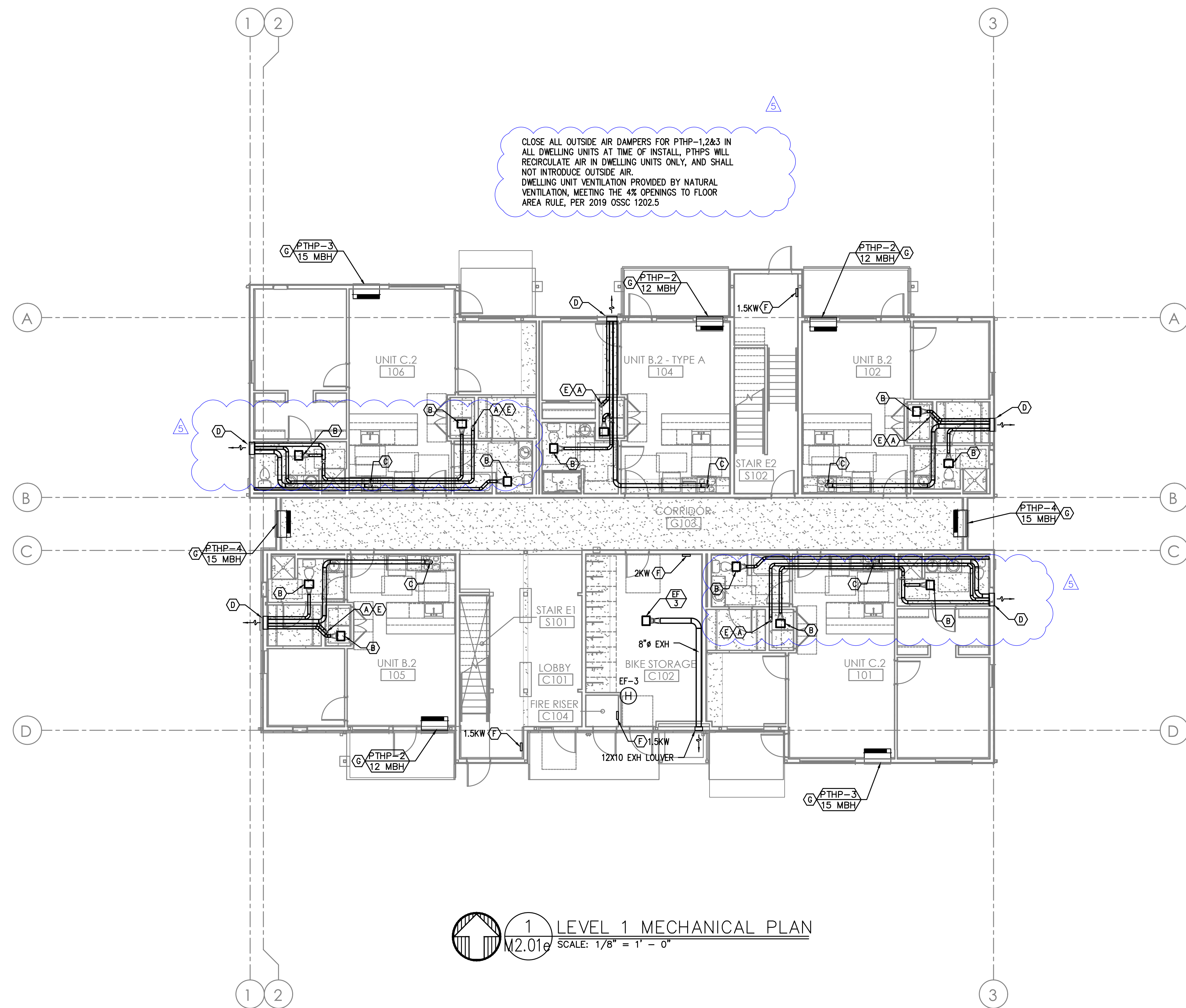


9-29-21	10081	3/28/2022	PLAN REVIEW
Date:	Proj. No.:	3/28/2022	PLAN REVIEW #1
10081	MOA	4/18/2022	PLAN REVIEW #2
MOA	MRD	6/24/2022	PLAN REVIEW #3
MRD	MRD		
MRD	MRD		
MRD	MRD		
MRD	MRD		
MRD	MRD		



