

Oak Brook Park District

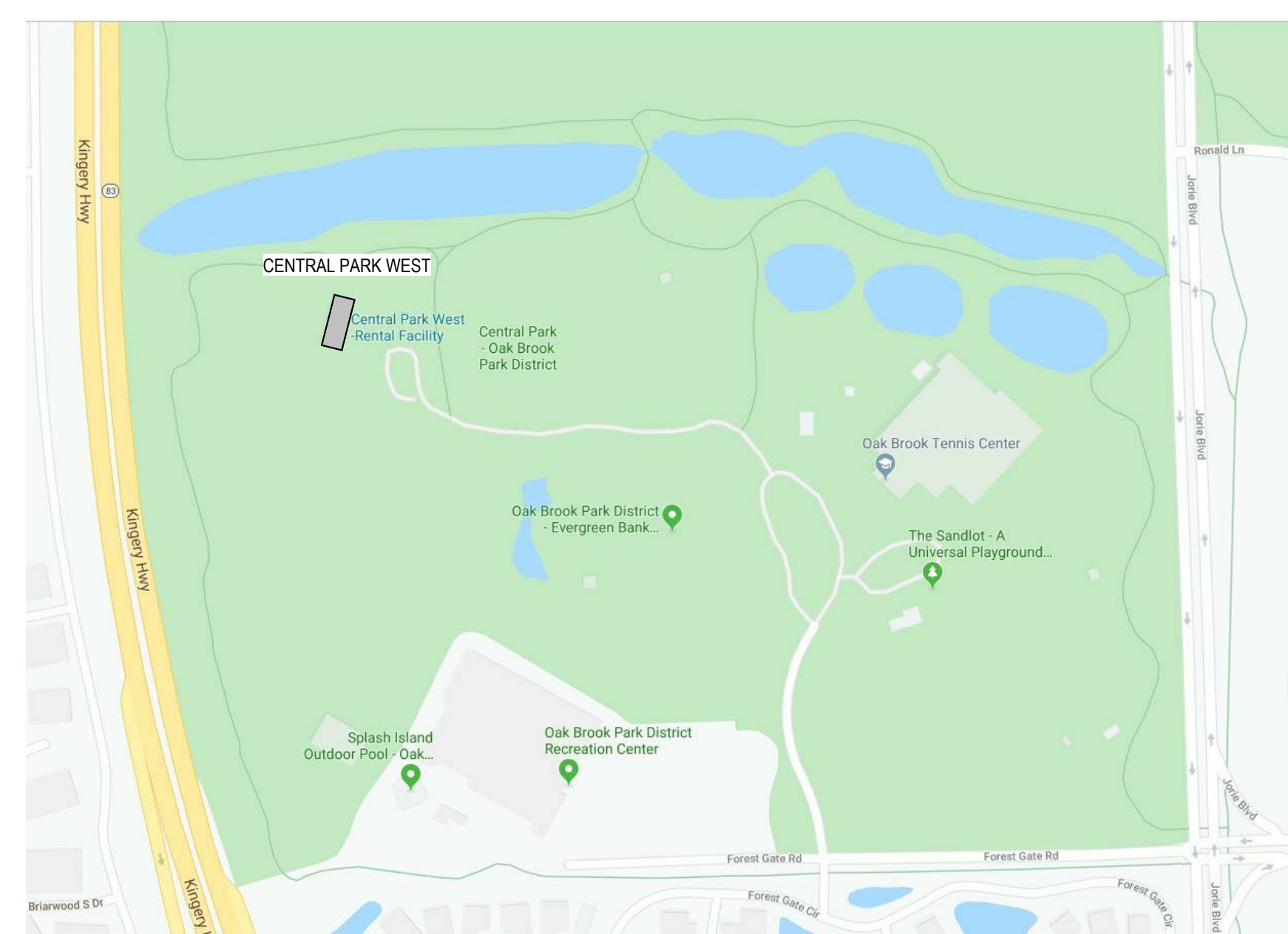
CENTRAL PARK WEST MECHANICAL RENOVATIONS

1500 Forest Gate Road

Oak Brook, IL 60523



SITE LOCATION MAP



SCHEDULE OF DRAWINGS

- GENERAL DRAWINGS**
 G-001.1 TITLE SHEET
 G-201.1 SYMBOLS AND PROJECT GENERAL NOTES
- ARCHITECTURAL DRAWINGS**
 A-101.1 INTERIOR DEMOLITION AND NEW ELEVATIONS, DEMO AND NEW WALL SECTIONS
 A-102.1 INTERIOR DEMOLITION AND NEW ELEVATIONS
- MECHANICAL DRAWINGS**
 ME-100 MECH. - ELEC. SPECIFICATIONS
 M-100 BASEMENT HVAC DEMO PLANS
 M-101 MAIN FLOOR HVAC DEMO PLANS
 M-201 FIRST FLOOR HVAC PLANS
 M-300 HVAC SPECIFICATIONS, ABBREV. & DETAILS

LEGATARCHITECTS
 DESIGN | PERFORMANCE | SUSTAINABILITY

Oak Brook
 Park District

**CENTRAL PARK
 WEST
 MECHANICAL
 RENOVATIONS**

1500 Forest Gate Road
 Oak Brook, IL 60523

ARCHITECT

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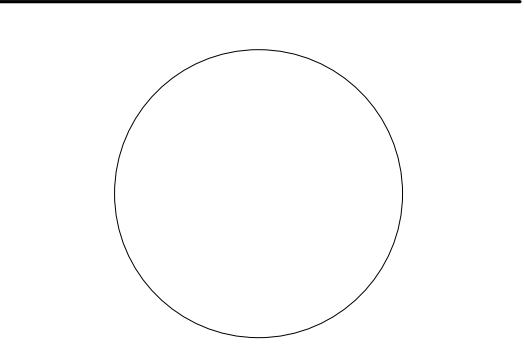
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DATE OF ISSUE

11.22.19

ARCHITECT'S PROJECT NUMBER

220005.00



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PROJECT NUMBER	220005.00
DATE OF ISSUE	11.22.19
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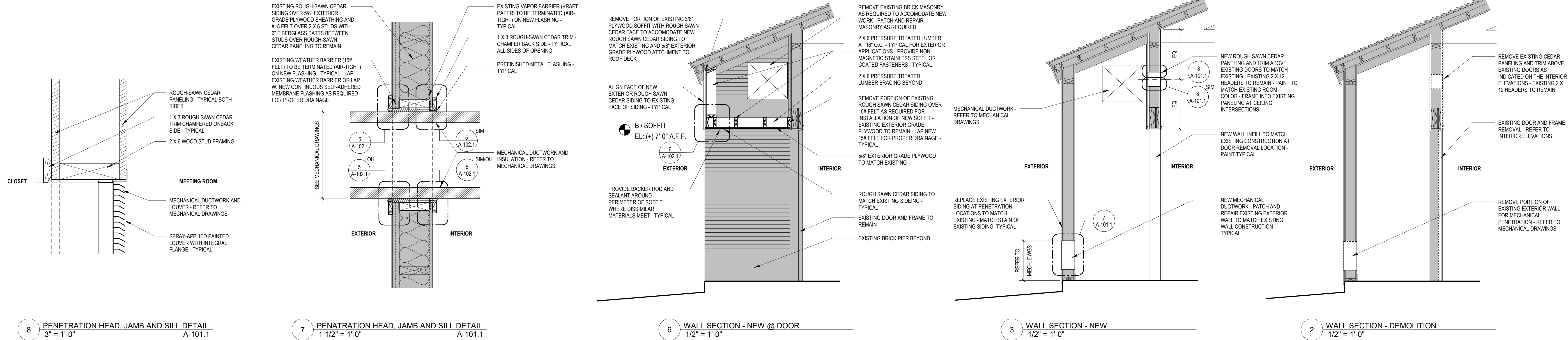
TITLE SHEET

**CENTRAL PARK
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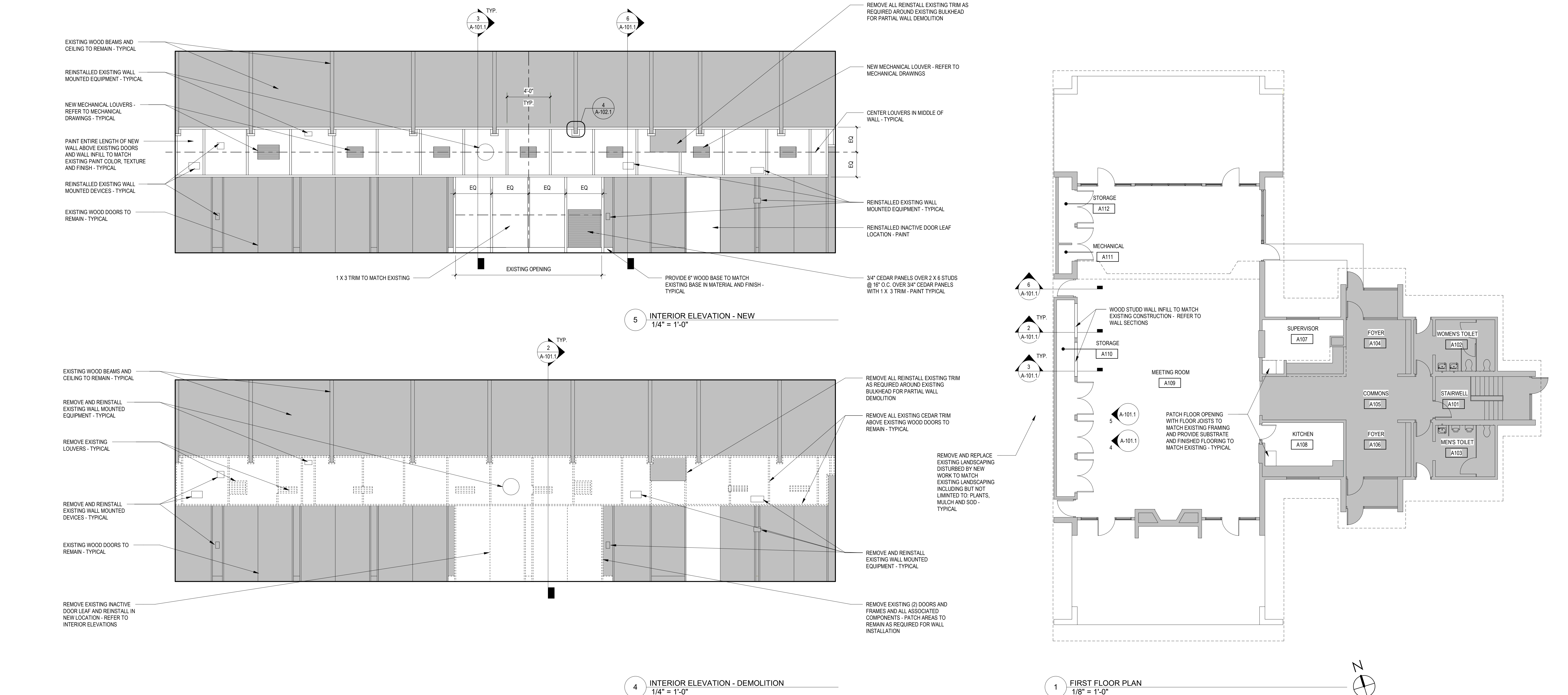
8 PENETRATION HEAD, JAMB AND SILL DETAIL
3" = 1'-0" A-101.1

7 PENETRATION HEAD, JAMB AND SILL DETAIL
1 1/2" = 1'-0" A-101.1

6 WALL SECTION - NEW @ DOOR
1/2" = 1'-0"

3 WALL SECTION - NEW
1/2" = 1'-0"

2 WALL SECTION - DEMOLITION
1/2" = 1'-0"



5 INTERIOR ELEVATION - NEW
1/4" = 1'-0"

4 INTERIOR ELEVATION - DEMOLITION
1/4" = 1'-0"

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

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**INTERIOR DEMOLITION
AND NEW ELEVATIONS,
DEMO AND NEW WALL
SECTIONS**

