - MECHANICAL

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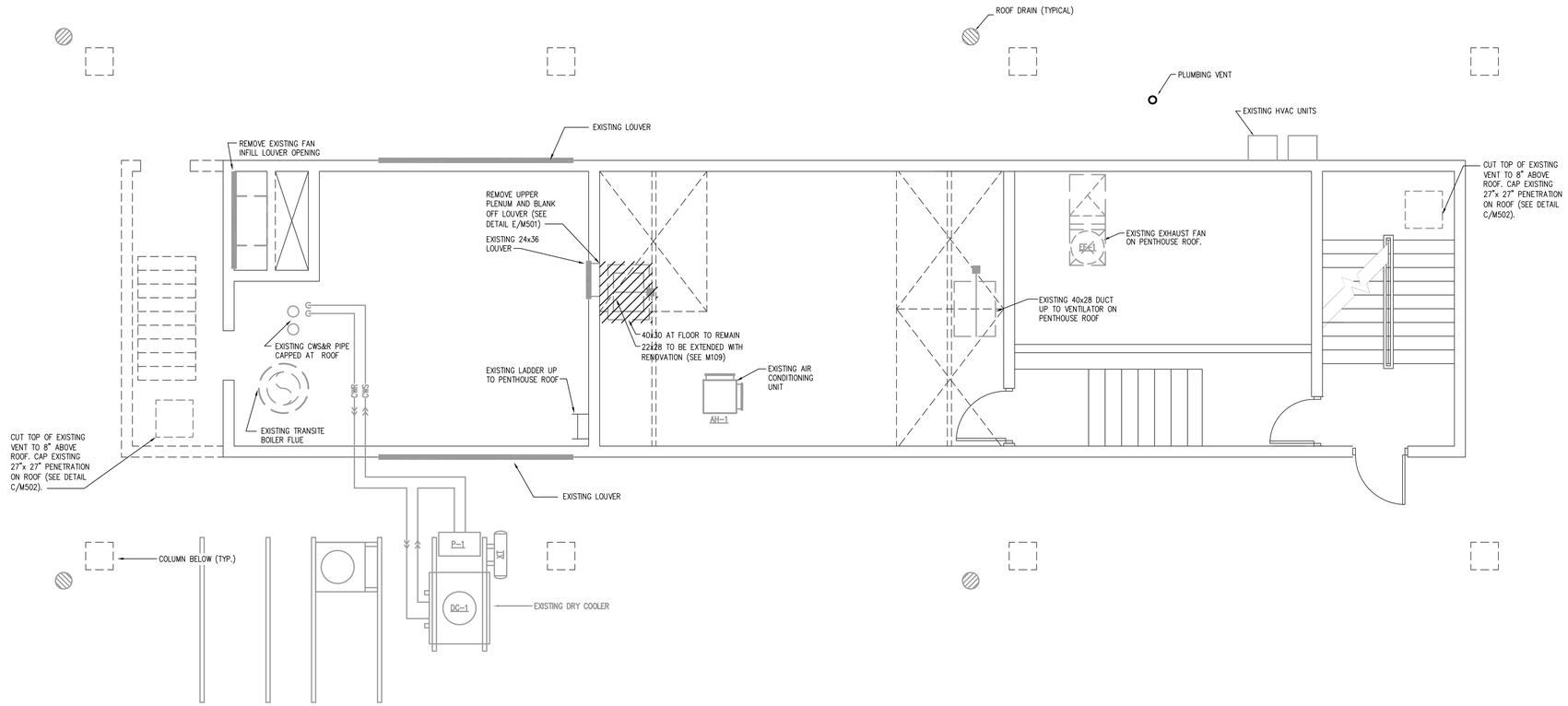

1 MD109 PARTIAL ROOF & PENTHOUSE DEMOLITION PLAN - MECHANICAL

SCALE 1/4"=1'-0"

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PARTIAL ROOF & PENTHOUSE DEMOLITION PLAN - MECHANICAL

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MD109

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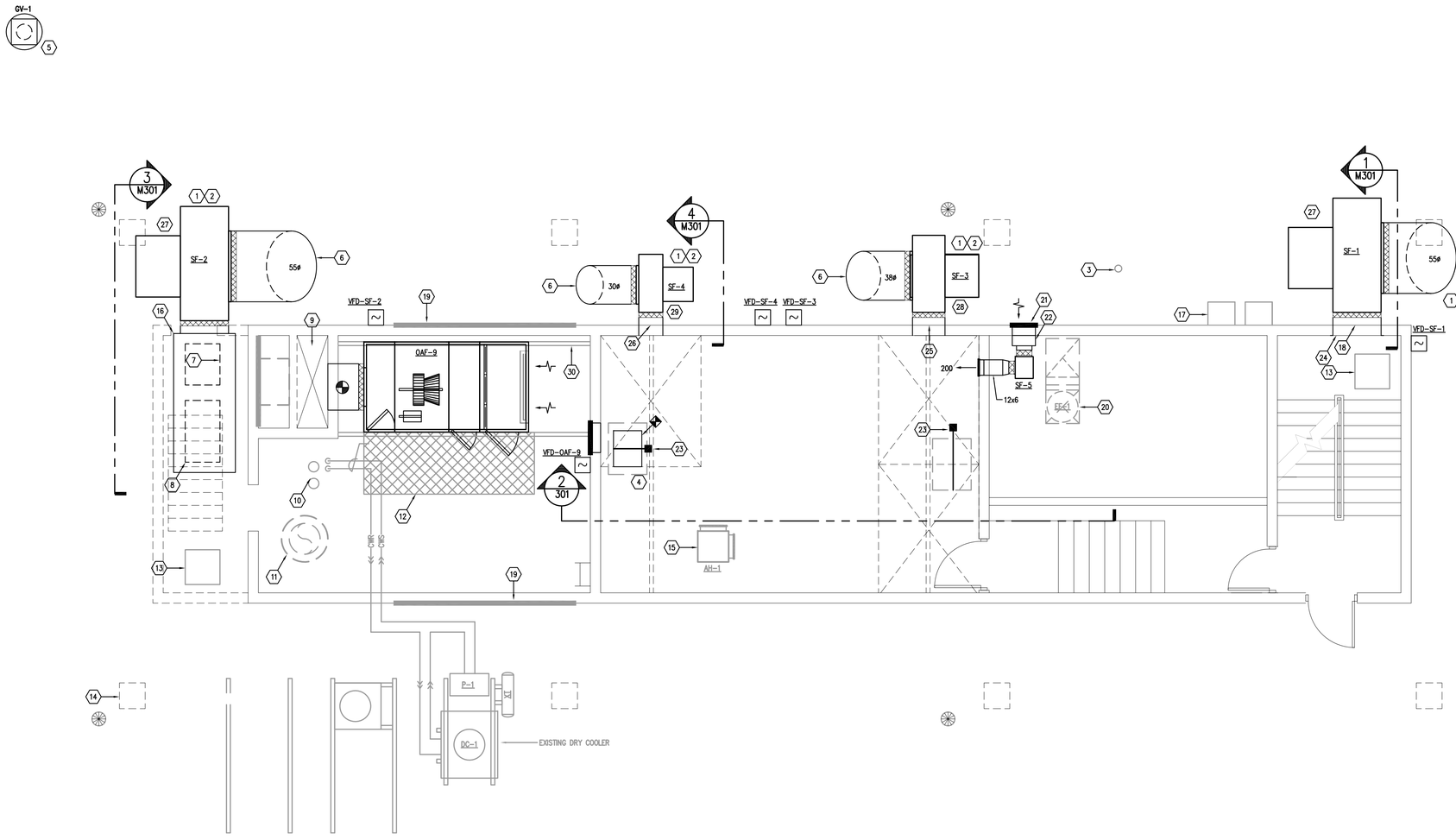
RENOVATION KEY NOTES:

