

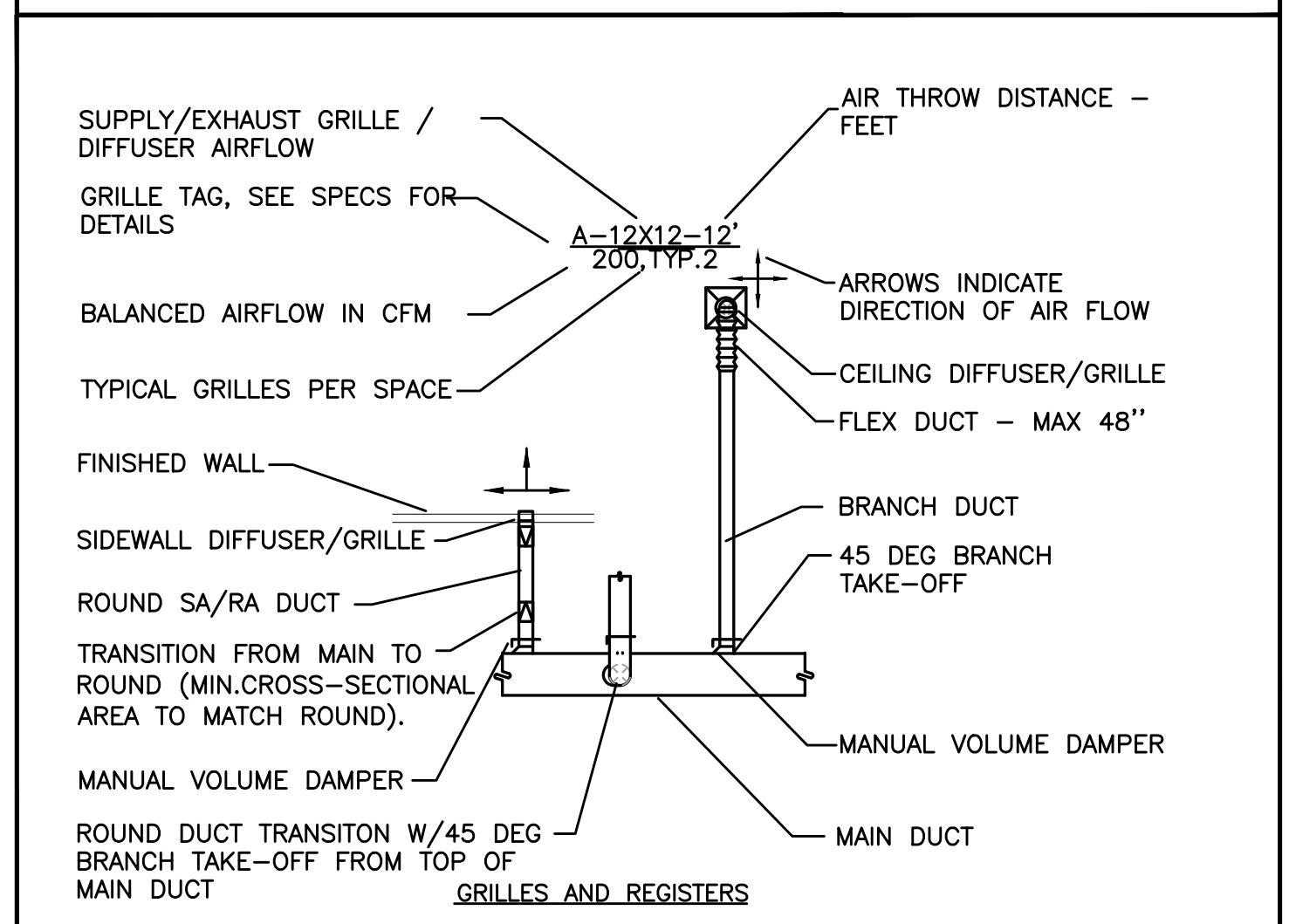
**MECHANICAL LEGEND**

	SUPPLY AIR DIFFUSER		RETURN AIR DIFFUSER		EXHAUST AIR DIFFUSER		DIRECTIONAL AIR FLOW		MANUAL VOLUME DAMPER		SUPPLY/OUTSIDE AIR DUCT UP & DOWN		RETURN AIR DUCT UP & DOWN		EXHAUST AIR DUCT UP & DOWN		DEMOLISH		CONNECT TO EXISTING		THERMOSTAT		TEMPERATURE SENSOR		NOTE		EQUIPMENT DESIGNATOR		GATE VALVE/SHUT-OFF VALVE SEE SPECS		CHECK VALVE		BALANCING VALVE		FLOW CONTROL/LIMITING VALVE		THERMOMETER		DIRECTION OF FLOW		PUMP		