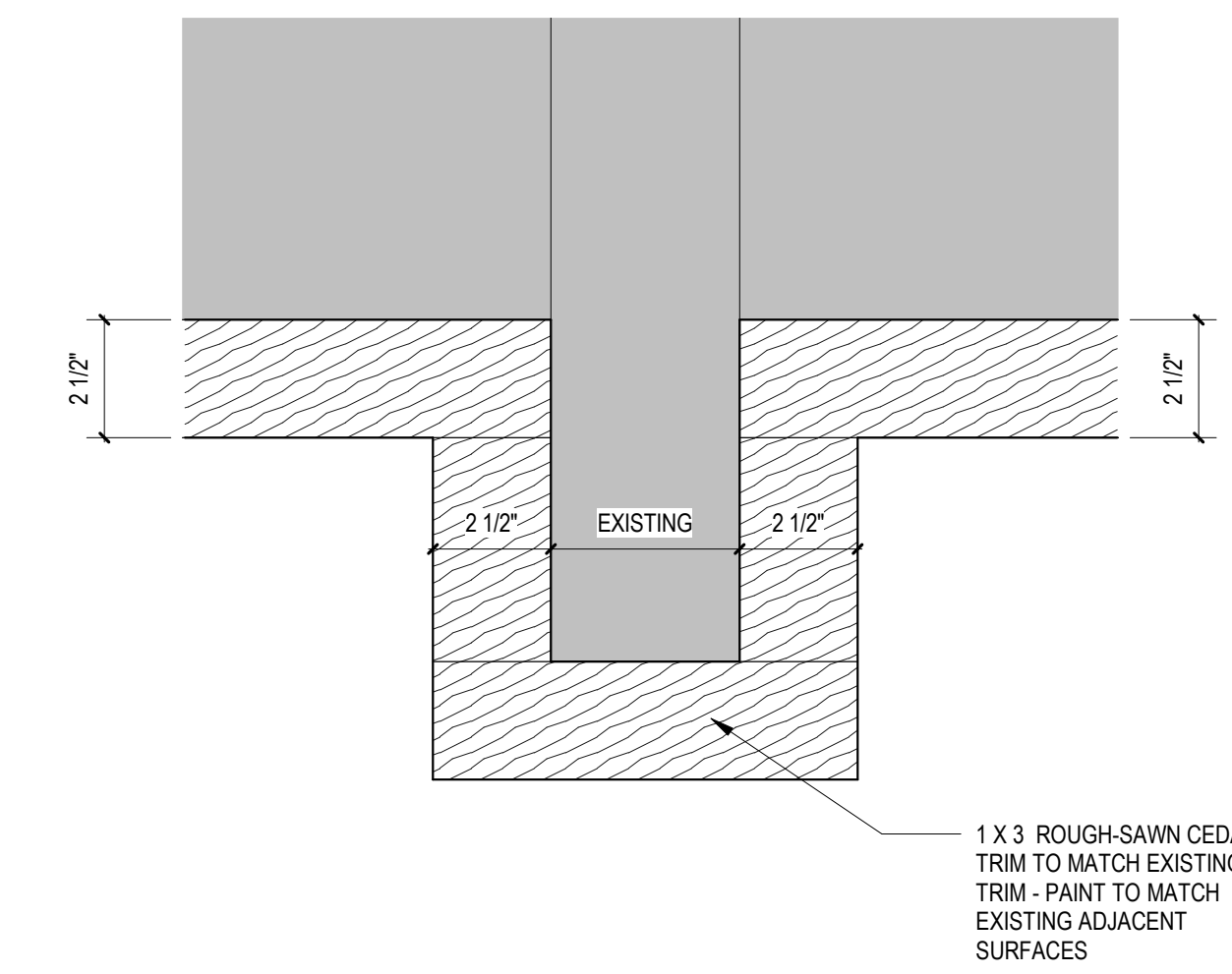
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**CENTRAL PARK
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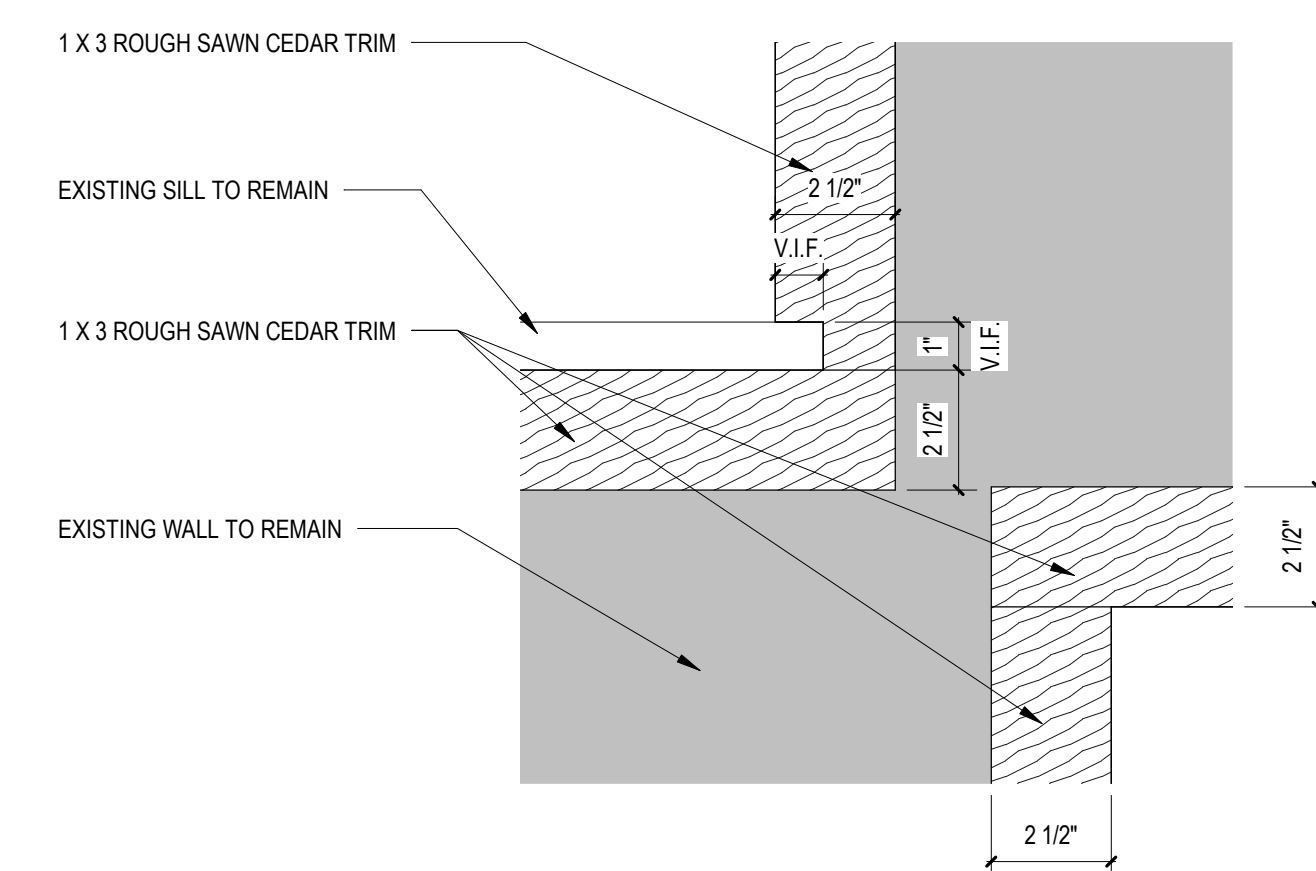
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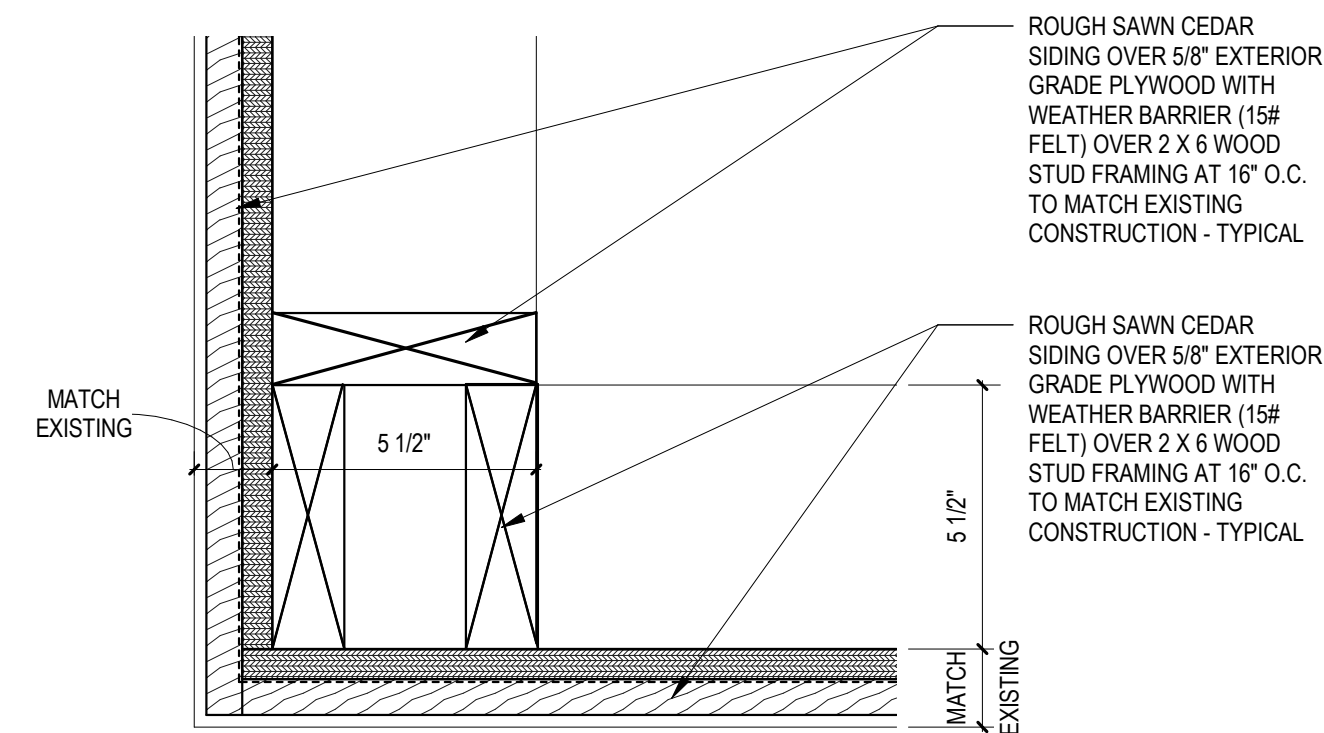
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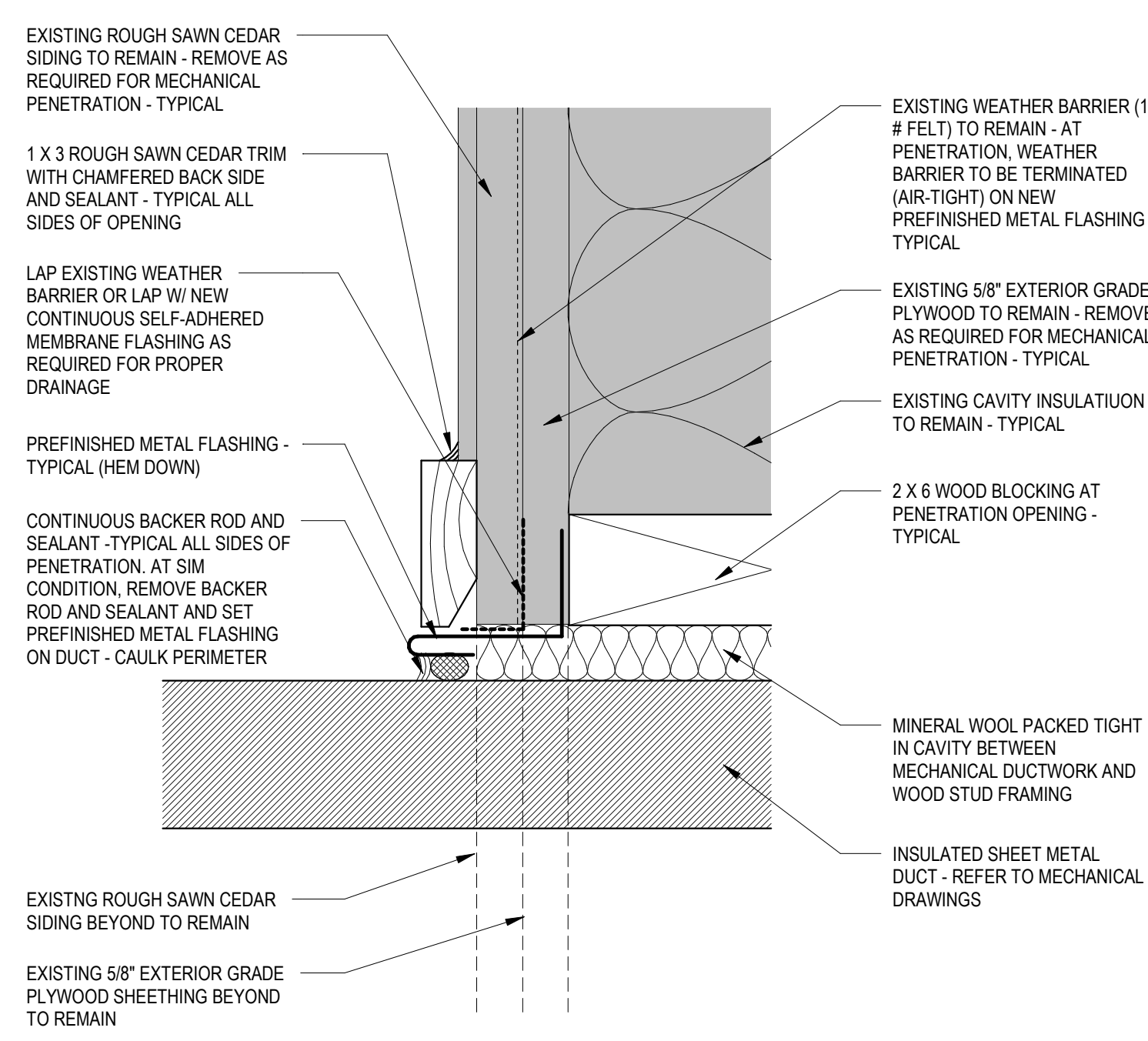
4 DETAIL ELEVATION
3" = 1'-0" A-101.1



