


ABBREVIATIONS			
ABS	ABSOLUTE	EDW	ELECTRIC WATER HEATER
AC	ALTERNATING CURRENT	ENT	ENTERING WATER TEMPERATURE
AD	AREA DRAIN	EXP	EXPANSION
AF	ABOVE FINISHED FLOOR	EXP JT	EXPANSION JOINT
AGF	AIR GAP FITTING	EXT	EXTERIOR
AHU	AIR HANDLING UNIT	F	DEGREE FAHRENHEIT
AMP	AMPERE	F	FIRE PROTECTION WATER SUPPLY
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	FCO	FLOOR CLEANOUT
APP	APPROVED	FD	FLOOR DRAIN
APPROX	APPROXIMATE	FDC	FIRE DEPARTMENT CONNECTION
AV	ACID VENT	FHC	FIRE HOSE CABINET
AVG	AVERAGE	FHV	FIRE HOSE VALVE
B.O.P.	BOTTOM OF PIPE	FIN	FINISH
BFP	BACKFLOW PREVENTION DEVICE	FF	FINISHED FLOOR
BFV	BUTTERFLY VALVE	FLFD	FUSIBLE LINK FIRE DAMPER
BHP	BRAKE HORSEPOWER	FLR	FLOOR
BLDG	BUILDING	FO	FUEL OIL
BLV	BALANCING VALVE	FS	FEET PER MINUTE
BTU	BRITISH THERMAL UNIT	PFS	FEET PER SECOND
BV	BALL VALVE	FS	FLOW SWITCH
BNW	BACKWATER VALVE	FT	FEET
CA	COMPRESSED AIR	FU	FIXTURE UNIT
C TO C	CENTER TO CENTER	FV	FLUSH VALVE
C/D	CONDENSATE DRAIN	G	NATURAL GAS
CFH	CUBIC FEET PER HOUR	GAL	GALLONS
CFM	CUBIC FEET PER MINUTE	GALV	GALVANIZED
CHWR	CHILLED WATER RETURN	GDV	GALLONS PER DAY
CHWS	CHILLED WATER SUPPLY	GDH	GALLONS PER HOUR
CI	CAST IRON	QFM	GALLONS PER MINUTE
CSP	CAST IRON SOIL PIPE	GR	GRAINS OF MOISTURE
CSPi	CAST IRON SOIL PIPE INSTITUTE	GRD	GROUND
CKT	CIRCUIT	QWH	GAS WATER HEATER
CLG	CEILING	H	ENTHALPY
CO	CLEANOUT	HB	HOSE BIBB
CO ₂	CARBON DIOXIDE	HC	HANDICAP
COL	COLUMN	HD	HEAD
COND	CONDENSATE	HP	HORSEPOWER
CONN	CONNECTION	HPCR	HIGH PRESSURE CONDENSATE RETURN
CONT	CONTINUED	HPSS	HIGH PRESSURE STEAM SUPPLY
CONTR	CONTRACTOR	HR	HOUR
CP	CONTROL PANEL	HS	HOSE STATION
CR	CONDENSER RETURN	HT	HEIGHT
CS	CONDENSER SUPPLY	HTR	HEATER
CU FT	CUBIC FEET	HWAC	HEATING VENTILATION AIR CONDITIONING
CU IN	CUBIC INCH	HW	HOT WATER (DOMESTIC)
CV	CHECK VALVE	HWR	HOT WATER RETURN (DOMESTIC)
CW	COLD WATER (DOMESTIC)	HWR	HOT WATER RETURN
DB	DECIBEL	HWS	HOT WATER SUPPLY
DB	DRY BULB	HZ	FREQUENCY-ELECTRICAL
DCBP	DOUBLE CHECK BACKFLOW PREVENTER	ID	INSIDE DIAMETER
DD	DECK DRAIN	ID	INDIRECT DRAIN
DG	DEGREE	IE	INVERT ELEVATION
DFU	DRAINAGE FIXTURE UNIT	IW	INDIRECT WASTE
DI	DEIONIZED WATER	KW	KILOWATT
DA	DIAMETER	KWH	KILOWATT HOUR
DIS	DISTILLED WATER	LAT	LEAVING AIR TEMPERATURE
DSCH	DISCHARGE	LAV	LAVATORY
DN	DOWN	LBS	POUNDS
DP	DEEP	LF	LINEAR FEET
DS	DOWNSPOUT	LL	LOW LEVEL
DSP	DRY STANDPIPE	LP	LIQUID PROPANE
DTR	DUAL TEMPERATURE RETURN	LPCR	LOW PRESSURE CONDENSATE RETURN
DTs	DUAL TEMPERATURE SUPPLY	LPCS	LOW PRESSURE CONDENSATE SUPPLY
DTV	DOUBLE THICK TURNING VANES	LWT	LEAVING WATER TEMPERATURE
DVC	DRY VACUUM CLEANING	MAU	MAKE-UP AIR UNIT
DWG	DRAWING	MAX	MAXIMUM
DWR	DOMESTIC WATER RISER	MECH	MECHANICAL
(E)	EXISTING	MFR	MANUFACTURER
EA	EXHAUST AIR	MH	MANHOLE
EAT	ENTERING AIR TEMPERATURE	MIN	MINIMUM
EFF	EFFICIENCY	MISC	MISCELLANEOUS
EFL	EFFLUENT	MOD	MOTOR OPERATED DAMPER
EL	ELEVATION	MPCR	MEDIUM PRESSURE CONDENSATE RETURN
ELEC	ELECTRICAL	MPH	MILES PER HOUR
ELF	ELECTROMOTIVE FORCE	MPSS	MEDIUM PRESSURE STEAM SUPPLY
EQ	EQUAL	(N)	NEW
EQUIP	EQUIPMENT	NA	NOT APPLICABLE
ES	EMERGENCY SHOWER	NC	NOISE CRITERIA
ESP	EXTERNAL STATIC PRESSURE	N.C.	NORMALLY CLOSED
EVAP	EVAPORATOR	NIC	NOT IN CONTRACT
EW	EMERGENCY EYEWASH		
EW	ELECTRIC WATER COOLER		


MECHANICAL GENERAL NOTES:
1. ALL WORK IS TO BE IN COMPLIANCE WITH THE 2018 INTERNATIONAL MECHANICAL CODE, NOT ALL CODE REQUIREMENTS HAVE BEEN DESCRIBED IN THIS SPECIFICATION OR INDICATED ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE CODES AND INSTALL THE WORK IN ACCORDANCE WITH CODES.
2. SUBMIT SHOP DRAWINGS OF ALL SHEET METAL FOR REVIEW. DRAWINGS ARE TO BE NOT LESS THAN 1/4"=1'-0" SCALE AND ARE TO INDICATE ALL STEEL, PIPING, CONDUIT, WIRING METHODS, LIGHTING FIXTURES, SPRINKLER, EQUIPMENT, AND ARCHITECTURAL FEATURES. DUCTWORK IS TO BE INDICATED DOUBLE-LINE. INDICATE DETAIL OF FIRE DAMPER. SHEET METAL SHOP DRAWING WILL BE UTILIZED FOR CONTRACTOR'S COORDINATION DRAWINGS AND IS TO BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. IF SHEET METAL SHOP DRAWINGS ARE NOT SUBMITTED, OR IF THE CONTRACTOR INSTALLS THE DUCTWORK WITHOUT PRIOR APPROVALS, THE CONTRACTOR IS TO ASSUME ALL RESPONSIBILITIES AND FIELD COORDINATION, AND PAY ALL ASSOCIATED COSTS ASSOCIATED WITH DUCTWORK INSTALLATION DEFICIENCIES, AND FIELD COORDINATION ISSUES.
3. ALL DUCTWORK IS TO COMPLY WITH NFPA PARAPLET 90 A. ALL DUCTWORK SEAMS ARE TO BE SEALED WITH DUCT SEALANT. ALL NEW DUCTWORK SECTIONS AND FITTINGS TO BE INSTALLED ON THE PROJECT ARE TO BE COVERED, AND SEALED FROM DUST, DIRT, DEBRIS.
4. PROVIDE THIRD-PARTY TEST, BALANCE, AND ADJUST REPORT (FOR ALL AIR SYSTEMS) BOTH PRIOR TO DEMOLITION WORK, AND AT THE COMPLETION OF THE WORK. BALANCE AIR QUANTITIES AND FLOW RATES TO VALUES AS INDICATED ON THE DRAWINGS. SET DAMPER AND VALVE POSITIONS. ALLOW FOR ONE SHAWM CHANGE PER EACH (50%) OF THE HVAC SYSTEMS. PROVIDE TOTAL AND STATIC PRESSURE READINGS, TRAVERSE AT FAN INLETS AND OUTLETS. I.B.A. CONTRACTOR IS TO BE INDEPENDENT, AND AISC/ NEBB CERTIFIED.
5. ALL CONDENSATE PIPING IS TO HAVE 1/2" FIBERGLASS INSULATION WITH VAPOR BARRIER. PROVIDE CONDENSATE PUMPS(S) WITH DISCHARGE CHECK VALVE(S) IF GRAVITY FLOW IS NOT OBTAINABLE. SUBMIT SHOP DRAWING FOR REVIEW AND APPROVAL AND COORDINATE ELECTRICAL WORK WITH THE ELECTRICAL CONTRACTOR.
6. PROVIDE INSULATED PREFABRICATED ROOF CURB FOR ROOF-MOUNTED EQUIPMENT AND PIPING AS MANUFACTURED BY THE ROOF-MOUNTED EQUIPMENT MANUFACTURER. ALL PIPING ROOF PENETRATIONS ARE TO HAVE ROOF CURBS. ALL ROOF CURBS ARE TO BE SECURED TO THE ROOF AND COORDINATED WITH THE OWNER'S ROOFING CONTRACTOR.
7. ALL FINISHES RELATED TO MECHANICAL EQUIPMENT, TERMINAL EQUIPMENT, AIR DEVICES, PERIMETER HEATERS, LOUVERS, ACCESS PANELS, EXPOSED WIREMOLD/ RACEWAYS, ETC. ARE TO BE COORDINATED AND SELECTED BY THE OWNER/ ENGINEER PRIOR TO SHOP DRAWING SUBMISSION, ORDERING, AND INSTALLATION.
8. FINAL LOCATIONS OF ALL THERMOSTATS, ACCESS PANELS, SPACE SENSORS, DETECTION DEVICES, ETC. IN FINISHED SPACES ARE TO BE COORDINATED AND APPROVED BY THE OWNER PRIOR TO ROUGH-IN AND INSTALLATION.
9. PROVIDE NEW MERV 8 FILTERS FOR ALL NEW AND EXISTING HVAC EQUIPMENT. CONTRACTOR IS TO PROVIDE ONE SPARE SET OF MERV 8 FILTERS FOR EACH HVAC SYSTEM, AND TURN OVER TO THE OWNER.
10. RENOVATION PROJECTS: CONTRACTOR IS TO PROVIDE TEMPORARY FILTERS IN ALL EXISTING HVAC EQUIPMENT IMPACTED BY THE RENOVATION PROJECT'S SCOPE OF WORK. CONTRACTOR IS TO COVER ALL EXISTING SUPPLY, RETURN, EXHAUST, AND RELIEF AIR OPENINGS DURING CONSTRUCTION, AND/ OR DEMOLITION TO PREVENT DUST, DIRT, AND DEBRIS FROM ENTERING THE EXISTING DUCTWORK.

PROJECT MANAGEMENT NOTES:
1. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR A COMPLETE TURN KEY PROJECT. IT IS THEIR RESPONSIBILITY TO OBTAIN THE SERVICES OF AN ELECTRICAL CONTRACTOR, FIRE ALARM CONTRACTOR, PLUMBING CONTRACTOR, CARPENTER, PAINTER, ETC.
2. PRIME CONTRACTOR IS RESPONSIBLE FOR OBTAINING REQUIRED PERMITS, TCNJ WILL PAY ALL RELATED FEES.
3. SHUT DOWN OF ANY AND ALL ELECTRICAL AND STEAM SYSTEMS TO BE COMPLETED DURING OFF HOURS.
4. THE PRIME CONTRACTOR SHALL PROVIDE IN THEIR PROPOSAL CONFIRMATION ON HOW QUICKLY EQUIPMENT CAN BE SECURED.
5. THE PRIME CONTRACTOR SHALL HOLD BI-WEEKLY MEETINGS WITH THE OWNER AND PROVIDE A TWO WEEK LOOK AHEAD SCHEDULE AND AN OVER ALL PROJECT SCHEDULE UPDATED AFTER EACH MEETING.
6. THE PRIME CONTRACTOR SHALL COORDINATE THE CRANE LIFT - POSITION, DAY OF THE WEEK, AND TIME OF DAY PRIOR TO THE EQUIPMENT DELIVERY. THE SCHOOL MAY BE IN SESSION AND THIS WORK IS REQUIRED TO BE COORDINATED WITH CLASS SCHEDULES AND USAGE. LIFT PLAN NEEDS TO BE SUBMITTED TWO WEEKS PRIOR TO THE LIFT ARRIVING AND BE APPROVED BY EHS.
7. NOT USED.
8. NOT USED.
9. NOT USED.
10. NOT USED.
11. NOT USED.
12. DURING CONSTRUCTION AND AT THE COMPLETION OF THE CONSTRUCTION THE ATTIC AND ROOF AREA ARE TO REMAIN CLEAN AND FREE OF DEBRIS. ALL EXCESS MATERIAL AND TRASH SHALL BE REMOVED ON A REGULAR BASIS.
13. NOT USED.
14. DUE TO THE AGE OF THE BUILDING, SOME MATERIALS, SUCH AS PLASTER CEILINGS, MAY CONTAIN LEAD BASED PAINT OR ASBESTOS AND AS SUCH ANY SUSPECT MATERIAL SHOULD BE IDENTIFIED TO TCNJ.
15. ALL IT CABLEING IN THE ATTIC SHALL BE CONSIDERED TO BE ACTIVE AND IS REQUIRED TO BE PROTECTED IN THE WORK AREAS AND ACCESS PATHWAYS TO THE WORK AREAS. ANY CABLEING DAMAGED DURING THE PROJECT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE WITH MATERIALS AND COMPONENTS MATCHING TCNJ STANDARDS, INSTALLED BY A COMMUNICATIONS CONTRACTOR CERTIFIED IN THE CABLEING PRODUCT (COMMSCOPE/TE & CORNING FIBER).
16. COMMUNICATIONS CABLEING SUPPORT ELEMENTS AND PATHWAY WITHIN THE ATTIC SPACE, PARTICULARLY IN THE WORK AREA, SHALL BE PROTECTED AND MAINTAINED. REPLACEMENT OF DAMAGED ELEMENTS SHALL BE WITH MATCHING PRODUCT AND INSTALLATION METHOD, AND IS THE RESPONSIBILITY OF THE CONTRACTOR.
17. MAINTAIN PROTECTED ACCESS TO ALL EXISTING INTERIOR AND EXTERIOR WALKWAYS, CORRIDORS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE, DETOUR, OR OBSTRUCT, FOR ANY LENGTH OF TIME, WALKWAYS, CORRIDORS, OR OTHER OCCUPIED OR USED FACILITIES WITHOUT WRITTEN PERMISSION FROM OWNER AND APPROVAL OF AUTHORITIES HAVING JURISDICTION. SHOULD AN EMERGENCY ROUTE BE AFFECTED, CONTRACTOR SHALL PROVIDE APPROPRIATE SIGNAGE, IN ACCORDANCE WITH ADA, DIRECTING OCCUPANTS FROM THE FACILITY.
18. THE CONTRACTOR SHALL LIMIT AND CONTAIN MATERIALS, DUST AND DEBRIS, AND ODORS, AND MAINTAIN SOUND ATTENUATION WITHIN WORK AREAS, AND PROVIDE AND INSTALL SUFFICIENT BARRIERS TO SEPARATE WORK AREAS FROM OCCUPIED AREAS, INCLUDING IDENTIFYING ENTRANCES TO WORK AREAS, AND THE REQUIREMENTS (I.E. PPE, ETC.) TO ENTER SUCH AREAS.
19. PRIME CONTRACTOR TO PROVIDE A SITE LOGISTICS PLAN, INCLUDING TEMPORARY FENCING, CRANE LIFT AREA, DUMPSTER LOCATION, ETC. TO TCNJ PRIOR TO CONSTRUCTION START UP. CONTRACTOR TO COORDINATE WITH TCNJ ON ALL ITEMS TO BE INCLUDED.
20. CONTRACTOR SHALL COORDINATE ALL ROOF WORK WITH EXISTING ROOF MANUFACTURER IN ORDER TO MAINTAIN ROOF WARRANTY.

