SPECIFICATIONS:

DUCTWORK 2 INCH PRESSURE CLASS GALVANIZED SHEETMETAL CONFORMING TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

DUCT INSULATION

ALL OUTSIDE AIR DUCT INCLUDING DOWNSTREAM OF ERV AND ALL SUPPLY AIR DUCT: 2 INCH FLEXIBLE GLASS FIBER OR 1-1/2 INCH RIGID GLASS FIBER WITH VAPOR BARRIER JACKET OF REINFORCED KRAFT PAPER BONDED TO ALUMINIZED FILM.

AHU-2: PACKAGED AIR SOURCE HEAT PUMP

EQUIVALENT TO UNIT SCHEDULED IN CAPACITY AND CONFIGURATION WITH TWO STAGE HEAT PUMP, R410A REFRIGERANT, MERV 8 FILTERS, TERMINAL BLOCK FOR DIRECT DIGITAL CONTROL, NON-FUSED DISCONNECT SWITCH, DOUBLE WALL INSULATED HOUSING, AND STAINLESS STEEL DRAIN PAN. ROUTE CONDENSATE THROUGH MEZZANINE FLOOR AND LOWER FLOOR CEILING PLENUM TO JANITOR FLOOR SINK.

ERV-1: ENERGY RECOVERY VENTILATOR

EQUIVALENT TO UNIT SCHEDULED IN VERTICAL CONFIGURATION WITH DIRECT DRIVE FANS, EC MOTORS, EXHAUST BYPASS WITH MOTORIZED DAMPER, FRESH AIR MOTORIZED DAMPER, EXHAUST AIR MOTORIZED DAMPER, AND INTEGRAL CONTROLS.

RH-1: RELIEF HOOD

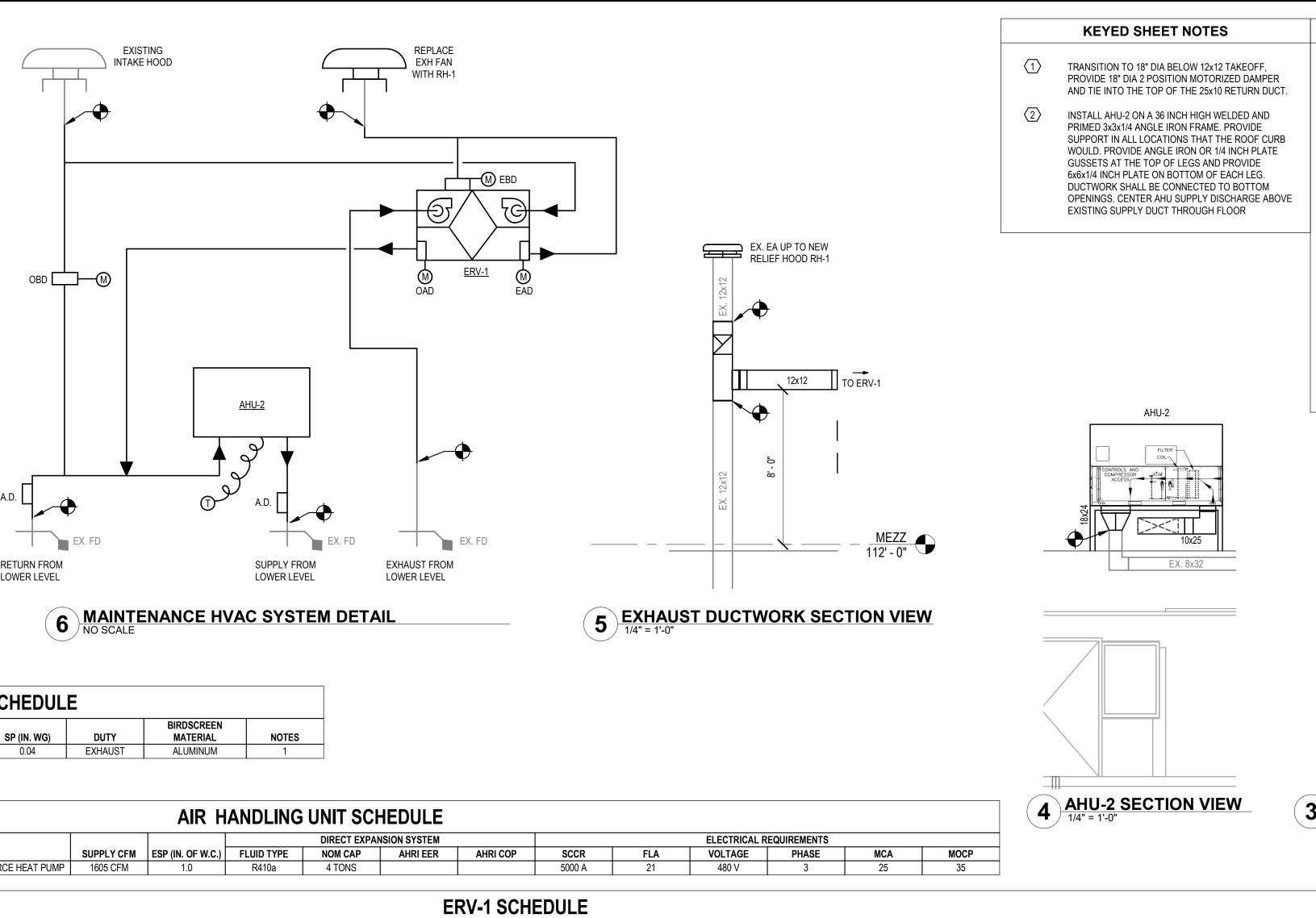
SPUN ALUMINUM CONSTRUCTION WITH CUSTOM SIZE CURB CAP TO MATCH EXISTING ROOF CURB AND ALUMINUM BIRDSCREEN.