1. ROOF CURB SHALL EXTEND 8" AFR. FIELD VERIFY EXISTING ROOF THICKNESS. (SEE DETAIL B/M502).
2. SECUREMENT AND ATTACHMENT OF CURB AND FAN BY DELEGATED DESIGN.
3. EXISTING PLUMBING VENT.
4. EXTEND 22x28 DUCT THRU ROOF. SEAL PENETRATION WATERTIGHT (SEE ARCHITECTURAL DRAWINGS)
5. COORDINATE LOCATION BETWEEN EXISTING STRUCTURE (TYPICAL OF 4 LOCATIONS). PROVIDE MINIMUM 20 FEET FROM SMOKE FAN INLETS.
6. MITER DUCT AT 45 DEGREEES FOR RAIN PROTECTION. SLOPE TO DRAIN. PROVIDE DUCT SUPPORT.
7. NEW 27"x32" PENETRATION ON ROOF – SEE STRUCTURAL PLANS.
8. NEW 27"x48" PENETRATION ON ROOF – SEE STRUCTURAL PLANS.
9. CLEAN OUTSIDE AIR SHAFT – SEE SPECIFICATIONS.
10. EXISTING CWS&R PIPE CAPPED AT ROOF.
11. EXISTING TRANSITE BOILER FLUE.
12. SUPPORT RAILS AND ACCESS PLATFORM – SEE STRUCTURAL PLANS.
13. CAPPED VENT.
14. COLUMN BELOW (TYPICAL).
15. EXISTING AIR CONDITIONING UNIT.
16. NEW 48"x108"x114" PLENUM MOUNTED ON CURB.
17. EXISTING HVAC UNIT (TYPICAL OF 2).
18. 38"x54" OPENING – SEE STRUCTURAL PLANS.
19. NEW LOUVER – SEE ARCHITECTURAL PLANS.
20. EXISTING EXHAUST FAN ON PENTHOUSE ROOF ABOVE.
21. 18x12 LOUVER – SEE ARCHITECTURAL PLANS.
22. 8" DEEP PLENUM. SLOPE TO DRAIN WITH MINIMUM 1% SLOPE.
23. REPLACE DAMPER ACTUATOR PER SPECIFICATIONS. DAMPER TO REMAIN.
24. PROVIDE ½" MESH WELDED STAINLESS STEEL WITH MINIMUM 80% FREE AREA.
25. 26"x37" OPENING INTO SHAFT – SEE STRUCTURAL PLANS.
26. 19"x27" OPENING INTO SHAFT – SEE STRUCTURAL PLANS.
27. TOTAL COMBINED WEIGHT OF FAN, CURB, AND WIND RESTRAINTS SHALL NOT EXCEED 2000 LBS.
28. TOTAL COMBINED WEIGHT OF FAN, CURB, AND WIND RESTRAINTS SHALL NOT EXCEED 1100 LBS.
29. TOTAL COMBINED WEIGHT OF FAN, CURB, AND WIND RESTRAINTS SHALL NOT EXCEED 800 LBS.
30. ATTACH AND SECURE OAF-9 TO EQUIPMENT RAILS (SEE DETAIL A/M502)



1 M109 PARTIAL ROOF & PENTHOUSE PLAN - HVAC

SCALE 1/4"=1'-0"

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PARTIAL ROOF & PENTHOUSE PLAN - MECHANICAL

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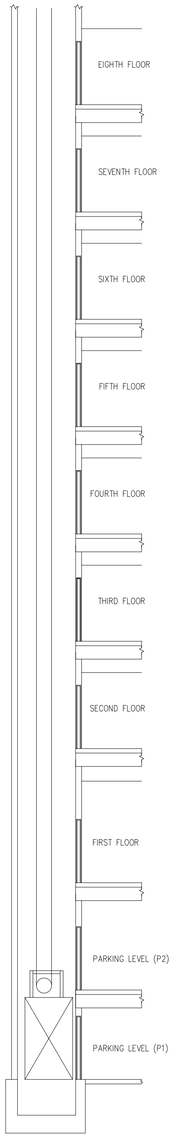
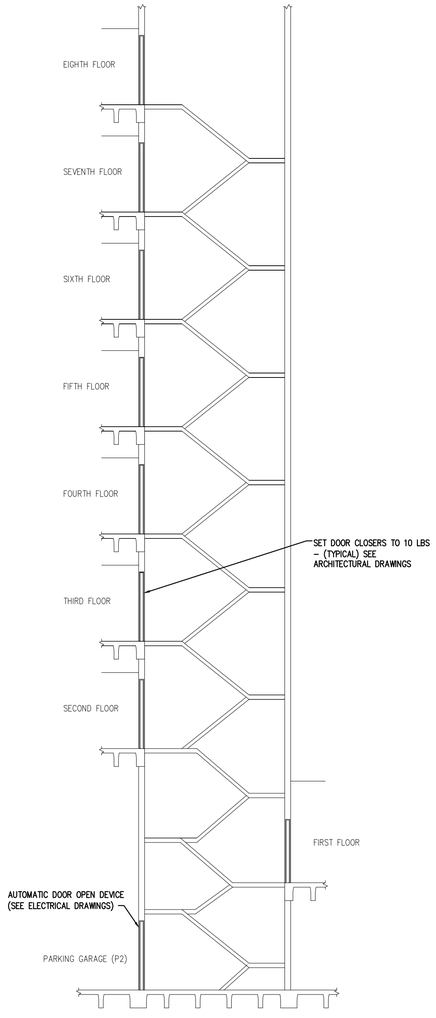
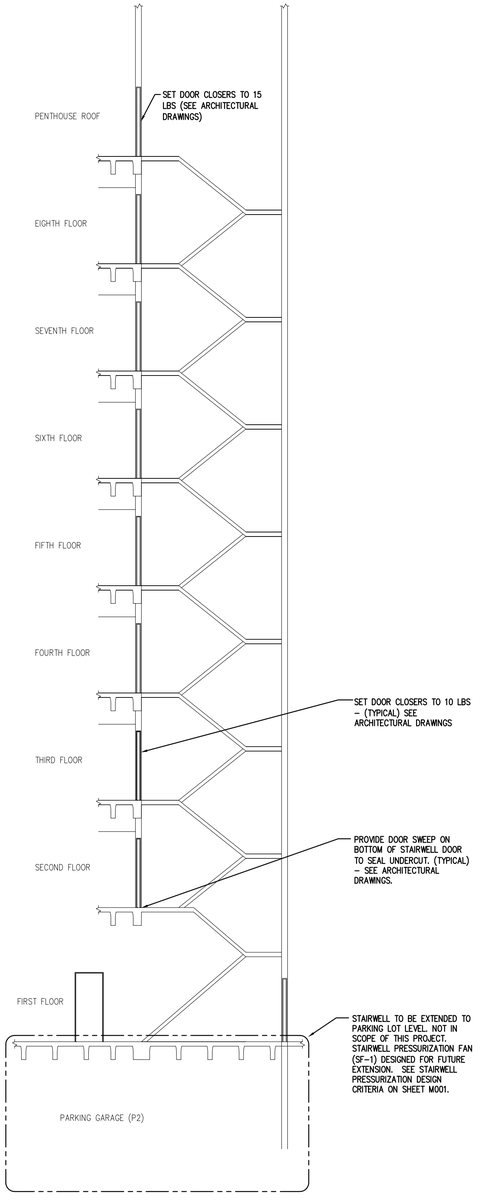