<div>CONTROLS NOTES:</div> <div><div>1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE SERVICES OF HONEYWELL (TCNJ CONTROLS CONTRACTOR) FOR THE INSTALLATION AND PROGRAMMING OF CONTROLLERS AND THEIR INTEGRATION INTO THE TCNJ BAS FOR ALL NEW AHU'S. HONEYWELL CONTACT: ED MOGOK, 856-261-1080.</div><div>2. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ALL CONTROLS CONDUIT AND WIRING. ALL WIRING SHALL BE RUN IN EMT CONDUIT.</div><div>3. THE AHU UNITS SHALL HAVE BACNET INTERFACE CAPABILITY.</div><div>4. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ALL SENSORS, RELAYS AND INTERLOCK WIRING TO DAMPERS.</div><div>5. CONTRACTOR TO THE AHU CONTROLS INTO BUILDING EBI FRONT END TO ALLOW FOR MONITORING AND CONTROL.</div></div>																																																								
<div>DRAWING SYMBOL LIST</div> <div><div><div><div><div>A-A</div><div>A-A</div></div><div>CROSS-SECTION</div></div><div><div><div><div><div></div></div></div><div>EQUIPMENT DESIGNATION</div></div><div><div><div><div></div></div></div><div>EQUIPMENT NUMBER</div></div><div><div><div><div><div>X</div><div>Y</div></div></div><div>EQUIPMENT/RISER DESIGNATION</div></div><div><div><div><div><div></div></div></div><div>EQUIPMENT/RISER NUMBER</div></div></div><div><div><div><div><div>X</div><div>Y</div></div></div><div>DRAWING NOTE DESIGNATION</div></div><div><div><div><div><div></div></div></div><div>REVISION TRIANGLE</div></div></div></div></div></div></div></div>		<div>MECHANICAL DRAWING LIST</div> <div><table><tr><td colspan="3">THE COLLEGE OF NEW JERSEY</td><td>Issued for Construction 12/22/21</td><td>Issued for Bid 02/28/22</td><td>Issued for xx/xx/xx</td></tr><tr><td>H001.0</td><td>COVER SHEET</td><td>- MECHANICAL</td><td>●</td><td>●</td><td></td></tr><tr><td>DH101.1</td><td>ATTIC DEMO FLOOR PLAN</td><td>- MECHANICAL</td><td>●</td><td>●</td><td></td></tr><tr><td>DH101.2</td><td>ROOF DEMO PLAN</td><td>- MECHANICAL</td><td>●</td><td>●</td><td></td></tr><tr><td>H101.0</td><td>SECOND FLOOR PLAN</td><td>- MECHANICAL</td><td>●</td><td>●</td><td></td></tr><tr><td>H101.1</td><td>ATTIC FLOOR PLAN</td><td>- MECHANICAL</td><td>●</td><td>●</td><td></td></tr><tr><td>H101.2</td><td>ROOF PLAN</td><td>- MECHANICAL</td><td>●</td><td>●</td><td></td></tr><tr><td>H201.0</td><td>DETAILS & SCHEDULES</td><td>- MECHANICAL</td><td>●</td><td>●</td><td></td></tr><tr><td>H201.1</td><td>DETAILS & SCHEDULES</td><td>- MECHANICAL</td><td>●</td><td>●</td><td></td></tr></table></div>	THE COLLEGE OF NEW JERSEY			Issued for Construction 12/22/21	Issued for Bid 02/28/22	Issued for xx/xx/xx	H001.0	COVER SHEET	- MECHANICAL	●	●		DH101.1	ATTIC DEMO FLOOR PLAN	- MECHANICAL	●	●		DH101.2	ROOF DEMO PLAN	- MECHANICAL	●	●		H101.0	SECOND FLOOR PLAN	- MECHANICAL	●	●		H101.1	ATTIC FLOOR PLAN	- MECHANICAL	●	●		H101.2	ROOF PLAN	- MECHANICAL	●	●		H201.0	DETAILS & SCHEDULES	- MECHANICAL	●	●		H201.1	DETAILS & SCHEDULES	- MECHANICAL	●	●	
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<div>DESIGN NOTES</div> <div><div>1. DESIGN CONDITIONS:</div><div>SIZING, DESIGN AND PERFORMANCE OF THE HEATING AND COOLING SYSTEMS ARE BASED ON THE FOLLOWING DESIGN CHARACTERISTICS. MODIFICATION OF ANY OF THESE CHARACTERISTICS MAY ADVERSELY AFFECT THE HEATING AND COOLING PERFORMANCE AND LEVEL OF COMFORT TO THE BUILDING OCCUPANTS.</div><div>WEATHER STATION LOCATIONS – TRENTON, NJ</div><div>HEATING DEGREE DAYS = 5144</div><div>OUTDOOR:</div><div>WINTER DRY BULB 14F</div><div>SUMMER DRY BULB 90F</div><div>SUMMER WET BULB 74F</div><div>INDOOR:</div><div>WINTER DRY BULB 70F</div><div>SUMMER DRY BULB 75F</div></div>																																																								



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TCNJ Project #: GR221
TCNH Project Manager: Mumtaz Makhdomi

NOTICE

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Project : TCNJ Green Hall
HVAC Replacements

Client/Owner :

The College of New Jersey
2000 Pennington Road
Ewing, NJ 08628

Date:	December 22, 2021
Drawn By:	AF/DK
Checked By:	MW
Project Number:	2021-342

Issued / Revisions		
No.	Date	Description
	11/19/21	SD Review Set
	12/22/21	Issued for Construction
	02/11/22	Issued for Construction
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Drawing Name :

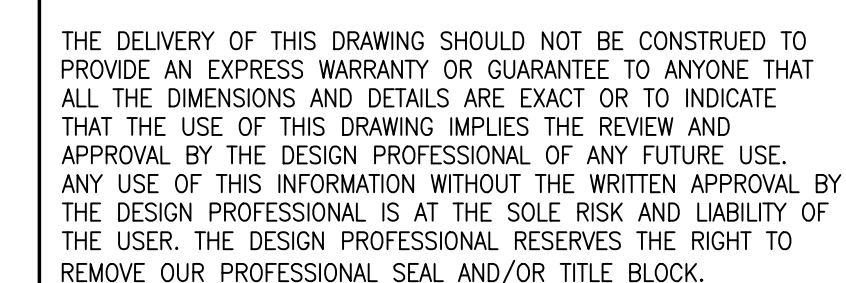
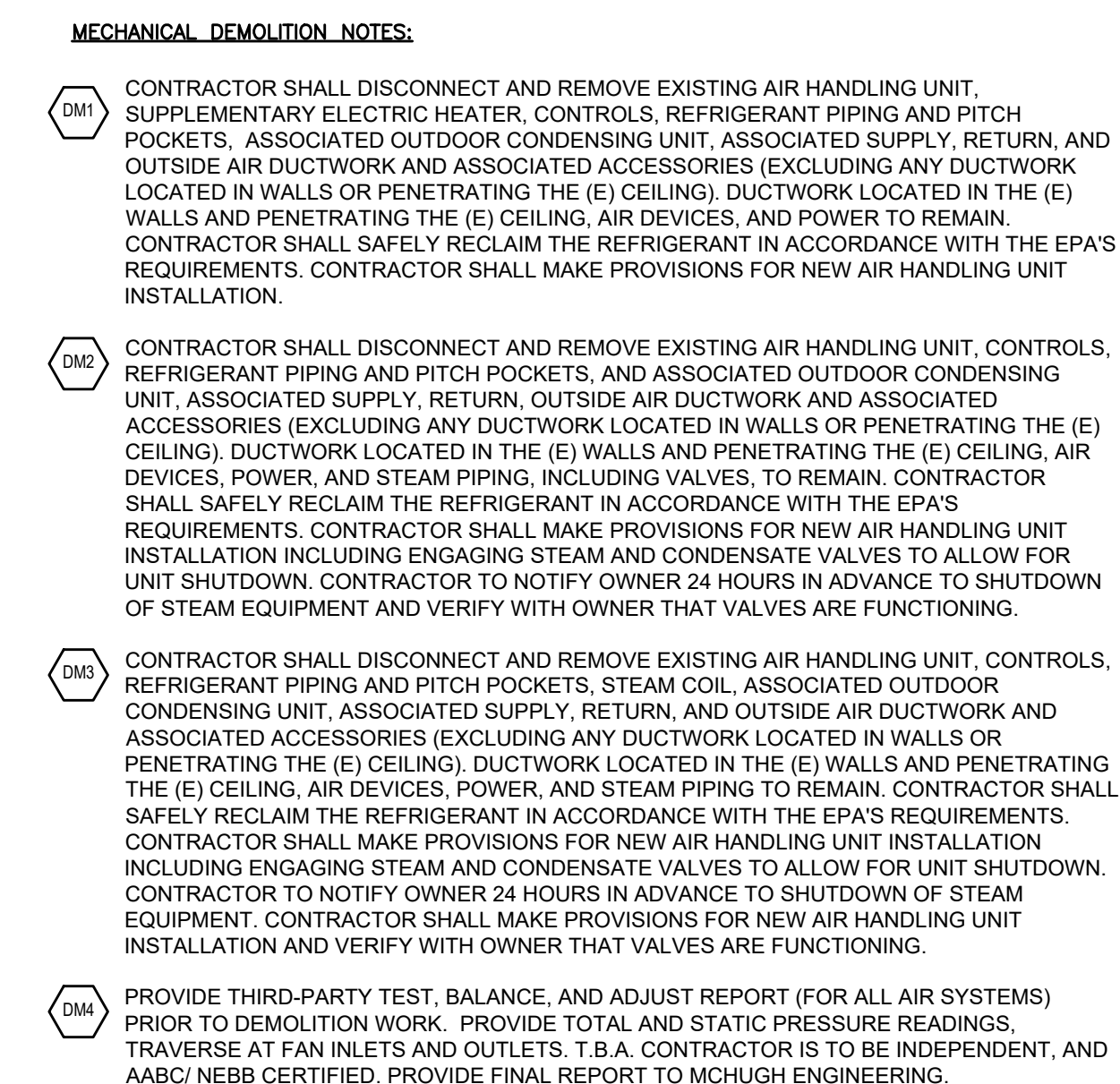
Cover Sheet-
Mechanical

VERIFY SCALE
BAR IS ONE INCH
ON ORIGINAL
DRAWING

0 1"

Drawing Number :

H001.0



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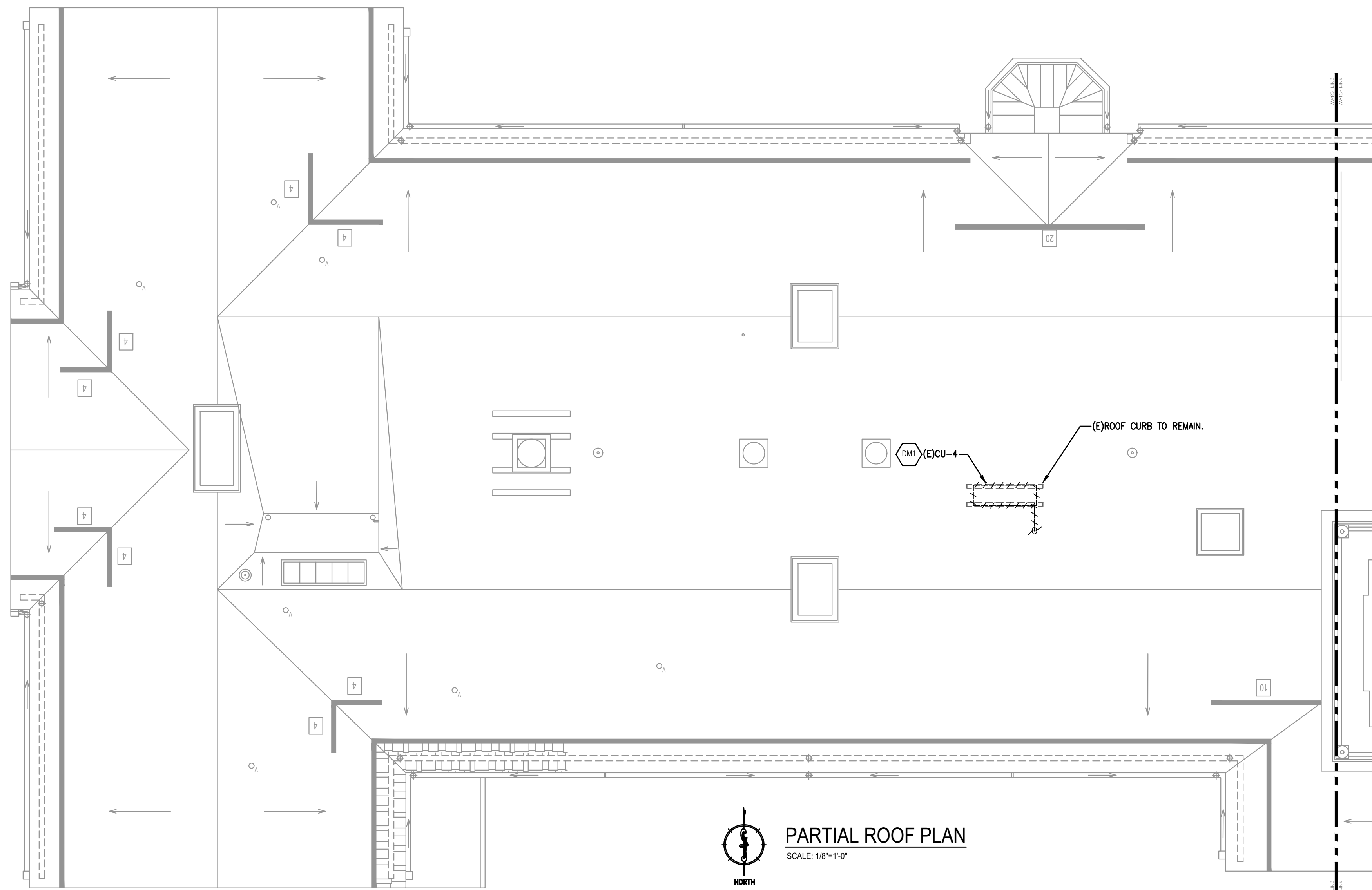
Attic Demo Floor Plan - Mechanical

VERIFY SCALE
BAR IS ONE INCH
ON ORIGINAL
DRAWING

A horizontal scale bar with vertical end caps. The number '0' is at the left end and '1"' is at the right end.

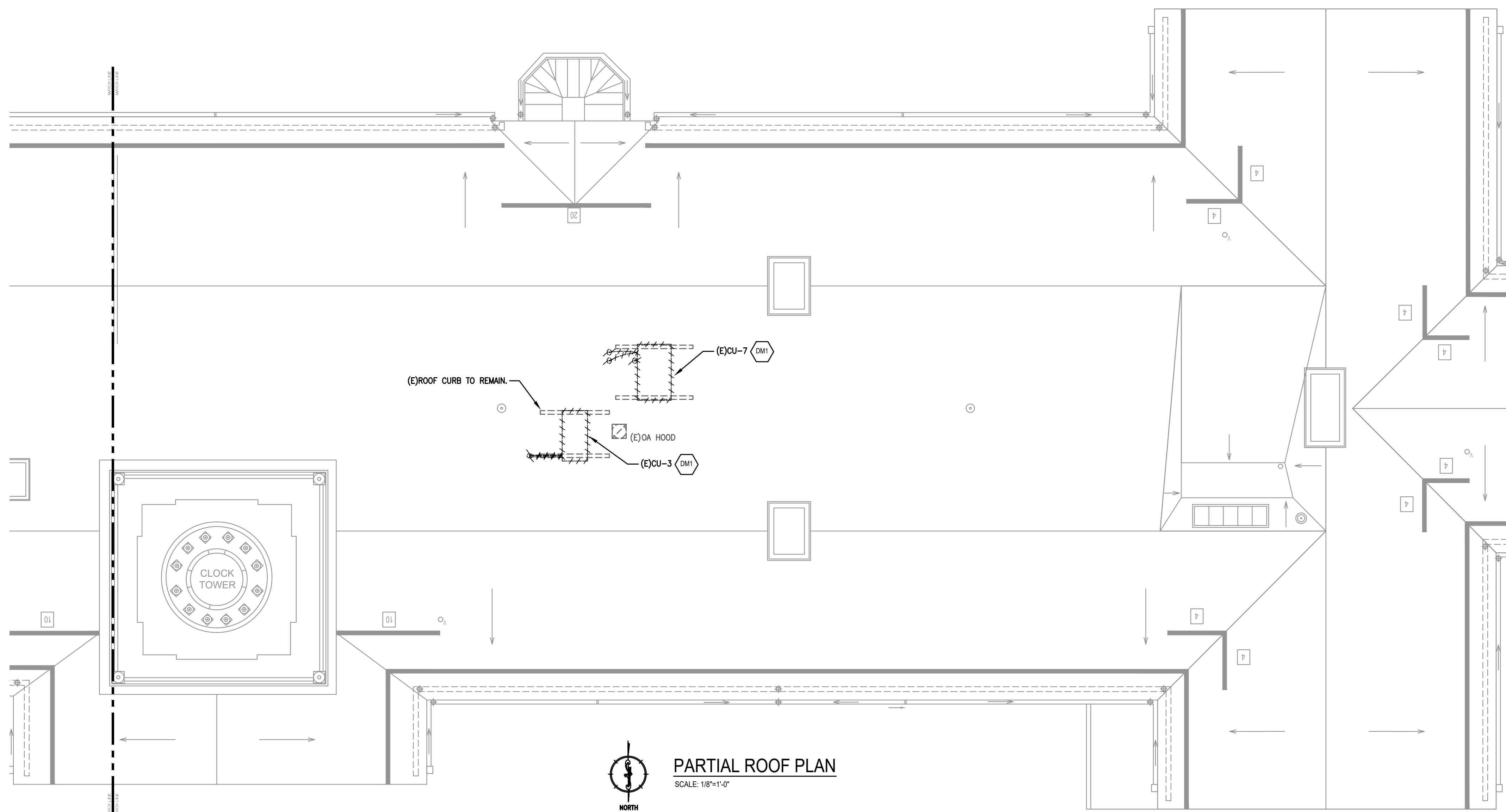
Drawing Number :