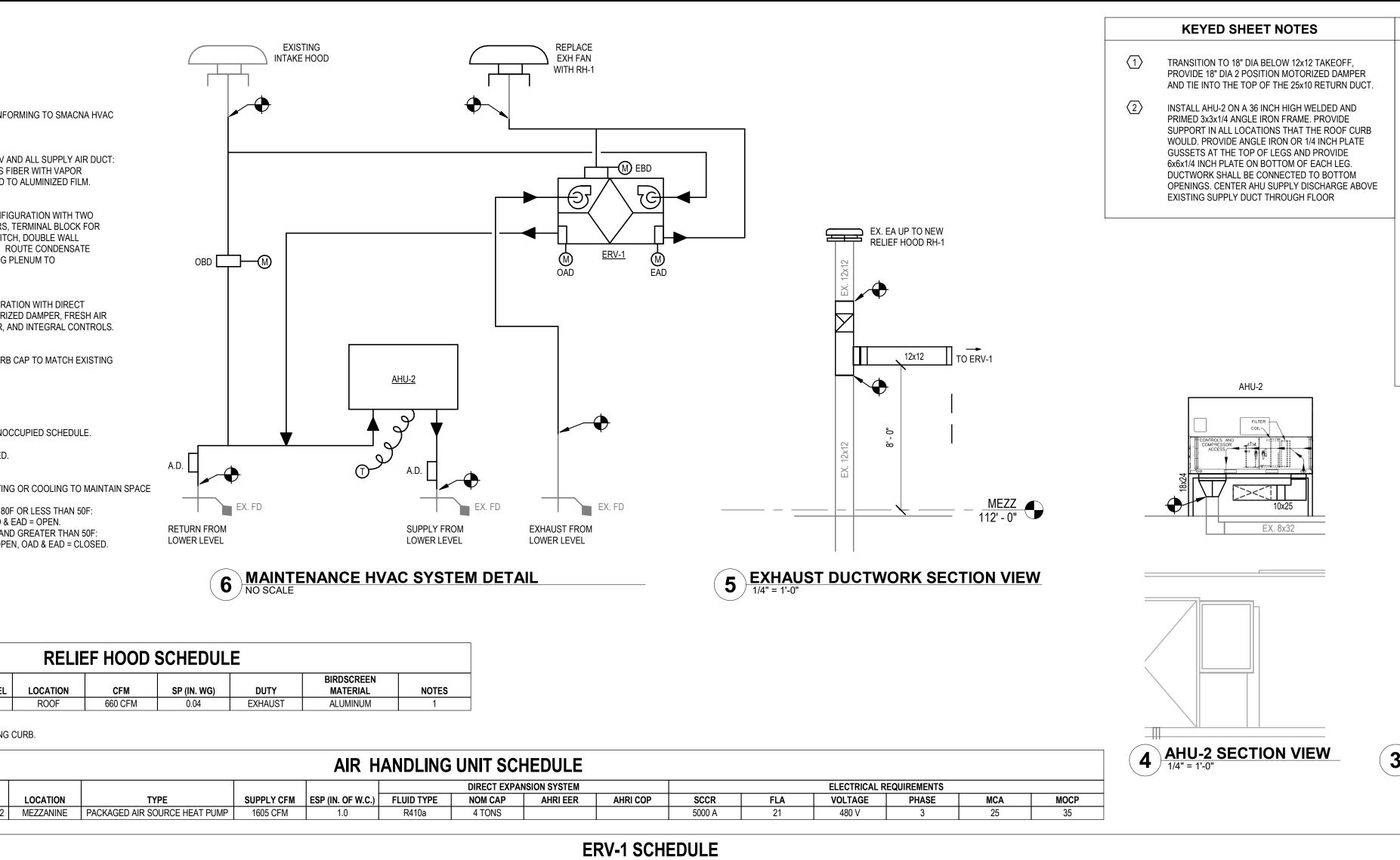
MAINTENANCE HVAC SYSTEM CONTROL SEQUENCE

