

ABBREVIATIONS

Table of abbreviations for mechanical systems, including terms like ARCHITECT / ENGINEER, AIR TO AIR HEAT EXCHANGER, AIR BLENDER, etc.

ABBREVIATIONS

Table of abbreviations for electrical and general systems, including terms like EXISTING, EXHAUST AIR, ENTERING AIR TEMPERATURE, etc.

ABBREVIATIONS

Table of abbreviations for fluid and energy systems, including terms like INPUT/OUTPUT, INDOOR AIR QUALITY, INVERTED BUCKET TRAP, etc.

ABBREVIATIONS

Table of abbreviations for pressure and flow systems, including terms like PUMP, PASCAL, PUMPED CONDENSATE, etc.

ABBREVIATIONS

Table of abbreviations for ventilation and control systems, including terms like SUPPLY AIR, SOUND ATTENUATING DEVICE, UNIT COOLER, etc.

MECHANICAL SHEET INDEX

Index table listing sheet numbers and titles, such as MM001 MECHANICAL COVER SHEET, MD101 HVAC DEMOLITION PLAN - FIRST FLOOR, etc.

GENERAL NOTES

- List of general notes regarding piping, ductwork, and equipment installation, including note 1: ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED...

SEISMIC BRACING NOTES

- Notes regarding seismic bracing requirements, including note 1: SOME MECHANICAL AND PLUMBING COMPONENTS OF THIS BUILDING REQUIRE SEISMIC BRACING...

CONSULTANTS:

Table for listing consultants, with a single entry for P.E.C.

ARCHITECT/ENGINEERS:

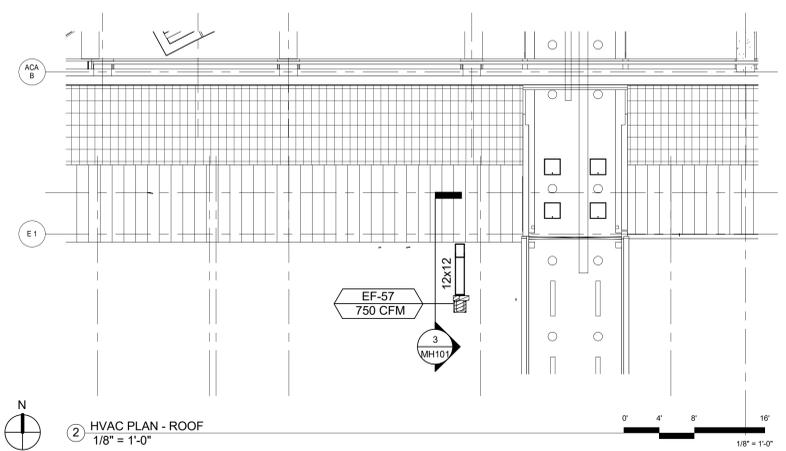
Logos for ARCHITECT/ENGINEERS (m H I T E C T U R E) and P.E.C. PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

Project information block containing Drawing Title (MECHANICAL COVER SHEET), Project Title (RENOVATE MAIN LOBBY), Project Number (589-334), Location (Columbia, Missouri), Date (04/03/2018), and Drawing Number (MM001).

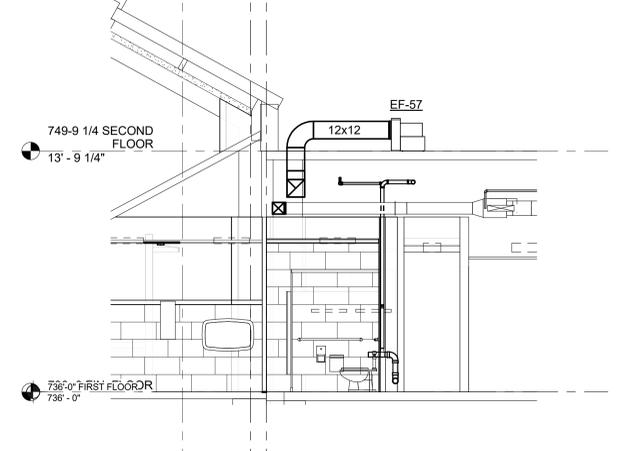
Office of Construction and Facilities Management logo and Department of Veterans Affairs logo.

Vertical scale markings on the left margin, ranging from 0 to 16 feet.

