

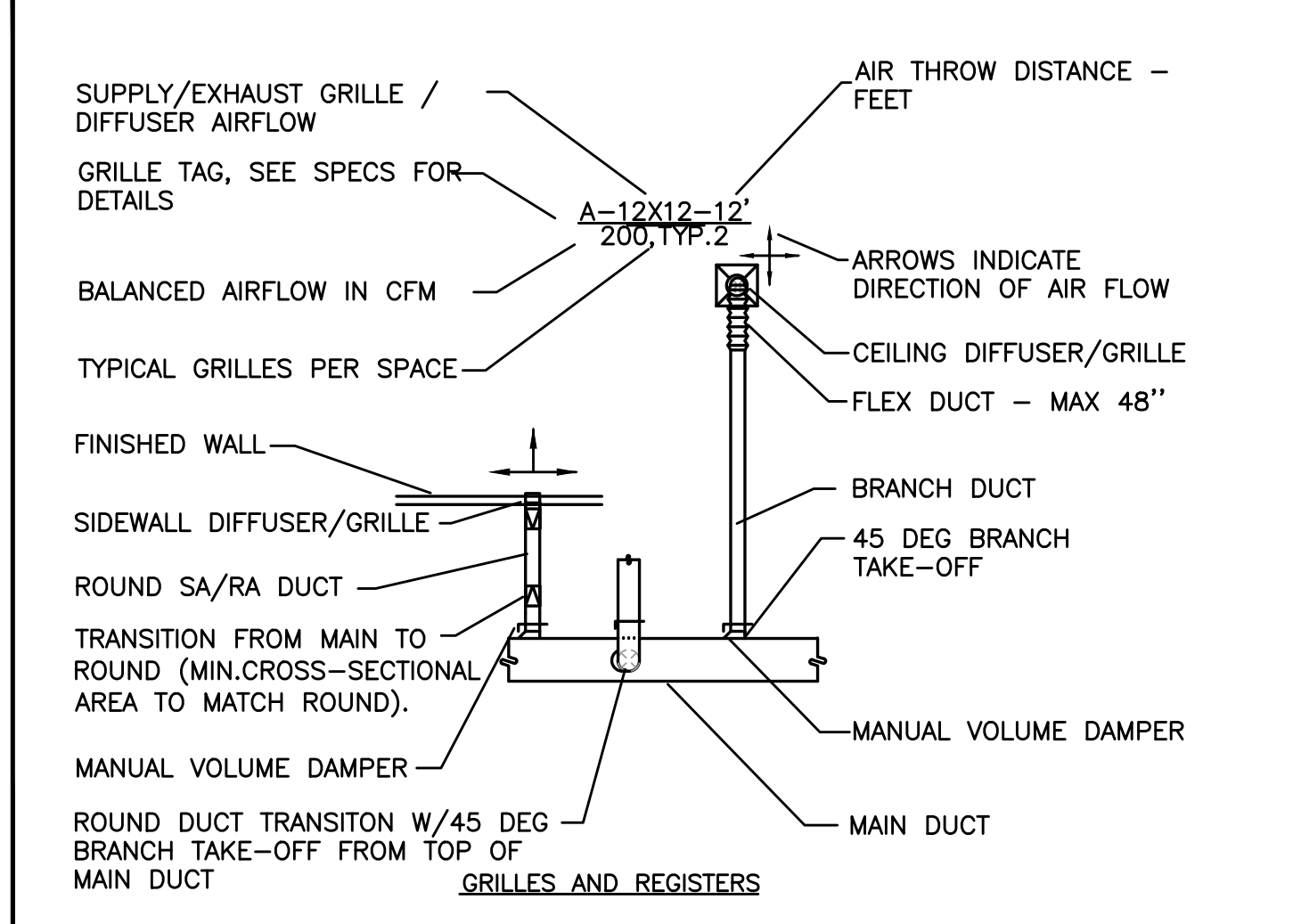
MECHANICAL LEGEND

	SUPPLY AIR DIFFUSER	AF	ABOVE FINISH FLOOR
	RETURN AIR DIFFUSER	AHU	AIR HANDLING UNIT
	EXHAUST AIR DIFFUSER	B.D.	BOTTOM OF DUCT
	DIRECTIONAL AIR FLOW	BHP	BRAKE HORSEPOWER
	MANUAL VOLUME DAMPER	BOG	BOTTOM OF GRILLE
	SUPPLY/OUTSIDE AIR DUCT UP & DOWN	BTU	BRITISH THERMAL UNITS
	RETURN AIR DUCT UP & DOWN	CFM	CUBIC FEET PER MINUTE
	EXHAUST AIR DUCT UP & DOWN	CONN.	CONNECTION
	DEMOLISH	CONT.	CONTINUATION
	EXISTING	CW	DOMESTIC COLD WATER
	CONNECT TO EXISTING	DB	DRY BULB
	THERMOSTAT	DIA.	DIAMETER
	TEMPERATURE SENSOR	DIST.	DISTRIBUTION
	NOTE	EXH	EXHAUST AIR
	EQUIPMENT DESIGNATOR	EDB	ENTERING DRY BULB TEMPERATURE
	GATE VALVE/SHUT-OFF VALVE SEE SPECS	EWB	ENTERING WET BULB TEMPERATURE
	CHECK VALVE	EWT	ENTERING WATER TEMPERATURE
	BALANCING VALVE	FFT	FINISH FLOOR
	FLOW CONTROL/LIMITING VALVE	FIXT.	FIXTURE
	THERMOMETER	F.O.B.	FLAT ON BOTTOM
	DIRECTION OF FLOW	FBM	FEET PER MINUTE
	PUMP	FPS	FEET PER SECOND
	STRAINER W/ DRAIN VALVE	FT.	FEET / FOOT
	PRESSURE GAUGE	GA	GAUGE
	PET'S PLUG	GEHX	GREASE EXHAUST AIR DUCT
	DOUBLE CHECK ASSEMBLY	GPM	GALLONS PER MINUTE
	PRESSURE REDUCING VALVE	H	HEIGHT
	UNION	HP	HORSEPOWER
	2-WAY CONTROL VALVE	I.D.	INSIDE DIAMETER
	3-WAY CONTROL VALVE	IN.	INCHES
	TRIPLE DUTY VALVE	L	LENGTH
	CAP	LBS.	POUNDS
	MOTORIZED DAMPER	LDB	LEAVING DRY BULB
	BALL/SHUT-OFF VALVE(SEE SPECS)	LWB	LEAVING WET BULB
	FIRE DAMPER	LWT	LEAVING WATER TEMPERATURE
	FIRE / SMOKE DAMPER	MA	MAKE UP AIR
	SMOKE DAMPER	MAX.	MAXIMUM
	FAN MOTOR	MBH	THOUSANDS OF BTUs PER HOUR
		MD	MOTORIZED DAMPER
		MIN.	MINIMUM
		MVD	MANUAL VOLUME DAMPER
		NC	NOISE CRITERIA
		N.C.	NORMALLY CLOSED
		N.I.M.	NOT IN MECHANICAL
		NO.	NUMBER
		N.O.	NORMALLY OPEN
		O.A.	OUTSIDE AIR
		P	PERSON
		PSI	POUNDS PER SQUARE INCH
		P/T	PRESSURE / TEMPERATURE
		R.A.	RETURN AIR
		RECT.	RECTANGULAR
		REQ'D	REQUIRED
		S.A.	SUPPLY AIR
		S.P.	STATIC PRESSURE
		SQ.	SQUARE
		TEMP.	TEMPERATURE
		TYP.	TYPICAL
		VAV	VARIABLE AIR VOLUME
		W	WIDTH
		WB	WET BULB
		WPD	WATER PRESSURE DROP
		Ø	DIAMETER
		(E)	EXISTING
		(D)	DEMOLISH
			NEW WORK
		G	NATURAL GAS
		CD	CONDENSATE DRAIN
		RF	(RF) TWO OR THREE REFRIGERANT LINES
		HWS	(HWS) HEATING WATER SUPPLY
		HWR	(HWR) HEATING WATER RETURN
		CHS	(CHWS) CHILLED WATER SUPPLY
		CHR	(CHWR) CHILLED WATER RETURN
			EQUIPMENT MAINTENANCE CLEARANCE AND ACCESS

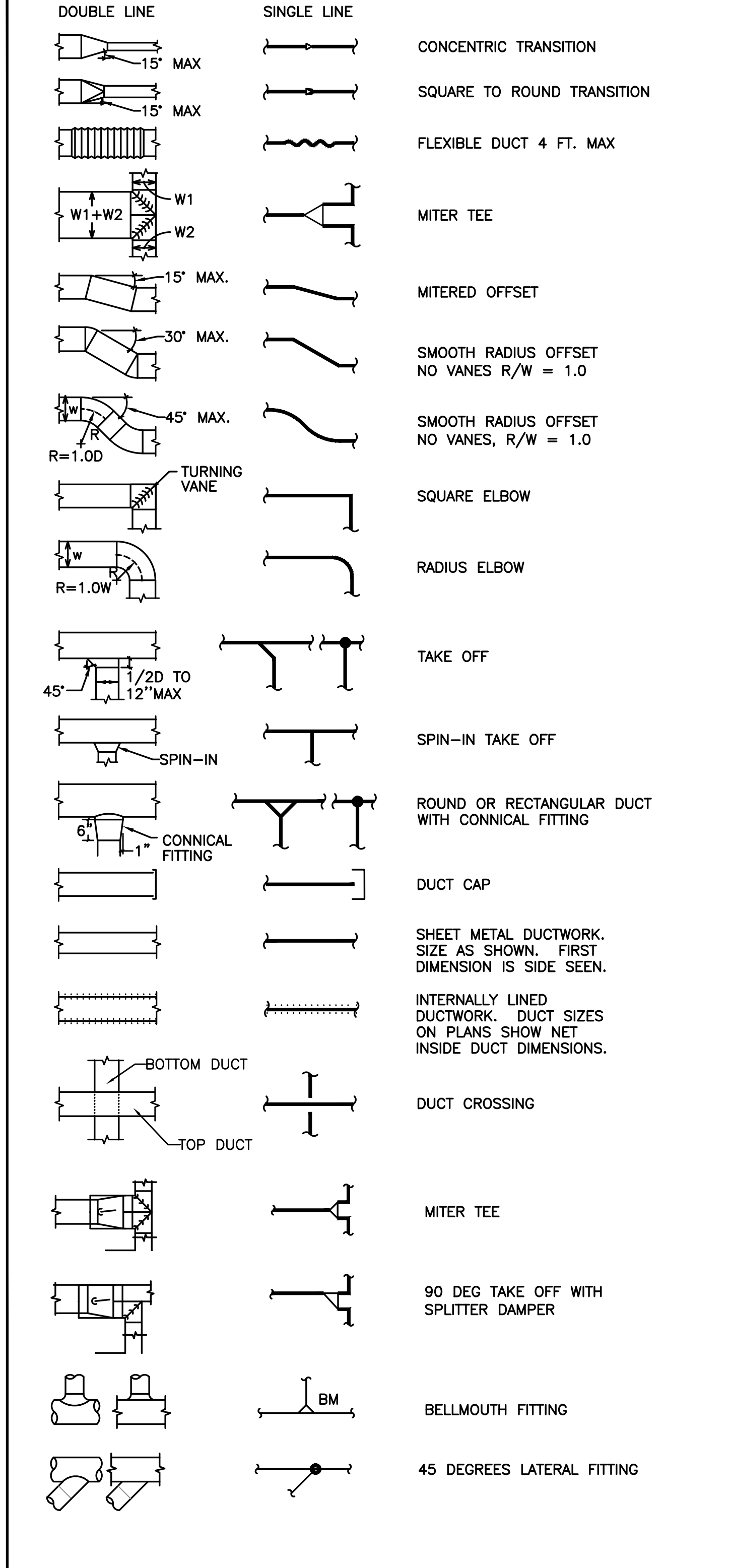
MECHANICAL GENERAL NOTES

- 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 (OEESC)-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 SMAQNA, 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



SYSTEM COMMISSIONING-VERIFICATION AND TESTING REQUIREMENTS:

- ASHRAE 90.1-2019 REQUIREMENTS SECTION 4.2.5 THROUGH 4.2.5.3
- THE OWNER OR GC SHALL PROCURE A COMMISSIONING PROVIDER THAT MEETS ONE OF THE FOLLOWING.
- THE COMMISSIONING PROVIDER SHALL BE:
- A THIRD PARTY ENTITY NOT ASSOCIATED WITH THE BUILDING PROJECT
 - AN OWNER'S QUALIFIED EMPLOYEE.
 - AN INDIVIDUAL ASSOCIATED WITH THE DESIGN FIRM, BUT NOT DIRECTLY ASSOCIATED WITH THE DESIGN OR INSTALLATION OF THE BUILDING SYSTEMS.
- EXCEPTIONS:
- BUILDING IS LESS THAN 10,000 SQ FT
- CONTRACTOR RESPONSIBILITIES
- THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL THE REQUIREMENTS OF ASHRAE 90.1-2019.
 - THE GENERAL CONTRACTOR OR OWNER SHALL HIRE AND UTILIZE AN APPROVED CX AGENT
 - THE CX AGENT SHALL
- PREPARE A CX PLAN
 - OVERSEE THE TAB MEASUREMENTS
 - CONDUCT THE PR-FUNCTIONAL & FUNCTIONAL TESTS
 - PREPARE THE PRELIMINARY CX REPORT
 - REVIEW THE TAB REPORT
 - REVIEW THE O&M'S
 - PREPARE THE SYSTEMS MANUALS
- SYSTEMS REQUIRED TO BE COMMISSIONED
- SERVICE WATER HEATERS
 - MIXING VALVES & RECIRC SYSTEMS
 - ROOFTOP UNIT - HALLWAY VENTILATION
 - SPLIT SYSTEM FAN COILS
 - PTHP'S (SAMPLE SELECTION).
 - DWELLING UNIT EXHAUST FANS (SAMPLE SELECTION).
 - LIGHTING CONTROL SYSTEMS
 - OCCUPANCY SENSORS
 - EMERGENCY POWER SYSTEMS (GENERATOR)
 - THERMOSTAT OPERATIONS AND SET POINTS
 - FIRE PIT 7 BRQ TIMERS AND AUTO-SHUT OFF
 - FIRE PUMP AND DOMESTIC WATER BOOSTER PUMP.