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- (D) — EXTERIOR EXHAUST PLENUM — SEE
- (E) — LINT TRAPS ON ALL DRYERS, SEE FOR TYP DETAIL. 4" DRYER EXHAUST DUCT WITH RECESSED DRYER BOX — LINT TRAPS ARE ACCEPTED ON THIS PROJECT.
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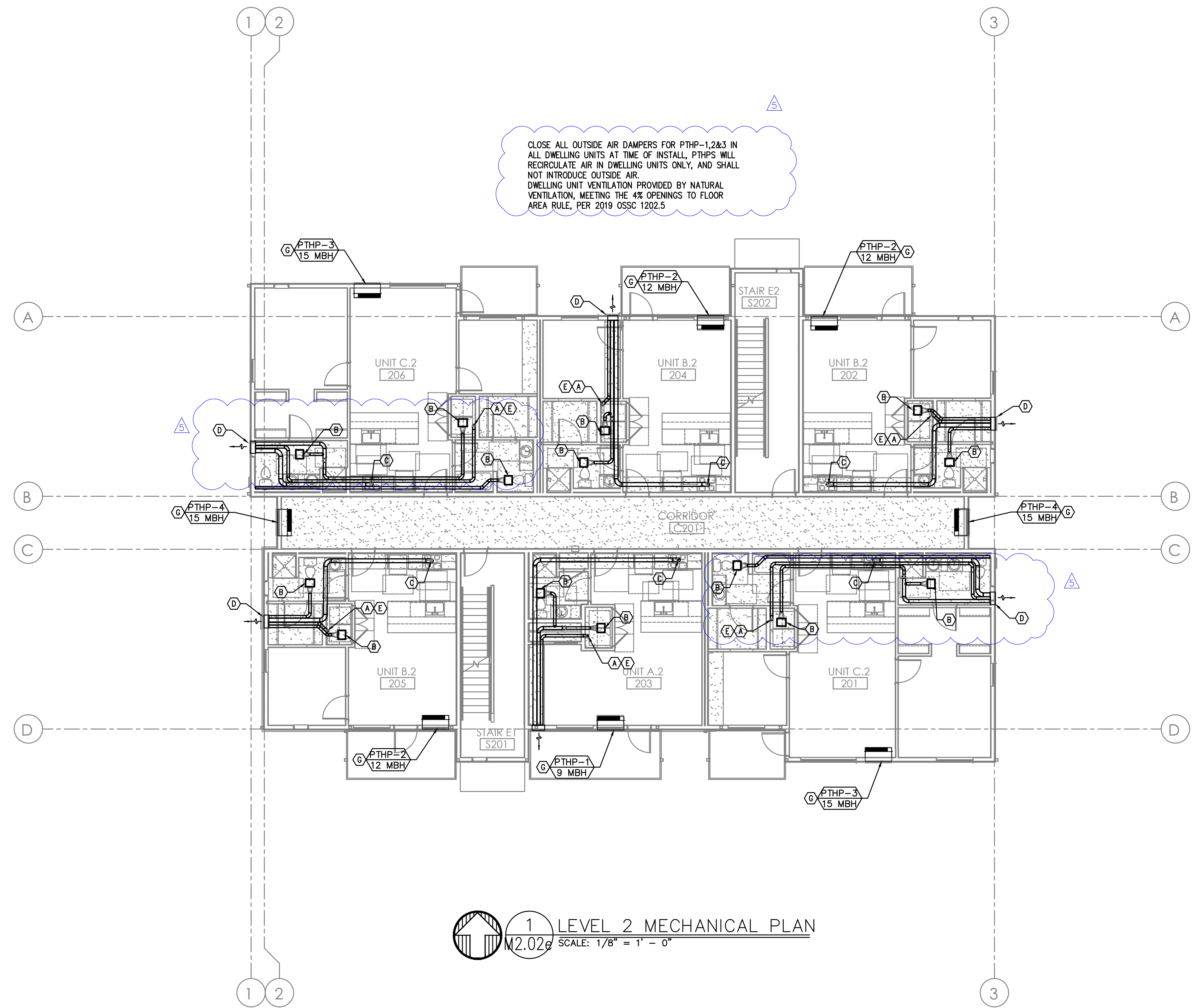
COMMONS ON THE TUALATIN
 6845 SW NYBERG LANE
 BUILDING E
 LEVEL 1 MECHANICAL PLAN
 TUALATIN OREGON 97225

PERMIT SET
 11/22/21

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9-29-21	10081	3-28-2022	PLAN REVIEW
Date:	Proj. No:	3-28-2022	PLAN REVIEW #2
10081	MOA	4-18-2022	PLAN REVIEW #3
MOA	MRD	6-24-2022	PLAN REVIEW #5
MRD	MRD		
MRD	MRD		
MRD	MRD		
MRD	MRD		
MRD	MRD		