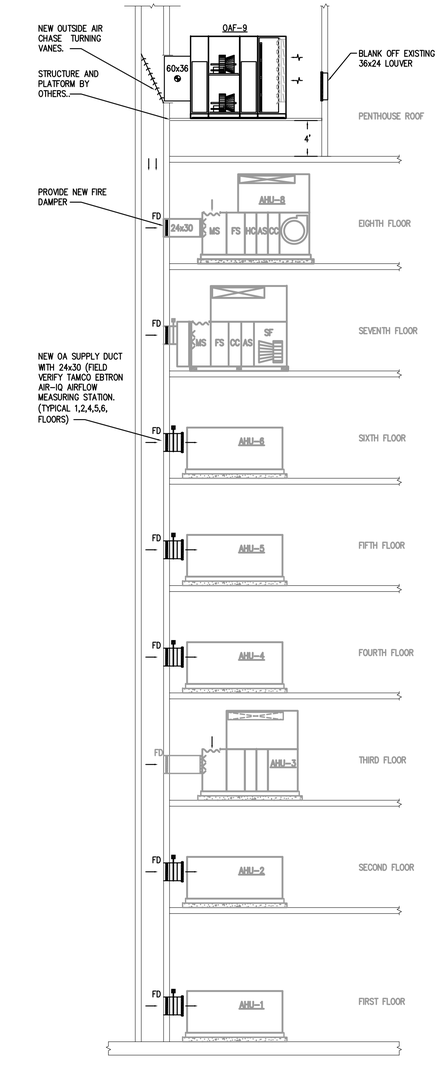
4 M201 **ELEVATOR RISER - MECHANICAL**
SCALE - NTS — BOA TOWER



3 M201 **STAIR#2 RISER - MECHANICAL**
SCALE - NTS — BOA TOWER



2 M201 **STAIR#1 RISER - MECHANICAL**
SCALE - NTS — BOA TOWER



1 M201 **OUTSIDE AIR CHASE RISER - MECHANICAL**
SCALE - NTS — BOA TOWER

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RISERS - MECHANICAL

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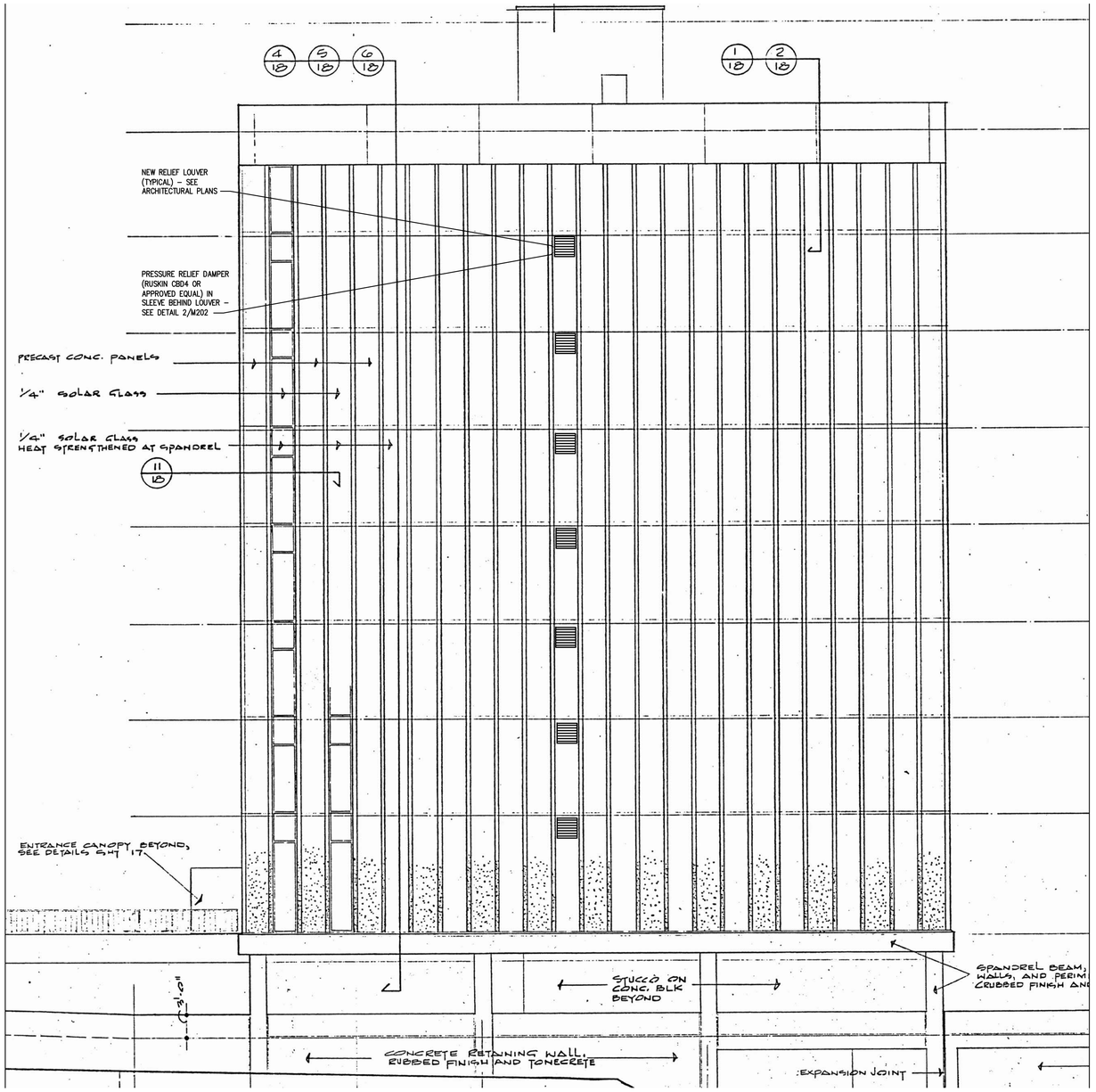

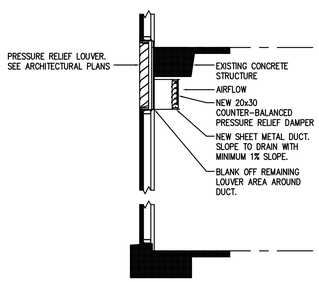

2 / M202 DETAIL - PRESSURE RELIEF DAMPER

SCALE - NTS

BOA TOWER

1 / M202 SOUTH ELEVATION - MECHANICAL

SCALE - NTS

(NORTH ELEVATION IS OPPOSITE IN HAND)

BOA TOWER

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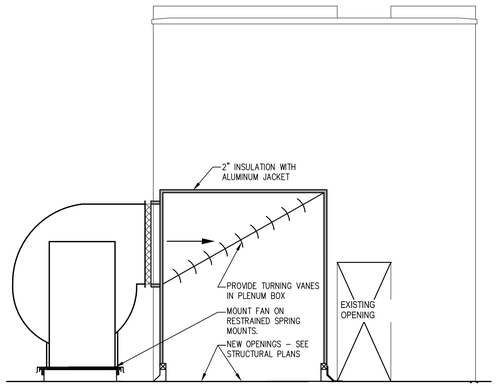
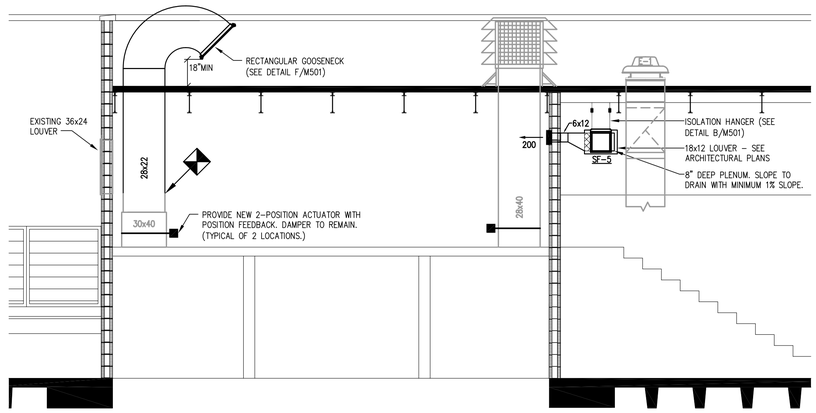


3 SECTION (SF-2)

M301 SCALE 1/4"=1'-0"

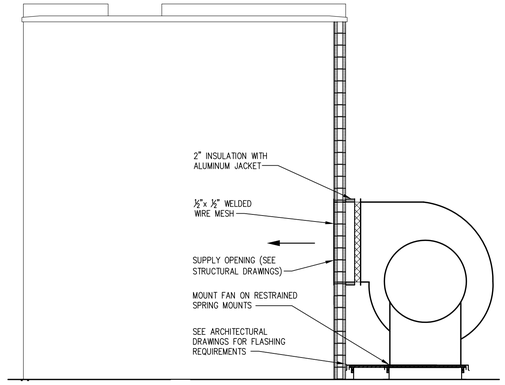
BOA TOWER



2 PENTHOUSE SECTION

M301 SCALE 1/4"=1'-0"

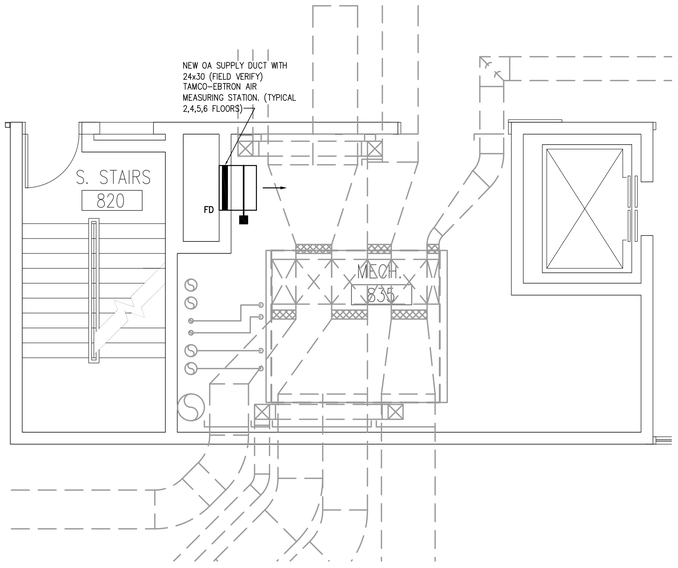
BOA TOWER



1 SECTION (SF-1)

M301 SCALE 1/4"=1'-0"

