

# BEJE CLARK RESIDENTIAL CENTER 9389.00 DOC 2JD BCRC ERV REPLACEMENT

PROJECT  
LOCATION



DRAWING INDEX		
SHEET	REV	TITLE
<b>GENERAL</b>		
G00	0	COVER SHEET AND DRAWING INDEX
<b>ELECTRICAL &amp; CONTROLS</b>		
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M 01	0	MECHANICAL 1ST FLOOR PLAN
M 02	0	MECHANICAL ATTIC FLOOR PLAN
M 02ALT	0	MECHANICAL ALTERNATE ATTIC FLOOR PLAN
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M 04	0	MECHANICAL DETAILS AND SCHEDULES
<b>ELECTRICAL &amp; CONTROLS</b>		
E01	0	ELECTRICAL PLAN

NORMAL CONSTRUCTION ACTIVITY TO OCCUR BETWEEN 8AM AND 5PM. COORDINATE PHASING/SEQUENCING WITH REPRESENTATIVE TO MINIMIZE SHUTDOWN TIME.

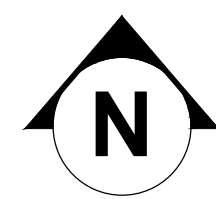


**BEJE CLARK RESIDENTIAL CENTER**  
9389.00 DOC 2JD BCRC ERV Replacement  
818 15TH STREET SW.  
MASON CITY, IOWA 50401


BIDDING SET	DATE	DESCRIPTION
1	9/11/2024	

PROJECT NO: **101324**  
DATE: **9/11/2024**  
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**A**  
**G00**  
BEJE CLARK RESIDENTIAL CENTER  
NO SCALE



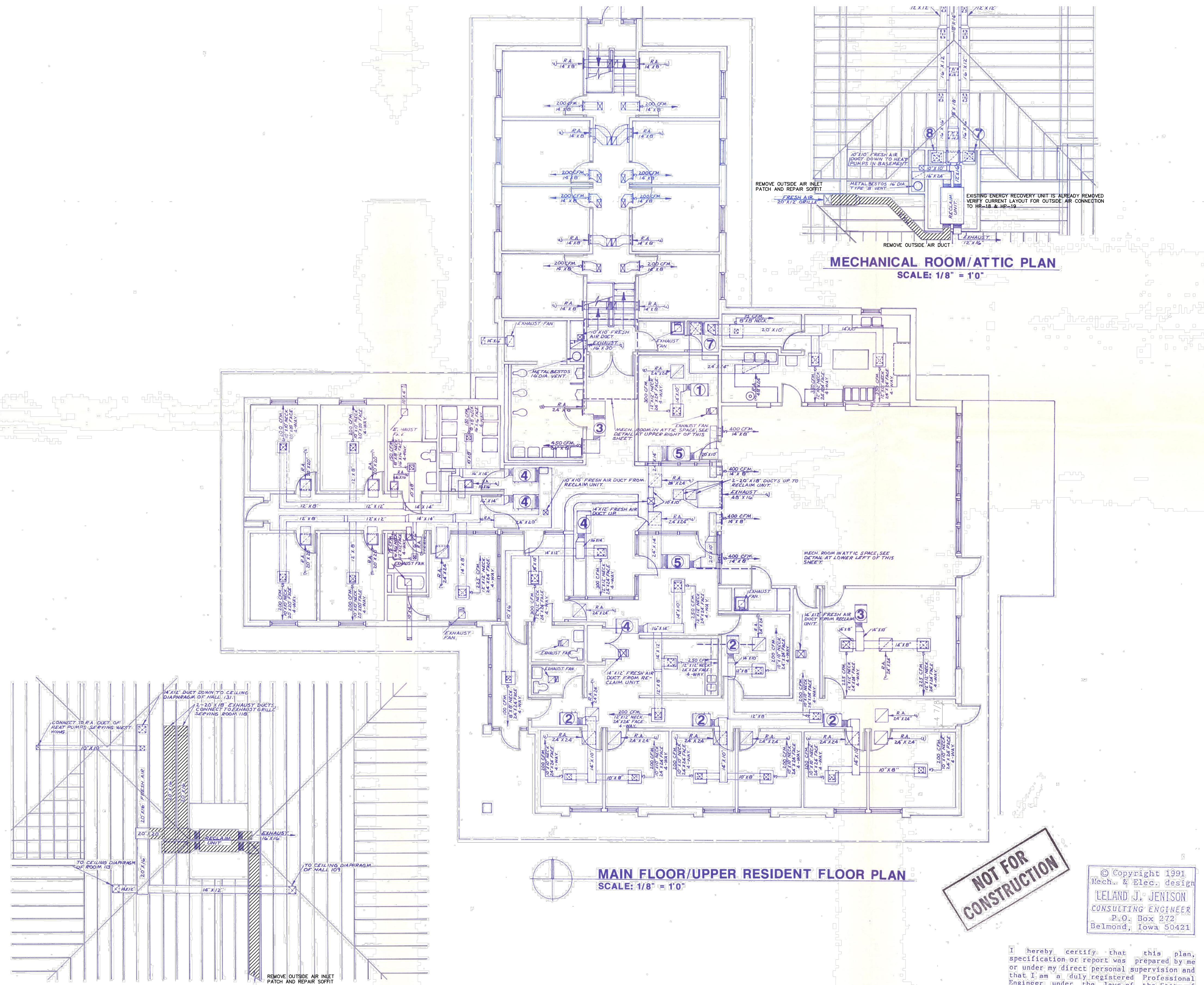
I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME, OR UNDER MY DIRECT PERSONAL SUPERVISION. I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE:  MOHAMMED N. ABU-HASAN  
NAME: MOHAMMED N. ABU-HASAN  
LICENSE RENEWAL DATE: DEC. 31, 2025  
PAGES OR DIVISIONS COVERED BY THIS CERTIFICATION: \_\_\_\_\_

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SHEET TITLE  
**COVER SHEET & DRAWING INDEX**

**G00**



**MECHANICAL ROOM/ATTIC PLAN**  
SCALE: 1/8" = 1'-0"

**MAIN FLOOR/UPPER RESIDENT FLOOR PLAN**  
SCALE: 1/8" = 1'-0"

**NOT FOR CONSTRUCTION**

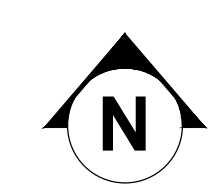
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**LELAND J. JENISON**  
CONSULTING ENGINEER  
P.O. Box 272  
Belmond, Iowa 50421

I hereby certify that this plan, specification or report was prepared by me or under my direct personal supervision and that I am a duly registered Professional Engineer under the laws of the State of Iowa.  
Signed \_\_\_\_\_ Date \_\_\_\_\_

LELAND J. JENISON, P.E. Iowa Reg. No. 3617

- NOTES:
1. REMOVE EXISTING ENERGY RECOVERY UNIT
  2. REMOVE EXISTING OUTSIDE AND EXHAUST AIR DUCTS
  3. PROVIDE DEDUCTIVE ALTERNATE PRICE TO ALLOW RECOVERY UNIT AND DUCTWORK TO REMAIN. SELECTIVE DEMOLITION WILL STILL BE REQUIRED FOR CONNECTION TO NEW UNIT.