1 LEVEL 2 MECHANICAL PLAN
 M2.02g SCALE: 1/8" = 1' - 0"

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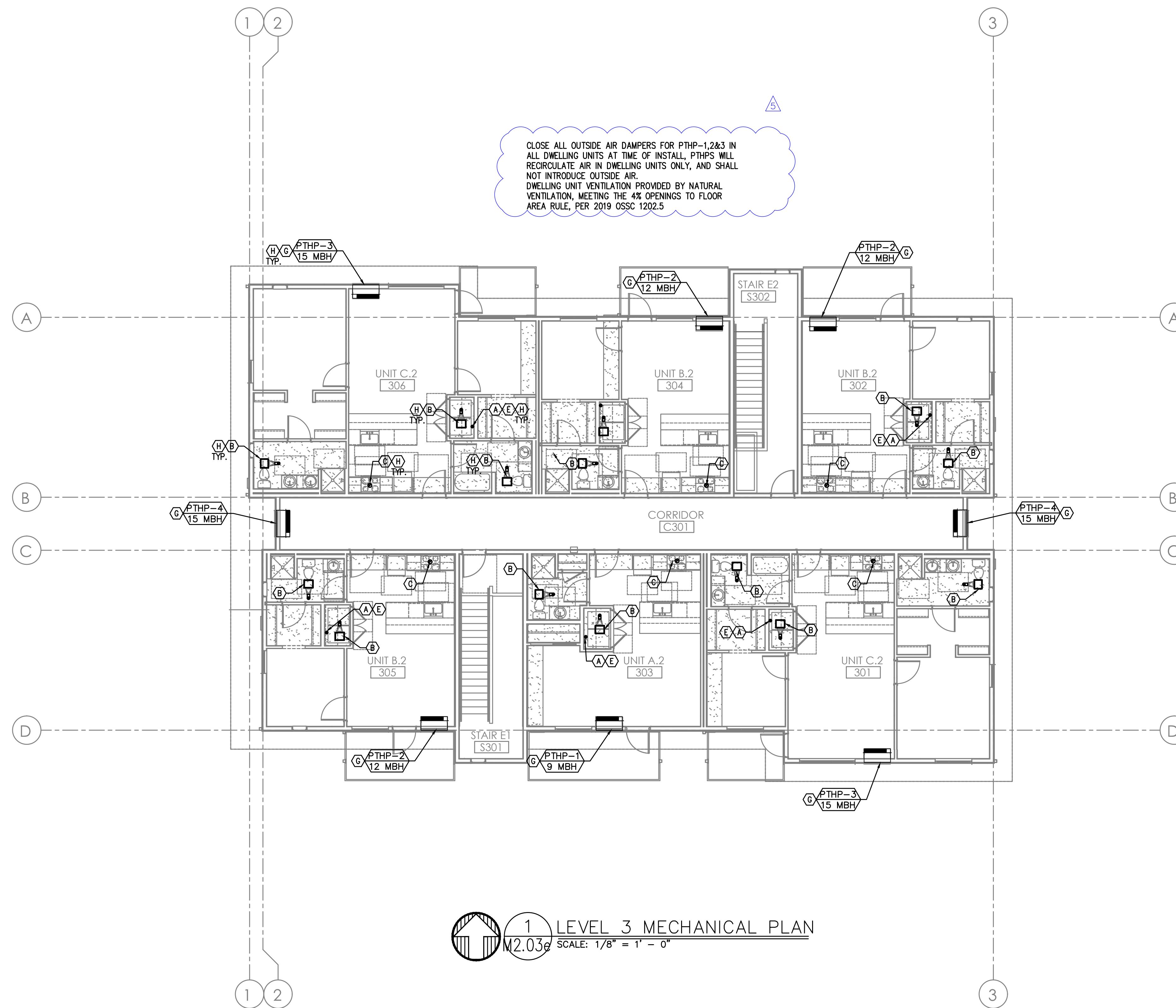
COMMONS ON THE TUALATIN
 6845 SW NYBERG LANE
 BUILDING E
LEVEL 2 MECHANICAL PLAN
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Date:	Proj. No:	3-28-2022	PLAN REVIEW #2
10081	MOA	4-18-2022	PLAN REVIEW #3
MOA	MRD	6-24-2022	PLAN REVIEW #5
MRD	MRD		
MRD			
Accd File:			



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COMMONS ON THE TUALATIN
6845 SW NYBERG LANE
BUILDING E
LEVEL 3 MECHANICAL PLAN
 TUALATIN OREGON 97225