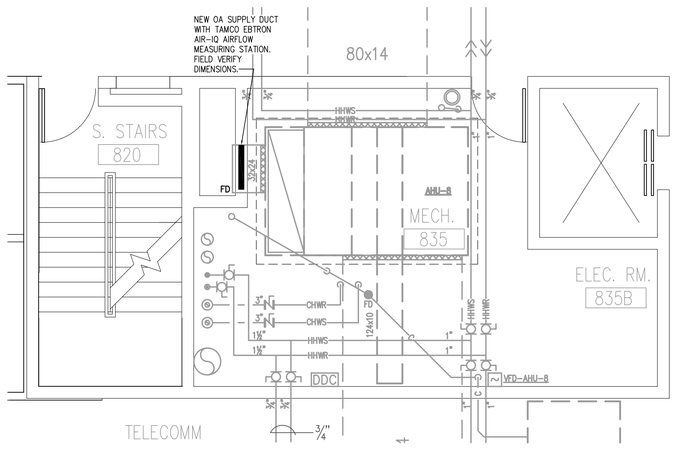
BOA TOWER



6 ENLARGED EX. MECHANICAL ROOMS FLOORS 2,4,5,6 - HVAC

M301 SCALE 1/4"=1'-0"

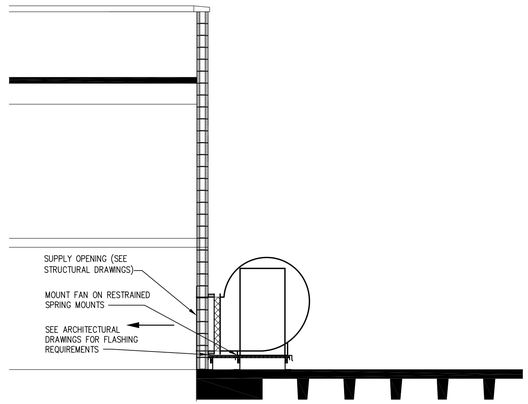
BOA TOWER



5 ENLARGED EX. MECHANICAL ROOM FLOORS 8 - HVAC

M301 SCALE 1/4"=1'-0"

BOA TOWER



4 SECTION (SF-4)

M301 SCALE 1/4"=1'-0"

BOA TOWER

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SECTIONS AND ENLARGEMENTS - MECHANICAL

Tallahassee Florida

M301

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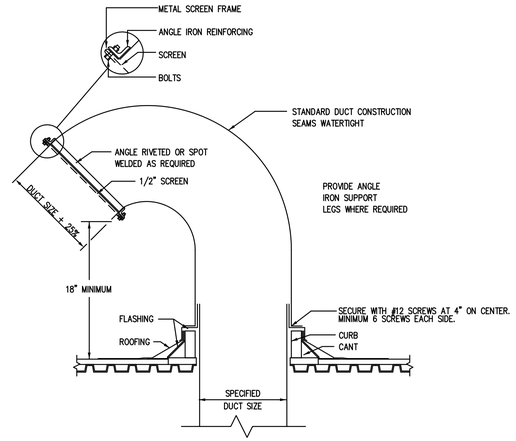
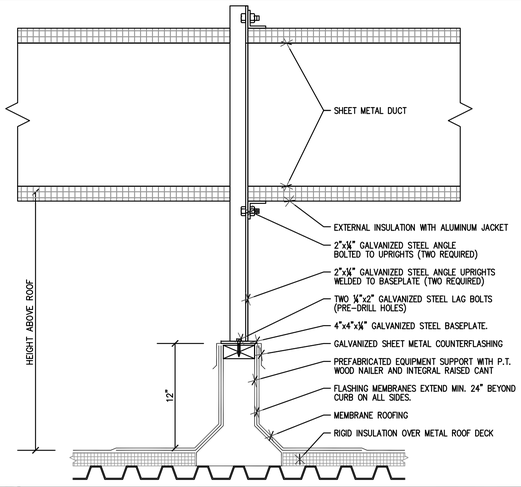
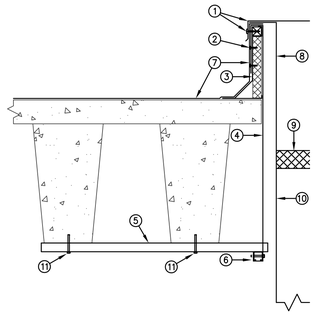


F RECTANGULAR GOOSENECK



WIDTH OF DUCT OR EQUIPMENT	HEIGHT ABOVE ROOF
< 24"	14"
24" < 36"	18"
36" < 48"	24"
48" < 60"	30"
>=60"	48"
BASED ON 2010 F.B.C. 1509.7	

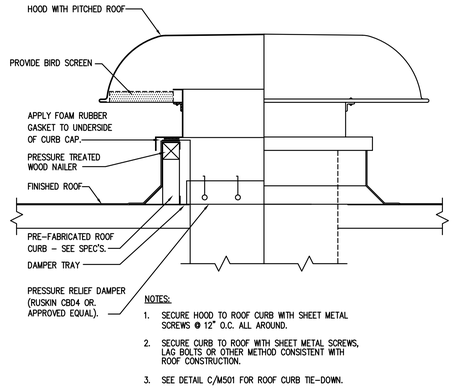
G ROOF TOP DUCT SUPPORT



KEY NOTES (THIS DETAIL ONLY)

1. SECURE EQUIPMENT OR CURB CAP TO ROOF CURB WITH LAG BOLTS @ 12" O.C. ALL AROUND. CAULK BOLTS WITH SILICONE. APPLY CONTINUOUS FOAM RUBBER GASKET TO UNDERSIDE OF CURB CAP.
2. WRAP STRAP OVER TOP OF CURB AND ATTACH TO OUTSIDE OF CURB WITH FOUR STAINLESS STEEL SHEET METAL SCREWS.
3. PREFABRICATED INSULATED ROOF CURB WITH PRESSURE TREATED WOOD NAILER AND INTEGRAL CANT, MIN. 12" HIGH (SEE SPECIFICATIONS). PROVIDE RAISED CANT MODEL FOR INSULATED ROOF.
4. GALVANIZED STEEL STRAPS ON TWO OPPOSITE SIDES – SIMPSON "STRONG-TIE" CMSTC16, OR EQUAL.
5. UNISTRUT BOLTED TO ROOF STRUCTURE (SPAN AT LEAST TWO PAN JOISTS)
6. WRAP STRAP AROUND THREE SIDES OF UNISTRUT AND FASTEN WITH 1/4" STAINLESS STEEL BOLT, WASHER, LOCK WASHER AND NUT.
7. ROOF MEMBRANE SHALL TURN UP ON OUTSIDE OF ROOF CURB AND COVER THE TIE-DOWN STRAPS. FASTEN TO WOOD NAILER AT TOP OF CURB.
8. PROVIDE DUCT (WHERE INDICATED ON PLANS) WITH FLANGE ATTACHED TO TOP OF ROOF CURB. ALLOW SPACE FOR DUCT INSULATION, IF REQUIRED.
9. FLEXIBLE DUCT CONNECTION
10. SUPPORT LOWER SECTION OF DUCT FROM ROOF STRUCTURE.
11. FASTEN WITH 1/4" STAINLESS STEEL EXPANSION BOLT, WASHER, & EXPANSION ANCHOR.

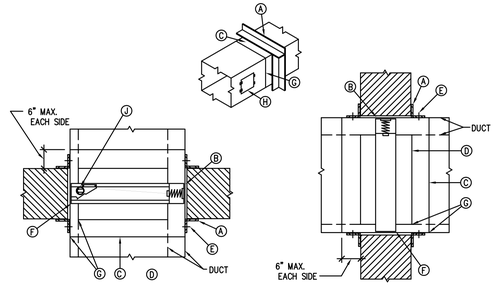
C ROOF CURB AND TIE-DOWN



NOTES:

1. SECURE HOOD TO ROOF CURB WITH SHEET METAL SCREWS @ 12" O.C. ALL AROUND.
2. SECURE CURB TO ROOF WITH SHEET METAL SCREWS, LAG BOLTS OR OTHER METHOD CONSISTENT WITH ROOF CONSTRUCTION.
3. SEE DETAIL C/M501 FOR ROOF CURB TIE-DOWN.