DH101.1



MECHANICAL DEMOLITION NOTES:

- (DM1) CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT, SUPPLEMENTARY ELECTRIC HEATER, CONTROLS, REFRIGERANT PIPING AND PITCH POCKETS, ASSOCIATED OUTDOOR CONDENSING UNIT, ASSOCIATED SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK AND ASSOCIATED ACCESSORIES (EXCLUDING ANY DUCTWORK LOCATED IN WALLS OR PENETRATING THE (E) CEILING), DUCTWORK LOCATED IN THE (E) WALLS AND PENETRATING THE (E) CEILING, AIR DEVICES, POWER, AND STEAM PIPING, INCLUDING VALVES, TO REMAIN. CONTRACTOR SHALL SAFELY RECLAIM THE REFRIGERANT IN ACCORDANCE WITH THE EPA'S REQUIREMENTS. CONTRACTOR SHALL MAKE PROVISIONS FOR NEW AIR HANDLING UNIT INSTALLATION.
- (DM2) CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT, CONTROLS, REFRIGERANT PIPING AND PITCH POCKETS, AND ASSOCIATED OUTDOOR CONDENSING UNIT, ASSOCIATED SUPPLY, RETURN, OUTSIDE AIR DUCTWORK AND ASSOCIATED ACCESSORIES (EXCLUDING ANY DUCTWORK LOCATED IN WALLS OR PENETRATING THE (E) CEILING), DUCTWORK LOCATED IN THE (E) WALLS AND PENETRATING THE (E) CEILING, AIR DEVICES, POWER, AND STEAM PIPING, INCLUDING VALVES, TO REMAIN. CONTRACTOR SHALL SAFELY RECLAIM THE REFRIGERANT IN ACCORDANCE WITH THE EPA'S REQUIREMENTS. CONTRACTOR SHALL MAKE PROVISIONS FOR NEW AIR HANDLING UNIT INSTALLATION INCLUDING ENGAGING STEAM AND CONDENSATE VALVES TO ALLOW FOR UNIT SHUTDOWN. CONTRACTOR TO NOTIFY OWNER 24 HOURS IN ADVANCE TO SHUTDOWN OF STEAM EQUIPMENT AND VERIFY WITH OWNER THAT VALVES ARE FUNCTIONING.
- (DM3) CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT, CONTROLS, REFRIGERANT PIPING AND PITCH POCKETS, STEAM COIL, ASSOCIATED OUTDOOR CONDENSING UNIT, ASSOCIATED SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK AND ASSOCIATED ACCESSORIES (EXCLUDING ANY DUCTWORK LOCATED IN WALLS OR PENETRATING THE (E) CEILING), DUCTWORK LOCATED IN THE (E) WALLS AND PENETRATING THE (E) CEILING, AIR DEVICES, POWER, AND STEAM PIPING, INCLUDING VALVES, TO REMAIN. CONTRACTOR SHALL SAFELY RECLAIM THE REFRIGERANT IN ACCORDANCE WITH THE EPA'S REQUIREMENTS. CONTRACTOR SHALL MAKE PROVISIONS FOR NEW AIR HANDLING UNIT INSTALLATION INCLUDING ENGAGING STEAM AND CONDENSATE VALVES TO ALLOW FOR UNIT SHUTDOWN. CONTRACTOR TO NOTIFY OWNER 24 HOURS IN ADVANCE TO SHUTDOWN OF STEAM EQUIPMENT. CONTRACTOR SHALL MAKE PROVISIONS FOR NEW AIR HANDLING UNIT INSTALLATION AND VERIFY WITH OWNER THAT VALVES ARE FUNCTIONING.
- (DM4) PROVIDE THIRD-PARTY TEST, BALANCE, AND ADJUST REPORT (FOR ALL AIR SYSTEMS) PRIOR TO DEMOLITION WORK. PROVIDE TOTAL AND STATIC PRESSURE READINGS, TRAVERSE AT FAN INLETS AND OUTLETS, T.B.A. CONTRACTOR IS TO BE INDEPENDENT, AND AASO/NEBB CERTIFIED. PROVIDE FINAL REPORT TO MCHUGH ENGINEERING.



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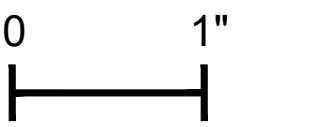
Date: December 22, 2021
Drawn By: AF/DK
Checked By: MW
Project Number: 2021-342

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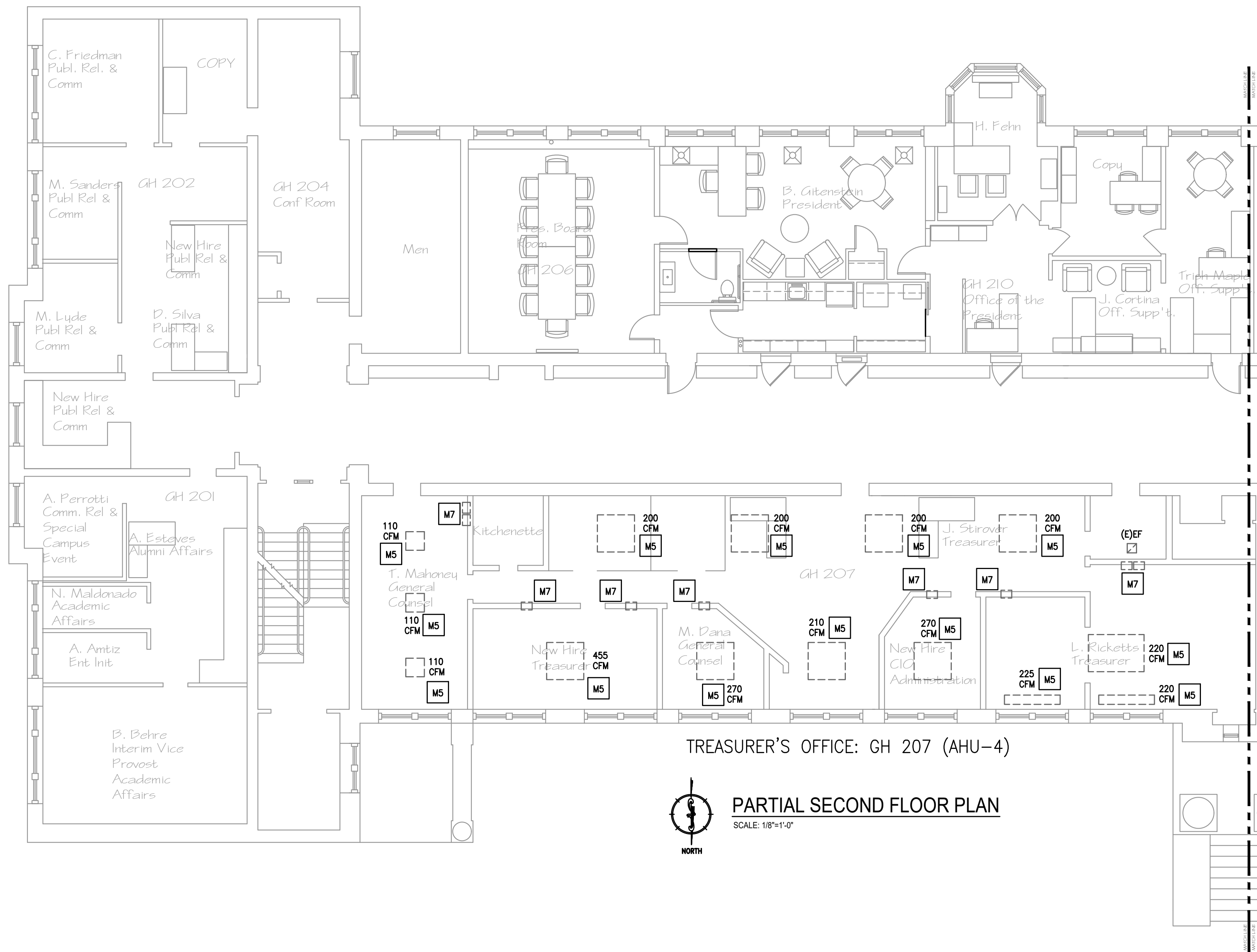
**Roof Demo Plan -
Mechanical**

VERIFY SCALE
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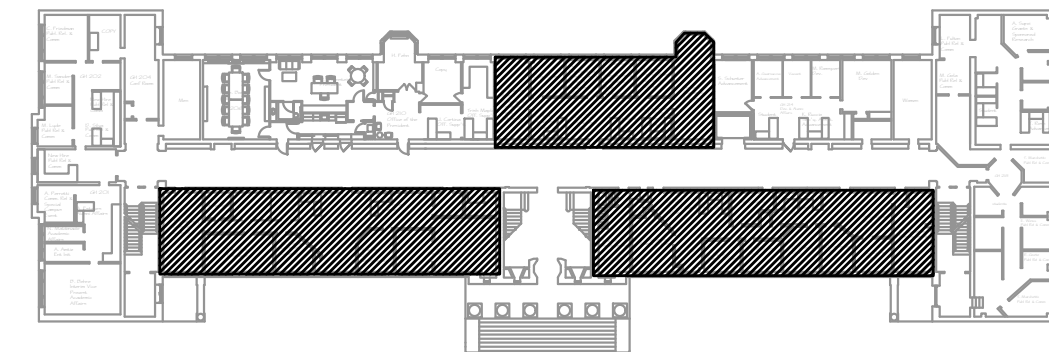
Drawing Number :

DH101.2



- MECHANICAL NOTES:**
- M1** NEW AIR HANDLING UNIT TO REPLACE EXISTING UNIT.
 - M2** NEW AIR HANDLING UNIT TO REPLACE EXISTING UNIT. UNIT TO RECONNECT TO EXISTING STEAM PIPING.
 - M3** CONTRACTOR SHALL PROVIDE 36" CLEARANCE FOR UNIT ACCESS/SERVICE. COORDINATE IN FIELD WITH TCNJ.
 - M4** LOCATE CONDENSING UNIT ON ROOF. CONDENSING UNIT SHALL BE MINIMALLY 10'-0" FROM EDGE OF ROOF AND 4'-0" FROM ALL OTHER CONDENSING UNITS.
 - M5** EXISTING AIR DEVICE TO REMAIN.
 - M6** NEW STEAM PIPING TO TIE INTO EXISTING SYSTEM. REFER TO TYPICAL STEAM EQUIPMENT CONNECTION DETAIL.
 - M7** EXISTING AIR DEVICE AND ASSOCIATED DUCTWORK LOCATED IN WALL TO REMAIN.
 - M8** (N) OUTSIDE AIR DUCTWORK TO TIE INTO EXISTING OA DUCT AT CHASE WALL.
 - M9** (N) DUCT TO TIE INTO EXISTING DUCTWORK OR AIR DEVICE IN (E) CEILING.
 - M10** DE-ENERGIZE AND CAP EXISTING EXHAUST FAN. EF NO LONGER REQUIRED FOR HVAC SYSTEM.

- GENERAL MECHANICAL NOTES:**
- ALL DUCTWORK SIZES INDICATED ARE INSIDE DIMENSIONS UNLESS OTHERWISE NOTED.
 - DUCT SIZES INDICATED ON DRAWING ARE BASED AFTER THE LAST DIFFUSER AND/OR BRANCH TAKE-OFF.
 - CONTRACTOR TO PROVIDE A CLEAN OUT AT EVERY CHANGE IN DIRECTION OF A CONDENSATE LINE AND AT 25 FT. CENTERS.
 - SHARP THROAT, RADIUS HEEL 90 DEGREE FITTINGS ARE UNACCEPTABLE. RADIUS ELBOWS (INNER AND OUTER) OR MITERED ELBOWS WITH TURNING VANES SHALL BE PROVIDED FOR ALL 90 DEGREE ELBOWS.
 - CONTRACTOR TO PERFORM A PRE-CONSTRUCTION BALANCING REPORT AND SUBMIT REPORT TO ENGINEER.
 - ALL DUCTWORK TO BE INSULATED AND PROPERLY SEALED.



SCOPE OF WORK KEY
SCALE: NONE



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TCNJ Project #: GR221
TCNJ Project Manager: Mumtaz Makhdomi

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Drawing Name :

Second Floor Plan - Mechanical

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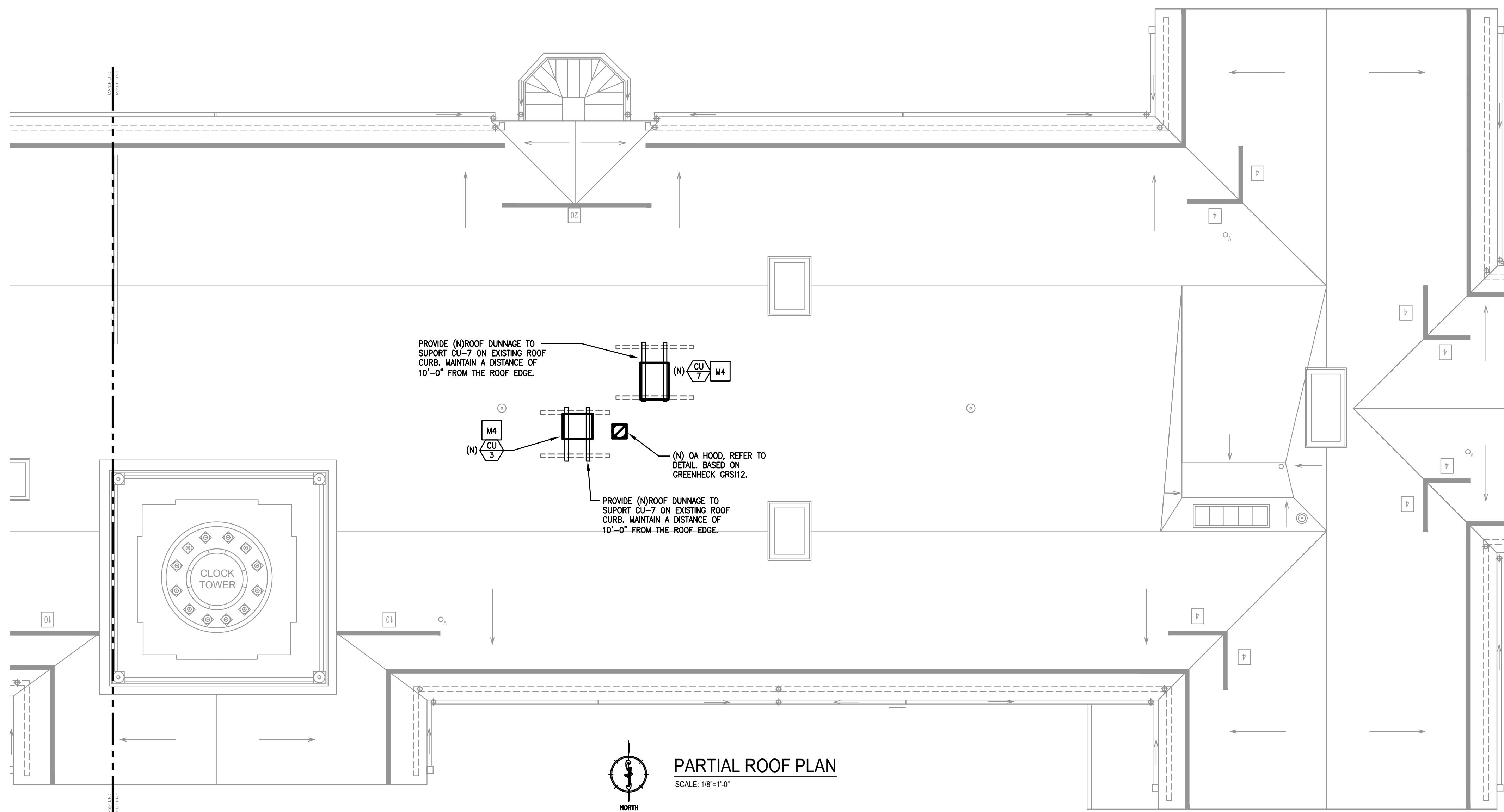
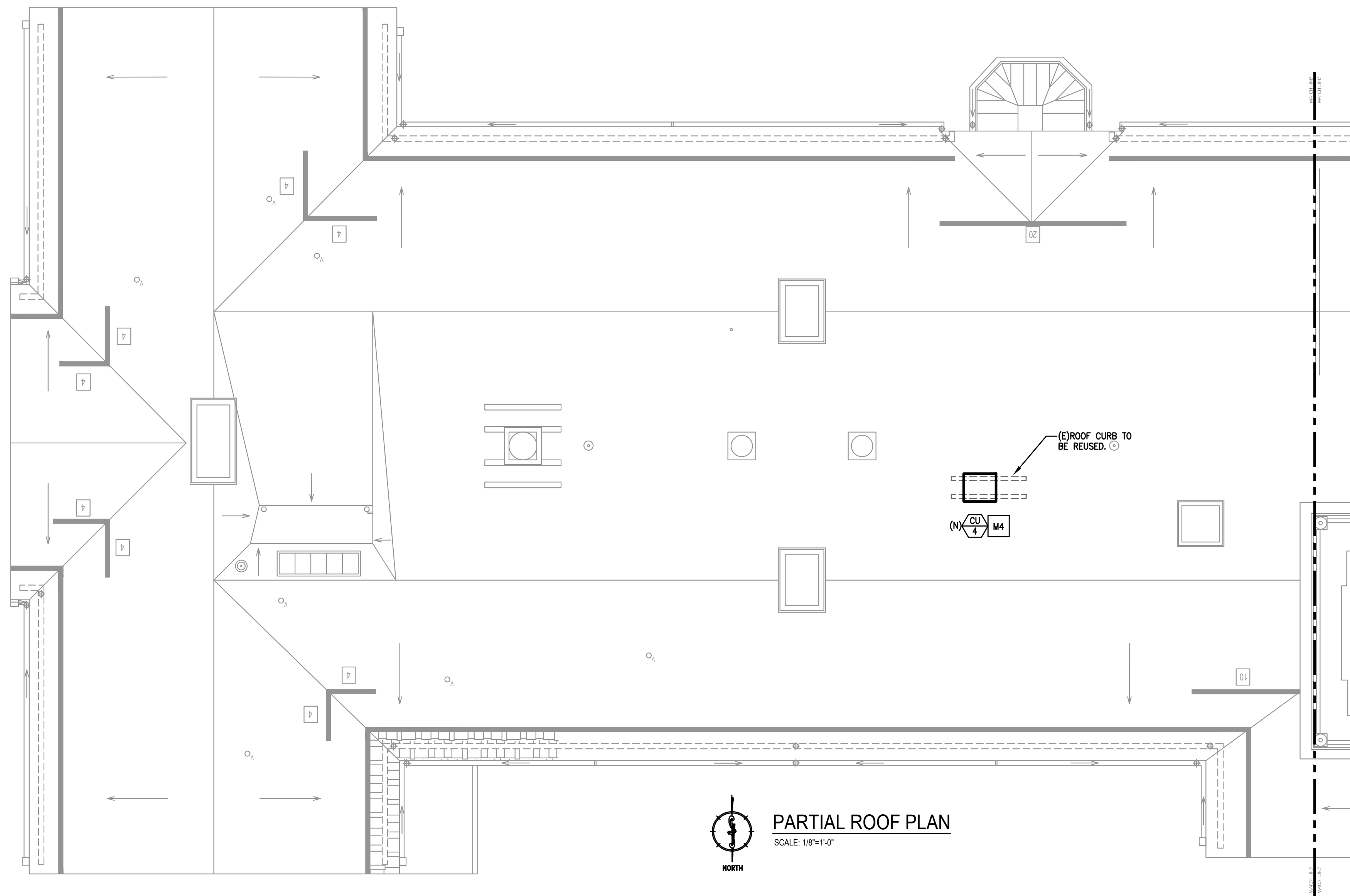
0 1"

