

CVICU ROOM EXHAUST

HOSPITALS • RESEARCH • FOUNDATION

CONSTRUCTION DOCUMENTS

PROJECT NUMBER: 2022-191

ISSUE DATE: 12-01-2022

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Arkansas Children's

> CVICU ROOM EXHAUST

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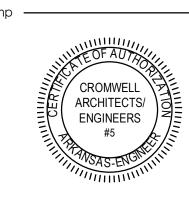
MAIN HOSPITAL -SOUTH WING

ONE CHILDREN'S WAY LITTLE ROCK, ARKANSAS

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COVER SHEET

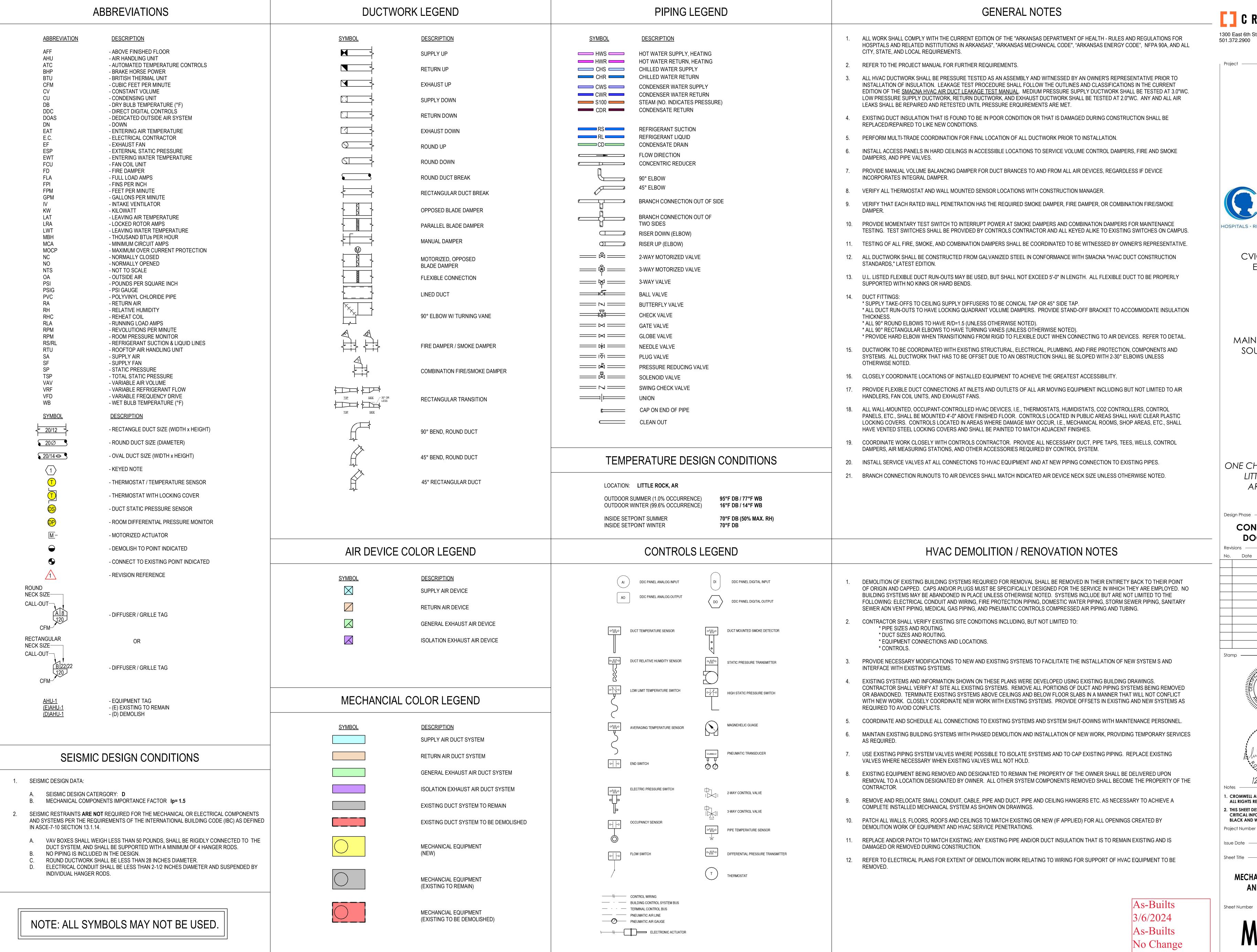
As-Builts

3/6/2024

As-Builts