STRAINER W/ DRAIN VALVE		PRESSURE GAUGE		PET'S PLUG		DOUBLE CHECK ASSEMBLY		PRESSURE REDUCING VALVE		UNION		2-WAY CONTROL VALVE		3-WAY CONTROL VALVE		TRIPLE DUTY VALVE		CAP		MOTORIZED DAMPER		BALL/SHUT-OFF VALVE(SEE SPECS)		FIRE DAMPER		FIRE / SMOKE DAMPER		SMOKE DAMPER		FAN MOTOR (OR EQUAL) SEISMIC RESTRAINT, SEE NOTE		EQUIPMENT MAINTENANCE CLEARANCE AND ACCESS
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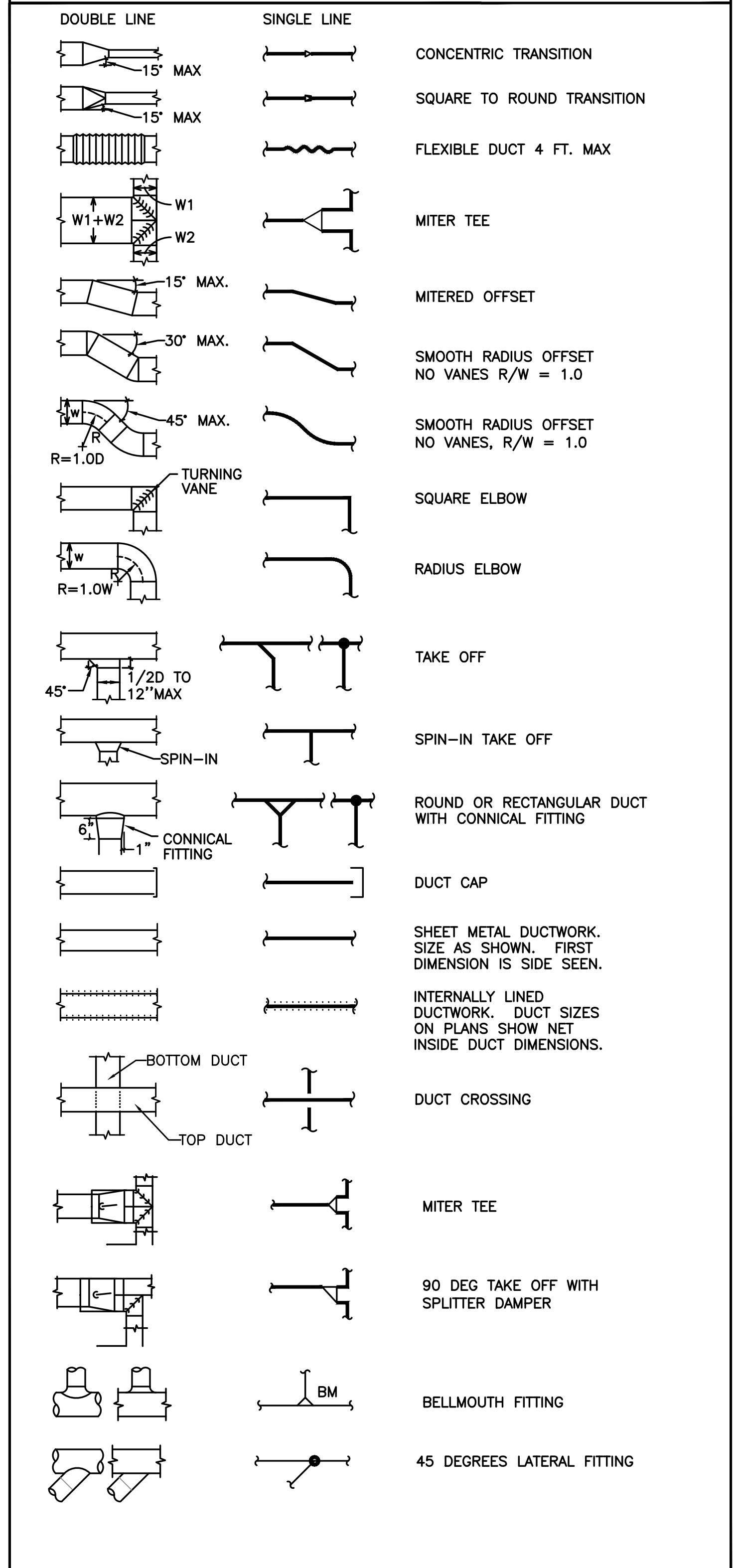
**MECHANICAL GENERAL NOTES**