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 11/22/21

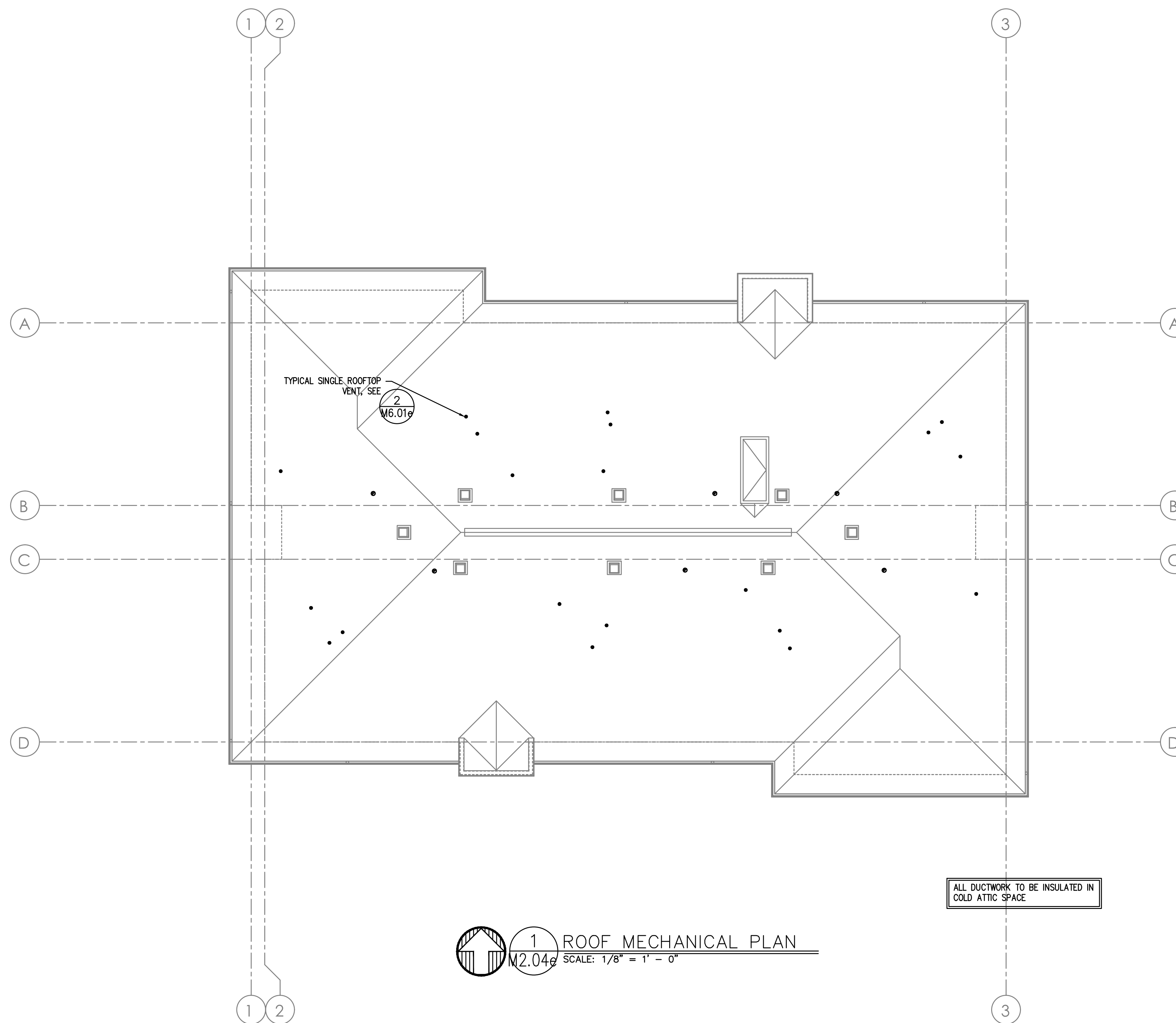


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9-29-21	10081	3-28-2022	PLAN REVIEW
Date:	Proj. No:	3-28-2022	PLAN REVIEW #1
Drawn By:	MGA	4-18-2022	PLAN REVIEW #2
CHKD By:	MRD	6-24-2022	PLAN REVIEW #3
DSGN By:	MRD		
Acad File:			


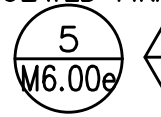
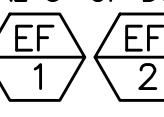

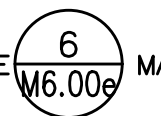
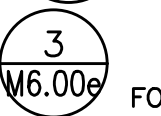
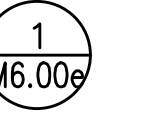
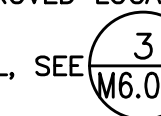
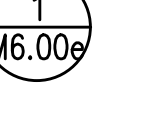


1 ROOF MECHANICAL PLAN
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COMMONS ON THE TUALATIN
 6645 SW NYBERG LANE
 BUILDING E
ROOF MECHANICAL PLAN
 TUALATIN OREGON 97225

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MECHANICAL LEGEND

	SUPPLY AIR DIFFUSER	AFF	ABOVE FINISH FLOOR
	RETURN AIR GRILLE	AHU	AIR HANDLING UNIT
	EXHAUST AIR GRILLE	B.D.	BOTTOM OF DUCT
	PERFORATED RETURN AIR PANEL	BHP	BRAKE HORSEPOWER
	DIRECTIONAL AIR FLOW	BTU	BRITISH THERMAL UNITS
	MANUAL VOLUME DAMPER	CFM	CUBIC FEET PER MINUTE
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	CONN.	CONNECTION
	RETURN AIR DUCT UP & DOWN	CONT.	CONTINUATION
	EXHAUST AIR DUCT UP & DOWN	CW	DOMESTIC COLD WATER
	VAV TERMINAL UNIT	DB	DRY BULB
	VT TERMINAL UNIT	DIAM.	DIAMETER
	EXISTING	DIST.	DISTRIBUTION
	CONNECT TO EXISTING	EA	EXHAUST AIR
	THERMOSTAT OR TEMP. SENSOR	EAT	ENTERING AIR DRY BULB TEMPERATURE
	NOTE	EWB	ENTERING WET BULB TEMPERATURE
	EQUIPMENT DESIGNATOR	FF	FINISH FLOOR
	BALL VALVE	FXIT.	FIXTURE
	GATE VALVE	FPM	FEET PER MINUTE
	CHECK VALVE	FPS	FEET PER SECOND
	BALANCING VALVE	FT.	FEET / FOOT
	THERMOMETER	GA.	GAUGE
	DIRECTION OF FLOW	GPM	GALLONS PER MINUTE
	PUMP	H	HEIGHT
	STRAINER	HP	HORSEPOWER
	PRESSURE GAUGE	I.D.	INSIDE DIAMETER
	PETE'S PLUG	IN.	INCHES
	DOUBLE CHECK ASSEMBLY	L	LENGTH
	PRESSURE REDUCING VALVE	LBS.	POUNDS
	UNION	LWB	LEAVING WET BULB
	2-WAY CONTROL VALVE	LWT	LEAVING WATER TEMPERATURE
	3-WAY CONTROL VALVE	MAX.	MAXIMUM
	CAP	MEH	THOUSANDS OF BTUs PER HOUR
	SMOKE DETECTOR	MIN.	MINIMUM
	MOTORIZED 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
			HWS (HWS) HEATING WATER SUPPLY
			HWR (HWR) HEATING WATER RETURN
			FIRE DAMPER
			FIRE / SMOKE DAMPER
			SMOKE DAMPER
			SEISMIC BRACING
			LATERAL BRACING
			LONGITUDINAL BRACING
			LONGITUDINAL & LATERAL BRACING