3.2 DUCTWORK INSULATION

- A. 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 3' of duct work connected to a louver or exhaust termination.
- B. 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.
- C. Fittings: Install with wire, straps, and duct adhesive as required. To prevent sagging on all rectangular or square ducts over 24" wide, install Granweld or equal welding pins on the bottom. Maximum spacing 18" on center in both directions.
- D. 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.
- E. 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

MECHANICAL SHEET INDEX

- MA001 TITLE SHEET & MECHANICAL SCHEDULES
- MA002 MECHANICAL SCHEDULES
- MA201 MECH FLOOR PLAN - LEVEL 1
- MA202 MECH FLOOR PLAN - LEVEL 2
- MA203 MECH FLOOR PLAN - LEVEL 3
- MA204 MECH FLOOR PLAN - LEVEL 4
- MA205 MECH FLOOR PLAN - ROOF
- MA601 MECHANICAL DETAILS
- MA602 MECHANICAL DETAILS



Date:	10.25.2023
Proj. No:	10423
Drawn By:	MGA
Chkd By:	MRB
DSGN By:	MRB
Acad File:	10423

VVC BUILDING A APTS
 11385 SW ROYAL SCOT LN
 WILSONVILLE, OR 97070

TITLE SHEET & MECHANICAL SCHEDULES



PERMIT SET

SHEET

MA001



INDOOR UNITS - *							
MARK NUMBER	FC-1 24 MBH	FC-2 36 MBH	FC-3 18 MBH	FC-4 36 MBH	FC-5 36 MBH	FC-6 36 MBH	FC-7 48 MBH
SYSTEM	UNITS 206, 306, 406	FITNESS CENTER 114	POSTAL CENTER - FLEX	POSTAL CENTER 116	POSTAL CENTER 116	CORRIDOR/LOBBY/BIKE	COMMUNITY
TYPE	WALL MOUNTED	DUCTED	WALL MOUNTED	DUCTED	DUCTED	DUCTED	VERT. DUCTED
EFFICIENCY	SEE OUTDOOR UNIT	SEE OUTDOOR UNIT	SEE OUTDOOR UNIT	SEE OUTDOOR UNIT	SEE OUTDOOR UNIT	SEE OUTDOOR UNIT	SEE OUTDOOR UNIT
NOMINAL COOLING CAPACITY	24,000 BTUH	33,000 BTUH	18,000 BTUH	33,000 BTUH	33,000 BTUH	33,000 BTUH	48,000 BTUH
HEATING CAPACITY	24,000 BTUH	33,000 BTUH/10 KW ELECT	18,000 BTUH	33,000 BTUH/10 KW ELECT	33,000 BTUH/10 KW ELECT	33,000 BTUH/10 KW ELECT	48,000 BTUH/15 KW ELECT
TOTAL SUPPLY CFM	719	1150	680	1150	1150	1150	1400
OSA CFM	--	XXX	--	XXX	XXX	XXX	XXX
EXTERNAL SP. (H2O)	0.25	0.25	0.25	0.25	0.25	0.25	0.25
VOLTS/PHASE	--	208/1	208/1	208/1	208/1	208/1	208/1
MCA/MOP	SEE OUTDOOR UNIT	45.5/60 ***	SEE OUTDOOR UNIT	45.5/60 ***	45.5/60 ***	45.5/60 ***	53.8/60 & 22.7/25
WEIGHT	50	135	30	135	135	135	185
BASIS OF DESIGN	CARRIER 40MAHQ24XA3	CARRIER FMC423600AL	CARRIER 40MAQB18B--3	CARRIER FMC423600AL	CARRIER FMC423600AL	CARRIER FMC423600AL	CARRIER FV4CNB005L00
OUTDOOR UNIT	HP-1 3 TON	HP-2 3 TON	HP-3 1.5 TON	HP-4 3 TON	HP-5 3 TON	HP-6 3 TON	HP-7 4 TON

* - PROVIDE ALL UNITS THAT CANNOT BE DRAINED BY GRAVITY WITH CONDENSATE PUMP. ROUTE ALL CONDENSATE LINES HIDDEN WITHIN STRUCTURE TO AN APPROVED LOCATION PROVIDED BY THE PLUMBER.
 ** - 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.
 *** - ELECTRIC HEAT MODEL NUMBER EHK3-10B, 10KW 240V ELECTRIC HEAT WITH CIRCUIT BREAKER. ACCESS PANEL FOR INDOOR UNIT, MODEL # KFAGP0201COV.

OUTDOOR UNITS - SPLIT SYSTEM HEAT PUMP							
MARK NUMBER	HP-1 2 TON	HP-2 3 TON	HP-3 1.5 TON	HP-4 3 TON	HP-5 3 TON	HP-6 3 TON	HP-7 4 TON
SYSTEM	UNITS 206, 306, 406	FITNESS CENTER 114	POSTAL CENTER - FLEX	POSTAL CENTER 116	POSTAL CENTER 116	CORRIDOR/LOBBY/BIKE	COMMUNITY
TYPE	1-PORT HEAT PUMP	1-PORT HEAT PUMP	1-PORT HEAT PUMP	1-PORT HEAT PUMP	1-PORT HEAT PUMP	1-PORT HEAT PUMP	1-PORT HEAT PUMP
NORMAL COOLING CAPACITY	24,000 BTUH	36,000 BTUH	18,000 BTUH	36,000 BTUH	36,000 BTUH	36,000 BTUH	48,000 BTUH
NORMAL HEATING CAPACITY	24,000 BTUH	36,000 BTUH	18,000 BTUH	36,000 BTUH	36,000 BTUH	36,000 BTUH	48,000 BTUH
EFFICIENCY SEER/EER	21.5/13	14.0/11.0	19/12.5	14.0/11.0	14.0/11.0	14.0/11.0	14.5/12
EFFICIENCY HSPF/COP	12/3.4	8.5/3.85	13/3.81	8.5/3.85	8.5/3.85	8.5/3.85	8.5/3.82
REFRIGERANT	410 A	410 A	410 A	410 A	410 A	410 A	410 A
REFRIGERANT CHARGE	X LBS	X LBS	X LBS	X LBS	X LBS	X LBS	X LBS
MAX OPERATING TEMPS	115/5	115/5	115/5	115/5	115/5	115/5	115/5
MAX PIPING LENGTH	164 FT	200 FT	98 FT	200 FT	200 FT	200 FT	98 FT
MAX PIPING HEIGHT	82 FT	80 FT	62 FT	80 FT	80 FT	80 FT	65 FT
VOLTS-PHASE - **	208/230-1 PHASE	208/230-3 PHASE	208/230-1 PHASE	208/230-3 PHASE	208/230-3 PHASE	208/230-3 PHASE	208/230-3 PHASE
MCA/MOP - **	25/35 AMPS	11.7/20.0 AMPS	16/25 AMPS	11.7/20.0 AMPS	11.7/20.0 AMPS	11.7/20.0 AMPS	14.5/25.0 AMPS
COMPRESSOR	VARIABLE SPEED	CONSTANT SPEED	VARIABLE SPEED	CONSTANT SPEED	CONSTANT SPEED	CONSTANT SPEED	CONSTANT SPEED
WEIGHT	150 LBS	227 LBS	100 LBS	227 LBS	227 LBS	227 LBS	250 LBS
BASIS OF DESIGN	CARRIER 38MARBQ24AA3	CARRIER 25HCE436AP05	CARRIER 38MARBQ18AA3	CARRIER 25HCE436AP05	CARRIER 25HCE436AP05	CARRIER 25HCE436AP05	CARRIER 25HCE448AP05

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EXHAUST FANS

MARK NUMBER	EF 1	EF 2	EF 3	EF 4	EF 5	TF 1
TYPE	CEILING CABINET	CEILING CABINET	CEILING CABINET	CEILING CABINET	ROOF DIRECT DRIVE	CEILING DIRECT DRIVE
SYSTEM	BATHROOM	RESTROOM	JANITOR	BIKE STORAGE	TRASH/RECYCLE	CORRIDOR
CFM	30/80	110	100	300	200	300
TOTAL SP. (IN H2O)	0.20	0.125	0.125	0.125	0.125	0.125
RPM	1062/1146	1190	1250	2500	740	2500
TIP SPEED (FPM)	NA	--	--	--	--	--
MOTOR WATTS OR HP	5/11.7 W	47.3 W	100 W	135 W	127 W	135 W
CONTROLLED BY	**	LIGHTS	LIGHTS	HUMIDISTAT	T-STAT	CONTINUOUS
INTERLOCK WITH	MOTION SENSOR	NONE	NONE	NONE	NONE	NONE
FAN SPEED CONTROLLER	YES	NO	NO	YES	YES	YES
WHEEL TYPE	BI	FC	FC	BI	BI	BI
BACK DRAFT DAMPER	YES	GRAVITY	GRAVITY	GRAVITY	GRAVITY	GRAVITY
ISOLATION	RUBBER	RUBBER	RUBBER	RUBBER	RUBBER	RUBBER
DESIGN WEIGHT (LBS)	25	25	25	25	23	25
MAX. SONES	0.3/0.6	3.0	1.5	4.5	1.7	4.5
MAX AMPS - ***	0.27	0.40	1.3	1.34	1.8	1.34
POWER (VOLTS/PHASE/HZ) - ***	120/1/60	120/60/1	120/60/1	120/60/1	120/60/1	120/60/1
BASIS OF DESIGN:	PANASONIC * PV-05-11VKSLS2	BROAN A110	BROAN L100	GREENHECK SP-A390	BROAN L200	GREENHECK SP-A390

** - FAN TO RUN AT LOW SPEED CONTINUOUSLY, AND INCREASE TO HIGH SPEED UPON ACTIVATION OF THE MOTION SENSOR.
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VENTILATION AIR SCHEDULE - FC-2

ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/P)	OUTSIDE AIR REQUIREMENT (CFM/SQ. FT.)	OUTSIDE AIR REQUIRED (CFM)	ZONE OSA (CFM)	SUPPLY AIR (CFM)	PRIMARY OSA FRACTION	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency	Corrected OSA CFM	AIR SYSTEMS
COMMUNITY ROOM 102	869	30	27	5	0.06	187	0.8	234	0.19	966	0	1.00	234.93	FC-2
TOTAL	869	30	27	5	0.06	187	0.8	234	0.19	966	0	1.00	234	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE														
234 CFM Corrected OSA Fraction Zs = 0.19														

ROOFTOP HVAC UNITS

MARK NUMBER	RTU-1 3 TON
SYSTEM	CORRIDORS
TYPE	C.V.
DISCHARGE	VERT
TOTAL CFM	1200
ECONOMIZER	NONE-100% OSA
MIN. OSA	1200
MAX OSA (FULL OCCUPANCY)	NA
CO2 CONTROL	NA
EXTERNAL SP. (H2O)	0.75
TOTAL SP. (H2O)	---
RPM	1771
WHEEL TYPE/ SIZE	F.C. --- (DIRECT)
MOTOR HP.	0.41 BHP
POWER EXH FAN/ACCESSORY	NONE
MIN FILTER SIZE	2-16X25
FILTER TYPE	2"- 30%
HEATING	
GAS INPUT/OUTPUT (MBH)	110 / 88
EFF. (AFUE)	80.0%
STAGES/TYPE	2-S.S. HIGH HEAT
COOLING	
TOTAL CLG. (TONS)	3.0
SENSIBLE CLG. (MBH)	35.98
ENT. EVAP AIR TEMP (DB/WB.)	90/67
LVG. EVAP AIR TEMP (DB/WB.)	55/54
AMBIENT AIR (°F)	95
EER/EER	14 SEER
REFRIGERANT	410A
REFRIGERANT CHARGE	XX
DESIGN WEIGHT (LBS.)	550
SMOKE DETECTOR (SUPPLY DUCT)	YES
SPRING ISOLATION ROOF CURB	YES
CONVENIENCE OUTLET - ALWAYS POWERED	NO
VOLTAGE/PHASE - ***	208/3
MCA/MOP - ***	20/30 AMPS
BASIS OF DESIGN - CARRIER MODEL	48FCRA04A2A5

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ELECTRIC DUCT HEATER

MARK NUMBER	SE 1
SIZE (KW)	1.44 KW
CFM	200
DUCT SIZE	8"
STEPS	2
MCA	12.6
POWER (VOLTS/PHASE) *	120/1
BASIS OF DESIGN: HOTPOD	HPB

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TERMINAL HEAT PUMP UNIT

MARK NUMBER	THP-1 15 MBH
TYPE	THRU-THE-WALL HEAT PUMP
SYSTEM	DWELLING UNITS
NOMINAL COOLING CAPACITY (BTUH)	14400
HEATING CAPACITY (BTUH)	13400
ELECTRIC HEATING CAPACITY (KW)	3.4
CFM (HI/LOW)	449/290
MIN OSA (CFM)	44
HTG. LVG. AIR TEMP (°F)	90°F
REMOTE THERMOSTAT	YES
EFFICIENCY (EER)	10.6
EFFICIENCY (COP)	3.3
WALL SLEEVE OPENING SIZE	VERIFY IN FIELD
VOLTAGE/PH	208/1
MCA/MOCP	20/20
DESIGN WT. (LBS)	110
BASIS OF DESIGN: GE	AZ65H15DAB

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VENTILATION AIR SCHEDULE - SF-1

ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/P)	OUTSIDE AIR REQUIREMENT (CFM/SQ. FT.)	OUTSIDE AIR REQUIRED (CFM)	ZONE OSA (CFM)	SUPPLY AIR (CFM)	PRIMARY OSA FRACTION	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency	Corrected OSA CFM	AIR SYSTEMS
POSTAL CENTER - FLEX	260	15	4	7.5	0.12	61	0.8	77	100	0.77	0	1.00	76.50	SF-1
TOTAL	260	15	4	7.5	0.12	61	0.8	77	100	0.77	0	1.00	77	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE														
77 CFM Corrected OSA Fraction Zs = 0.77														

VENTILATION AIR SCHEDULE - FC-4&5

ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/P)	OUTSIDE AIR REQUIREMENT (CFM/SQ. FT.)	OUTSIDE AIR REQUIRED (CFM)	ZONE OSA (CFM)	SUPPLY AIR (CFM)	PRIMARY OSA FRACTION	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency	Corrected OSA CFM	AIR SYSTEMS
POSTAL CENTER 116	1772	15	27	7.5	0.12	415	0.8	519	2400	0.22	1881	0	518.93	FC-4&5
TOTAL	1772	15	27	7.5	0.12	415	0.8	519	2400	0.22	1881	0	519	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE														
519 CFM Corrected OSA Fraction Zs = 0.22														

VENTILATION AIR SCHEDULE - FC-6

ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/P)	OUTSIDE AIR REQUIREMENT (CFM/SQ. FT.)	OUTSIDE AIR REQUIRED (CFM)	ZONE OSA (CFM)	SUPPLY AIR (CFM)	PRIMARY OSA FRACTION	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency	Corrected OSA CFM	AIR SYSTEMS
CORRIDOR C101	350	0	0	0	0.06	21	0.8	26	320	0.08	0	1.09	43.55	FC-6
LOBBY 101	904	0	0	0	0.06	54	0.8	68	680	0.10	855	0	112.48	FC-6
BIKE ROOM 103	761	0	0	0	0.12	91	0.8	114	200	0.57	0	0.60	189.38	FC-6
TOTAL	2015	0	0	0	0.06	167	0.8	208	1200	0.22	855	200	345	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE														
345 CFM Corrected OSA Fraction Zs = 0.29														

VENTILATION AIR SCHEDULE - FC-7

ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/P)	OUTSIDE AIR REQUIREMENT (CFM/SQ. FT.)	OUTSIDE AIR REQUIRED (CFM)	ZONE OSA (CFM)	SUPPLY AIR (CFM)	PRIMARY OSA FRACTION	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency	Corrected OSA CFM	AIR SYSTEMS
FITNESS CENTER 114	1016	10	11	20	0.06	281	0.8	351	1600	0.22	1249	0	351.20	FC-7
TOTAL	1016	10	11	20	0.06	281	0.8	351	1600	0.22	1249	0	351	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE														
351 CFM Corrected OSA Fraction Zs = 0.22														

VVC BUILDING A APTS
 11385 SW ROYAL SCOT LN
 WILSONVILLE, OR 97070

MECHANICAL SCHEDULES



PERMIT SET

SHEET

MA002

Date:	10.25.2022	Proj No:	10422
Drawn By:	MGA	Checked By:	MRB
Design By:	MRB	Acc'd File:	10422