D GRAVITY ROOF VENTILATOR



Ⓐ RETAINING ANGLES: MINIMUM 1 1/2" x 1 1/2" x 0.054 (16 GAUGE). RETAINING ANGLES MUST LAP STRUCTURAL OPENING 1" MINIMUM AND COVER OPENINGS OF CORNERS. CAULK THE EXTERIOR PERIMETER OF FIRE DAMPER RETAINING ANGLES WITH A THIN FILLET OF AN APPROVED CAULKING MATERIAL TO PREVENT THE PASSAGE OF SMOKE AND ALLOW MOVEMENT OF THE ANGLE.

Ⓑ CLEARANCE: 1/8" PER LINEAR FOOT IN BOTH DIMENSIONS (SEE NOTE 1 BELOW).

Ⓒ STEEL SLEEVE: 14 GAUGE, OR AS ALLOWED BY U.L. STANDARD 555.

Ⓓ APPROVED FIRE DAMPER: CURTAIN OR BLADE TYPE.

Ⓔ SECURE RETAINING ANGLES TO SLEEVE: ON 8" CENTERS WITH 1/2" LONG WELDS, OR 1/4" BOLTS AND NUTS, OR #10 STEEL SCREWS, OR MINIMUM 3/16" STEEL RIVETS.

Ⓕ SECURE FIRE DAMPER TO SLEEVE: ON 8" CENTERS WITH 1/2" LONG WELDS, OR 1/4" BOLTS AND NUTS, OR #10 STEEL SCREWS, OR MINIMUM 3/16" STEEL RIVETS.

Ⓖ CONNECT DUCT TO SLEEVE OR FIRE DAMPER: WITH BREAKAWAY CONNECTION.

Ⓗ INSTALL HINGED ACCESS DOOR

Ⓙ NEGATOR CLOSURE SPRING

NOTES:

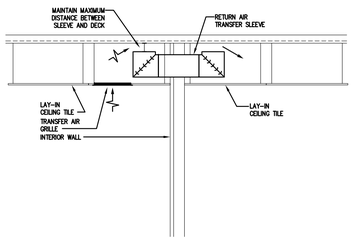
1. CLEARANCE REQUIREMENTS FOR FIRE DAMPER SLEEVES WITHIN OPENING IS BASED ON 1/8" PER FOOT OF WIDTH (OR HEIGHT) UNLESS OTHERWISE STATED IN THE LISTING OF THE ASSEMBLY. THE SLEEVE MAY REST ON THE BOTTOM OF THE OPENING, AND NEED NOT BE CENTERED. (FRACTIONAL DIMENSIONS SHALL BE TAKEN AS THE NEXT LARGER WHOLE FOOT). EXAMPLE: A 30" x 24" FIRE DAMPER SLEEVE IS INSTALLED IN A WALL/FLOOR OPENING. THE OPENING SHALL BE 30 3/8" WIDE (1/8" x 3') BY 24 1/4" HIGH (1/8" x 2').

   THE SLEEVE IS RETAINED IN THE WALL/FLOOR BY THE USE OF STEEL RETAINING ANGLES Ⓐ. THESE MUST OVERLAP THE EDGE OF THE FRAMING BY A MINIMUM OF ONE (1) INCH OVER AND BEYOND ALL MATERIAL IN THE OPENING. THIS MEANS THAT THE MINIMUM WIDTH OF THE RETAINING ANGLE WOULD BE 1 3/8". (GOOD PRACTICE CALLS FOR AN ADDITIONAL SAFETY FACTOR BY MAKING THE ANGLE IN THIS CASE 1 1/2" WIDE).

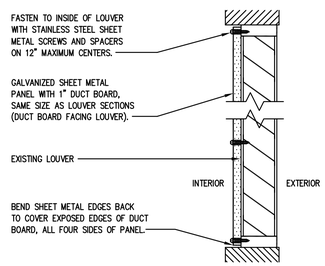
   THE DIMENSIONS REQUIRED FOR THE OPENING SHALL BE THOSE REMAINING AFTER THE OPENING HAS BEEN FRAMED AND THE FIRE RESISTIVE MATERIALS PROVIDED WHERE REQUIRED. THE FIRE RESISTIVE MATERIALS SHALL BE EQUAL TO THE REQUIREMENTS FOR FIRE RESISTIVE MATERIALS USED IN THE CONSTRUCTED WALL SO THAT A CONTINUOUS RATING EXISTS AT THE WALL/FLOOR PENETRATION. THE CONTRACTOR ERECTING THE WALL/FLOOR IS RESPONSIBLE FOR PROVIDING THE FIRE RESISTIVE MATERIAL AND CORRECT SIZE OPENINGS TO ACHIEVE THE REQUIRED CLEARANCE.

2. THE FIRE DAMPER MANUFACTURER'S INSTALLATION DETAILS AND INSTRUCTIONS AS TESTED AND APPROVED BY U.L. MUST BE USED IN LIEU OF THE ABOVE DETAILS WHERE APPLICABLE.

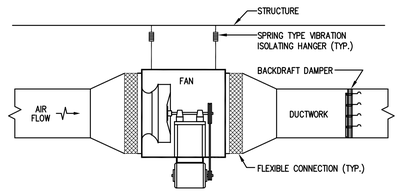
A FIRE DAMPER INSTALLATION



H SECURITY TRANSFER AIR SLEEVE



E LOUVER CLOSURE



NOTES: 1. INSTALL TO ALLOW ACCESS FOR MAINTENANCE.
2. PROVIDE DIRECT DRIVE FAN WHERE SCHEDULED.

B IN-LINE FAN

H2E ENGINEERING
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H2E PROJECT No. 1109

Florida Certificate of Authorization #2485
Scott R. Drury, P.E. #59845

BARNETT FRONCZAK BARLOWE ARCHITECTS

Leon County
Courthouse Annex
(Bank of America) Stair & Elevator Pressurization

12062 Drawn By: RCT
Project Code Checked By: SRD

27 April 2012
Date

Construction Documents

Revisions

DETAILS - MECHANICAL

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M501

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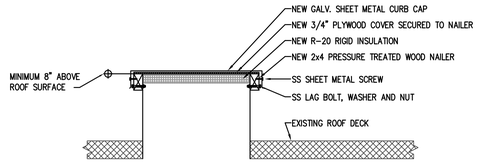
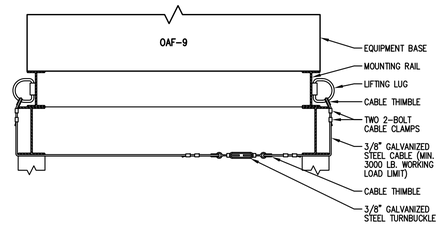
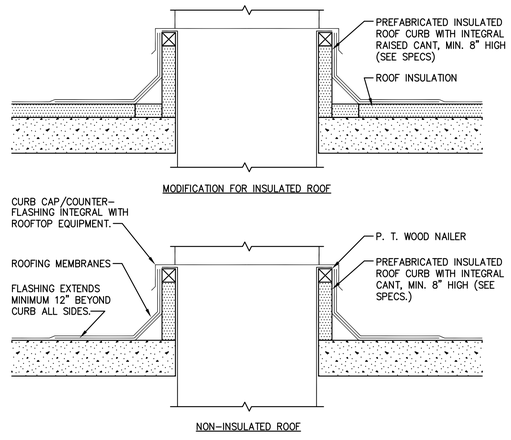


C ROOF VENT CAP



A EQUIPMENT TIE-DOWN (OAF-9)



NOTES:

1. SECURE CURB TO ROOF WITH LAG BOLTS OR OTHER METHOD CONSISTENT WITH ROOF CONSTRUCTION.
2. SECURE CURB CAP TO WOOD NAILING STRIP WITH 3/8" CADMIUM PLATED LAG BOLTS ON 12" MAX. CENTERS.
3. PROVIDE CONTINUOUS FOAM RUBBER GASKET APPLIED TO UNDERSIDE OF CURB CAP.