PACKAGED TERMINAL HEAT PUMP

MARK NUMBER	PTH-1 9 MBH	PTH-2 12 MBH	PTH-3 15 MBH	PTH-4 15 MBH
TYPE	THRU-THE-WALL HEAT PUMP	THRU-THE-WALL HEAT PUMP	THRU-THE-WALL HEAT PUMP	THRU-THE-WALL HEAT PUMP
SYSTEM	STUDIO	1 BEDROOM	2&3 BEDROOM	CORRIDOR
NOMINAL COOLING CAPACITY (BTUH)	9,000	12,000	14,400	14,400
HEATING CAPACITY (BTUH)	8,300	11,500	13,800	13,800
47°F OUTDOOR AIR TEMP				
ELECTRIC HEATING CAPACITY (KW)	2.5	3.5	3.5	3.5
CFM (HI/LOW) (WET COIL)	330/245	340/245	390/340	390/340
MIN OSA (CFM)	30 CFM	30 CFM	45 CFM	45 CFM
LVG. AIR TEMP (°F)	55°F	55°F	55°F	55°F
REMOTE THERMOSTAT	YES	YES	YES	YES
EFFICIENCY (EER)	12.9	11.9	11.2	11.2
EFFICIENCY (COP)	3.6	3.5	3.1	3.1
ARCHITECTURAL GRILLE	YES	YES	YES	YES
DESIGN WT. (LBS)	130	135	145	145
ELECT (VOLTS/PHASE/HTZ)	230/1/60	230/1/60	230/1/60	230/1/60
TOTAL AMPS	11.2	15.5	15.5	15.5
MCA/MOP	14.1/15	19.5/20	19.5/20	19.5/20
REFRIGERANT	410a	410a	410a	410a
REFRIGERANT CHARGE	1.325 LBS	1.34 LBS	1.95 LBS	1.95 LBS
CONDENSATE DRAIN KIT *	YES - *	YES - *	YES - *	YES - *
BASIS OF DESIGN: LG	LP093HD3B	LP123HD3B	LP153HD3B	LP153HD3B