VVC BUILDING A APTS
 11385 SW ROYAL SCOT LN
 WILSONVILLE, OR 97070

BLDG A - MECH PLAN - LEVEL 1



PERMIT SET

SHEET

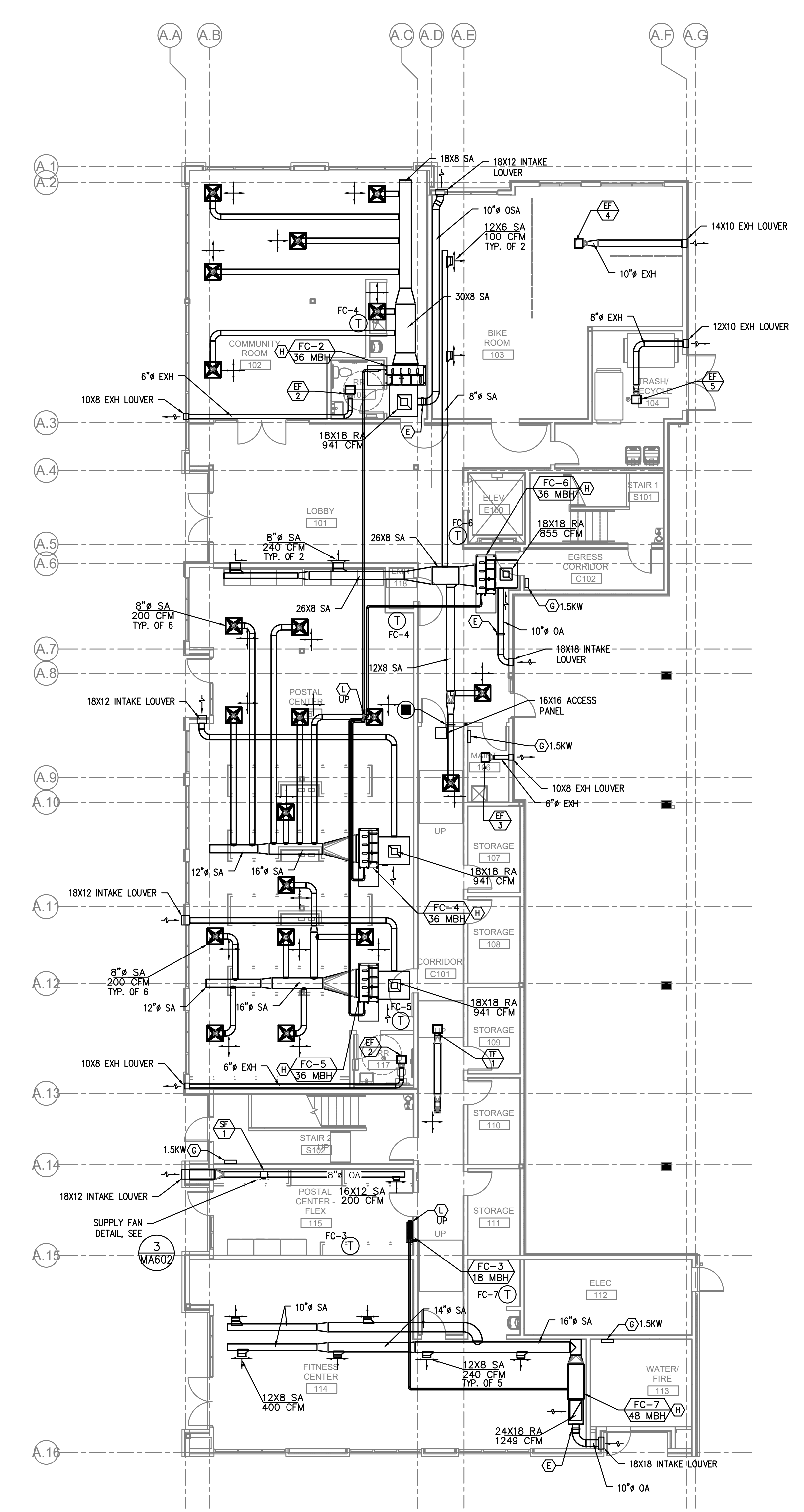
MA201

KEY NOTES:

- (A) — SUPPLY DUCT FROM RTU, SEE BELOW
- (B) — SUPPLY AIR OR RETURN GRILLE, SIZED FOR BOTH FREE AREA AND FOR ACTUATOR ACCESS, SEE [4] FOR GRILLE INSTALLATION, AND SEE [6] FOR TYPICAL F/S INSTALLATION, AND CONTROLS. [MA601]
- (C) — PANASONIC WHISPERGREEN CEILING FAN WITH 4" DUCT TO ROOF OR EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO FAN, FAN TO OPERATE AT LOW SPEED CONTINUOUS (30 CFM) AND INCREASE TO 80 CFM WHEN BUILT-IN MOTION SENSOR IS ACTIVATED. INSULATED FINAL 5' OF DUCTWORK. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. SEE [5] [MA602] [EF 1]
- (D) — 4" DRYER EXHAUST TO EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. DRYER DUCT MATERIAL SHALL HAVE A SMOOTH INTERIOR FINISH, BE CONSTRUCTED OF 26 GA SHEET METAL, SUPPORTED AT 4 FOOT INTERVALS. RIVET OR SCREW PENETRATIONS THROUGH THE DUCT WALL ARE NOT ACCEPTABLE. IDENTIFY TOTAL EQUIVALENT LENGTH OF DRYER VENT WITH PERMANENT LABEL WITHIN 6FT OF DRYER CONNECTION. CLEAN-OUT TO BE PROVIDED FOR ALL VERTICAL RISERS. SEE [3] [MA601]
- (E) — X" OUTSIDE AIR TO FAN COIL, PROVIDE WITH 2-POSITION DAMPER TO OPEN WHENEVER FAN COIL OPERATES. DAMPER TO BE A LOW LEAK CLASS 1 DAMPER.
- (F) — 6" HOOD DUCT TO EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO HOOD. INSULATED FINAL 5' OF DUCTWORK. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. HOOD FAN TO OPERATE INTERMITTENTLY.
- (G) — X KW WALL(SEE PLANS) HEATER QMARK AWH4404F OR EQUAL. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY.
- (H) — DUCTED FAN COIL DETAIL, SEE [1] [MA601]
- (I) — EXTERIOR EXHAUST — SEE [2] MAINTAIN 36" CLEAR TO OPERABLE WINDOWS AND DOORS. [MA602]
- (J) — FIRE PENETRATION DETAILS, SEE [6] [MA602]
- (K) — PTHP (PACKAGED TERMINAL HEAT PUMP) WITH FACTORY WALL SLEEVE. CONDENSATE DRAIN KIT, AND 42X16 ALUMINUM ARCHITECTURAL GRILLE AT EXTERIOR. INSTALL GRAVITY CONDENSATE DRAIN KIT, PLUMBING CONTRACTOR TO MAKE CONNECTION AT DRAIN KIT AND CONTINUE DRAIN LINE TO AN APPROVED LOCATION. SEE [5] [MA601]
- (L) — REFRIGERANT LINE SETS FROM CONDENSING UNITS ON ROOF TO FAN COILS ON ALL FLOORS.
- (M) — 3/4" CONDENSATE TO WASHER BOX, ROUTED THROUGH JOISTS. COORDINATE WITH PLUMBER FOR WASHER BOX WITH FUNNEL FITTING.

FLOOR	SUPPLY AIR	CFM	RETURN AIR	CFM	UNIT
ATTIC	20 X 20	1200			RTU-1
4TH	20 X 20	1200			RTU-1
3RD	20 X 16	800			RTU-1
2ND	20 X 16	400			RTU-1

VENTILATION CALCULATIONS:
 DWELLING UNIT ARE VENTILATED BY NATURAL VENTILATION.
 HALLWAYS ARE VENTILATED BY RTU'S SIZED TO EXCEED THE MINIMUM 0.06 CFM/SQ FT REQUIREMENT.
 SEE VENTILATION SCHEDULES FOR OTHER UNITS.



1 BLDG A - MECH PLAN - LEVEL 1
 MA201 1/8" = 1'-0"



Date:	10.25.2022
Proj. No:	10422
Drawn By:	MGA
Chkd By:	MRB
DSGN By:	MRB
Acad File:	10422

VVC BUILDING A APTS
 11385 SW ROYAL SCOT LN
 WILSONVILLE, OR 97070

BLDG A - MECH PLAN - LEVEL 2



PERMIT SET

SHEET

MA202

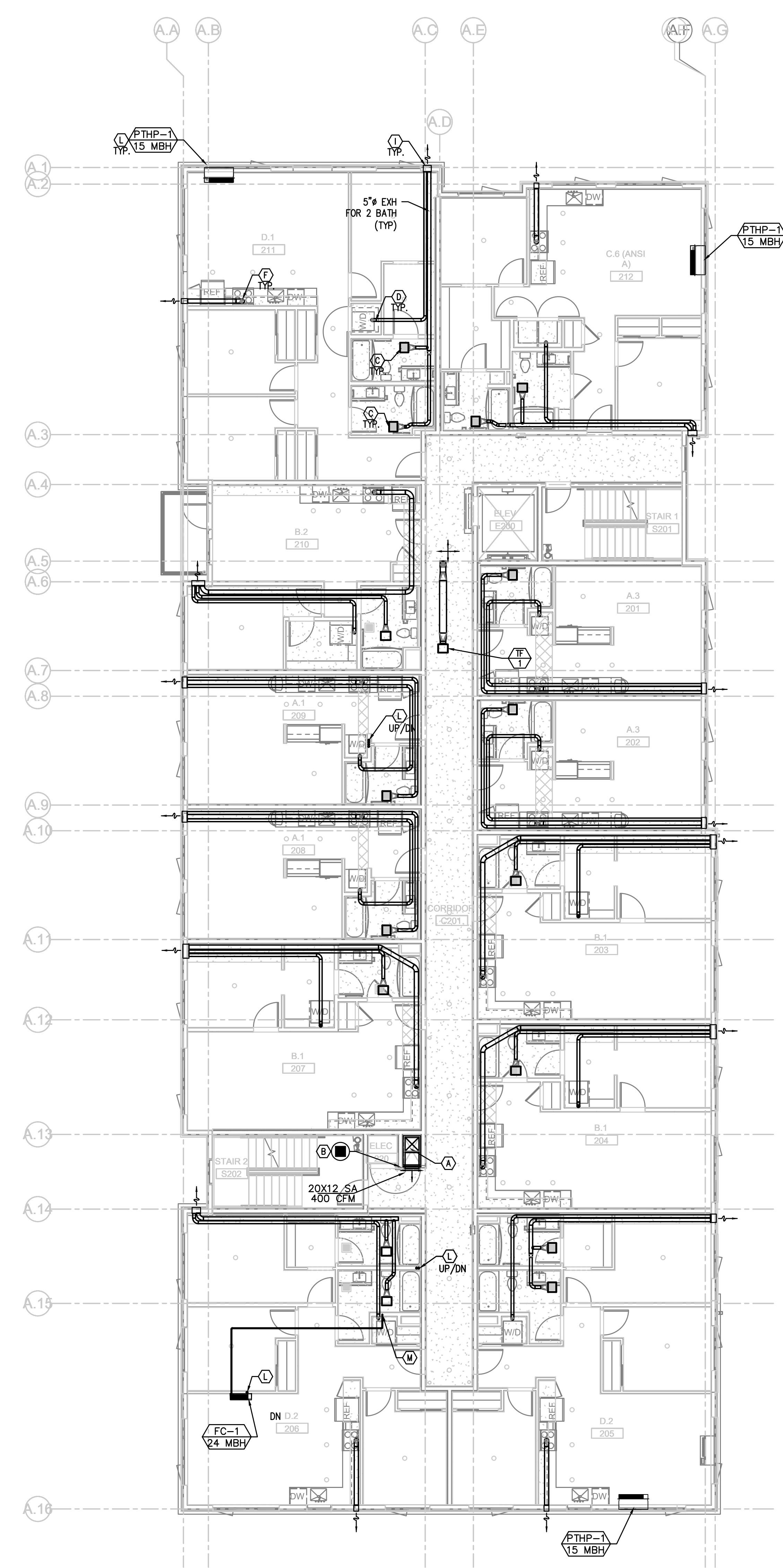
KEY NOTES:

- (A) — SUPPLY DUCT FROM RTU, SEE BELOW
- (B) — SUPPLY AIR OR RETURN GRILLE, SIZED FOR BOTH FREE AREA AND FOR ACTUATOR ACCESS, SEE 4 MA601 FOR GRILLE INSTALLATION, AND SEE 6 MA601 FOR TYPICAL F/S INSTALLATION, AND CONTROLS.
- (C) — PANASONIC WHISPERGREEN CEILING FAN WITH 4" DUCT TO ROOF OR EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO FAN, FAN TO OPERATE AT LOW SPEED CONTINUOUS (30 CFM) AND INCREASE TO 80 CFM WHEN BUILT-IN MOTION SENSOR IS ACTIVATED. INSULATED FINAL 5' OF DUCTWORK. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. SEE 5 MA602 EF 1
- (D) — 4" DRYER EXHAUST TO EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. DRYER DUCT MATERIAL SHALL HAVE A SMOOTH INTERIOR FINISH, BE CONSTRUCTED OF 26 GA SHEET METAL, SUPPORTED AT 4 FOOT INTERVALS. RIVET OR SCREW PENETRATIONS THROUGH THE DUCT WALL ARE NOT ACCEPTABLE. IDENTIFY TOTAL EQUIVALENT LENGTH OF DRYER VENT WITH PERMANENT LABEL WITHIN 6FT OF DRYER CONNECTION. CLEAN-OUT TO BE PROVIDED FOR ALL VERTICAL RISERS. SEE 3 MA601
- (E) — X" OUTSIDE AIR TO FAN COIL, PROVIDE WITH 2-POSITION DAMPER TO OPEN WHENEVER FAN COIL OPERATES. DAMPER TO BE A LOW LEAK CLASS 1 DAMPER.
- (F) — 6" HOOD DUCT TO EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO HOOD. INSULATED FINAL 5' OF DUCTWORK. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. HOOD FAN TO OPERATE INTERMITTENTLY.
- (G) — X KW WALL(SEE PLANS) HEATER QMARK AWH4404F OR EQUAL. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY.
- (H) — DUCTED FAN COIL DETAIL, SEE 1 MA601
- (I) — EXTERIOR EXHAUST — SEE 2 MA602 MAINTAIN 36" CLEAR TO OPERABLE WINDOWS AND DOORS.
- (J) — FIRE PENETRATION DETAILS, SEE 6 MA602
- (K) — PTHP (PACKAGED TERMINAL HEAT PUMP) WITH FACTORY WALL SLEEVE, CONDENSATE DRAIN KIT, AND 42X16 ALUMINUM ARCHITECTURAL GRILLE AT EXTERIOR. INSTALL GRAVITY CONDENSATE DRAIN KIT, PLUMBING CONTRACTOR TO MAKE CONNECTION AT DRAIN KIT AND CONTINUE DRAIN LINE TO AN APPROVED LOCATION. SEE 5 MA601
- (L) — REFRIGERANT LINE SETS FROM CONDENSING UNITS ON ROOF TO FAN COILS ON ALL FLOORS.
- (M) — 3/4" CONDENSATE TO WASHER BOX, ROUTED THROUGH JOISTS. COORDINATE WITH PLUMBER FOR WASHER BOX WITH FUNNEL FITTING.

SHAFT DUCT SIZES

FLOOR	SUPPLY AIR	CFM	RETURN AIR	CFM	UNIT
ATTIC	20 X 20	1200			RTU-1
4TH	20 X 20	1200			RTU-1
3RD	20 X 16	800			RTU-1
2ND	20 X 16	400			RTU-1

VENTILATION CALCULATIONS:
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 SEE VENTILATION SCHEDULES FOR OTHER UNITS.