B ROOF CURB DETAIL

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DETAILS - MECHANICAL

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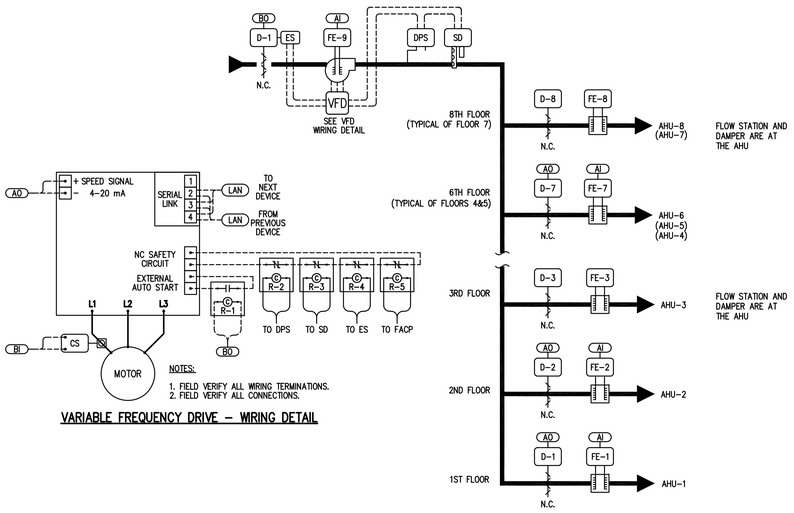
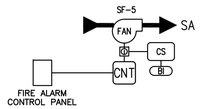
CONTROL SCHEMATICS (OAF - 9)



VARIABLE FREQUENCY DRIVE - WIRING DETAIL

CONTROL SCHEMATICS (SF - 5)



SEQUENCE OF OPERATION (OAF - 9)

OUTSIDE AIR FAN SYSTEM:

1. GENERAL
   a. THE OUTSIDE AIR FAN SYSTEM SHALL BE CONTROLLED BY A STAND-ALONE BUILDING CONTROLLER. SEQUENCE OF OPERATION SHALL NOT RELY ON A COMMUNICATION INTERFACE WITH A REMOTE PANEL; ALL CONTROL LOGIC SHALL RESIDE IN CONTROL PANEL SERVING EQUIPMENT.
   b. THE UNIT CONTROLLER SHALL RESIDE ON A PEER-TO-PEER BUILDING LEVEL NETWORK AS DEFINED IN ARTICLE 2.2 'COMMUNICATIONS' OF SPECIFICATION 230900.
2. FAN
   a. START/STOP: START/STOP OF THE OUTSIDE AIR FAN SHALL BE CONTROLLED THROUGH H-O-A SWITCH ON THE VARIABLE FREQUENCY DRIVE (VFD). ENABLE THE FAN WHENEVER ANY UNIT (AHU-1 THRU AHU-8) ARE OPERATING IN OCCUPIED MODE. DISABLE THE FAN WHENEVER ALL UNITS (AHU-1 THRU AHU-8) ARE EITHER OPERATING IN UNOCCUPIED MODE OR ARE SHUT DOWN.
   b. STATUS: FAN OPERATION SHALL BE PROVED THROUGH A CURRENT SWITCH. UPON FAILURE, THE BAS SHALL ANNUNCIATE ONE OF THE FOLLOWING ALARMS:
      1. FAN FAILURE; IF THE FAN IS COMMANDED ON, BUT THE STATUS IS OFF.
      2. FAN IN HAND MODE; IF THE FAN IS COMMANDED OFF, BUT THE STATUS IS ON.
   c. SPEED: ONCE ENABLED, THE VFD SHALL RAMP THE SUPPLY FAN SPEED TO OPERATING SETPOINT OVER A 60 SECOND TIME DELAY (PROGRAM RAMP TIME IN VFD). MODULATE FAN SPEED TO MAINTAIN AN AIRFLOW SETPOINT.
      1. OUTSIDE AIRFLOW RESET; RESET THE OUTSIDE AIRFLOW SETPOINT TO MAINTAIN THE SUM OF ALL OUTSIDE AIRFLOW SETPOINT FOR ALL ASSOCIATED AHUs OPERATING IN OCCUPIED MODE.
3. OUTSIDE AIR DAMPER: IF THE OUTSIDE AIR FAN IS ENABLED, OPEN THE DAMPER. IF THE OUTSIDE AIR FAN IS DISABLED OR IF THE FAN IS SHUTDOWN ON FAULT, CLOSE THE DAMPER.
4. SAFETIES:
   a. SMOKE DETECTOR(S) ARE PROVIDED BY OTHERS BUT SHALL BE WIRED TO AN AUXILIARY CONTACT ON THE VFD TO SHUT DOWN THE AIR HANDLER FAN(S) UPON DETECTION OF SMOKE.
   b. HIGH PRESSURE LIMIT; PROVIDE A PRESSURE SWITCH AT THE SUPPLY FAN DISCHARGE, WIRED TO AN AUXILIARY CONTACT ON THE VFD. IF STATIC PRESSURE EXCEEDS 3.0 IN. W.G, THE SWITCH SHALL OVERRIDE ALL CONTROLS AND SHUT DOWN THE UNIT.
   c. WIRE THE FIRE ALARM CONTROL PANEL TO AN AUXILIARY CONTACT ON THE VFD TO SHUTDOWN THE FAN(S) UPON SIGNAL.

BAS OBJECT POINTS LIST (OAF - 9)

	POINTS								APPLICATIONS																						REPORTS / MESSAGES						GRAPHIC SCREEN					
	PHYSICAL				VIRTUAL				ALARMS						TRENDS				PROGRAMS			CONTROL LOOP																		
	INPUT		OUTPUT																																					
	BINARY	ANALOG	BINARY	ANALOG	INTEROPERABLE	CALCULATED	SETPOINT	USER ADJUSTABLE	INITIAL OR DEFAULT VALUE	BINARY ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM	AUTO RESET	MANUAL RESET	TREND (CHANGE OF VALUE)	TREND (SAMPLE INTERVAL)	C.O.V. or SAMPLE INTERVAL	SCHEDULING	WEEKLY TESTING	OPERATOR OVERRIDE	SETPOINT RESET PROGRAM	DIRECT ACTING	REVERSE ACTING	PROPORTIONAL CONTROL	INTEGRAL CONTROL	DERIVATIVE CONTROL	ALARM LOG (REPORT DAILY)	REPORT (DAILY)	REPORT (WEEKLY)	REPORT (MONTHLY)	REPORT (ANNUAL)	ALARM INSTRUCTION	MAINTENANCE MESSAGE	OUTSIDE AIR FAN	AIR HANDLING UNIT	TERMINAL UNIT SUMMARY	AFD DETAIL	DYNAMIC CHARTING	NOTES
OAF-9																																			X					GRAPHIC SCREEN FOR OAF
FAN START STOP			1																	X														X					
FAN STATUS	1									X																		X					X	X					
FAN SPEED				1																				X		X	X							X					
OUTSIDE AIR DAMPER (D-9)			1																															X					NORMALLY CLOSED, SPRING RETURN
TOTAL OA FLOW		1																																X					
TOTAL OA FLOW SETPOINT						X		X																X	X									X					
OA FLOW		5																																X					AHUs - 1, 2, 3, 4, 5, 6
OA FLOW SETPOINT							X	X	2500 CFM																									X					AHUs - 2, 3, 4, 5, 6, 8
OA FLOW SETPOINT							X	X	3000 CFM																									X					AHU-1
OA FLOW SETPOINT							X	X	2700 CFM																									X					AHU-7
OA FLOW					X																													X					FROM AHU-3, AHU-7, & AHU-8
OA DAMPER POSITION				5																														X					FLOORS 1,2,4,5,6
OA DAMPER POSITION					X																													X					FROM AHU-3 , AHU-7, & AHU-8
	1	6	2	6																																			
	2	7	3	7																																				

BAS OBJECT POINTS LIST (SF-5)

	POINTS								APPLICATIONS																						REPORTS / MESSAGES						GRAPHIC SCREEN					
	PHYSICAL				VIRTUAL				ALARMS						TRENDS				PROGRAMS			CONTROL LOOP																		
	INPUT		OUTPUT																																					
	BINARY	ANALOG	BINARY	ANALOG	INTEROPERABLE	CALCULATED	SETPOINT	USER ADJUSTABLE	INITIAL OR DEFAULT VALUE	BINARY ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM	AUTO RESET	MANUAL RESET	TREND (CHANGE OF VALUE)	TREND (SAMPLE INTERVAL)	C.O.V. or SAMPLE INTERVAL	SCHEDULING	WEEKLY TESTING	OPERATOR OVERRIDE	SETPOINT RESET PROGRAM	DIRECT ACTING	REVERSE ACTING	PROPORTIONAL CONTROL	INTEGRAL CONTROL	DERIVATIVE CONTROL	ALARM LOG (REPORT DAILY)	REPORT (DAILY)	REPORT (WEEKLY)	REPORT (MONTHLY)	REPORT (ANNUAL)	ALARM INSTRUCTION	MAINTENANCE MESSAGE	OUTSIDE AIR FAN	AIR HANDLING UNIT	TERMINAL UNIT SUMMARY	AFD DETAIL	DYNAMIC CHARTING	NOTES
SF-5																																			X					GRAPHIC SCREEN FOR OAF
FAN START STOP			1																	X														X					
FAN STATUS	1									X																		X					X	X					
	1	#	1	#																																			
	2	0	2	0																																				