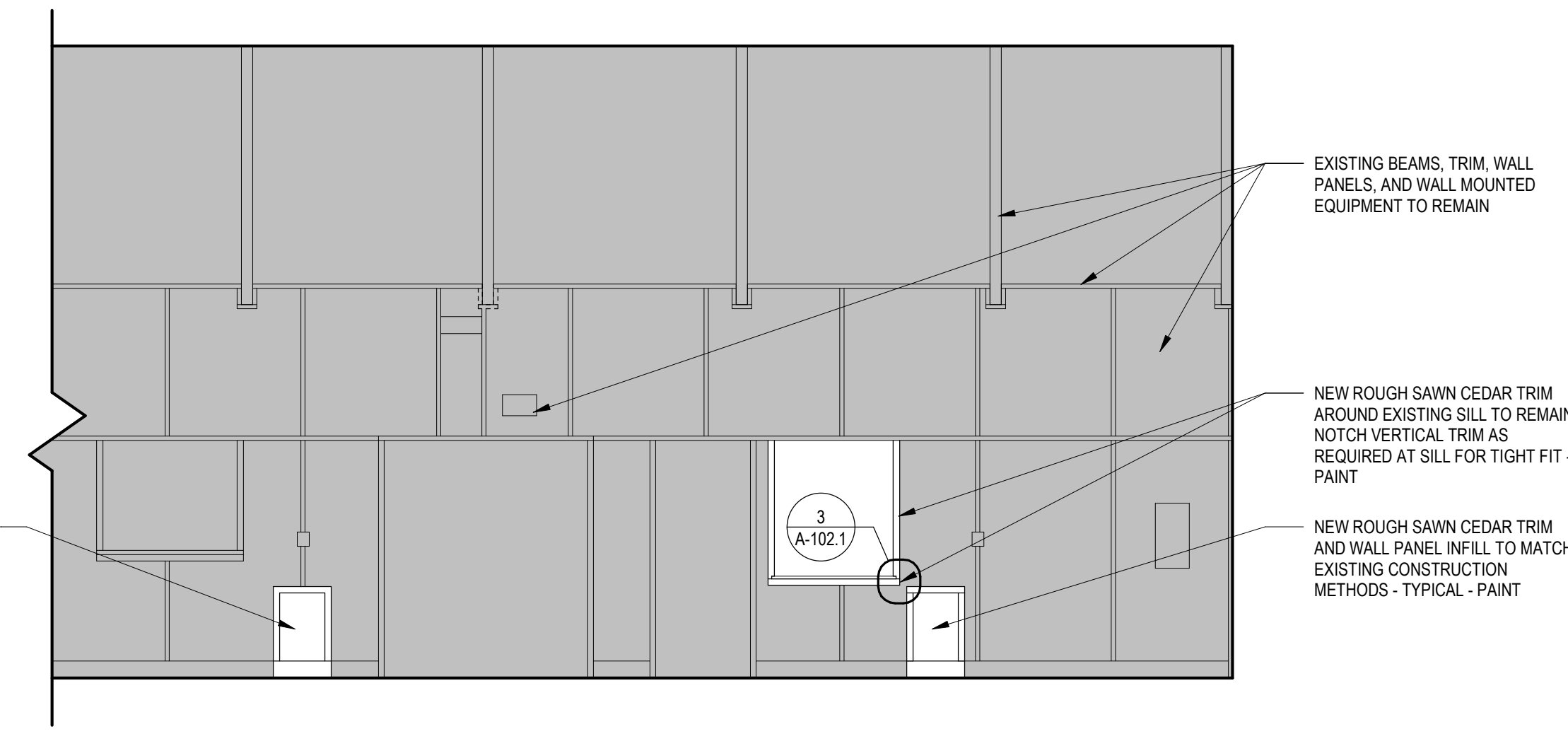
3 DETAIL ELEVATION
3" = 1'-0" A-102.1



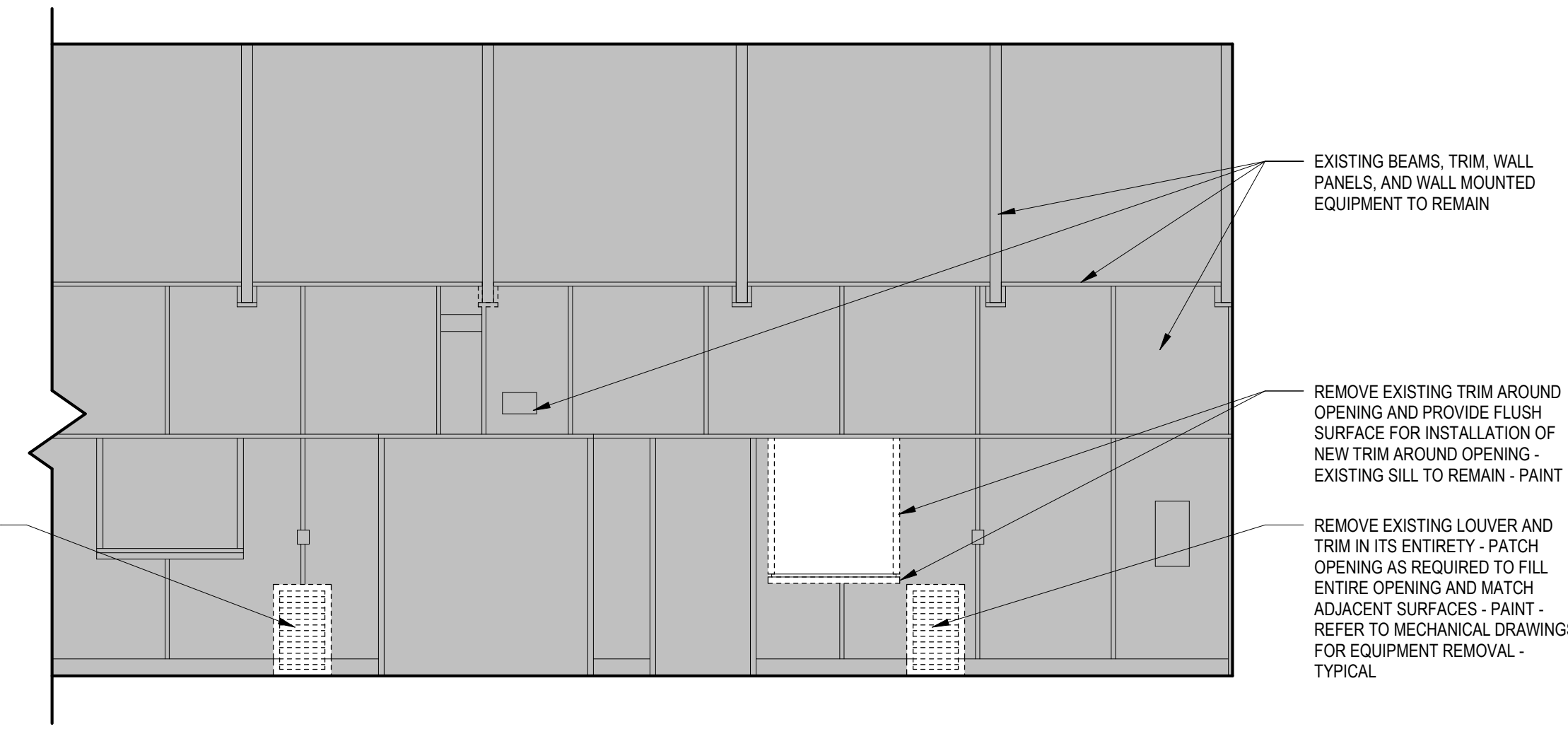
6 SD - SOFFIT
3" = 1'-0" A-101.1



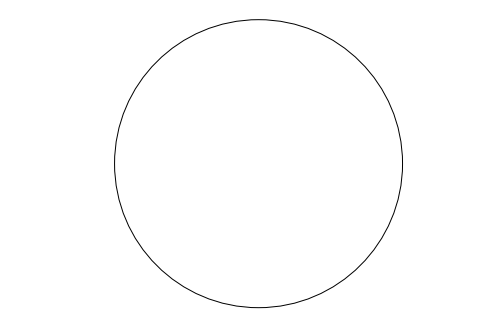
5 SD - PENETRATION HEAD/JAMB/SILL
6" = 1'-0" A-101.1



2 INTERIOR ELEVATION - NEW
1/4" = 1'-0"



1 INTERIOR ELEVATION - DEMOLITION
1/4" = 1'-0"



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**INTERIOR DEMOLITION
AND NEW ELEVATIONS**

A-102.1
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NAME: P204AZ-FE-100.dwg BY: AVE DATE: NOV 01, 2016 TIME: 8:47 AM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
A																									
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GENERAL NOTES - ALL CONTRACTORS

- DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, DUCTWORK, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. EACH CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
- IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLARITY OF PRESENTATION.
- CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED ARE CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS IN THE BUILDING, WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY OWNER/ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK.
- CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, CONDUIT, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
- WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTORS SHALL VERIFY EXACT LOCATIONS OF ALL DEVICES AND EQUIPMENT WITH FIELD CONDITIONS, SHOP DRAWINGS, AND WORK OF OTHER TRADES PRIOR TO ROUGH-IN. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
- CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS AS SHOWN ON THE DRAWINGS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ARCHITECT BEFORE CONTRACTOR CUTS ANY STRUCTURAL BUILDING MEMBER.
- THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ARCHITECT/ENGINEER AND OWNERS STIPULATION AS DIRECTED.
- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTOR'S WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK.
- CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING AND REMOVAL/REPLACEMENT OF NEW BUILDING CONSTRUCTION ALREADY IN PLACE AS REQUIRED TO ACCOMMODATE THE INSTALLATION OF THEIR WORK. ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY PREVIOUSLY INSTALLED NEW BUILDING CONSTRUCTION. ANY PREVIOUSLY INSTALLED FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR WHO DAMAGED THEM TO THE SATISFACTION OF THE ARCHITECT AND OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEAN-UP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEAN-UP, THE ARCHITECT/ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE ARCHITECT/ENGINEER.
- CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR PIPING, DUCTWORK, CONDUIT, TANKS, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.
- UNLESS INDICATED OTHERWISE, THE ARCHITECT/ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED, THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ARCHITECT/ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") SET ON 6" X 6" PLANKS AND/OR WOOD PALLETES. ALL MATERIAL AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPES OR VISOLIN. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT WILL BE ALLOWED TO BE STORED OUTSIDE THE BUILDING ON THE SITE UNLESS IT IS SUPPORTED OFF THE GROUND AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS.
- THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS FOR DIMENSIONAL DESIGN. IF THE CONTRACTOR PURCHASES EQUIPMENT FROM A SPECIFIED ACCEPTABLE MANUFACTURER, BUT NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT. WHEN EQUIPMENT SUBMITTED FOR REVIEW DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED, CONTRACTOR SHALL PAY FOR ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR WILL ALSO PAY ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND FUNCTION AS INTENDED.
- CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT HE SUBMITS FOR REVIEW MEET THE CAPACITY AND DUTY SPECIFIED. WHEN EQUIPMENT SUBMITTED FOR REVIEW REQUIRES MODIFICATIONS TO THE WORK OF OTHER CONTRACTORS, SUBMITTING CONTRACTOR SHALL PAY FOR ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT FUNCTION SAFELY AND PROPERLY.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF HIS WORK WITH CONSTRUCTION OF THE BUILDING, INCLUDING VERIFYING THE SIZE OF OPENINGS, WINDOWS, DOORS, CORRIDORS, ROOMS, ETC. FOR ACCESS OF HIS NEW EQUIPMENT INTO THE BUILDING AREAS WHICH WILL ALREADY BE CONSTRUCTED WHEN HIS EQUIPMENT IS READY TO BE INSTALLED. IF OPENINGS ARE TOO SMALL FOR ACCESS THEN CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE NEW OR ENLARGED OPENINGS AND RESTORE SAME TO PREVIOUS SIZE AND CONDITION. CONTRACTOR MAY ELECT TO ORDER THE EQUIPMENT DISASSEMBLED AND/OR WITH SPLIT HOUSING FOR ENTRANCE INTO THE SPACE OR BUILDING. CONTRACTOR SHALL REASSEMBLE EQUIPMENT AFTER IT IS IN THE SPACE AT HIS OWN EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND THEIR ASSOCIATED FEES.
- CONTRACTOR SHALL SUBMIT DIGITAL COPIES OF SHOP DRAWINGS OF ALL EQUIPMENT, DIFFUSERS, REGISTERS, TEMPERATURE CONTROL SYSTEM, ELECTRICAL DEVICES, AND 1/4" = 1'-0" SCALE DETAILED DUCT LAYOUT DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING ANY ITEMS OR FABRICATING ANY DUCTWORK.
- CONTRACTOR SHALL PROVIDE OWNER TRAINING ON ALL EQUIPMENT AND BUILDING SYSTEMS PROVIDED/ALTERED BY HIS WORK. TRAINING SHALL BE ACCOMPLISHED DURING TIME DEDICATED FOR THAT PURPOSE, NOT IN CONJUNCTION WITH SERVICE WORK.
- AT COMPLETION OF PROJECT, CONTRACTOR SHALL SUBMIT DIGITAL COPIES OF OPERATION AND MAINTENANCE MANUALS FOR ALL WORK PROVIDED BY HIM ON PROJECT. MANUALS SHALL BE CLEARLY ORGANIZED AND CONTAIN COPIES OF APPROVED EQUIPMENT, SHOP DRAWINGS, EQUIPMENT PARTS LISTS, SERVICE CONTACTS, CONTRACTOR AND MANUFACTURER WARRANTIES, AND "AS BUILT" FLOOR PLANS.
- CONTRACTOR SHALL PROVIDE WARRANTY FOR ALL MATERIAL AND GUARANTEE ALL WORKMANSHIP PROVIDED BY HIM FOR 1 (ONE) YEAR FROM SUBSTANTIAL COMPLETION OF WORK INVOLVED.
- CONTRACTOR SHALL MAINTAIN A CURRENT CITY OF OAK BROOK LICENSE THROUGHOUT ALL PHASES OF CONSTRUCTION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH THE CITY OF OAK BROOK. THE CITY OF OAK BROOK REQUIRES MINIMUM ONE DAY PRIOR NOTICE FOR ALL INSPECTIONS.