**A MECHANICAL PLAN**  
M01 SCALE 1/8" = 1'-0"



IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES  
CENTRAL PROCUREMENT ENTERPRISES (CPE)  
HOOVER STATE OFFICE BUILDING, LEVEL 3  
1305 EAST WALNUT  
DES MOINES, IA 50319-0105

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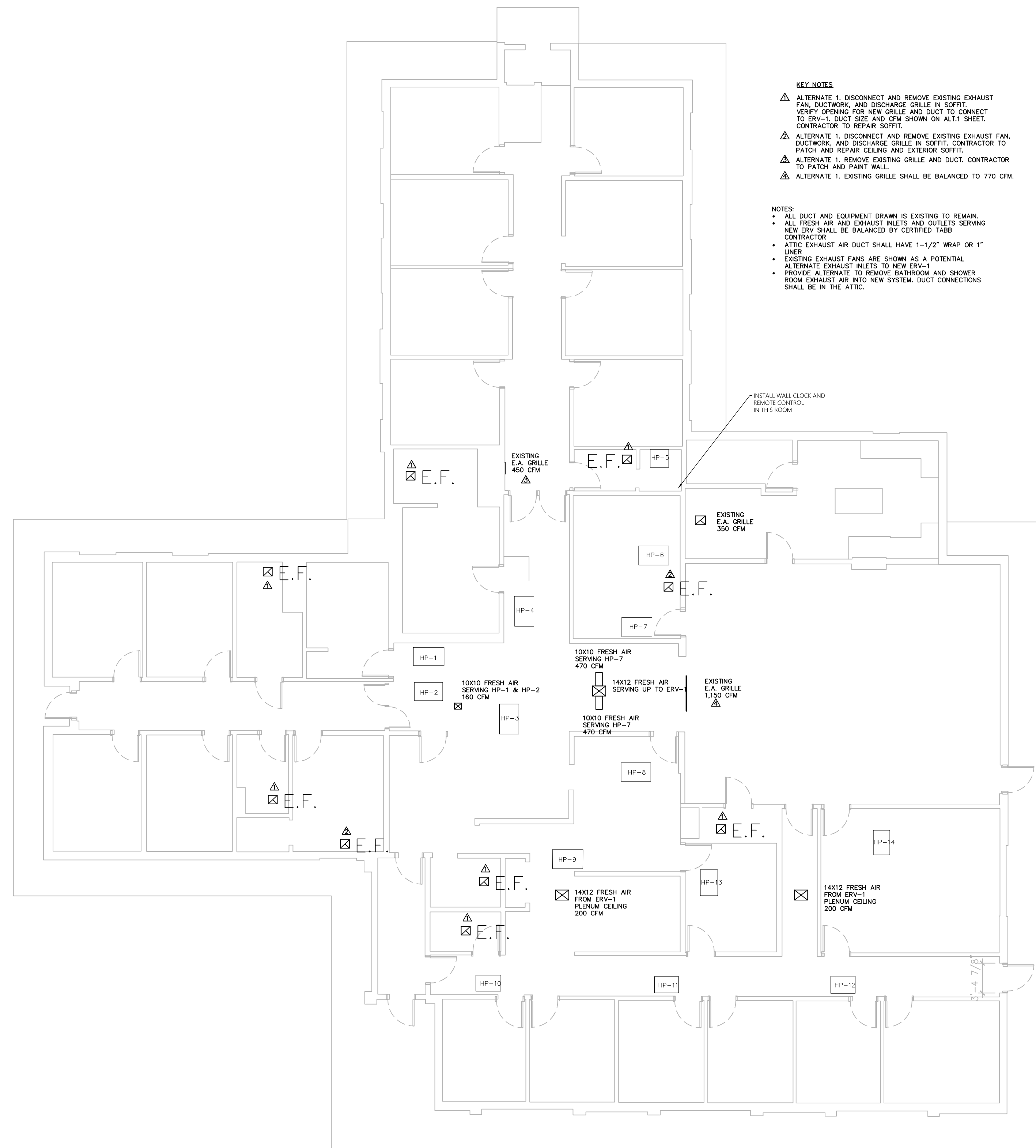
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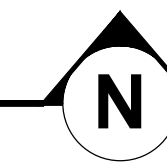
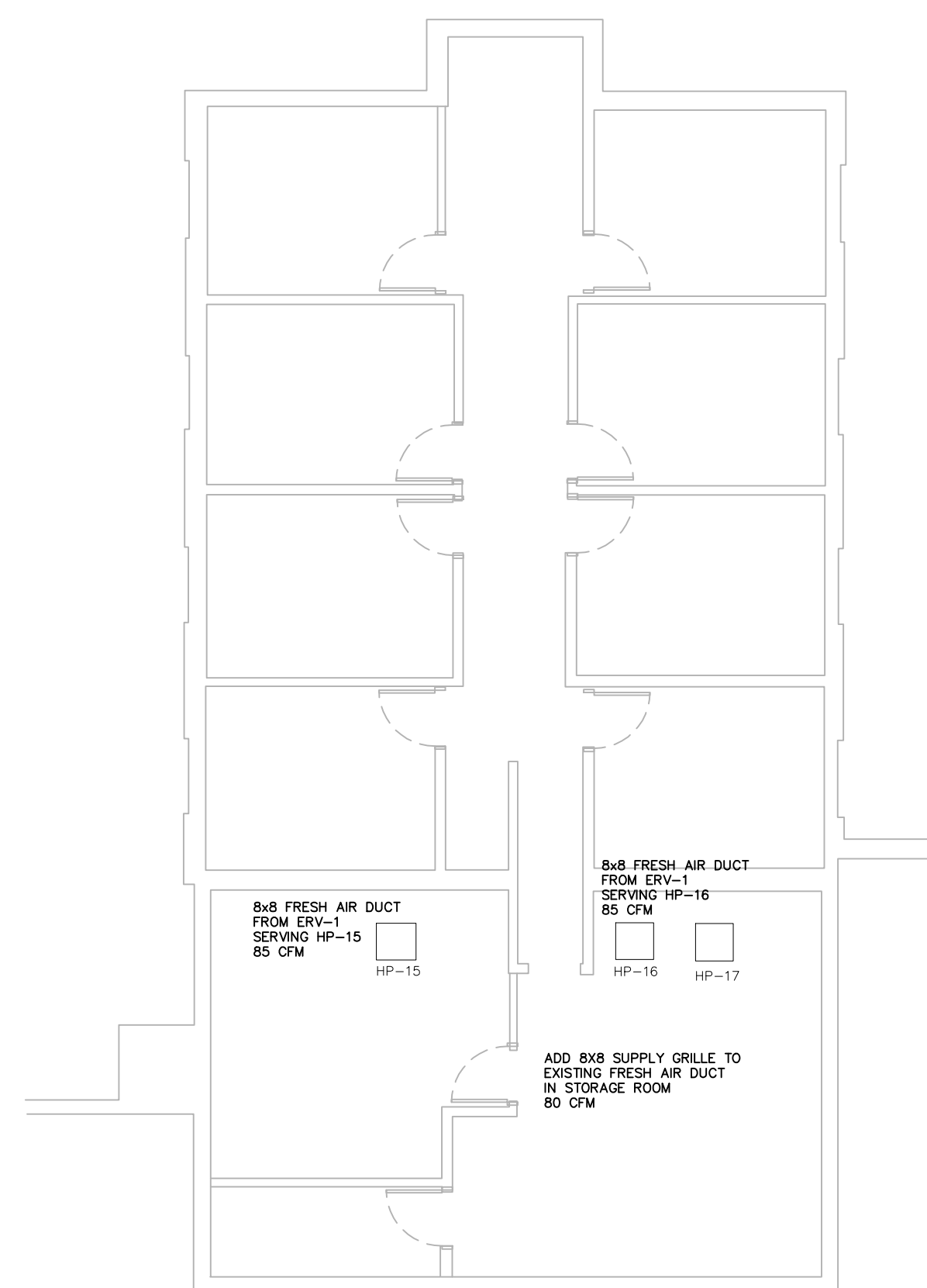
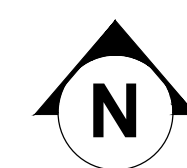
**MECHANICAL DEMOLITION PLAN**

