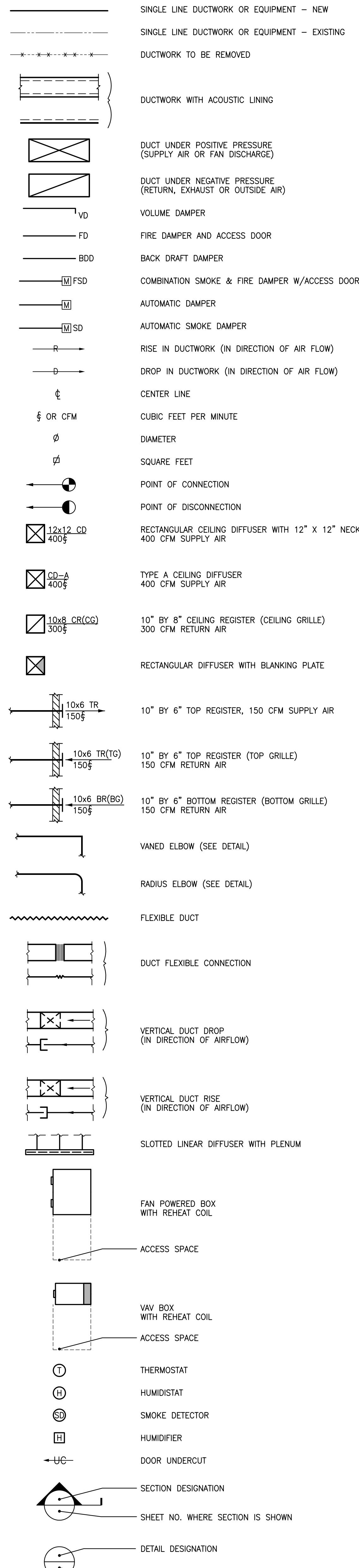


HVAC BASIC DUCTWORK SYMBOLS

(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)



HVAC ABBREVIATIONS

(NOT ALL ABBREV. ARE NECESSARILY USED ON THIS PROJECT)

AAV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BG	BOTTOM GRILLE
BHP	BRAKE HORSEPOWER
BR	BOTTOM REGISTER
BT	BOTTOM THROAT
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CLG	CEILING
COND	CONDENSATE
CR	CEILING REGISTER
CUH	CABINET UNIT HEATER
CV	CONSTANT VOLUME
DB	DRY BULB
DIAM	DIAMETER
DMPR	DAMPER
DX	DIRECT EXPANSION
(E)	EXISTING TO REMAIN
(ER)	EXISTING TO BE REMOVED
(ERR)	EXISTING TO BE REMOVED & RELOCATED
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EF	EXHAUST FAN
EL	ELEVATION
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	DEGREES FAHRENHEIT
FA	FREE AREA (SQ.FT.)
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
FIN FL	FINISHED FLOOR
FLA	FULL LOAD AMPERES
FPM	FEET PER MINUTE
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HT	HEIGHT
HR	HOUR
HV	HEATING AND VENTILATING
HX	HEAT EXCHANGER
HZ	FREQUENCY
IN	INCH OR INCHES
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LF	LINEAR FEET
LWB	LEAVING WET BULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTU PER HOUR
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINIMUM
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OED	OPEN END DUCT
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
RA	RETURN AIR
(RE)	RELOCATED EXISTING
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
(RRO)	EXISTING TO BE REMOVED AND RETURN TO OWNER
SA	SUPPLY AIR
SD	SMOKE DAMPER
SF	SUPPLY FAN
SP	STATIC PRESSURE
SPEC	SPECIFICATION
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TG	TOP GRILLE
TR	TOP REGISTER
TYP	TYPICAL
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE
VAV	VARIABLE AIR VOLUME UNIT
VV	VARIABLE INLET VANES
W	WIDTH
w/	WITH
WB	WET BULB
WMS	WIRE MESH SCREEN

GENERAL NOTES

- GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.
- DRAWINGS ARE DIAGRAMMATIC. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. RELOCATE EXISTING WORK THAT INTERFERES WITH WORK OF THIS CONTRACT.
- WORK IN THIS SECTION IS SPECIFIED IN SECTION 15000.
- COORDINATE THIS WORK WITH THAT OF OTHER TRADES.
- DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL EXCEPT IN WAY OF STRUCTURAL STEEL. DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.
- NEITHER ACCURACY NOR COMPLETION OF SERVICES AND UTILITY LOCATIONS SHOWN ON DRAWINGS IS GUARANTEED. DETERMINE EXACT LOCATIONS OF EXISTING SERVICES AND UTILITIES IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFORM WORK OF THIS SECTION.
- MANUFACTURERS MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
- PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURERS RECOMMENDATIONS.
- PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE.
- PROVIDE HANGERS, INSERTS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS REQUIRED TO SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE.
- SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERING WITH EXISTING OPERATIONS IN THE FACILITY.
- COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. MECHANICAL CONTRACTOR TO NOTIFY OWNER PRIOR TO STARTING WORK TO VERIFY COMPLIANCE WITH BOND AND WARRANTY OF EXISTING ROOF.
- RUN DUCTS AND PIPING CONCEALED, UNLESS OTHERWISE SPECIFIED AND CLEAR OF CEILING INSERTS.
- INSTALL THERMOSTATS 4'-6" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT.
- STRUCTURAL WELDING SHALL BE CONTINUOUS 1/4" FILLET UNLESS REQUIRED OTHERWISE.

AIR SYSTEMS

- AIR SYSTEMS REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.
- INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE DUCT SIZE AS NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED.
- USE FLAT TRANSVERSE SEAM FOR DUCTWORK WHERE SPACE AVAILABLE DICTATES.
- DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTERS AND GRILLE SIZES ARE NOMINAL.
- PROVIDE VOLUME DAMPERS OR OTHER APPROVED BALANCING DEVICES AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTER GRILLE AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN OR NOT.
- DUCTWORK DOWNSTREAM OF ALL VAV AND FAN POWERED VAV BOXES SHALL BE ACOUSTICALLY LINED WITH 1" ACOUSTICAL LINING FOR A MINIMUM OF 15 FEET.
- PROVIDE 36" CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND MFG. REQUIREMENTS.
- PROVIDE DUCT TRANSITIONS FROM VAV BOX INLET/OUTLET DUCT WORK AT SIZES INDICATED TO VAV BOX INLET/OUTLET UNIT CONNECTIONS.
- VAV DUCT INLET SIZE SHALL BE AS SCHEDULED OR AS INDICATED ON THE FLOOR PLANS. PROVIDE TRANSITION FROM DUCT SIZE INDICATED ON THE FLOOR PLANS TO SCHEDULED SIZE MINIMUM 2'-0" FROM VAV BOX INLETS.

PIPING SYSTEMS

- PITCH PIPING 1" IN 20' IN DIRECTION OF FLOW.
- PROVIDE TRAPS IN CONDENSATE LINES THAT EXTEND OVER 2'.

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Revisions

07-18-07 DESIGN DEVELOPMENT
08-23-07 CONSTRUCTION DOCUMENTS

Sheet

HVAC COVER SHEET

Project

Landmark Healthcare Facilities LLC

Fore River Medical Pavilion
Portland, Maine

Date

August 23, 2007

Project No.

07-5198

Sheet No.