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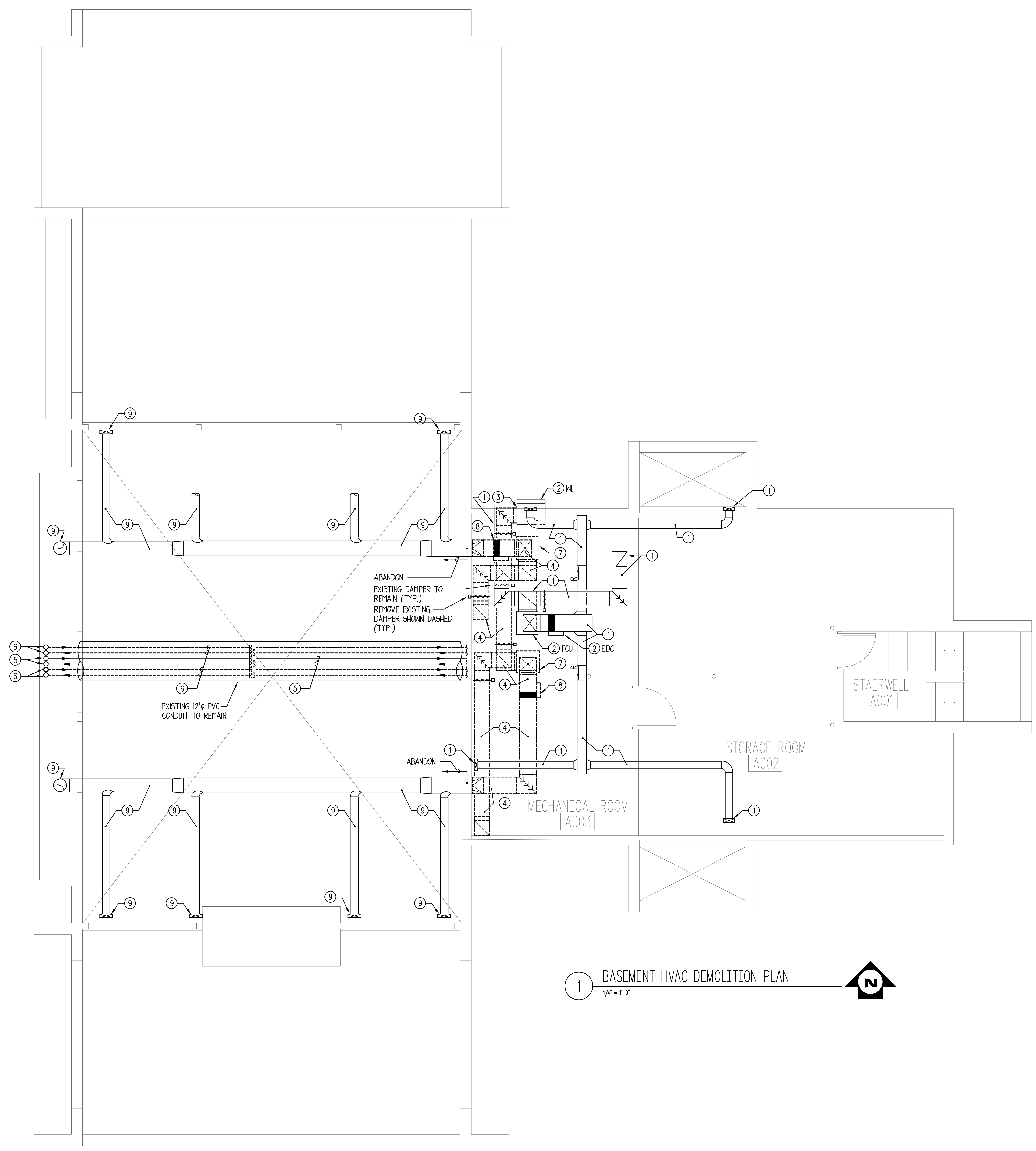
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**MECH.-ELEC.
SPECIFICATIONS**

ME-100
ISSUED FOR BIDDING

NAME: IP204AZ_HV-100.dwg BY: AVE DATE: NOV 21, 2019 TIME: 7:48 PM



1 BASEMENT HVAC DEMOLITION PLAN
1/8" = 1'-0"

DRAWING NOTES: (TYPICAL FOR THIS DRAWING ONLY)

- ① EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
- ② EXISTING HVAC EQUIPMENT TO REMAIN.
- ③ CAP EXISTING DUCT AT LOCATION SHOWN AND REMOVE ALL DUCTWORK, REGISTERS, DIFFUSERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
- ④ REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.
- ⑤ EXISTING PIPING AND VALVING TO REMAIN.
- ⑥ REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED. WITHIN SHEET METAL DUCT.
- ⑦ REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED DUCTWORK, DAMPERS, PIPING, VALVING, CONTROLS, HANGERS, SUPPORTS, INSULATION, CONCRETE PAD, ETC.
- ⑧ REMOVE ELECTRIC DUCT COIL AND ALL ASSOCIATED CONTROLS INCLUDING CONDUIT, WIRING, THERMOSTATS, ETC. PROVIDE BLANK COVER PLATES ON ABANDONED JUNCTION BOXES IN EXISTING WALLS THAT ARE TO REMAIN.
- ⑨ EXISTING DUCTWORK INDICATED TO BE ABANDONED.

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**BASEMENT HVAC
DEMO PLANS**

M-100
ISSUED FOR BIDDING

NAME: 1924AZ_HV-10.dwg BY-AVE DATE: NOV/01/2019 TIME: 11:55 AM

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ARCHITECT

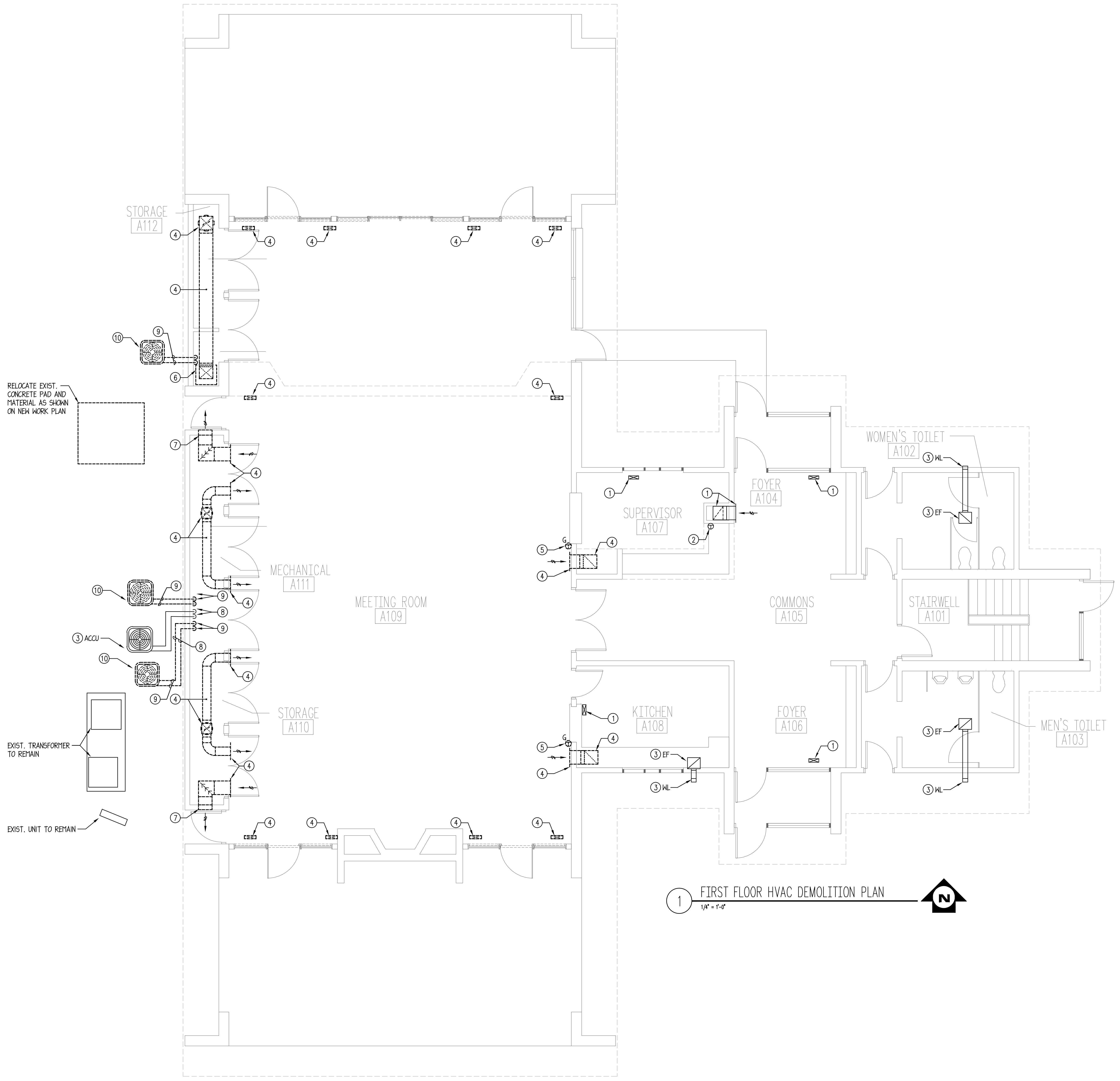
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DRAWING NOTES:

- ① EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
- ② EXISTING THERMOSTAT TO REMAIN.
- ③ EXISTING HVAC EQUIPMENT TO REMAIN.
- ④ REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.
- ⑤ REMOVE EXISTING THERMOSTAT INCLUDING ALL ASSOCIATED CONDUIT, WIRING, PNEUMATIC TUBING, ETC. LOCATED ABOVE ANY ACCESSIBLE CEILING BETWEEN THERMOSTAT AND THE UNIT IT CONTROLS. PROVIDE BLANK COVER PLATE OVER ALL ABANDONED JUNCTION BOXES IN WALLS THAT ARE TO REMAIN.
- ⑥ REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED DUCTWORK, DAMPERS, PIPING, VALVING, CONTROLS, HANGERS, SUPPORTS, INSULATION, ETC.
- ⑦ REMOVE EXISTING EXHAUST FAN AND ALL ASSOCIATED DUCTWORK, GRILLES, REGISTERS, DAMPERS, INSULATION, CONTROLS, ETC.
- ⑧ EXISTING PIPING AND VALVING TO REMAIN.
- ⑨ REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED.
- ⑩ REMOVE AIR COOLED CONDENSING UNIT, EQUIPMENT SUPPORTS, AND ALL ASSOCIATED PIPING, VALVING, AND CONTROLS.