**MD01**

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**A**  
**M01** MECHANICAL 1ST FLOOR PLAN  
SCALE 1/8" = 1'-0"



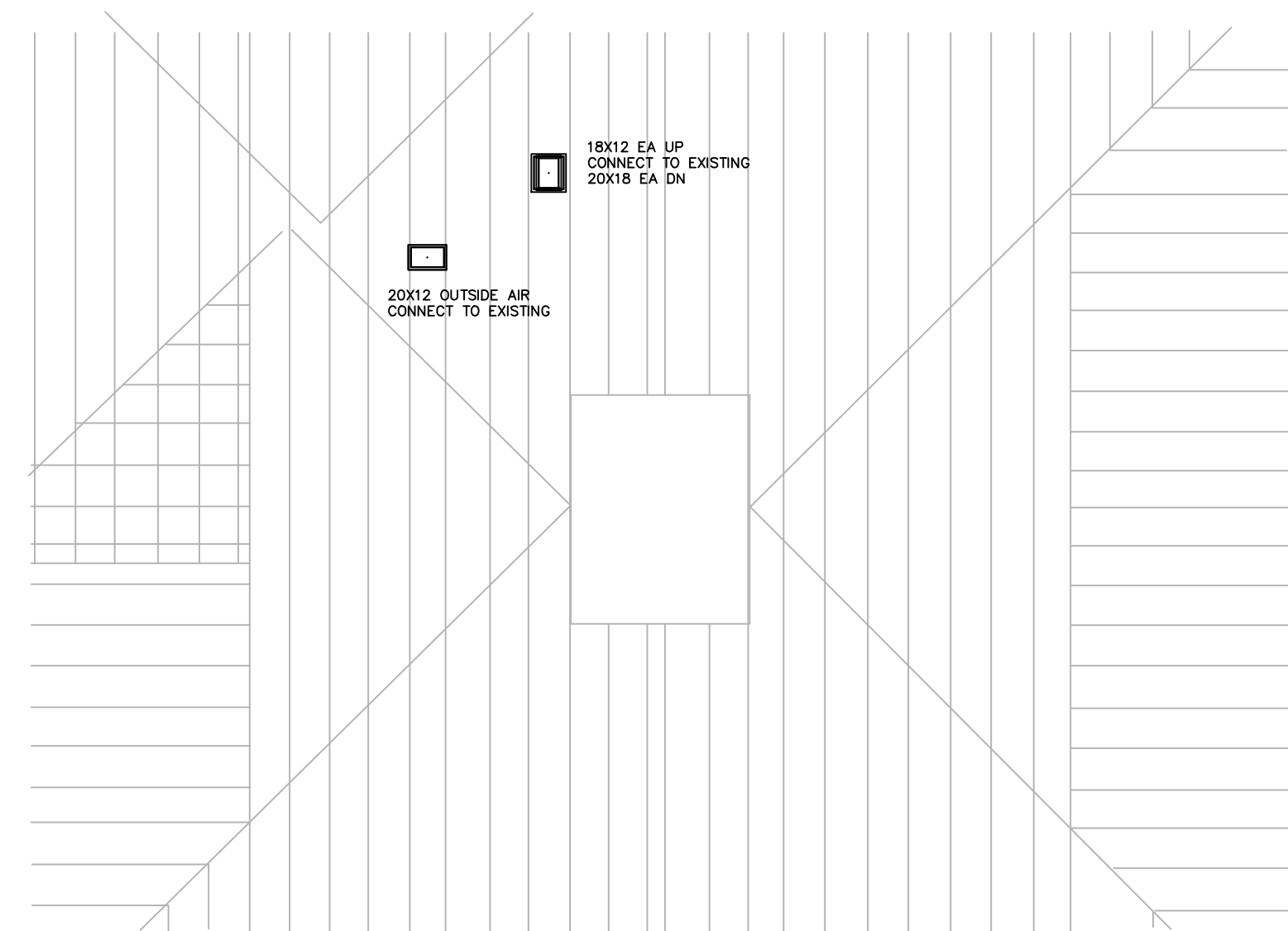
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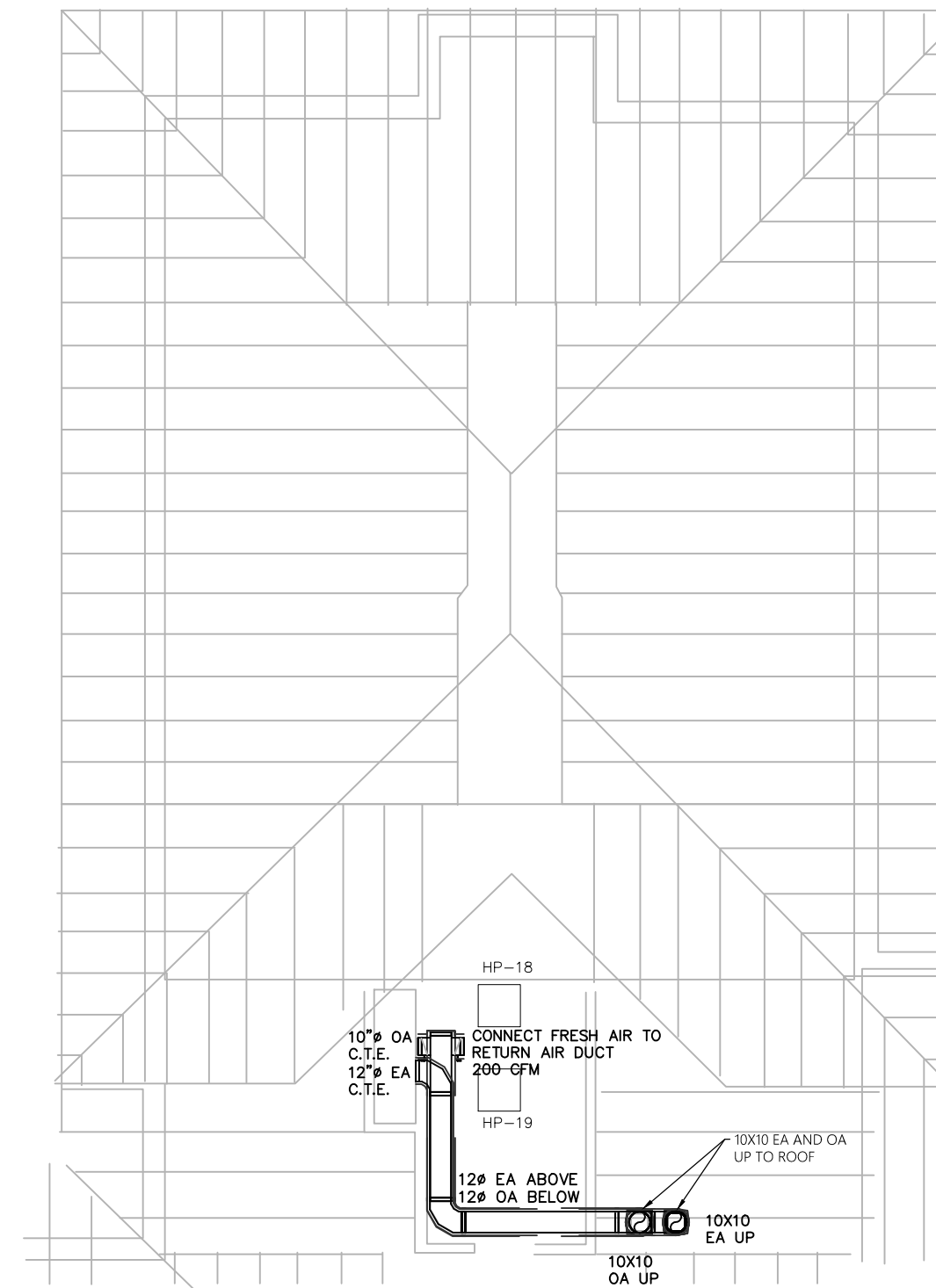
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**MECHANICAL BASEMENT AND 1ST FLOOR PLAN**