H-1.0

Frank Lorenz

PROFESSIONAL ENGINEER
NO. WA 7907

0 1/4" 1/8" 1/4" 3/8" 1/2" 3/4" 1" 1 1/4" 1 1/2" 1 3/4" 2" 2 1/4" 2 1/2" 2 3/4" 3" 3 1/4" 3 1/2" 3 3/4" 4" 4 1/4" 4 1/2" 4 3/4" 5"

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Revisions
07-18-07 DESIGN DEVELOPMENT
08-23-07 CONSTRUCTION DOCUMENTS
09-25-07 ADDENDUM #1

Sheet
HVAC
SECOND FLOOR PLAN

Project
Landmark Healthcare
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Fore River Medical
Pavillon
Portland, Maine

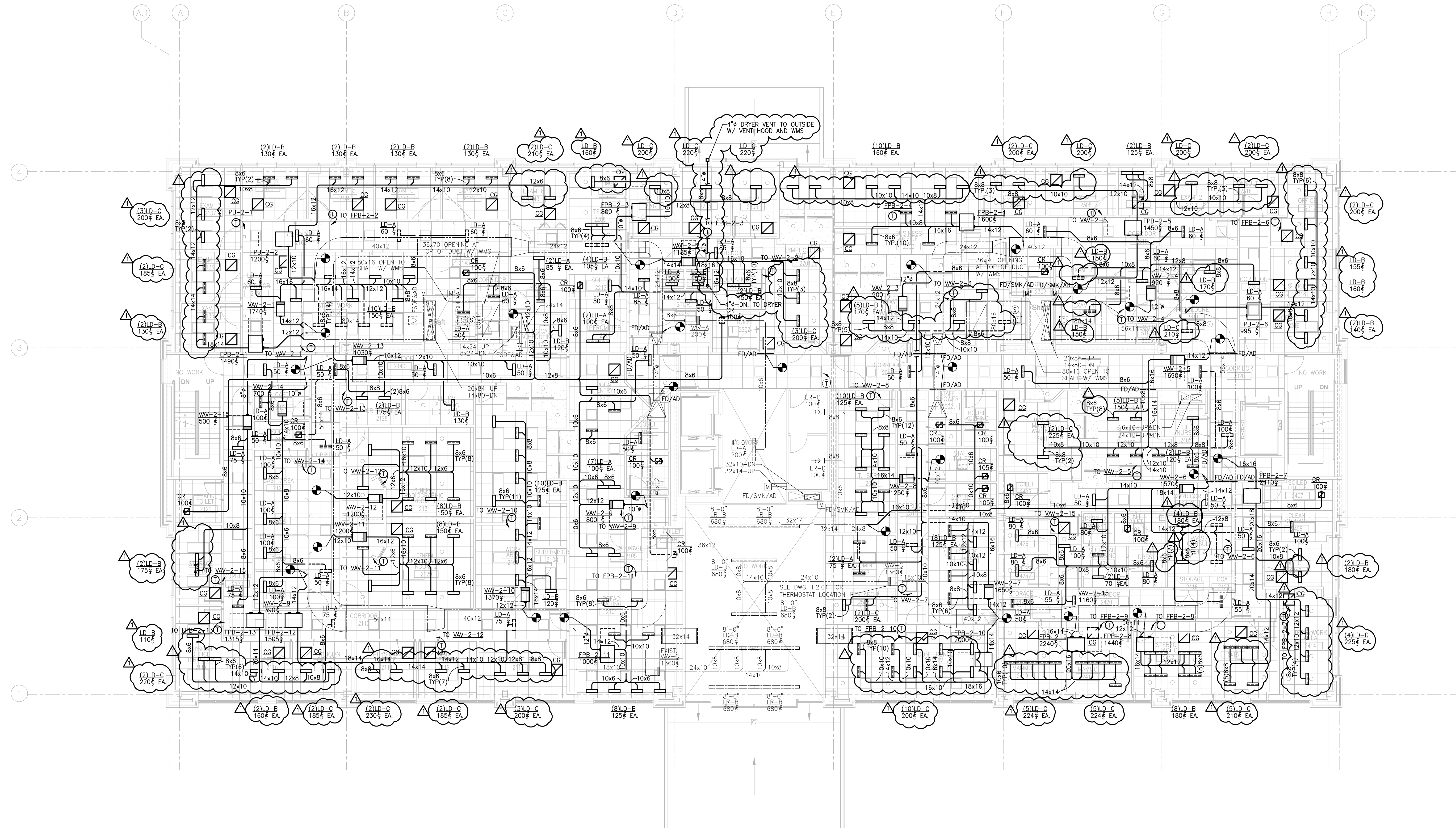
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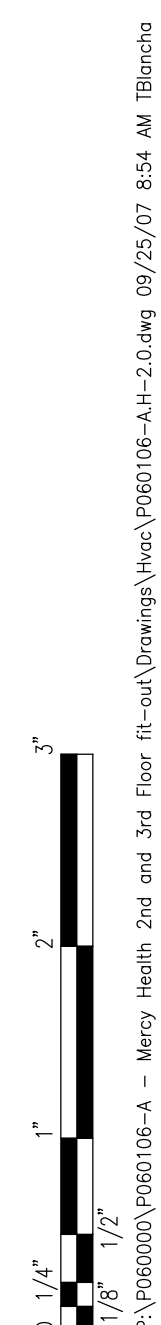
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1 SECOND FLOOR PLAN
SCALE: 1/8"=1'-0"



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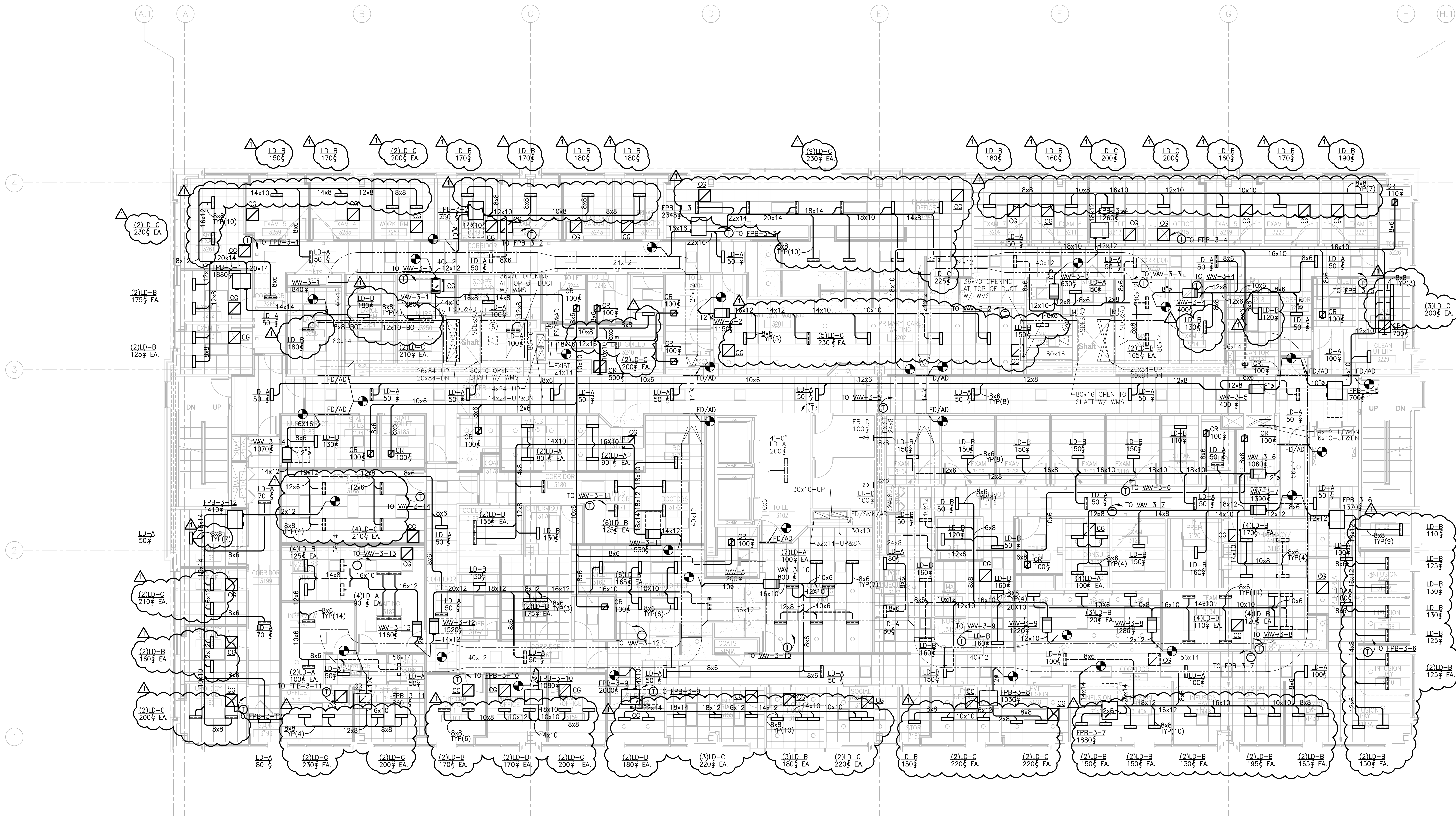
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08-23-07 CONSTRUCTION DOCUMENTS
09-25-07 ADDENDUM #1