1 BLDG A — MECH PLAN — LEVEL 2
 MA202 1/8" = 1'-0"

Date:	10.25.2023
Proj No:	10423
Drawn By:	MGA
Chkd By:	MRB
DSGN By:	MRB
Acad File:	10423

VVC BUILDING A APTS
 11385 SW ROYAL SCOT LN
 WILSONVILLE, OR 97070

BLDG A - MECH PLAN - LEVEL 3



PERMIT SET

SHEET

MA203

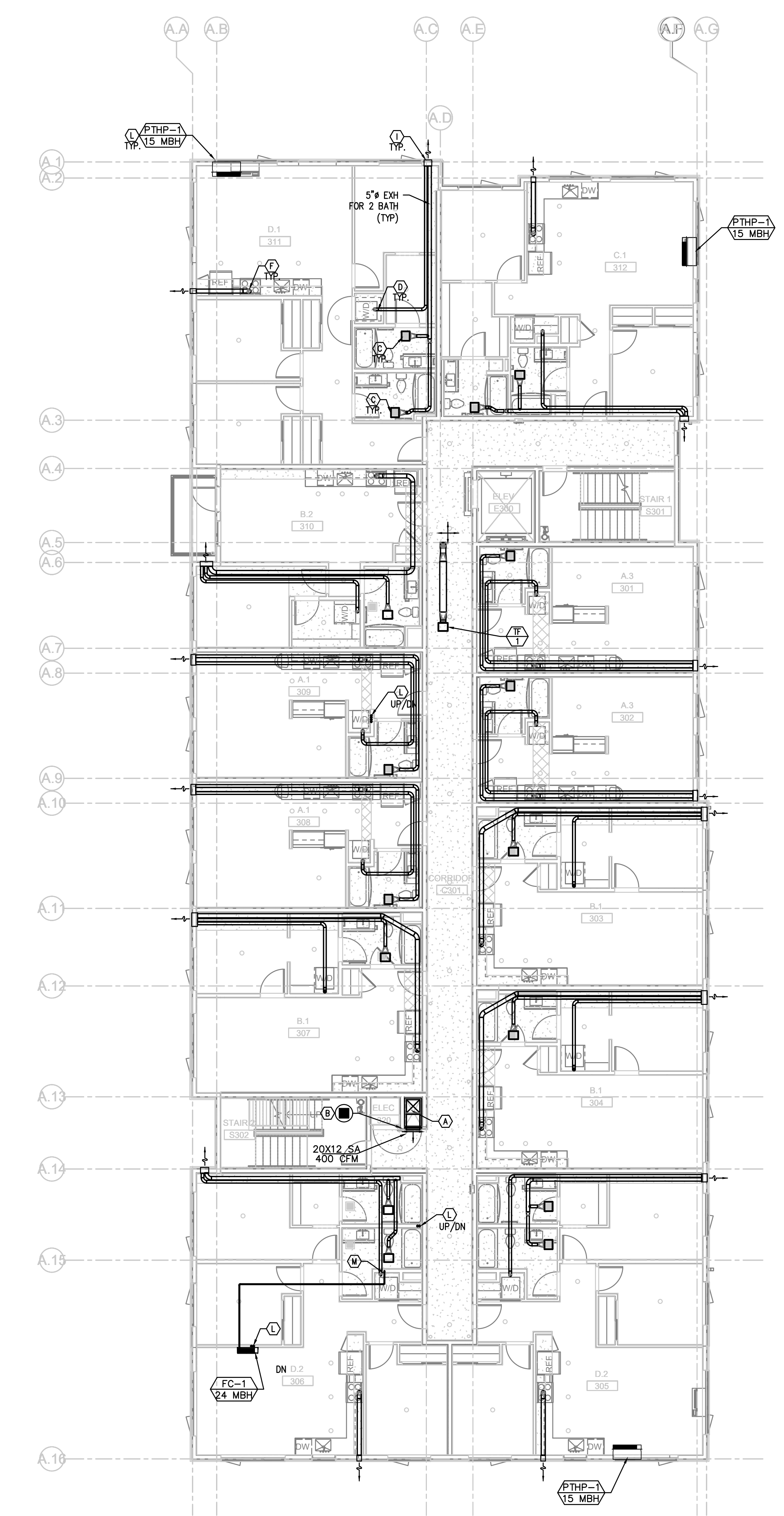
KEY NOTES:

- (A) — SUPPLY DUCT FROM RTU, SEE BELOW
- (B) — SUPPLY AIR OR RETURN GRILLE, SIZED FOR BOTH FREE AREA AND FOR ACTUATOR ACCESS, SEE 4 FOR GRILLE INSTALLATION, AND SEE 6 FOR TYPICAL F/S INSTALLATION, AND CONTROLS.
- (C) — PANASONIC WHISPERGREEN CEILING FAN WITH 4" DUCT TO ROOF OR EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO FAN, FAN TO OPERATE AT LOW SPEED CONTINUOUS (30 CFM) AND INCREASE TO 80 CFM WHEN BUILT-IN MOTION SENSOR IS ACTIVATED. INSULATED FINAL 5' OF DUCTWORK. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. SEE 5 AND 1.
- (D) — 4" DRYER EXHAUST TO EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. DRYER DUCT MATERIAL SHALL HAVE A SMOOTH INTERIOR FINISH, BE CONSTRUCTED OF 26 GA SHEET METAL, SUPPORTED AT 4 FOOT INTERVALS. RIVET OR SCREW PENETRATIONS THROUGH THE DUCT WALL ARE NOT ACCEPTABLE. IDENTIFY TOTAL EQUIVALENT LENGTH OF DRYER VENT WITH PERMANENT LABEL WITHIN 6FT OF DRYER CONNECTION. CLEAN-OUT TO BE PROVIDED FOR ALL VERTICAL RISERS. SEE 3.
- (E) — X" OUTSIDE AIR TO FAN COIL, PROVIDE WITH 2-POSITION DAMPER TO OPEN WHENEVER FAN COIL OPERATES. DAMPER TO BE A LOW LEAK CLASS 1 DAMPER.
- (F) — 6" HOOD DUCT TO EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO HOOD. INSULATED FINAL 5' OF DUCTWORK. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. HOOD FAN TO OPERATE INTERMITTENTLY.
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- (H) — DUCTED FAN COIL DETAIL, SEE 1.
- (I) — EXTERIOR EXHAUST — SEE 2 MAINTAIN 36" CLEAR TO OPERABLE WINDOWS AND DOORS.
- (J) — FIRE PENETRATION DETAILS, SEE 6.
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- (L) — REFRIGERANT LINE SETS FROM CONDENSING UNITS ON ROOF TO FAN COILS ON ALL FLOORS.
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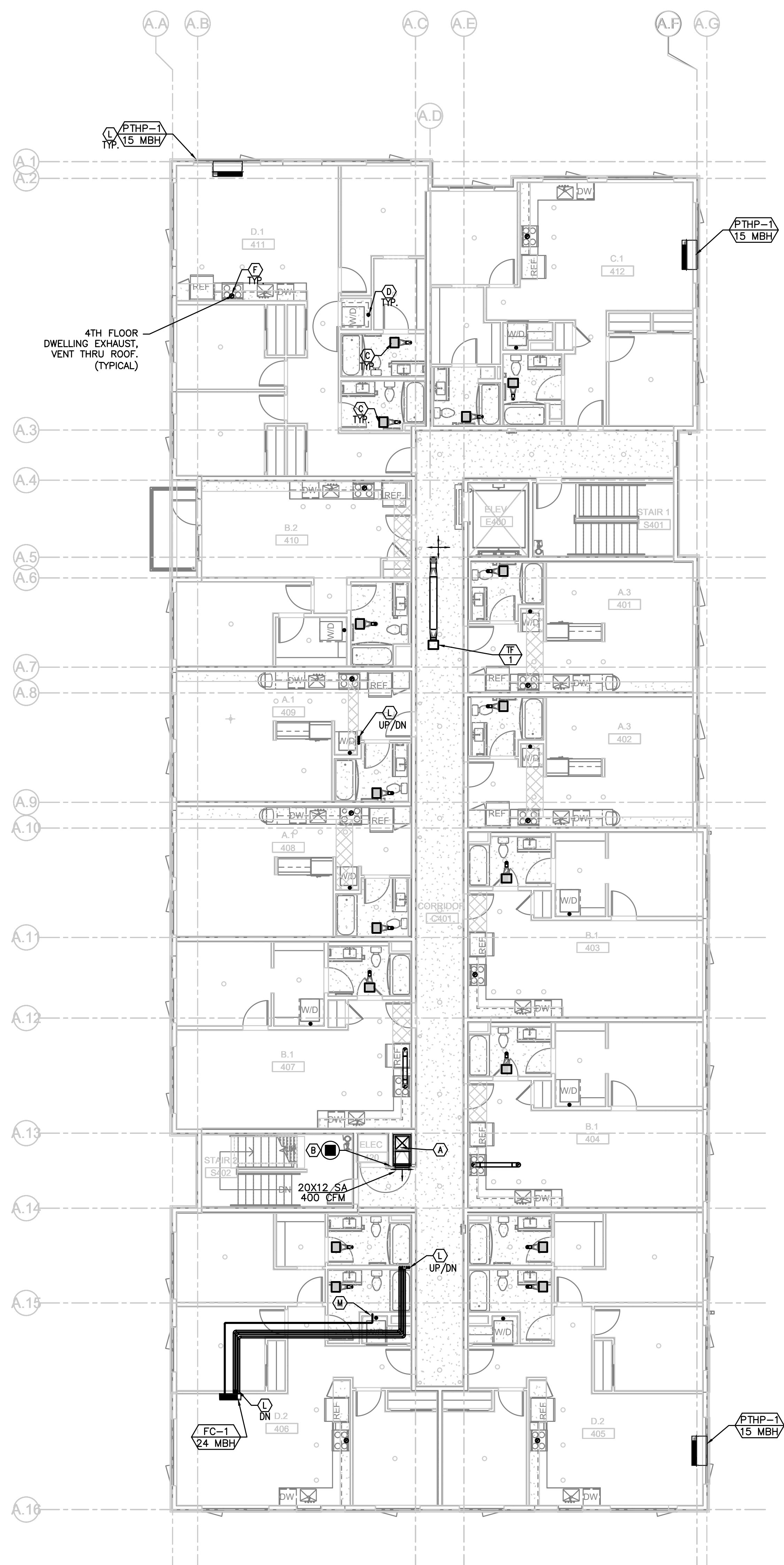
SHAFT DUCT SIZES

FLOOR	SUPPLY AIR	CFM	RETURN AIR	CFM	UNIT
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4TH	20 X 20	1200			RTU-1
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 SEE VENTILATION SCHEDULES FOR OTHER UNITS.



1 BLDG A — MECH PLAN — LEVEL 3
 MA203 1/8" = 1'-0"



KEY NOTES:

- (A) - SUPPLY DUCT FROM RTU, SEE BELOW
(B) - SUPPLY AIR OR RETURN GRILLE, SIZED FOR BOTH FREE AREA AND FOR ACTUATOR ACCESS, SEE...
(C) - PANASONIC WHISPERGREEN CEILING FAN WITH 4" DUCT TO ROOF OR EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED.
(D) - 4" DRYER EXHAUST TO EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED.
(E) - X" OUTSIDE AIR TO FAN COIL, PROVIDE WITH 2-POSITION DAMPER TO OPEN WHENEVER FAN COIL OPERATES.
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(H) - DUCTED FAN COIL DETAIL, SEE...
(I) - EXTERIOR EXHAUST - SEE... MAINTAIN 36" CLEAR TO OPERABLE WINDOWS AND DOORS.
(J) - FIRE PENETRATION DETAILS, SEE...
(K) - PTHP (PACKAGED TERMINAL HEAT PUMP) WITH FACTORY WALL SLEEVE, CONDENSATE DRAIN KIT, AND 42X16 ALUMINUM ARCHITECTURAL GRILLE AT EXTERIOR.
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SHAFT DUCT SIZES table with columns: FLOOR, SUPPLY AIR, CFM, RETURN AIR, CFM, UNIT. Rows include ATTIC, 4TH, 3RD, and 2ND floors.

VENTILATION CALCULATIONS: DWELLING UNIT ARE VENTILATED BY NATURAL VENTILATION. HALLWAYS ARE VENTILATED BY RTU'S SIZED TO EXCEED THE MINIMUM 0.06 CFM/SQ FT REQUIREMENT. SEE VENTILATION SCHEDULES FOR OTHER UNITS.

Project information table with columns: Date, Proj No, Drawn By, Chkd By, DSGN By, Acct File. Values include 10.25.2022, 10422, MGA, MRD, MGA, 10422.

VVC BUILDING A APTS
11385 SW ROYAL SCOT LN
WILSONVILLE, OR 97070
BLDG A - MECH PLAN - LEVEL 4



PERMIT SET

SHEET
MA204

1 BLDG A - MECH PLAN - LEVEL 4
MA204 1/8" = 1'-0"



Date:	10.25.2022
Proj. No:	10422
Drawn By:	MGA
Chkd By:	MRB
DSGN By:	MRB
Acad File:	10422

VVC BUILDING A APTS
 11385 SW ROYAL SCOT LN
 WILSONVILLE, OR 97070

BLDG A - MECH PLAN - ROOF



PERMIT SET

SHEET

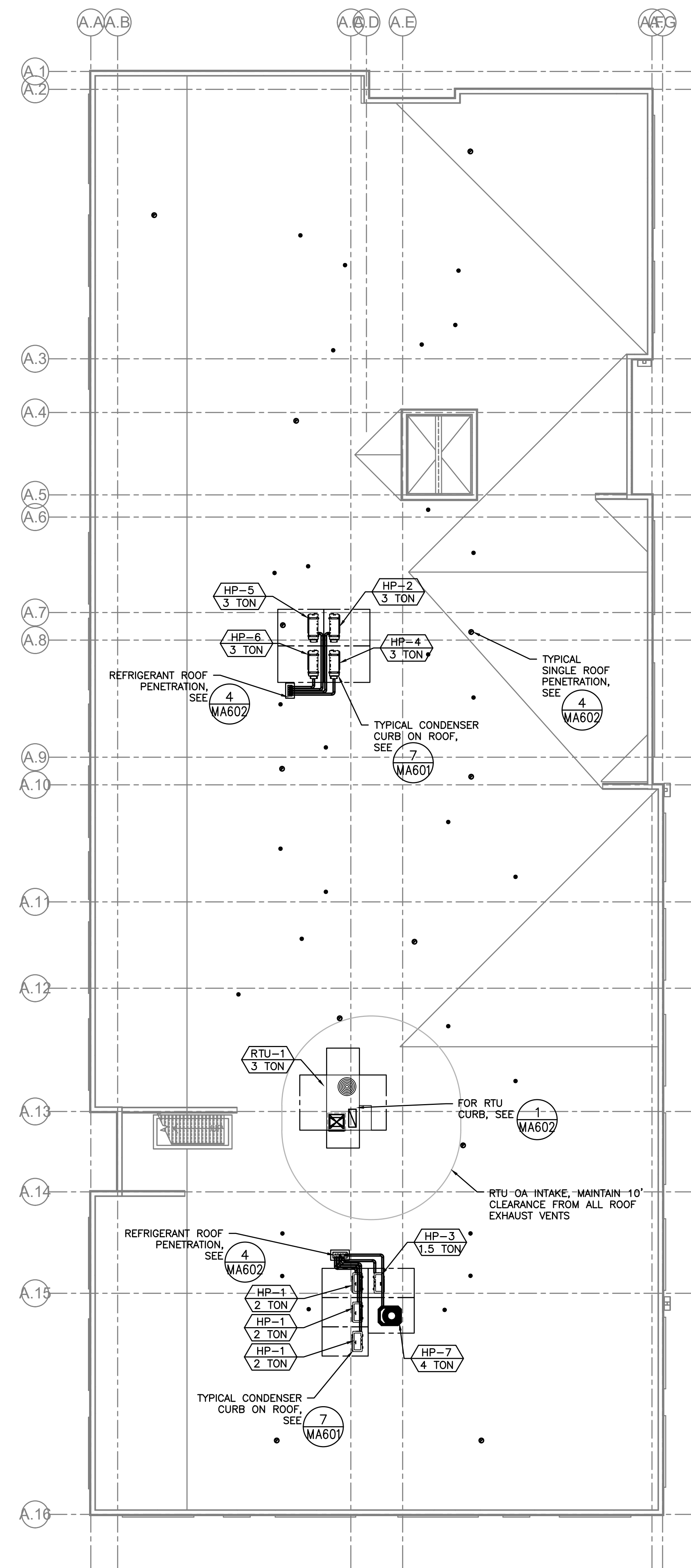
MA205

KEY NOTES:

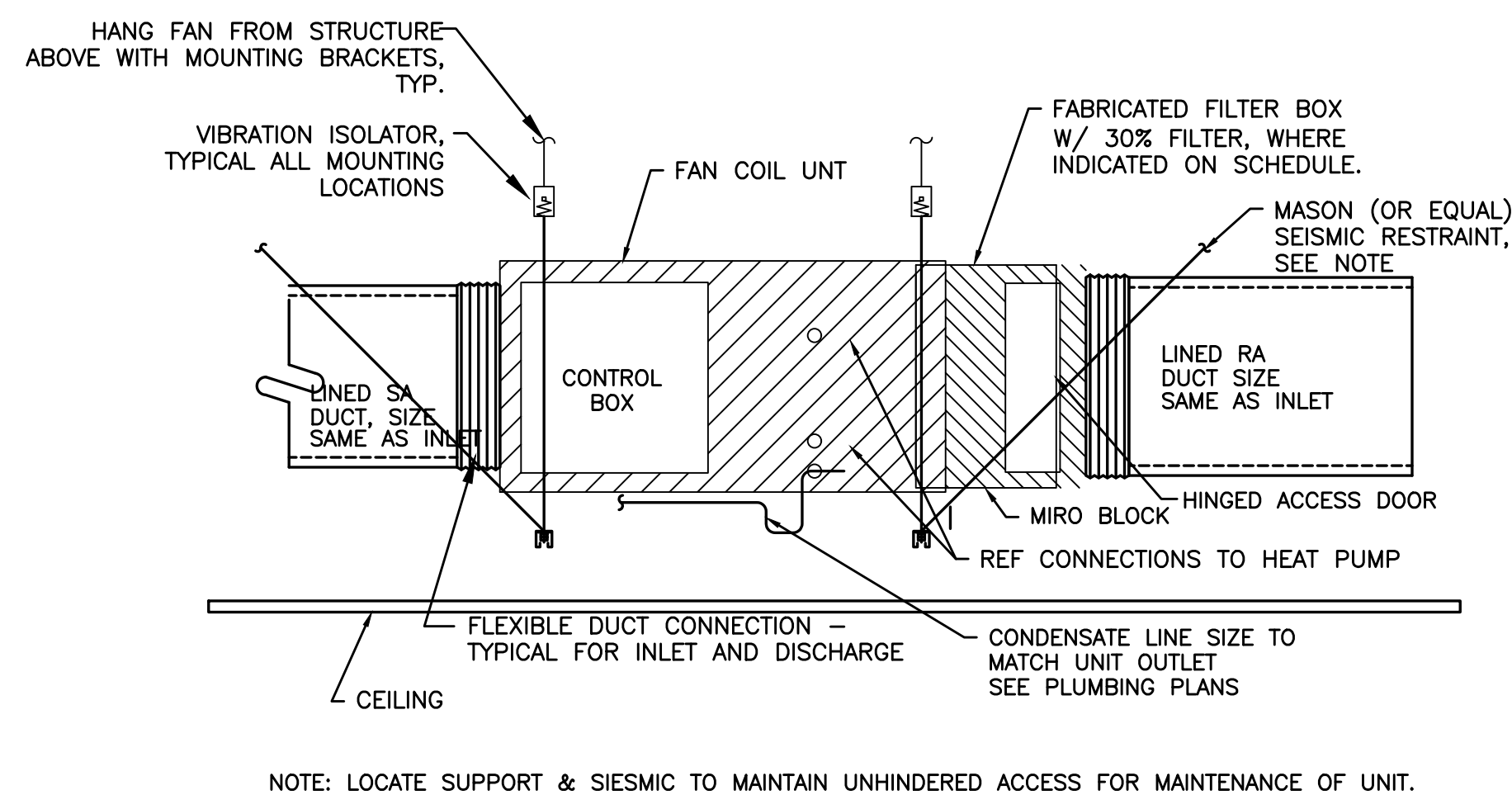
- (A) — SUPPLY DUCT FROM RTU, SEE BELOW
- (B) — SUPPLY AIR OR RETURN GRILLE, SIZED FOR BOTH FREE AREA AND FOR ACTUATOR ACCESS, SEE (4) FOR GRILLE INSTALLATION, AND SEE (6) FOR TYPICAL F/S INSTALLATION, AND CONTROLS.
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- (E) — X" OUTSIDE AIR TO FAN COIL, PROVIDE WITH 2-POSITION DAMPER TO OPEN WHENEVER FAN COIL OPERATES. DAMPER TO BE A LOW LEAK CLASS 1 DAMPER.
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- (G) — X KW WALL(SEE PLANS) HEATER QMARK AWH4404F OR EQUAL. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY.
- (H) — DUCTED FAN COIL DETAIL, SEE (1) (MA601)
- (I) — EXTERIOR EXHAUST — SEE (2) MAINTAIN 36" CLEAR TO OPERABLE WINDOWS AND DOORS.
- (J) — FIRE PENETRATION DETAILS, SEE (6) (MA602)
- (K) — PTHP (PACKAGED TERMINAL HEAT PUMP) WITH FACTORY WALL SLEEVE, CONDENSATE DRAIN KIT, AND 42X16 ALUMINUM ARCHITECTURAL GRILLE AT EXTERIOR. INSTALL GRAVITY CONDENSATE DRAIN KIT, PLUMBING CONTRACTOR TO MAKE CONNECTION AT DRAIN KIT AND CONTINUE DRAIN LINE TO AN APPROVED LOCATION. SEE (5) (MA601)
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- (M) — 3/4" CONDENSATE TO WASHER BOX, ROUTED THROUGH JOISTS. COORDINATE WITH PLUMBER FOR WASHER BOX WITH FUNNEL FITTING.

FLOOR	SUPPLY AIR	CFM	RETURN AIR	CFM	UNIT
ATTIC	20 X 20	1200			RTU-1
4TH	20 X 20	1200			RTU-1
3RD	20 X 16	800			RTU-1
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VENTILATION CALCULATIONS:
 DWELLING UNIT ARE VENTILATED BY NATURAL VENTILATION.
 HALLWAYS ARE VENTILATED BY RTU'S SIZED TO EXCEED THE MINIMUM 0.06 CFM/SQ FT REQUIREMENT.
 SEE VENTILATION SCHEDULES FOR OTHER UNITS.

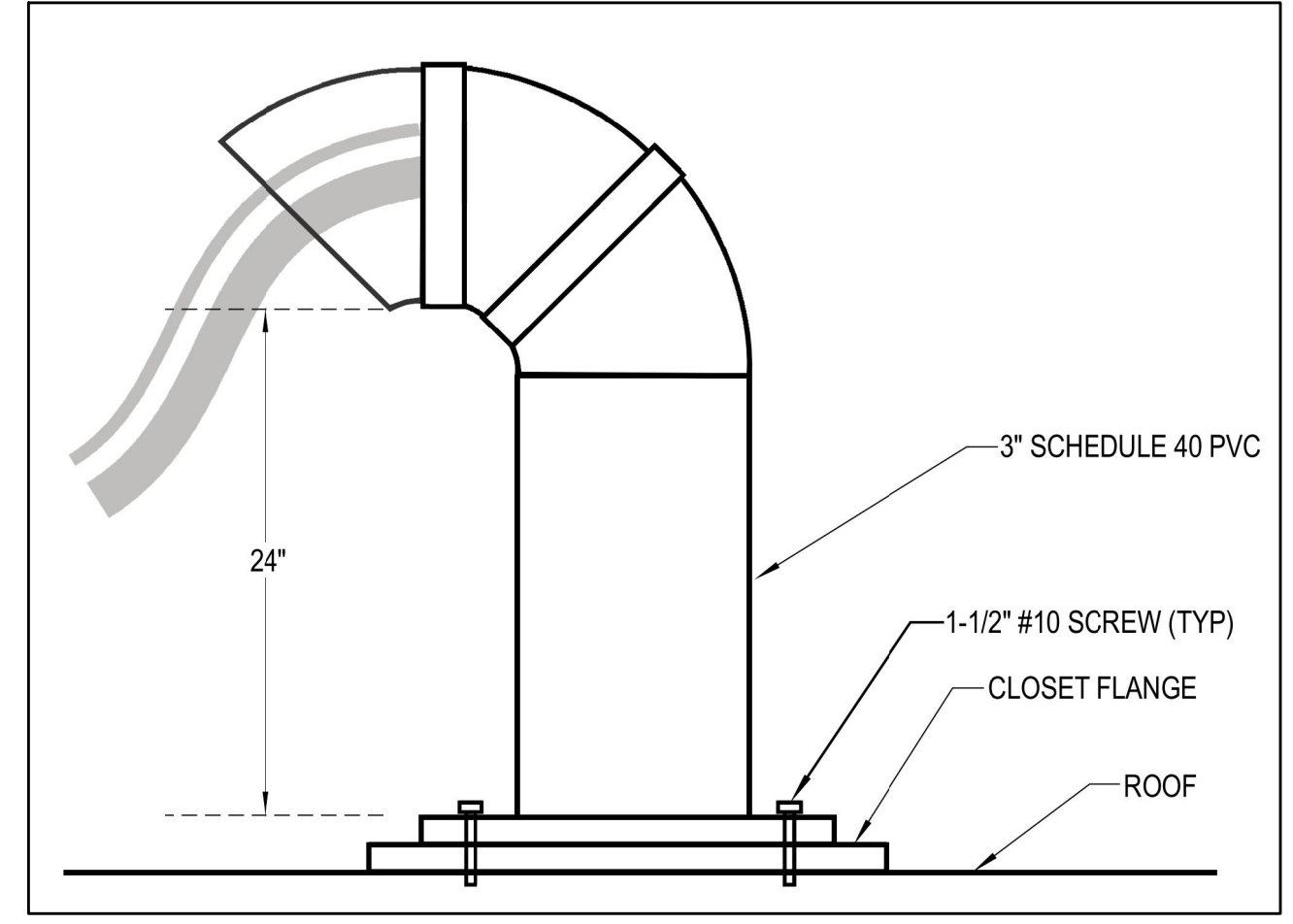


1 BLDG A — MECH PLAN — ROOF
 MA205 1/8" = 1'-0"

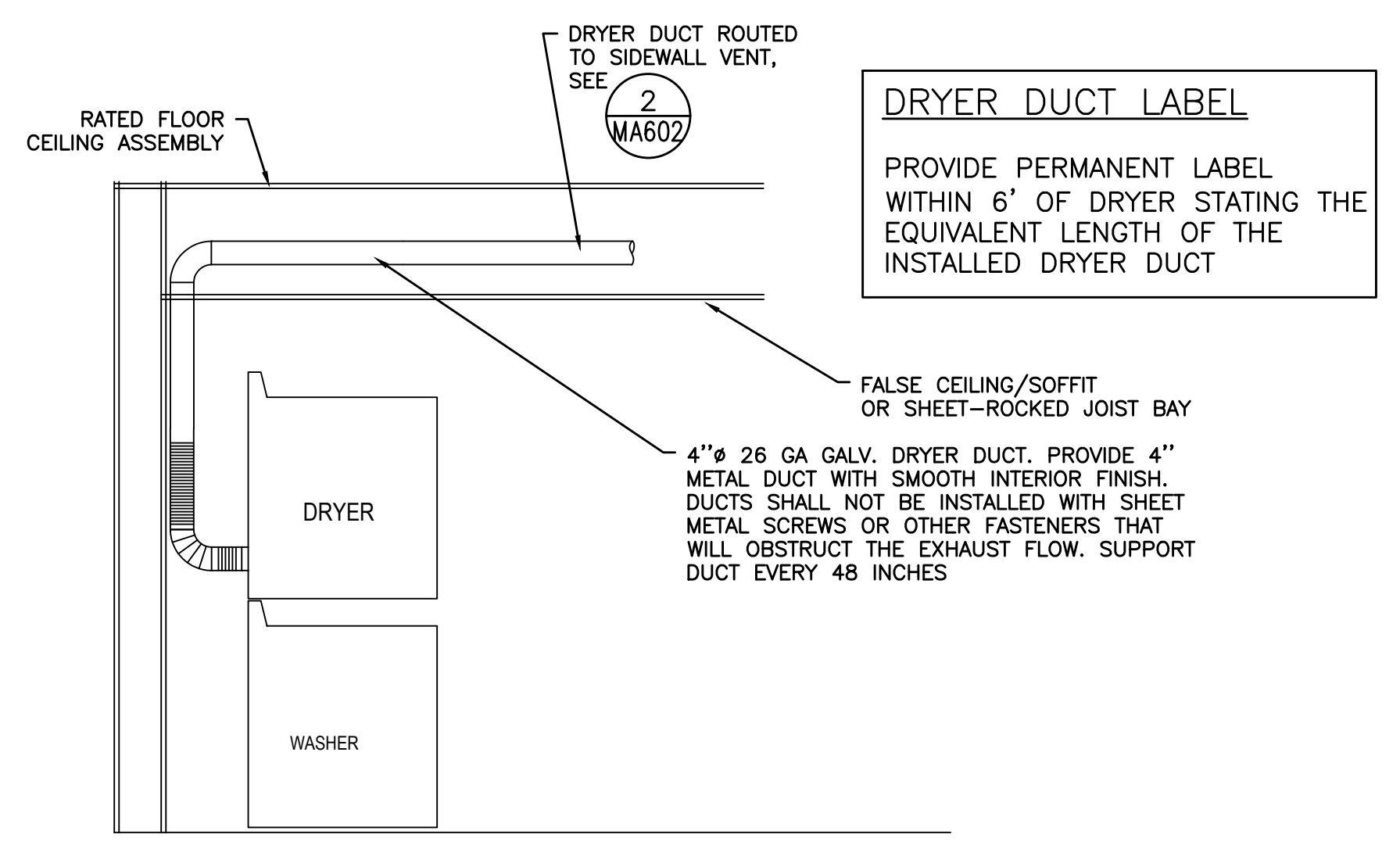
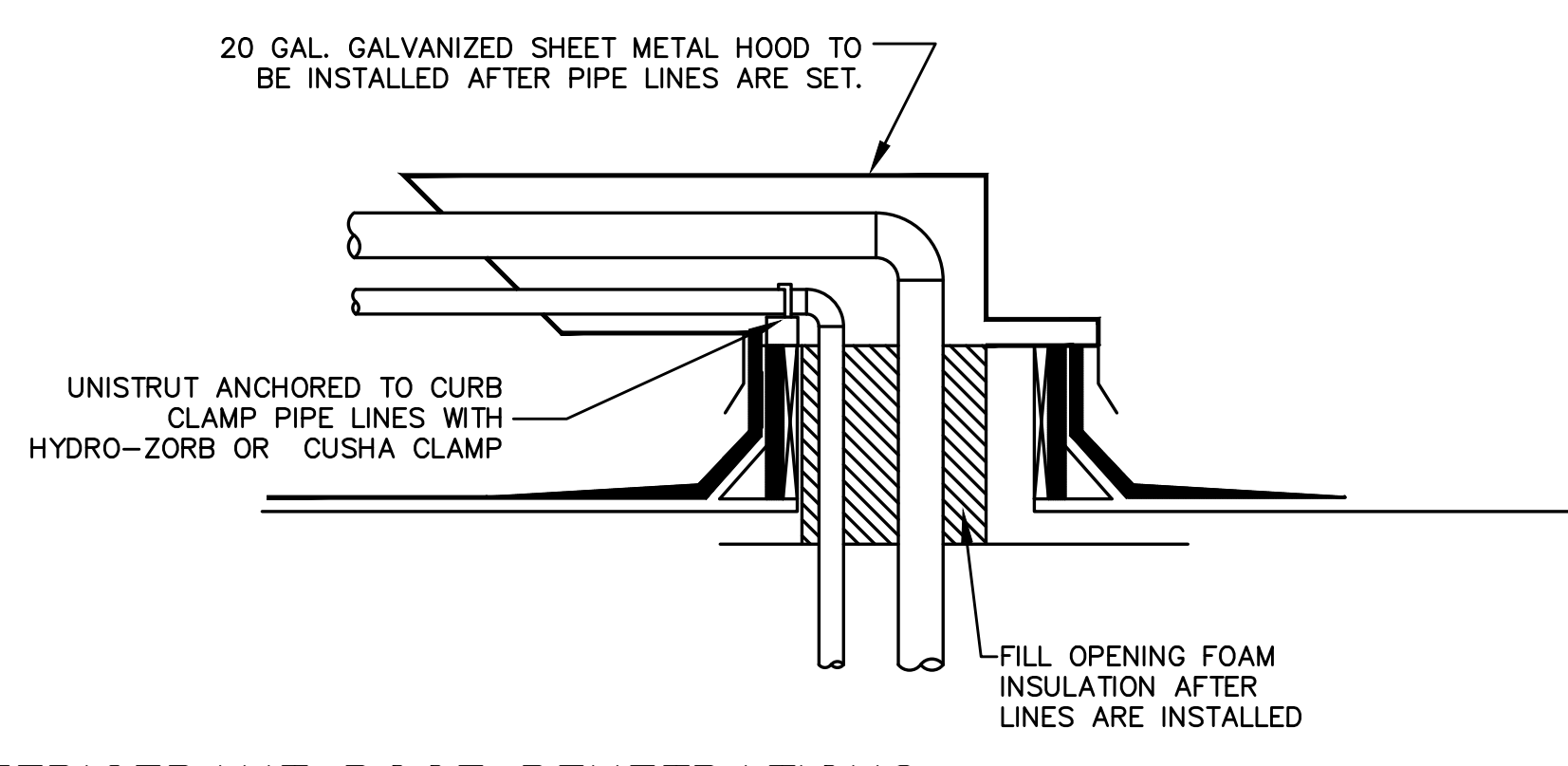