- THE DRAWINGS ARE DIAGRAMMATIC. PROVIDE ALL MATERIAL (NEW AND UNDAMAGED) AND LABOR FOR A COMPLETE AND OPERABLE SYSTEM. VERIFY ALL BUILDING MEASUREMENTS DIMENSIONS AND EQUIPMENT LOCATIONS BEFORE PROCEEDING WITH ANY OF THE WORK.
- VERIFY ALL EXISTING CONDITIONS RELATIVE TO THE SCOPE OF WORK. REPORT DISCREPANCIES BACK TO THE ENGINEER.
- VERIFY INDICATED (E) DUCTWORK/PIPE SIZES PRIOR TO RECONNECTING NEW EQUIPMENT. EQUIPMENT SHALL NOT BE CONNECTED TO EXISTING DUCT/PIPE OF SMALLER DIAMETER THAN NEW DUCT/PIPE. REPORT DISCREPANCIES BACK TO ENGINEER.
- DO NOT FABRICATE EQUIPMENT SUPPORTS/BASES W/O CONFIRMING SPACE EXISTS AND THE BUILDING ATTACHMENT POINTS.
- REFER TO THE MECHANICAL SPECIFICATIONS FOR MATERIALS, EQUIPMENT, AND ADDITIONAL CONSTRUCTION INSTRUCTIONS NOT COVERED BY THESE PLANS.
- ALL INSTALLATIONS SHALL COMPLY WITH APPLICABLE FEDERAL AND STATE CODES INCLUDING, 2019 OREGON STRUCTURAL SPECIALTY CODE (OSSC) INCLUDING APPENDIX N FOR OREGON FIRE CODE REGULATIONS, 2021 OREGON PLUMBING SPECIALTY CODE (OPSC), 2019 OREGON MECHANICAL SPECIALTY CODE (OMSC), 2021 OREGON ENERGY EFFICIENCY SPECIALTY CODE (OEEEC)-BASED ON ASHRAE 90.1-2019, AND NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), WHERE TWO CODES DIFFER THE MORE STRICT OF THE TWO SHALL BE FOLLOWED.
- OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES HAVING JURISDICTION. SUBMIT ALL CERTIFICATES PRIOR TO ACCEPTANCE.
- COORDINATE ALL MECHANICAL AND CONTROL WORK WITH GENERAL CONTRACTOR, CONTROL CONTRACTOR, ELECTRICAL AND ARCHITECTURAL.
- COORDINATE OTHER TRADES FOR PATCH/REPAIR OF WALLS WHERE EXISTING SENSORS ARE REMOVED OR MODIFIED.
- PATCH & REPAIR WALLS / FLOORS / CEILING WHERE OLD DUCTWORK/PIPES HAVE BEEN REMOVED TO MATCH EXISTING FINISHES.
- COORDINATE WITH OTHER CRAFTS AS REQUIRED TO COMPLETE WORK IN ACCORDANCE WITH CONSTRUCTION SCHEDULE.
- PROVIDE OWNER INSTRUCTION BY QUALIFIED PERSONNEL ON EQUIPMENT AND SYSTEMS AT OWNER'S REQUEST.
- ALL DUCTWORK SHALL BE GALVANIZED STEEL, UNLESS OTHERWISE INDICATED, CONFORMING TO LATEST SMACNA, ASHRAE, OMSC, NFPA, AND UL STANDARDS.
- MANUFACTURERS AND MODEL NUMBERS LISTED IN THE EQUIPMENT SCHEDULES ARE THE BASIS OF DESIGN.
- CUT WALLS FOR PROPER EQUIPMENT, DUCT OR PIPE INSTALLATION. FILL HOLES WHICH ARE CUT OVERSIZED FOR A TIGHT FIT AROUND OBJECTS PASSING THROUGH.
- PROVIDE UL LISTED FIRESTOP SYSTEM TO MAINTAIN THE CODE REQUIRED F AND T RATING OF THE CONSTRUCTION ASSEMBLY AT A DUCT/PIPE PENETRATION THROUGH A RATED BUILDING CONSTRUCTION.
- INSTALL LABELS ON ALL MECHANICAL EQUIPMENT. SEE SPECIFICATIONS FOR CRITERIA.
- CONTROLS AND WIRING SHALL MEET ALL ELECTRICAL REQUIREMENTS OF APPLICABLE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS OF OWNER, BUILDING OFFICIALS AND EQUIPMENT SUPPLIERS OF EQUIPMENT INSTALLED ON PROJECT.
- ELECTRIC MOTORS SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTION OR BE PROTECTED EXTERNALLY WITH SEPARATE THERMAL OVERLOAD DEVICES, WITH LOW-VOLTAGE RELEASE OR LOCK OUT AS REQUIRED.
- ALL NEW EQUIPMENT, PIPING, CONDUIT, AND DUCTWORK SHALL BE INSTALLED PER CURRENT SEISMIC CODE REQUIREMENTS.
- PROVIDE LOW LEAK AUTOMATIC DAMPERS ON OUTSIDE AIR, EXHAUST AIR AND RELIEF AIR CONTROL DAMPERS WHERE THESE ARE INDICATED.