No Change

G-001



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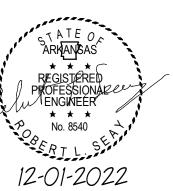
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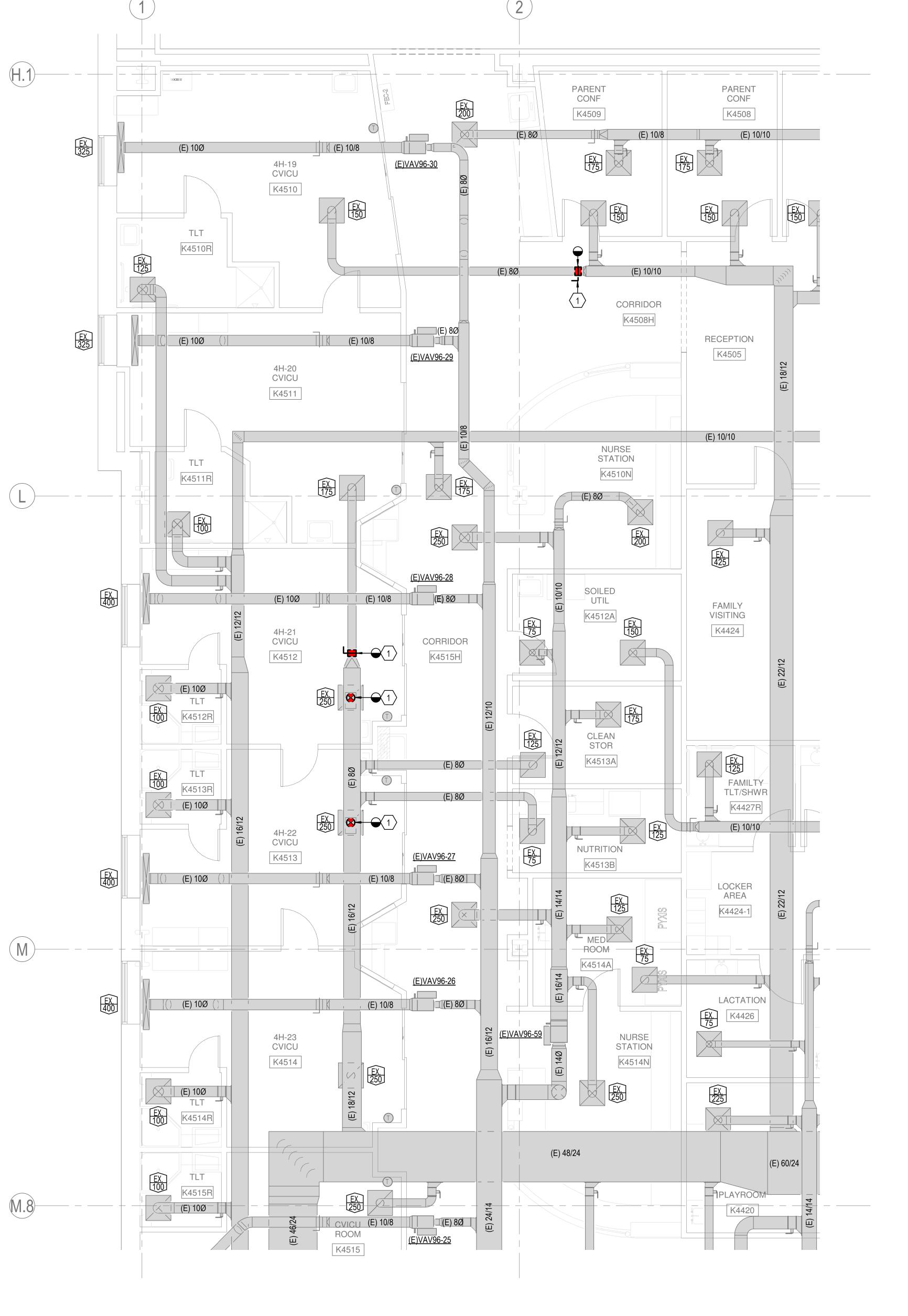


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MECHANICAL LEGEND AND SYMBOLS



FOURTH FLOOR MECHANICAL DEMOLITION PLAN

1/4" = 1'-0"

0

2

4

8

MECHANICAL DEMOLITION KEYED NOTES:

REMOVE EXISTING MANUAL BALANCING DAMPER. PREPARE EXISTING DUCTWORK FOR RECONNECTION TO MOTORIZED DAMPER PER HVAC PLAN.