three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot

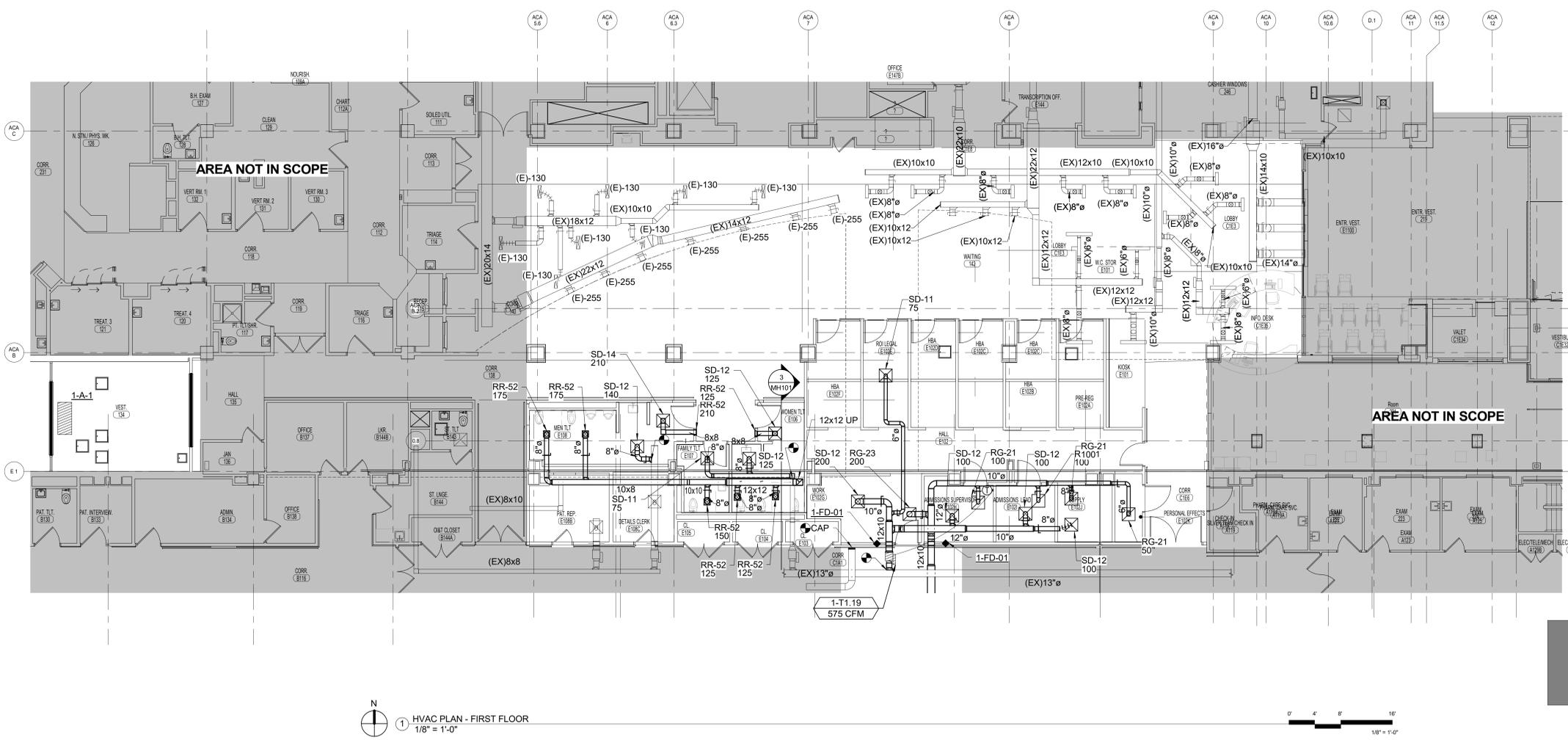


2 HVAC PLAN - ROOF
 1/8" = 1'-0"



3 RESTROOM EXHAUST LOOKING EAST
 1/4" = 1'-0"

- GENERAL NOTES**
- ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.
 - THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES ARE NET INSIDE DIMENSIONS.
 - ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.
 - TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
 - FOR TYPICAL STEAM AND WATER PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD EQUIPMENT DETAILS.
 - DIFFUSER, REGISTER, AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
 - WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
 - REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.
 - SEISMIC PROVISIONS - SEE SPECS. ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.
 - SIZES OF ALL HWS & HWR RUNOUTS TO TERMINAL UNITS CAN BE FOUND ON THE EQUIPMENT SCHEDULES.
 - THIS CONTRACTOR IS RESPONSIBLE FOR SUBMITTING FULL COORDINATION AND LAYOUT DRAWINGS PER SPECIFICATIONS SECTION 230511, 1.4 (G). COORDINATION SHOULD BE COMPLETED WITH ALL TRADES INCLUDED. CONSTRUCTION SHALL NOT BEGIN UNTIL COORDINATION DRAWINGS HAVE BEEN REVIEWED BY THE ENGINEER AND COR.
 - TAB CONTRACTOR SHALL BALANCE EXISTING GRILLES USING AIRFLOWS DETERMINED IN TAB PRE-BALANCE REPORT (SEE DEMO DRAWINGS).



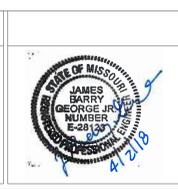
1 HVAC PLAN - FIRST FLOOR
 1/8" = 1'-0"



KEY PLAN LEVEL 1
 1" = 80'-0"

Revisions:	Date

CONSULTANTS:



ARCHITECT/ENGINEERS:

M H E G
 ARCHITECTURE

PEC
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

Drawing Title
HVAC FLOOR PLANS

Approved: Project Director

Project Title
RENOVATE MAIN LOBBY

Project Number
589-334

Building Number

Drawing Number
MH101

Dwg.