**M01**

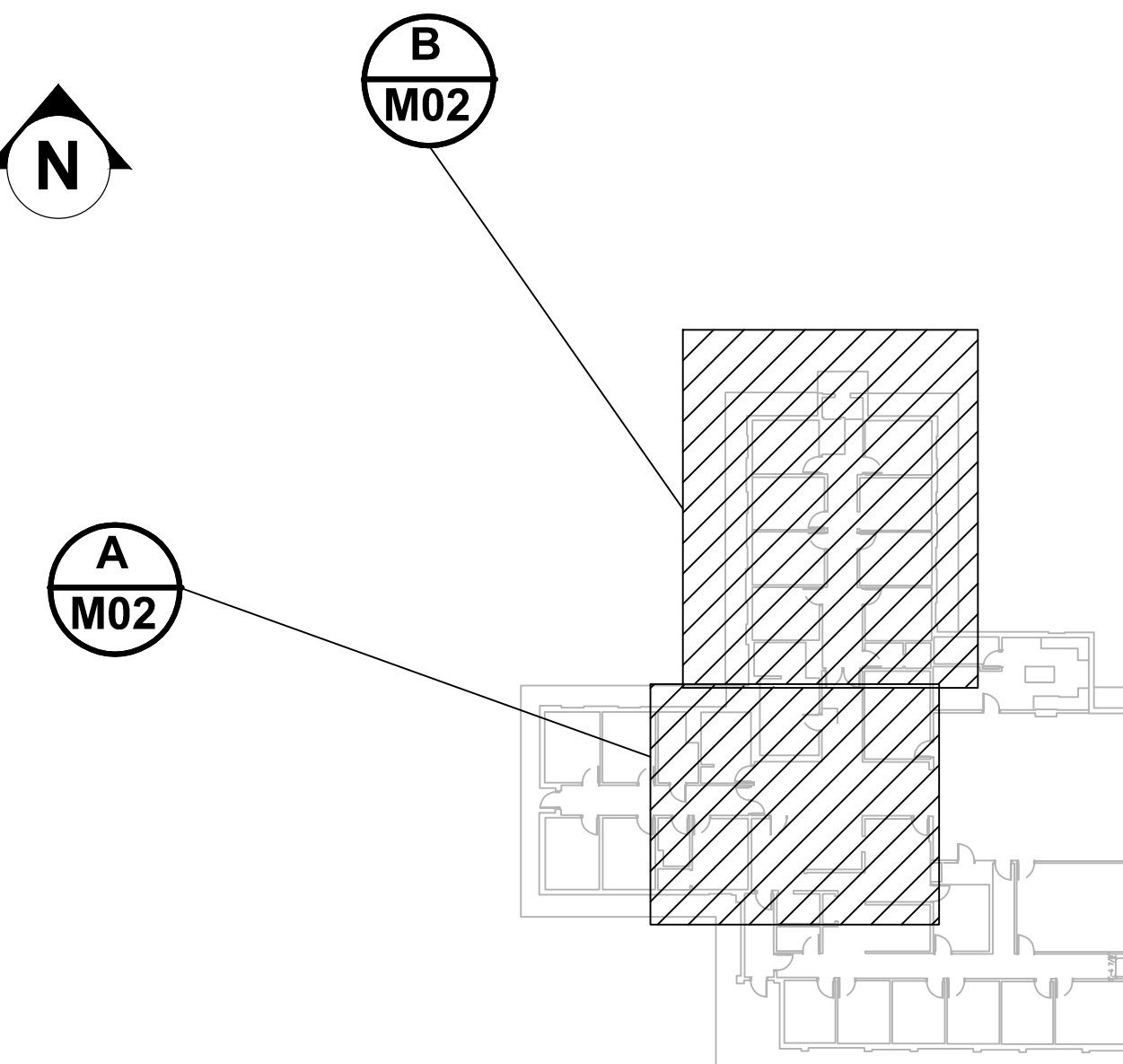
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**A**  
**M02** MECHANICAL ATTIC PLAN - CENTRAL  
SCALE 1/8" = 1'-0"  
N