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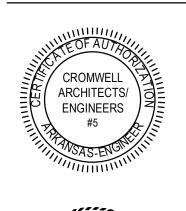
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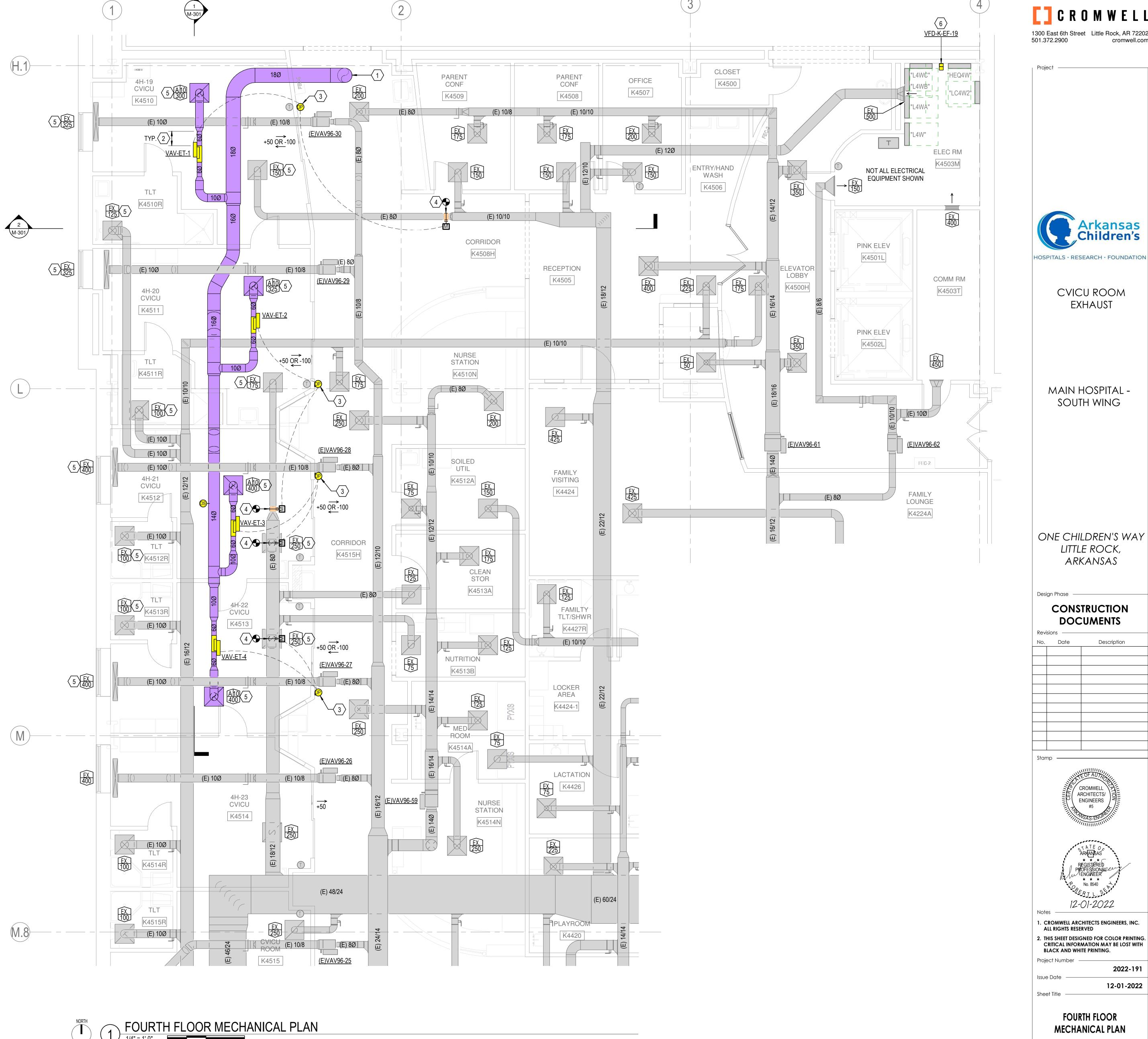
FOURTH FLOOR
MECHANICAL
DEMOLITION PLAN

MD104

As-Builts
3/6/2024
As-Builts
No Change

INSTALLATION KEYED NOTES:

- 1 EXHAUST AIR DUCT UP THROUGH ROOF TO EXHAUST FAN K-EF-19. REFER TO ROOF MECHANICAL PLAN FOR CONTINUATION.
- $\langle 2 \rangle$ PROVIDE MINIMUM THREE DUCT DIAMETERS OF STRAIGHT DUCT AT ALL TERMINAL UNIT INLETS AND OUTLETS TO ENSURE AIRFLOW MEASUREMENT ACCURACY.
- (3) LOCATE ROOM DIFFERENTIAL PRESSURE MONITOR 48 INCHES AFF AND ADJACENT TO PATIENT ROOM DOOR. COORDINATE FINAL LOCATION WITH PROJECT MANAGER.
- REPLACE EXISTING MANUAL BALANCING DAMPER WITH MOTORIZED DAMPER.
- 5 TEST AND BALANCE NEW AND EXISTING AIR DEVICES SERVING PATIENT ROOMS AND TOILETS TO AIRFLOWS INDICATED. REPORT EXHAUST AND RETURN AIRFLOWS IN "STANDARD" AND "NEGATIVE PRESSURE" MODE OF
- (6) INSTALL A DEDICATED CIRCUIT FOR EXHAUST FAN. CIRCUIT SHALL BE 3#12, #12G, 3/4" CONDUIT, SUPPLIED FROM PANEL "L4W". IN PANEL "L4W", REMOVE 20A, 1-POLE BREAKER AT CIRCUIT 12. INSTALL 20A, 3-POLE BREAKER AT CIRCUITS 8, 10,12 TO SERVE FAN VFD. MATCH INTERRUPTING RATING OF EXISTING BREAKERS. ROUTE CONDUIT FROM VFD TO EXHAUST FAN ABOVE THE 4TH FLOOR CEILINGS. MAINTAIN 36" SERVICE CLEARANCE IN FRONT OF 208V PANELS AND 48" SERVICE CLEARANCE IN FRONT OF 480V PANELS.



FOURTH FLOOR MECHANICAL PLAN

1/4" = 1'-0"