NOTE: LOCATE SUPPORT & SIESMIC TO MAINTAIN UNHINDERED ACCESS FOR MAINTENANCE OF UNIT.

1 DUCTED FAN COIL
SCALE: DETAIL
MA601

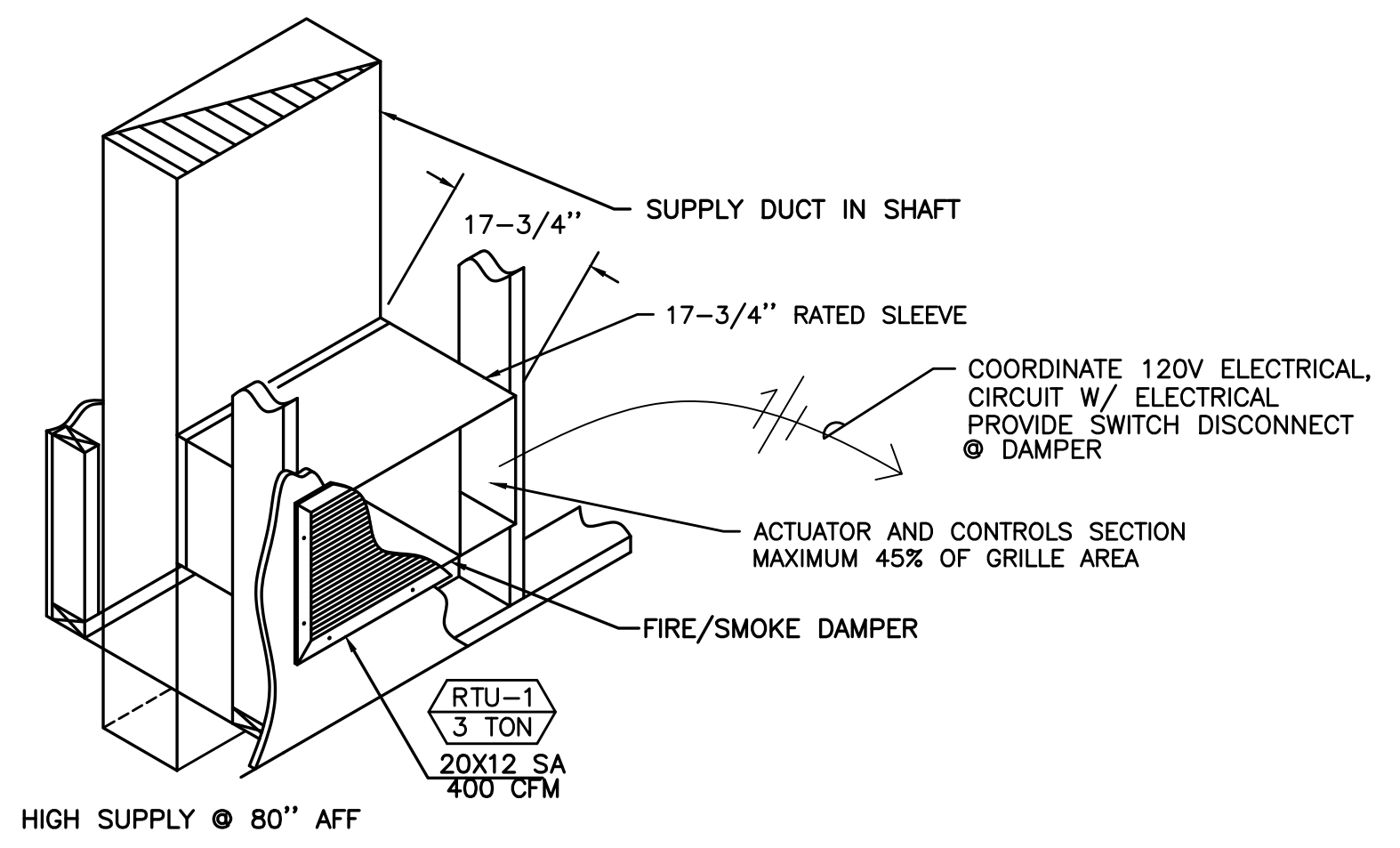


2 REFRIGERANT ROOF PENETRATIONS
SCALE: DETAIL
MA601

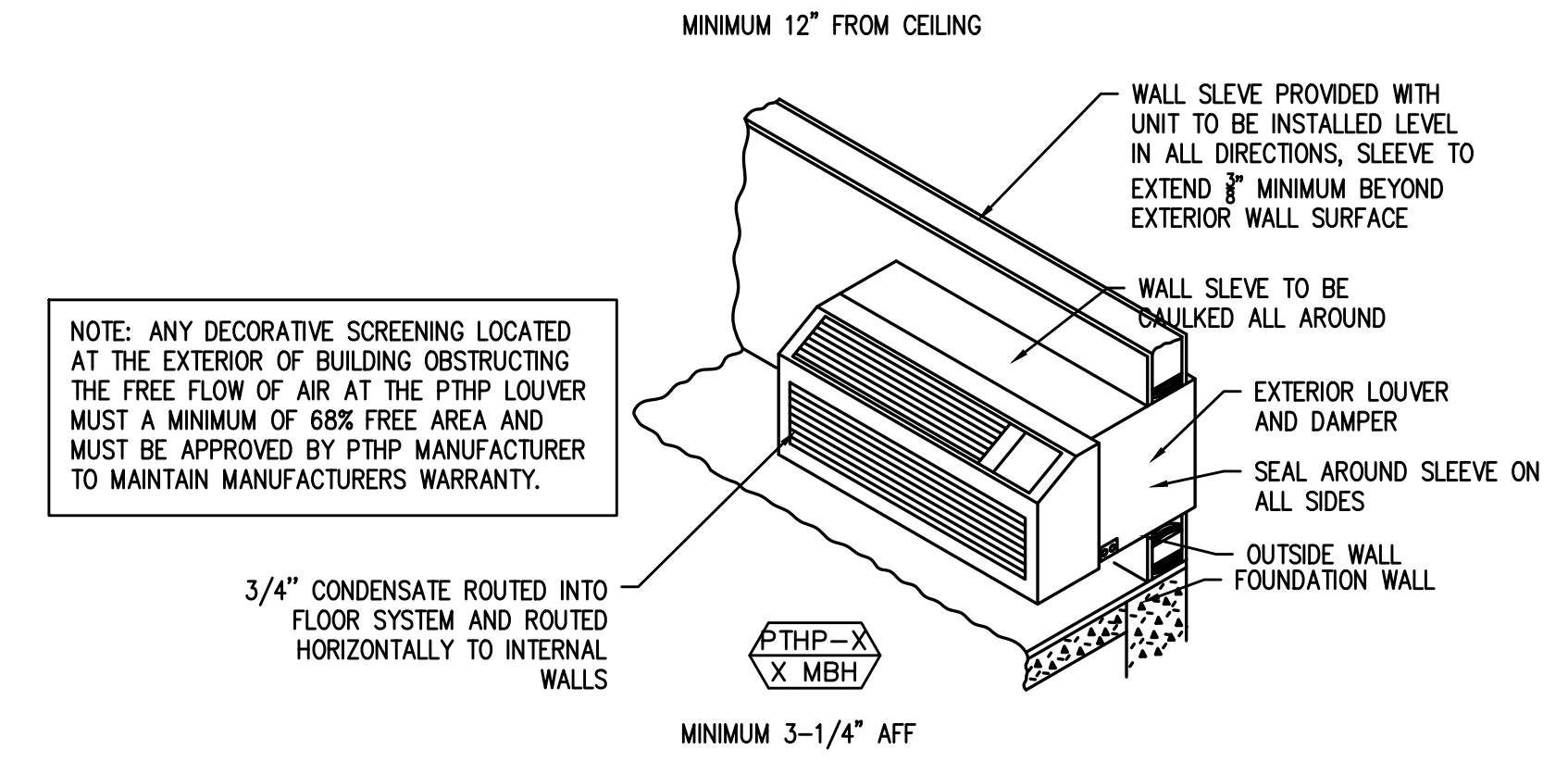


DRYER DUCT LABEL
PROVIDE PERMANENT LABEL WITHIN 6" OF DRYER STATING THE EQUIVALENT LENGTH OF THE INSTALLED DRYER DUCT

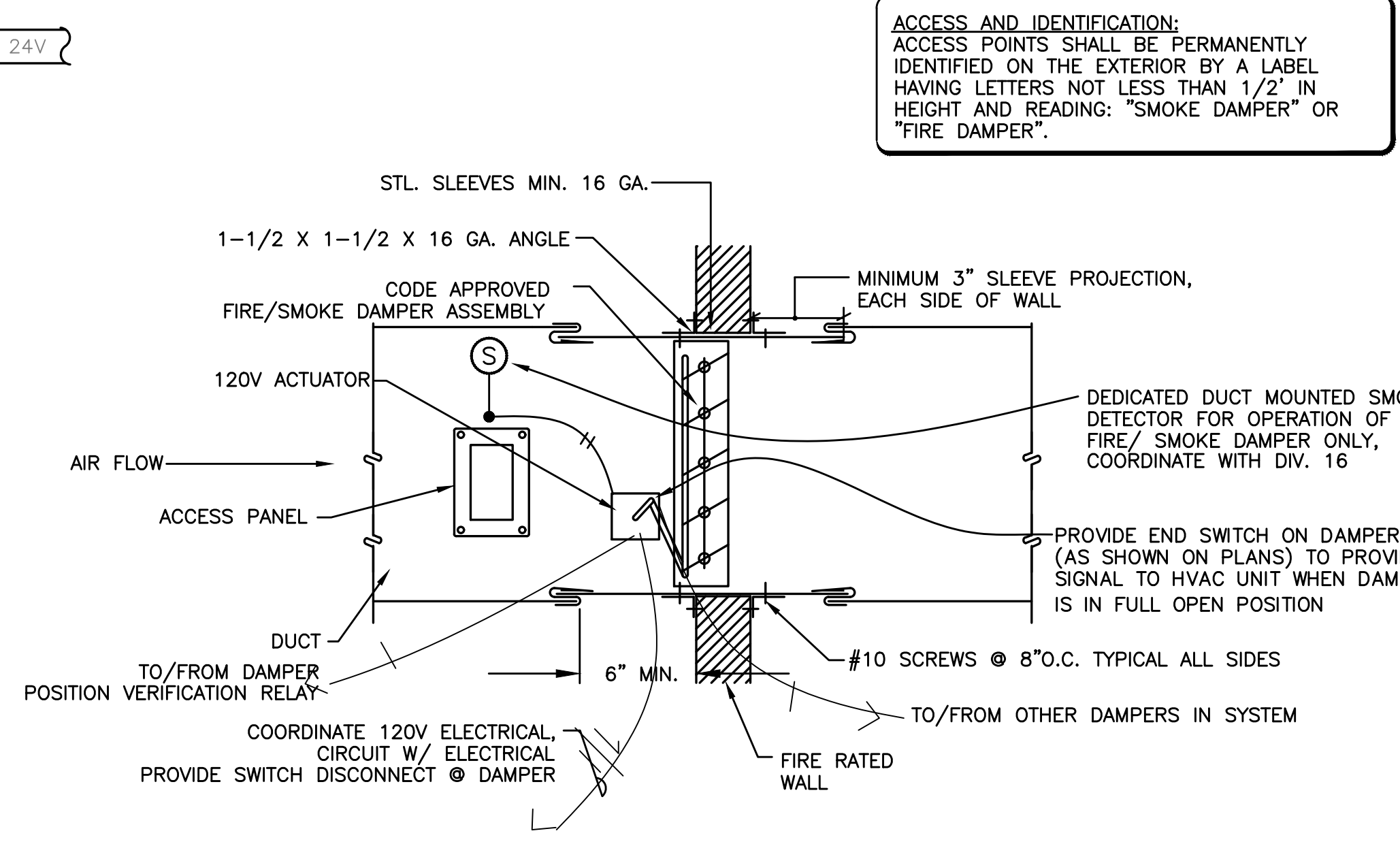
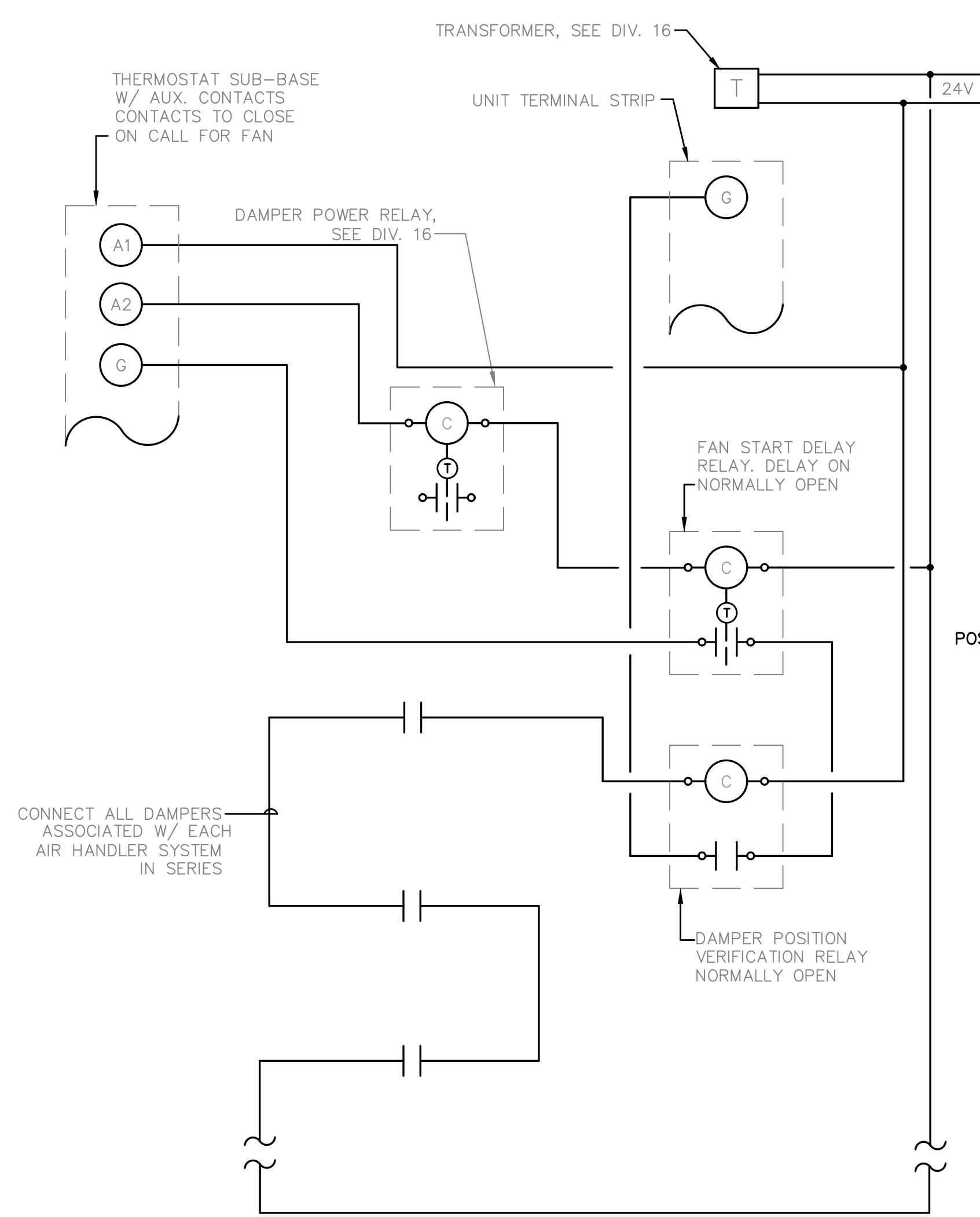
3 TYPICAL DRYER INSTALLATION
SCALE: NOT TO SCALE
MA601