**AIR DISTRIBUTION DETAILS**



**AIR DISTRIBUTION DETAILS**



**MECHANICAL SHEET INDEX**

- M0.01 TITLE SHEET, MECHANICAL SCHEDULES & DETAILS
- M2.01 BUILDING 5 - MECH PLAN

**BUILDING 5 ROOF TOP UNIT**

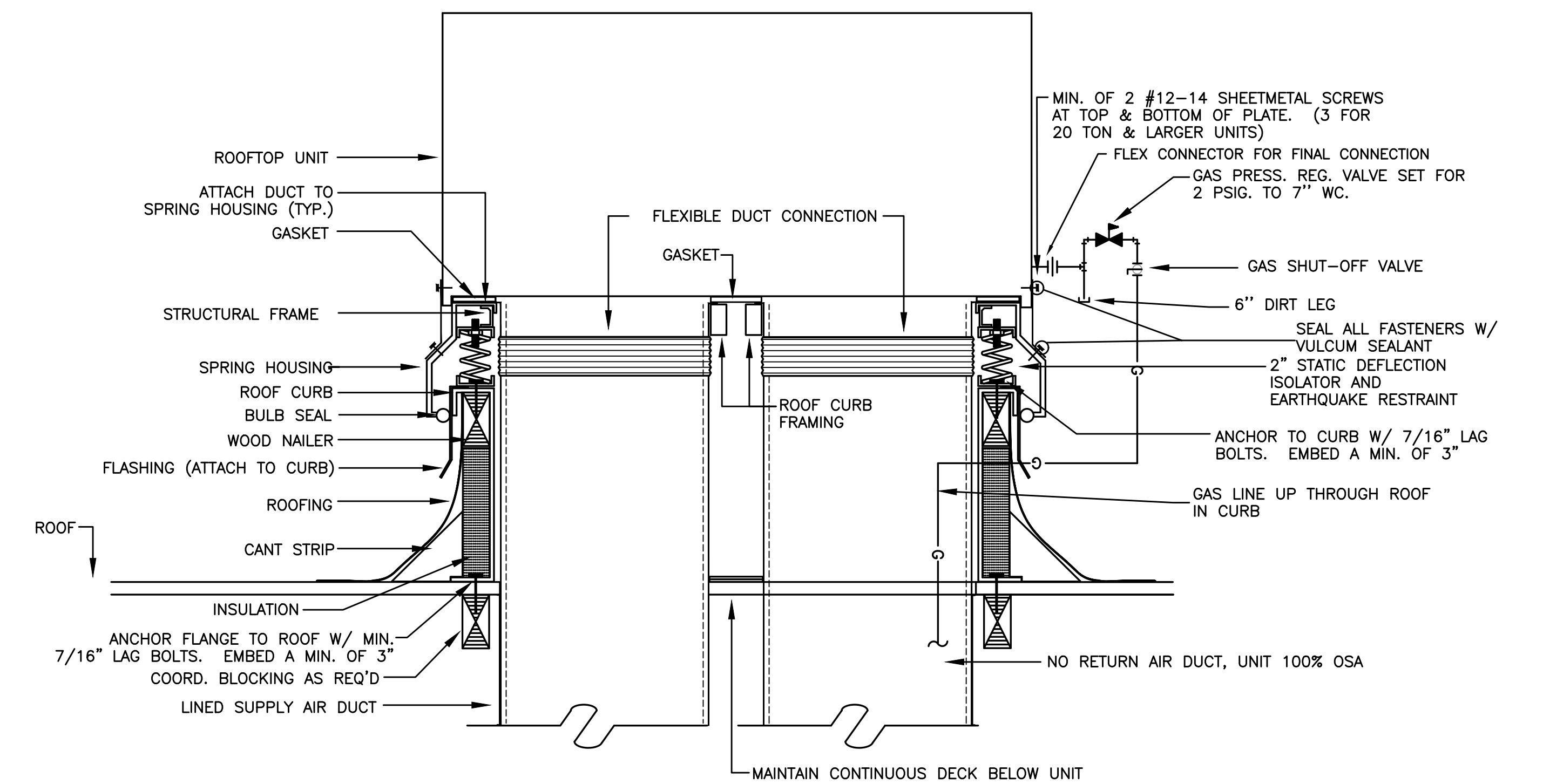
MARK NUMBER	RTU-1
SYSTEM	RETAIL
TYPE	GAS PACK
DISCHARGE	DOWN
TOTAL CFM	2000
ECONOMIZER	YES
MIN. OSA	-
MAX OSA (FULL OCCUPANCY)	-
CO2 CONTROL	-
EXTERNAL SP. (H2O)	0.75
TOTAL SP. (H2O)	1.25
RPM	2222
WHEEL TYPE/ SIZE	-
MOTOR HP	1.18
POWER EXH FAN/ACCESSORY	NO
MIN FILTER SIZE	16X25X2
FILTER TYPE	THROW AWAY
GAS INPUT/OUTPUT (MBH)	110/88
EFF. (AFUE)	80
STAGES/TYP	1
TOTAL CLG. (TONS)	5
SENSIBLE CLG. (MBH)	45
ENT. EVAP AIR TEMP (DB/WB.)	80/67
LVG. EVAP AIR TEMP (DB/WB.)	59.3/57.7
AMBIENT AIR (°F)	-
EER/IEER	12/14
REFRIGERANT	R410A
REFRIGERANT CHARGE	-
DESIGN WEIGHT (LBS.)	574
SMOKE DETECTOR (SUPPLY DUCT)	YES
SPRING ISOLATION ROOF CURB	C.V.
CONVENIENCE OUTLET - ALWAYS POWERED	YES
VOLTAGE/PHASE - ***	208/3
MCA/MOCP - ***	31/45
BASIS OF DESIGN - CARRIER MODEL	48FC6A6ZAS

\*\*\* ELECTRICAL DATA LISTED FOR REFERENCE ONLY. COORDINATE WITH ELECTRICAL DESIGN BUILD CONTRACTOR FOR VOLTAGE AND PHASE REQUIREMENTS. ELECTRICAL CONTRACTOR RESPONSIBLE FOR SIZING ALL CONDUCTORS & OVERCURRENT PROTECTION. VERIFY WITH EQUIPMENT SUBMITTALS FOR EQUIPMENT ELECTRICAL REQUIREMENTS