1 FIRST FLOOR HVAC DEMOLITION PLAN
1/4" = 1'-0"

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MAIN FLOOR HVAC
DEMO PLANS

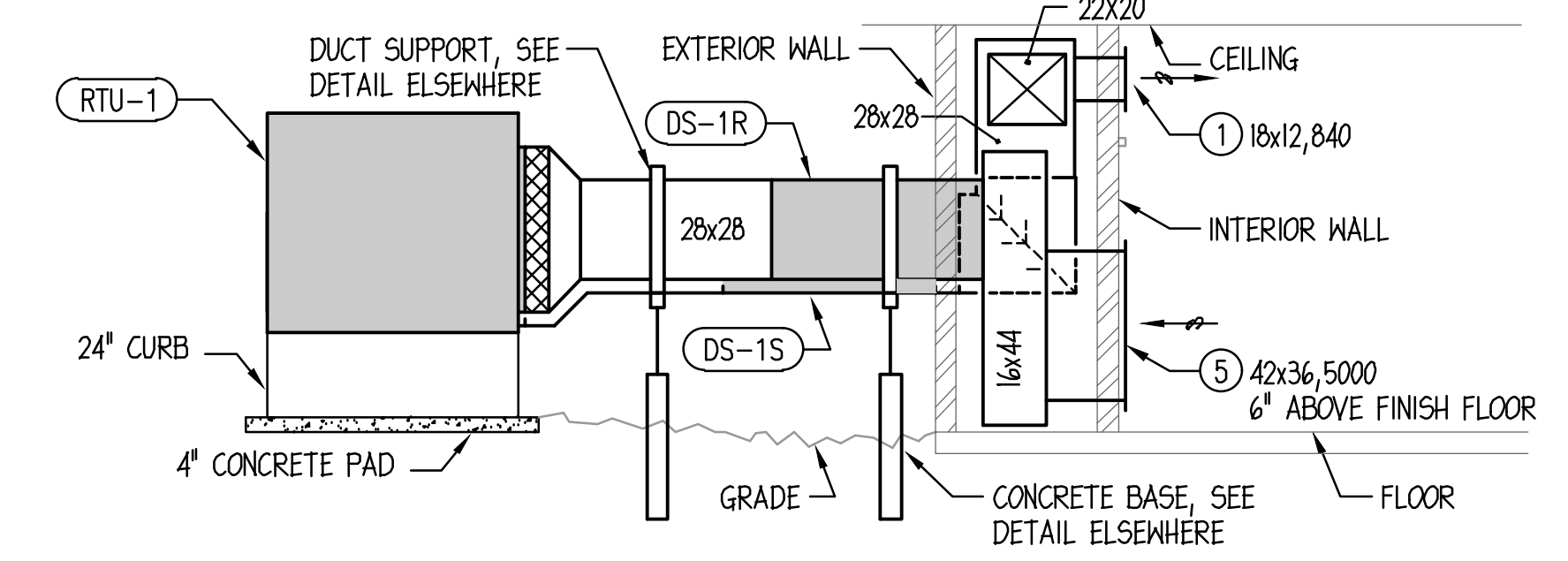
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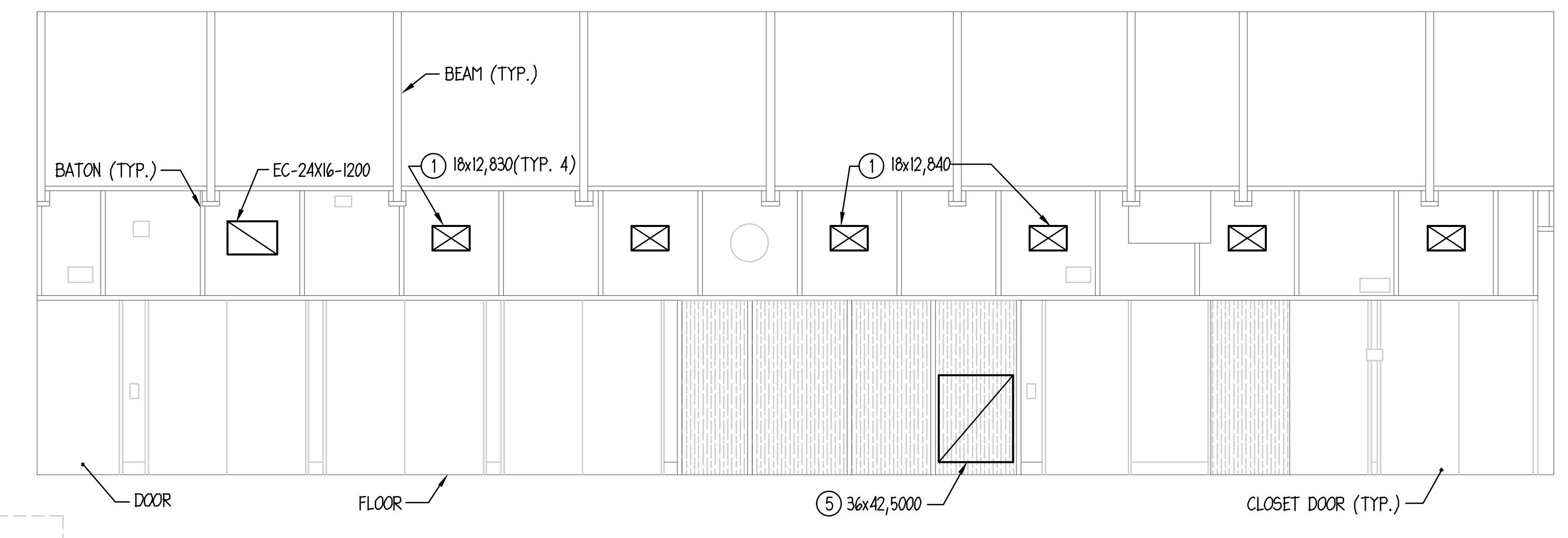
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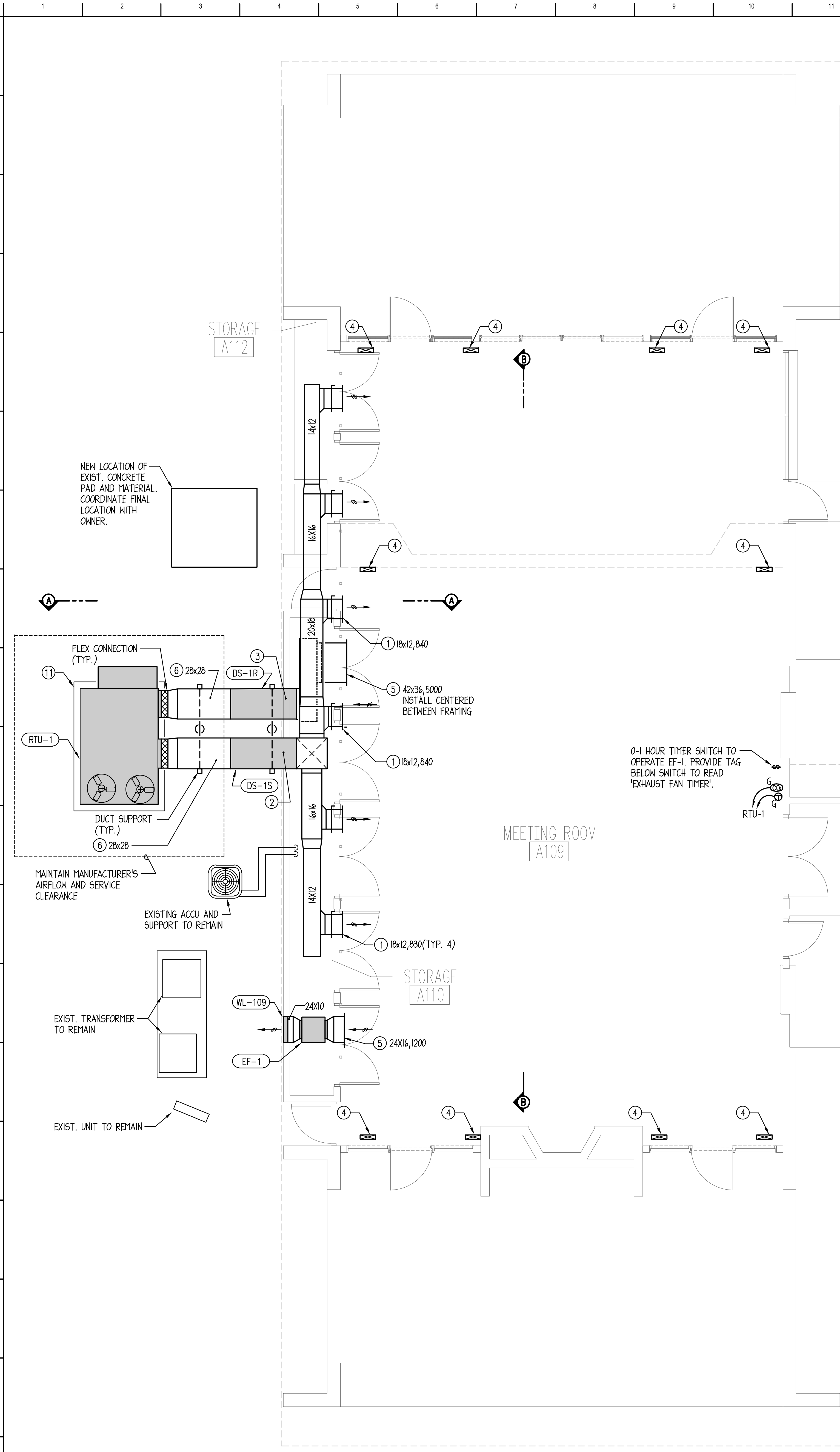
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A HVAC SECTION A
NO SCALE



B HVAC SECTION B
NO SCALE



1 FIRST FLOOR HVAC PLAN
1/4" = 1'-0"

DUCT SILENCER SCHEDULE													
EQUIPMENT TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	CFM	AIR INLET SIZE AxB (IN)	AIR INLET SIZE CxD (IN)	VELOCITY (FPM)	MINIMUM ATTENUATION (dB)	MAX. AIR P.D. (IN. H ₂ O)	LENGTH (IN.)	NOTES	
						1/2" / 2" / 2 1/2" / 3" / 4"		1/2" / 2" / 2 1/2" / 3" / 4"					
DS-1S	EXTERIOR	RTU-1	PRICE	RM60/BC	5,000	28x28	28x28	98	7/12/18/28/24/18/13/11	0.14	30	30	1,2,3
DS-1R	EXTERIOR	RTU-1	PRICE	RM60/BC	5,000	28x28	28x28	98	8/13/20/30/25/18/13/11	0.11	30	30	1,2,3

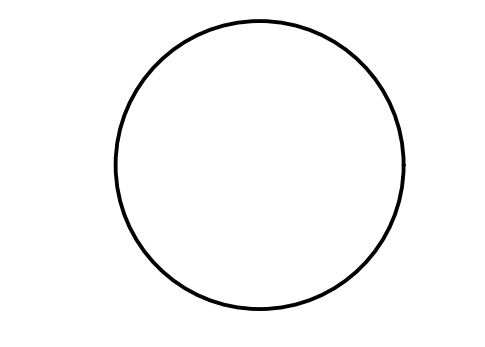
NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: APPROVED EQUAL.
2. ELBOW SILENCER LENGTH IS CENTER LINE LENGTH.
3. OUTER CASING SHALL BE 22 GAUGE, PERFORATED INNER CASING SHALL BE 26 GAUGE, WITH STANDARD FIBERGLASS FILL.

DRAWING NOTES:

- TITUS (OR APPROVED EQUAL) MODEL '300R' SUPPLY REGISTER WITH NECK SIZE INDICATED TO DISCHARGE AIRFLOW INDICATED.
- 28x28 SUPPLY DUCT THRU WALL AND UP WITHIN CLOSET.
- 28x28 RETURN DUCT THRU WALL.
- TITUS (OR APPROVED EQUAL) MODEL '30R' WITH DARK BRONZE ANODIZED FINISH IN SAME LOCATION AS FORMER. PROVIDE BLANKED-OFF BACK WITH VISIBLE PORTION PAINTED BLACK.
- TITUS (OR APPROVED EQUAL) MODEL '350R' RETURN/EXHAUST REGISTER WITH NECK SIZE INDICATED TO DISCHARGE AIRFLOW INDICATED.
- SUPPORT EXTERIOR DUCTWORK SIZE INDICATED PER DETAIL ON SHEET M-201 AND EXTERNALLY INSULATED WITH MINIMUM R-12 RIGID BOARD (APPROXIMATELY 4" THICK) DUCT INSULATION AND VENTURE CLAD 1577 CH WHITE 5-PLY LAMINATED FOIL/FILM JACKET INSTALLED STRICTLY PER MANUFACTURER'S INSTRUCTION. ALL SEAMS SHALL BE LAPPED AND SEALED WEATHERTIGHT.
- EXISTING HVAC EQUIPMENT TO REMAIN.
- EXISTING DUCTWORKS, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
- EXISTING PIPING AND VALVING TO REMAIN.
- EXISTING THERMOSTAT TO REMAIN.
- 4" THICK REINFORCED CONCRETE PAD WITH 4" CRUSHED GRAVEL BASE 6" LARGER THAN UNIT IN ALL DIRECTIONS.