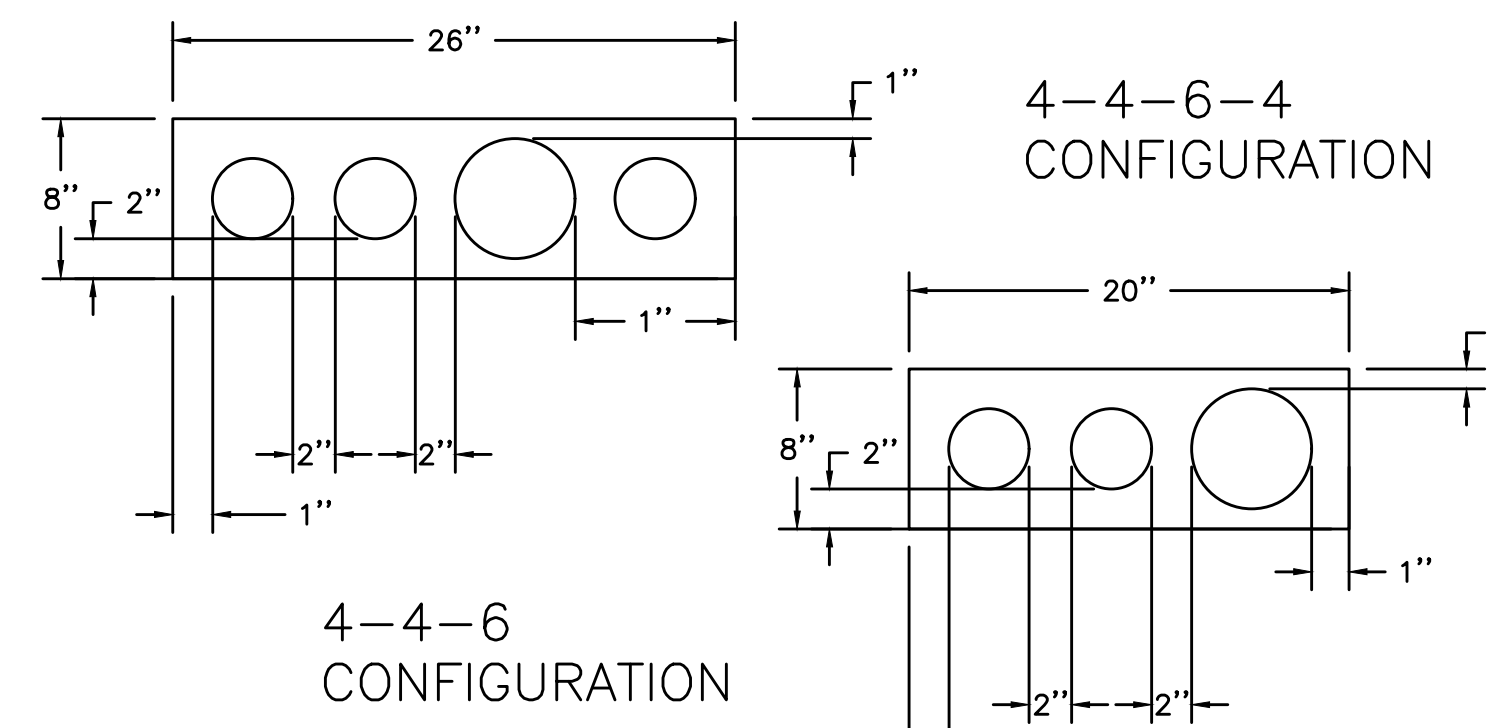
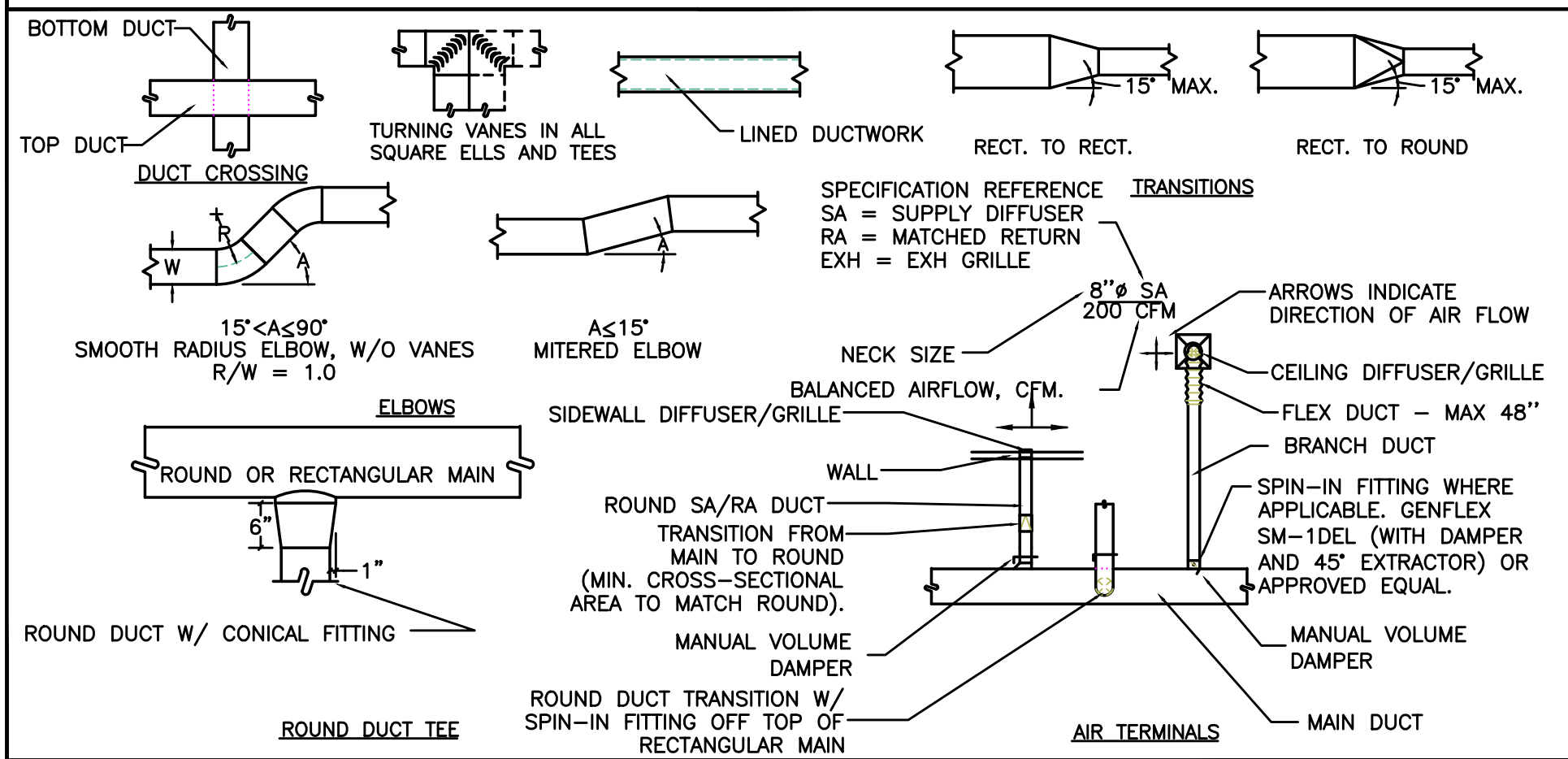
* - CONDENSATE DRAIN KIT PROVIDED BY MECHANICAL CONTRACTOR, ALL CONDENSATE PIPING TO BE ROUTED TO AN APPROVED LOCATION, SEE PLANS