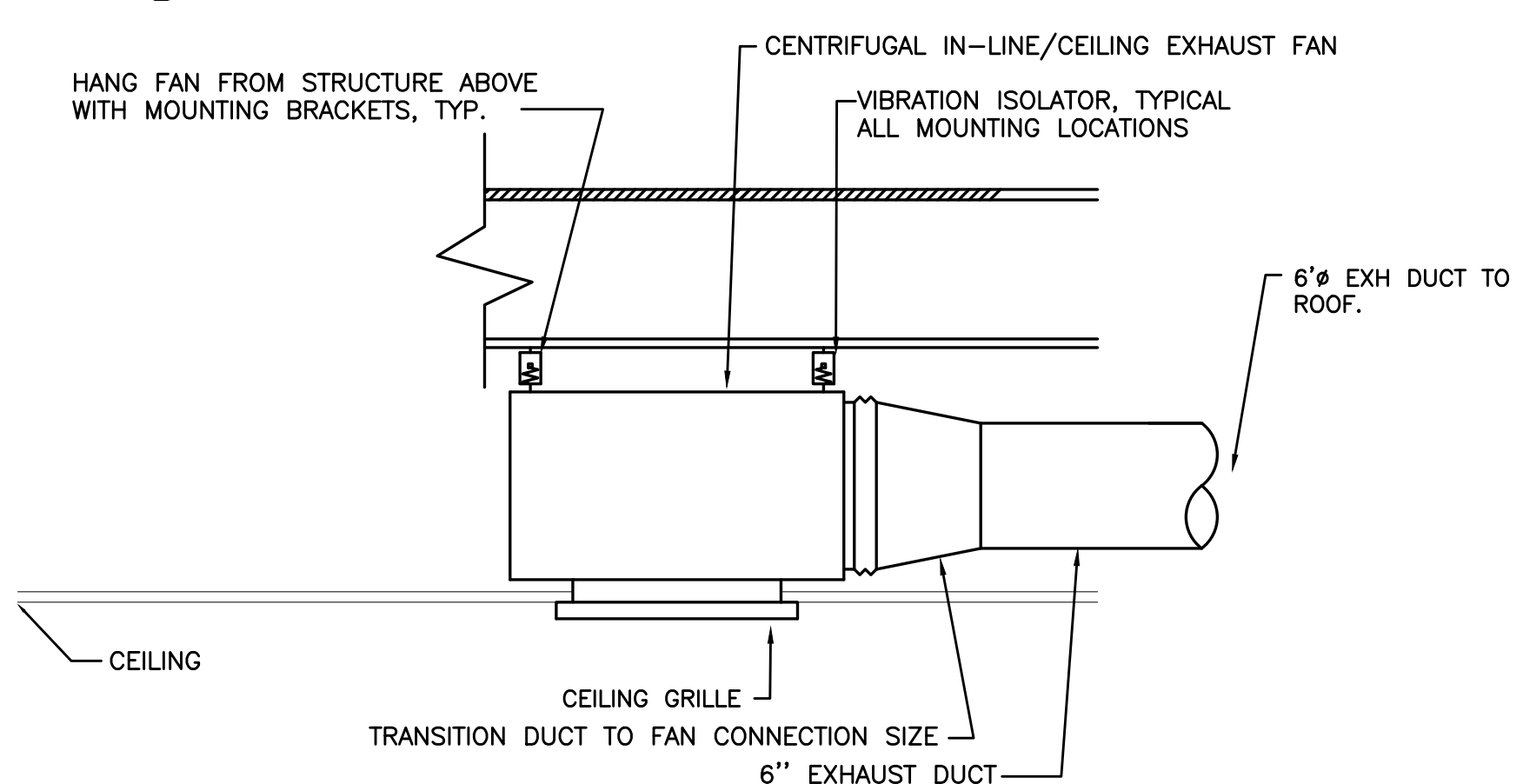
**EXHAUST FANS**

MARK NUMBER	EF 1
TYPE	CEILING CABINET
SYSTEM	RESTROOM
CFM	100
TOTAL SP. (IN H2O)	0.125
RPM	1250
TIP SPEED (FPM)	100 W
MOTOR WATTS OR HP	100 W
CONTROLLED BY	LIGHTS
INTERLOCK WITH	NONE
FAN SPEED CONTROLLER	NO
WHEEL TYPE	FC
BACK DRAFT DAMPER	GRAVITY
ISOLATION	RUBBER
DESIGN WEIGHT (LBS)	25
MAX. SONES	1.5
MAX AMPS - *	1.3
POWER (VOLTS/PHASE/HZ) - *	-
BASIS OF DESIGN:	BROAN L100

\*\*\* ELECTRICAL DATA LISTED FOR REFERENCE ONLY. COORDINATE WITH ELECTRICAL DESIGN BUILD CONTRACTOR FOR VOLTAGE AND PHASE REQUIREMENTS