EQUIPMENT SCHEDULE:

- EF-1** GREENHECK (OR APPROVED EQUAL) MODEL '5Q-100' INLINE EXHAUST FAN TO EXHAUST 1,200 CFM AT 0.375 ESP. 1/4 HP, 0.2 BHP, 120V/1 PH, 10.4 SONES, AND DISCONNECT SWITCH. PROVIDE NEOPRENE VIBRATION ISOLATORS, BACKDRAFT DAMPER, AND SPEED CONTROLLER FOR BALANCING.
- RTU-1** 12.5 TON TRANE VOYAGER (OR APPROVED EQUAL) 'THD180G' PACKAGED ROOFTOP UNIT ON GRADE TO DISCHARGE 5,000 CFM AT 1.0 ESP. 237B LB., 54 KW ELECTRIC HEATING CAPACITY, AND DEHUMIDIFICATION SEQUENCE. 88.9°F HEATING LAT, 60.7°F DB/54.04°F WB COOLING LAT, 240V/1 HIGH Φ, 155 MCA, 175 MOC.P. PROVIDE FIELD-INSTALLED 24" CURB, ECONOMIZER WITH BAROMETRIC RELIEF, AND SOUND ATTENUATION ACCESSORIES.
- WL-109** RUSKIN (OR APPROVED EQUAL) MODEL 'ELF375DX' EXTRUDED ALUMINUM DRAINABLE WALL LOUVER WITH 24x18 NECK TO EXHAUST 1,200 CFM AT 0.15 ESP, 900 FPM. PROVIDE BIRDSCREEN AND COLOR/FINISH AS SELECTED BY ARCHITECT.



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FIRST FLOOR HVAC PLANS

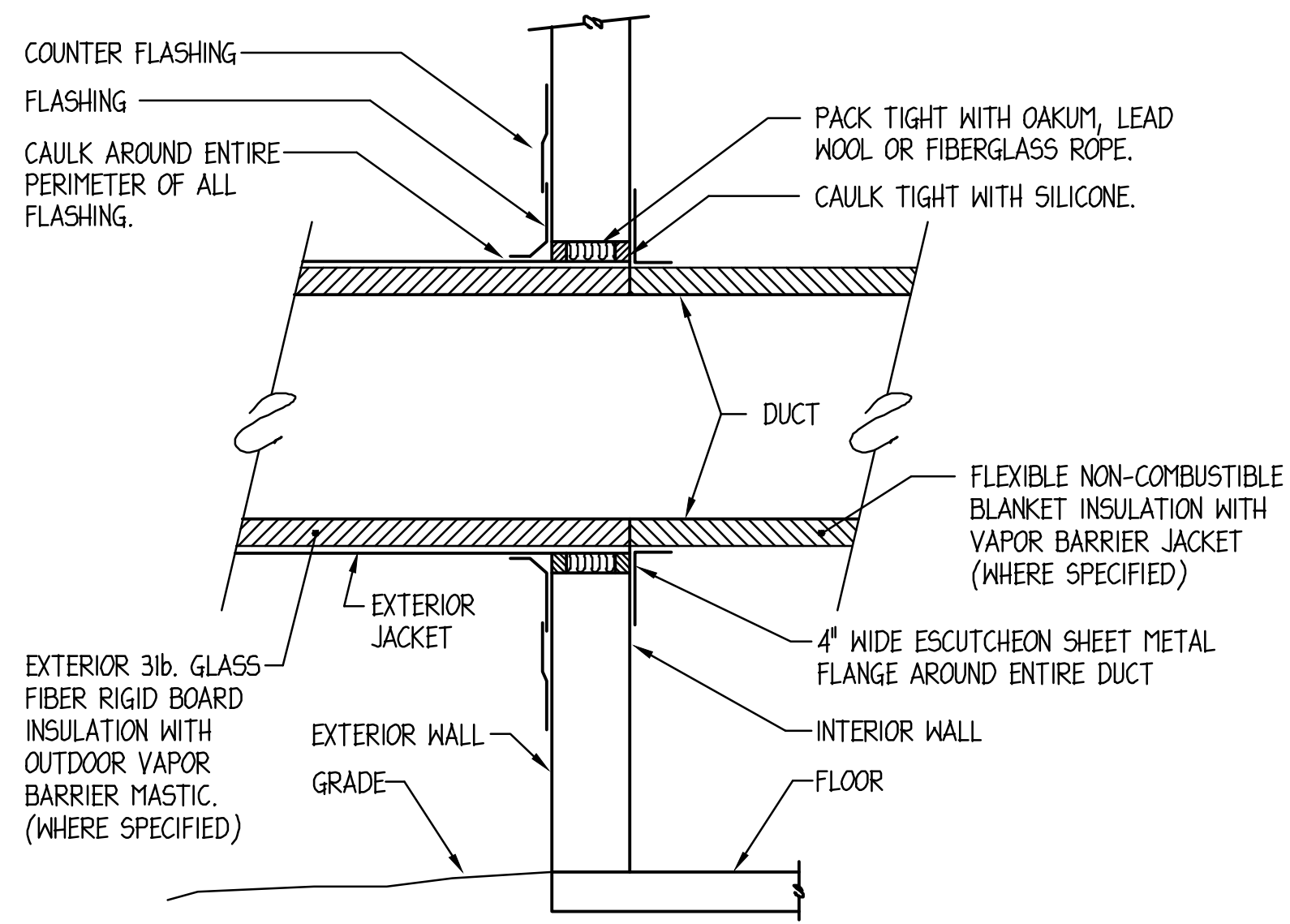
HVAC SYMBOLS AND ABBREVIATIONS

ACCU	AIR COOLED CONDENSING UNIT		FLEXIBLE DUCT CONNECTION
AD	ACCESS DOOR		
A.F.F.	ABOVE FINISHED FLOOR		MANUAL SINGLE BLADE OR OPPOSED BLADE DAMPER
BHP	BRAKE HORSEPOWER		
BTUH	BRITISH THERMAL UNIT PER HOUR		AIR FLOW
CFM	CUBIC FEET PER MINUTE		
D	DRAIN LINE		DUCT SIZE FREE AREA (1ST FIGURE, SIDE OF DUCT SHOWN)
DB	DRY BULB		
DN.	DOWN		CROSS-SECTION OF SUPPLY OR OUTSIDE AIR INTAKE DUCT
EAT	ENTERING AIR TEMPERATURE		
EDC	ELECTRIC DUCT COIL		CROSS-SECTION OF RETURN OR EXHAUST DUCT
EF	EXHAUST FAN		
ESP	EXTERNAL STATIC PRESSURE		INCLINED RISE (R) OR DROP (D)
F	FAHRENHEIT		
FC	FLEXIBLE CONNECTION		90° ELBOW WITH TURNING VANES
FCU	FAN COIL UNIT		
FFM	FEET PER MINUTE		90° BRANCH TAKE-OFF W/45 DEGREE ENTRY
FV	FACE VELOCITY		
HP	HORSEPOWER		ROUND FLEXIBLE DUCT
LAT	LEAVING AIR TEMPERATURE		
MCA	MINIMUM CIRCUIT AMPS		SQUARE OR RECTANGLE DUCT TRANSITION
MOCOP	MAXIMUM OVERCURRENT PROTECTION		
MOD	MOTOR OPERATED DAMPER		SQUARE OR RECTANGLE TO ROUND DUCT TRANSITION
PD	PRESSURE DROP		
PH	PHASE		EQUIPMENT TAG
PSI	POUNDS PER SQUARE INCH		WALL THERMOSTAT OR TEMPERATURE SENSOR
RPM	REVOLUTIONS PER MINUTE		WALL CARBON DIOXIDE SENSOR
RTU	ROOFTOP UNIT		ROUND
TYP.	TYPICAL		
UC	UNDERCUT DOOR		
VVT	VARIABLE VOLUME AND TEMPERATURE BOX		
WB	WET BULB		
W.C.	WATER COLUMN		
WL	WALL LOUVER		
CA	COMBUSTION AIR		
G	NATURAL GAS		
RS	REFRIGERANT SUCTION		
RL	REFRIGERANT LIQUID		
D	DRAIN LINE		
S	BALL VALVE (2" & SMALLER)		
→	DIRECTION OF FLOW		
○	PIPE ELBOW (TURNED UP)		
○	PIPE ELBOW (TURNED DOWN)		
○	PIPE TEE DOWN (DROP)		
○	PIPE TEE UP		
○	PIPE TEE UP OR ANGLE		
○	PIPE TEE DOWN OR ANGLE		

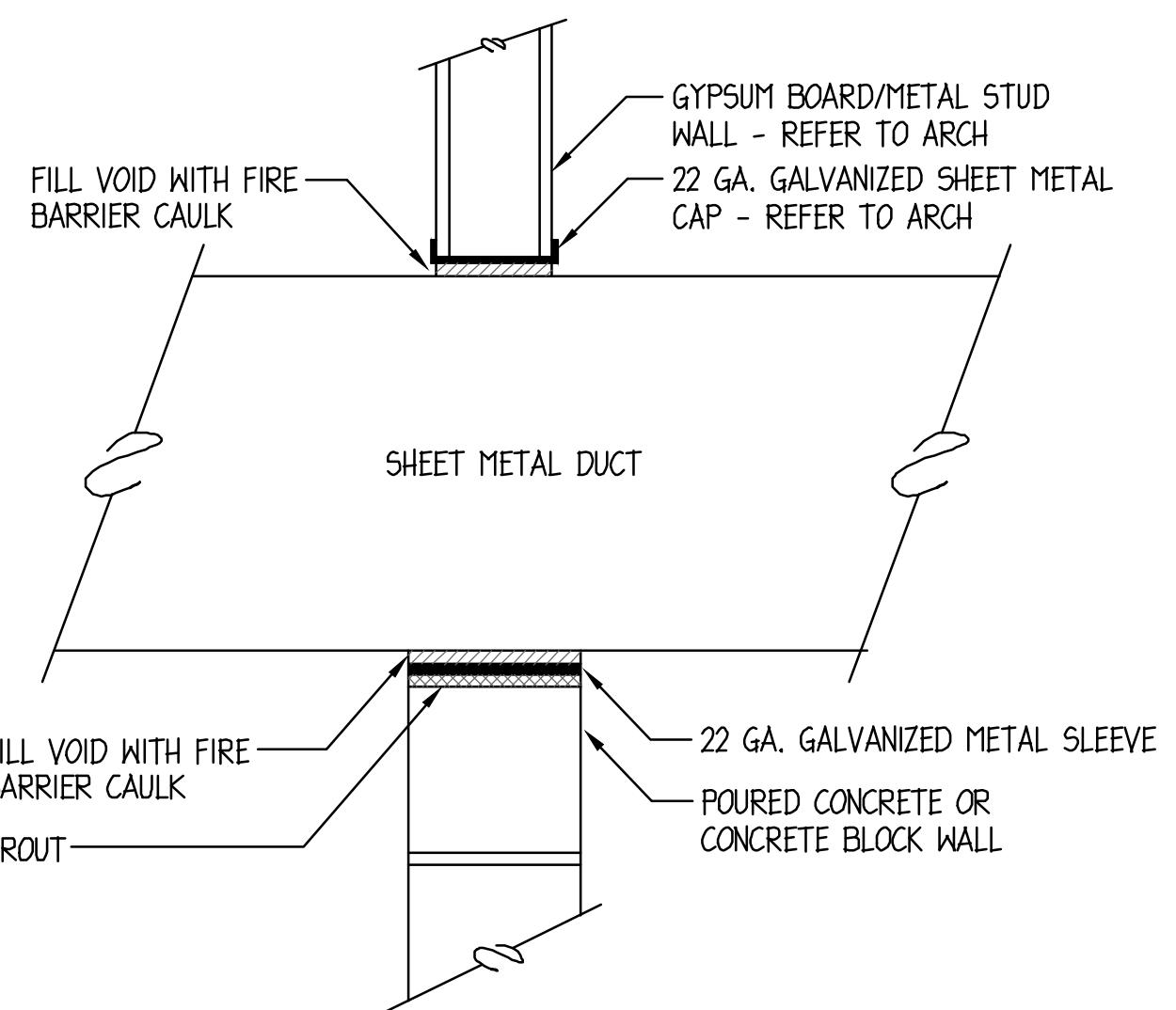
TEMPERATURE CONTROL SEQUENCE

- GENERAL**
1. SYSTEM OCCUPIED/UNOCCUPIED CONTROL SHALL BE PROGRAMMED INTO TC DEVICE.
 2. FAILURE OF SYSTEM TO START AS INDICATED BY CURRENT SENSOR SHALL SIGNAL ALARM.
 3. SUMMER/WINTER CHANGEOVER SHALL BE BASED ON OUTSIDE AIR TEMPERATURE OF 65° F. SYSTEM.
 4. UPON RECEIVING SIGNAL FROM FIRE ALARM SYSTEM, SYSTEM SHALL SHUT DOWN. T.C. CONTRACTOR SHALL PROVIDE CONTACTS FOR RECEIVING SIGNAL AT RTU DDC CONTROLLER AND SUBSEQUENT CONTROL WIRING DEVICES NECESSARY TO SHUT DOWN SYSTEM.
- SUMMER OCCUPIED OPERATION**
1. FAN SHALL OPERATE CONTINUOUSLY.
 2. OUTSIDE AIR DAMPER SHALL REMAIN AT MINIMUM POSITION.
 3. ROOM TEMPERATURE SENSOR FOR ZONE REQUIRING COOLING SHALL OPERATE RTU COMPRESSOR TO MAINTAIN SETPOINT.
- SUMMER UNOCCUPIED OPERATION**
1. FAN SHALL BE OFF.