Location
Columbia, Missouri

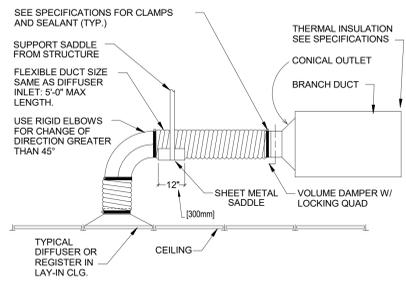
Date
04/03/2018

Checked
BOH

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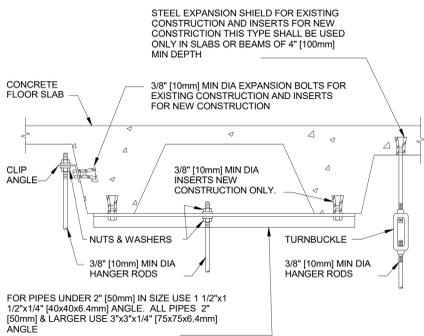
Office of
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 and Facilities
 Management

Department of
 Veterans Affairs



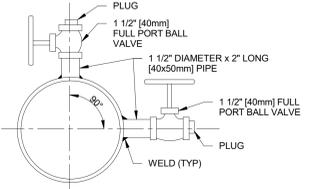
9 FLEXIBLE AIR DUCT CONNECTOR

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10 SECURING HANGER RODS IN CONCRETE

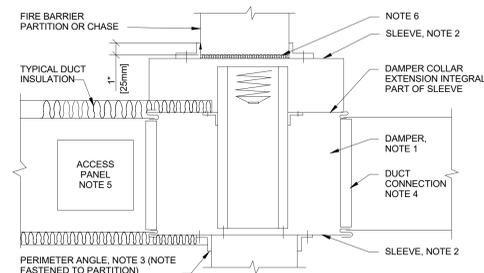
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- NOTE:**
- PROVIDE IN CHILLED WATER MAIN AND IN CONDENSER WATER MAIN.
 - LOCATE PILOT TUBE TAPS 20 PIPE DIAMETERS DOWNSTREAM AND 10 PIPE DIAMETERS UPSTREAM FROM THE NEAREST PIPE FITTING.
- EITHER TOP OR SIDE LOCATION. BOTH ARE NOT REQUIRED AT SAME LOCATION.

11 PITOT TEST CONNECTIONS

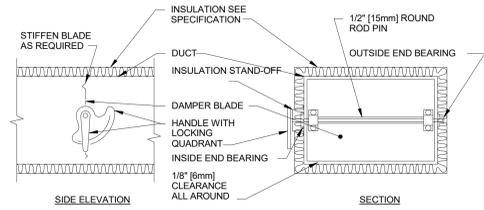
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- NOTE:**
- A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION, IS SIMILAR. FOLLOW DAMPER MANUFACTURER'S INSTRUCTIONS, INCLUDING FASTENER OPTIONS AND GAGES FOR SLEEVE AND PERIMETER ANGLES. FIRE DAMPERS MUST BE INSTALLED IN THE PARTITION OR FLOOR AND NOT OUTSIDE THE PENETRATION.
 - GALVANIZED SLEEVE, GAGE NOT LESS THAN CONNECTING DUCT. FASTEN SLEEVE TO DAMPER FRAME AND TO PERIMETER ANGLES.
 - PERIMETER ANGLES: GALVANIZED STEEL, NOT LESS THAN 1 1/2"x1 1/2" [40x40mm], 14 GAGE, TO PROVIDE 1" [25mm] MINIMUM OVERLAP OF OPENING ON ALL 4 SIDES.
 - BREAKAWAY DUCT CONNECTION: CONTRACTOR'S OPTION OF TYPES SHOWN IN SMACNA. ACCESS PANELS: SIZE AND LOCATION TO PERMIT SERVICING THE FUSIBLE LINK OR LINKS.

6 SECTION THRU FIRE DAMPER INSTALLATION

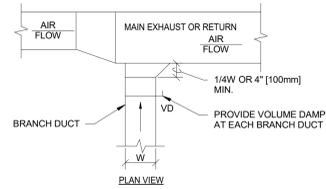
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- NOTE:**
- DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
 - DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

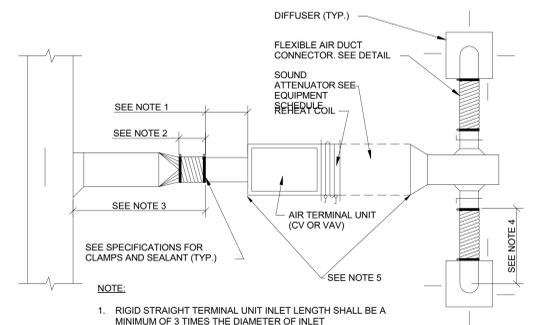
7 VOLUME DAMPER DETAIL

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8 EXHAUST OR RETURN BRANCH DUCTWORK