0

2

4

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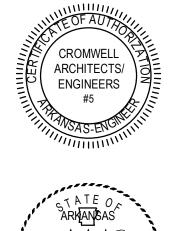
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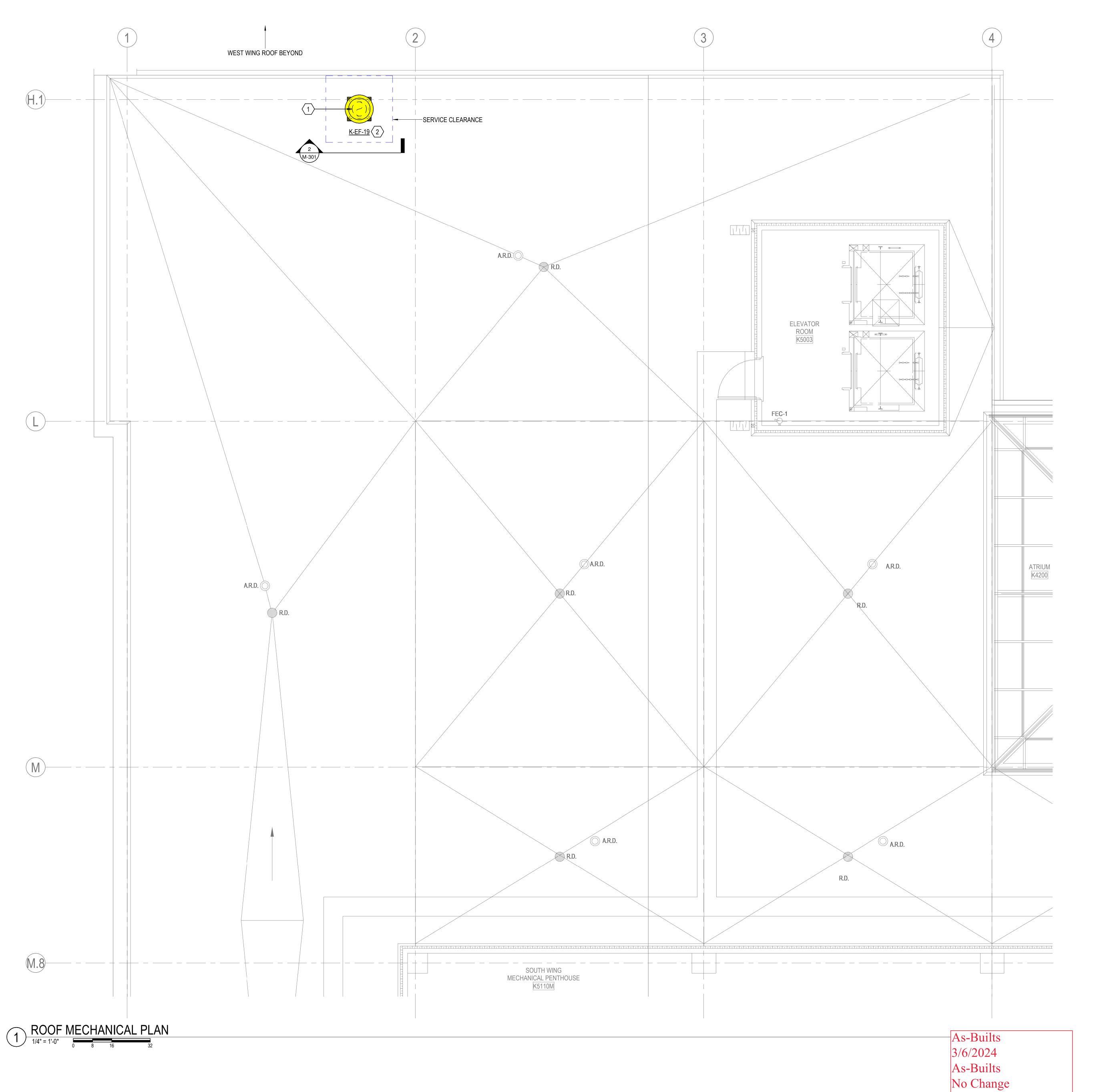
> **FOURTH FLOOR** MECHANICAL PLAN

As-Builts

3/6/2024

As-Builts

No Change



INSTALLATION KEYED NOTES:

EXHAUST AIR DUCT DOWN THROUGH ROOF. REFER TO FOURTH FLOOR MECHANICAL PLAN FOR CONTINUATION. PROVIDE DUCTWORK FLEXIBLE CONNECTION TO EXHAUST FAN. REFER TO MECHANICAL DETAILS.

2 EXHAUST FAN AND ROOF CURB PROVIDED BY EXHAUST FAN MANUFACTURER. REFER TO MECHANICAL DETAILS

FOR ADDITIONAL INFORMATION REGARDING ROOF CURB AND DUCT PENETRATION THRU ROOF.