**1 ROOF TOP UNIT W/ VIBRATION ISOLATION CURB**  
SCALE: DETAIL

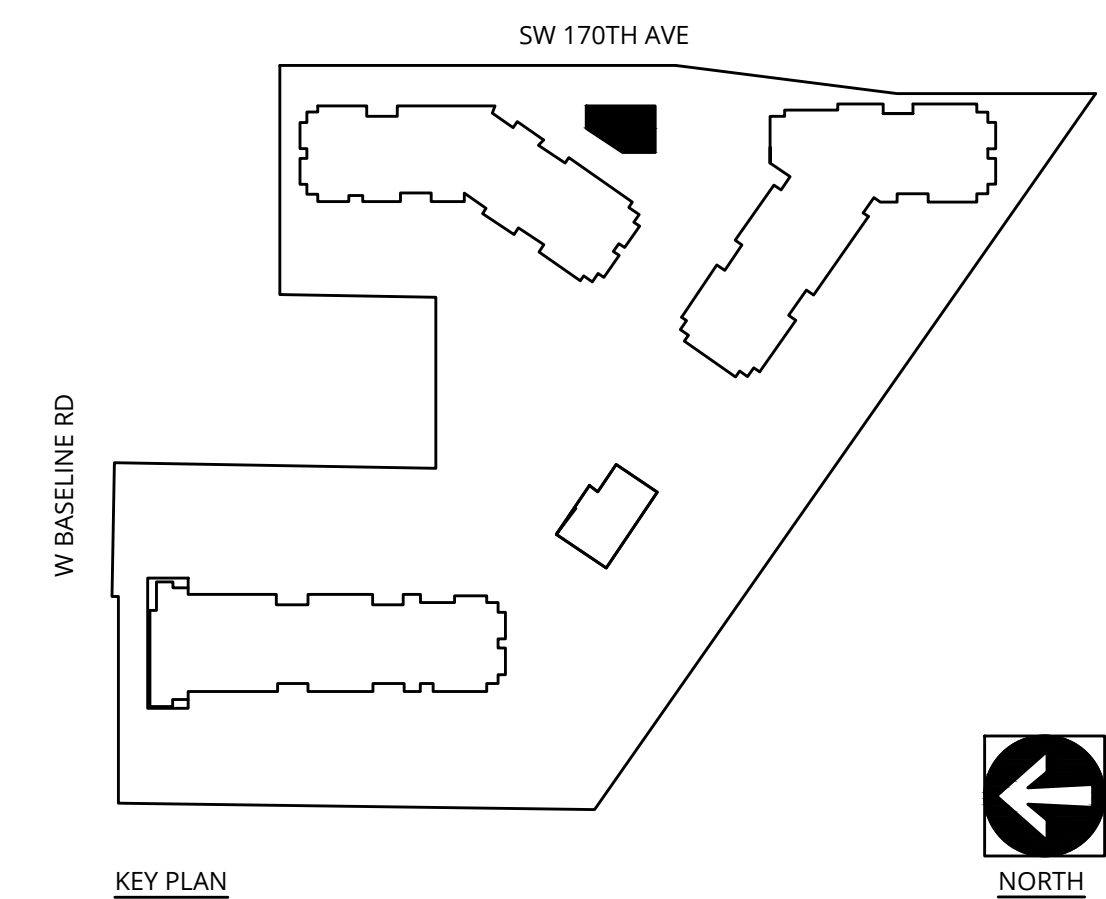


**2 RESTROOM EXHAUST FAN**  
SCALE: DETAIL

**VENTILATION AIR SCHEDULE - BUILDING 5**

ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/PP)	OUTSIDE AIR REQUIREMENT (CFM/SQ FT.)	OUTSIDE AIR REQUIREMENT (CFM)	ZONE OSA (CFM)	SUPPLY AIR (CFM)	PRIMARY FRACTION	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency	Corrected OSA CFM	AIR SYSTEMS		
	Az	Pz	Rp	Ra	Vbz	Ez	Voz	Vpz	Zp			Evz				
STORAGE 103	42	0	0	0	0.12	5	0.8	6	50	0.13	50	0	1.07	7.41	RTU-1	
STORAGE 102	114	0	0	0	0.12	14	0.8	17	50	0.34	50	0	0.85	20.11	RTU-1	
RETAIL	1157	15	18	7.5	0.12	274	0.8	342	1900	0.19	1800	0	1.00	402.48	RTU-1	
<b>TOTAL</b>	<b>1313</b>		<b>18</b>			<b>293</b>		<b>366</b>	<b>1900</b>		<b>1900</b>	<b>0</b>	<b>0.85</b>	<b>430</b>		
<b>CORRECTED TOTAL OUTDOOR AIR FLOW RATE</b>												<b>430</b>	<b>CFM</b>	<b>Corrected OSA Fraction</b>	<b>Zs =</b>	<b>0.23</b>

- 3.2 DUCTWORK INSULATION**
- Ductwork Insulate the following:
    - All supply and return ductwork in systems routed in unconditioned spaces or exposed to the outside conditions.
    - All outside air intake ducts.
    - All ductwork required to be insulated by code.
    - The last 5' of duct work connected to a lower or exhaust termination.
  - Insulation Thickness: Select board and blanket insulation of thickness required to provide the following installed R-value.
    - All heating or cooling system supply and return ducts located on the exterior of the insulated building envelope, including ventilated attics, and all outside air intake ducts, R-8.
    - All heating and cooling system supply and return ducts located in unconditioned spaces within the building insulation envelope, R-5.
    - All heating and cooling system supply ducts located in conditioned spaces and where exposed in unfinished spaces or concealed from view in finished spaces, R-3.3. Exposed ductwork in finished spaces shall not be externally insulated.
    - Ducts located within or below concrete slabs on grade, R-4.
  - Fittings: Install with wire straps and duct adhesive as required. To prevent sagging on all rectangular or square ducts over 24" wide, install Gramwell or equal welding pins on the bottom. Maximum spacing 18" on center in both directions.
  - Installation: Applied with butt joints, all seams sealed with vapor seal mastic or taped with 2" wide vapor-proof, pressure-sensitive tape. Seal all penetrations with vapor barrier adhesive.
  - Internally Lined Ductwork: Where internally lined ductwork is indicated on the Drawings and/or specified, no exterior insulation is required. Select duct lining to provide the required R-value. Carefully lap the ends of the exterior insulation a minimum of 6" past the interior insulation unless otherwise shown. Seal the end of vapor barrier jacket to the duct with mastic where the vapor barrier is required.
    - Line Supply and Return ducts for 10' on intake and discharge of fan.
    - Line Supply ducts routed in vertical shafts directly below RTUs