- A. SCHEDULE: SYSTEM OPERATES ON AN OCCUPIED/UNOCCUPIED SCHEDULE.
- B. UNOCCUPIED: AHU-2 & ERV-1 OFF, OBD & EBD CLOSED.

C. OCCUPIED:

- 1. AHU-2 RUNS CONTINUOUSLY AND PROVIDES HEATING OR COOLING TO MAINTAIN SPACE TEMPERATURE SETPOINTS.
- 2. FOR OUTSIDE AIR TEMPERATURE GREATER THAN 80F OR LESS THAN 50F:
- a. ERV-1 EF & SF = ON, OBD & EBD = CLOSED, OAD & EAD = OPEN. 3. FOR OUTSIDE AIR TEMPERATURE LESS THAN 80F AND GREATER THAN 50F:
- a. ERV-1 EF = ON, ERV-1 SF = OFF, OBD & EBD = OPEN, OAD & EAD = CLOSED.





						BIRDSCREEN	
UNIT NO.	MANUFACTURER AND MODEL	LOCATION	CFM	SP (IN. WG)	DUTY	MATERIAL	NOTES
RH-1	GREENHECK GRSR-15	ROOF	660 CFM	0.04	EXHAUST	ALUMINUM	1

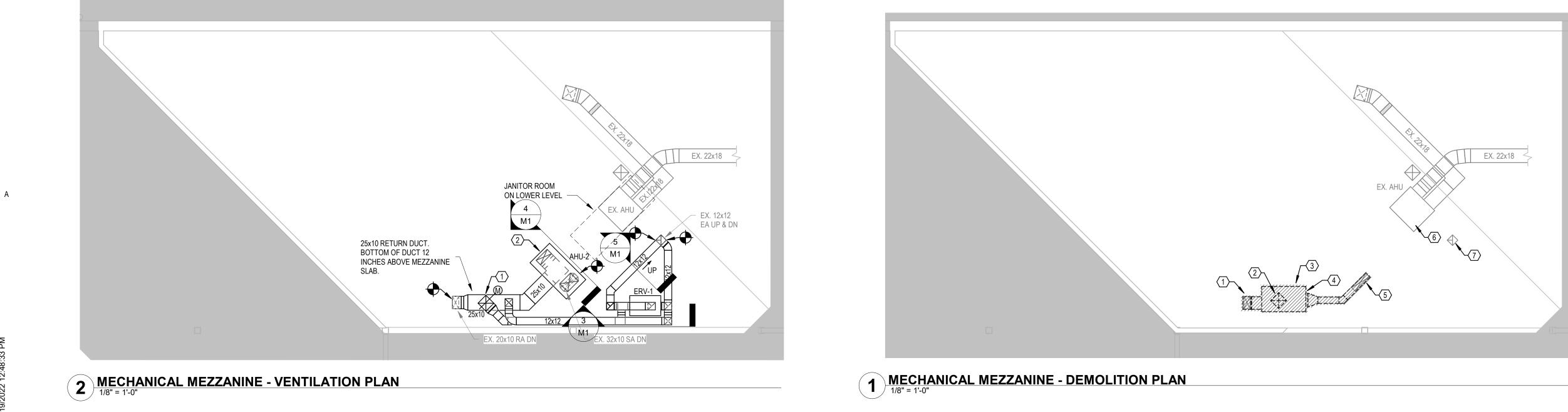
1. CUSTOM CURB CAP TO MOUNT ON EXISTING CURB.