**B**  
**M02** MECHANICAL ATTIC PLAN - NORTH  
SCALE 1/8" = 1'-0"  
N



**KEY PLAN**

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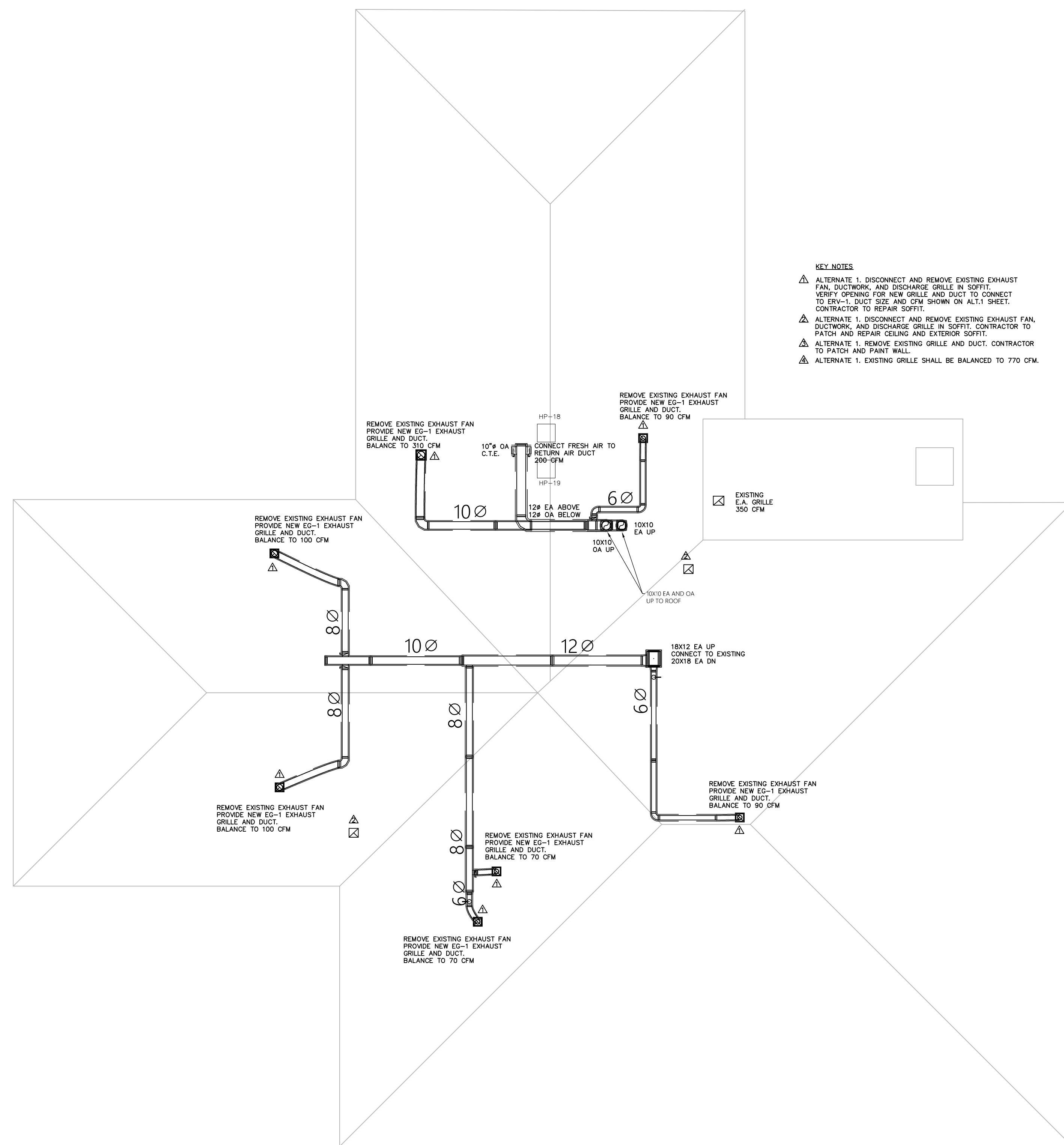
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SHEET TITLE

**ATTIC MECHANICAL PLAN**

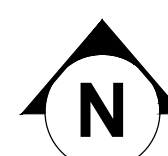
**M02**



**KEY NOTES**

- △ ALTERNATE 1, DISCONNECT AND REMOVE EXISTING EXHAUST FAN, DUCTWORK, AND DISCHARGE GRILLE IN SOFFIT. VERIFY OPENING FOR NEW GRILLE AND DUCT TO CONNECT TO ERV-1. DUCT SIZE AND CFM SHOWN ON ALT.1 SHEET. CONTRACTOR TO REPAIR SOFFIT.
- △ ALTERNATE 1, DISCONNECT AND REMOVE EXISTING EXHAUST FAN, DUCTWORK, AND DISCHARGE GRILLE IN SOFFIT. CONTRACTOR TO PATCH AND REPAIR CEILING AND EXTERIOR SOFFIT.
- △ ALTERNATE 1, REMOVE EXISTING GRILLE AND DUCT. CONTRACTOR TO PATCH AND PAINT WALL.
- △ ALTERNATE 1, EXISTING GRILLE SHALL BE BALANCED TO 770 CFM.

**A**  
**M02** MECHANICAL ATTIC PLAN - ALTERNATE 1  
SCALE 1/8" = 1' - 0"



Iowa Department of Administrative Services  
**DAS**  
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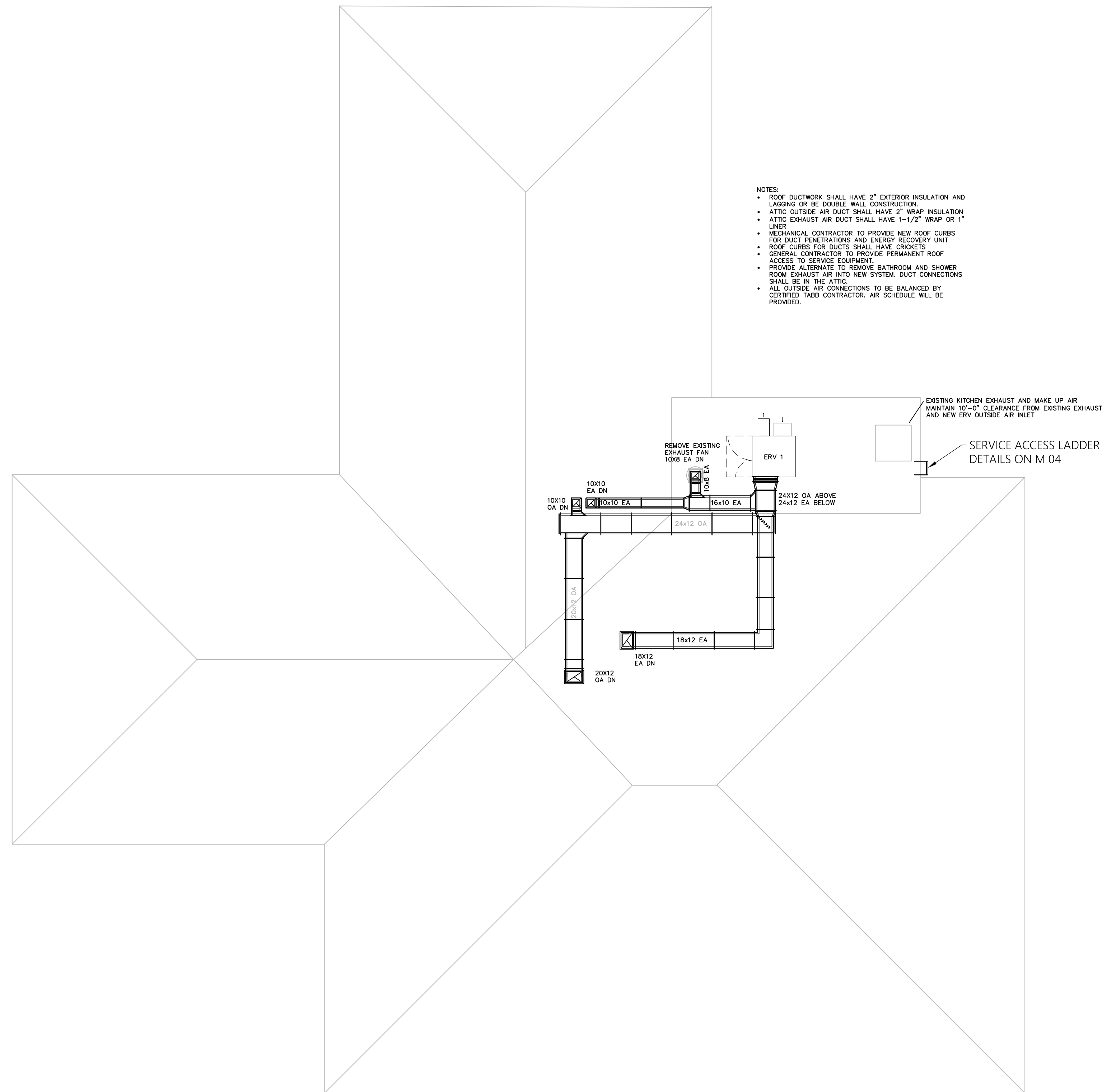
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SHEET TITLE  
**ATTIC MECHANICAL PLAN ALT.1**