Drawing Number :

H101.0

- GENERAL MECHANICAL NOTES:
1. ALL DUCTWORK SIZES INDICATED ARE INSIDE DIMENSIONS UNLESS OTHERWISE NOTED.
 2. DUCT SIZES INDICATED ON DRAWING ARE BASED AFTER THE LAST DIFFUSER AND/OR BRANCH TAKE-OFF.
 3. CONTRACTOR TO PROVIDE A CLEAN OUT AT EVERY CHANGE IN DIRECTION OF A CONDENSATE LINE AND AT 25 FT. CENTERS.
 4. SHARP TURNOUT, RADIUS HELIX 90 DEGREE FITTINGS ARE UNACCEPTABLE. RADIUS ELBOWS (INNER AND OUTER) OR MITERED ELBOWS WITH TURNING VANES SHALL BE PROVIDED FOR ALL 90 DEGREE ELBOWS.
 5. CONTRACTOR TO PERFORM A PRE-CONSTRUCTION BALANCING REPORT AND SUBMIT REPORT TO ENGINEER.
 6. ALL DUCTWORK TO BE INSULATED AND PROPERLY SEALED.

H101.1



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**Roof Plan -
Mechanical**

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DRAWING

0 1"

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AIR HANDLING UNIT SCHEDULE (AHU)																																												
TAG	Serves	Configuration	Nom	CFM	OA CFM	(in) External Static	Fan HP	(lbs) Weight	(in) Height	Cooling					Heating (Heat Pump)		HEATING (ELECT. RESIST.)					HEATING (STEAM)					Electrical (AHU)					Electrical (CU)				Filters		Basis of Design	Model	Comments				
										Total BTU	Sens BTU	Entering Air		Leaving Air		Outdoor Ambient	BTU Capacity	COP	MBH	KW	Entering Air		Leaving Air	Volts	Phase	MBH	Pressure PSIG	LB/HR	Entering Air	Leaving Air	Volts	Phase	MCA	MOCp	EER	Volts	Phase				MCA	MOCp	Min MERV	Type
												dB	wB	dB	wB						dB	wB																						
AHU-3	Development Office	Split System	7.5	3000	245	1.5	1 1/2	323	25 1/2	88,000	61,600	80	67	58	57											158	2	163	60	109	208	3	7	15	12.8	208	3	32	40	8	Throwaway	Trane	Indoor: TWE090 Outdoor: TTA090	1,2,3,4,5,6,7,8,9,10
AHU-4	Treasurer's Office	Split System	7.5	3000	240	1.5	1 1/2	323	25 1/2	88,000	61,600	80	67	58	57											158	2	163	60	109	208	3	7	15	12.8	208	3	32	40	8	Throwaway	Trane	Indoor: TWE090 Outdoor: TTA090	1,2,3,4,5,6,7,8,9,10
AHU-7	Provost's Office	Split System	10	4000	180	1.5	2	393	25 1/2	110,000	77,000	80	67	58.6	57.6	14	82,000	3.3	63.8	18.72	70	89.6	208	3						208	3	73	80	12.6	208	3	41	50	8	Throwaway	Trane	Indoor: TWE120 Outdoor: TTA120	1,2,3,4,5,6,7,8,9,10	

Comments

1 Single Point Power Connection

2 Disconnect Switch

3 Vibration Isolation Hangers

4 Equivalent By Trane, York, Lennox, or prior approved equal

5 Roof Mounting Curb For Condensing Unit

6 Provide temperature sensor in space. Integrate with existing Honeywell BAS. Update front end graphics. To use existing thermostat locations, and to tie into existing conduit.

7 Merv 8, 30% EFF Filters 2" Throwaway

8 On Split System And Fan Coil Units Contractor Shall Provide A UL Listed Condensate Detection Device On The Units Primary Drain Pan Wall. Interlock Sensor With Air Handler.

9 Condensate Piping-Furnish and Install Condensate Pump, 120V/1PH, 6 FT. Power Cord. Impact Resistant Integral Check Valve. Stainless Steel Motor/Pump Shaft. 25GPH. 15 TFD. 1/30 HP. Little Giant "VCMA" Series Or Equivalent. Pump shall be hardwired for above ceiling applications.

10 Contractor to provide refrigerant piping

11 Provide Bacnet card to tie into existing BAS system.

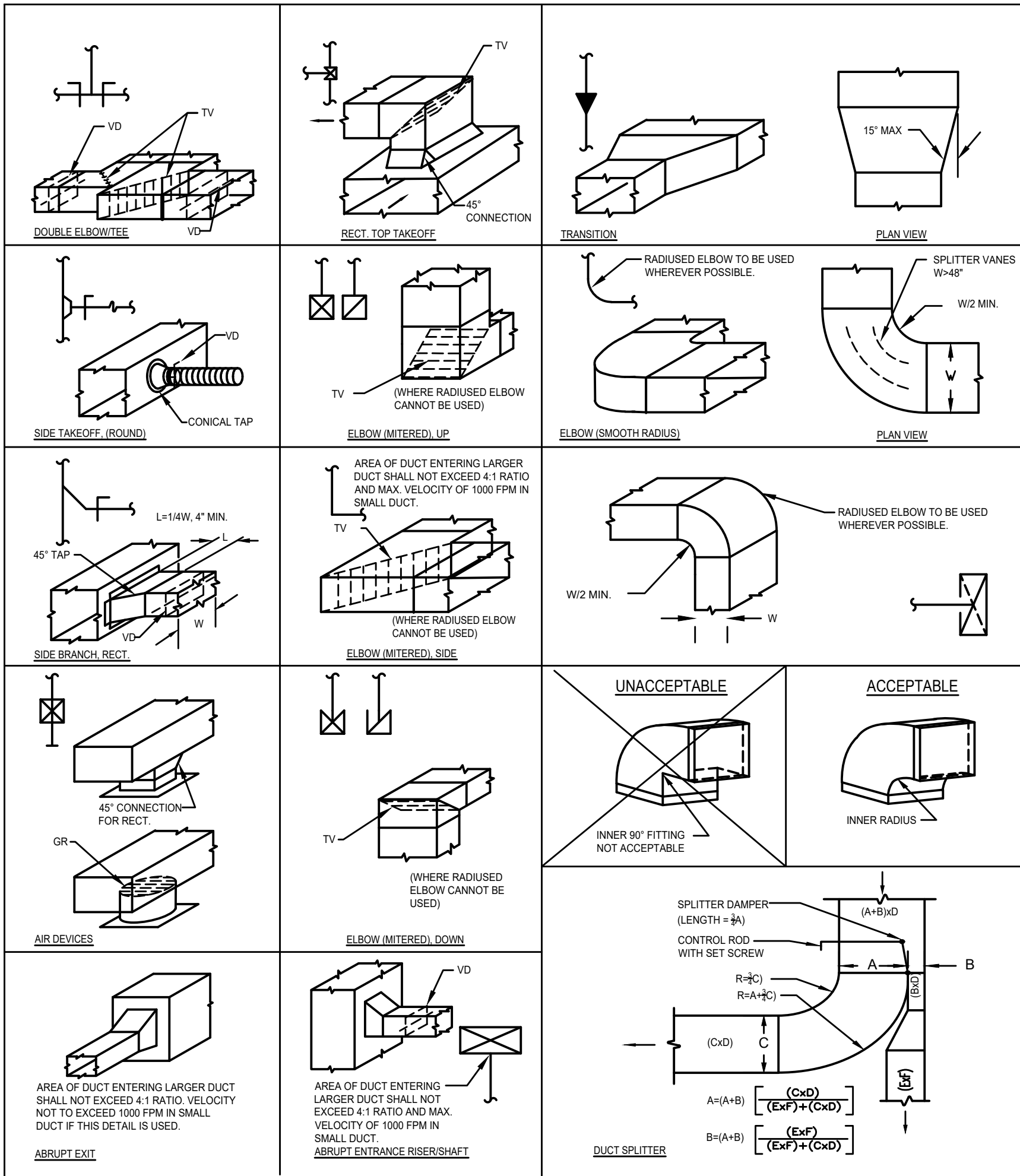
Note:

Equipment Selling Agent/Distributor Shall Have A Service Agency That Is Part Of The Company And Covers Start-Up And Warranty Labor.

Leaving Air Temperature Represents Temperature Leaving The Air Handler.

MECHANICAL SYMBOLS AND ABBREVIATIONS

- NEW DUCTWORK
- EXISTING DUCTWORK
- DUCTWORK TO BE DEMOLISHED
- FLEXIBLE DUCTWORK
- REFRIGERANT LIQUID
- REFRIGERANT SUCTION
- A/C UNIT DRAIN
- LOW PRESSURE STEAM SUPPLY
- SUPPLY DIFFUSER
- SUPPLY DIFFUSER W/ROUND DUCT CONNECTION
- RETURN REGISTER/GRILLE
- EXHAUST REGISTER/GRILLE
- SPIN IN TAP W/DAMPER
- SPIN IN TAP W/DAMPER BOTTOM TAKEOFF
- SPIN IN TAP W/DAMPER TOP TAKEOFF
- TAKEOFF W/DAMPER
- FLEXIBLE CONNECTION
- TRANSITION FROM RIGID DUCT TO ROUND FLEXIBLE DUCT
- DUCT REDUCER
- THERMOSTAT HEIGHT 54" STANDARD HEIGHT 48" HANDICAP
- VOLUME DAMPER
- CONTINUATION/BREAK
- BACKDRAFT DAMPER
- PIPE DOWN
- PIPE UP
- MOTOR OPERATED DAMPER
- FLANGED VALVE
- BALL VALVE
- STRAINER W/ BLOW OFF VALVE
- BALANCING VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- UNION
- PIPE REDUCER
- PIPE INCREASER
- PIPE FLEXIBLE CONNECTION
- DOUBLE THICK. TURN VANES
- EXHAUST AIR
- OUTSIDE AIR
- RETURN AIR
- RETURN AIR GRILLE
- RETURN AIR REGISTER
- SUPPLY AIR
- SUPPLY AIR DIFFUSER
- SUPPLY AIR REGISTER
- NEW
- EXISTING
- EXISTING TO BE DEMOLISHED
- CONNECT TO EXISTING
- POINT OF REMOVAL



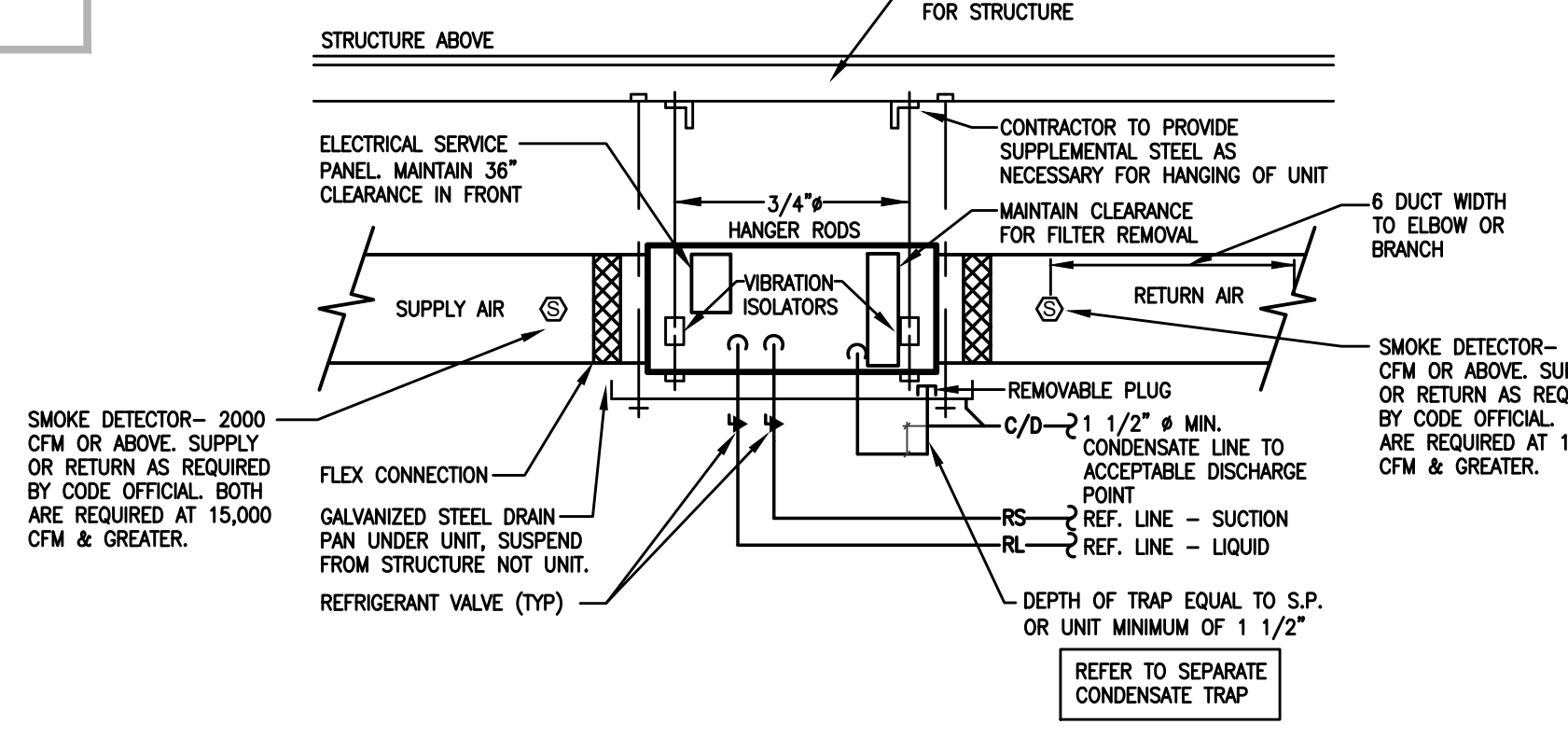
DUCTWORK DETAIL

SCALE: NONE

ABBREVIATIONS:

- GR EQUALIZING GRID
- TV TURNING VANES
- VD VOLUME DAMPER
- AT AIR TURN OR EXTRACTOR

6



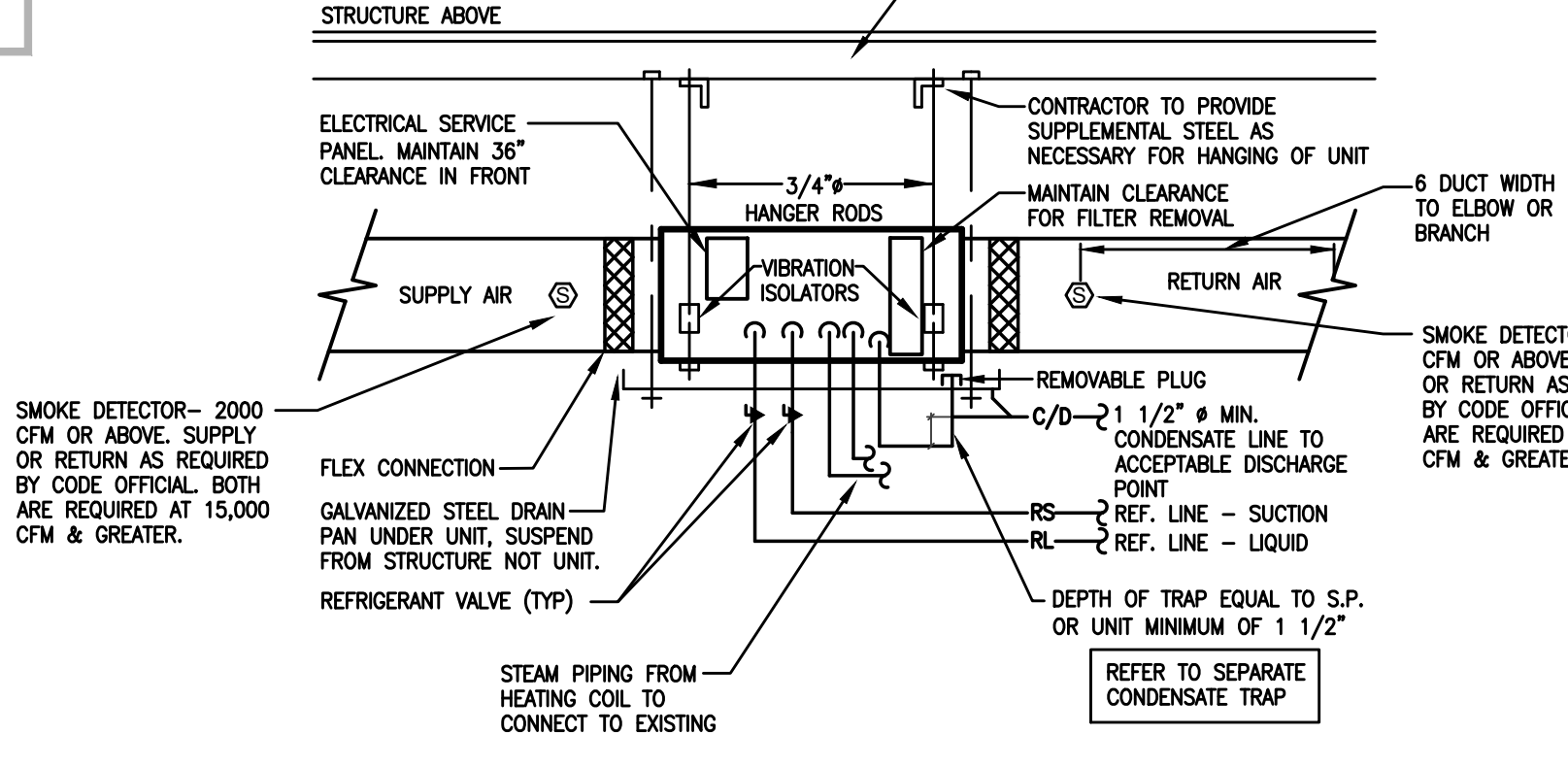
DETAIL OF HORIZONTAL AIR HANDLING UNIT W/ ELECTRIC HEAT

SCALE: NONE

NOTES:

- 1. UL LISTED CONDENSATE DETECTION DEVICE ON DRAIN PAN WITH SENSOR INTERLOCKED W/AIR HANDLER. SHUT UNIT DOWN IF WATER IS DETECTED.

7



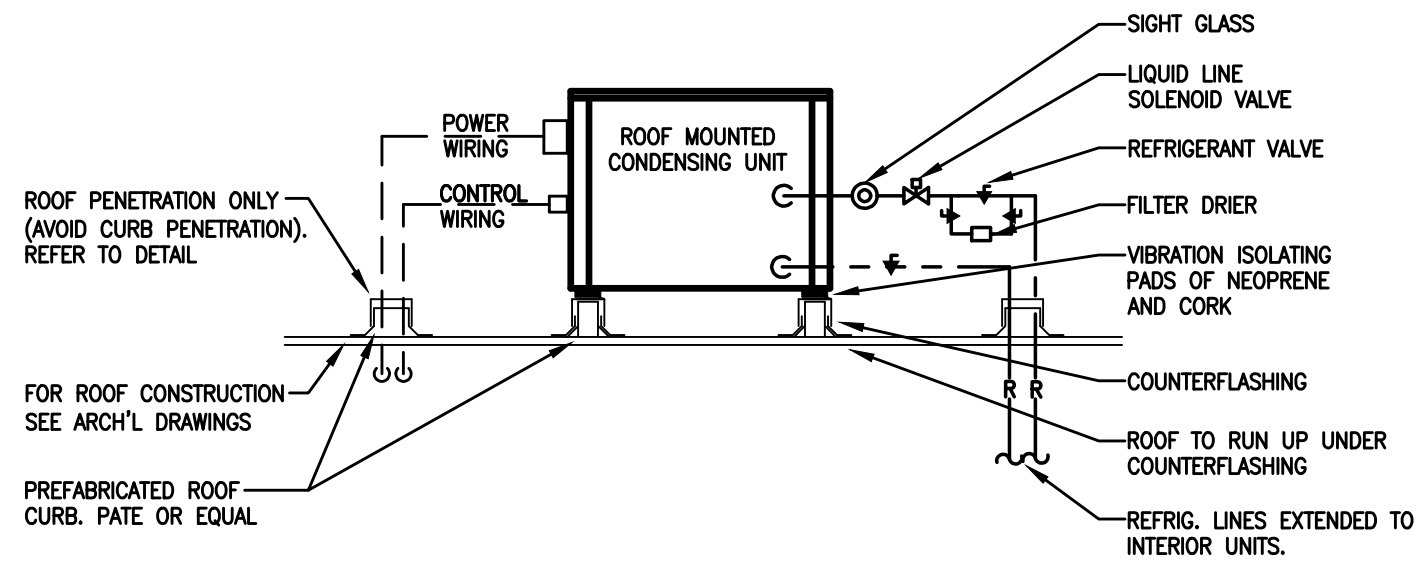
DETAIL OF HORIZONTAL AIR HANDLING UNIT W/ STEAM COIL

SCALE: NONE

NOTES:

- UL LISTED CONDENSATE DETECTION DEVICE ON DRAIN PAN WITH SENSOR INTERLOCKED W/AIR HANDLER. SHUT UNIT DOWN IF WATER IS DETECTED.

5



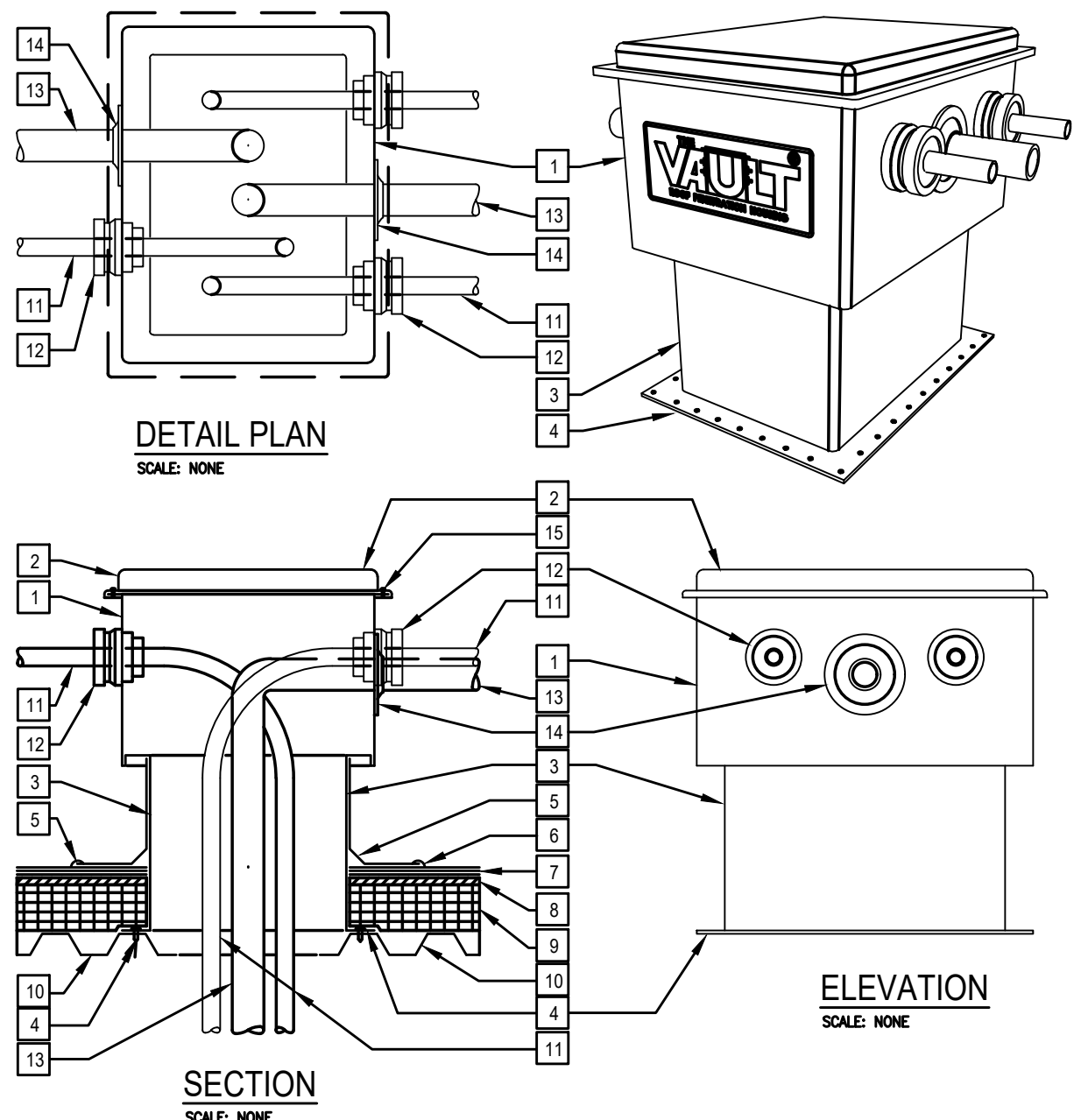
ROOF MOUNTED HEAT PUMP

SCALE: NONE

NOTE:

- 1. ALL ROOF CURBS SHALL BE SECURED TO THE ROOF IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND COMPLY WITH IBC WIND LOADING REQUIREMENTS.

8



PIPE PENetration ROOF CURB DETAIL

SCALE: NONE

NOTES:

- 1. ALL VAULT MODELS COMPLY WITH ICC 2015 SECTION C402.1 - BUILDING ENVELOPE ROOF AIR LEAKAGE AND FEM/ICC-500.
- 2. MECHANICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE VAULT AND APPROPRIATE TRADES TO PROVIDE EXIT SEALS.
- 3. COORDINATE WITH PLUMBING AND ELECTRICAL CONTRACTOR.

LEGEND

- 1 THE VAULT (SPICIFY MODEL)
- 2 MATCHING WIND RATED ALUMINUM COVER
- 3 MATCHING ALUMINUM CURB 14" HIGH MIN. CURB MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 4 CURB FLANGE, FASTEN TO ROOF DECK
- 5 SBS FLASHING MEMBRANE
- 6 CONTINUOUS DALK WITH RUBBERIZED ASPHALT SEALANT
- 7 ROOFING SYSTEM
- 8 RECOVERY BOARD
- 9 RIGID INSULATION
- 10 METAL ROOF DECK
- 11 CONDUIT, PIPE, REFRIGERANT LINE, ETC. SIZES FROM 0.25" THRU 1.90" O.D.
- 12 SERIES 5000 EXIT SEAL FOR SIZES FROM 0.25" THRU 1.90" O.D.
- 13 CONDUIT, PIPE, REFRIGERANT LINE, ETC. SIZES FROM 1.90" THRU 15" O.D.
- 14 SERIES 6000 & 7000 EXIT SEAL FOR SIZES FROM 1.90" THRU 15" O.D.
- 15 VANDAL RESISTANT STAINLESS SCREWS



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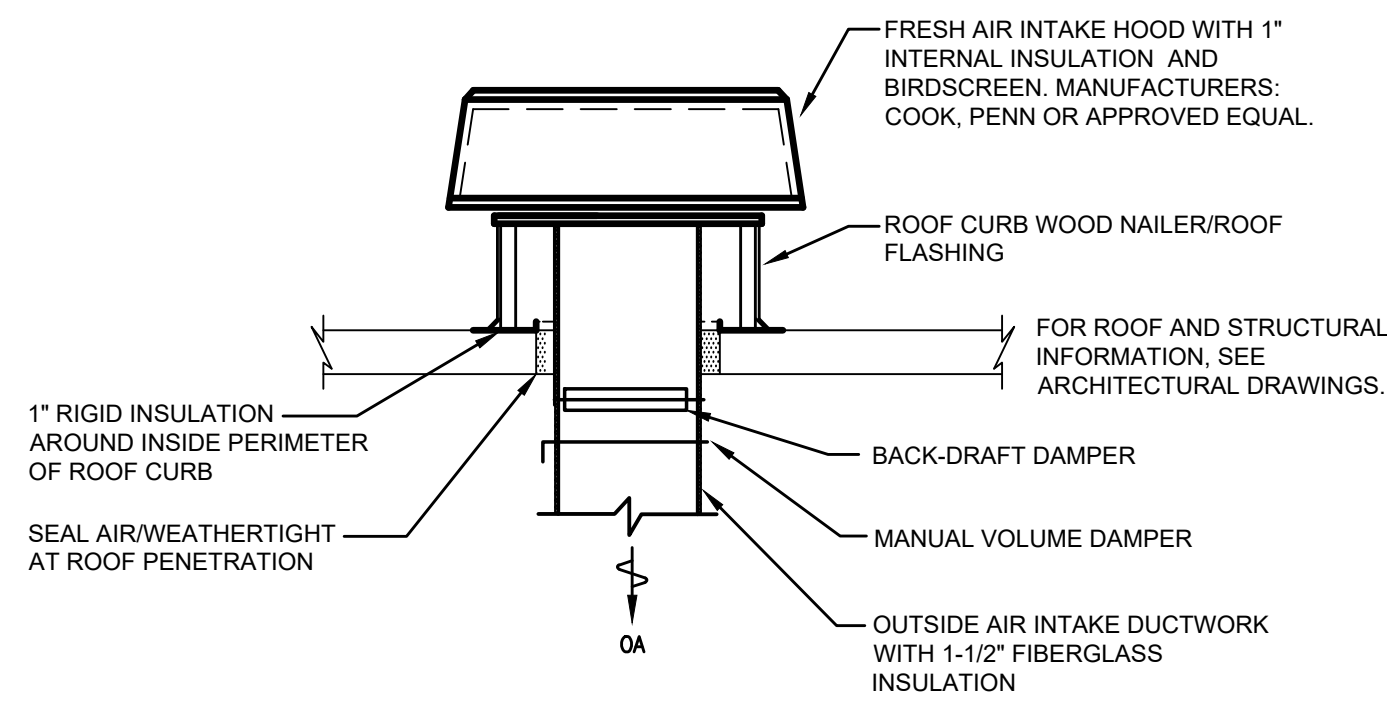
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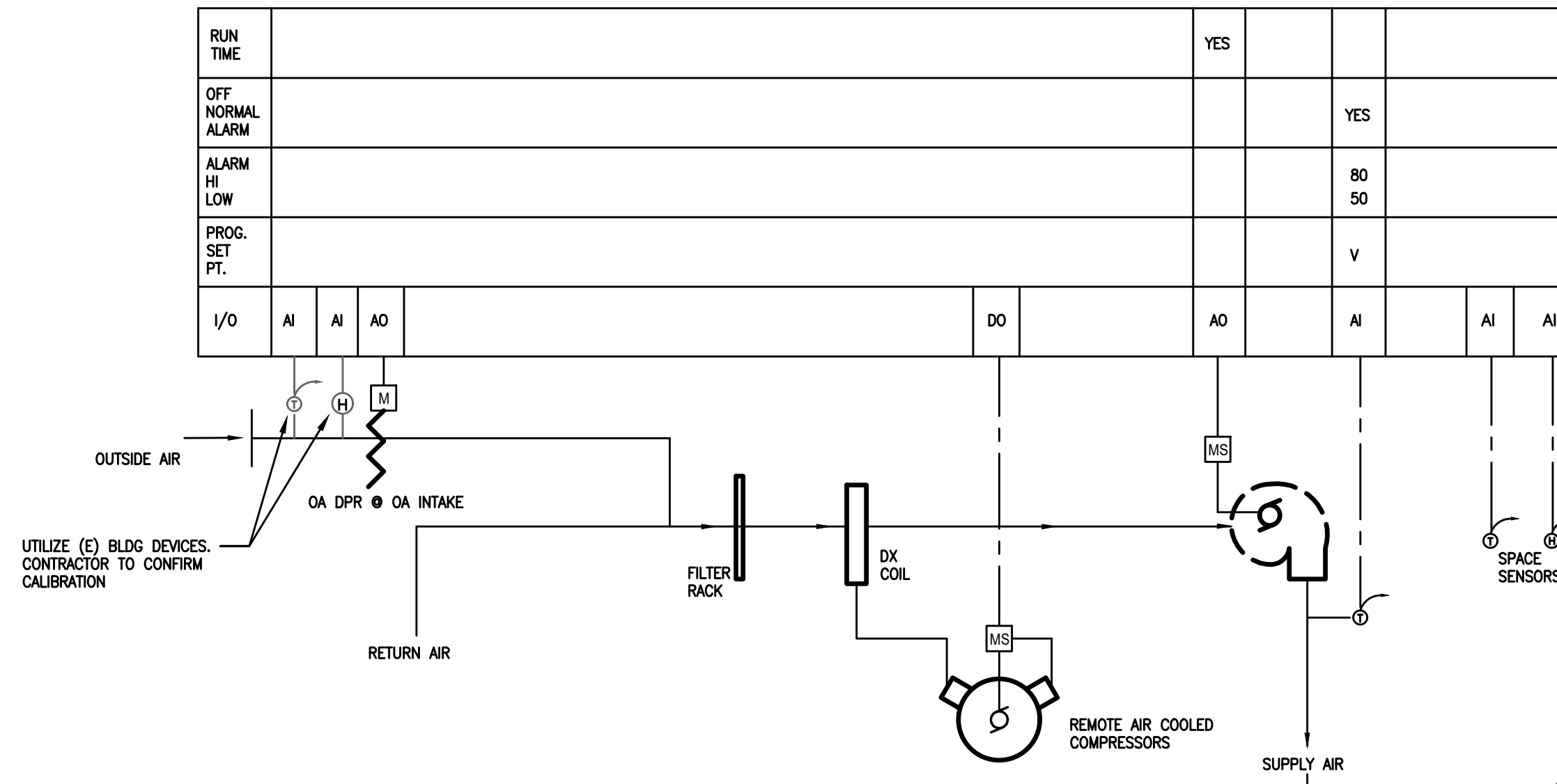
H201.0



ROOF FRESH AIR INTAKE DETAIL

SCALE: NONE

- NOTES:
1. INSTALL PER MANUFACTURER REQUIREMENT.