1

					AIR									
							DIRE							
UNIT NO.	MANUFACTURER	MODEL	LOCATION	ТҮРЕ	SUPPLY CFM	ESP (IN. OF W.C.)	FLUID TYPE	NOM C						
AHU-2	AAON	RQ-004-2-V-G602	MEZZANINE	PACKAGED AIR SOURCE HEAT PUMP	1605 CFM	1.0	R410a	4 TON						

		ERV-1 SCHEDULE																													
			SUPPLY A	IR AIRFLOW		EX	HAUST AIR AIRFI	LOW		SUMMER / COOLING						WINTER CONDITIONS					ELECTF REQUIRE			FILTERS							
		FRESH				EXHAUST AIR		MOTOR		OUTS	OUTSIDE AIR FRESH AIR RETURN AIR		OUTSIDE AIR FRESH AIR		RETU	RETURN AIR]		(outdoor ai	R	R	RETURN AIF	2					
UNIT NO.	MODEL INFORMATION	AIR CFM	ESP	MOTOR HP	FLA	CFM	ESP	HP	FLA	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	VOLTAGE	PHASE	MCA	MOPD	TYPE	DEPTH	RATING	TYPE	DEPTH	R
ERV-1	RENEWAIR HE1.5 INDOOR UNIT	700	0.38	1	8	660	0.75	1	8	87	70	79.6	67.8	77	67	-21	-22.2	44.9	33.7	68	46.9	120 V	1	18	20	PLEATED	2"	MERV-8	PLEATED	2"	М
				•																									-		

NOTES: 1. BYPASS WITH DAMPER, FRESH AIR DAMPER, EXHAUST AIR DAMPER EC MOTORS, INTEGRAL CONTROLS.



2

DEMOLITION KEYED SHEET NOTES

- $\langle 1 \rangle$ RETURN DUCT THROUGH MEZZANINE FLOOR. DISCONNECT DUCTWORK ABOVE FLOOR AND FIRE DAMPER. PREPARE DUCT FOR RECONNECTION.
- $\langle 2 \rangle$ OUTSIDE AIR DUCT THROUGH CEILING. DISCONNECT DUCTWORK BELOW CEILING AS HIGH AS POSSIBLE. PREPARE DUCT FOR RECONNECTION.
- $\langle 3 \rangle$ DISCONNECT HEATING WATER PIPES. REMOVE BACK TO WALL PENETRATION. VALVE AND CAP PIPES ON MEZZANINE SIDE OF WALL.
- $\langle 4 \rangle$ REMOVE AIR HANDLING UNIT. REMOVE DUCTWORK BETWEEN AIR HANDLING UNIT AND NOTED RECONNECTIONS.
- $\langle 5 \rangle$ SUPPLY DUCT THROUGH MEZZANINE FLOOR. DISCONNECT DUCTWORK ABOVE FLOOR AND FIRE DAMPER. PREPARE DUCT FOR RECONNECTION.
- $\langle 6 \rangle$ DISCONNECT EXHAUST DUCT ABOVE FIRE DAMPER ACCESS DOOR AND 12 INCHES BELOW CEILING. PREPARE ENDS FOR RECONNECTION. REMOVE ROOF EXHAUST FAN AND PREPARE CURB FOR GOOSENECK INSTALLATION.
- $\langle 7 \rangle$ REMOVE APPROXIMATELY 4 FEET OF EXHAUST RISER TO ACCOMMODATE TIE-IN LOCATIONS.



DRIVEN DESIGN. LHBcorp.com

21 W. Superior St., Ste 500 | Duluth, MN 55802 | 218.727.8446



2402 WEST MICHIGAN STREET, DULUTH, MINNESOTA 55806

THIS SQUARE APPEARS 1/2"x1/2"

BIDDING

ISSUED FOR

REVISION

I HEREBY CERTIFY that this plan, specification or

Professional Engineer under the laws of the State of

Mul L

Reg. No.: 21202

STEWART CRAN

report was prepared by me or under my direct supervision and that I am a duly Licensed

COPYRIGHT 2022 BY LHB, INC. ALL RIGHTS RESERVED

OPERATION CENTER

2402 WEST MICHIGAN STREET,

MEZZANINE MECHANICAL

DULUTH, MINNESOTA 55806

ON FULL SIZE SHEETS

05/19/2022

DATE

DATE

NO

NO

Minnesota.

Signature:

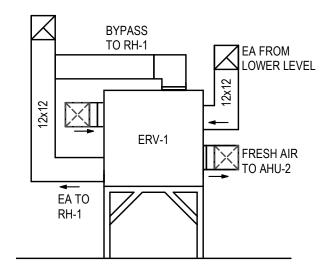
Typed or Printed Name:

Date: 05/19/2022

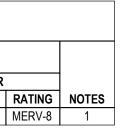
PROJECT NAME:

DRAWING TITLE:

PLANS



3 ERV-1 SECTION VIEW





DRAWN BY: MSR CHECKED BY: SDC PROJ. NO: 200066 DRAWING NO:



4