EXHAUST FANS

MARK NUMBER	EF 1	EF 2	EF 3
TYPE	CEILING CABINET	CEILING CABINET	CEILING CABINET
SYSTEM	BATHROOM	LAUNDRY	BIKE STORAGE
CFM	30/80	30/80	200
TOTAL SP. (IN H2O)	0.20	0.20	0.125
RPM	1062/1146	1062/1146	740
TIP SPEED (FPM)	NA	NA	--
MOTOR WATTS OR HP	5/11.7 W	5/11.7 W	127 W
CONTROLLED BY	*	*	HUMIDISTAT
INTERLOCK WITH	MOTION SENSOR	LIGHTS	NONE
FAN SPEED CONTROLLER	YES	YES	YES
WHEEL TYPE	BI	BI	BI
BACK DRAFT DAMPER	YES	YES	GRAVITY
ISOLATION	RUBBER	RUBBER	RUBBER
DESIGN WEIGHT (LBS)	25	25	23
MAX. SONES	0.3/0.6	0.3/0.6	1.7
MAX AMPS - ***	0.27	0.27	1.8
POWER (VOLTS/PHASE/HZ) - ***	120/1/60	120/1/60	120/60/1
BASIS OF DESIGN:	FV-05-11VKS2	FV-05-11VKS2	BROAN
	L200		

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

AIR DISTRIBUTION DETAILS



6 SIDE WALL DWELLING UNIT VENTING WITH HOOD

NOT TO SCALE

GFD55ESSN/ESP

GE® 7.5 cu. ft. Capacity Front Load Electric Dryer

DRYER EXHAUSTING INFORMATION - METAL DUCT ONLY

For complete information, see installation instructions packed with your dryer.
DUCTING MATERIALS: For best performance, this dryer should be vented with 4" diameter all rigid metal exhaust duct. If rigid metal duct cannot be used, then UL-listed flexible metal (semi-rigid) ducting can be used (Kit WX08X10077). In special installations, it may be necessary to connect the dryer to the house vent using a flexible metal (foil-type) duct. A UL-listed flexible metal (foil-type) duct may be used ONLY in installations where rigid metal or flexible metal (semi-rigid) ducting cannot be used AND where a 4" diameter can be maintained throughout the entire length of the transition duct. Please see installation instruction packed with your dryer for complete instructions when using flexible metal (foil type) ducting.

EXHAUST LENGTH CALCULATION:

- Determine the number of 90° turns needed for your installation. If you exhaust to the side or bottom of dryer, add one turn.
 - The maximum length of 4" rigid (aluminum or galvanized) duct which can be tolerated is shown in the table.
- A turn of 45° or less may be ignored. Two 45° turns within the duct length should be treated as a 90° elbow.
 A turn over 45° should be treated as a 90° elbow.

Dryers must be exhausted to the outside.

CAUTION: For personal safety do not terminate exhaust into a chimney, under any enclosed house floor (crawl space), or into an attic, since the accumulated lint could create a fire hazard or moisture could cause damage. Never terminate the exhaust into a common duct or plenum with a kitchen exhaust, since the combination of lint and grease could create a fire hazard. Exhaust ducts should be terminated in a dampened wall cap to prevent back drafts, bird nesting, etc. The wall cap must also be located at least 12" above the ground or any other obstruction with the opening pointed down.

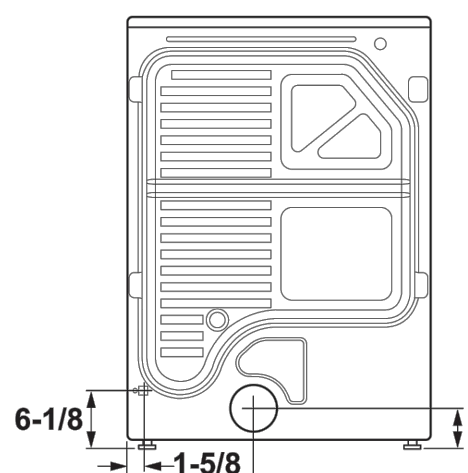
For more information on venting kits and accessories, please call 1-800-GE-CARES.



For answers to your Monogram, GE Café® Series, GE Profile® Series or GE Appliances product questions, visit our website at geappliances.com or call GE Answer Center® Service, 800.626.2006.

ADA DRYER

Domestic dryer models	Number of 90° turns	Best performance	
		A 4" opening	B 2 1/2" opening
0	0	90 ft.	60 ft.
1	1	60 ft.	45 ft.
2	2	45 ft.	35 ft.
3	3	35 ft.	25 ft.
4	4	25 ft.	15 ft.



Specification Revised 11/19

GTX22EASK

GE Appliances Series 6.2 Cu. Ft. Capacity Aluminum Alloy Drum Electric Dryer

FOR COMPLETE INFORMATION, SEE INSTALLATION INSTRUCTIONS PACKED WITH YOUR DRYER.

DUCTING MATERIALS: For best performance, this dryer should be vented with 4" diameter all rigid metal exhaust duct. If rigid metal duct cannot be used, then UL-listed flexible metal (semi-rigid) ducting can be used (Kit WX08X10077). In special installations, it may be necessary to connect the dryer to the house vent using a flexible metal (foil-type) duct. A UL-listed flexible metal (foil-type) duct may be used ONLY in installations where rigid metal or flexible metal (semi-rigid) ducting cannot be used AND where a 4" diameter can be maintained throughout the entire length of the transition duct. Please see installation instruction packed with your dryer for complete instructions when using flexible metal (foil type) ducting.