1 THIRD FLOOR PLAN
SCALE: 1/8"=1'-0"

Sheet
HVAC
THIRD FLOOR PLAN

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Pavilion
Portland, Maine

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Project No.
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Revisions
07-18-07 DESIGN DEVELOPMENT
08-23-07 CONSTRUCTION DOCUMENTS

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HVAC
DETAILS

Project
Landmark Healthcare
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Fore River Medical
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Portland, Maine

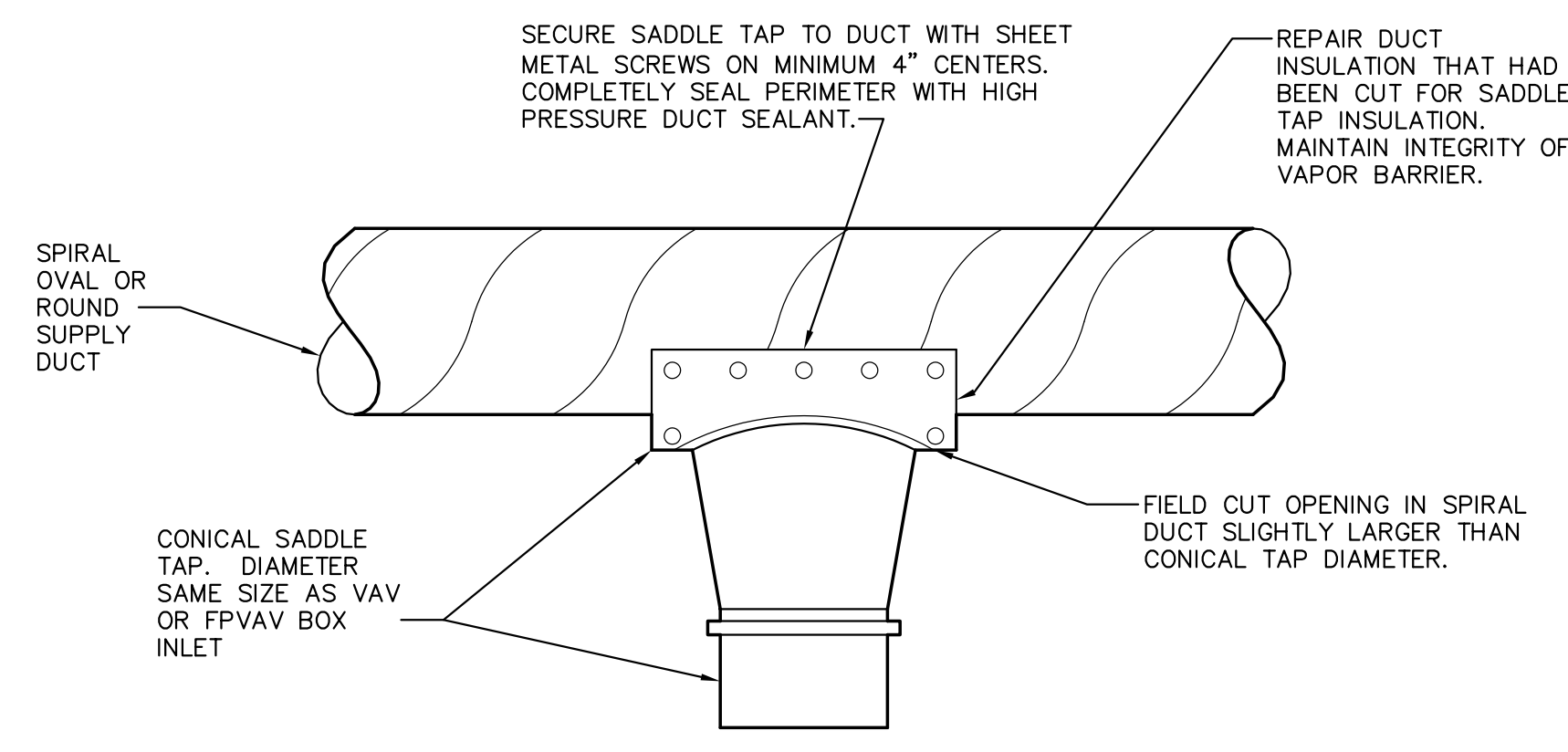
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Project No.
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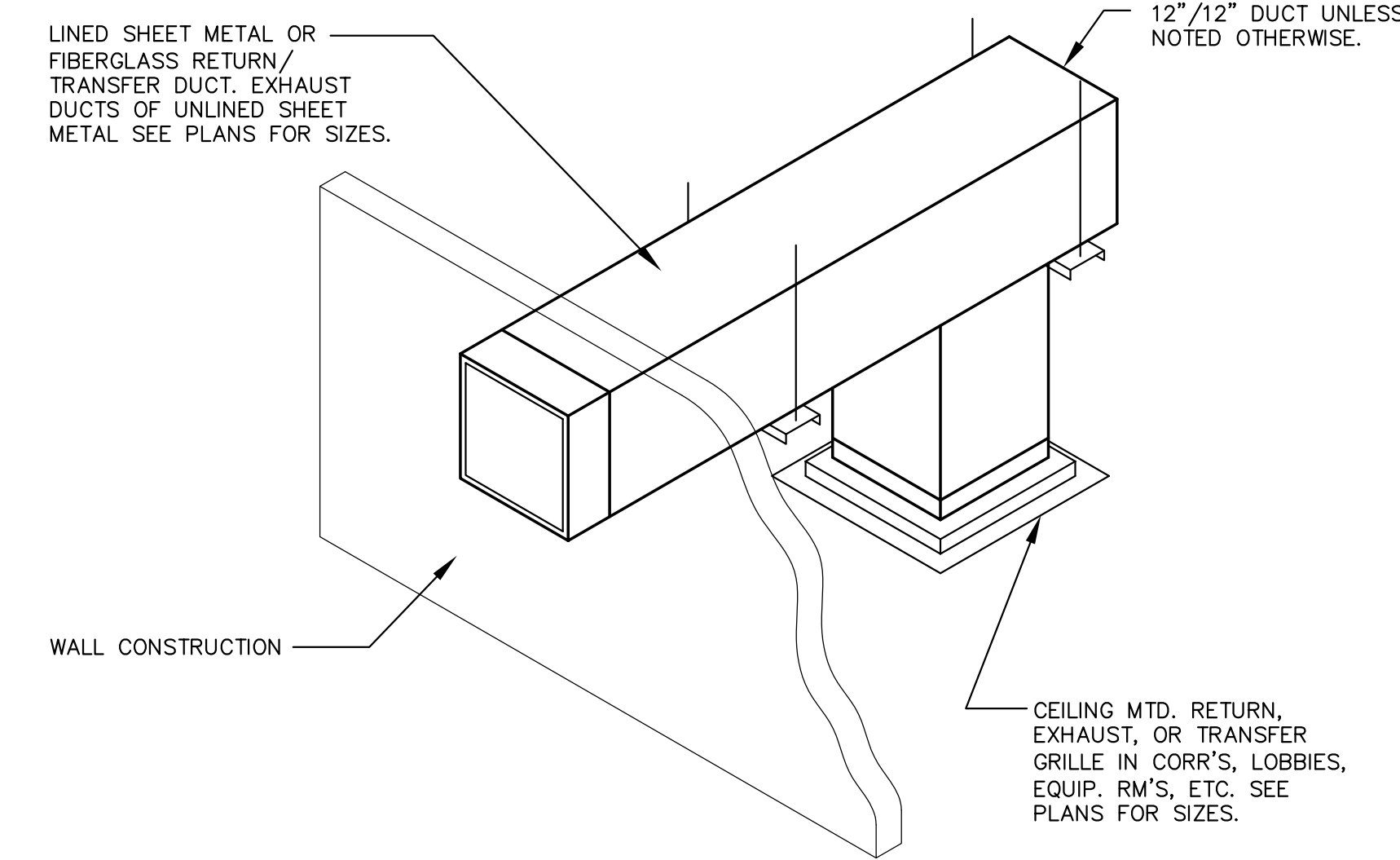
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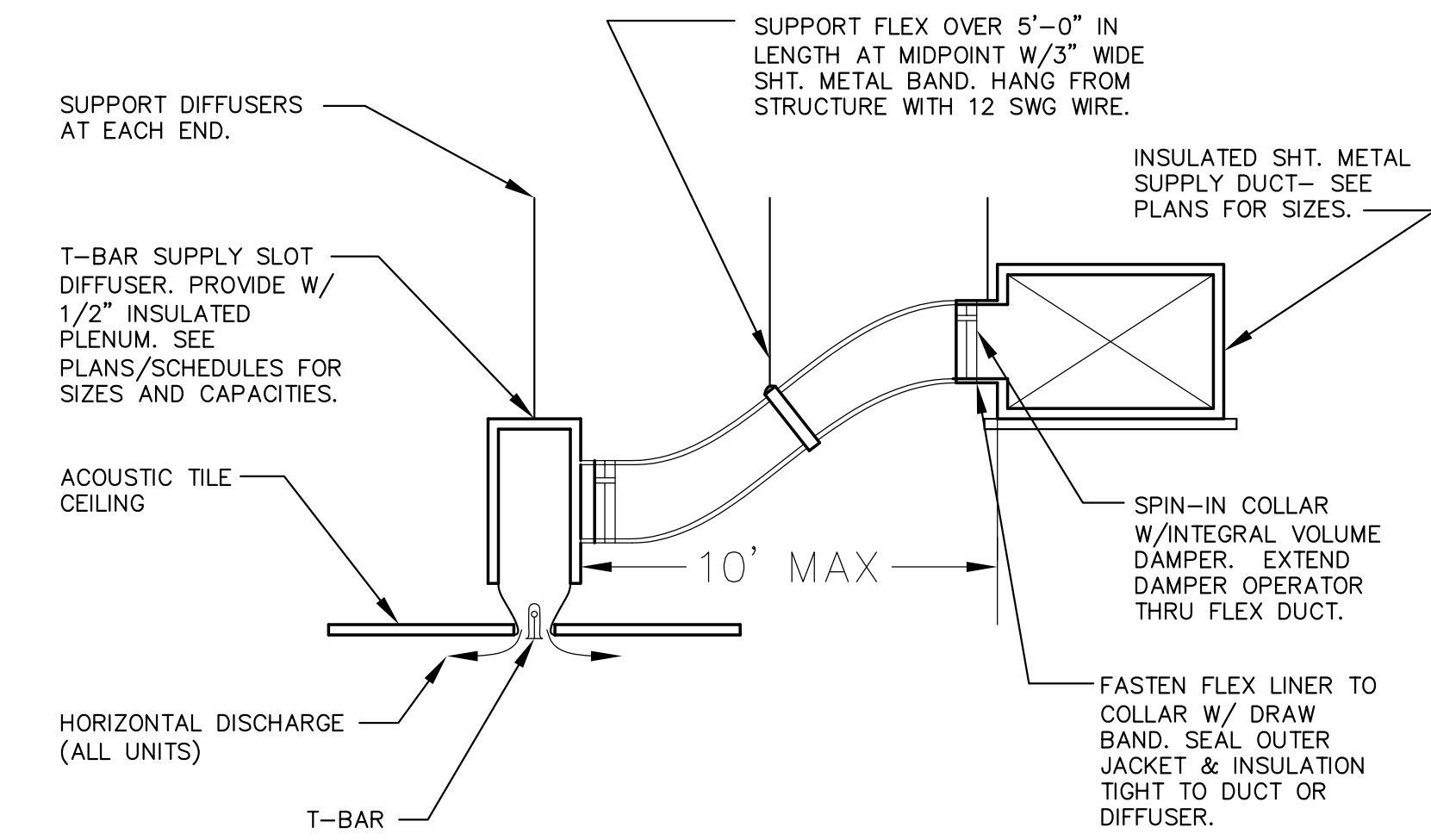