INDOOR AIR HANDLING UNITS

SCALE: NONE
SEQUENCE: SEE SPECIFICATIONS

1. CONTROL POINTS:
A. OUTSIDE AIR TEMPERATURE
B. OUTSIDE AIR HUMIDITY
C. OUTSIDE AIR DAMPER POSITION
D. SUPPLY AIR TEMPERATURE
E. SPACE TEMPERATURE

ATC SYMBOLS AND ABBREVIATIONS

- AI ANALOG INPUT
AO ANALOG OUTPUT
DI DIGITAL INPUT
DO DIGITAL OUTPUT
T THERMOSTAT
FS FLOW SWITCH
DP DIFFERENTIAL PRESSURE
MS MOTOR STARTER
M MOTOR
MD MOTOR OPERATED DAMPER
S MOTOR
H HUMIDISTAT
F FREEZESTAT
SD SMOKE DETECTOR
V VARIABLE



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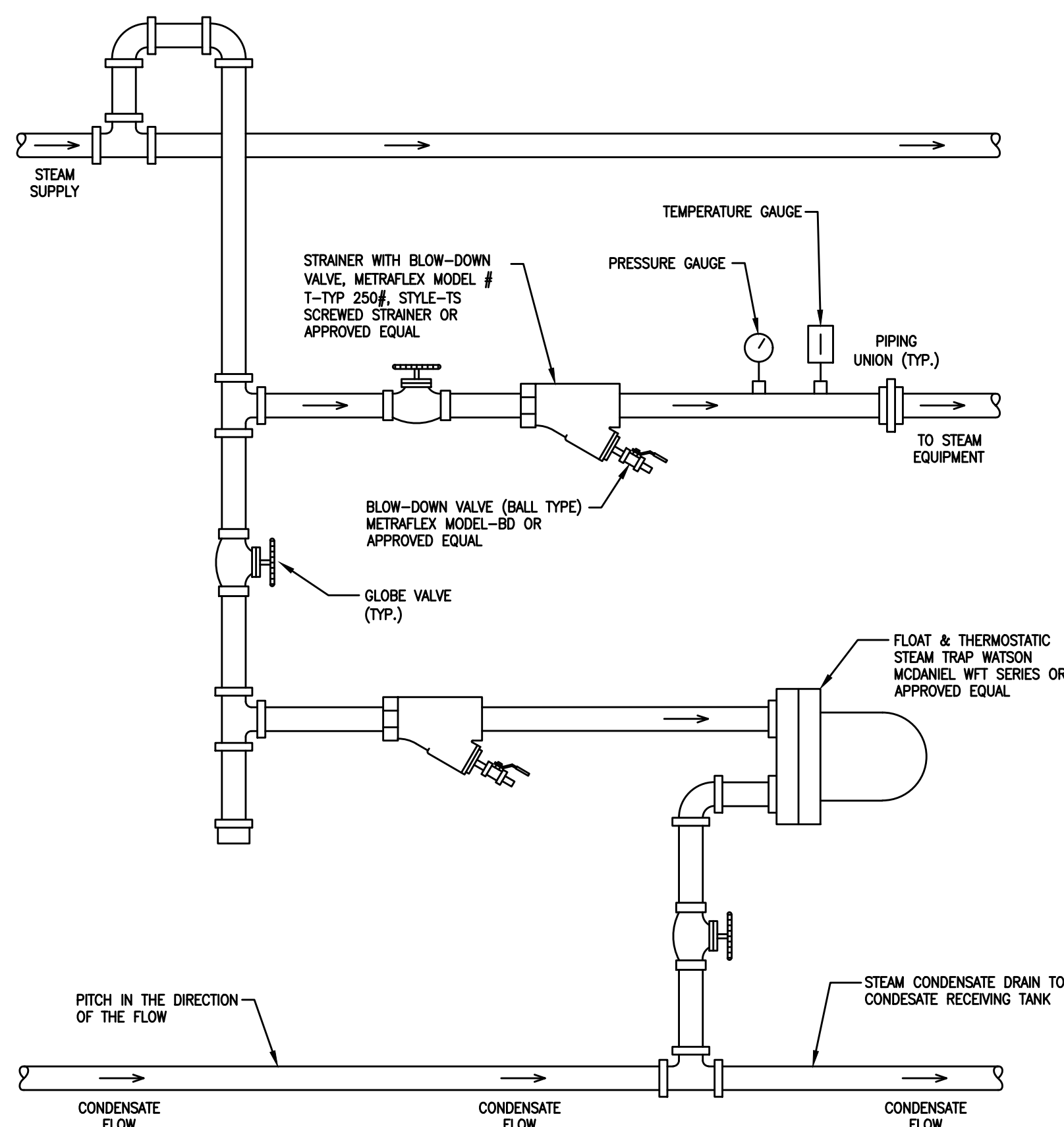
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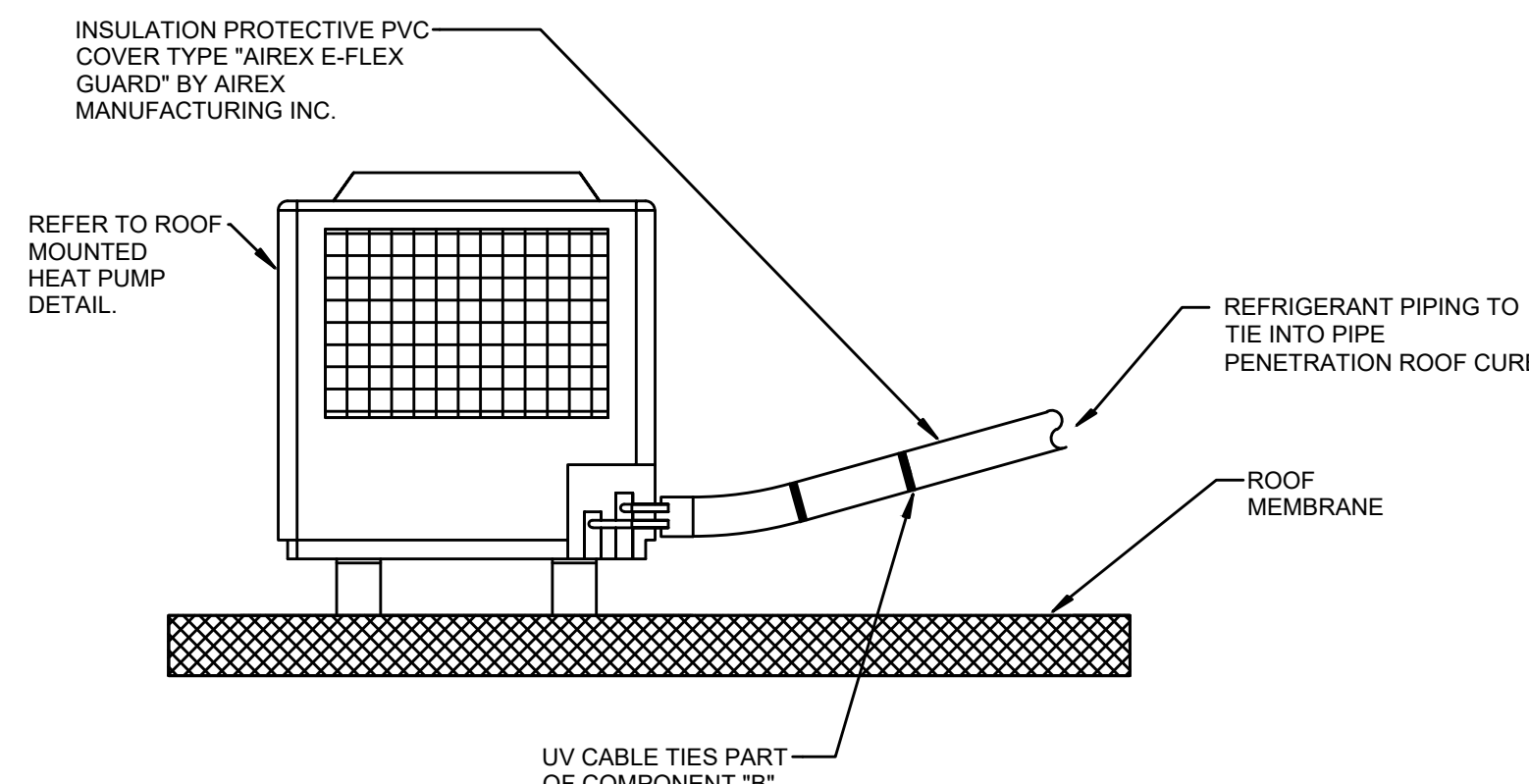
Drawing Number:

H201.1



TYPICAL STEAM EQUIPMENT CONNECTION DETAIL

SCALE: NONE



REFRIGERANT PIPE INSULATION DETAIL

SCALE: NOT TO SCALE

- NOTES:
1. COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR INSTALLATION OF THE POWER WIRING THROUGH THE WALL PENETRATION OUTLET TO MINIMIZE BUILDING ENVELOPE PENETRATIONS.

ABBREVIATIONS

ABS

ABSOLUTE

MECH

MECHANICAL

AC

ALTERNATING CURRENT

MCC

MOTOR CONTROL CENTER

AFF

ABOVE FINISHED FLOOR

MCM

THOUSAND CIRCULAR MILLS

AHU

AIR HANDLING UNIT

MFR

MANUFACTURER

AMP, A

AMPERE

MH

MANHOLE, MOUNTING HEIGHT

APP

APPROVED

MIN

MINIMUM

APPROX

APPROXIMATE

MISC

MISCELLANEOUS

ATS

AUTOMATIC TRANSFER SWITCH

MLO

MAIN LUG ONLY

AVG

AVERAGE

MOD

MOTOR OPERATED DAMPER

BLDG

BUILDING

MTD

MOUNTED

C

CONDUIT

(N)

NEW

CB

CIRCUIT BREAKER

NA

NOT APPLICABLE

COL

COLUMN

N.C.

NORMALLY CLOSED

CONN

CONNECTION

NEUT.

NEURAL

CONT

CONTINUED

NIC

NOT IN CONTRACT

CONTR

CONTRACTOR

NL

NIGHT LIGHT

DB

DECIBEL

N.O.

NORMALLY OPEN

DEG

DEGREE

NO

NUMBER

DIA

DIAMETER

NTS

NOT TO SCALE

DN

DOWN

OD

OUTSIDE DIAMETER

DT

DOUBLE THROW

OH

OVERHEAD

DWG

DRAWING

OH

OVERHEAD DOOR

(E)

EXISTING

%

PERCENT

E.C.

ELECTRICAL CONTRACTOR

PB

PUSH BUTTON

EF

EXHAUST FAN

PH

PHASE-ELECTRICAL

EL

ELEVATION

PNL

PANEL

ELEC

ELECTRICAL

PVC

POLYVINYL CHLORIDE PIPE

EQ

EQUAL

(R)

REMOVE EXISTING

EQUIP

EQUIPMENT

(RE)

RELOCATE EXISTING

EW

ELECTRIC WATER COOLER

RA

RESEARCH & DEVELOPMENT

EW

ELECTRIC WATER HEATER

REQ

REQUIRED

EXT

EXTERIOR

RM

ROOM

°F

DEGREE FAHRENHEIT

SCH

SCHEDULE

FACP

FIRE ALARM CONTROL PANEL

SF

SQUARE FEET

FBO

FURNISHED BY OTHERS

SPD

SURGE PROTECTION DEVICE

FD

FLOOR DRAIN

SPEC

SPECIFICATION

FDC

FIRE DEPARTMENT CONNECTION

SQ

SQUARE

FHC

FIRE HOSE CABINET

SS

SAFETY SWITCH

FIN

FINISH

ST

SINGLE THROW

FF

FINISHED FLOOR

STD

STANDARD

FLR

FLOOR

STL

STEEL

FT

FEET

STRUC

STRUCTURAL

FUF

FUSED

SW

SWITCH

GALV

GALVANIZED

SWBD

SWITCHBOARD

GFCI

GROUND FAULT CURRENT INTERRUPTER

SWGR

SWITCHGEAR

GRD, GND

GROUND

TEMP

TEMPERATURE

GWH

GAS WATER HEATER

TEL

TELEPHONE

HC

HANDICAP

THERM

THERMOMETER

HP

HORSEPOWER

TYP

TYPICAL

HR

HOUR

UG

UNDERGROUND

HT

HEIGHT

UH

UNIT HEATER

HTR

HEATER

UL

UNDERWRITER'S LABORATORY

HV

HIGH VOLTAGE

U.O.N.

UNLESS OTHERWISE NOTED

HVAC

HEATING VENTILATION AIR CONDITIONING

UTIL

UTILITY

HZ

FREQUENCY-ELECTRICAL

V

VOLTS

ID

INSIDE DIAMETER

VB

VACUUM BREAKER

ID

INDIRECT DRAIN

VERT

VERTICAL

JB

JUNCTION BOX

VFD

VARIABLE FREQUENCY DRIVE

KV

KILOVOLTS

VF

VERIFY IN FIELD

KVA

KILOVOLT AMPERE

VPC

VIA PHOTOCELL

KW

KILOWATT

VTC

VIA TIME CLOCK

KWH

KILOWATT HOUR

W

WIRE

LF

LINEAR FEET

W/

WITH

LV

LOW VOLTAGE

WP

WEATHERPROOF

MAU

MAKE-UP AIR UNIT

W/O

WITHOUT

MAX

MAXIMUM

XFMR

TRANSFORMER

MCB

MAIN CIRCUIT BREAKER

YR

YEAR

GENERAL NOTES

1. ALL WORK IS TO CONFORM WITH THE 2017 NATIONAL ELECTRICAL CODE AND ALL APPLICABLE CODES, REGULATIONS AND STANDARDS. NOT ALL CODE REQUIREMENTS HAVE BEEN DESCRIBED IN THIS SPECIFICATION OR INDICATED ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE CODES AND INSTALL THE WORK IN ACCORDANCE WITH CODES.

2. OBTAIN AND PAY FOR AND SCHEDULE ALL BUILDING INSPECTIONS, CONNECTION CHARGES, AND FEES.

3. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SUPERVISION NECESSARY TO INSTALL COMPLETE OPERATING ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING ALL SITE WORK ON THE SITE AND WITHIN THE PROPOSED CONSTRUCTION AREAS TO ACCOMPLISH THE REQUIRED WORK.

4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL ELECTRIC WORK ASSOCIATED WITH THE ELECTRIC SHOP. MAKE ALL ARRANGEMENTS IN A TIMELY FASHION FOR CONNECTION OF THE ELECTRICAL SERVICE.

5. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE TAKEN AS A WHOLE. IF A CONFLICT OR CONTRADICTION EXISTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT WILL APPLY. THE ARCHITECT'S AND ENGINEER'S INTERPRETATION OF THE DOCUMENTS ARE TO BE BINDING UPON THE CONTRACTOR.

6. PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT FOR REVIEW PRIOR TO ORDERING. COORDINATE ALL PHYSICAL DIMENSIONS PRIOR TO SHOP DRAWING SUBMISSION.

7. IF THE CONTRACTOR ELECTS TO SUBMIT ALTERNATE EQUIPMENT, MANUFACTURERS, SYSTEMS, METHODS, OR MATERIALS NOT SPECIALLY IDENTIFIED IN THE DRAWINGS AND SPECIFICATIONS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE ENGINEER'S AND OWNER'S APPROVAL AND COORDINATE THE WORK WITH OTHER TRADES AND PAY FOR ANY ADDITIONAL COSTS ASSOCIATED WITH THE SUBSTITUTION OR CHANGE.