Project —



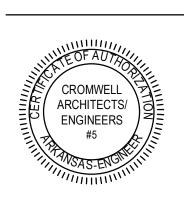
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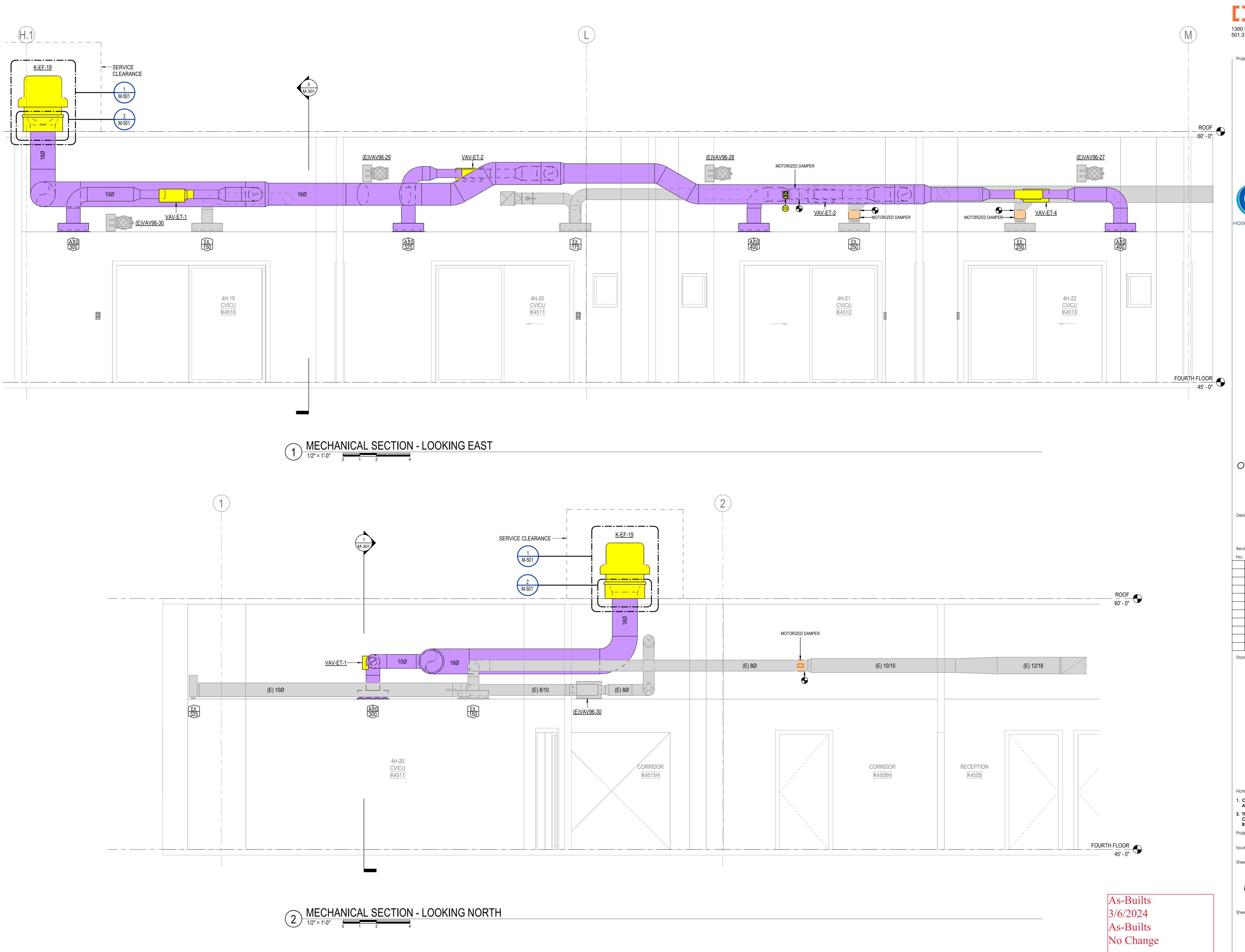
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ROOF MECHANICAL PLAN

eet Number ————

MH105



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EXHAUST

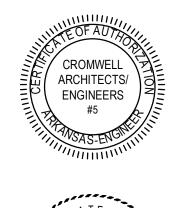
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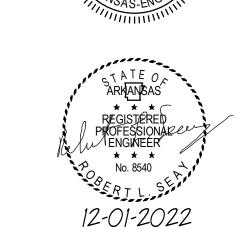
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MECHANICAL SECTIONS

M-301



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MECHANICAL DETAILS
AND SCHEDULES

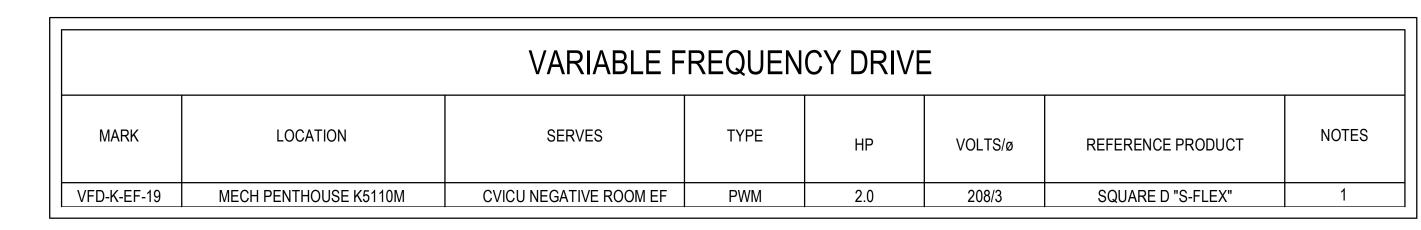
M_501

	EXHAUST FAN														
	MARK	LOCATION	SERVES	TYPE	DRIVE	F.	AN		MOTOR			MAX WEIGH — SONES (LBS)		REFERENCE PRODUCT	NOTES
						CFM	ESP	HP	RPM	VOLTS/ø	FLA	JOINES	(LBS)		
K	K-EF-19	SOUTH WING ROOF	CVICU NEGATIVE ROOMS	DOWNBLAST	BELT	1,425	2.0	2.0	1725	208/3	7.5	19	113	GREENHECK GB-180HP	1

NOTES: 1. BELT DRIVE CENTRIFUGAL ROOF EXHAUST FAN. SPUN ALUMINUM HOUSING, BACKWARD INCLINED ALUMINUM FAN WHEEL. PROVIDE MOTOR VIBRATION ISOLATION MOUNTS, GRAVITY BACKDRAFT DAMPER, 12 INCH INSULATED ROOF CURB, ELECTRICAL DISCONNECT SWITCH

VAV TERMINAL											
MARK	LOCATION	SERVES	TYPE	INLET SIZE (IN)	MAX. AIRFLOW (CFM)	MIN. AIRFLOW (CFM)	MAX. INLET SP (IN WC)	MAX. APD (FT WC)	MAX N.C. (DB)	REFERENCE PRODUCT	NOTES
VAV-ET-1	CVICU ROOM K4510	NEGATIVE ROOM EXHAUST	SHUT-OFF	6	300	0	1.0	0.55	30	TUTTLE & BAILEY RRV	1
VAV-ET-2	CVICU ROOM K4511	NEGATIVE ROOM EXHAUST	SHUT-OFF	6	325	0	1.0	0.55	30	TUTTLE & BAILEY RRV	1
VAV-ET-3	CVICU ROOM K4512	NEGATIVE ROOM EXHAUST	SHUT-OFF	6	400	0	1.0	0.55	30	TUTTLE & BAILEY RRV	1
VAV-ET-4	CVICU ROOM K4513	NEGATIVE ROOM EXHAUST	SHUT-OFF	6	400	0	1.0	0.55	30	TUTTLE & BAILEY RRV	1