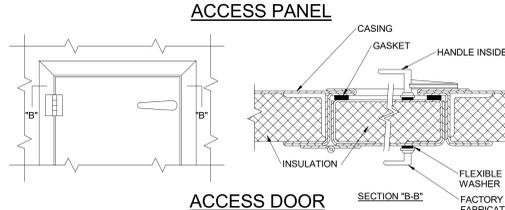
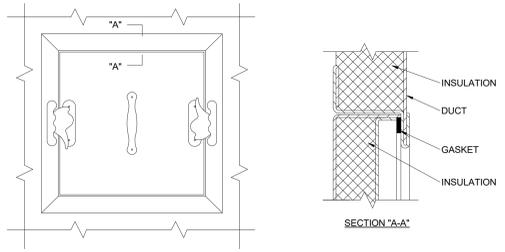
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- NOTE:**
- RIGID STRAIGHT TERMINAL UNIT INLET SHALL BE A MINIMUM OF 3 TIMES THE DIAMETER OF INLET.
 - A FLEXIBLE AIR DUCT CONNECTOR IS NOT MANDATORY FOR INLET TO THIS BOX, BUT ALLOWED TO ACCOMMODATE MINOR OFFSETS. MAXIMUM LENGTH 3'-0" [900mm].
 - A BRANCH DUCT SERVING AN INDIVIDUAL BOX MAY BE THE SAME SIZE AS THE BOX INLET, PROVIDED THE EQUIVALENT LENGTH OF THE BRANCH DUCT, AS SHOWN, DOES NOT EXCEED 10 FEET (3 METERS). FOR LONGER LENGTHS, INCREASE THE DUCT SIZE AND PROVIDE A DUCT TRANSITION TO MAINTAIN THE DUCT STATIC PRESSURE DROP AT OR BELOW 0.2" [100] [1.64Pa/m].
 - FLEXIBLE AIR DUCT CONNECTORS, WHEN USED FROM TERMINAL UNIT SUPPLY AIR DUCT TO DIFFUSER, SHALL NOT EXCEED 5'-0" [1500mm]. USE RIGID ELBOWS FOR CHANGE OF DIRECTION GREATER THAN 45°.
 - COMPONENT ARRANGEMENT MAY VARY BY MANUFACTURER. PROVIDE INSULATION W/APOR BARRIER FOR CONNECTING DUCT SECTIONS.
 - USE OF THE FLEXIBLE AIR DUCT CONNECTORS ARE NOT PERMITTED FOR THE DEDICATED AHU SERVING THE SURGICAL SUITE.

4 DUCT CONNECTIONS - AIR TERMINAL UNITS

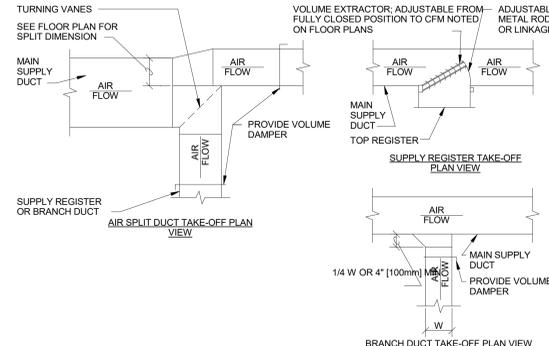
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- NOTES:**
- LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
 - HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
 - SEE SMACNA 2005, FIGURE 9-15

5 ACCESS PANEL AND DOOR DETAIL

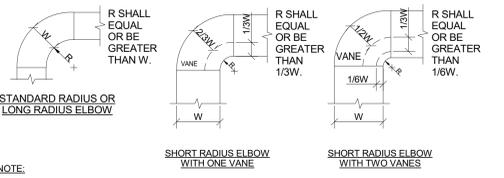
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1 SUPPLY DUCTWORK TAKE-OFFS

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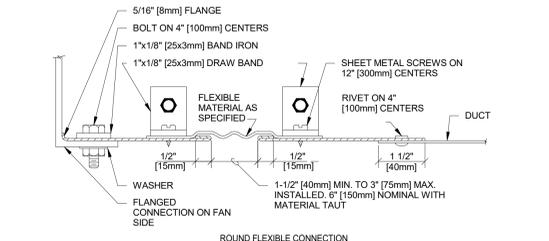
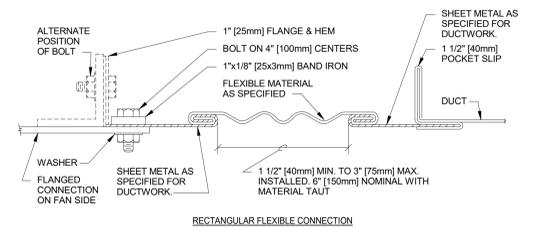
- DESIGNER'S NOTES:**
- THE SUPPLY REGISTER TAKE-OFF MAY BE USED FOR UP TO 25% OF THE MAIN DUCT CFM. THE BRANCH DUCT TAKE-OFF MAY BE USED FOR UP TO 15% OF THE MAIN DUCT CFM ANYTIME AND UP TO 40% WHEN THE MAIN DUCT VELOCITY IS 1000 FPM [5.1 M/S] OR LESS. THE AIR SPLIT DUCT TAKE-OFF SHALL BE USED IN ALL OTHER CASES AND MAY BE USED AT ANYTIME.
 - SHOW ALL VOLUME DAMPERS ON FLOOR PLANS.