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**M02ALT**



- NOTES:
- ROOF DUCTWORK SHALL HAVE 2" EXTERIOR INSULATION AND LAGGING OR BE DOUBLE WALL CONSTRUCTION.
  - ATTIC OUTSIDE AIR DUCT SHALL HAVE 2" WRAP INSULATION
  - ATTIC EXHAUST AIR DUCT SHALL HAVE 1-1/2" WRAP OR 1" LINER
  - MECHANICAL CONTRACTOR TO PROVIDE NEW ROOF CURBS FOR DUCT PENETRATIONS AND ENERGY RECOVERY UNIT
  - ROOF CURBS FOR DUCTS SHALL HAVE CRICKETS
  - GENERAL CONTRACTOR TO PROVIDE PERMANENT ROOF ACCESS TO SERVICE EQUIPMENT
  - PROVIDE ALTERNATE TO REMOVE BATHROOM AND SHOWER ROOM EXHAUST AIR INTO NEW SYSTEM. DUCT CONNECTIONS SHALL BE IN THE ATTIC
  - ALL OUTSIDE AIR CONNECTIONS TO BE BALANCED BY CERTIFIED TABB CONTRACTOR. AIR SCHEDULE WILL BE PROVIDED.

**A** ROOF MECHANICAL PLAN  
**M03** SCALE 1/8" = 1'-0"

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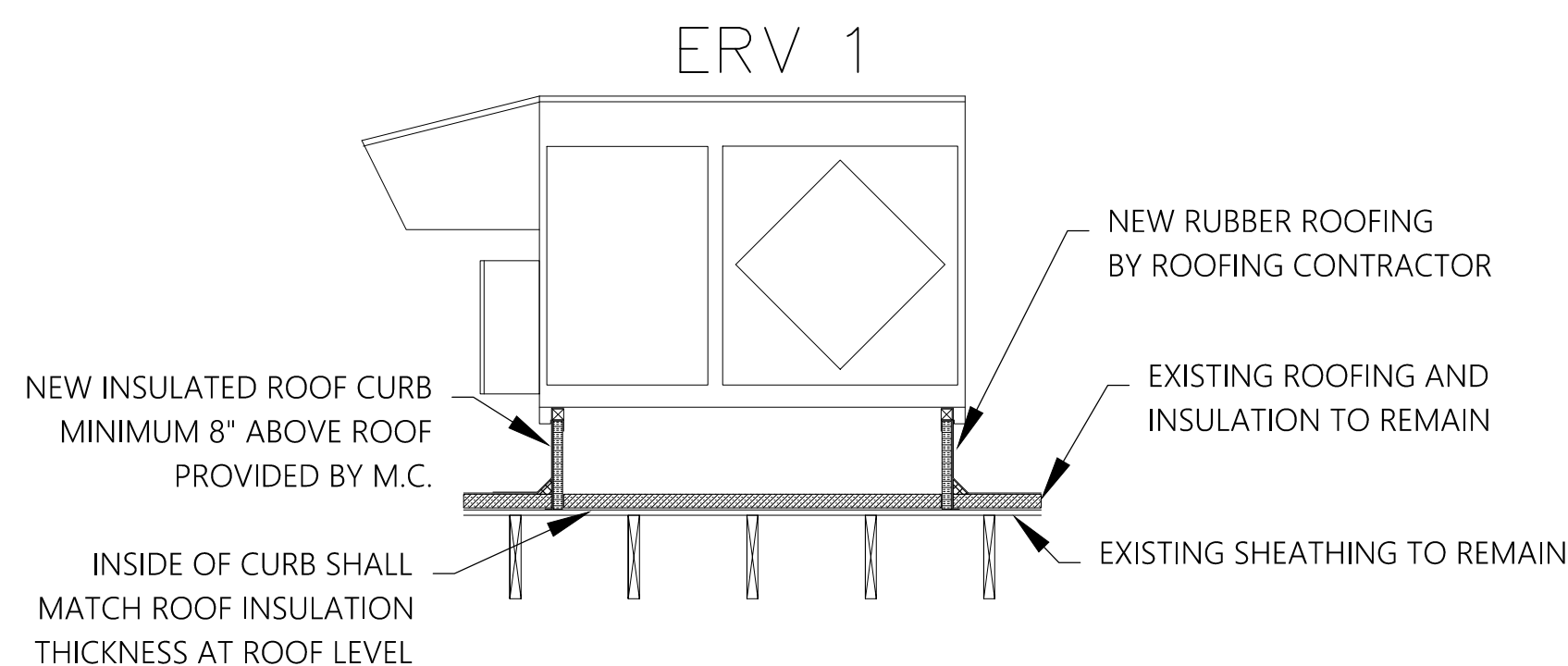
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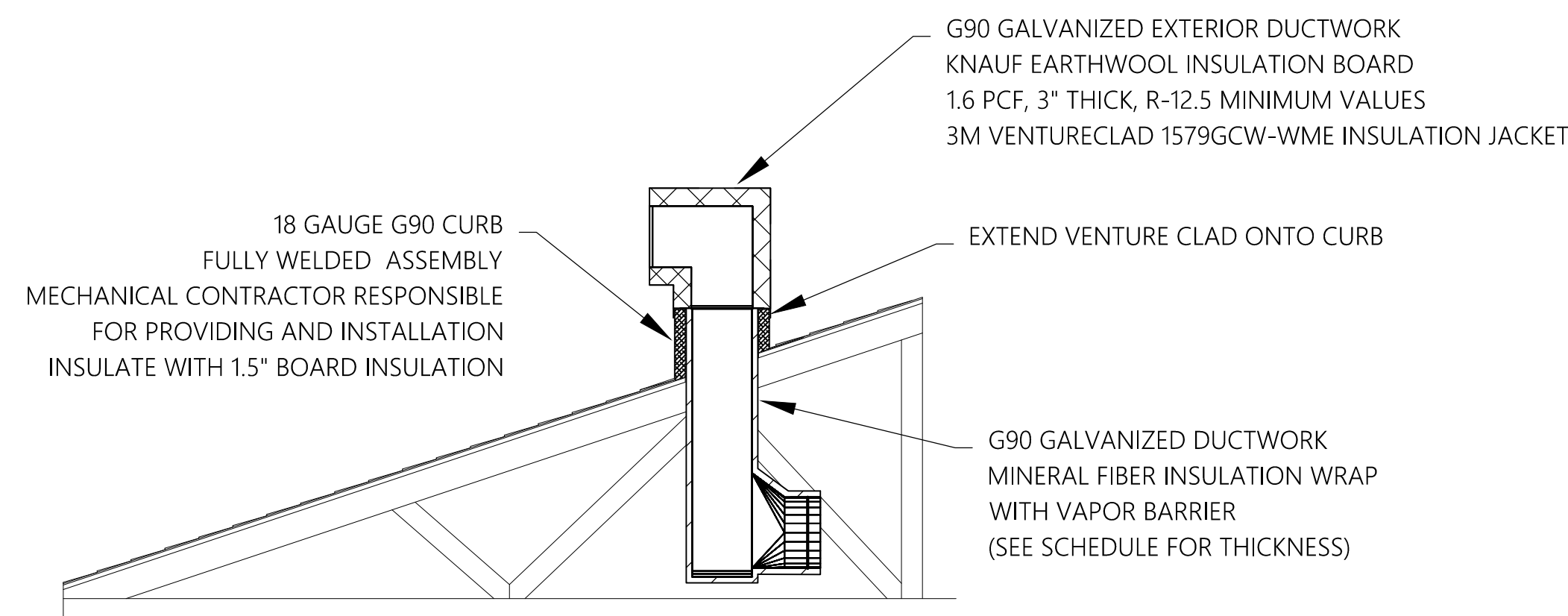
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**ROOF MECHANICAL PLAN**

