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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


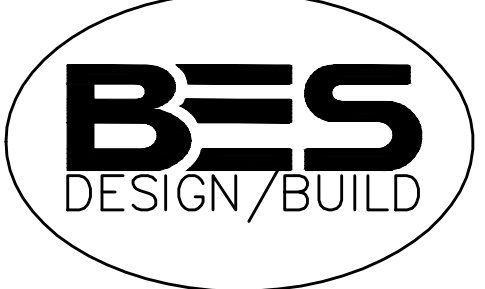
GENERAL NOTES

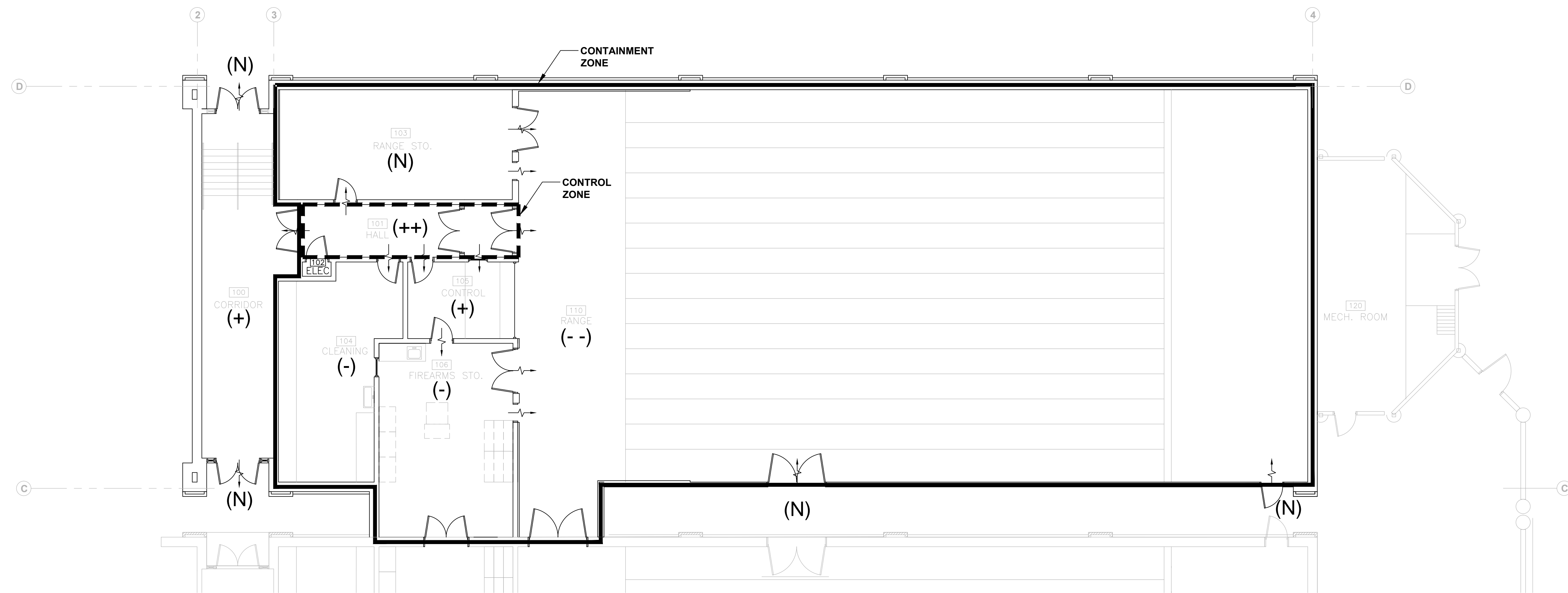
- THE DRAWINGS SHOW THE GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL INSTALLATION W/ THE STRUCTURE AND OTHER TRADES AND SHALL PROVIDE ADDITIONAL OFFSETS AND FITTINGS AS NECESSARY.
- COORDINATE WORK WITH AUTHORITY HAVING JURISDICTION AND OBTAIN ALL PERMITS AND INSPECTIONS.
- THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS SHALL COMPLY WITH THE 2012 EDITION OF THE INTERNATIONAL MECHANICAL CODE, NFPA 90A, AND LOCAL CODE OFFICIAL REQUIREMENTS. IN THE EVENT OF A CONFLICT BETWEEN CODES, THE MOST STRINGENT SHALL ALWAYS GOVERN.
- DUCT DIMENSIONS ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
- THE CONTRACTOR SHALL CHECK AND VERIFY ALL CLEARANCES PRIOR TO FABRICATION OR INSTALLATION OF EQUIPMENT, DUCTWORK, AND PIPING SYSTEMS. WHERE CONDITIONS REQUIRE A CHANGE IN DUCT OR PIPE ROUTING, NOTIFY THE COR FOR AN ACCEPTABLE ALTERNATIVE METHOD. AVOID ROUTING DUCTWORK DIRECTLY OVER LIGHT FIXTURES, DIFFUSERS, AND OTHER CEILING MTD. DEVICES. LOCATE ALL MECHANICAL EQUIPMENT SO THAT FILTERS AND COMPONENTS REQUIRING ACCESS (SERVICE AND MAINTENANCE) ARE FULLY ACCESSIBLE.
- PROVIDE CURVED RADIUS ELBOW AT FIRST SUPPLY & RETURN FITTING FOR ALL HVAC UNITS. PROVIDE TURNING VANES IN ALL 90 DEGREE ELBOWS IN ALL RECTANGULAR SUPPLY/RETURN/EXHAUST DUCT SYSTEMS. ANY OFFSETS REQUIRED IN DUCT SYSTEMS SHALL BE INSTALLED PER SMACNA STANDARDS. SHARP ANGLED TRANSITIONS OR OFFSETS 'WILL NOT BE ALLOWED'. PROVIDE DUCT ACCESS DOORS AT LOCATIONS SPECIFIED.
- INSTALL ALL DUCT MOUNTED DEVICES (DAMPERS, ACCESS DOORS, ETC.) AND PIPING SPECIALTIES IN EASILY ACCESSIBLE LOCATIONS. ADVISE THE COR IN ADVANCE OF INSTALLATION IF ACCESS WILL BE HINDERED SO AN ALTERNATE LOCATION CAN BE SELECTED.
- ALL DUCT TAKE-OFFS SHALL BE INSTALLED AS SHOWN BY DETAILS ON THE PLANS WITH A MANUAL BALANCE DAMPER AT EVERY TAKE-OFF. WHERE DUCT RUN-OUT SIZE IS NOT SHOWN PROVIDE DUCT SAME SIZE AS GRILLE NECK SIZE. PRE-INSULATED FLEXIBLE DUCT MAY BE USED FOR FINAL CONNECTION TO SUPPLY/RETURN GRILLES (MAX. LENGTH 5')
- ALL ROTATING MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH VIBRATION ISOLATION. PROVIDE FLEXIBLE NEOPRENE DUCT CONNECTORS BETWEEN DUCTWORK AND ISOLATED MECHANICAL EQUIPMENT.
- THE CONTRACTOR SHALL FIRESTOP ALL PENETRATIONS OF FIRE RATED WALLS/FLOORS/CEILINGS BY DUCTWORK, PIPING, ETC., WITH U.L. LISTED FIRE STOPPING MATERIAL TO MAINTAIN FIRE RATING OF THE BARRIER.
- SEISMIC PROTECTION OF EQUIPMENT, DUCTWORK, PIPING AND UTILITIES SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16 OF THE 2012 EDITION OF THE INTERNATIONAL BUILDING CODE. ALL SEISMIC RESTRAINT AND BRACING SHALL BE SUBSTANTIATED BY MANUFACTURER'S SUBMITTALS PER THE SPECIFICATIONS.
- BALANCE ALL AIR DISTRIBUTION DEVICES, EXHAUST FANS, AND OUTSIDE AIR QUANTITIES AS SCHEDULED OR SHOWN ON THE DRAWINGS. PROVIDE MARKERS AT ALL DAMPER LOCATIONS SHOWING FULL OPEN/CLOSED POSITIONS AND DAMPER SETTING FOR REQUIRED AIRFLOW. PROVIDE FINAL TEST AND BALANCE REPORT ALONG W/ SCHEMATIC DRAWINGS SHOWING DIFFUSER LOCATION W/ DESIGN AND ACTUAL CFM. THE DIFFUSER TAGS ON THE DRAWINGS SHALL CORRESPOND TO THE DIFFUSER TAGS ON THE REPORT. THIS REPORT SHALL BE SUBMITTED BEFORE THE FINAL INSPECTION IS PERFORMED. SEE THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

MECHANICAL LEGEND

AHU	AIR HANDLING UNIT
ACCU	AIR COOLED CONDENSING UNIT
EF	EXHAUST FAN
EXF	EXFILTRATION
FD	FLOOR DRAIN
INF	INFILTRATION
OA	OUTSIDE AIR
SA	SUPPLY FAN
TYP.	TYPICAL
XA	EXHAUST AIR
①	NOTE NUMBER (SEE SCHEDULE)
T	THERMOSTAT, "1" INDICATES DEVICE CONTROLLED
CO	CARBON MONOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
⬇	LAMINAR FLOW DIFFUSER, DIRECTION OF FLOW AS INDICATED
⬆	DIFFUSER, DIRECTION OF FLOW AS INDICATED
⬇	EXHAUST AIR OUTLET
FD	FIRE DAMPER
SD	SMOKE DETECTOR
C	CONDENSATE
⌋	MANUAL DAMPER
⊗	NEW CONNECTION SYMBOL
— STEAM —	STEAM LINE

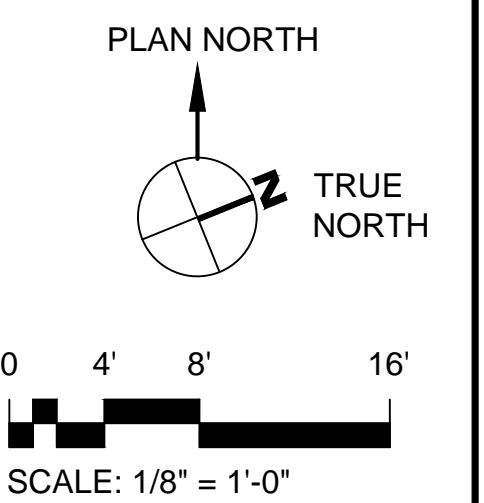
CONSTRUCTION DOCUMENTS UNSPRINKLERED

		CONSULTANTS:		ARCHITECT/ENGINEERS:	 <div>BES DESIGN/BUILD, LLC 766 Middle St, Fairhope, AL 36532 Phone: 251.990.5778 Fax: 251.990.3716</div>	Drawing Title MECHANICAL LEGENDS, GENERAL NOTES, AND ABBREVIATIONS	Project Title LETC FIRING RANGE SITE ADAPTATION	Project Number 598-12-207	CENTRAL ARKANSAS VETERANS AFFAIRS HEALTHCARE SYSTEM
						Location NORTH LITTLE ROCK, ARKANSAS	Building Number 195		
Revisions:	Date	Date 10-10-2014	Checked BT	Drawn BJP	Drawing Number MH001 Dwg. 39 of 58				