- NOTE:**
- THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
 - ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

2 DUCTWORK RADIUS ELBOWS

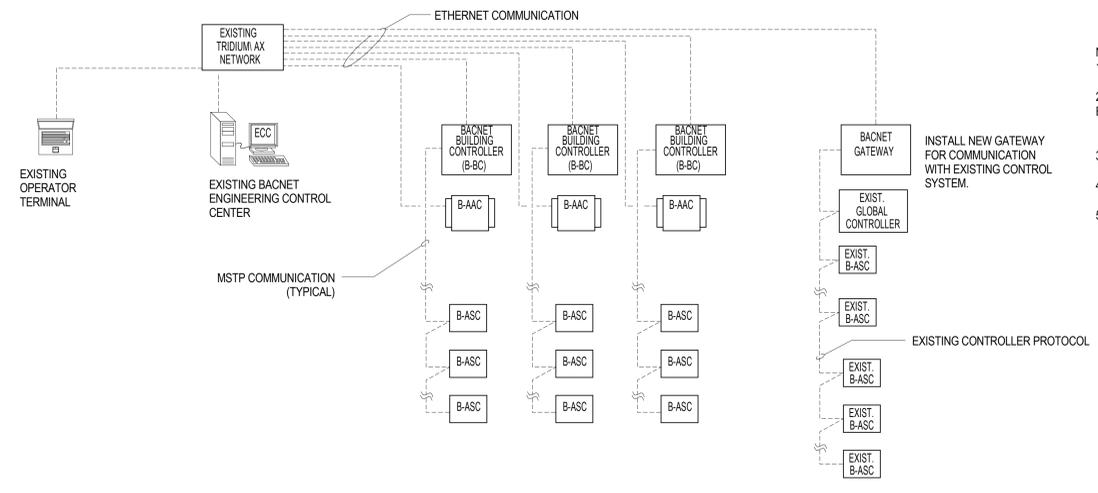
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3 FLEXIBLE DUCT CONNECTIONS

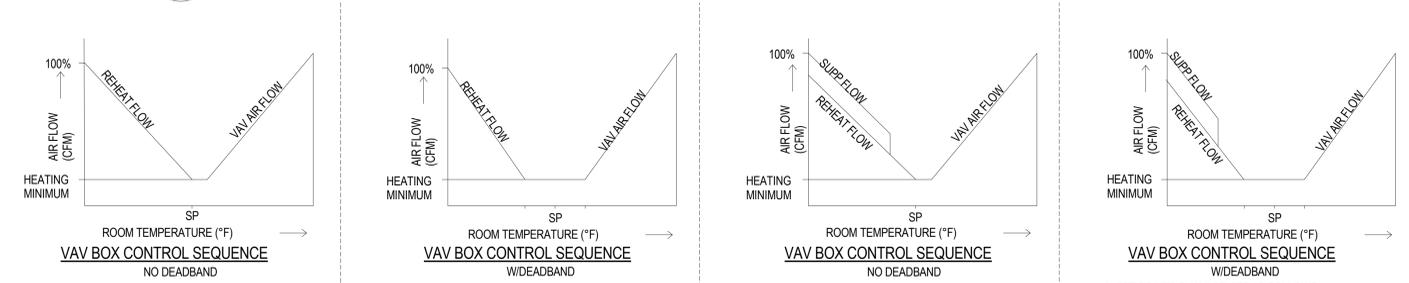
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CONSULTANTS: -		ARCHITECT/ENGINEERS: 		Drawing Title MECHANICAL DETAILS		Project Title RENOVATE MAIN LOBBY		Project Number 589-334		Office of Construction and Facilities Management Department of Veterans Affairs
Revisions: _____ Date _____				Approved: Project Director		Location Columbia, Missouri		Building Number		
						Date 04/03/2018		Drawing Number M-501		

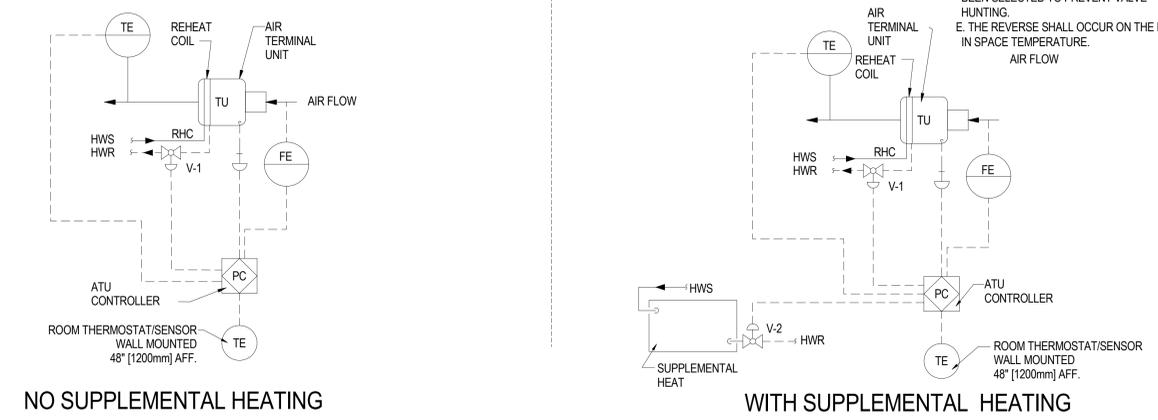


- NOTES:
- EXISTING CONTROLLERS TO REMAIN.
 - INSTALL NEW BACNET GATEWAY OR PANEL WITH FULL COMMUNICATION TO EXISTING CONTROLLERS.
 - INSTALL NEW BACNET COMMUNICATION NETWORK.
 - INSTALL NEW CONTROLLERS (B-AAC/B-ASC) AS REQUIRED.
 - NEW CONTROL PANEL TO BE LOCATED IN CLOSET B340. COORDINATE POWER AND DATA REQUIREMENTS WITH EC.