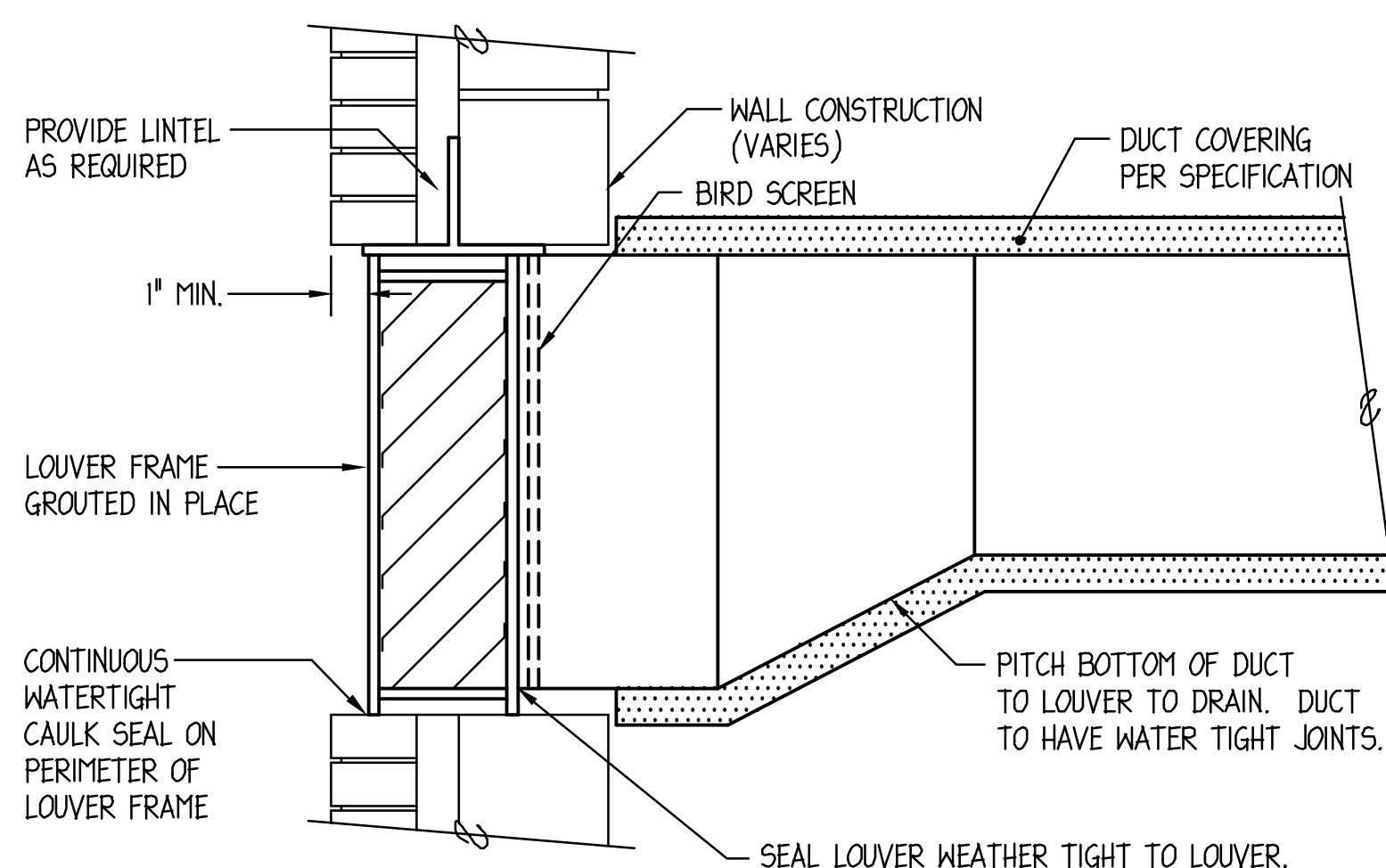
- WINTER OCCUPIED OPERATION**
1. UPON START-UP, OUTSIDE AIR DAMPER SHALL MOVE TO ITS MINIMUM POSITION.
 2. ZONE ROOM TEMPERATURE SENSOR REQUIRING HEATING SHALL OPERATE ELECTRIC HEATING COIL ON CALL FOR HEAT OR MODULATE OUTSIDE AIR DAMPER OPEN BEYOND MINIMUM POSITION (THRU 50° F MIXED AIR LOW LIMIT) ON CALL FOR COOLING THRU NON-OVER LAPPING SEQUENCE TO MAINTAIN ROOM TEMPERATURE SETPOINT.
 3. IF SPACE TEMPERATURE, AS SENSED BY ANY ZONE ROOM TEMPERATURE SENSOR, FALLS BELOW 68° F, THERE SHALL BE AN AUTOMATIC OVERRIDE CONTROL SEQUENCE WHEREBY OUTSIDE AIR DAMPER RETURNS TO MINIMUM POSITION, ELECTRIC HEATING COIL IS ENERGIZED ON THROUGH SUPPLY DUCT DISCHARGE 110° F HIGH LIMIT SENSOR UNTIL SUCH TIME AS ROOM TEMPERATURE RISES TO 75° F. AT THIS TIME, ROOM TEMPERATURE SENSOR SHALL AGAIN ASSUME CONTROL AS SPECIFIED PREVIOUSLY. THIS SHALL ALSO ACT AS A "WARM-UP" CYCLE.
- UNOCCUPIED OPERATION**
1. FAN SHALL BE OFF.
 2. IF ANY ZONE ROOM TEMPERATURE SENSOR SENSES A TEMPERATURE BELOW THE NIGHT SETBACK TEMPERATURE SETPOINT, SYSTEM SHALL START IN "WARM-UP" CYCLE UNTIL SUCH TIME AS ROOM TEMPERATURE SENSOR IS SATISFIED.



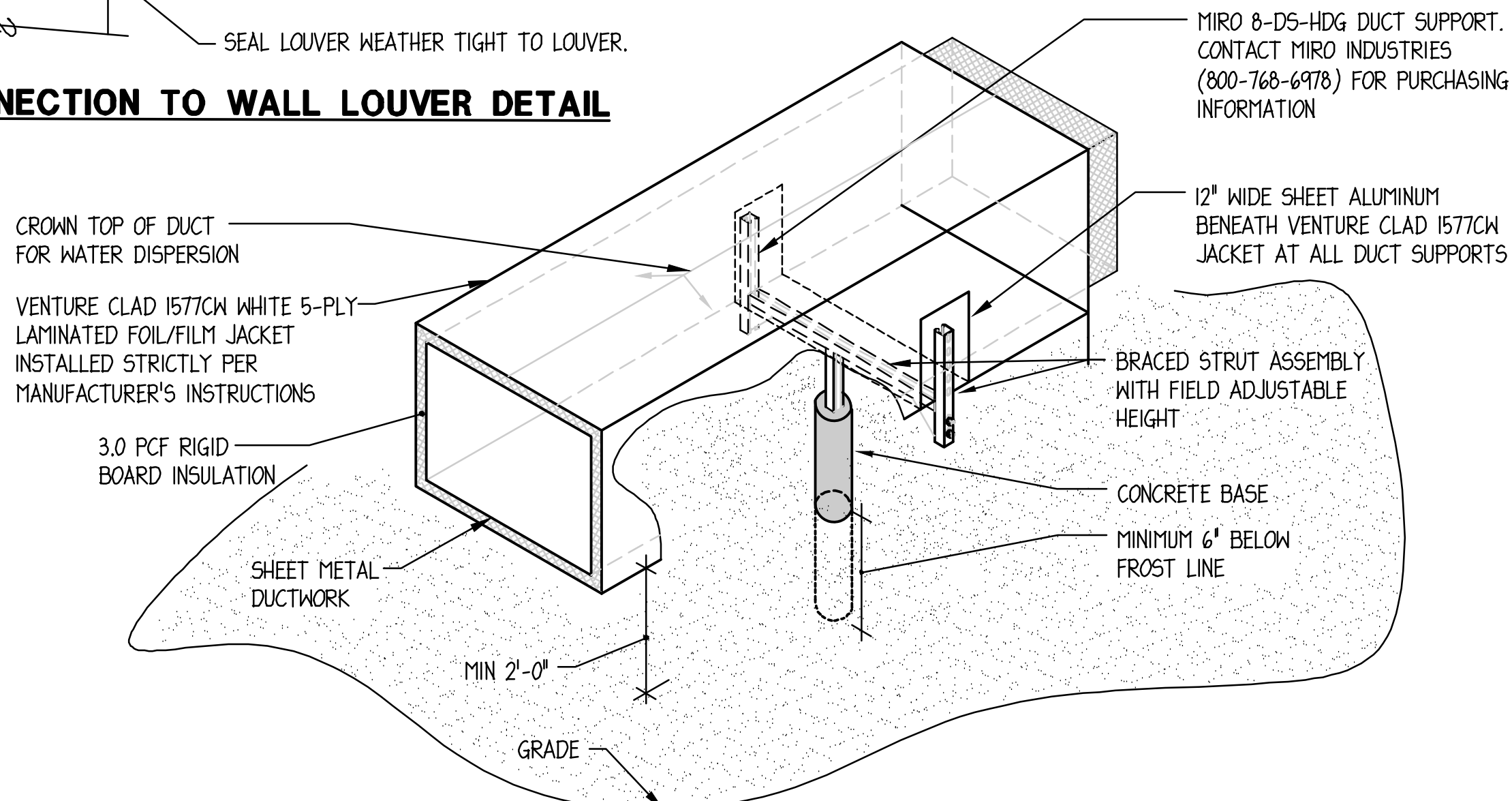
TYPICAL EXTERIOR TO INTERIOR DUCT PENETRATION
NO SCALE



DUCT SLEEVE THRU INTERIOR WALL DETAIL
NO SCALE



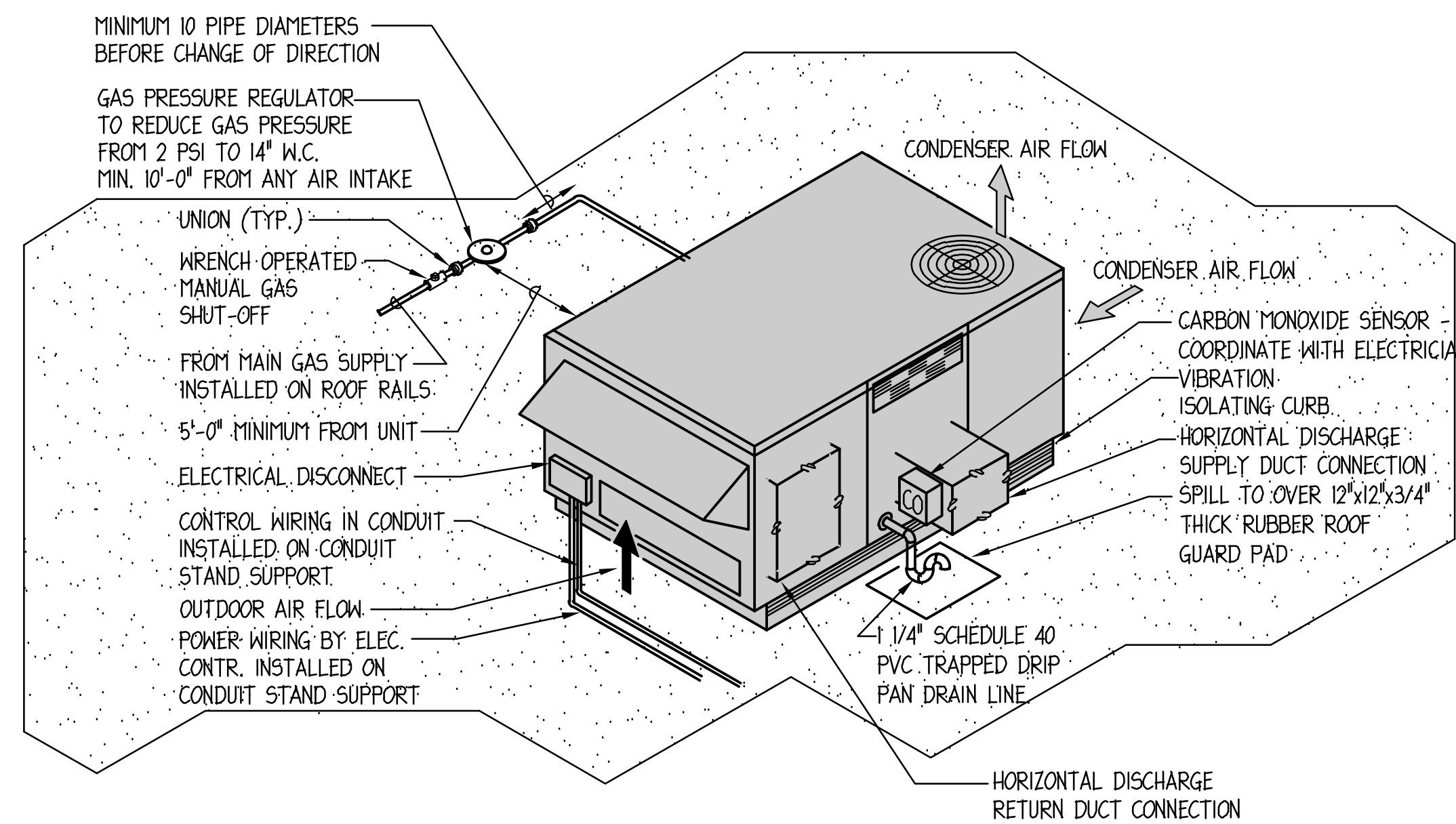
DUCT CONNECTION TO WALL LOUVER DETAIL
NO SCALE