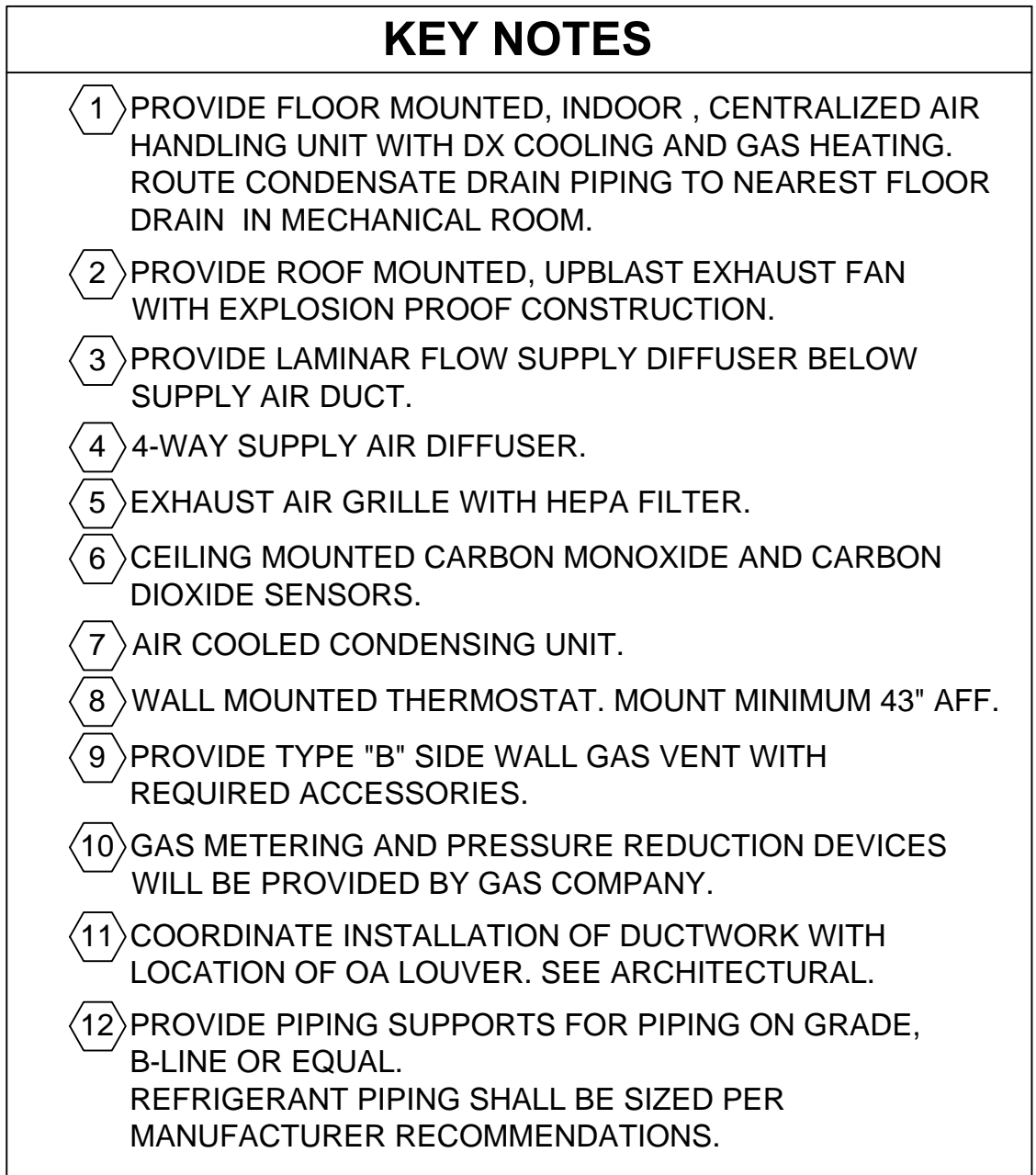
1 FLOOR PLAN
1/8"=1'-0"

LEGENDS	
(- -)	VERY NEGATIVE
(-)	NEGATIVE
(N)	NEUTRAL
(+)	POSITIVE
(+ +)	VERY POSITIVE



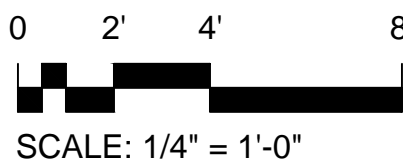
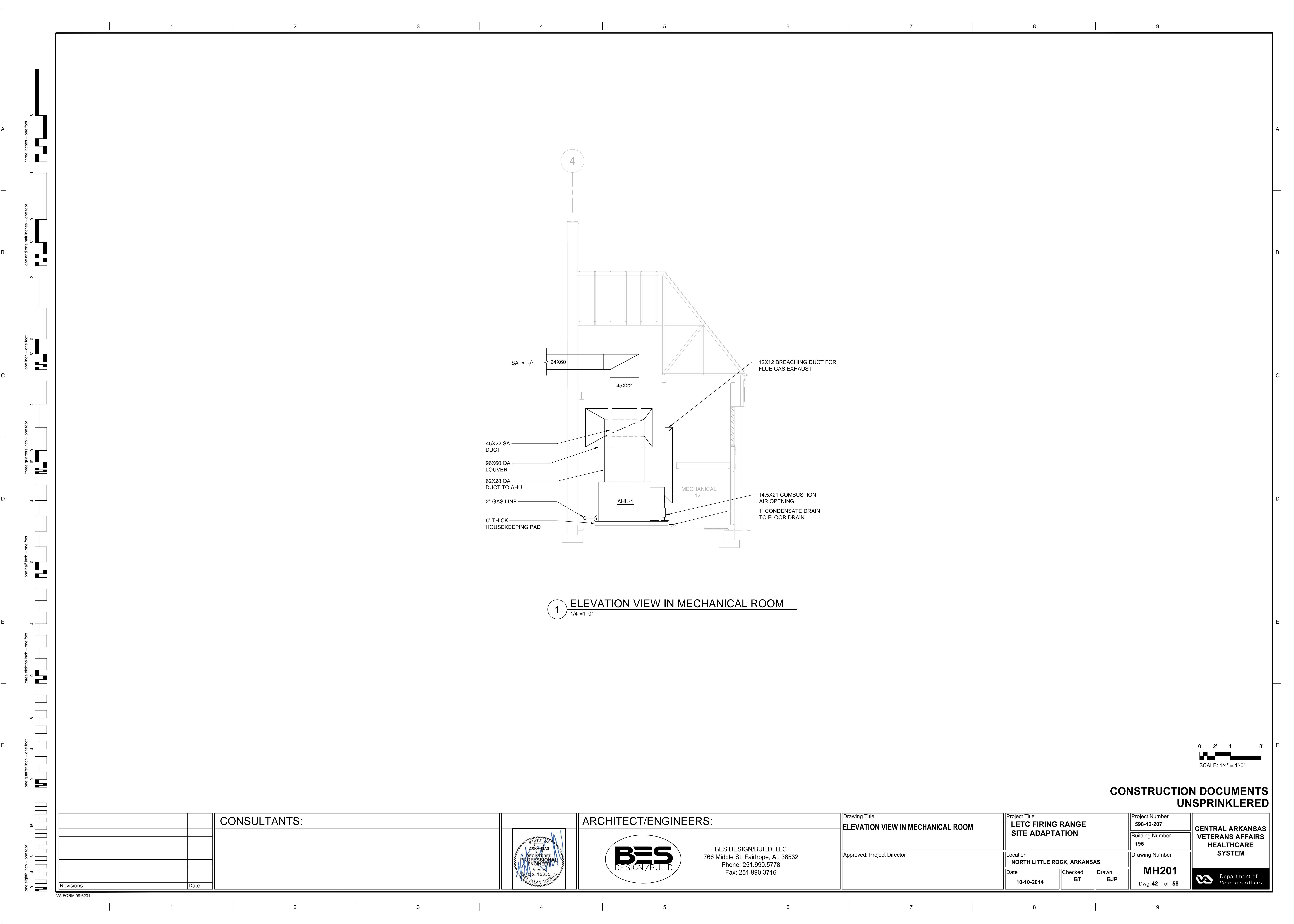
**CONSTRUCTION DOCUMENTS
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						BES DESIGN/BUILD, LLC 766 Middle St, Fairhope, AL 36532 Phone: 251.990.5778 Fax: 251.990.3716		Approved: Project Director		Location NORTH LITTLE ROCK, ARKANSAS		Drawing Number MH101		Building Number 195							
Revisions:		Date										Date 10-10-2014		Checked BT		Drawn BJP		Dwg. 40 of 58		 Department of Veterans Affairs	