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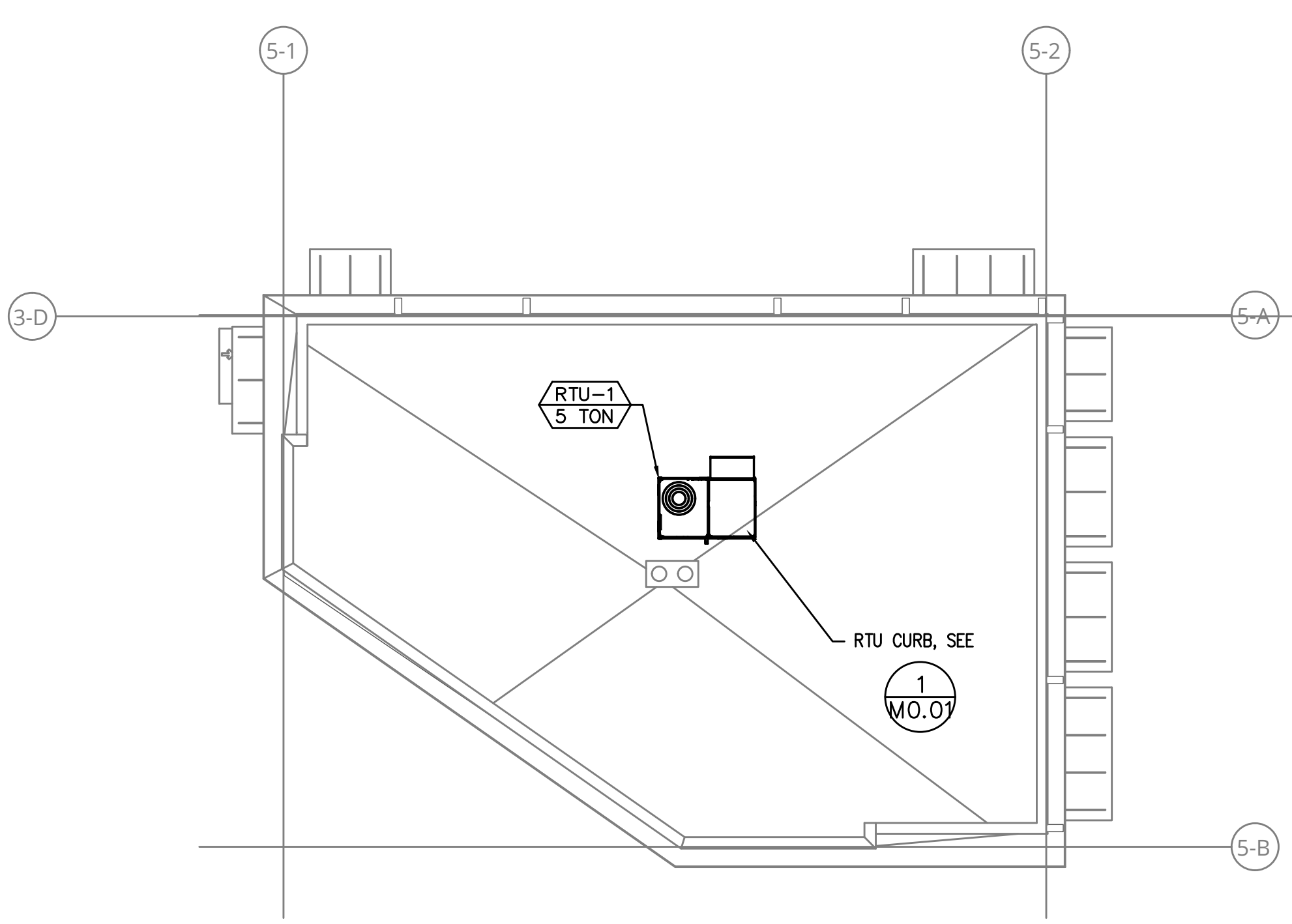
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**ELMONICA STATION APARTMENTS BUILDING 5**  
SW 170TH AND W BASELINE  
REMBOLD PROPERTIES