**M03**

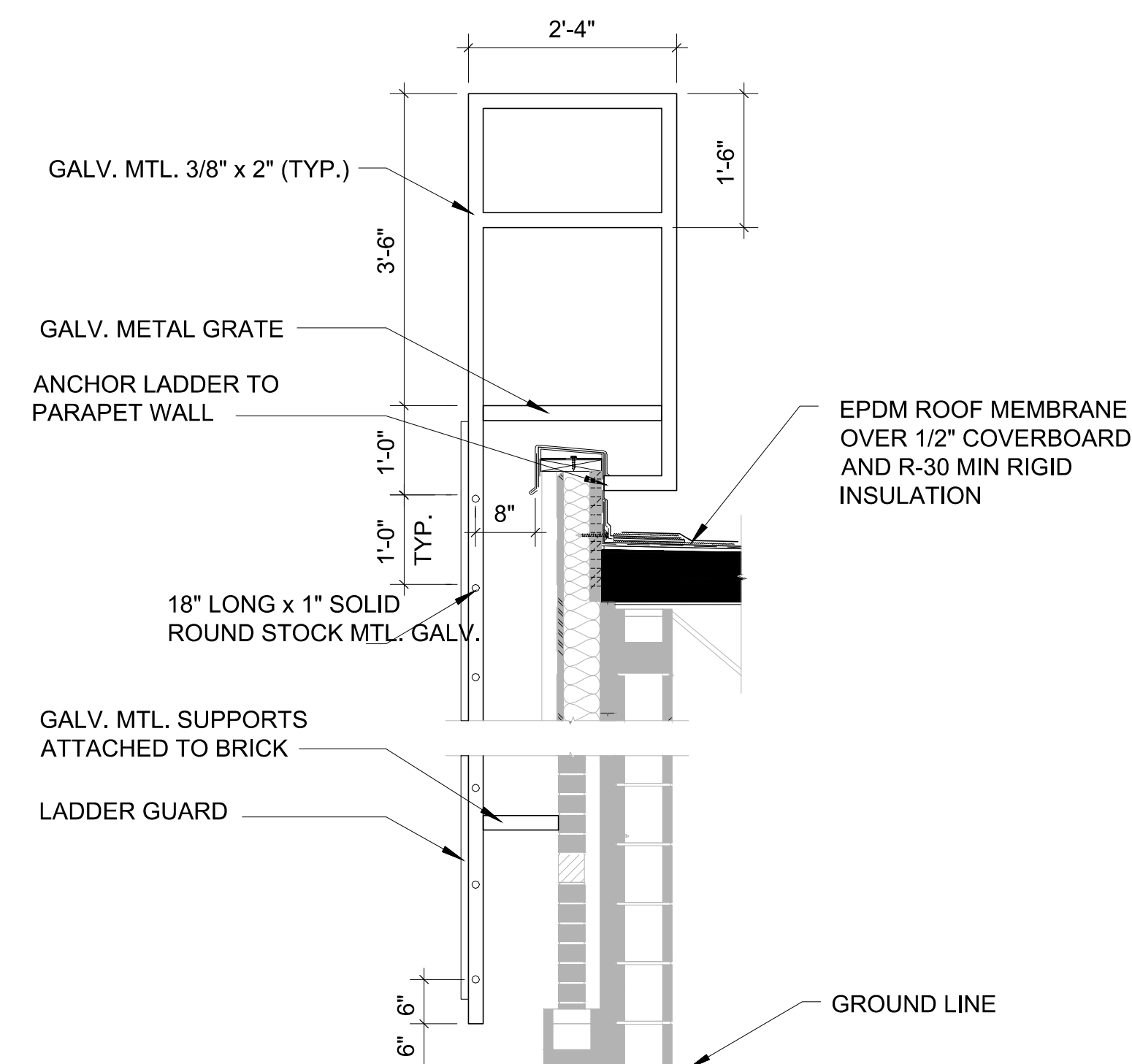
- NOTES:
- MODEL BASIS OF DESIGN IS HE-3XRTC
  - APPROVED ALTERNATES WILL BE ACCEPTED PROVIDED INSTALLATION CONFIGURATION MATCHES ROOF LAYOUT.
  - EQUIPMENT IS PROVIDED WITH DIGITAL TIME CLOCK TC7D-W AND REMOTE DISPLAY 131311.
  - EQUIPMENT SHALL OPERATE 365 DAYS PER YEAR AND UNIT WILL SHUT OFF BETWEEN 2:00 A.M. AND 5:00 A.M.



**A** ENERGY RECOVERY UNIT DETAIL  
M04 NOT TO SCALE



**B** DUCTWORK ROOF CURB DETAIL  
M04 NOT TO SCALE



**C** ROOF LADDER WITH GUARD  
M04 NOT TO SCALE

NOTE: MANUFACTURED LADDERS ARE ACCEPTABLE UPON REVIEW BY THE DESIGN TEAM.