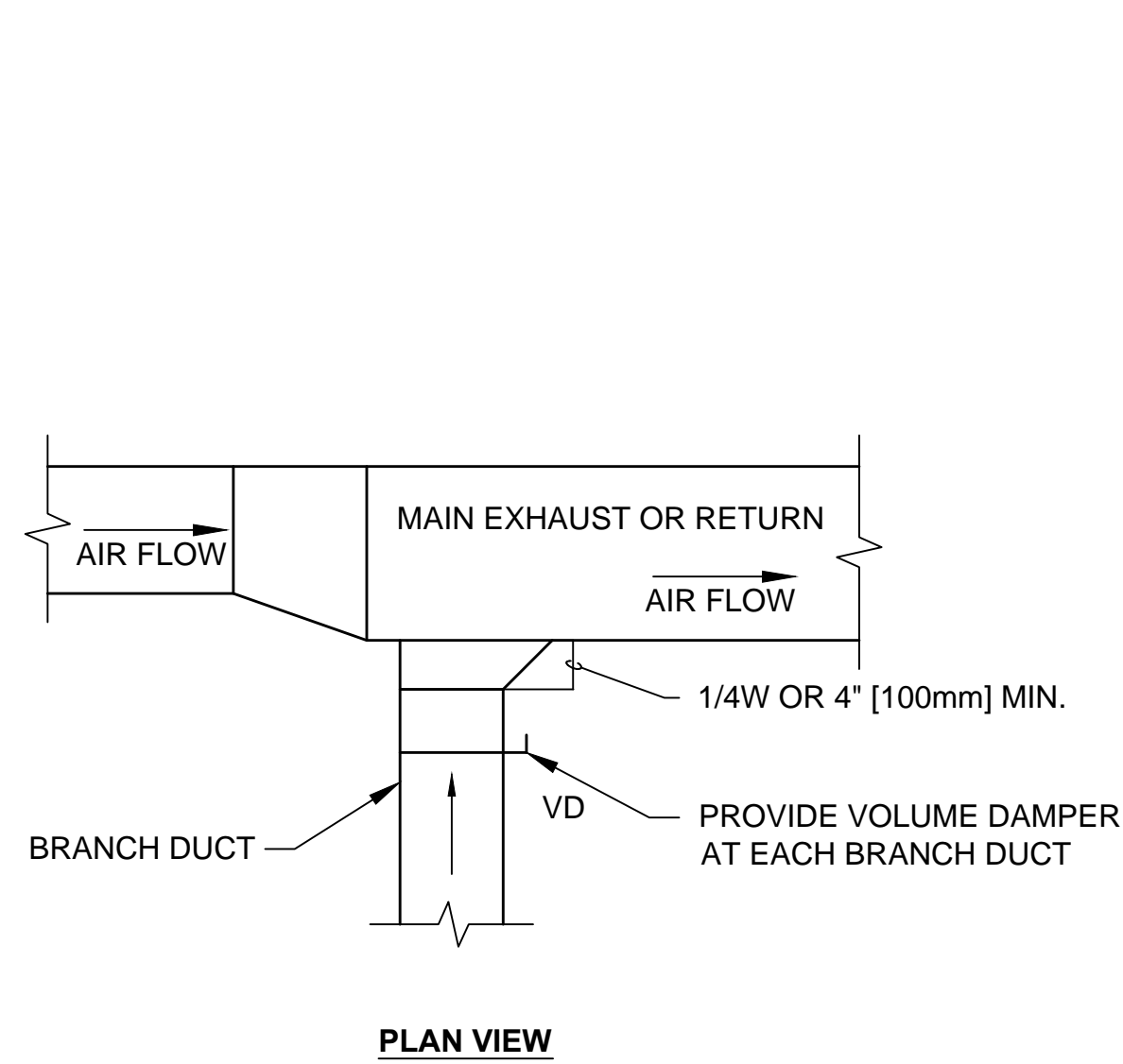
**CENTRAL ARKANSAS
VETERANS AFFAIRS
HEALTHCARE
SYSTEM**

 Department of
Veterans AffairsVA FORM 08-6231

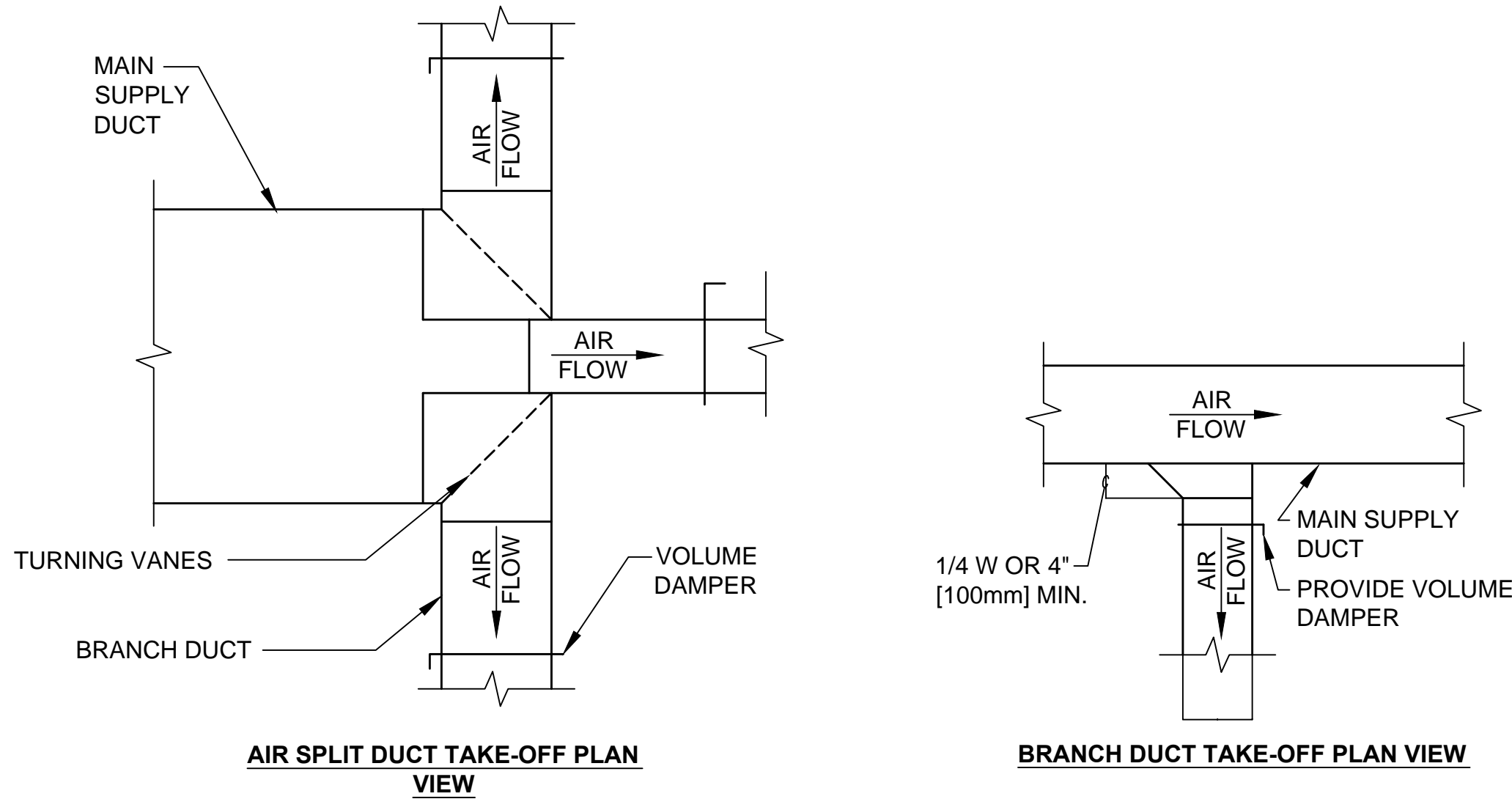


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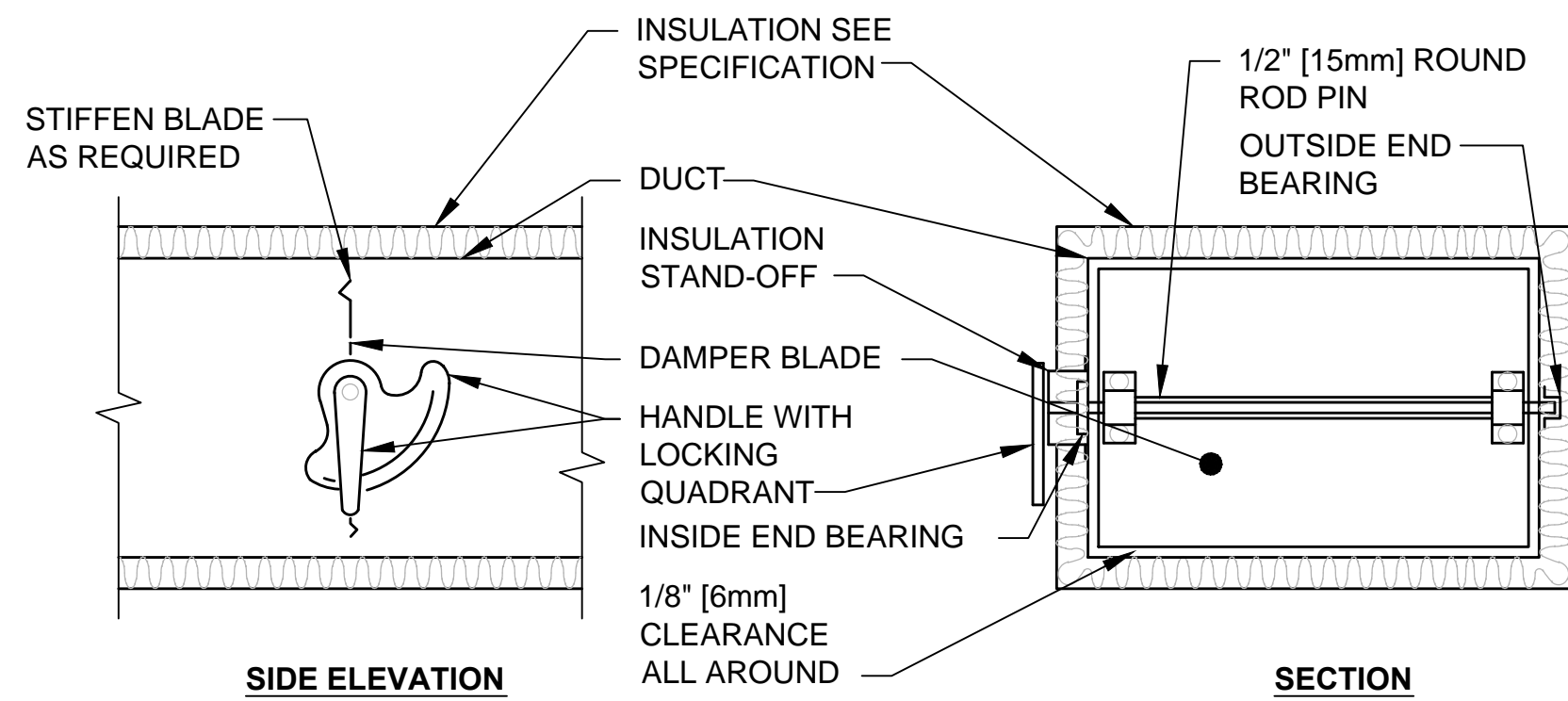
		CONSULTANTS:		ARCHITECT/ENGINEERS:  BES DESIGN/BUILD, LLC 766 Middle St, Fairhope, AL 36532 Phone: 251.990.5778 Fax: 251.990.3716	Drawing Title ELEVATION VIEW IN MECHANICAL ROOM	Project Title LETC FIRING RANGE SITE ADAPTATION	Project Number 598-12-207	CENTRAL ARKANSAS VETERANS AFFAIRS HEALTHCARE SYSTEM		
					Building Number 195					
					Drawing Number MH201					
					Dwg. 42 of 58					
Revisions:	Date				Approved: Project Director	Location NORTH LITTLE ROCK, ARKANSAS	Date 10-10-2014	Checked BT	Drawn BJP	 Department of Veterans Affairs