NOTE: TAP FOR PUBLIC AREAS MAY BE CONICAL SADDLE TAPS OR MANUFACTURERD CONICAL FITTINGS

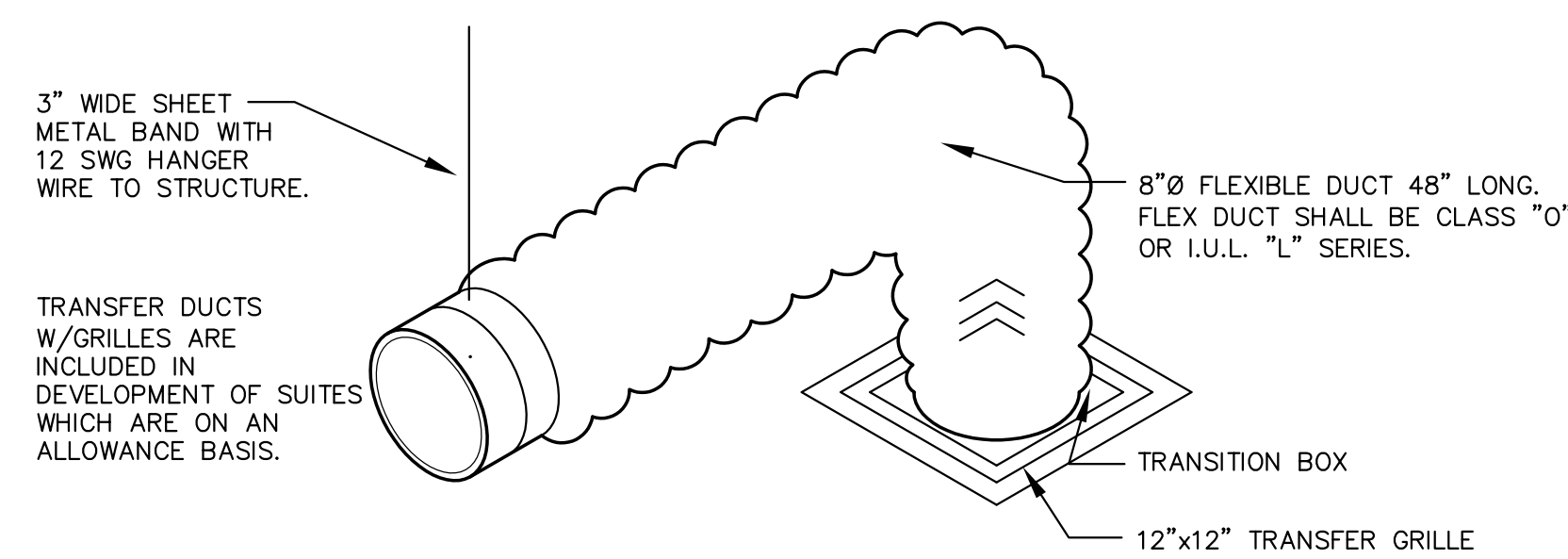
1 CONICAL SADDLE TAP
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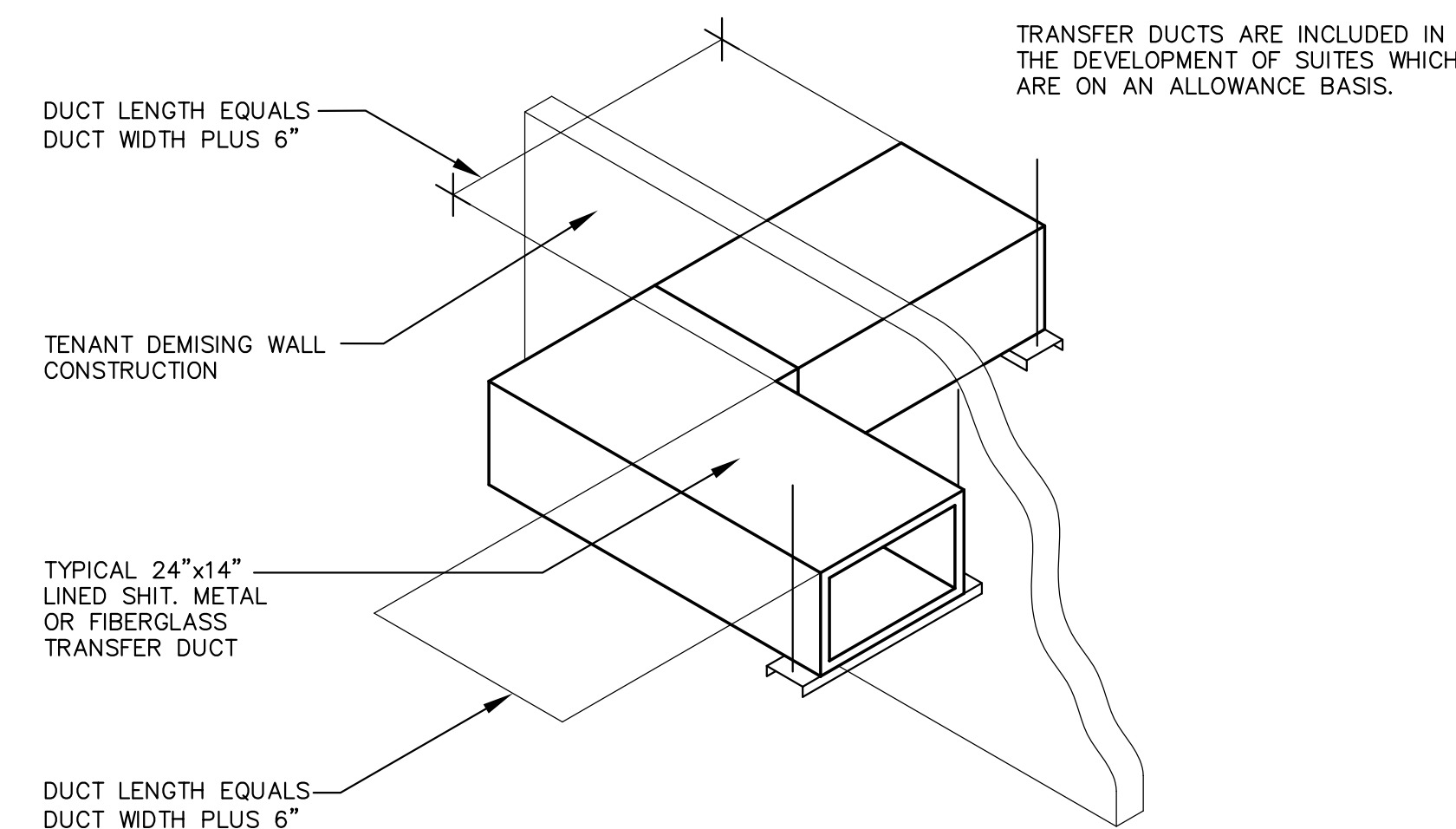
2 RETURN, EXHAUST, OR TRANSFER DUCT W/ GRILLE - PUBLIC AREAS
N.T.S.