1 BACNET SYSTEM ARCHITECTURE



- A. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER WILL MODULATE TO MINIMUM POSITION.**
- B. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT $\pm 5^\circ\text{F}$. THE ADJUSTABLE TOLERANCE OF $\pm 5^\circ\text{F}$ HAS BEEN SELECTED TO PREVENT VALVE HUNTING.**
- C. THE REVERSE SHALL OCCUR ON THE RISE IN SPACE TEMPERATURE.**
- A. SET POINTS SHALL BE SET AS FOLLOWS:
COOLING 75°F (ADJ)
HEATING 70°F (ADJ)
DEADBAND OF 5°F BETWEEN HEATING AND COOLING SET POINTS WILL BE MAINTAINED.**
- B. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER WILL MODULATE TO MINIMUM POSITION.**
- C. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT $\pm 5^\circ\text{F}$. THE ADJUSTABLE TOLERANCE OF $\pm 5^\circ\text{F}$ HAS BEEN SELECTED TO PREVENT VALVE HUNTING.**
- D. THE REVERSE SHALL OCCUR ON THE RISE IN SPACE TEMPERATURE.**
- A. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER WILL MODULATE TO MINIMUM POSITION.**
- B. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT $\pm 5^\circ\text{F}$. THE ADJUSTABLE TOLERANCE OF $\pm 5^\circ\text{F}$ HAS BEEN SELECTED TO PREVENT VALVE HUNTING.**
- C. VALVE V-2 SHALL BE ENABLED WHEN OUTSIDE AIR FALLS BELOW 40°F (ADJ) AND VALVE V-1 HAS BEEN MODULATED OPEN ABOVE 30% (ADJ). VALVE V-2 SHALL MAINTAIN SET POINT $\pm 5^\circ\text{F}$. THE ADJUSTABLE TOLERANCE OF $\pm 5^\circ\text{F}$ HAS BEEN SELECTED TO PREVENT VALVE HUNTING. THE REVERSE SHALL OCCUR ON A RISE IN SPACE TEMPERATURE.**
- A. SET POINTS SHALL BE SET AS FOLLOWS:
COOLING 75°F (ADJ)
HEATING 70°F (ADJ)
DEADBAND OF 5°F BETWEEN HEATING AND COOLING SET POINTS WILL BE MAINTAINED.**
- B. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER WILL MODULATE TO MINIMUM POSITION.**
- C. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT $\pm 5^\circ\text{F}$. THE ADJUSTABLE TOLERANCE OF $\pm 5^\circ\text{F}$ HAS BEEN SELECTED TO PREVENT VALVE HUNTING.**
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- E. THE REVERSE SHALL OCCUR ON THE RISE IN SPACE TEMPERATURE.**



2 VARIABLE VOLUME AIR TERMINAL UNIT CONTROL DIAGRAM

CONTROLS SYMBOLS		CONTROLS SYMBOLS	
T	ROOM THERMOSTAT/TRANSMITTER - WALL MOUNT	PSH	PRESSURE SWITCH HIGH
M	ROOM HUMIDISTAT (MOISTURE)/TRANSMITTER - WALL MOUNT	PSL	PRESSURE SWITCH LOW
TT	TEMPERATURE TRANSMITTER	EPT	ELECTRONIC TO PNEUMATIC TRANSDUCER
TT	TEMPERATURE TRANSMITTER, AVERAGING ELEMENT	AT _{CO2}	CARBON DIOXIDE TRANSMITTER
MT	MOISTURE (HUMIDITY) TRANSMITTER	AT _{CO}	CARBON MONOXIDE TRANSMITTER
PT	PRESSURE TRANSMITTER	AT _{OC}	OCCUPANCY SENSOR
SPS	STATIC PRESSURE SENSOR	LTCP	LOCAL TEMPERATURE CONTROL PANEL
FT	FLOW TRANSMITTER	HVAC	HVAC CONTROL PANEL
IT	CURRENT TRANSMITTER	VSMC	VARIABLE SPEED MOTOR CONTROLLER
CT	CONDUCTIVITY TRANSMITTER	MC	MOTOR CONTROLLER
SD	SMOKE DETECTOR	ECC	INTEGRATE CONTROL POINT ON REMOTE GRAPHICS WORKSTATION AT ENERGY CONTROL CENTER
POT	PRESSURE DIFFERENTIAL TRANSMITTER	TC	TEMPERATURE CONTROLLER. SEE SEQUENCE OF OPERATION
PDS	PRESSURE DIFFERENTIAL SWITCH	PC	PRESSURE CONTROLLER. SEE SEQUENCE OF OPERATION
HS	HAND SWITCH (HAND-OFF-AUTO SWITCH)	SC	SPEED CONTROLLER. SEE SEQUENCE OF OPERATION
ZC	VALVE OR DAMPER POSITION CONTROLLER	FC	FLOW CONTROLLER. SEE SEQUENCE OF OPERATION
KR	LOCAL RECORDING TIME CLOCK (RUNTIME)	FSH	FLOW SWITCH HIGH
TSL	TEMPERATURE SWITCH, LOW (FREEZE/STAT)	FSL	FLOW SWITCH LOW
TSH	TEMPERATURE SWITCH, HIGH (FREEZE/STAT)	KC	TIME CLOCK CONTROLLING EQUIPMENT ON A SCHEDULE
LC	LEVEL CONTROLLER		
LT	LEVEL TRANSMITTER		