SEQUENCE OF OPERATION (SF - 5)

SUPPLY FAN:

1. GENERAL
   a. THE SUPPLY FAN SHALL BE CONTROLLED BY A UL-864 LISTED SMOKE CONTROL PANEL. SEQUENCE OF OPERATION SHALL NOT RELY ON A COMMUNICATION INTERFACE WITH A REMOTE PANEL; ALL CONTROL LOGIC SHALL RESIDE IN CONTROL PANEL SERVING EQUIPMENT..
2. SUPPLY FAN
   a. START/STOP: START/STOP OF THE SUPPLY FAN SHALL BE CONTROLLED THROUGH A MOTOR RATED CONTACTOR. ENABLE THE SUPPLY FANS ON SIGNAL FROM FIRE ALARM CONTROL PANEL, BASED ON DETECTION OF SMOKE IN THE ELEVATOR MACHINE ROOM. (THE SMOKE DETECTORS IN THE ELEVATOR MACHINE ROOM ARE CONNECTED TO THE DIGITAL ADDRESSABLE FIRE ALARM CONTROL PANEL.)
   b. STATUS: SUPPLY FAN OPERATION SHALL BE PROVED THROUGH A CURRENT SWITCH. UPON FAILURE, THE BAS SHALL ANNUNCIATE ONE OF THE FOLLOWING ALARMS:
      1. SUPPLY FAN FAILURE; IF THE FAN IS COMMANDED ON, BUT THE STATUS IS OFF.
      2. SUPPLY FAN IN HAND MODE; IF THE FAN IS COMMANDED OFF, BUT THE STATUS IS ON.

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H2E PROJECT No. 1109

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BARNETT FRONCZAK BARLOWE ARCHITECTS

Leon County
Courthouse Annex
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Pressurization

12062 — Project Code
Drawn By: RCT
Checked By: SRD

27 April 2012 — Date

Construction
Documents

Revisions

CONTROLS - MECHANICAL

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M701

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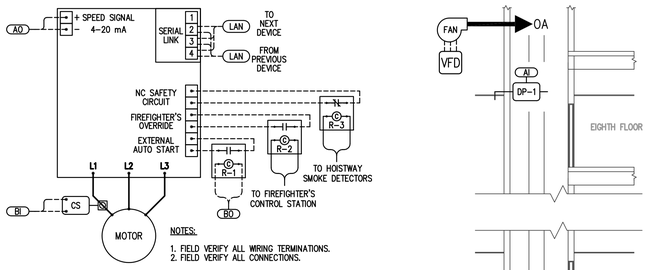
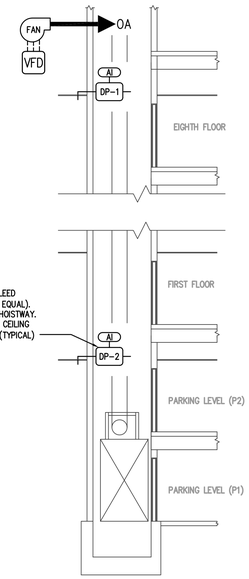
CONTROL SCHEMATICS (ELEVATOR PRESSURIZATION SYSTEM)

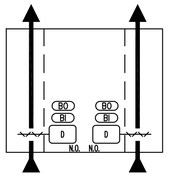


NOTES:
1. FIELD VERIFY ALL WIRING TERMINATIONS.
2. FIELD VERIFY ALL CONNECTIONS.

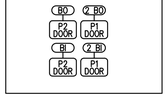
VARIABLE FREQUENCY DRIVE – WIRING DETAIL



EBTRON GOLD SERIES BLEED SENSOR (OR APPROVED EQUAL). LOCATE DP SENSOR IN HOISTWAY. LOCATE DISPLAY ABOVE CEILING OUTSIDE OF HOISTWAY. (TYPICAL)

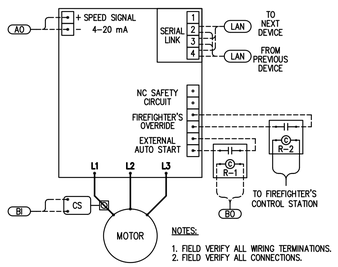


ELEVATOR MACHINE ROOM



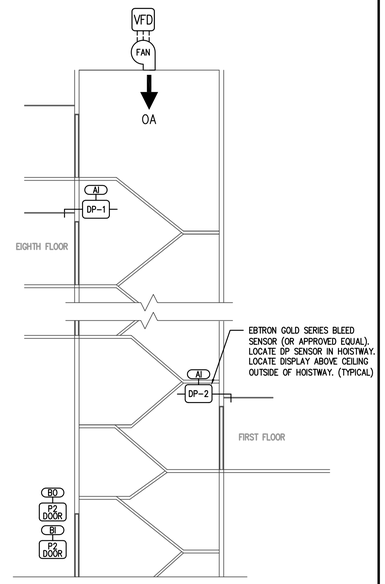
ELEVATOR LOBBY

CONTROL SCHEMATICS (STAIRWELL PRESSURIZATION SYSTEM)



NOTES:
1. FIELD VERIFY ALL WIRING TERMINATIONS.
2. FIELD VERIFY ALL CONNECTIONS.

VARIABLE FREQUENCY DRIVE – WIRING DETAIL



EBTRON GOLD SERIES BLEED SENSOR (OR APPROVED EQUAL). LOCATE DP SENSOR IN HOISTWAY. LOCATE DISPLAY ABOVE CEILING OUTSIDE OF HOISTWAY. (TYPICAL)

SEQUENCE OF OPERATION (ELEVATOR PRESSURIZATION SYSTEM)

ELEVATOR PRESSURIZATION FAN SYSTEMS:

1. GENERAL
   a. THE ELEVATOR PRESSURIZATION FAN SYSTEM SHALL BE CONTROLLED BY A UL-864 LISTED SMOKE CONTROL PANEL. SEQUENCE OF OPERATION SHALL NOT RELY ON A COMMUNICATION INTERFACE WITH A REMOTE PANEL; ALL CONTROL LOGIC SHALL RESIDE IN CONTROL PANEL SERVING EQUIPMENT.
2. SUPPLY FAN
   a. START/STOP: START/STOP OF THE SUPPLY FANS SHALL BE THROUGH THE VARIABLE FREQUENCY DRIVE (VFD), FROM BOTH THE H-O-A SWITCH AND THE FIREFIGHTER'S OVERRIDE. ENABLE THE SUPPLY FANS ON SIGNAL FROM FIRE ALARM CONTROL PANEL. (THE SMOKE DETECTORS IN THE ELEVATOR LOBBIES ARE CONNECTED TO THE DIGITAL ADDRESSABLE FIRE ALARM CONTROL PANEL.)
   b. STATUS: SUPPLY FAN OPERATION SHALL BE PROVED THROUGH A CURRENT SWITCH. UPON FAILURE, THE BAS SHALL ANNUNCIATE ONE OF THE FOLLOWING ALARMS:
      1. SUPPLY FAN FAILURE: IF THE FAN IS COMMANDED ON, BUT THE STATUS IS OFF.
      2. SUPPLY FAN IN HAND MODE: IF THE FAN IS COMMANDED OFF, BUT THE STATUS IS ON.
   c. SPEED: ONCE ENABLED, THE VFD SHALL RAMP THE SUPPLY FAN SPEED TO OPERATING SETPOINT OVER A 60 SECOND TIME DELAY (PROGRAM RAMP TIME IN VFD). MODULATE FAN SPEED TO MAINTAIN A DIFFERENTIAL PRESSURE SETPOINT, AS MEASURED ACROSS THE ELEVATOR HOISTWAY DOORS. CONTROL TO MOST DEMANDING READING.
3. ELEVATOR VENT DAMPERS
   a. ENABLE/DISABLE: IF SMOKE IS DETECTED IN THE HOISTWAY (DETECTOR PROVDED BY OTHERS), OPEN THE ASSOCIATED VENT DAMPER. IF THE SUPPLY FAN IS OPERATING OR IF THE SMOKE IS NOT DETECTED IN THE HOISTWAY, THEN CLOSE THE ASSOCIATED VENT DAMPER.
   b. STATUS: DAMPER POSITION SHALL BE PROVED THROUGH AN END SWITCH.
4. ELEVATOR LOBBY DOORS
   a. ENABLE/DISABLE: IF THE SUPPLY FANS ARE OPERATING, OPEN THE ELEVATOR LOBBY DOORS. ELSE, THE DOORS SHALL BE CLOSED.
   b. STATUS: DOOR POSITION SHALL BE PROVED THROUGH AN AUXILIARY CONTACT ON THE AUTOMATIC DOOR OPENER.
5. SAFETIES
   a. SMOKE DETECTOR(S) ARE PROVIDED BY OTHERS BUT SHALL BE WIRED TO AN AUXILIARY CONTACT ON THE VFD TO SHUT DOWN THE FAN(S) UPON DETECTION OF SMOKE IN ITS RESPECTIVE HOISTWAY. UPON DETECTION OF SMOKE, THE ASSOCIATED VENT DAMPER SHALL OPEN.