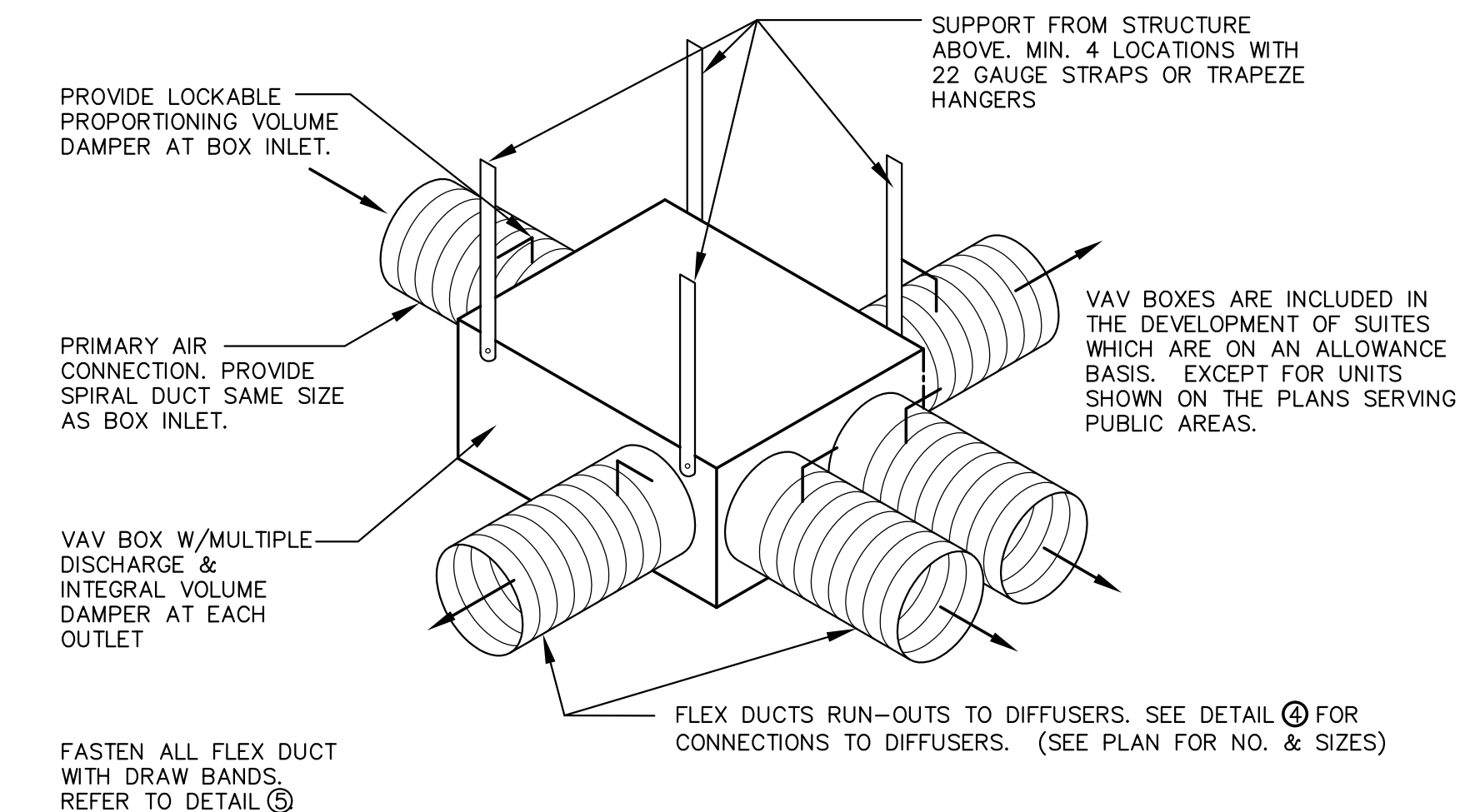
3 SLOT DIFFUSER TO DUCT CONNECTION
N.T.S.



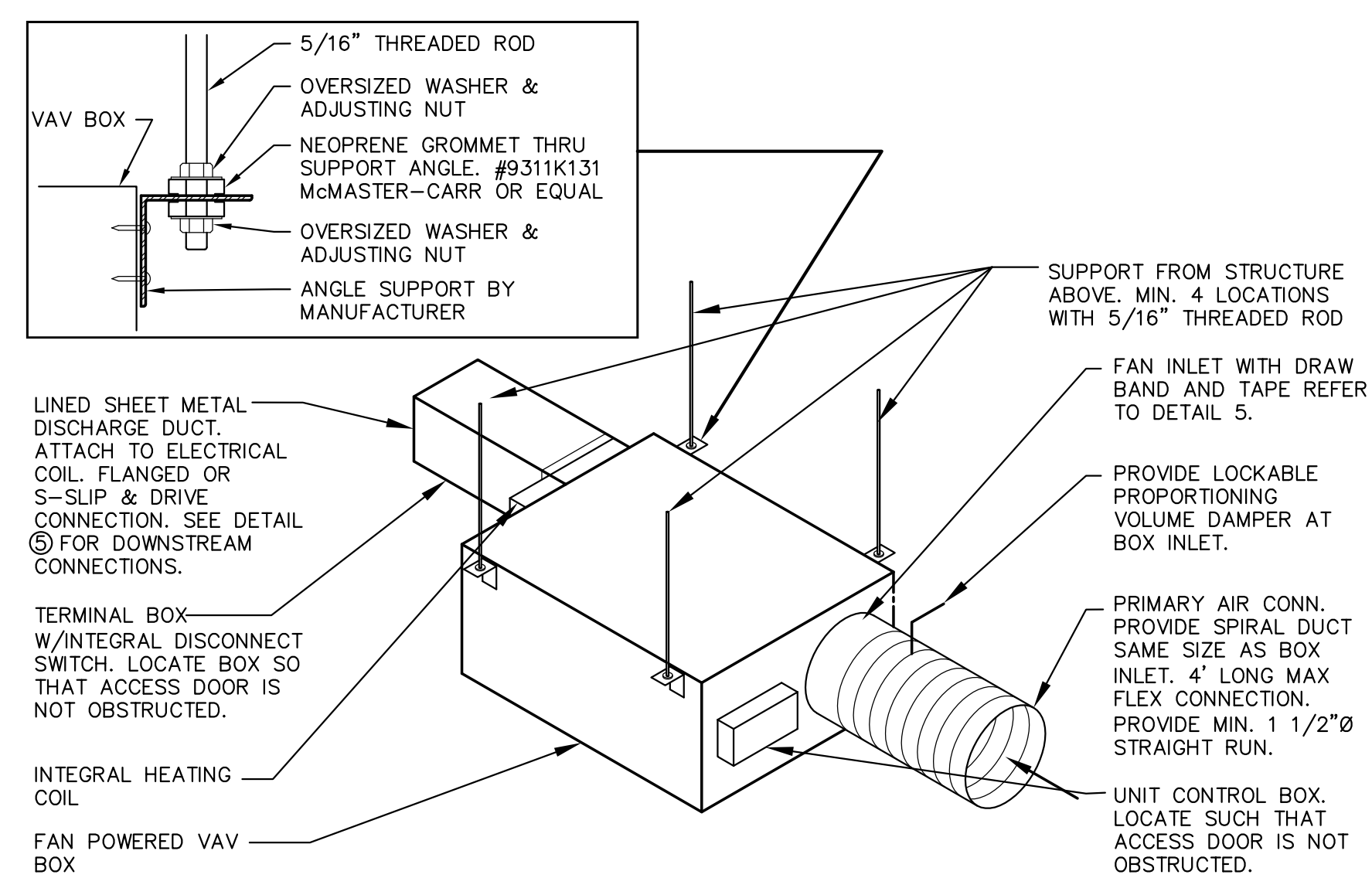
4 RETURN/TRANSFER GRILLE W/ FLEX
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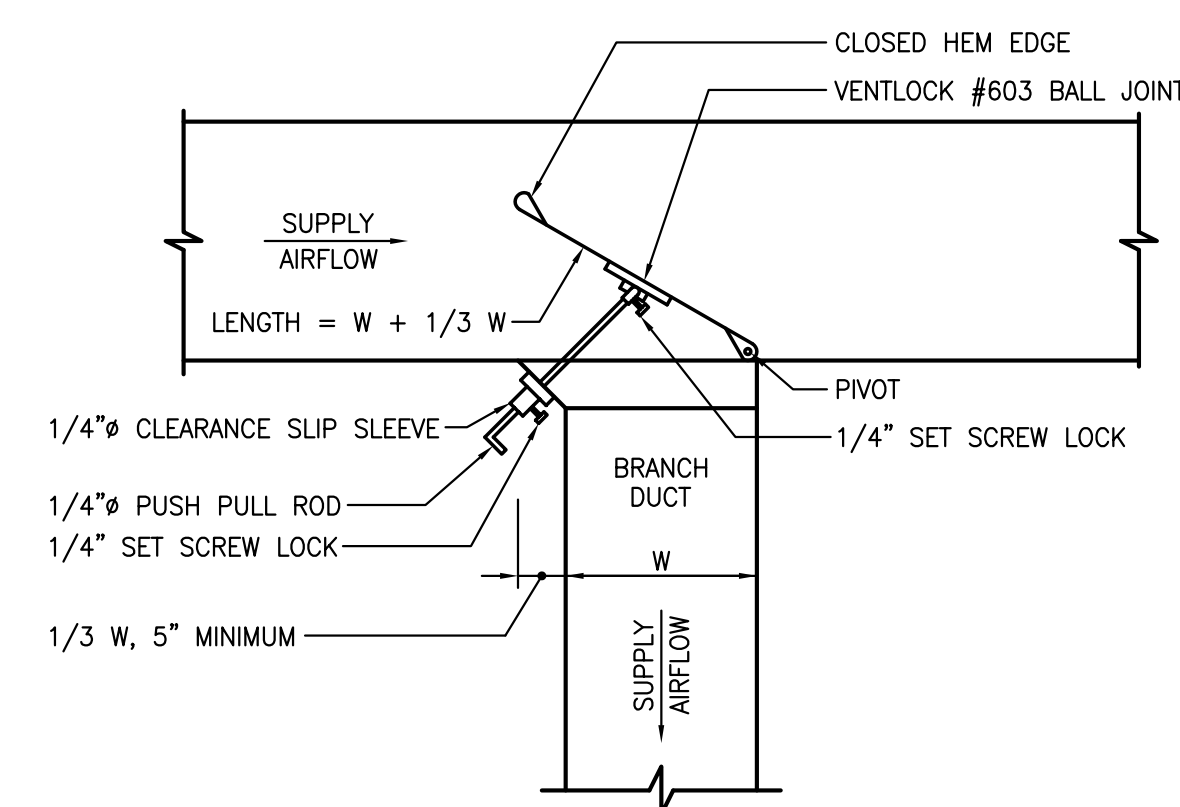
5 TRANSFER DUCT - SUITE AREAS
N.T.S.