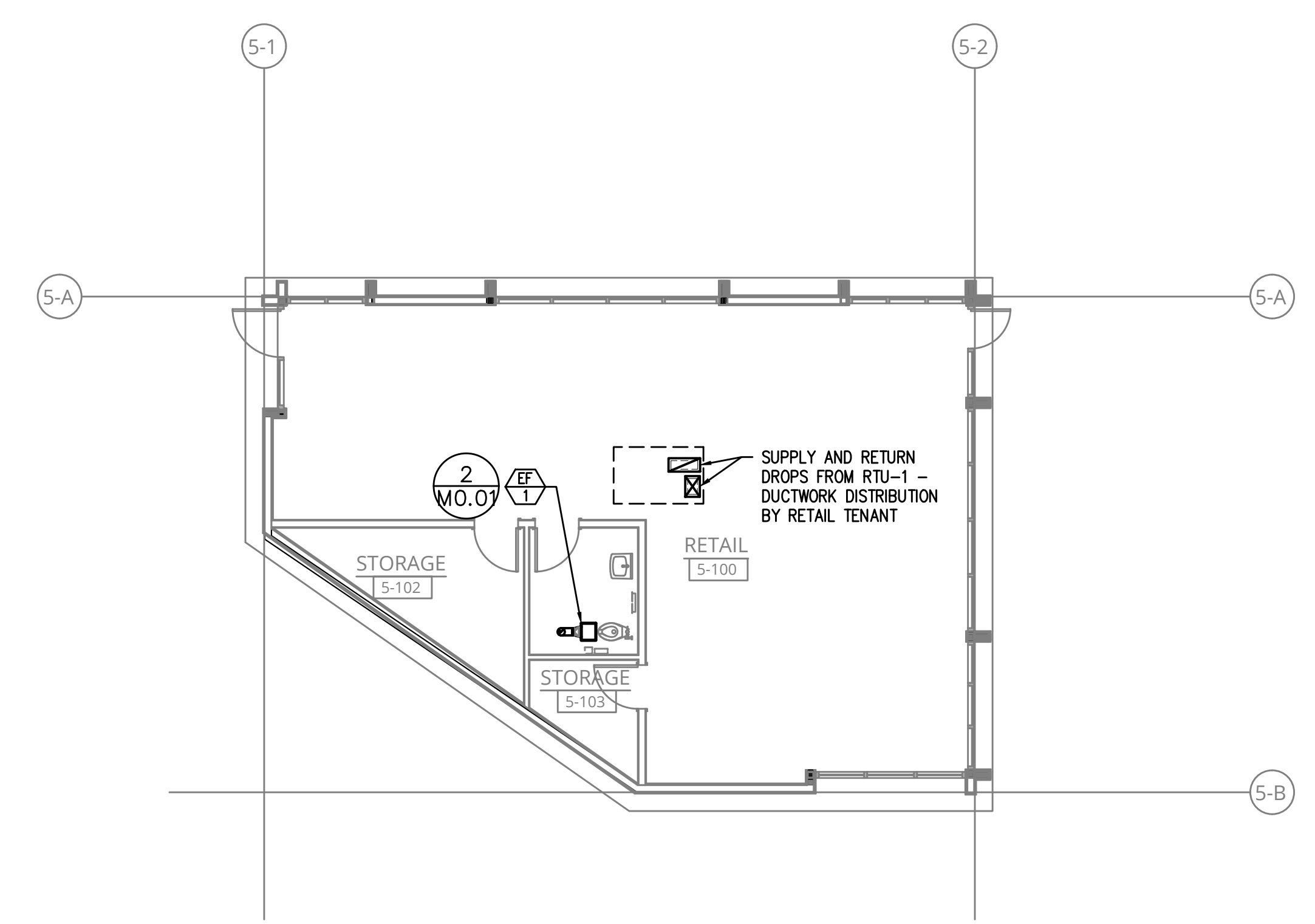
REVISION	DATE	REASON FOR ISSUE

**MECH LEGENDS, SCHEDULES & DETAILS**  
**PERMIT SET**

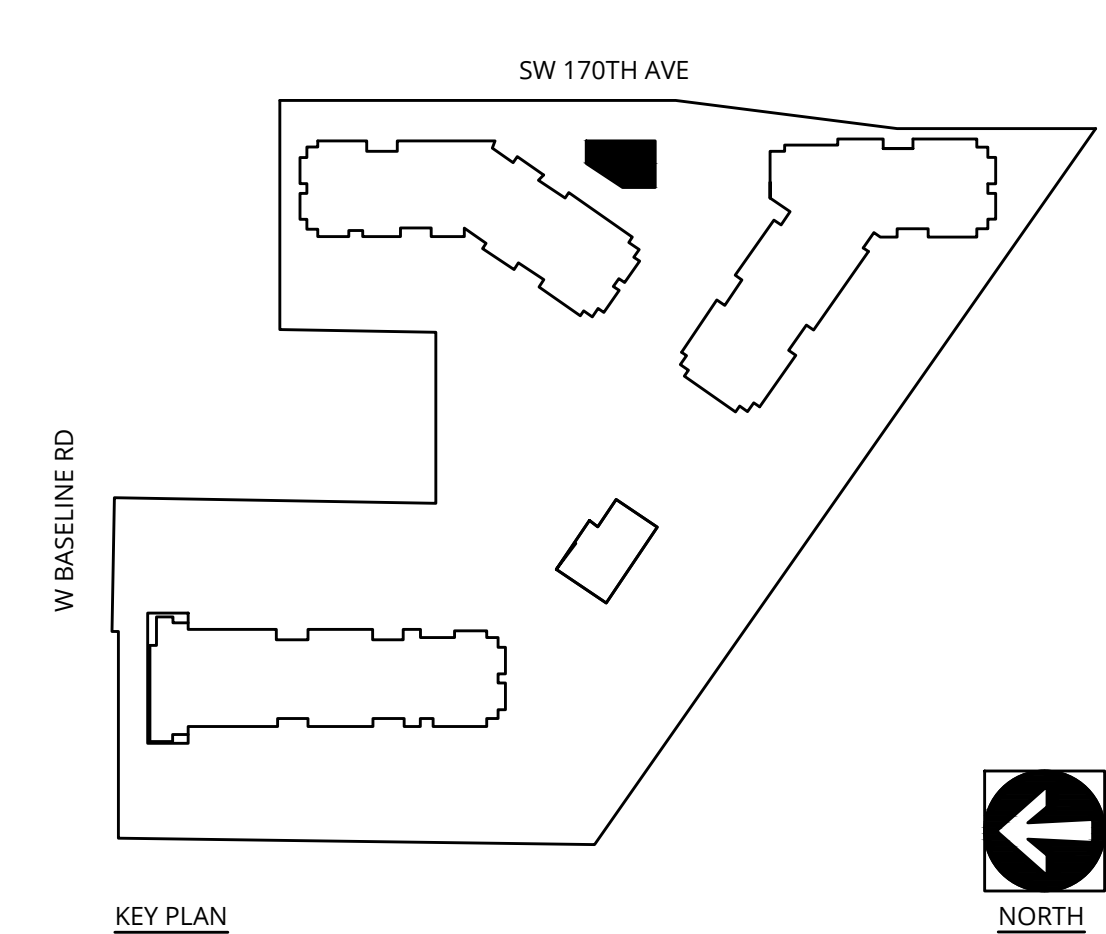
DATE: 09/23/2022 PROJECT NUMBER: 215390  
**M0.01-5**



**2** BUILDING 5 - ROOF - MECHANICAL PLAN  
SCALE: 1/8" = 1'-0"



**1** BUILDING 5 - LEVEL 1 - MECHANICAL PLAN  
SCALE: 1/8" = 1'-0"



REVISION	DATE	REASON FOR ISSUE

MECHANICAL PLANS

PERMIT SET

DATE: 09/23/2022 PROJECT NUMBER: 215390

M2.01-5