4 HIGH SUPPLY W/ FIRE/SMOKE DAMPER
SCALE: DETAIL
MA601



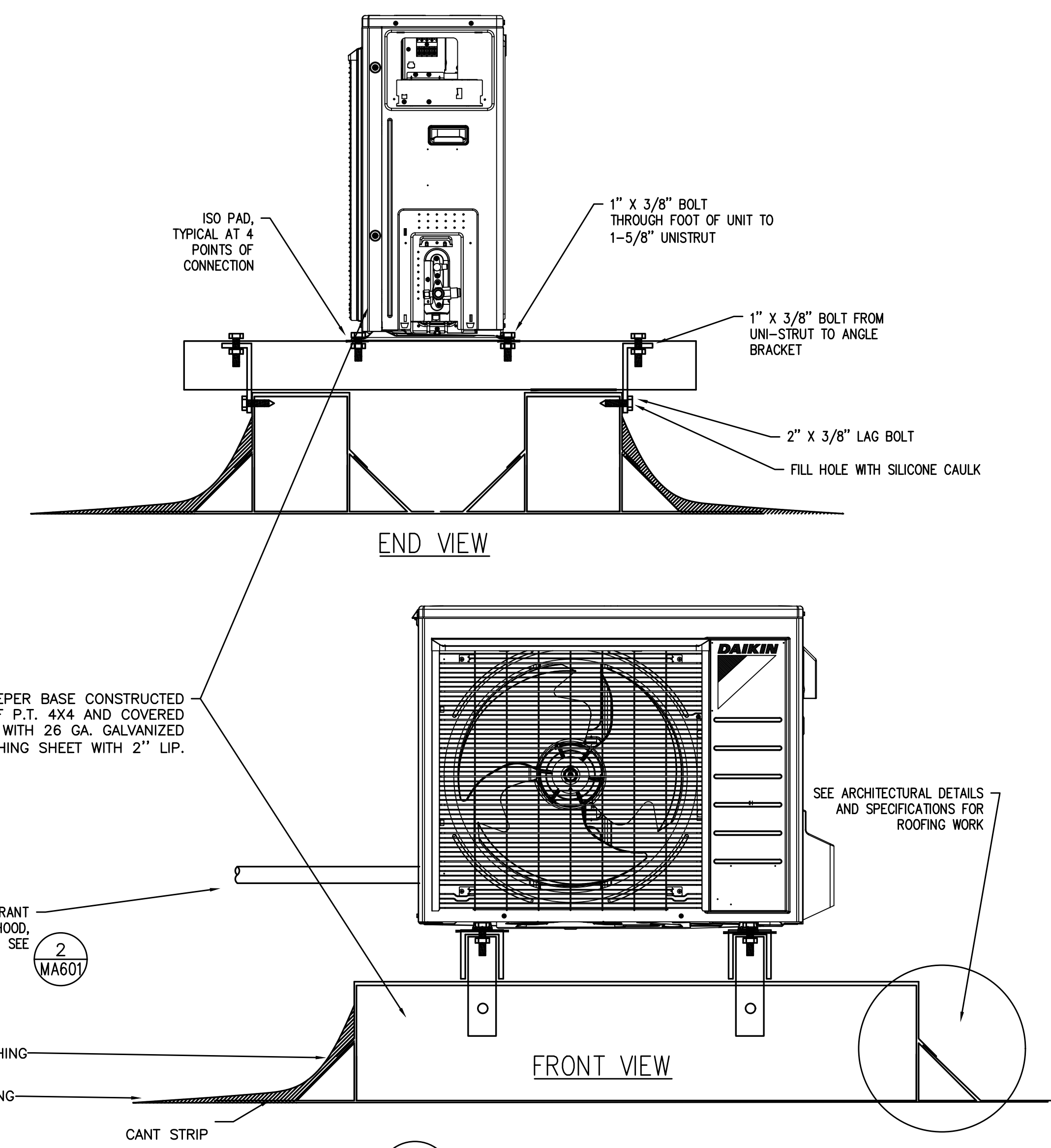
5 PTHP AT EXTERIOR WALL
SCALE: NOT TO SCALE
MA601



6 FIRE/SMOKE DAMPER W/SMOKE DETECTOR
SCALE: NOT TO SCALE
MA601

NOTE:
PROVIDE ALL REQUIRED CONTROL WIRING TO ACCOMPLISH:
FIRE/SMOKE DAMPER - FIRE/SMOKE DAMPER TO CLOSE UPON ACTIVATION OF LOCAL SMOKE DETECTOR
EXHAUST DUCTS/FANS - FIRE/SMOKE DAMPER TO CLOSE UPON SHUTDOWN OF ASSOCIATED EXHAUST FAN.
SUPPLY OR RETURN DUCTS/FANS - FIRE/SMOKE DAMPER TO CLOSE UPON SHUTDOWN OF ASSOCIATED AIR HANDLING UNIT.

GENERAL NOTES:
PROVIDE ACCESS IN CEILING OR WALL FOR DAMPER AND SMOKE DETECTOR
SEE ELECTRICAL DRAWINGS FOR WIRING INSTALLATION



7 HEAT PUMP CURB
SCALE: DETAIL
MA601

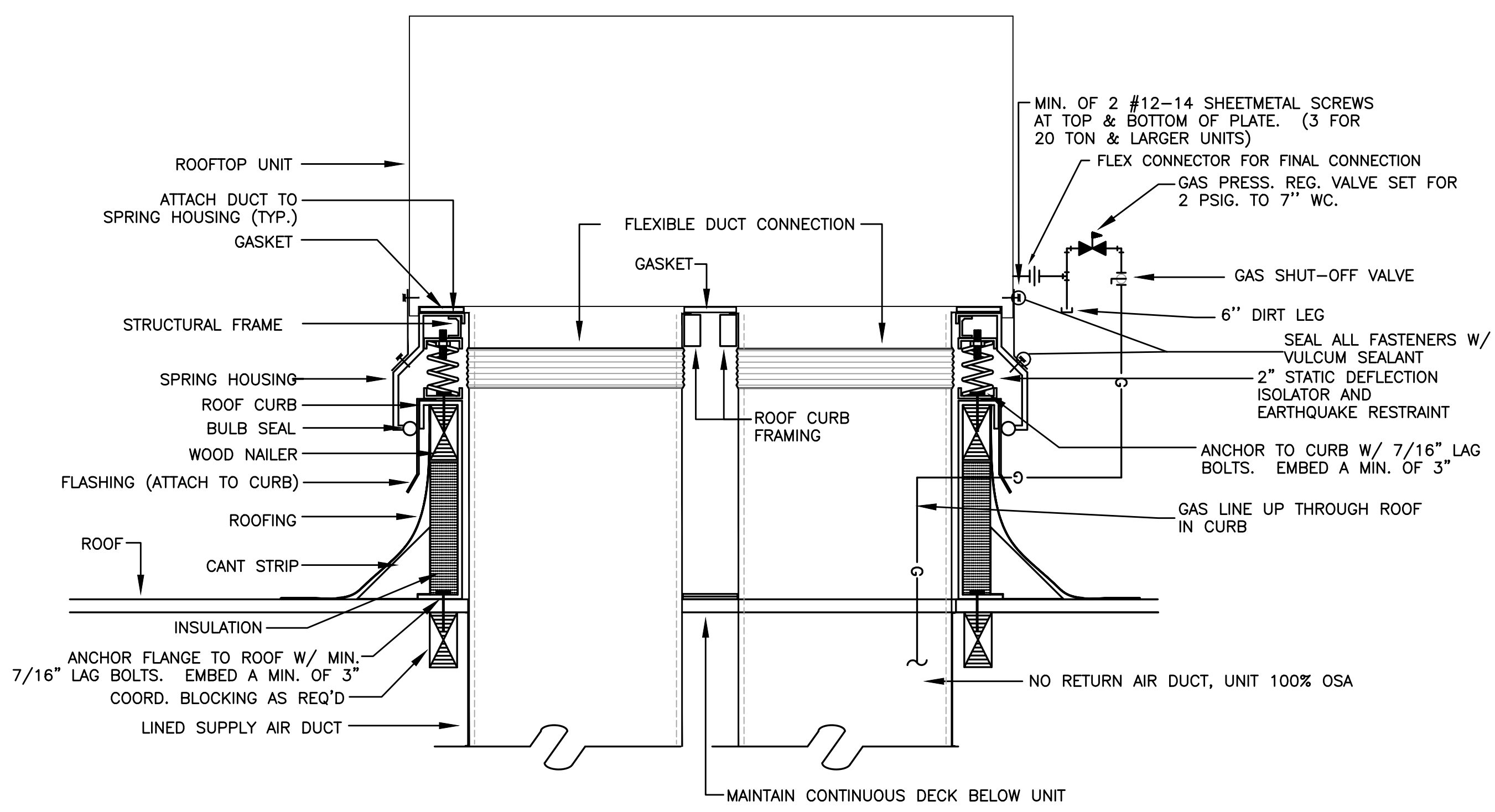
VVC BUILDING A APTS
11385 SW ROYAL SCOT LN
WILSONVILLE, OR 97070
MECHANICAL DETAILS