B2 EXHAUST OR RETURN BRANCH DUCTWORK
NTS

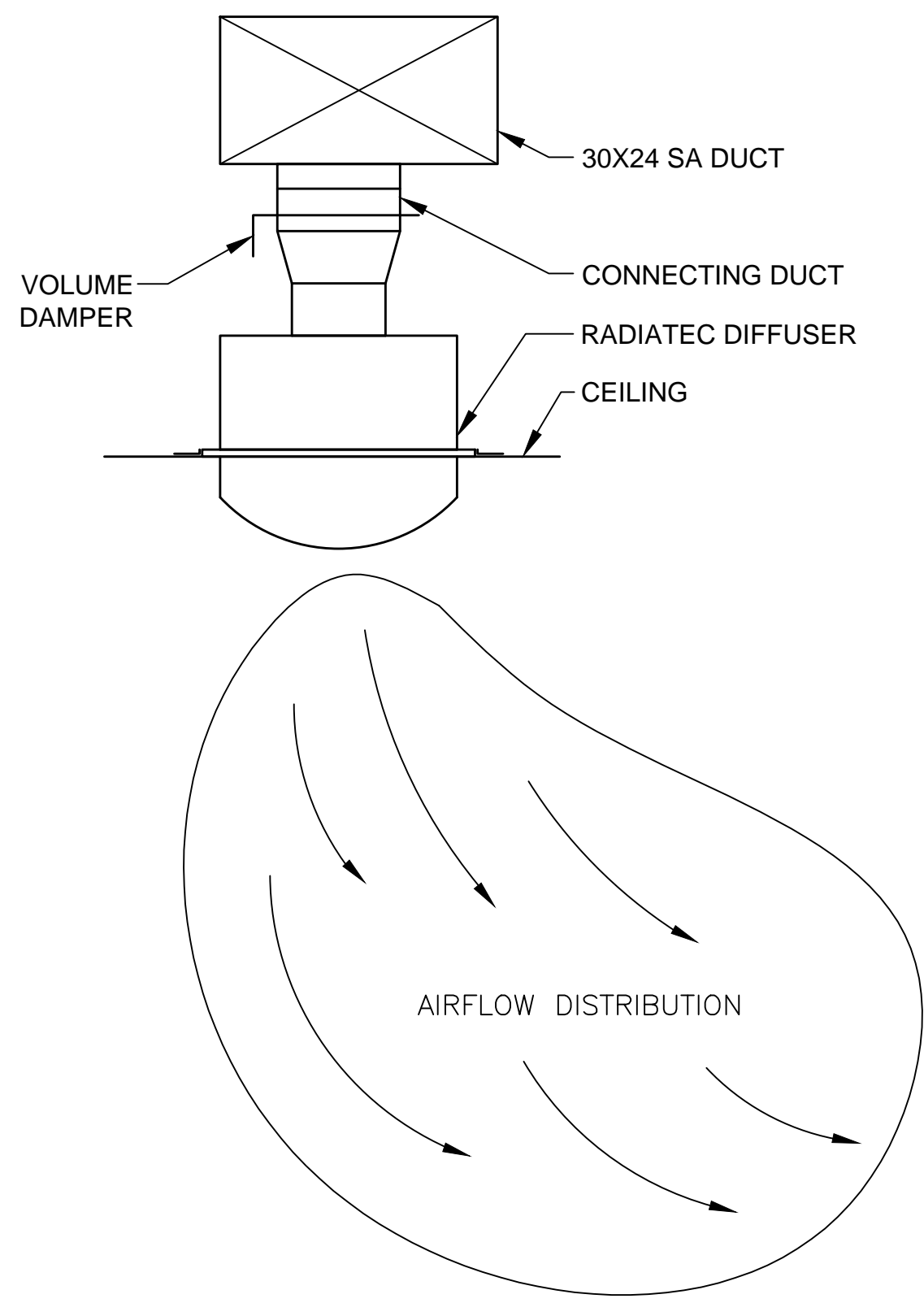


B4 SUPPLY DUCTWORK TAKE-OFFS
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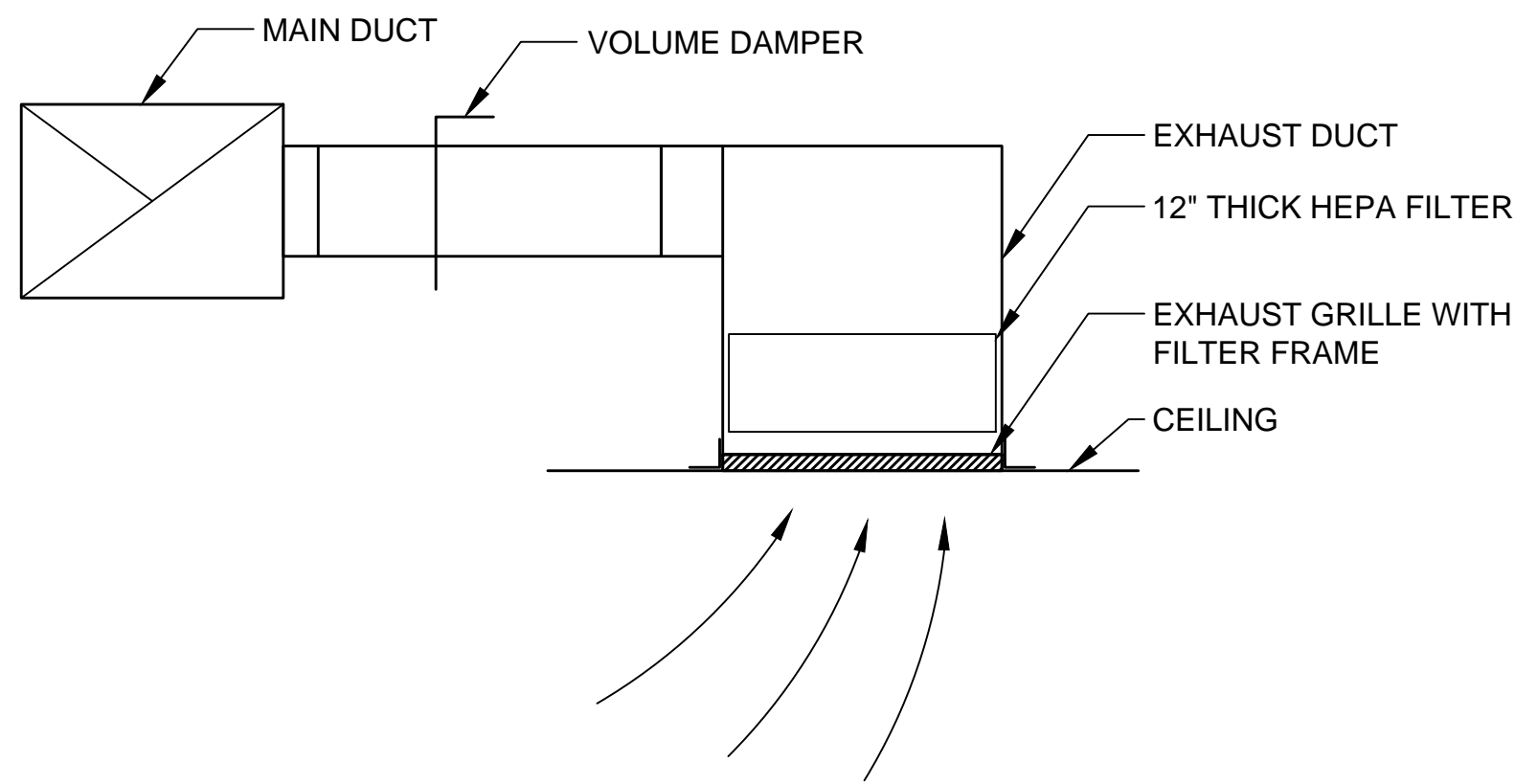


- NOTE:**
- DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
 - DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

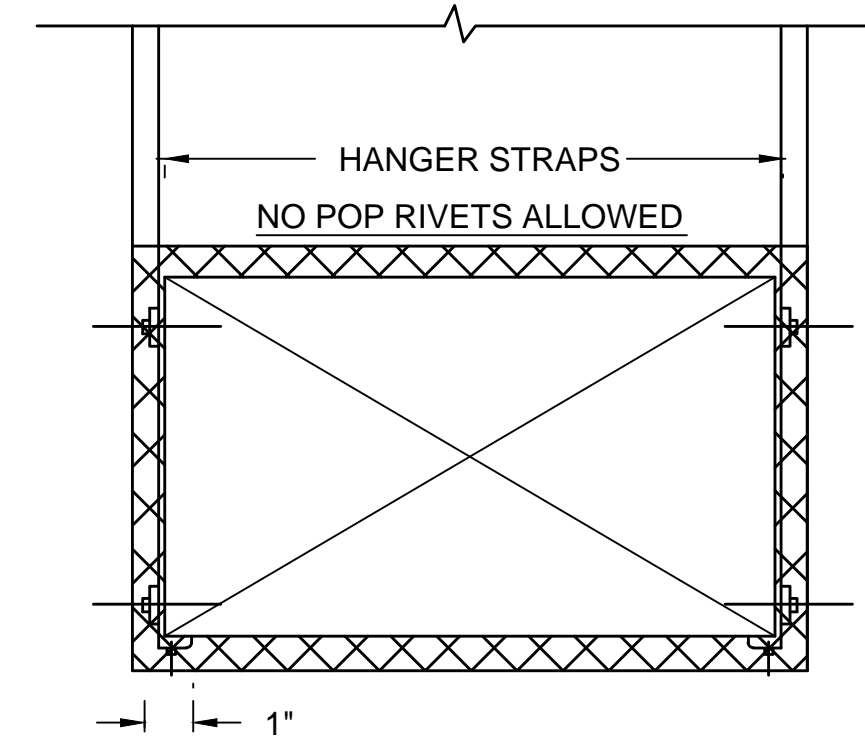
B6 VOLUME DAMPER DETAIL
NTS



E2 LAMINAR FLOW SUPPLY AIR DIFFUSER
NTS



E4 EXHAUST GRILLE WITH HEPA FILTER
NTS



NO. 10x3/4" SELF TAPPING CADMIUM PLATED SHEET METAL SCREWS TO ANCHOR STRAPS TO DUCT AND JOISTS. ALL STRAPS SHALL BE TIGHT AGAINST DUCT AND MEMBERS.

HANGER SIZES FOR RECTANGULAR DUCT			
MAX. SIDE	HANGER	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
UP TO 34"	1" X 18 GAGE STRAP	NONE REQUIRED	8'-0"
MAX. 34" TO 40"	HANGER 1" X 18 GAUGE STRAP	NONE REQUIRED	6'-0"

E6 DUCT STRAP HANGER
NTS

Revisions:		Date:		CONSULTANTS:		ARCHITECT/ENGINEERS:		Drawing Title MECHANICAL DETAILS		Project Title LETC FIRING RANGE SITE ADAPTATION		Project Number 598-12-207		CENTRAL ARKANSAS VETERANS AFFAIRS HEALTHCARE SYSTEM			
								Approved: Project Director		Location NORTH LITTLE ROCK, ARKANSAS		Building Number 195					
										Date 10-10-2014		Checked BT				Drawn BJP	
								BES DESIGN/BUILD		BES DESIGN/BUILD, LLC 766 Middle St, Fairhope, AL 36532 Phone: 251.990.5778 Fax: 251.990.3716				Drawing Number MH501		Department of Veterans Affairs	
												Dwg. 43 of 58					