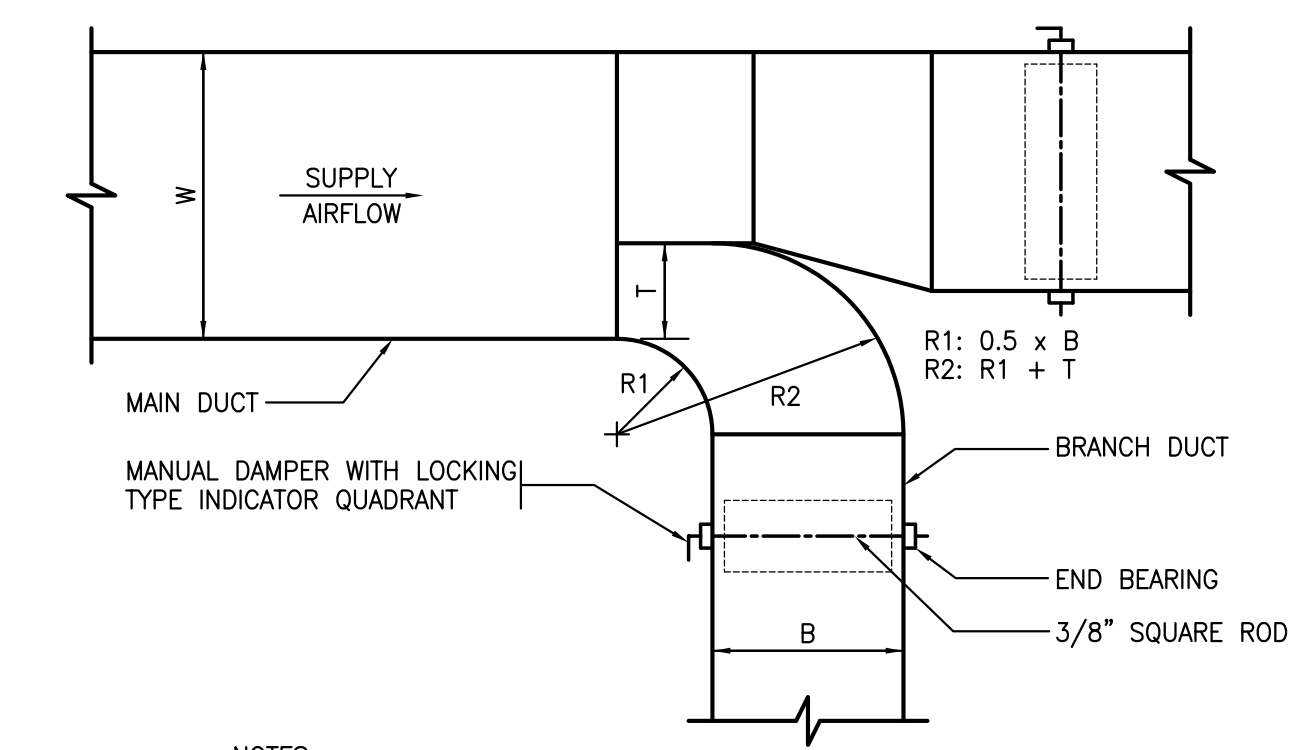
6 TYPICAL VAV BOX
N.T.S.



7 TYPICAL FAN POWERED VAV BOX
N.T.S.
NOTE: CONSTANT VOLUME REHEAT OR VAV REHEAT BOX SIMILAR

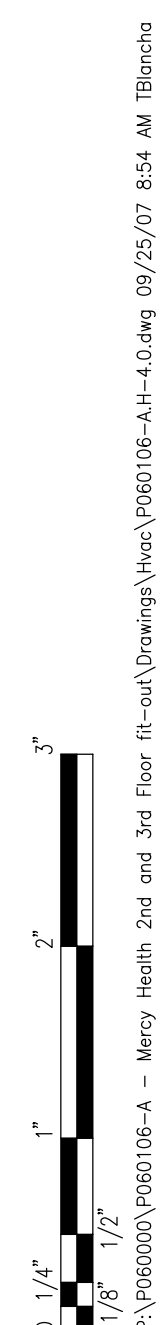


8 RECTANGULAR DUCT TAP WITH SPLITTER DAMPER
N.T.S.



NOTES:
1. FURNISH THIS TYPE CONNECTION WHERE NOTED AND WHEN SINGLE LINE DUCTWORK IS INDICATED AS THIS FOR LOW PRESSURE BRANCHES WITH MORE THAN 700 CFM AND MEDIUM PRESSURE BRANCHES WITH MORE THAN 1,000 CFM.
2. FURNISH THIS TYPE CONNECTION WITHOUT MANUAL DAMPER FOR ALL MEDIUM PRESSURE DUCTWORK BRANCHES.
3. MUST BE USED WHEN W ≥ 36\"/>
4. T = CFM IN B x W, MINIMUM 4 INCHES, CFM IN W