HVAC NOTES	
1 THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS, AND PER MANUFACTURER'S INSTRUCTIONS.	10 PROVIDE 1 YEAR WARRANTY ON ALL EQUIPMENT AND 5 YEAR WARRANTY ON ALL COMPRESSORS.
2 THE CONTRACTOR SHALL PAY FOR ALL NECESSARY PERMITS, LICENSES, INSPECTIONS AND FEES.	11 INTAKE OPENINGS SHALL BE A MINIMUM OF 10'-0" FROM ALL EXHAUST OUTLETS AND PLUMBING VENTS PER INTERNATIONAL CODE.
3 THESE DRAWINGS ARE SCHEMATIC IN NATURE AND SHOW GENERAL LOCATIONS AND ARRANGEMENT OF EQUIPMENT AND MATERIALS. VERIFICATION OF EXACT LOCATIONS SHALL BE PERFORMED BY THE CONTRACTOR.	12 ALL MAIN DUCTWORK SHALL BE GALVANIZED SHEET METAL AND CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS. BRANCH DUCT TO REGISTERS AND GRILLES SHALL HAVE A BALANCE DAMPER. FLEX DUCTWORK IS NO MORE THAN 8'-0".
4 COORDINATE ALL OPENINGS IN THE EXTERIOR WALLS AND ROOF WITH GENERAL CONTRACTOR.	13 ALL DUCTWORK SHALL BE SEALED IN ACCORDANCE WITH SMACNA SEAL CLASS A. ALL LONG AND TRANSVERSE SEAMS SHALL BE SEALED.
5 BUILDING IS EXISTING AND MECHANICAL CONTRACTOR IS RESPONSIBLE TO MAKE ALL CONNECTIONS EQUIVALENT OR AS DETAILED IN THESE DRAWINGS.	14 PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND ALL MECHANICAL UNITS FOR MAINTINANCE AND FILTER REMOVAL.
6 ALL DUCT DIMENSIONS ARE FREE AREA AND DUCT SIZE DOES NOT ACCOUNT FOR DUCT LINER.	15 LOCATE CEILING DIFFUSERS AS SHOWN ON THE MECHANICAL DRAWINGS.
7 ALL PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL FLASHED, SEALED AND WATERPROOF.	16 CONDENSATE DRAIN PIPING SHALL BE SCHEDULE 40 PVC. ALL DRAINS FROM AIR HANDLING UNITS SHALL BE TRAPPED.
8 ALL HANGING MATERIALS AND EQUIPMENT SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE.	17 ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE M.C.
9 INSTALL ALL CONTROL DEVICES AND SWITCHES AT 4'-0" A.F.F. PROVIDE DEVICES REQUIRED FOR EQUIPMENT WHETHER SHOWN ON PLANS OR NOT.	18 THE MECHANICAL CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING AND LOW VOLTAGE CONTROL WIRING FOR ALL MECHANICAL EQUIPMENT.

ENERGY RECOVERY UNIT SCHEDULE		
GENERAL	PLAN TAG	ERV-1
	MANUFACTURER	RENEWAIRE
	MODEL NUMBER	HE3XRTC
	SIZE (L X W X H) (IN)	81.25 X 63.5 X 48
SUPPLY FAN	MINIMUM CIRCUIT AMPACITY	20.3
	MCOP	25
	TOTAL OUTSIDE AIRFLOW (CFM)	1,970
	EXTERNAL STATIC PRESSURE (IN WC)	0.3
EXHAUST FAN	VOLTS	208/3/60
	TOTAL EXHAUST AIRFLOW (CFM)	1,950
	EXTERNAL STATIC PRESSURE (IN WC)	0.3
ACCESSORIES	VOLTS	208/3/60
	DIGITAL TIME CLOCK - WALL MOUNT (TC7D-W) REMOTE DISPLAY 131311 OA AND EA BACKDRAFT DAMPER	

ABBREVIATIONS	
SA	SUPPLY AIR
RA	RETURN AIR
OA	OUTSIDE AIR
EA	EXHAUST AIR
EF	EXHAUST FAN
EG	EXHAUST GRILLE
HP	HEAT PUMP
ERV	ENERGY RECOVERY UNIT
C.T.E.	CONNECT TO EXISTING
UP	UP
DN	DOWN

TABLE 403.3.1.1 MINIMUM VENTILATION RATES							
Occupancy Classification	Square Foot	Occupant Density	Occupants	People Outdoor Airflow Rate In Breathing Zone CFM/Person	Area Outdoor Airflow Rate In CFM/SF	Exhaust Airflow Rate CFM/SF	Minimum Outside Air Minimum Exhaust Air
Coin-Operated Laundry	124	20	2	7.5	0.12	-	33
Corridor	1631	-	0	-	0.06	-	98
Dining Rooms	987	70	69	7.5	0.18	-	696
Dormitory Sleeping Area	2572	20	51	5	0.06	-	412
Kitchen (Cooking)	316	20	6	7.5	0.12	0.7	85 221.2
Multipurpose Assembly	563	120	68	5	0.06	-	372
Office	1713	5	9	5	0.06	-	146
Storage	825	-	0	-	0.12	-	99
Toilet Rooms	83	-	0	-	-	50/70	0 140
Toilet/Shower Room	359	-	0	-	-	50/70 + 20/50	0 470

DUCTWORK INSULATION SCHEDULE					
SERVICE	DUCTWORK TYPE	INSULATION TYPE	INSULATION THICKNESS	MINIMUM INSTALLED THICKNESS	VAPOR RETARDER REQUIRED
SUPPLY AIR	RECTANGULAR (ALL)	DUCT LINER	1/2"	-	YES
SUPPLY AIR	ROUND (CONCEALED)	MINERAL FIBER BLANKET	1-1/2"	1"	YES
SUPPLY AIR	ROUND (EXPOSED)	NONE	-	-	-
RETURN AIR	RECTANGULAR (ALL)	NONE	-	-	-
RETURN AIR	ROUND (ALL)	NONE	-	-	-
EXHAUST AIR	RECTANGULAR (ALL)	MINERAL FIBER BLANKET	1-1/2"	1"	YES
EXHAUST AIR	ROUND (ALL)	MINERAL FIBER BLANKET	1-1/2"	1"	YES
EXHAUST AIR	EXTERIOR	BOARD AND CLAD	3"	3"	YES
OUTSIDE AIR	RECTANGULAR (ALL)	MINERAL FIBER BLANKET	3"	2-1/4"	YES
OUTSIDE AIR	ROUND (ALL)	MINERAL FIBER BLANKET	3"	2-1/4"	YES
OUTSIDE AIR	EXTERIOR	BOARD AND CLAD	3"	3"	YES

NOTES: EXTERIOR DUCTWORK TO BE INSULATED WITH RIGID INSULATION MINIMUM R-12.5 EXTERIOR DUCTWORK SHALL BE SEALED WITH 3M VENTURECLAD SERIES 1579 OR SIMILAR

DIFFUSER REGISTER AND GRILLE SCHEDULE	
PLAN TAG	EG-1
MANUFACTURER	HART & COOLEY
MODEL NUMBER	RE5TI
FUNCTION	RETURN
DESCRIPTION	SURFACE MOUNT
DEFLECTION	-
MATERIAL	STEEL
FINISH	BRIGHT WHITE
NECK SIZE	VARIABLE
FACE SIZE	FIELD VERIFY
ACCESSORIES	-

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SHEET TITLE  
**MECHANICAL - NOTES & SCHEDULES**

**M04**