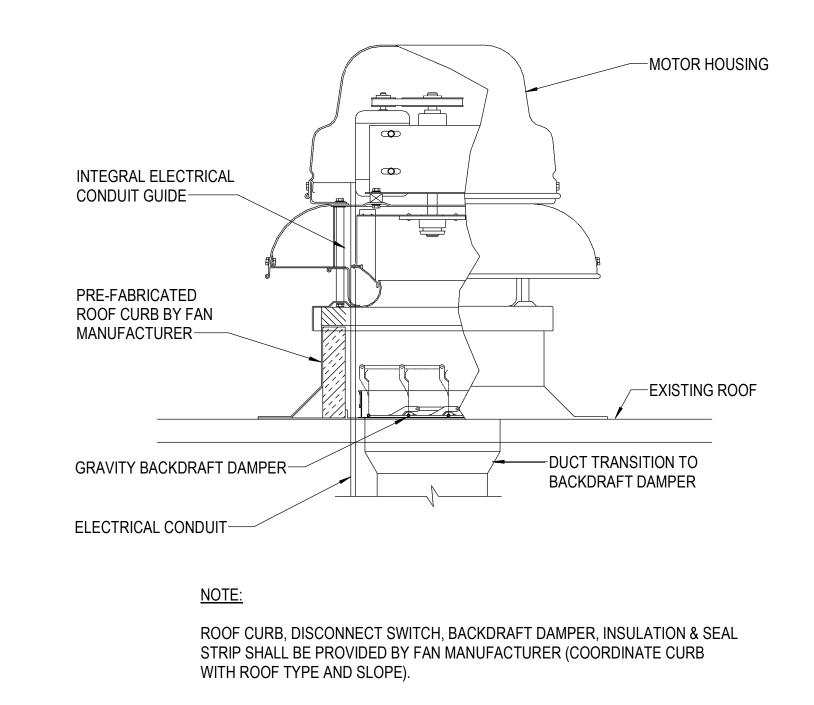
NOTES: 1. SINGLE DUCT ROUND EXHAUST TERMINAL UNIT WITH INTEGRAL DAMPER AND AIRFLOW MEASUREMENT. GALVANIZED STEEL CONSTRUCTION, SLIP INLET/OUTLET CONNECTIONS, NO LINER, NO REHEAT. PROVIDE WITH CONTROLS MOUNTING BRACKET WITHOUT CONTROLS ENCLOSURE. REFER TO PLANS FOR CONTROL BRACKET AND DAMPER SHAFT HANDING. CONTROLS SHALL BE FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR.



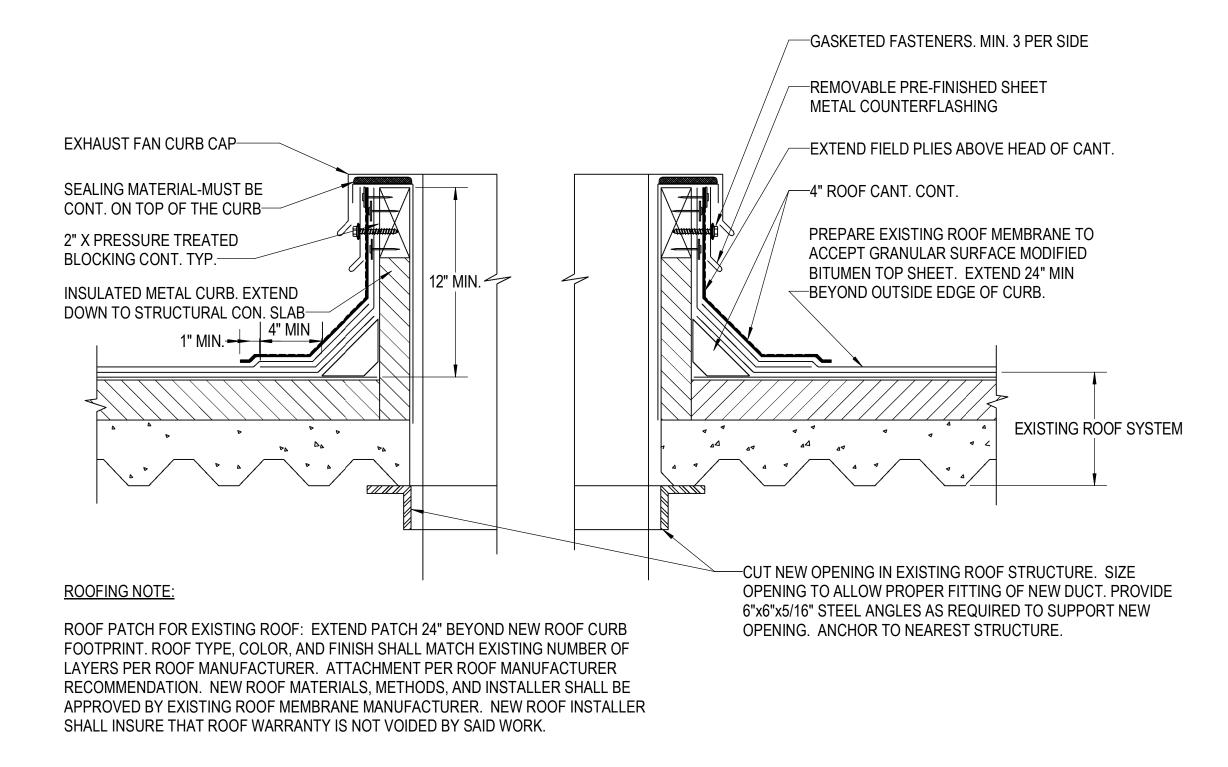
NOTES: 1. FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR. PROVIDE FULL CONTACT BY-PASS AND BACNET NETWORK INTERFACE.