8. THE CONTRACTOR IS TO SURVEY AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID SUBMISSION AND BECOME AWARE OF ALL CONDITIONS WHICH MAY IMPACT THE REQUIRED WORK. CONTRACTOR IS TO INCLUDE ALL ASSOCIATED COSTS OF BID (MATERIALS/ LABOR) DETERMINED TO BE REQUIRED DURING SITE INSPECTIONS. CONTRACTOR'S BID SUBMISSION IS TO BE CONSIDERED PROOF THAT THIS REQUIREMENT HAS BEEN MET.

9. FINAL LOCATIONS OF ALL DEVICES IN FINISHED SPACES ARE TO BE COORDINATED, AND APPROVED BY THE ENGINEER/ OWNER PRIOR TO ROUGH-IN AND INSTALLATION.

10. COORDINATE LOCATIONS AND ROUGH-IN REQUIREMENTS WITH ALL TRADES PRIOR TO INSTALLATION.

11. PROVIDE NEW FIRE ALARM SYSTEM DEVICES AS INDICATED ON PLANS. PROVIDE ALL ASSOCIATED CONTROLS, AND APPURTENANCES REQUIRED TO SERVE NEW DEVICES. ALL NEW FIRE ALARM EQUIPMENT IS TO BE COMPATIBLE WITH THE EXISTING FIRE ALARM SYSTEM.

12. PROVIDE POWER TO HVAC AND PLUMBING EQUIPMENT AS REQUIRED FOR COMPLETE, OPERATIONAL SYSTEMS. EXISTING WIRING METHODS ARE TO BE EVALUATED FOR RE-USE AND ARE TO BE RE-USED WHEREVER DEEMED APPROPRIATE.

13. THE CONTRACTOR IS TO BE RESPONSIBLE FOR SELECTING PARTICULAR MOUNTING ARRANGEMENTS OF FIXTURES TO SUIT THE CONSTRUCTION, OR CEILING TYPE. THE CONTRACTOR OR HIS AGENT IS TO REVIEW ALL ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS TO VERIFY ALL CEILING TYPES PRIOR TO PREPARING SHOP DRAWINGS FOR SUBMISSION. IT IS NOT TO BE UNDERSTOOD THAT THE LIGHTING FIXTURE SCHEDULE ACCOUNTS FOR THE MOUNTING TYPES. CEILING TYPES ARE FREQUENTLY CHANGED AFTER THE SCHEDULE HAS BEEN COMPLETED.

14. FIXTURES AND DEVICES RECESSED IN A FIRE-RATED CEILING ARE TO BE PROVIDED WITH A FIRE-RATED ENCLOSURE THAT MAINTAINS THE FIRE-RATING OF THE CEILING SYSTEM. THE INSTALLATION OF THE ENCLOSURE IS TO MEET THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. WHERE APPLICABLE, FIXTURES AND DEVICES ARE TO BE RATED FOR INSULATION CONTACT (IC) FOR HIGH-TEMPERATURE OPERATION.

15. ALL DEVICES ARE TO BE INSTALLED SQUARE, LEVEL, PLUMB, AND TRUE.

16. PROVIDE CODE REQUIRED SIGNAGE (I.E., NEC 110.34, NEC 700.8, AND 695.4 B3).

17. ALL EQUIPMENT PANELS, CONTROLS, SAFETY SWITCHES, AND DEVICES ARE TO BE PROVIDED WITH PERMANENT BLACK LAMINATED MICA/TA WHITE CORE LABELS WITH 3/8" LETTERS. THIS ALSO APPLIES TO ALL CONTROLLERS, REMOTE START/ STOP PUSHBUTTONS, EQUIPMENT CABINETS, AND WHERE DIRECTED BY THE ARCHITECT AND ENGINEER, THIS REQUIREMENT DOES NOT APPLY TO INDIVIDUAL ROOM THERMOSTATS, AND LOCAL LIGHTING CONTROL DEVICES.

18. ALL THREE PHASE STARTER EQUIPMENT IS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR AND IS TO BE MAGNETIC, ACROSS-THE-LINE WITH AUXILIARY CONTACTS. ALL SINGLE PHASE STARTER EQUIPMENT IS TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

19. ALL WORK IS TO BE CONCEALED, UNLESS OTHERWISE INDICATED.

20. ALL EXPOSED INTERIOR WIRING, PANEL FEEDERS, HOME RUNS, AND EQUIPMENT FEEDERS ARE TO BE INSTALLED IN EMT (ELECTRICAL METALLIC TUBING). ALL EMT IS TO BE SECURELY FASTENED AT INTERVALS NOT EXCEEDING 10'-0" AND WITHIN 3'-0" OF ALL BOXES. NOTE: "EXPOSED" INDICATES ALL WIRING METHODS NOT INSTALLED WITHIN WALLS, ABOVE SUSPENDED CEILINGS, OR WITHIN A PRE-MANUFACTURED RACEWAY. ANY EXPOSED RACEWAY IN A FINISHED SPACE IS TO BE COORDINATED WITH THE ARCHITECT/ ENGINEER PRIOR TO INSTALLATION.

21. ALL CONCEALED BRANCH CIRCUIT WIRING METHODS INSTALLED ABOVE SUSPENDED CEILINGS, AND IN STUD PARTITIONS IS TO BE MC (METAL CLAD) CABLE. MC CABLE IS TO BE SECURELY FASTENED AT INTERVALS NOT EXCEEDING 4'-6", AND WITHIN 1'-0" OF ALL BOXES AND/OR FITTINGS.

22. PROPERLY INSTRUCT OWNER'S PERSONNEL IN THE OPERATION AND MAINTENANCE OF ALL SYSTEMS AND EQUIPMENT. PROVIDE THREE INSTRUCTION AND MAINTENANCE MANUALS. SUBMIT MANUALS FOR REVIEW PRIOR TO OPERATING INSTRUCTION.

23. PROVIDE RECORD AS-BUILT DRAWINGS AT COMPLETION OF WORK. SUBMIT TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL.

24. ALL NEW ATC WIRING METHODS ARE TO BE INSTALLED IN A DEDICATED CONDUIT PATHWAY. EXISTING PATHWAYS ARE TO BE USED FOR NEW ATC WIRING.

25. CONTRACTOR IS TO PROVIDE NEW, TYPES PANEL DIRECTORIES FOR ALL PANELS IMPACTED BY THE WORK.

26. ALL OVERCURRENT PROTECTION DEVICES, DISCONNECTING MEANS, WIRING METHODS, DEVICES, ETC. ASSOCIATED WITH THE WORK ARE TO BE NEW. THE CONTRACTOR SHALL NOT UTILIZE ANY EXISTING EQUIPMENT OR DEVICES.

ELECTRICAL DRAWING LIST

THE COLLEGE OF NEW JERSEY

Issued for Construction
12/22/21

Issued for Bid
02/28/22

Issued for
xx/xx/xx

E001.0

COVER SHEET

- ELECTRICAL

●

●

E101.0

ATTIC FLOOR PLAN

- ELECTRICAL

●

●

E101.1

ROOF PLAN

- ELECTRICAL

●

●

E201.0

DETAILS & SCHEDULES

- ELECTRICAL

●

●



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Ambler, PA 19002
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TCNH Project #: GR221
TCNH Project Manager: Mumtaz Makhdomi

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Project : TCNJ Green Hall
HVAC Replacements

Client/Owner :

The College of New Jersey
2000 Pennington Road
Ewing, NJ 08628

Date:	December 22, 2021
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Drawn By:	AF/DK
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Checked By:	MW
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Project Number:	2021-342
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Issued / Revisions

No.	Date	Description
	11/19/21	SD Review Set
	12/22/21	Issued for Construction
	02/11/22	Issued for Construction
	02/28/22	Issued for BID

Drawing Name :

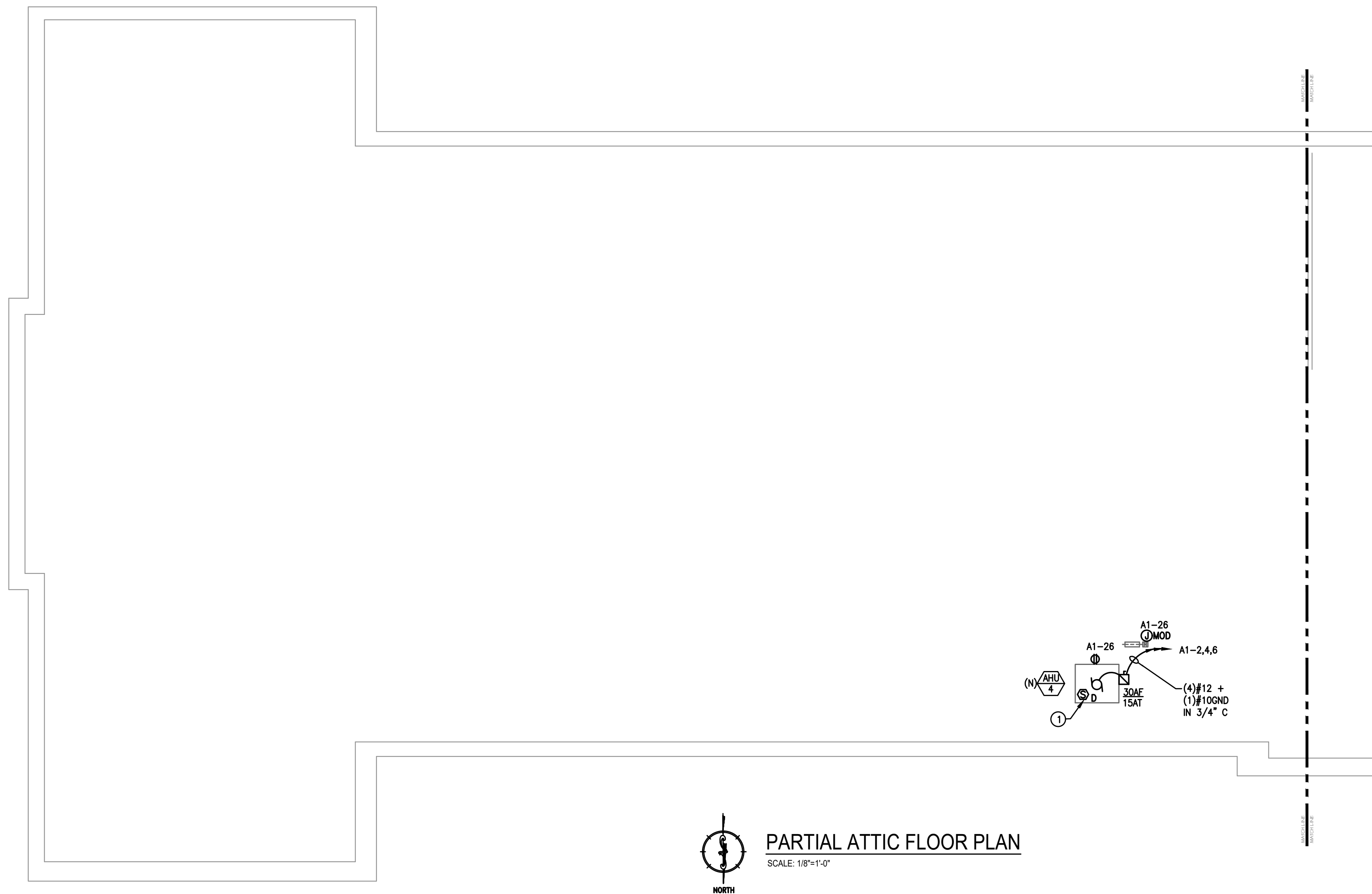
Cover Sheet- Electrical

VERIFY SCALE
BAR IS ONE INCH
ON ORIGINAL
DRAWING

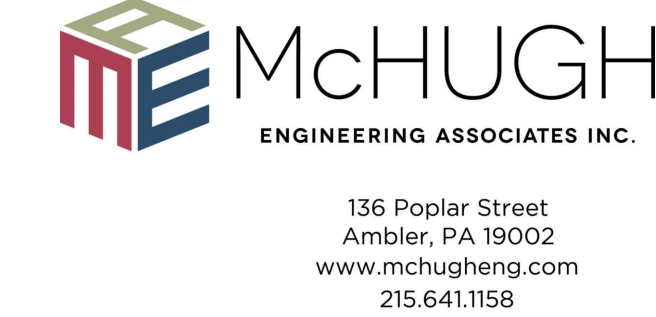
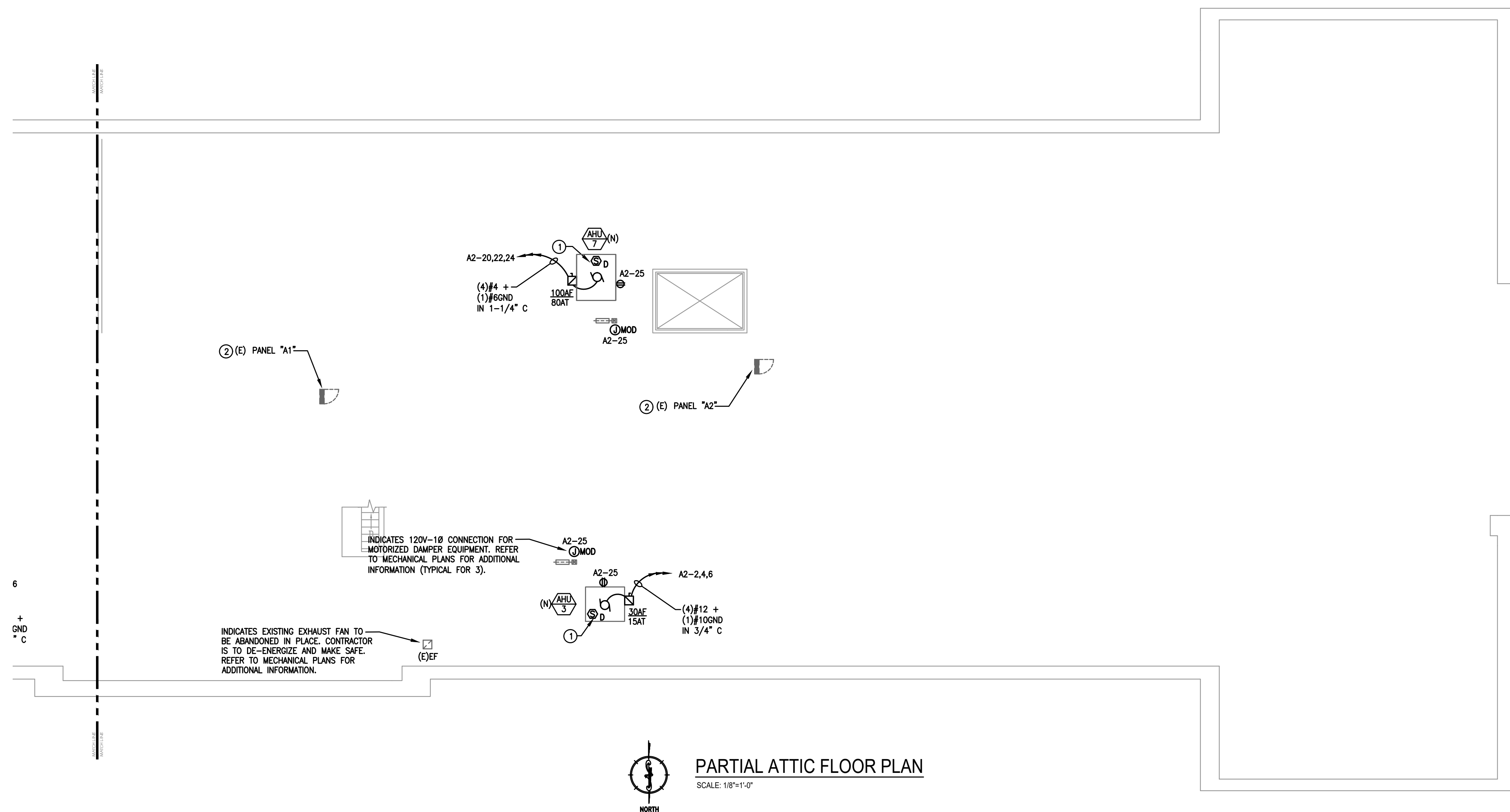


Drawing Number :

E001.0



- ELECTRICAL GENERAL NOTES:**
- EXISTING LOW VOLTAGE WIRING METHODS IN THE ATTIC AREA ARE CURRENTLY IN-USE AND WILL REQUIRE PROTECTION DURING ALL PHASES OF CONSTRUCTION. ANY/ ALL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED PER TCNJ'S SPECIFICATIONS AT THE CONTRACTOR'S EXPENSE.
- ELECTRICAL KEYNOTES:**
- NEW DUCT SMOKE DETECTOR DEVICE IS TO BE SERVED VIA EXISTING FIRE ALARM CONTROL PANEL EQUIPMENT. THE CONTRACTOR IS TO ENGAGE THE SERVICES OF THE FIRE ALARM VENDOR (MONEYWELL, CONTACT: ED MACK 856-261-1000) TO COORDINATE AND PROVIDE ALL PROGRAMMING OF NEW FIRE ALARM DEVICES. ALL SUCH COSTS ARE TO BE INCLUDED IN THE CONTRACTOR'S BID.
 - APPROXIMATE LOCATION OF EXISTING PANELS. CONTRACTOR TO VERIFY LOCATION ON THE FIELD