CONSTRUCTION DOCUMENTS
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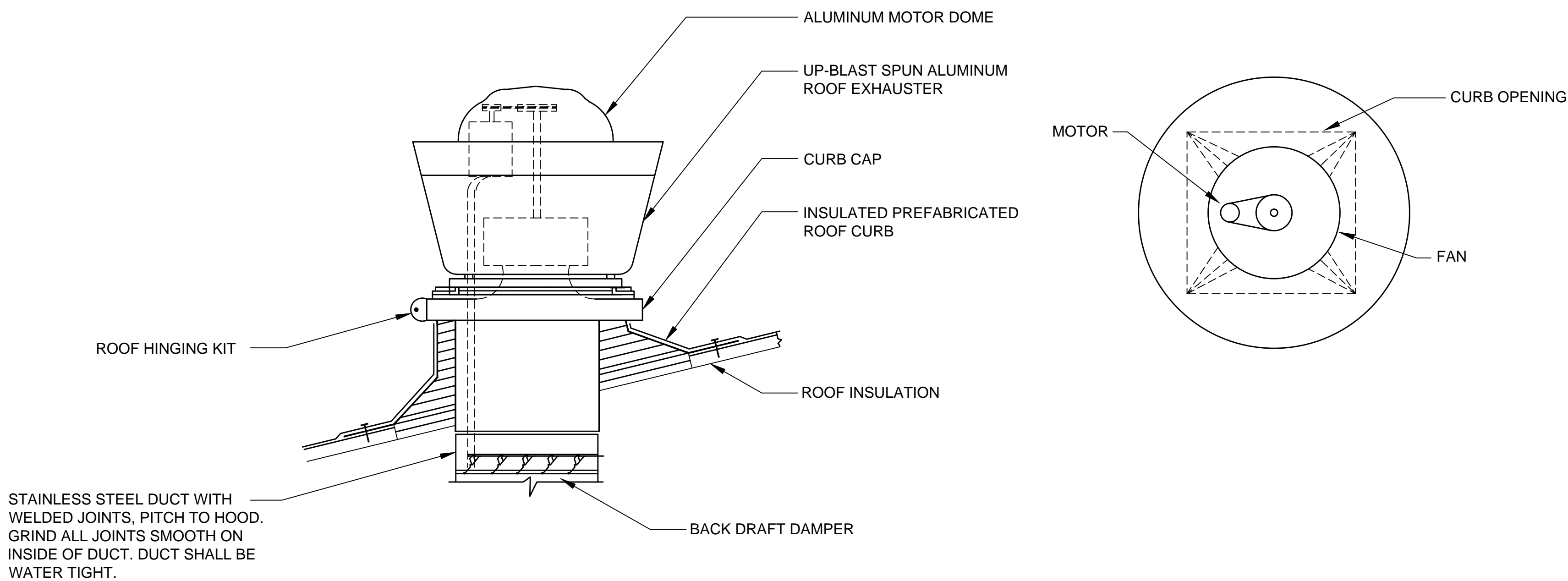
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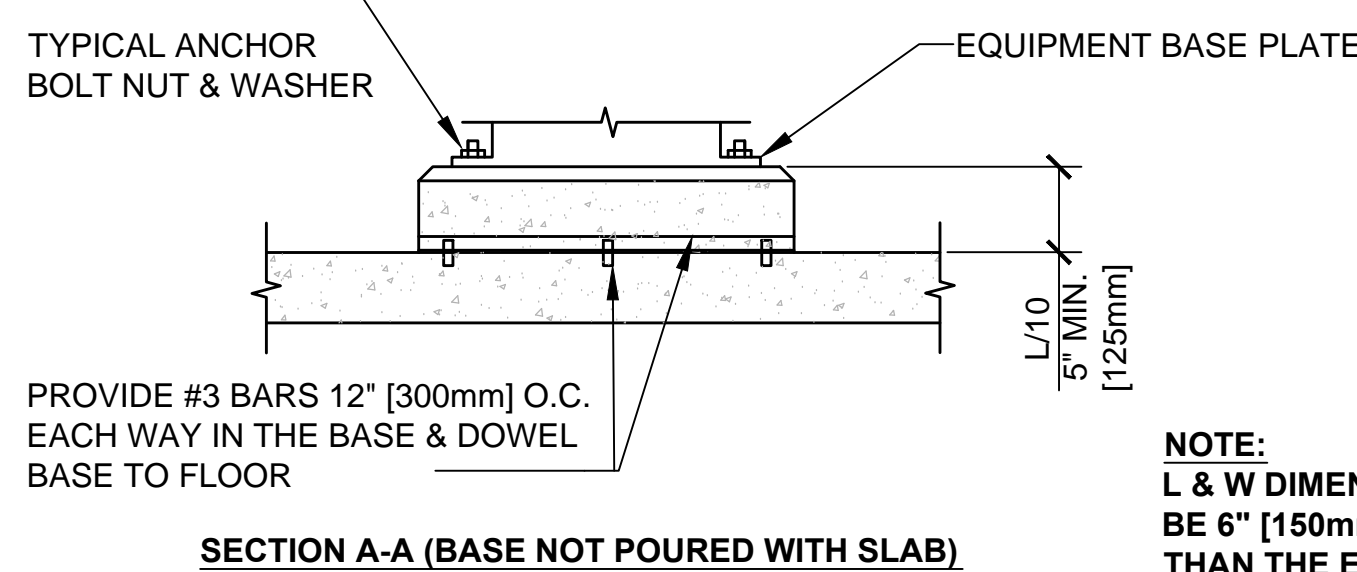
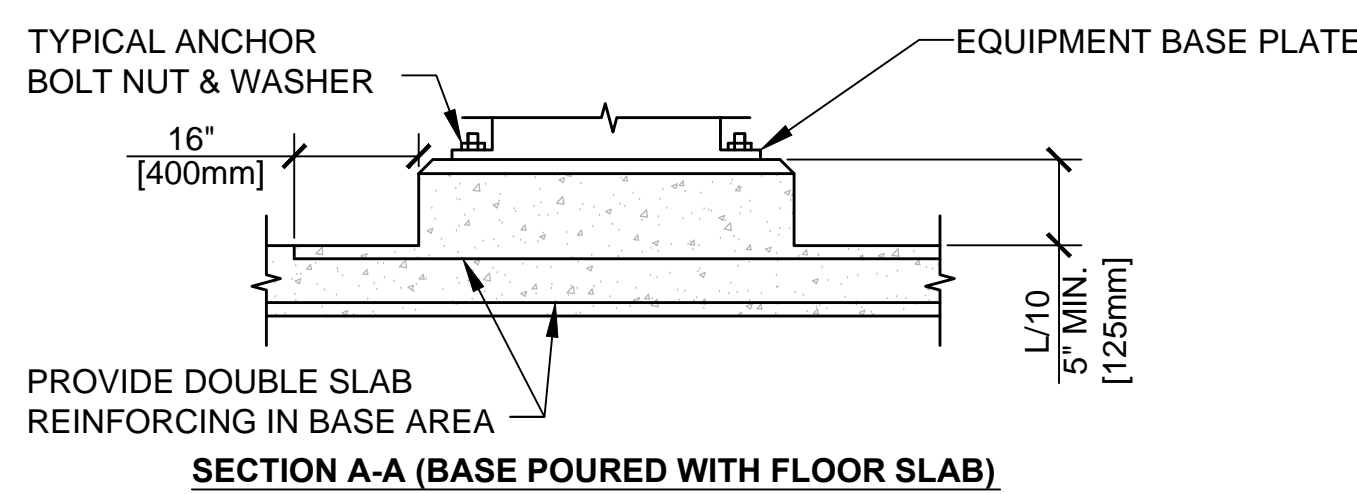
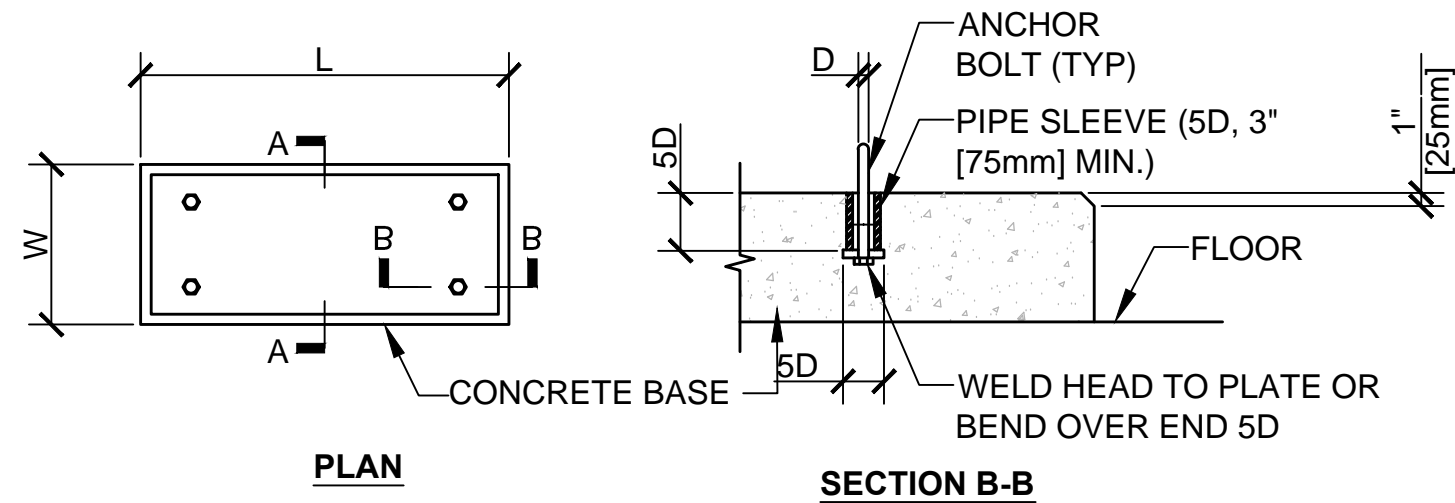
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UPBLAST EXHAUST FAN

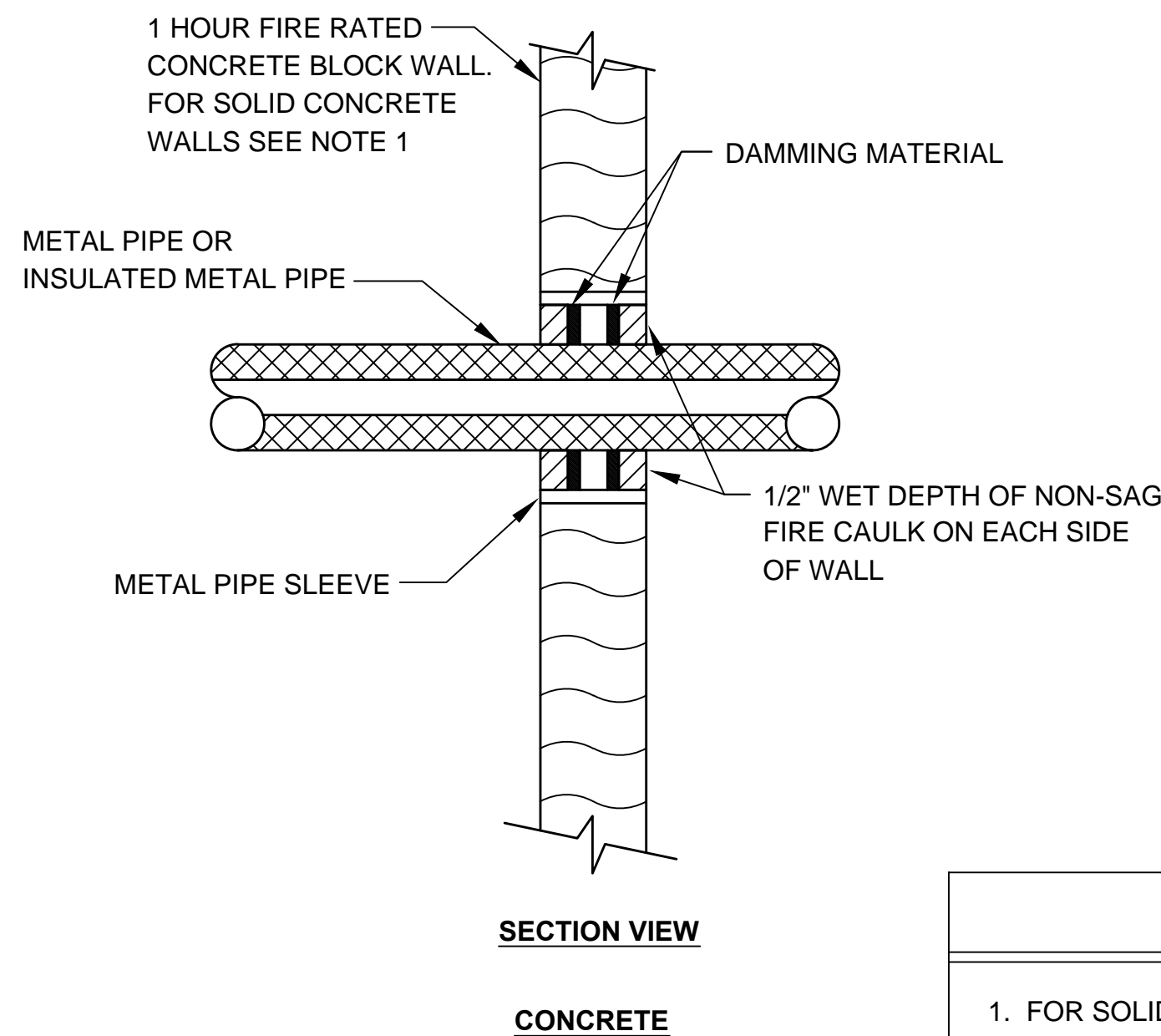
NTS



F1

CONCRETE EQUIPMENT BASES

NTS



F3

FIRE RATED PIPING PENETRATION

NTS

A) FOR UNINSULATED METAL PIPE:

- RECOMMENDATIONS BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) FIRE TEST AND UL CLASSIFICATION FIRE STOP SYSTEM 49.
- UP TO 40% SHRINKAGE OF NON-SAG OR SELF-LEVELING FIRE CAULK IS ACCEPTABLE AFTER INITIAL WET DEPTH INSTALLATION.