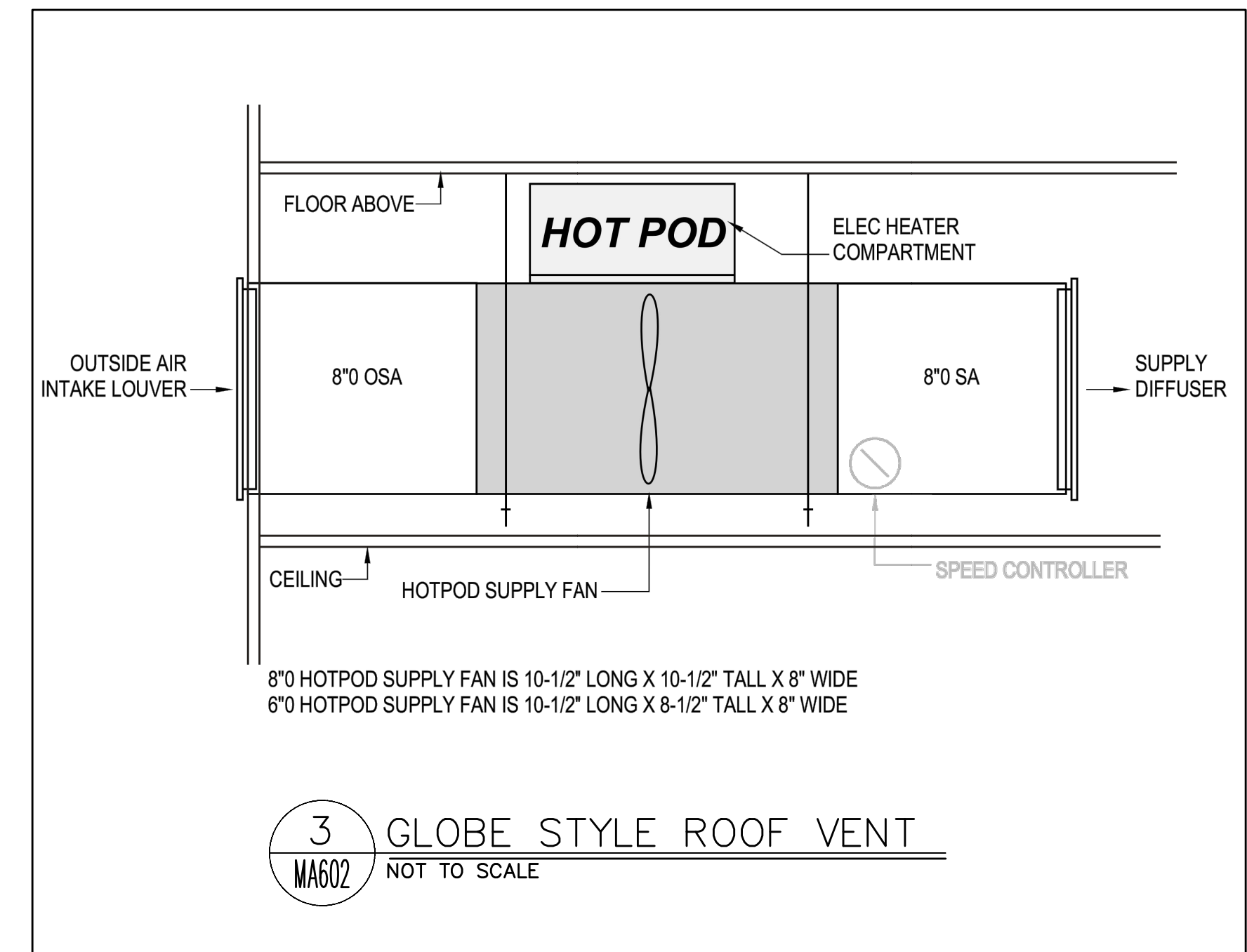
PERMIT SET

SHEET

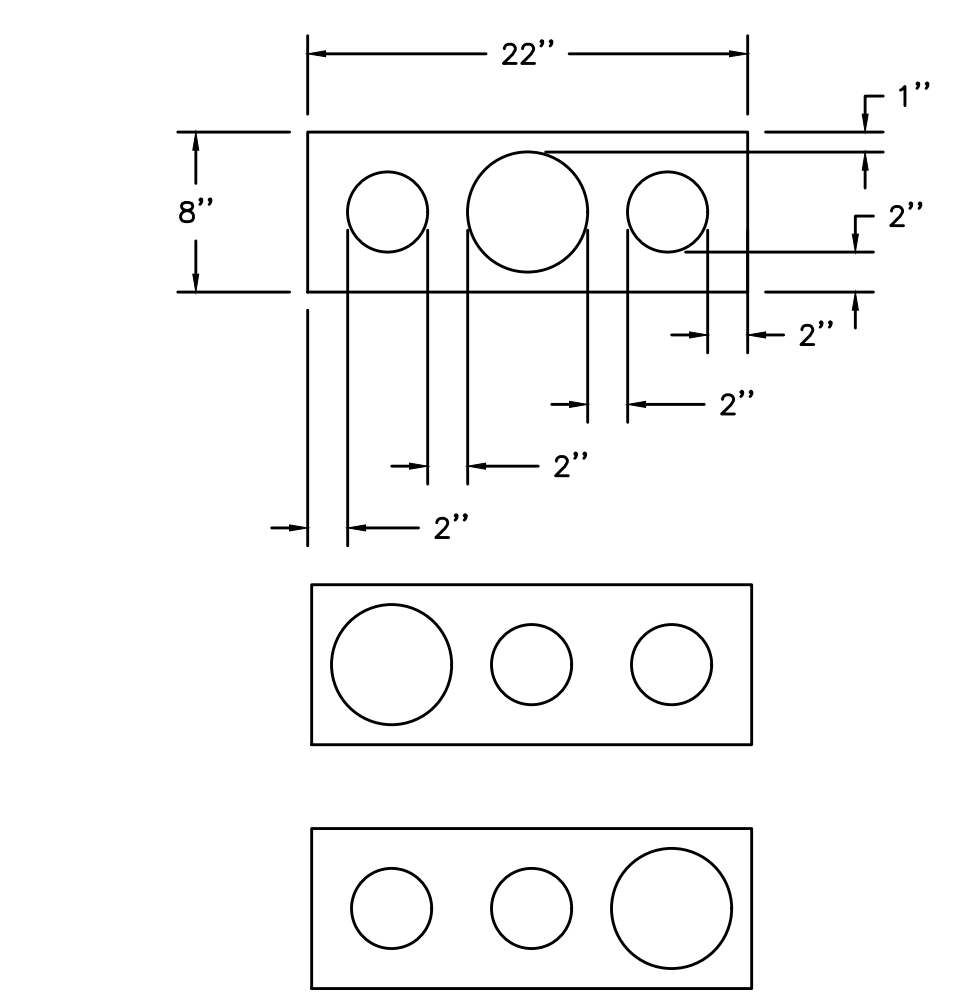
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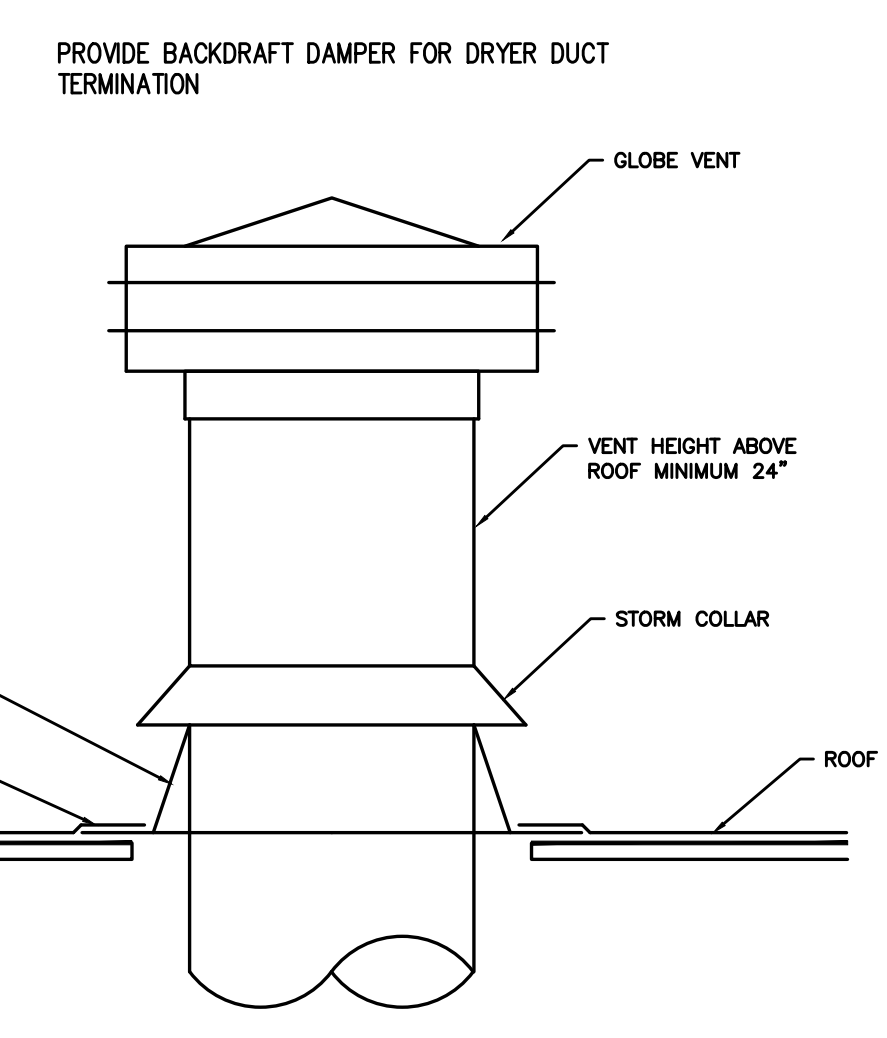
1 ROOF TOP UNIT W/ VIBRATION ISOLATION CURB
SCALE: DETAIL
MA602



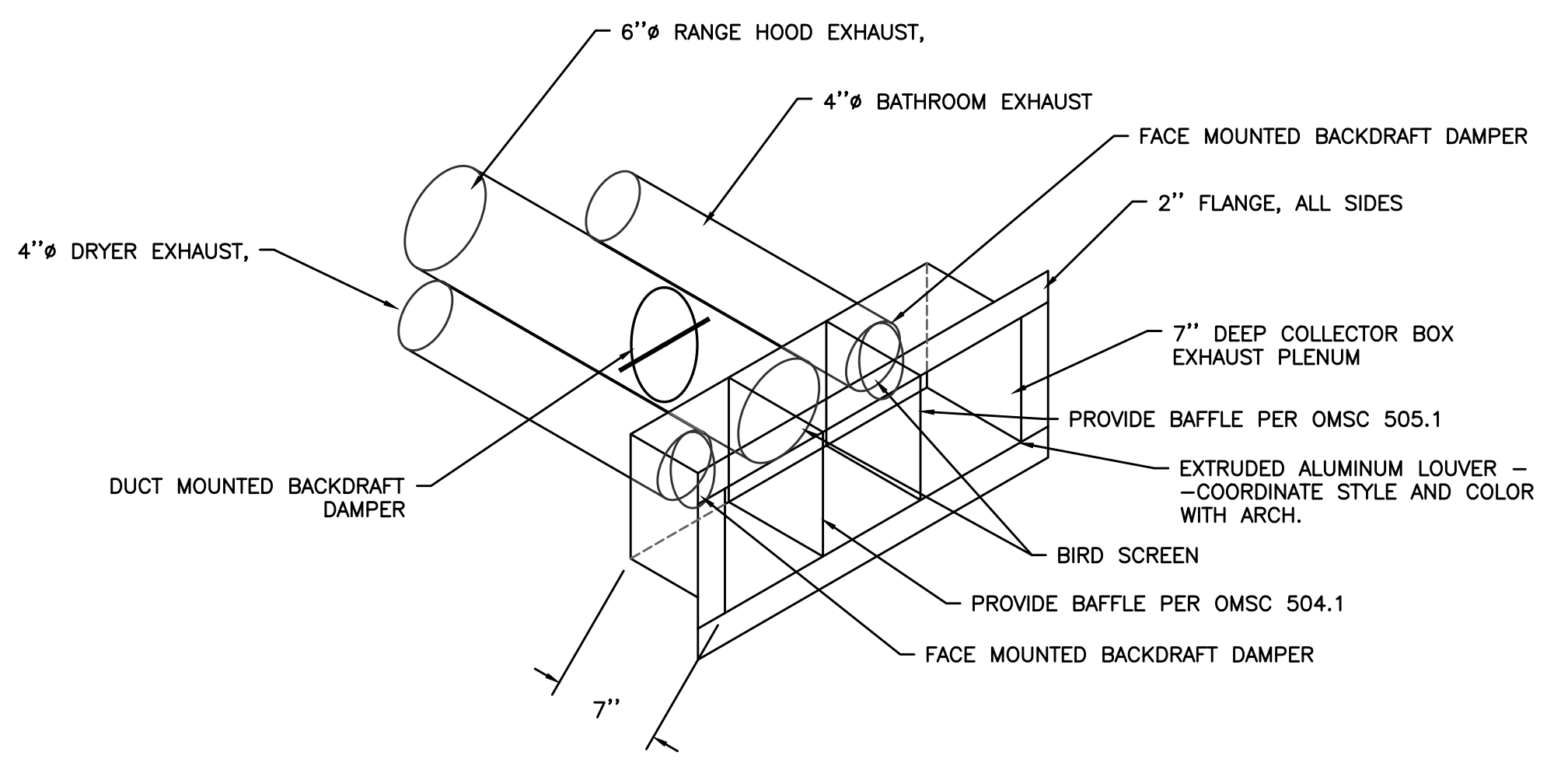
3 GLOBE STYLE ROOF VENT
NOT TO SCALE
MA602



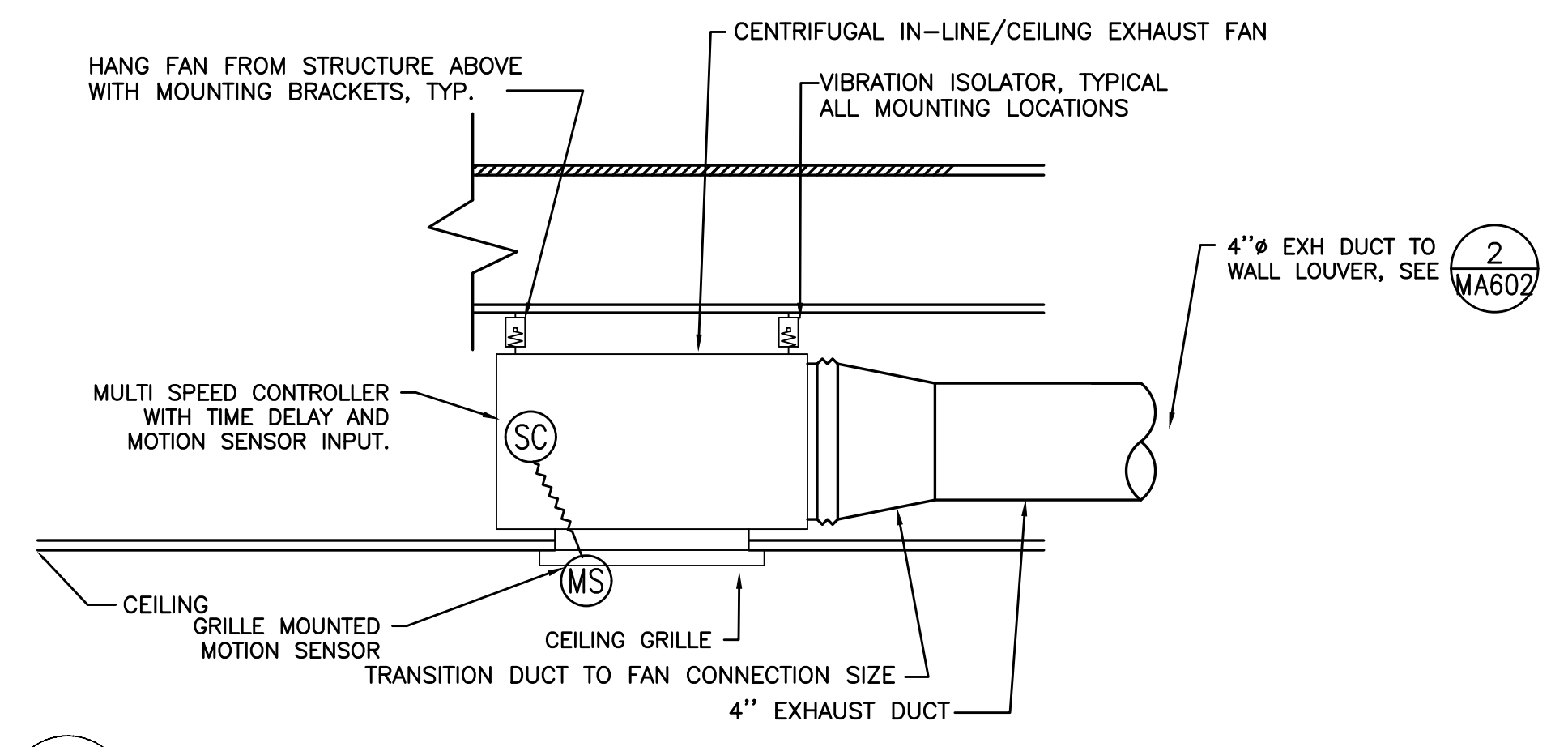
4-6-4 CONFIGURATION
6-4-4 CONFIGURATION
4-4-6 CONFIGURATION



4 GLOBE STYLE ROOF VENT
NOT TO SCALE
MA602



2 SIDE WALL DWELLING UNIT VENTING
NOT TO SCALE
MA602



5 RESTROOM EXHAUST FAN
SCALE: DETAIL
MA602

6 FIRE PENETRATION DETAIL - 5" or 6" DUCTS
DETAIL
MA602

System No. W-L-7018

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 1/2 Hr	FT Rating — 1-1/2 Hr
	FH Rating — 2 Hr
	FTH Rating — 1-1/2 Hr

SECTION A-A

1. Wall Assembly — The 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, U400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
 A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nominal 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
 B. Gypsum Board — Two layers of nominal 5/8 in. (16 mm) thick gypsum wallboard as specified in the individual Wall and Partition Design No. Max diam of opening is 9 in. (229 mm).

2. Metallic Sleeve — Cylindrical sleeve fabricated from min 0.016 in. (0.40 mm) thick (No. 28 gauge) galv steel sheet steel and having a min 2 in. (51 mm) lap along the longitudinal seam. Length of sleeve to be 18 in. (3 mm) less than thickness of wall. Sleeve to be installed by coiling the sheet metal to a diam smaller than the through opening, inserting the coil through the openings and releasing the coil to let it uncoil against the circular cutouts in the gypsum wallboard layers.

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System No. W-L-7018

3. Steel Duct — Nom 6 in. (152 mm) diam (or smaller) No. 28 gauge (or heavier) galv steel duct to be installed concentrically within the firestop system. Duct to be rigidly supported on both sides of the wall assembly.

4. Pipe Covering — Nom 1 in. (25 mm) thick hollow cylindrical heavy density (3.5 pcf or 56 kg/m³) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing top tape. Transverse joints secured with metal fasteners or with built tape supplied with the product. The annular space between the insulated pipe and the steel sleeve shall be min 0 in. (point contact) to max 1 in. (25 mm).

See Pipe Equipment Covering — Materials — (BRGU) Category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

5. Fill, Void or Cavity Material* — Sealant — Min 1-1/4 in. (32 mm) depth of sealant applied within the annulus, flush with each surface of the wall assembly. At the point contact location between insulated pipe and wall, a min 1/2 in. (13 mm) diam bead of sealant shall be applied on both surfaces of wall, lapping 1/4 in. (6 mm) beyond the periphery of the opening.
 HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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