CONTROLS SYMBOLS	
	TEMPERATURE SENSING ELEMENT FOR TRANSMITTING TEMPERATURE TO EMCS (PROVIDE 12 INCHES [200mm] MINIMUM LENGTH IN DUCT WHEN SPACE PERMITS.)
	SENSOR WITH AVERAGING ELEMENT TO TRANSMIT TEMPERATURE TO EMCS
	ELECTRIC OPERATED CONTROL DAMPER/OR VALVE
	MOTOR STARTER

CONSULTANTS: -		ARCHITECT/ENGINEERS: 		Drawing Title MECHANICAL CONTROL DIAGRAMS		Project Title RENOVATE MAIN LOBBY		Project Number 589-334		Office of Construction and Facilities Management
Revisions: _____ Date _____				Approved: Project Director		Location Columbia, Missouri		Building Number		
						Date 04/03/2018		Drawing Number M-511		
						Checked BOH		Drawn AR		

HVAC DESIGN DATA												
DESIGN CONDITIONS	SUMMER				WINTER				LOWEST AVERAGE ANNUAL DEWPOINT			
	TEMP		WET BULB TEMP		TEMP		DEWPOINT TEMP				% HUMIDITY	
	°F	[°C]	°F	[°C]	°F	[°C]	°F	[°C]	%		°F	[°C]
OUTDOOR DESIGN CONDITIONS	91.6	33.1	75.9	24.4	49	1.3	-17.1	0	-17.8	NA	-5.8	-21
INDOOR AREA DESIGN CONDITIONS												
CORRIDOR	75	23.9	62	16.7	50	70	21.1	53.9	12.2	30		
TOILETS - INTERIOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
LOUNGE	75	23.9	62	16.7	50	70	21.1	52.9	11.6	30		

FIRE DAMPER SCHEDULE								
MARK	LOCATION	FAN SYSTEM	SYSTEM AND/OR SERVICE	DUCT SIZE		DUCT PRESSURE CLASS	REMARKS	
				IN	[mm]			
1-FD-01	CORR.	EXIST.		12" x 10"	304 x 254	2"	488	1-1/2 HR. RATING

AIR DEVICE SCHEDULE (SUPPLY)																
MARK	TYPE	AIR FLOW				MAX APD		MOUNTING	PANEL/FRAME SIZE		NECK SIZE		NC	DAMPER	FINISH	REMARKS
		MIN		MAX		IN WG	[Pa]		IN x IN	[mm x mm]	IN	[mm]				
		CFM	[L/s]	CFM	[L/s]											
SD-11	LOUVERED FACE	40	19	100	76	0.080	20	CEILING	24 x 24	[600 x 600]	6 ø	[152 ø]	25	NONE	WHITE	---
SD-12	LOUVERED FACE	70	33	280	130	0.100	25	CEILING	24 x 24	[600 x 600]	8 ø	[203 ø]	25	NONE	WHITE	---
SD-14	LOUVERED FACE	160	76	470	220	0.080	20	CEILING	24 x 24	[600 x 600]	12 ø	[305 ø]	22	NONE	WHITE	---
SD-63	GRILLE	125	71	300	140	0.090	23	DUCT MOUNTED	12 x 12	[305 x 305]	10 x 10	[254 x 254]	18	NONE	WHITE	---

NOTES
1. SEE FLOOR PLAN FOR THROW PATTERN. 4-WAY TYPICAL UNLESS OTHERWISE NOTED.
2. SEE DETAIL FOR DAMPER IN BRANCH DUCT SERVING EACH DIFFUSER.
3. PROVIDE SQUARE TO ROUND ADAPTER.

AIR DEVICE SCHEDULE (RETURN/EXHAUST)																
MARK	TYPE	AIR FLOW				MAX APD		MOUNTING	PANEL/FRAME SIZE		NECK SIZE		NC	DAMPER	FINISH	REMARKS
		MIN		MAX		IN WG	[Pa]		IN x IN	[mm x mm]	IN x IN	[mm x mm]				
		CFM	[L/s]	CFM	[L/s]											
RG-21	PERFORATED	60	28	100	47	0.088	22.000	CEILING	24 x 24	[600 x 600]	6 DIAM	[152 DIAM]	13	NONE	WHITE	---
RG-23	PERFORATED	170	80	250	120	0.088	22.000	CEILING	24 x 24	[600 x 600]	10 DIAM	[254 DIAM]	14	NONE	WHITE	---
RR-62	RETURN REGISTER	125	59	330	160	0.078	20.000	CEILING	12 x 12	[305 x 305]	10 x 10	[254 x 254]	15	NONE	WHITE	---

NOTE
PROVIDE SQUARE TO ROUND ADAPTER.