MAXIMUM ANNULAR SPACE TO BE FILLED IS 2-1/2"

B) FOR INSULATED METAL PIPE:

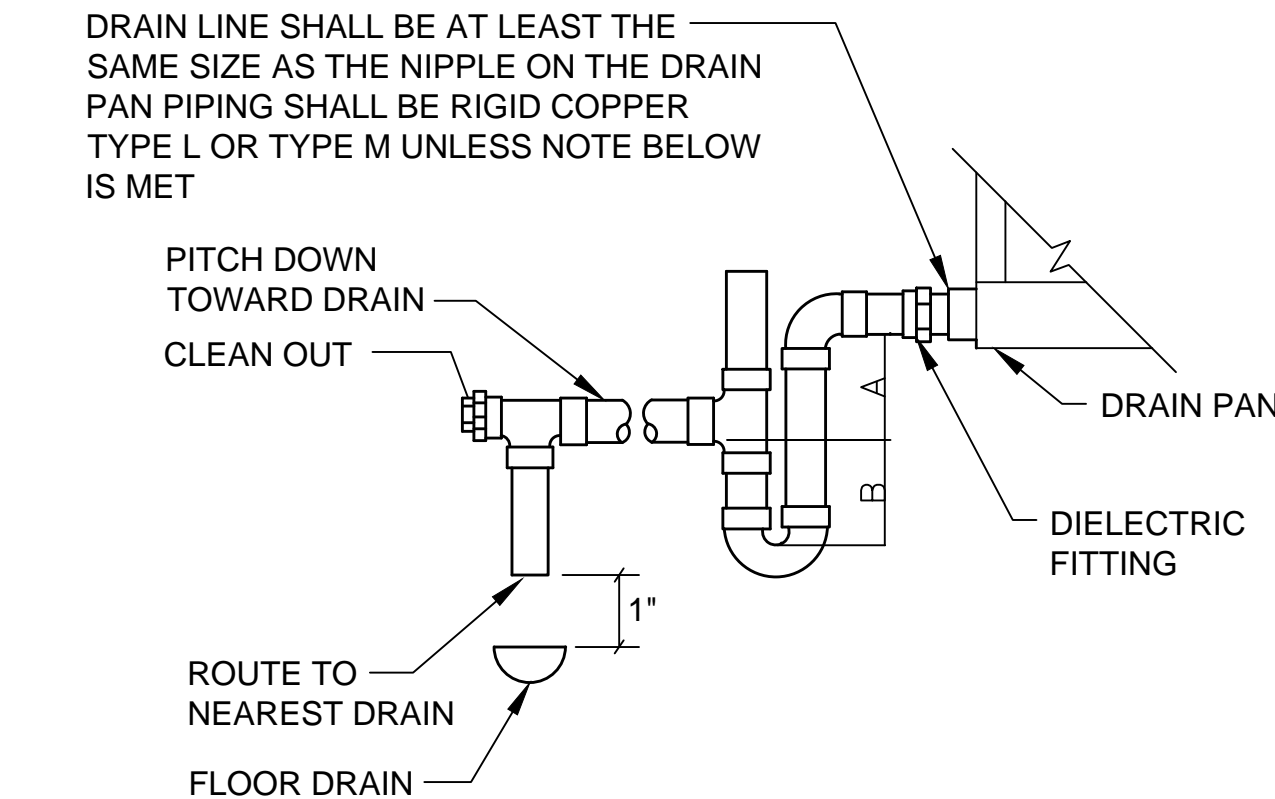
- DEPTH OF FIRE CAULK DEPENDS ON INSULATION THICKNESS:
1" OF INSULATION - 1" DEPTH OF FIRE CAULK
2"-3" OF INSULATION - 2" DEPTH OF FIRE CAULK
- MINIMUM ANNULAR SPACE TO BE FILLED IS 3/4".
MAXIMUM ANNULAR SPACE TO BE FILLED IS 2-1/2"

- RECOMMENDATIONS BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) TIME TEMPERATURE CURVE FIRE EXPOSURE. UL CLASSIFIED PER SYSTEM 91

- IT IS NOT NECESSARY TO REMOVE INSULATION AS IT PENETRATES THE WALL OR FLOOR.

NOTES

- FOR SOLID CONCRETE WALLS, CENTER NON-SAG FIRE CAULK WITHIN WALL WITH DAMMING MATERIAL ON ONE SIDE.
- DEPTH OF FIRE CAULK:



NOTE:

- CPVC PIPE MAY BE USED ONLY IF APPROVED BY LOCAL VA AND IS INDOORS AND DOES NOT PASS THROUGH RATED BARRIERS.
- DIELECTRIC FITTING TO BE USED WHEN TWO DISSIMILAR METALS ARE TO BE CONNECTED.

UNIT TYPE	A	B
DRAW THRU	2" [50mm] PLUS X	X
BLOW THRU	1" [25mm] MINIMUM	2X

WHERE X = STATIC PRESSURE IN PAN

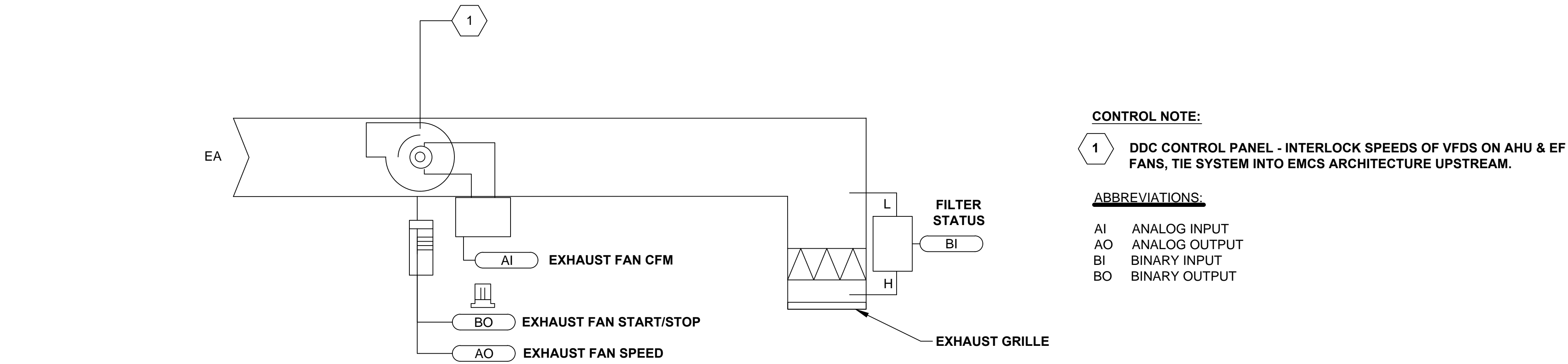
F8

AIR HANDLING UNIT DRAIN TRAP DETAIL

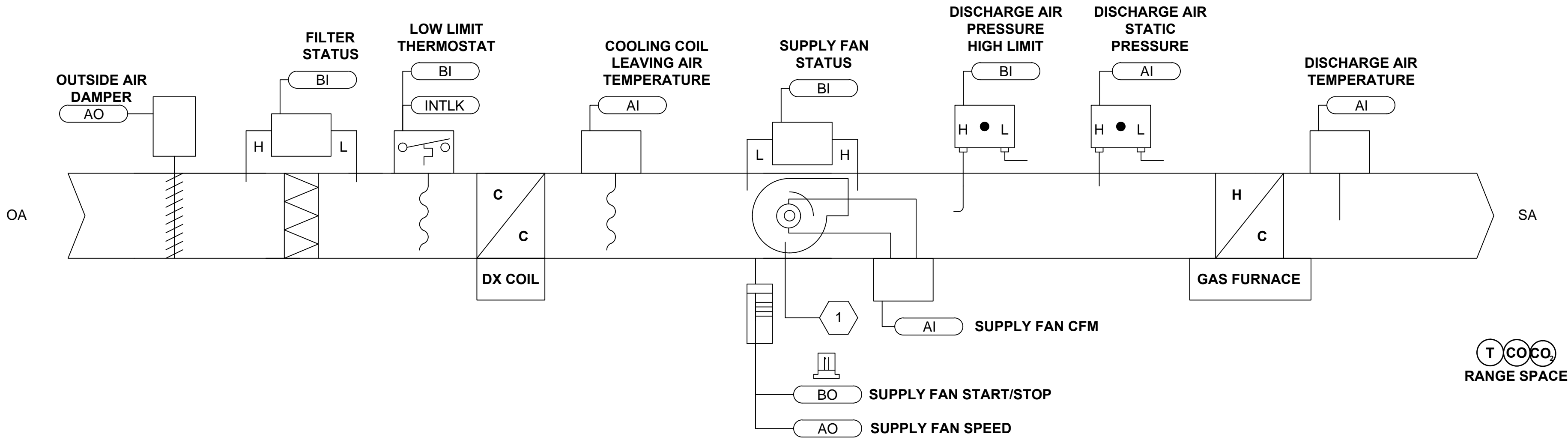
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CONSTRUCTION DOCUMENTS UNSPRINKLERED

CONSULTANTS:		ARCHITECT/ENGINEERS:		Drawing Title MECHANICAL DETAILS		Project Title LETC FIRING RANGE SITE ADAPTATION		Project Number 598-12-207		CENTRAL ARKANSAS VETERANS AFFAIRS HEALTHCARE SYSTEM Department of Veterans Affairs	
				Approved: Project Director		Location NORTH LITTLE ROCK, ARKANSAS		Building Number 195			
Revisions:						Date 10-10-2014		Checked BT			
Date						Drawn BJP		Drawing Number MH502			
				BES DESIGN/BUILD BES DESIGN/BUILD, LLC 766 Middle St, Fairhope, AL 36532 Phone: 251.990.5778 Fax: 251.990.3716				Dwg. 44 of 58			