AIR DEVICES						
MARK	TYPE	DESCRIPTION	SIZE	REFERENCE PRODUCT	NOTES	
А	EXHAUST	EGGCRATE	24"x24"	TUTTLE & BAILEY CRE500	1	

NOTES: 1. EGGCRATE GRID CORE WITH 1/2"x1/2"x1/2" SPACING, ALUMINUM CONSTRUCTION, STANDARD WHITE FINISH. PROVIDE SQUARE TO ROUND TRANSITION. PROVIDE MANUFACTURER'S MOUNTING FRAME FOR HARD CEILING LOCATIONS.

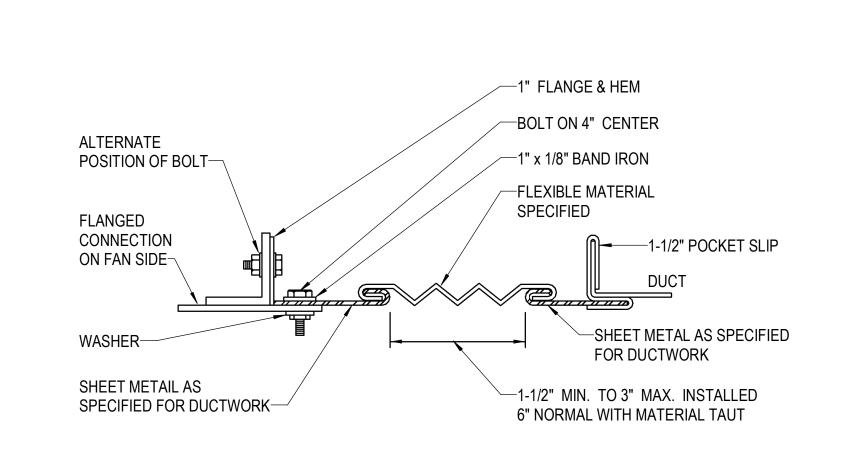






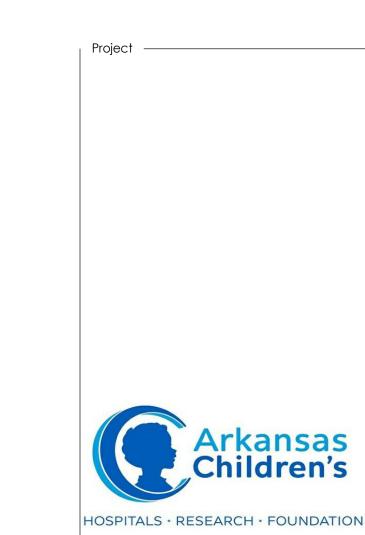
ROOF CURB AND DUCT PENETRATION THRU ROOF DETAIL

NOT TO SCALE



3 DUCTWORK FLEXIBLE CONNECTION DETAIL
NOT TO SCALE

As-Builts
3/6/2024
As-Builts
No Change

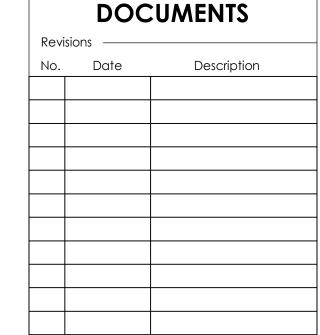


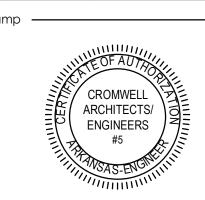
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Design Phase CONSTRUCTION