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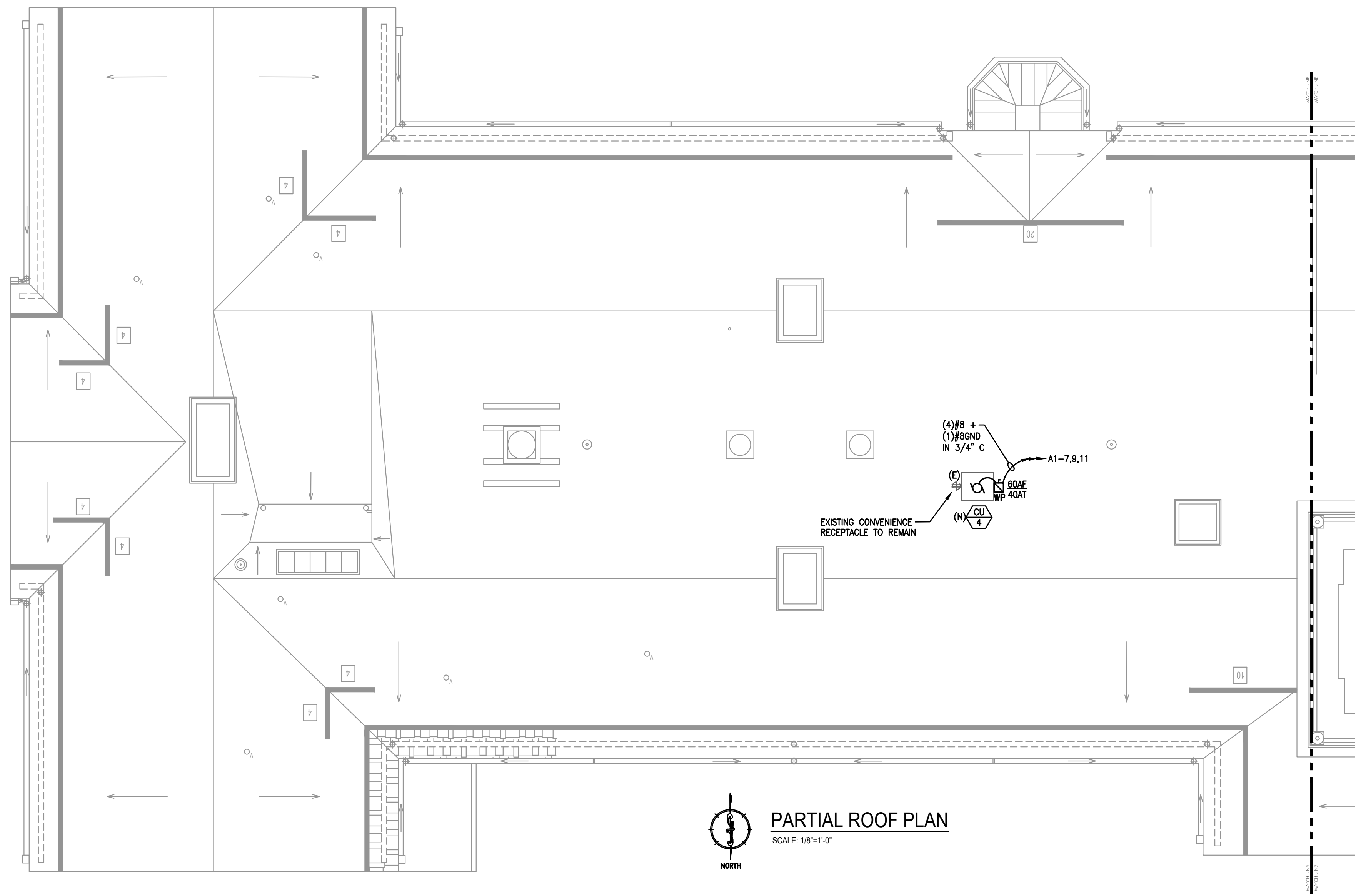
Attic Floor Plan - Electrical

VERIFY SCALE
BAR IS ONE INCH
ON ORIGINAL
DRAWING

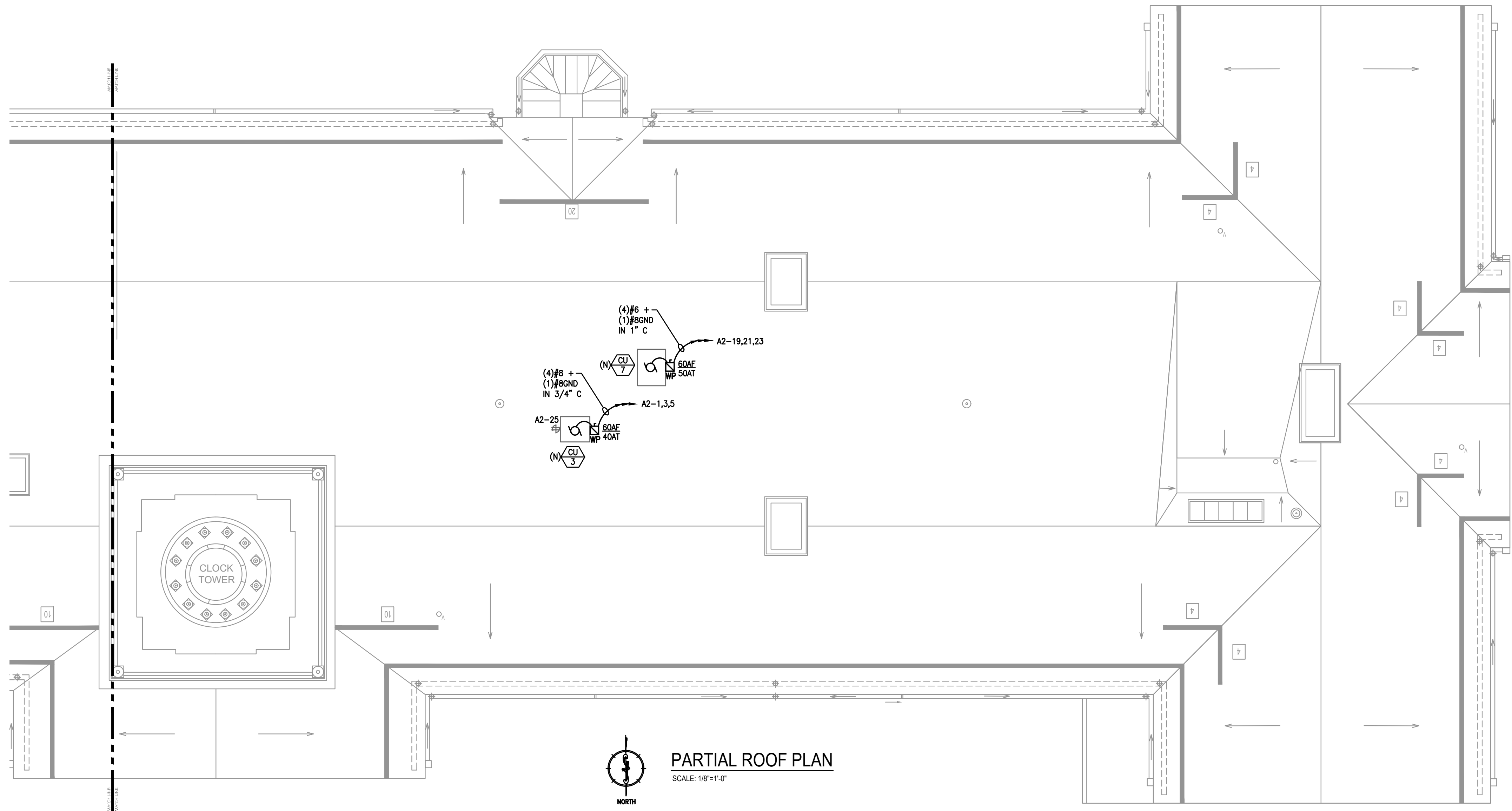
0 1"

Drawing Number :

E101.0



ELECTRICAL GENERAL NOTES:
1. THE ELECTRICAL CONTRACTOR IS TO ENGAGE THE SERVICES OF LIGHTNING PROTECTION SPECIALIST TO COORDINATE AND PROVIDE ALL REQUIRED PROTECTION FOR NEW EQUIPMENT. EXISTING LIGHTNING PROTECTION DEVICES AND EQUIPMENT ARE TO BE EVALUATED AND RE-USED WHEREVER DEEMED APPROPRIATE. NEW EQUIPMENT AND DEVICES ARE TO BE PROVIDED AS REQUIRED. PROVIDE ALL UL CERTIFICATIONS AS REQUIRED BY THE OWNER.



McHUGH
ENGINEERING ASSOCIATES INC.
136 Poplar Street
Ambler, PA 19002
www.mchugheng.com
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TCNJ THE COLLEGE OF NEW JERSEY
TCNH Project #: GR221
TCNH Project Manager: Mumtaz Makhdomi

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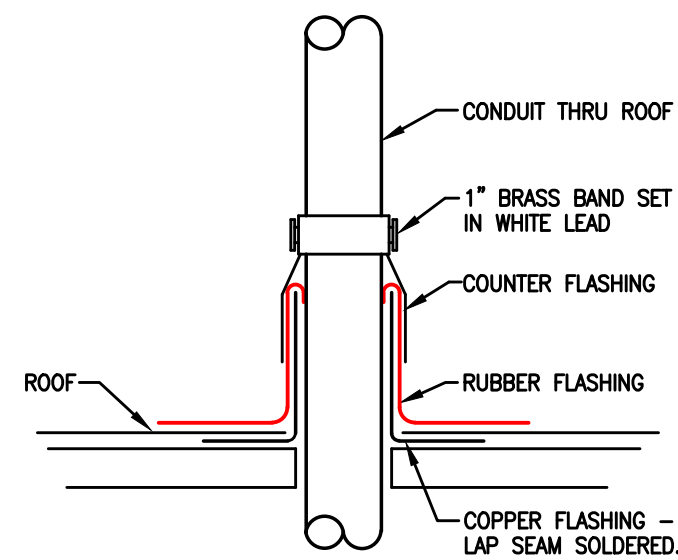
Roof Plan - Electrical



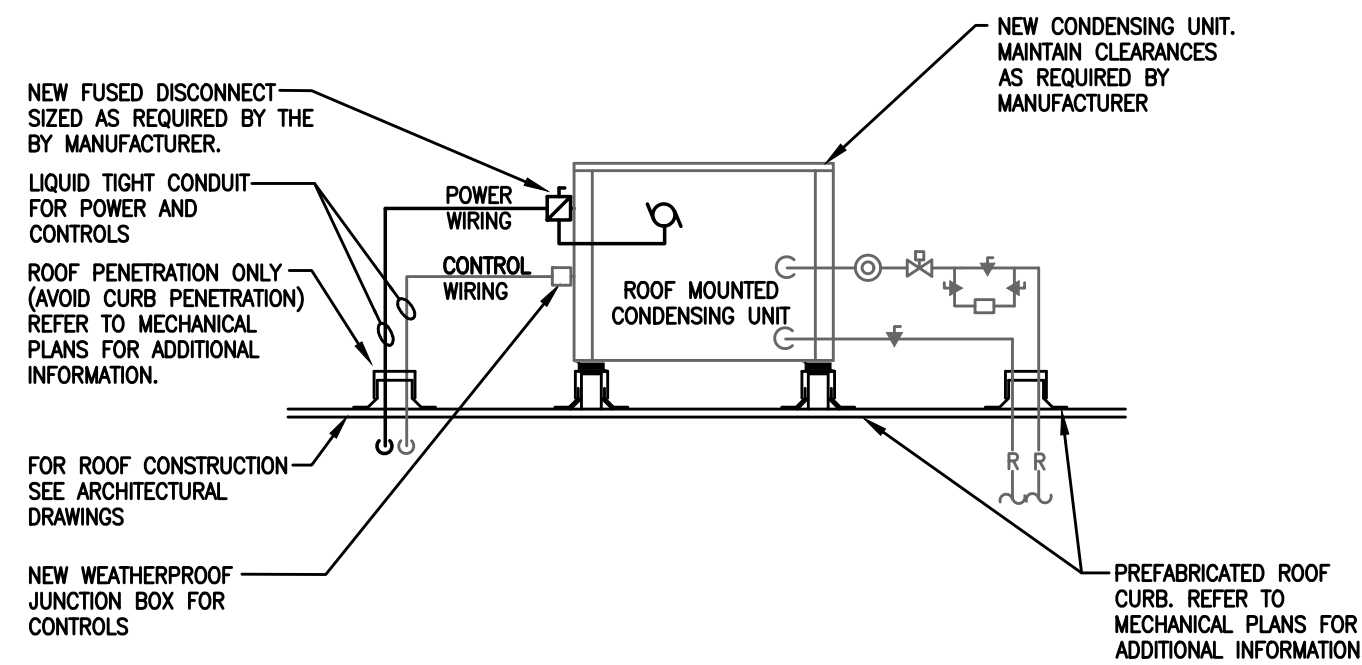
Drawing Number :

E101.1

ELECTRICAL SYMBOLS AND ABBREVIATIONS			
⊕	GFCI DUPLEX RECEPTACLE-GROUND FAULT CIRCUIT INTERRUPTER, PERSONAL PROTECTION		LIGHTING OR POWER PANEL ON NORMAL FEEDER
ⓐ	JUNCTION BOX		WIRE & COND. DESIGNATION
	DUCT SMOKE DETECTOR		PANEL CIRCUIT DESIGNATION (CONCEALED)
WP	WEATHERPROOF		CONCEALED BRANCH CIRCUITING
M.O.D.	MOTOR OPERATED DAMPER		MOTOR
(E)	EXISTING		DISCONNECT SWITCH FUSED TYPE.
o	*"o" INDICATES SWITCH DESIGNATION		*"xxaf" INDICATES FRAME SIZE, *xxat" INDICATES TRIP SIZE.



DETAIL #1 CONDUIT THRU ROOF DETAIL
SCALE: NONE



ROOF MOUNTED CONDENSING UNIT
SCALE: NONE

NOTE:
CONTRACTOR SHALL INSTALL NEW FUSED DISCONNECT SWITCH TO MAINTAIN WORKING CLEARANCE PER NEC 110.26.

EXISTING PANEL SCHEDULE							A1		
PANEL LABEL: A1			MAIN: 225 AMP			ENCLOSURE			
A.I.C. EXISTING			MCS:			NEMA: 1			
208/120 VOLT 3 PHASE 4 WIRE			LUGS:			MOUNTING: S			
			TOP BOTTOM			WIDTH			
CKT	TRIP	POLE	DESCRIPTION	WATT	WATT	DESCRIPTION	TRIP	POLE	CKT
1									2
3	100	3	EXISTING AC LOAD	2519		NEW AHU-4 (MCA = 7)	15	3	4
5									6
7									8
9	40	3	NEW CU-4 (MCA = 32)	11515		EXISTING PRESI OFFICE LOAD "OFF"	100	3	10
11									12
13	20	1	EXISTING LOADS			EXISTING LOADS	20	2	14
15									16
17	20	2	EXISTING RM 202 LOADS			EXISTING LOADS	20	1	18
19	20	1	EXISTING LOADS "OFF"						20
21	20	1	EXISTING LOADS "OFF"			EXISTING ATTIC FAN EAST LOAD	20	3	22
23	20	1	EXISTING RM 202 LOADS						24
25	20	1	EXISTING RM 202 LOADS			180 NEW GFCI RECEPTACLE	20	1	26
27	20	1	EXISTING RM 202 LOADS			EXISTING LOADS	20	1	28
29	20	1	EXISTING RM 202 LOADS			EXISTING LOADS	20	1	30
				12500	26269	15199	53	AMPS	

EXISTING PANEL SCHEDULE										A2	
PANEL LABEL: A2				MAINS: 225 AMP				ENCLOSURE			
A.I.C. EXISTING				MCS:				NEMA: 1			
208/120 VOLT 3 PHASE 4 WIRE				LUGS:				MOUNTING: S			
				TOP BOTTOM				WIDTH			
CKT	TRIP	POLE	DESCRIPTION	WATT	WATT	DESCRIPTION	TRIP	POLE	CKT		
1									2		
3	40	3	NEW CU-3 (MCA = 32)	11515	2519	NEW AHU-3 (MCA = 7)	15	3	4		
5									6		
7						EXISTING LOAD	20	1	8		
9	30	3	EXISTING LOAD			EXISTING LOAD	100	3	10		
11									12		
13									14		
15	60	3	EXISTING ELECTRIC HEAT #4			EXISTING LOAD	20	1	16		
17						EXISTING LOAD	20	1	18		
19									20		
21	50	3	NEW CU-7 (MCA = 41)	14753	26268	NEW AHU-7 (MCA = 73)	80	3	22		
23									24		
25	20	1	NEW GFCI RECEPTACLES	540		EXISTING SPACE			26		
27			EXISTING SPACE			EXISTING LOAD	20	1	28		
29			EXISTING SPACE			EXISTING SPACE			30		
				12500	28797	47287	143	AMPS			
ALL OVERCURRENT PROTECTION DEVICES AND WIRING METHODS SERVING NEW EQUIPMENT AND DEVICES ARE TO BE NEW.											



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**Details &
Schedules -
Electrical**

VERIFY SCALE
BAR IS ONE INCH
ON ORIGINAL
DRAWING

0 1"

Drawing Number :

E201.0