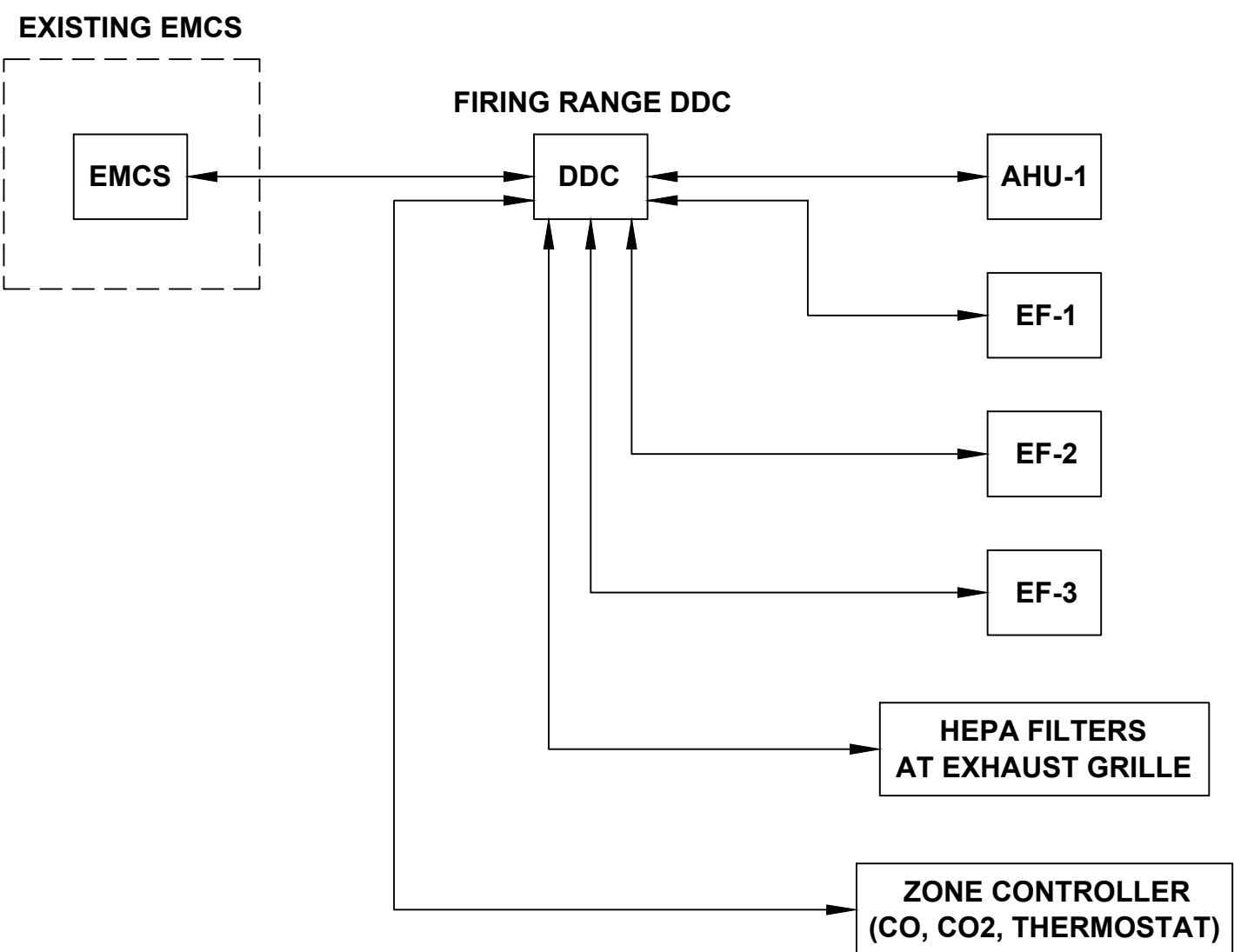


3 EXHAUST FAN CONTROL DIAGRAM
NTS



2 AIR HANDLING UNIT-CONTROL DIAGRAM
NTS

AIR HANDLER UNIT & EXHAUST FAN		POINT LEGEND		SYSTEM OUTPUTS		SYSTEM INPUTS		SYSTEM SOFTWARE / CONTROL		REMARKS
				BINARY	ANA-LOG	BINARY	ANALOG	ALARM PROCESSING	APPLICATION / FUNCTION	
SYSTEM COMPONENT	POINT ID	ABBREVIATIONS	PRIORITY/ADD-ALTERNATE NO.	ELECTRIC DEVICE START / STOP OPEN / CLOSE	SPEED COMMAND	VALVE POSITION	VALVE POSITION	STATUS	ALARM	REMARKS
COOLING COIL TEMPERATURE	AI-6	CCT								
DISCHARGE AIR TEMPERATURE	AI-7	DAT								
DISCHARGE STATIC PRESSURE	AI-8	DASP								
DISCHARGE AIR HUMIDITY	AI-9	DAH								
SUPPLY AIR FLOW (CFM)	AI-10	SAF								
EXHAUST AIR FLOW (CFM)	AI-11	EAF								
EXHAUST AIR FILTER STATUS	AI-12	EAF-ST								
OUTSIDE AIR FILTER STATUS	AI-13	OAF-ST								
SUPPLY FAN STATUS	BI-3	SF-ST								
STATIC PRESSURE HIGH LIMIT	BI-5	SPS-2								
HUMIDITY HIGH LIMIT	BI-6	HHL								
SUPPLY FAN VSMC ALARM	BI-7	SF-ALA								
EXHAUST FAN VSMC ALARM	BI-8	EF-ALA								
EXHAUST FAN VSMC	AO-1	EF-SPD								
SUPPLY FAN VSMC	AO-2	SF-SPD								
OUTSIDE AIR DAMPER	AO-3	OAD								
MINIMUM OUTSIDE AIR DAMPER	AO-7	MIN-OAD								
SUPPLY FAN START / STOP	BO-2	SF-SST								
EXHAUST FAN START / STOP	BO-3	EF-SST								



1 EMCS SYSTEM ARCHITECTURE
NTS

SEQUENCE OF OPERATIONS

NORMAL OPERATIONS:

EXHAUST FAN EF-3: FAN SHALL OPERATE CONTINUOUSLY TO MAINTAIN A CONSTANT AIR EXHAUST FLOW RATE OF 1200 CFM. THE VFD CONTROLLER ON THE DIRECT DRIVE SHALL MODULATE TO OVERCOME STATIC PRESSURE DROP ACROSS THE FILTER. AN INTERLOCK SHALL SIGNAL AHU SUPPLY FAN AHU-SF-1 TO PROVIDE MAKE UP AIR AT A CONTINUOUS RATE OF 1800 CFM TO MAINTAIN SPACE PRESSURIZATION. FAN OPERATION STATUS, SPEED, AND CFM SHALL BE COMMUNICATED BACK TO THE EMCS.

EXHAUST FANS EF-1 & EF-2: FANS SHALL OPERATE CONTINUOUSLY TO MAINTAIN A MINIMUM AIR EXHAUST FLOW RATE OF 500 CFM. THE VFD CONTROLLER ON THE DIRECT DRIVE SHALL MODULATE TO OVERCOME STATIC PRESSURE DROP ACROSS THE FILTER. FAN OPERATION STATUS, SPEED AND CFM SHALL BE COMMUNICATED BACK TO THE EMCS.

EXHAUST FAN FILTER STATUS: SHOULD ANY OF THE EXHAUST FAN FILTERS DIFFERENTIAL PRESSURE SENSOR MONITORS REACH A VALUE OF 1" H2O, AN ALARM STATUS SIGNAL SHALL BE COMMUNICATED BACK TO THE EMCS.

SPACE AIR TEMPERATURE - HEATING: SHOULD ANY SPACE AIR TEMPERATURE SENSOR DROP BELOW 60 DEGREES F, THE SENSOR SHALL SIGNAL THE DUCT FURNACE TO OPERATE AND PROVIDE SUPPLY AIR TEMPERATURE AT 80 DEGREES FAHRENHEIT. THE DUCT FURNACE SHALL CONTINUE TO OPERATE UNTIL ALL SPACE TEMPERATURE SENSORS HAVE MET A MINIMUM OF 68 DEGREES F AT WHICH POINT THE DUCT FURNACE WILL TURN OFF. DUCT FURNACE OPERATION STATUS SHALL BE COMMUNICATED BACK TO THE EMCS.

SPACE AIR TEMPERATURE - COOLING: SHOULD ANY SPACE AIR TEMPERATURE SENSOR RISE ABOVE 80 DEGREES F, THE SENSOR SHALL SIGNAL THE COOLING COIL TO OPERATE AND PROVIDE SUPPLY AIR TEMPERATURE AT 60 DEGREES FAHRENHEIT. THE COOLING SHALL CONTINUE TO OPERATE UNTIL ALL SPACE TEMPERATURE SENSORS HAVE MET A MAXIMUM OF 72 DEGREES F AT WHICH POINT THE COOLING COIL WILL TURN OFF. COOLING COIL OPERATION STATUS SHALL BE COMMUNICATED BACK TO THE EMCS.

AIR HANDLING UNIT SUPPLY FAN AHU-SF-1: THE SUPPLY FAN PURPOSE IS TO PROVIDE MAKE-UP AIR TO MAINTAIN PRESSURIZATION THROUGHOUT THE FACILITY. OPERATION SHALL BE CONTROLLED PRIMARILY THROUGH INTERLOCK SIGNALS SENT FROM THE EXHAUST FANS. THE VFD SHALL MODULATE THE SPEED BASED ON THE MAKE-UP CFM REQUIRED FOR THE EXHAUST FANS PLUS OVERCOMING THE PRESSURE DROPS ACROSS THE UNIT'S FILTER, COOLING COIL AND GAS FURNACE IN ORDER TO MAINTAIN THE REQUIRED MAKE-UP AIR CFM. FAN STATUS, SPEED AND CFM SHALL BE COMMUNICATED BACK TO THE EMCS.

DUCT FURNACE: THE DUCT FURNACE PURPOSE IS TO PROVIDE HEATING OF THE SUPPLY AIR TO THE SPACE. THE FURNACE SHALL NOT TURN ON UNTIL FAN STATUS PROVES OPERATIONAL AND WILL MODULATE GAS FLOW RATE BASED ON SUPPLY AIR FLOW TO MAINTAIN A SUPPLY AIR TEMPERATURE OF 80 DEGREES F.

D/X COOLING COIL: THE D/X COOLING COIL PURPOSE IS TO PROVIDE COOLING AND DEHUMIDIFICATION OF THE SUPPLY AIR TO THE SPACE. THE COOLING COIL SHALL NOT TURN ON UNTIL FAN STATUS PROVES OPERATIONAL AND WILL MODULATE REFRIGERANT FLOW RATE BASED ON SUPPLY AIR FLOW TO MAINTAIN A SUPPLY AIR TEMPERATURE OF 60 DEGREES F. SHOULD THE HUMIDISTAT IN THE AIR HANDLING UNIT SENSE RELATIVE HUMIDITY ABOVE 55%, UPON PROOF OF FAN OPERATION STATUS, THE COOLING COIL SHALL TURN ON AND RUN CONTINUOUSLY UNTIL THE RELATIVE HUMIDITY REACHES 50%. THE COIL THEN SHALL TURN OFF. COOLING COIL OPERATION STATUS SHALL BE COMMUNICATED BACK TO THE EMCS.

OUTSIDE AIR DAMPER: THE OUTSIDE AIR DAMPER POSITION SHALL MODULATE BASED ON SYSTEM REQUIRED AIR FLOW.

AHU-1 FILTER STATUS: SHOULD THE FAN FILTERS DIFFERENTIAL PRESSURE SENSOR MONITORS REACH A VALUE OF 0.75" H2O, AN ALARM STATUS SIGNAL SHALL BE COMMUNICATED BACK TO THE EMCS.

SMOKE DETECTOR: UPON DETECTION OF SMOKE IN SUPPLY DUCT, SUPPLY FAN SHALL COMPLETELY SHUT DOWN AND EXHAUST FAN SHALL CONTINUE TO RUN.

TRAINING OPERATIONS:

MINIMUM SETPOINT SWITCH: A MINIMUM SETPOINT SWITCH HAS BEEN STRATEGICALLY LOCATED TO ENSURE AIRFLOW IN THE RANGE DURING ITS USE. THIS MANUAL SWITCH SHALL BE ACTUATED PRIOR TO USING THE RANGE. THE SWITCH WILL SIGNAL EXHAUST FANS EF-1 AND EF-2 TO OPERATE AT 750 CFM EACH. THE SUPPLY FAN AHU-SF-1 WILL FOLLOW SUIT AS DESCRIBED ABOVE.

CARBON MONOXIDE SENSORS: CARBON MONOXIDE (CO) SENSORS HAVE BEEN STRATEGICALLY LOCATED THROUGHOUT THE RANGE SPACE. SHOULD ANY OF THE CO SENSORS SENSE ROOM AIR CONTAMINATION LEVELS AT 20 PPM, A SIGNAL SHALL BE SENT TO EXHAUST FANS EF-1 AND EF-2 TO SLOWLY INCREASE THE AIR FLOW CFM RATES UNTIL ALL SENSORS HAVE BEEN SATISFIED AT CONTAMINATION LEVELS LESS THAN 10 PPM. THE SUPPLY FAN AHU-SF-1 WILL FOLLOW SUIT AS DESCRIBED ABOVE.

CARBON DIOXIDE SENSORS: CARBON DIOXIDE (CO2) SENSORS HAVE BEEN STRATEGICALLY LOCATED THROUGHOUT THE RANGE SPACE. SHOULD ANY OF THE CO SENSORS SENSE ROOM AIR CONTAMINATION LEVELS AT 700 PPM, A SIGNAL SHALL BE SENT TO EXHAUST FANS EF-1 AND EF-2 TO SLOWLY INCREASE THE AIR FLOW CFM RATES UNTIL ALL SENSORS HAVE BEEN SATISFIED AT CONTAMINATION LEVELS LESS THAN 500 PPM. THE SUPPLY FAN AHU-SF-1 WILL FOLLOW SUIT AS DESCRIBED ABOVE.