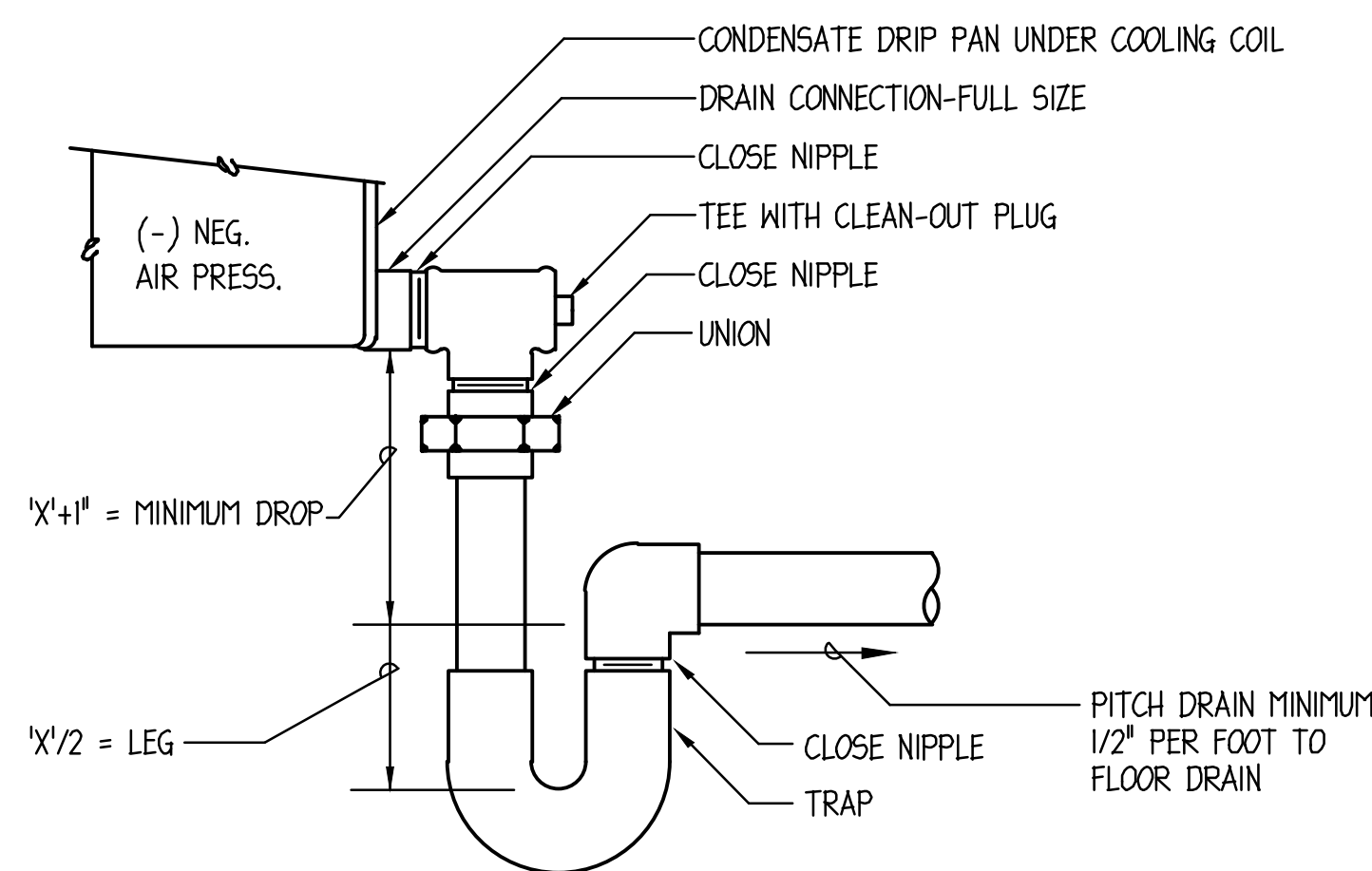
EXTERIOR DUCT SUPPORT DETAIL
NO SCALE

GENERAL NOTES - HVAC WORK:

1. ALL NEW WORK AND MATERIALS SHALL CONFORM TO CITY OF OAK BROOK CODE BUILDING STANDARDS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND INSPECTIONS AND PAYING THEIR ASSOCIATED FEES.
3. NOISE AND VIBRATION WILL NOT BE TOLERATED. CONTRACTOR SHALL BID ON FURNISHING EVERY DETAIL TO ASSURE THIS END.
4. PATCH AND REFINISH ALL DAMAGED INSULATED SURFACES OF ALL EXISTING DUCTWORK, PIPING AND ASSOCIATED FITTINGS TO MATCH EXISTING WHERE NEW CONNECTIONS ARE BEING MADE.
5. CONTRACTORS SHALL PROVIDE A ONE YEAR WARRANTY ON ALL MATERIALS, EQUIPMENT AND LABOR FROM DATE OF SUBSTANTIAL COMPLETION OF WORK EXCEPT AS FOLLOWS: PROVIDE A 5 YEAR PARTS AND LABOR WARRANTY FOR ROOFTOP UNIT COMPRESSOR; PROVIDE A 10 YEAR PARTS AND LABOR WARRANTY FOR ROOFTOP UNIT HEAT EXCHANGER.
6. CONTRACTORS SHALL PROVIDE IN WARRANTY LABOR AND MANUFACTURER WILL PROVIDE IN WARRANTY PARTS FOR EQUIPMENT WHICH HAS BEEN PRE-PURCHASED BY THE OWNER. CONTRACTOR SHALL RECEIVE THIS EQUIPMENT FROM THE OWNER AT THE PROJECT SITE, THEN COMPLETE REQUIRED ASSEMBLY WORK AND PROVIDE LABOR AND PROPER INSTALLATION.
7. THE LOCATIONS SHOWN FOR ALL DIFFUSERS, REGISTERS AND GRILLES, ETC. ARE DIAGNOSTIC. EXACT LOCATION SHALL BE DETERMINED FROM THE REFLECTED CEILING PLANS AND/OR ON THE JOB SITE BY THE ARCHITECT/ENGINEER REPRESENTATIVES.
8. EXCEPT AS NOTED OTHERWISE, ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH SEALED JOINTS CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH CURRENT SMACNA MANUAL. SIZES SHOWN ARE INSIDE FACE TO INSIDE FACE.
9. THE GAUGES OF IRON FOR DUCTS AND CASINGS AND SIZE OF STRUCTURAL REINFORCING ANGLES FOR DUCTS AND CASING SHALL BE SUCH AS TO PROVIDE ABSOLUTELY AIR TIGHT CONSTRUCTION FREE FROM PULSATION, DEFORMATION, OR VIBRATION AT NORMAL OPERATING PRESSURES.
10. ALL NEW CONCEALED SUPPLY DUCTWORK OUTSIDE OF MECHANICAL/BOILER ROOM AND ALL RETURN DUCTWORK SHALL BE EXTERNALLY INSULATED 1 1/2" THICK WITH FLEXIBLE FIBERGLASS INSULATION WITH VAPOR BARRIER JACKET.
11. ALL SUPPLY AND RETURN DUCTWORK, OUTSIDE MIXED/COMBUSTION AIR DUCTWORK, OR EXHAUST DUCTWORK BETWEEN THE LOUVER AND THE DAMPER SHALL BE EXTERNALLY INSULATED WITH 3 LB. DENSITY RIGID BOARD FIBERGLASS DUCT INSULATION WITH ALL SERVICE JACKET. OUTSIDE AIR AND MIXED AIR DUCTWORK TO BE INSULATED 2" THICK, SUPPLY DUCTWORK TO BE INSULATED 1 1/2" THICK.
12. ALL NEW RECTANGULAR SUPPLY AND RETURN DUCTWORK SHALL BE INTERNALLY LINED 1" THICK WITH MATT FACED FIBERGLASS DUCT LINER.
13. PROVIDE MANUAL VOLUME DAMPERS AT EACH BRANCH DUCT TAKEOFF IN SUPPLY DUCTWORK AND IN RETURN/EXHAUST DUCTWORK. PROVIDE TURNING VANES IN ALL SQUARE DUCT ELBOWS.
14. PAINT ALL INTERIOR DUCTWORK VISIBLE THROUGH AIR INLETS OR OUTLETS FLAT BLACK.
15. BALANCE DUCT SYSTEMS TO ACCOMPLISH AIR QUANTITIES SHOWN AT ALL INLETS/OUTLETS (NEW AND EXISTING) AS SHOWN ON DRAWING AND SUBMIT TEST REPORT FOR REVIEW BY OWNER AND ENGINEER.
16. ALL REFRIGERANT PIPING SHALL BE TYPE "K" COPPER WITH WROUGHT COPPER SOLDER FITTINGS AND BE SIZED PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. INSULATE REFRIGERANT SUCTION AND HOT GAS LINES WITH 3/4" THICK AP/AR/MAFLEX. PROVIDE EXTERIOR INSULATION WITH 2 COATS UV RESISTANT FINISH.
17. DRIP PAN DRAIN PIPING SHALL BE SCHEDULE 40 PVC.
18. NATURAL GAS PIPING SHALL BE SCHEDULE 40 BLACK AND CONFORM WITH ASTM STANDARDS WELDED FOR PIPE SIZES 2 1/2" AND OVER AND SCREWED FOR PIPE SIZES 2" AND UNDER.
19. ALL PIPING SHALL BE SUSPENDED WITH CLEVIS AND/OR TRAPEZE PIPE HANGERS. INSULATED PIPING SHALL REST ON SHEET METAL INSULATION SHIELDS.
20. FLUSH, CLEAN, PRESSURE TEST AND CHARGE ALL NEW PIPING SYSTEMS AND EXTENSION TO PIPING SYSTEMS. TESTING SHALL BE MINIMUM 50 PSI HIGHER THAN NORMAL OPERATING PRESSURE OF SYSTEM. CLEANING OF SYSTEM SHALL BE ACCOMPLISHED WITH H-O-H C-312 (OR EQUAL) CHEMICAL SOLUTION MULTIPURPOSE CLEANER UTILIZED IN STRICT ACCORDANCE WITH CHEMICAL TREATMENT SUPPLIER'S INSTRUCTION.
21. BALL VALVES SHALL BE STOCKHAM, MILWAUKEE, OR NIBCO MSS SP 10, 100 PSI WOG, ONE PIECE BRONZE BODY, CHROME PLATED BRASS BALL, FULL PORT, TEFLOON SEATS, BLOW-OUT PROOF STEM, SOLDER ENDS, LEVER HANDLE.
22. PROVIDE GAS SHUT-OFF VALVE AT EACH PIECE OF EQUIPMENT AND PRESSURE REGULATORS WHERE REQUIRED. VENT ALL PRESSURE REGULATORS WITHIN THE BUILDING FULL SIZE TO BUILDING EXTERIOR.
23. ALL TEMPERATURE CONTROL WORK SHALL MATCH JCI SYSTEM CURRENTLY INSTALLED IN BUILDING.
24. ALL ROOFTOP UNIT THERMOSTATS TO BE WHITE-ROGERS IPF6 SERIES 7 DAY PROGRAMMABLE WITH ECONOMIZER OPERATION. THERMOSTAT SELECTION SHALL BE MATCHED TO UNIT HEATING/COOLING STAGES. PROVIDE WHITE ROGER'S LOCKABLE THERMOSTAT GUARD SERIES F24 WITH TRANSPARENT COVER.
25. LOW VOLTAGE WIRING SHALL BE UL LISTED AND PLENUM RATED (LOW SMOKE PRODUCING). WIRING SHALL BE CONCEALED IN WALLS AND MAY BE INSTALLED WITHOUT CONDUIT ABOVE ACCESSIBLE LAT-IN CEILING SPACES ONLY.

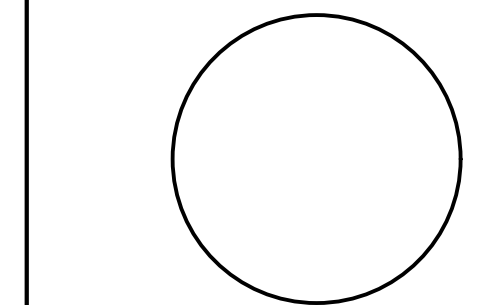


ON GRADE PACKED ROOFTOP UNIT INSTALLATION DETAIL
NO SCALE



- NOTES:**
1. "X" = SUCTION PRESSURE AT FAN INLET (NEGATIVE INTERNAL S.P.)

DRAW-THRU COOLING COIL DRIP PAN DRAIN DETAIL
NO SCALE



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HVAC SPECIFICATIONS,
ABBREV., & DETAILS