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MECHANICAL CONTROLS

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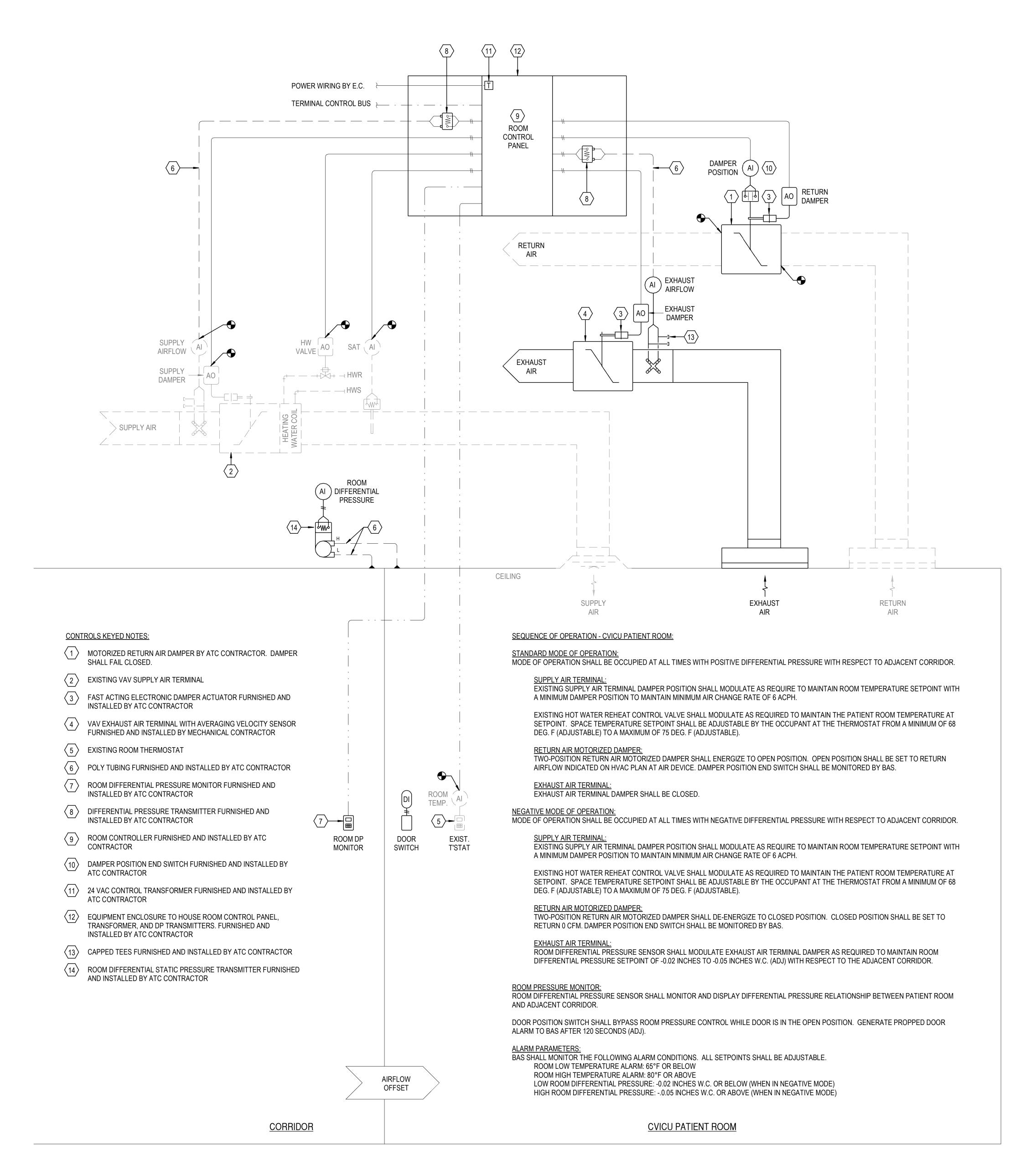
EXHAUST

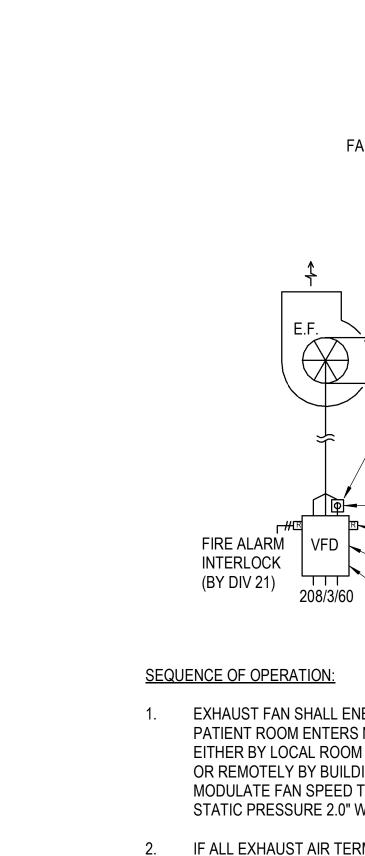
DUCT

STATIC

PRESSURE

EXHAUST AIR





SEQUENCE OF OPERATION:

EXHAUST FAN SHALL ENERGIZE WHEN ANY CONNECTED CVICU PATIENT ROOM ENTERS NEGATIVE PRESSURE MODE OF OPERATION EITHER BY LOCAL ROOM DIFFERENTIAL PRESSURE MONITOR SWITCH OR REMOTELY BY BUILDING AUTOMATION SYSTEM. VFD SHALL MODULATE FAN SPEED TO MAINTAIN EXHAUST AIR DUCT DIFFERENTIAL STATIC PRESSURE 2.0" W.G. (ADJUSTABLE).

FAN HIGH STATIC

CURRENT SENSOR

(AI) (CURRENT STATUS)

AO (SPEED CONTROL)

(AI) (SPEED INDICATION)

 \prec DO \rangle (START-STOP)

- 2. IF ALL EXHAUST AIR TERMINALS ARE CLOSED AND FAN FAILS TO CONTROL OFF, FAN HIGH STATIC PRESSURE SWITCH SHALL DE-ENERGIZE FAN. MANUAL RESET SHALL BE REQUIRED.
- 3. PROVIDE THE FOLLOWING ALARMS TO BAS: FAN FAILURE FAN HIGH STATIC PRESSURE LIMIT: 3.5 INCHES W.G. (ADJ)



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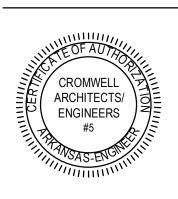
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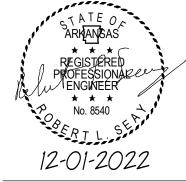
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MECHANICAL ISOMETRIC

No Change