CONSTRUCTION DOCUMENTS
UNSPRINKLERED

CONSULTANTS:		ARCHITECT/ENGINEERS:		Drawing Title MECHANICAL CONTROL & FLOW DIAGRAMS		Project Title LETC FIRING RANGE SITE ADAPTATION		Project Number 598-12-207		CENTRAL ARKANSAS VETERANS AFFAIRS HEALTHCARE SYSTEM	
				Approved: Project Director		Location NORTH LITTLE ROCK, ARKANSAS		Building Number 195			
Revisions:						Date 10-10-2014		Checked BT			
Date								Drawing Number MH601		Dwg. 45 of 58	



**CENTRAL ARKANSAS
VETERANS AFFAIRS
HEALTHCARE
SYSTEM**

 Department of
Veterans Affairs[illegible]

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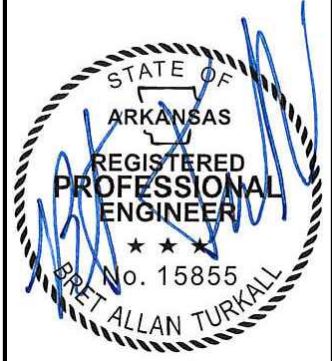


AIR HANDLING UNIT SCHEDULE																										
SYMBOL	OVERALL SIZE (L"xW"xH")	WEIGHT (LBS)	FAN								COIL												BASIS OF DESIGN	MODEL NUMBER	NOTES	
			SUPPLY (CFM)	OA (CFM)	E.S.P. (INCHES OF WATER)	T.S.P. (INCHES OF WATER)	FAN HP	VOLTS/Ø/HZ	MCA (A)	MOP (A)	COOLING COIL						GAS HEATING									
											REFRIGERANT	TOTAL (MBH)	SENS. (MBH)	ENT. AIR		LVG. AIR		INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	ENT. AIR DB (°F)	LVG. AIR DB (°F)	MCA (A)				MOP (A)
														DB (°F)	WB (°F)	DB (°F)	WB (°F)									
AHU-1	204x80x61-1/2	4184	13,280	13,280	2	4.5	20	460/3/60	33.97	60.97	R-410A	1036	635	95.2	76.4	55	54.8	1250	1000	13	80	4.08	7.34	TRANE	CSAA025UA	---

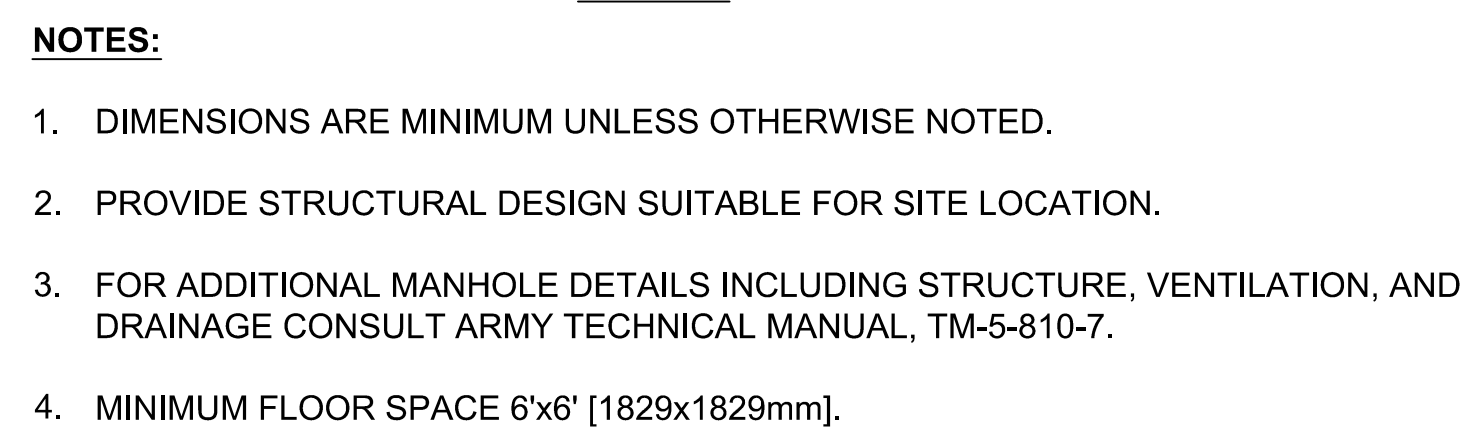
AIR COOLED CONDENSING UNIT SCHEDULE																	
SYMBOL	LOCATION	OVERALL SIZE ("xW"xH")	WEIGHT (LBS)	SERVICE	REFRIGERANT	CAPACITY	ELECTRIC V/Ø/HZ	COMPRESSOR MOTOR		CONDENSER FAN MOTOR					BASIS OF DESIGN	MODEL NUMBER	NOTES
								# COMP	ELECTRIC V/Ø/HZ	# COND FAN	ELECTRIC V/Ø/HZ	MOTOR HP	FLA	LRA			
ACCU-1	OUTSIDE	227x88x79	5622	AHU-1	410A	100 TONS	460/3/60	6	460/3/60	12	460/3/60	1	1.8	9.0	TRANE	RAUJD104B	1 TO 4
NOTES: 1. COMPRESSOR CIRCUIT A1/A2: 15/15 TONS, 25.4/25.4 RLA, 160/160 LRA 2. COMPRESSOR CIRCUIT B1/B2: 15/15 TONS, 25.4/25.4 RLA, 160/160 LRA 3. COMPRESSOR CIRCUIT C1/C2: 20/20 TONS, 37.2/37.2 RLA, 215/215 LRA 4. PROVIDE UNIT ON HOUSEKEEPING PAD.																	

AIR DEVICE SCHEDULE											
SYMBOL	TYPE	MAX. CFM	AIR DISTRIBUTION PATTERN	PD (IN OF WATER)	NECK SIZE (IN)	PANEL SIZE (INxIN)	MAX. NC	FINISH	BASIS OF DESIGN	MODEL	NOTES
A	SUPPLY LAY-IN	1000	1-WAY	0.3	12	48x24	31	OFF -WHITE	TITUS	RADIATEC	1
B	SUPPLY LAY-IN	50-600	4-WAY	0.2	PER DRAWINGS	24x24	21	OFF -WHITE	TITUS	TMS	1
C	EXHAUST LAY-IN	200-1000	---	0.1	24x12	24x12	20	OFF -WHITE	TITUS	355	1,2,3
NOTES: 1. PROVIDE OPPOSED BLADE DAMPER. 2. PROVIDE 24"x12"x12" HEPA FILTER, BASIS OF DESIGN "CAMFIL", MODEL NUMBER "855013-255" FOR EXHAUST GRILLE. 3. PROVIDE EXHAUST GRILLE WITH FILTER FRAME TO ACCOMMODATE HEPA FILTER.											

EXHAUST FAN SCHEDULE											
SYMBOL	AREA SERVED	CFM	SP (IN H ₂ O)	RPM MAX.	ELECTRIC (V/Ø/HZ)	SONES	MOUNT	HP	DRIVE	BASIS OF DESIGN	NOTES
EF-1	RANGE	12,150	2.0	605	460/3/60	21	ROOF	7-1/2	BELT	TWIN CITY BCRU-420B	1,2,3
EF-2	RANGE / STAND BY	12,150	2.0	605	460/3/60	21	ROOF	7-1/2	BELT	TWIN CITY BCRU-420B	1,2,3
EF-3	RANGE OFFICES	1,200	2.0	951	460/3/60	15.5	ROOF	1-1/2	BELT	TWIN CITY BCRU-240BHP	1,2,4
NOTES: 1. PROVIDE LOCAL DISCONNECT FOR EACH FAN. 2. PROVIDE PITCHED ROOF CURB, BIRD SCREEN, BACKDRAFT DAMPER, SPARK RESISTANCE CONSTRUCTION - (CLASS II, GROUP-E, & DIVISION-2) NEMA 4 DISCONNECT SWITCH, AND VFD. 3. FAN MOTOR CONTROL PROVIDED WITH INTERLOCKS, SEE SEQUENCE OF OPERATION. 4. FAN TO RUN CONSTANT VOLUME CONTINUOUSLY 24/7.											

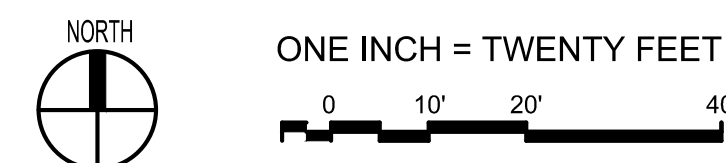
CONSTRUCTION DOCUMENTS
UNSPRINKLERED

		CONSULTANTS:		ARCHITECT/ENGINEERS:  BES DESIGN/BUILD, LLC 766 Middle St, Fairhope, AL 36532 Phone: 251.990.5778 Fax: 251.990.3716	Drawing Title MECHANICAL SCHEDULES	Project Title LETC FIRING RANGE SITE ADAPTATION	Project Number 598-12-207	CENTRAL ARKANSAS VETERANS AFFAIRS HEALTHCARE SYSTEM 	
					Approved: Project Director	Location NORTH LITTLE ROCK, ARKANSAS	Building Number 195		
					Date 10-10-2014	Checked BT	Drawn BJP		Drawing Number MH603
					Revisions:	Date			Dwg. 47 of 58






- ## KEY NOTES
- ① FIELD COORDINATE RELOCATION OF EXISTING STEAM LINE, DESIGN & INSTALLATION BY MANUFACTURER PER VA GUIDELINE.
 - ② DIRECT BURIED STEAM LINE REQUIRED MINIMUM COVERAGE OF 2'-5" REFLECTOR SPECIFICATION SECTION 5.10.3 OF VA STEAM DISTRIBUTION GUIDELINE.
 - ③ INSTALL STEAM LINE ANCHORS MINIMUM 2'-5" FROM ONE SIDE OF MANHOLE EQUALLY, REFLECTOR SPECIFICATION SECTION 5.6.2 OF VA STEAM DISTRIBUTION GUIDELINE. ACTUAL LOCATION OF MANHOLE TO BE FIELD LOCATED BY CONTRACTOR AND COORDINATED WITH DIRECT BURIED STEAM PIPE SYSTEM MANUFACTURER.
 - ④ INSTALL MANHOLE FOR DRIP LEG ASSEMBLY REQUIRED AT A MINIMUM OF EVERY 500 LINEAR FEET PER SPECIFICATION SECTION 5.4.1 OF VA STEAM DISTRIBUTION GUIDELINE. CONTRACTOR TO FIELD LOCATE ACTUAL LOCATION AND COORDINATE WITH DIRECT BURIED STEAM PIPE SYSTEM MANUFACTURER.
 - ⑤ RECONNECT EXISTING BRANCH FEEDER & (DRIP LEG ASSEMBLY, WHERE REQUIRED) FIELD LOCATE ACTUAL LOCATION AND COORDINATE CONNECTION WITH DIRECT BURIED STEAM PIPE MANUFACTURER.

- | CONTRACTOR NOTES | |
|---|--|
| PER VA OUTSIDE STEAM DISTRIBUTION SYSTEM DESIGN MANUAL SECTION 5.10, THE DIRECT BURIED STEAM PIPE SYSTEM MANUFACTURER IS RESPONSIBLE FOR THE DESIGN OF THE SYSTEM WITHIN THE PARAMETERS OF THE VA SPECIFICATION. CONTRACTOR RESPONSIBLE FOR PROVIDING A QUALIFIED ENTITY TO PROVIDE THESE SERVICES AS PART OF THIS SCOPE OF WORK. | |



**CONSTRUCTION DOCUMENTS
UNSPRINKLERED**

		CONSULTANTS:				ARCHITECT/ENGINEERS:		Drawing Title SITE UTILITY PLAN - STEAM		Project Title LETC FIRING RANGE SITE ADAPTATION		Project Number 598-12-207		CENTRAL ARKANSAS VETERANS AFFAIRS HEALTHCARE SYSTEM			
						 <div>BES DESIGN/BUILD, LLC 766 Middle St, Fairhope, AL 36532 Phone: 251.990.5778 Fax: 251.990.3716</div>		Approved: Project Director		Location NORTH LITTLE ROCK, ARKANSAS		Building Number 195				Drawing Number MS101 Dwg. 48 of 58	
Revisions:		Date								Date 10-10-2014		Checked BT		Drawn BJP		 Department of Veterans Affairs	