FAN SCHEDULE																									
MARK	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	AIR FLOW		TSP		FAN							MOTOR ELECTRICAL					CONTROL SEQUENCE	REMARKS				
				CFM	[L/s]	IN	[Pa]	TYPE	WHEEL	CLASS	ARRANGEMENT, ROTATION, AND DISCHARGE	DIAMETER		MIN % EFF	DRIVE	FAN MAX RPM	NOMINAL POWER		VOLT			PHASE	RPM	SPEED CONTROL	
												IN	[mm]				BHP	HP							[kW]
EF-57	ROOF	LOBBY RR'S	EXHAUST	750	[219]	0.25	[83]	CENTRIFUGAL	-	-	UPBLAST, SIDE INLET VENT SET	7.67"	[195]	30%	DIRECT	1140	0.30	0.5	[0.37]	120	1	1140	1	A	#1

REMARKS
1. PROVIDE UNIT WITH ROOF CURB, BIRD SCREEN & BACK DRAFT DAMPER.
A. EXHAUST FAN SHALL CONTINUOUSLY OPERATE AND SHALL TIE INTO EXISTING BMS SYSTEM.
NOTE:
ALL SELECTIONS ARE BASED ON AN ALTITUDE OF 758 FT.

SINGLE DUCT AIR TERMINAL UNIT SCHEDULE																
MARK	LOCATION	AREA AND/OR ROOM SERVED	SYSTEM AIR HANDLING	SIZE	AIR FLOW				ADDITIONAL SOUND ATTENUATION REQUIRED	CONTROL TYPE	CONTROL SEQUENCE	REHEAT			PERIMETER SUPPLEMENTAL HEAT LINK	REMARKS
					MAX		MIN					HW	ELEC	NONE		
					CFM	[L/s]	CFM	[L/s]								
1-1-19	S LOBBY	S LOBBY OFFICES	(EX) 1-AHU-1	G	575	271	300	142	NONE	VAV	5 DEGREE DEADBAND	X	-	-	---	RECONNECT TO (EX) HYDRONIC RUNOUTS

AIR CURTAIN SCHEDULE											
MARK	LOCATION	NOZZLE WIDTH	MAX FPM AT NOZZLE	CFM AT NOZZLE	HEATER KW	MOTOR HP	VOLTAGE	FLA	WEIGHT	REMARKS	ELEC REF
1A-1	ERVEST.	60"	3750	2217	24	(2) 1/2	4803	32.0	115.0	1.2,3	-

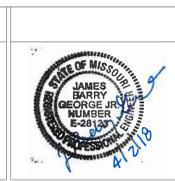
REMARKS
1. CEILING RECESSED
2. NO HEATING OR COOLING
3. MOTOR CONTROL PANEL WITH DOOR LIMIT SWITCH

AIR TERMINAL UNIT SIZING SCHEDULE																											
SIZE	MIN ALLOWABLE AIR FLOW		MAX ALLOWABLE AIR FLOW		DUCT INLET SIZE		MAX APD	MAXIMUM SOUND POWER LEVEL (Re: 10 -12 WATTS) FOR BOX DISCHARGE AT MAXIMUM INLET DUCT STATIC							HOT WATER HEATING COIL					REMARKS							
	CFM	[L/s]	CFM	[L/s]	IN	[mm]		IN WG	[Pa]	OCTAVE BANDS							EAT		EWT		FLOW		MAX WPD		PIPE RUNOUT SIZE TO COIL		
										2	3	4	5	6	7	°F	[°C]	°F	[°C]		GPM	[L/m]	FT	[Pa]	IN	[mm]	
A	60	28	170	80	4	100	0.4	100	69	65	58	52	51	47	55	13	140	60	0.5	1.9	3	9	0.75	19	---		
B	90	42	260	120	5	130	0.4	100	69	63	59	52	51	47	55	13	140	60	0.5	1.9	3	9	0.75	19	---		
C	130	61	380	180	6	150	0.4	100	69	67	61	55	52	49	55	13	140	60	0.7	2.7	4	12	0.75	19	---		
D	160	76	490	230	7	180	0.4	100	70	68	63	57	53	49	55	13	140	60	0.7	2.7	4	12	0.75	19	---		
E	230	110	680	320	8	200	0.4	100	71	68	69	53	51	47	55	13	140	60	1	3.8	3	9	0.75	19	---		
F	270	130	790	370	9	230	0.4	100	71	69	60	54	51	47	55	13	140	60	1.5	5.7	4	12	0.75	19	---		
G	350	170	1050	500	10	250	0.4	100	74	68	61	57	54	52	55	13	140	60	1.5	5.7	4	12	0.75	19	---		
H	500	240	1500	710	12	300	0.4	100	73	69	64	59	57	53	55	13	140	60	2.5	9.5	3	9	0.75	19	---		
I	750	350	2250	1100	14	350	0.4	100	73	68	65	61	61	59	55	13	140	60	3.5	13	4	12	0.75	19	---		
J	1000	470	3000	1400	16	400	0.4	100	73	68	66	60	58	55	55	13	140	60	4.5	17	4	12	1	25	---		

NOTES
1. INLET STATIC BASED ON ARI 885-98.
2. THIS SCHEDULE IS USED WITH THE TERMINAL UNIT SCHEDULE.
3. CONTROL SEQUENCE SHALL BE AS INDICATED ON THE AIR TERMINAL UNIT SCHEDULE.
4. PROVIDE SOUND ATTENUATION AFTER SECTION AS REQUIRED TO MEET ROOM NC LEVEL.

Revisions:	Date

CONSULTANTS:



Drawing Title MECHANICAL SCHEDULES
Approved: Project Director

Project Title RENOVATE MAIN LOBBY
Location Columbia, Missouri
Date 04/03/2018
Checked BOH
Drawn AR

Project Number 589-334
Building Number
Drawing Number M-601
Dwg.