BAS OBJECT POINTS LIST (ELEVATOR HOISTWAY PRESSURIZATION FANS)

	POINTS									APPLICATIONS																							REPORTS / MESSAGES										GRAPHIC SCREEN					
	PHYSICAL				VIRTUAL					ALARMS							TRENDS			PROGRAMS			CONTROL LOOP																							
	INPUT		OUTPUT																																											
	BINARY	ANALOG	BINARY	ANALOG	INTEROPERABLE	CALCULATED	SETPOINT	USER ADJUSTABLE	INITIAL OR DEFAULT VALUE	BINARY ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM	AUTO RESET	MANUAL RESET	TREND (CHANGE OF VALUE)	TREND (SAMPLE INTERVAL)	C.O.V. or SAMPLE INTERVAL	SCHEDULING	WEEKLY TESTING	SEQUENCING	OPERATOR OVERRIDE	SETPOINT RESET PROGRAM	DIRECT ACTING	REVERSE ACTING	PROPORTIONAL CONTROL	INTEGRAL CONTROL	DERIVATIVE CONTROL	ALARM LOG (REPORT DAILY)	REPORT (DAILY)	REPORT (WEEKLY)	REPORT (MONTHLY)	REPORT (ANNUAL)	ALARM INSTRUCTION	MAINTENANCE MESSAGE	ELEVATOR PRESSURIZATION PLAN						NOTES
SF-3, SF-4																																					X						
FAN START STOP			2																	x										x					X						
FAN STATUS	2																			x										x					X						
FAN SPEED				2																x				X	X	X	X			x					X						
DIFFERENTIAL PRESSURE		4																		x										x					X					2 PER ELEVATOR HOISTWAY; LOCATE AT LEVEL P2 AND FLOOR 8	
DIFFERENTIAL PRESSURE SETPOINT							X	X	0.04" WC																											X						
EXTERIOR DOOR OPEN			3																	x										x					X					1 VESTIBULE DOOR ON LEVEL P2; 1 VESTIBULE DOOR EACH SIDE ON LEVEL P1 (2 TOTAL)	
EXTERIOR DOOR POSITION FEEDBACK	3																			x										x					X					1 VESTIBULE DOOR ON LEVEL P2; 1 VESTIBULE DOOR EACH SIDE ON LEVEL P1 (2 TOTAL)	
VENT DAMPER (ELEVATORS 1 & 2)	1		1																	x										x										NORMALLY OPEN / SPRING RETURN	
VENT DAMPER (ELEVATOR 3)	1		1																	x										x										NORMALLY OPEN / SPRING RETURN	
	7	4	7	2																																							
	8	5	8	3																																							

BAS OBJECT POINTS LIST (STAIRWELL PRESSURIZATION FANS)

	POINTS									APPLICATIONS																							REPORTS / MESSAGES										GRAPHIC SCREEN					
	PHYSICAL				VIRTUAL					ALARMS							TRENDS			PROGRAMS				CONTROL LOOP																							
	INPUT		OUTPUT																																											
	BINARY	ANALOG	BINARY	ANALOG	INTEROPERABLE	CALCULATED	SETPOINT	USER ADJUSTABLE	INITIAL OR DEFAULT VALUE	BINARY ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM	AUTO RESET	MANUAL RESET	TREND (CHANGE OF VALUE)	TREND (SAMPLE INTERVAL)	C.O.V. or SAMPLE INTERVAL	SCHEDULING	WEEKLY TESTING	SEQUENCING	OPERATOR OVERRIDE	SETPOINT RESET PROGRAM	DIRECT ACTING	REVERSE ACTING	PROPORTIONAL CONTROL	INTEGRAL CONTROL	DERIVATIVE CONTROL	ALARM LOG (REPORT DAILY)	REPORT (DAILY)	REPORT (WEEKLY)	REPORT (MONTHLY)	REPORT (ANNUAL)	ALARM INSTRUCTION	MAINTENANCE MESSAGE	STAIRWELL PRESSURIZATION PLAN						NOTES
SF-1, SF-2																																					X						
FAN START STOP			2																	x										x					X						
FAN STATUS	2																			x										x					X						
FAN SPEED				2																x				X	X	X	X			x					X						
DIFFERENTIAL PRESSURE		4																		x										x					X					2 PER STAIRWELL; LOCATE AT FLOORS 1 AND 8	
DIFFERENTIAL PRESSURE SETPOINT							X	X	0.05" WC																											X						
EXTERIOR DOOR OPEN			2																	x										x					X					ONLY FOR STAIR #2 NOW; FOR STAIR #1 IN FUTURE	
EXTERIOR DOOR POSITION FEEDBACK	2																			x										x					X					ONLY FOR STAIR #2 NOW; FOR STAIR #1 IN FUTURE	
	4	4	4	2																																							
	5	5	5	3																																							

SEQUENCE OF OPERATION (STAIRWELL PRESSURIZATION FANS)

STAIRWELL PRESSURIZATION FAN SYSTEM:

1. GENERAL
   a. THE STAIRWELL PRESSURIZATION FAN SYSTEM SHALL BE CONTROLLED BY A UL-864 LISTED SMOKE CONTROL PANEL. SEQUENCE OF OPERATION SHALL NOT RELY ON A COMMUNICATION INTERFACE WITH A REMOTE PANEL; ALL CONTROL LOGIC SHALL RESIDE IN CONTROL PANEL SERVING EQUIPMENT..
2. SUPPLY FAN
   a. START/STOP: START/STOP OF THE SUPPLY FANS SHALL BE THROUGH THE VARIABLE FREQUENCY DRIVE (VFD), FROM BOTH THE H-O-A SWITCH AND THE FIREFIGHTER'S OVERRIDE. ENABLE THE SUPPLY FANS ON SIGNAL FROM FIRE ALARM CONTROL PANEL. (THE SMOKE DETECTORS IN THE CORRIDORS OUTSIDE THE STAIRWELL SHAFTS ARE CONNECTED TO THE DIGITAL ADDRESSABLE FIRE ALARM CONTROL PANEL.)
   b. STATUS: SUPPLY FAN OPERATION SHALL BE PROVED THROUGH A CURRENT SWITCH. UPON FAILURE, THE BAS SHALL ANNUNCIATE ONE OF THE FOLLOWING ALARMS:
      1. SUPPLY FAN FAILURE: IF THE FAN IS COMMANDED ON, BUT THE STATUS IS OFF.
      2. SUPPLY FAN IN HAND MODE: IF THE FAN IS COMMANDED OFF, BUT THE STATUS IS ON.
   c. SPEED: ONCE ENABLED, THE VFD SHALL RAMP THE SUPPLY FAN SPEED TO OPERATING SETPOINT OVER A 60 SECOND TIME DELAY (PROGRAM RAMP TIME IN VFD). MODULATE FAN SPEED TO MAINTAIN A DIFFERENTIAL PRESSURE SETPOINT, AS MEASURED ACROSS THE STAIRWELL DOORS. CONTROL TO MOST DEMANDING READING.
3. LEVEL P2 STAIRWELL DOORS
   a. ENABLE/DISABLE: IF THE SUPPLY FANS ARE OPERATING, OPEN THE P2 LEVEL DOOR. ELSE, THE DOOR SHALL BE CLOSED.
   b. STATUS: DOOR POSITION SHALL BE PROVED THROUGH AN AUXILIARY CONTACT ON THE AUTOMATIC DOOR OPENER.

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Scott R. Drury, P.E. #59845

BARNETT FRONCZAK BARLOWE ARCHITECTS

Leon County Courthouse Annex (Bank of America) Stair & Elevator Pressurization

12062 Drawn By: RCT
Project Code Checked By: SRD

27 April 2012
Date

Construction Documents

Revisions

CONTROLS - MECHANICAL

Tallahassee Florida

M702

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