9 RECTANGULAR DUCT BRANCH WITH THROAT & VOLUME DAMPER
N.T.S.



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Sheet
HVAC
RISER DIAGRAMS

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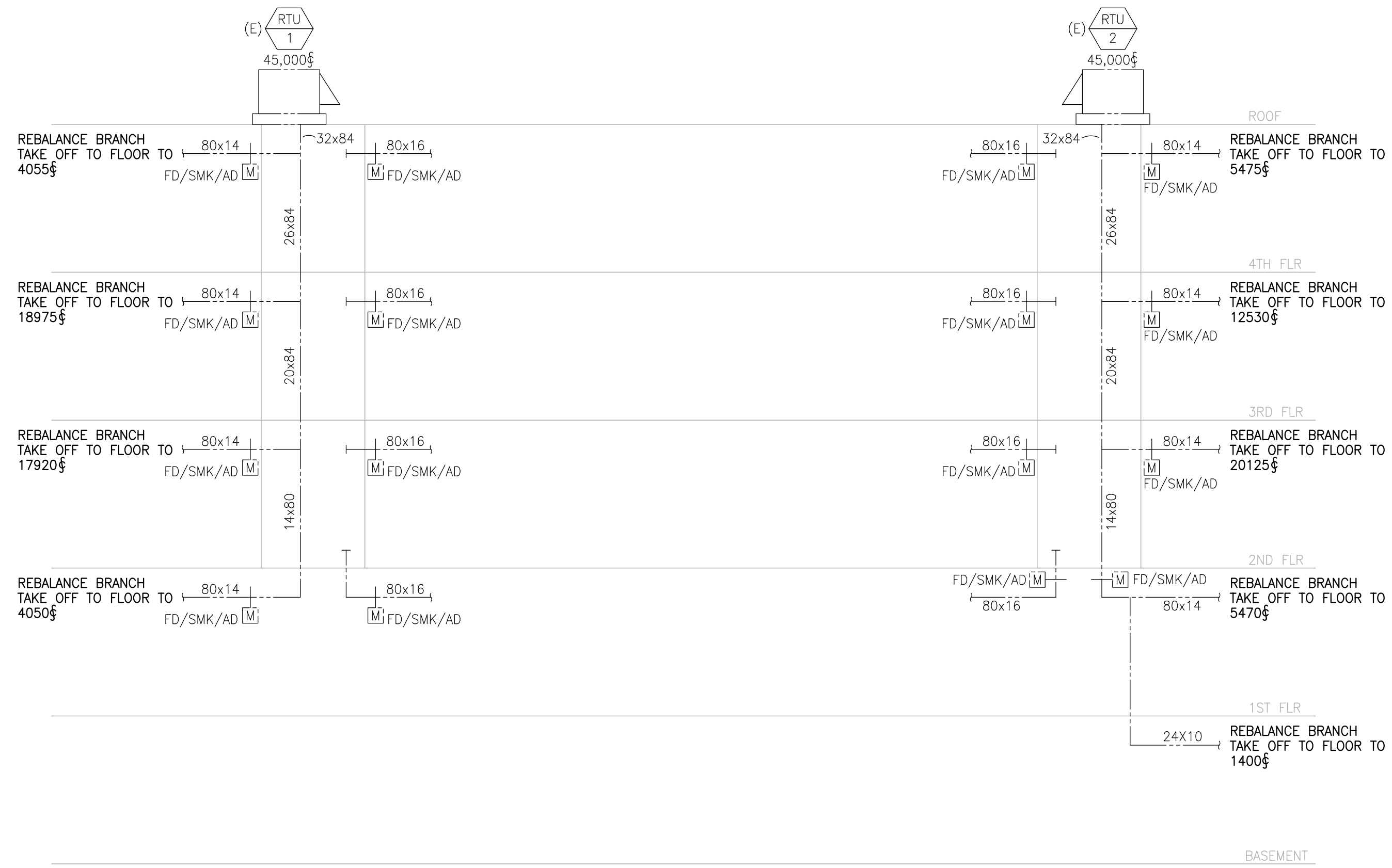
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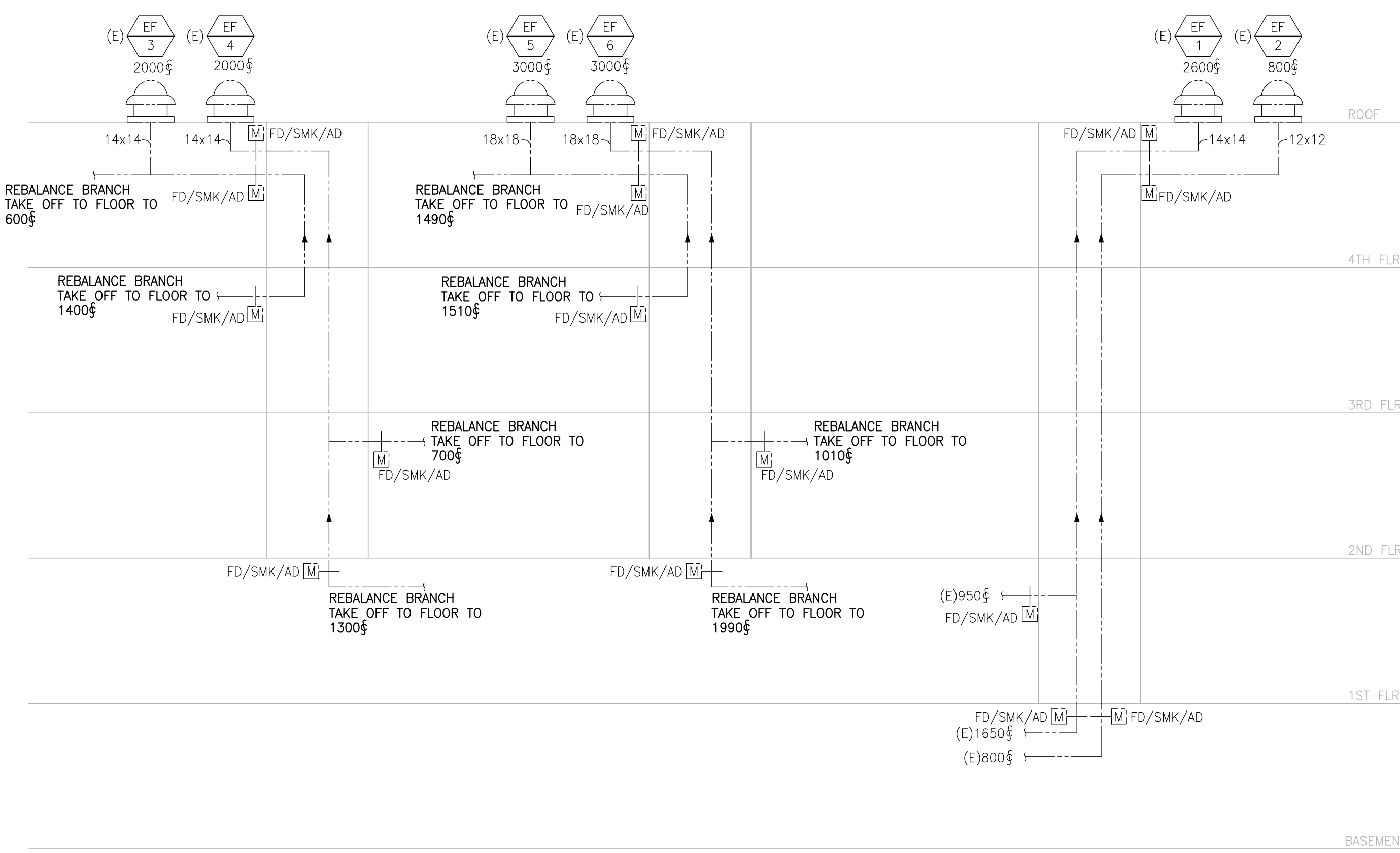
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SUPPLY AIR RISER DIAGRAM
SCALE: NTS



EXHAUST AIR RISER DIAGRAM
SCALE: NTS

0 1/4" 1/8" 1/4" 3/8" 1/2" 3/4" 1" 1 1/4" 1 1/2" 1 3/4" 2" 2 1/4" 2 1/2" 3" 3 1/4" 3 1/2" 4" 4 1/4" 4 1/2" 5"