EXHAUST LENGTH CALCULATION:

- Determine the number of 90° turns needed for your installation. If you exhaust to the side or bottom of dryer, add one turn.
- The maximum length of 4" rigid (aluminum or galvanized) duct which can be tolerated is shown in the table. A turn of 45° or less may be ignored. Two 45° turns within the duct length should be treated as a 90° elbow. A turn over 45° should be treated as a 90° elbow.

Dryers must be exhausted to the outside.

CAUTION: For personal safety do not terminate exhaust into a chimney, under any enclosed house floor (crawl space), or into an attic, since the accumulated lint could create a fire hazard or moisture could cause damage. Never terminate the exhaust into a common duct or plenum with a kitchen exhaust, since the combination of lint and grease could create a fire hazard. Exhaust ducts should be terminated in a dampened wall cap to prevent back drafts, bird nesting, etc. The wall cap must also be located at least 12" above the ground or any other obstruction with the opening pointed down.

For more information on venting kits and accessories, please call 1-800-GE-CARES.

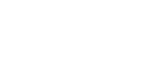


For answers to your Monogram, GE Café® Series, GE Profile® Series or GE Appliances product questions, visit our website at geappliances.com or call GE Answer Center® Service, 800.626.2006.

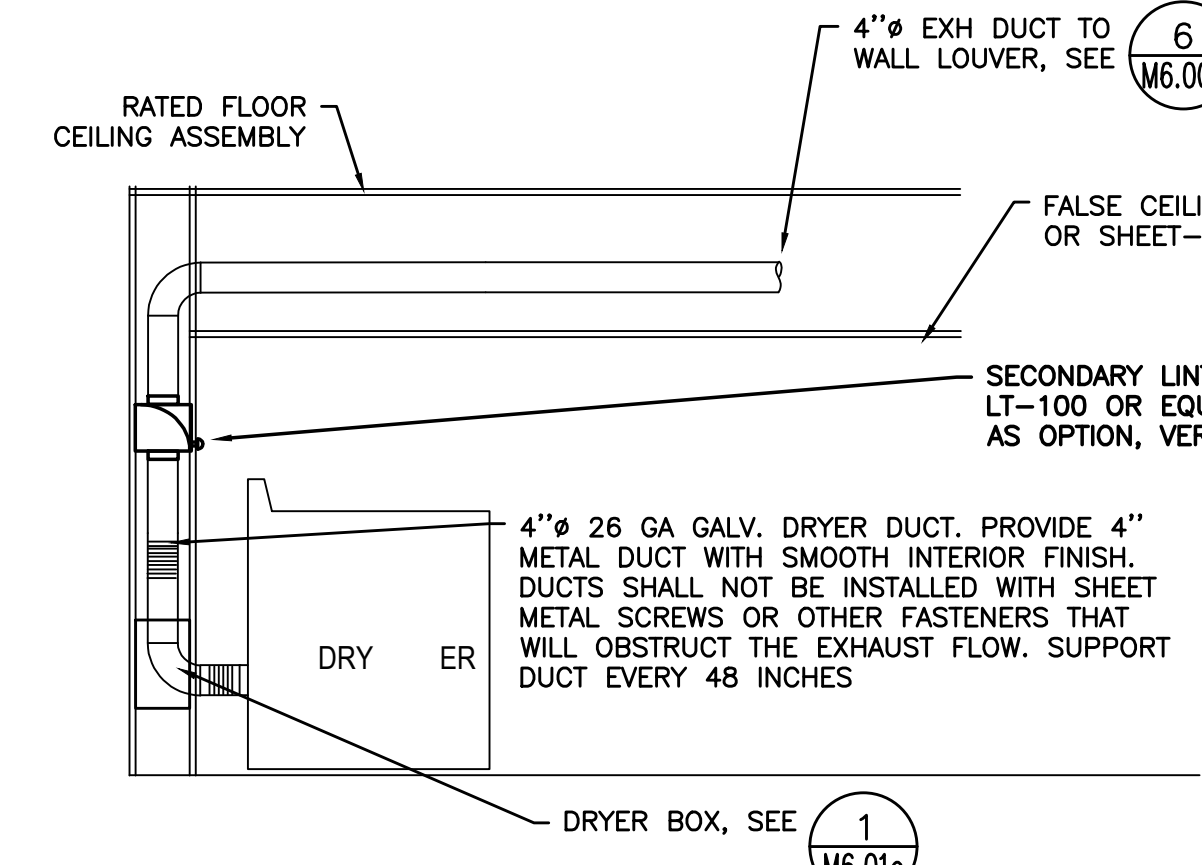
DRYER EXHAUSTING INFORMATION - USE METAL DUCT ONLY VERTICAL AND HORIZONTAL DUCTING

Domestic dryer models	Number of 90° turns	BEST PERFORMANCE	
		A 4" opening	B 2 1/2" opening
0	0	100 ft.	90 ft.
1	1	100 ft.	75 ft.
2	2	85 ft.	65 ft.
3	3	70 ft.	55 ft.
4	4	60 ft.	45 ft.
5	5	55 ft.	35 ft.

For every extra 90° elbow, reduce the allowable vent system length by 10 ft.
 Two 45° elbows will be treated like one 90° elbow.
 For the side exhaust installations, add one 90° elbow to the chart. When calculating the total vent system length, you must add all the straight portions and elbows of the system (including the transition duct).

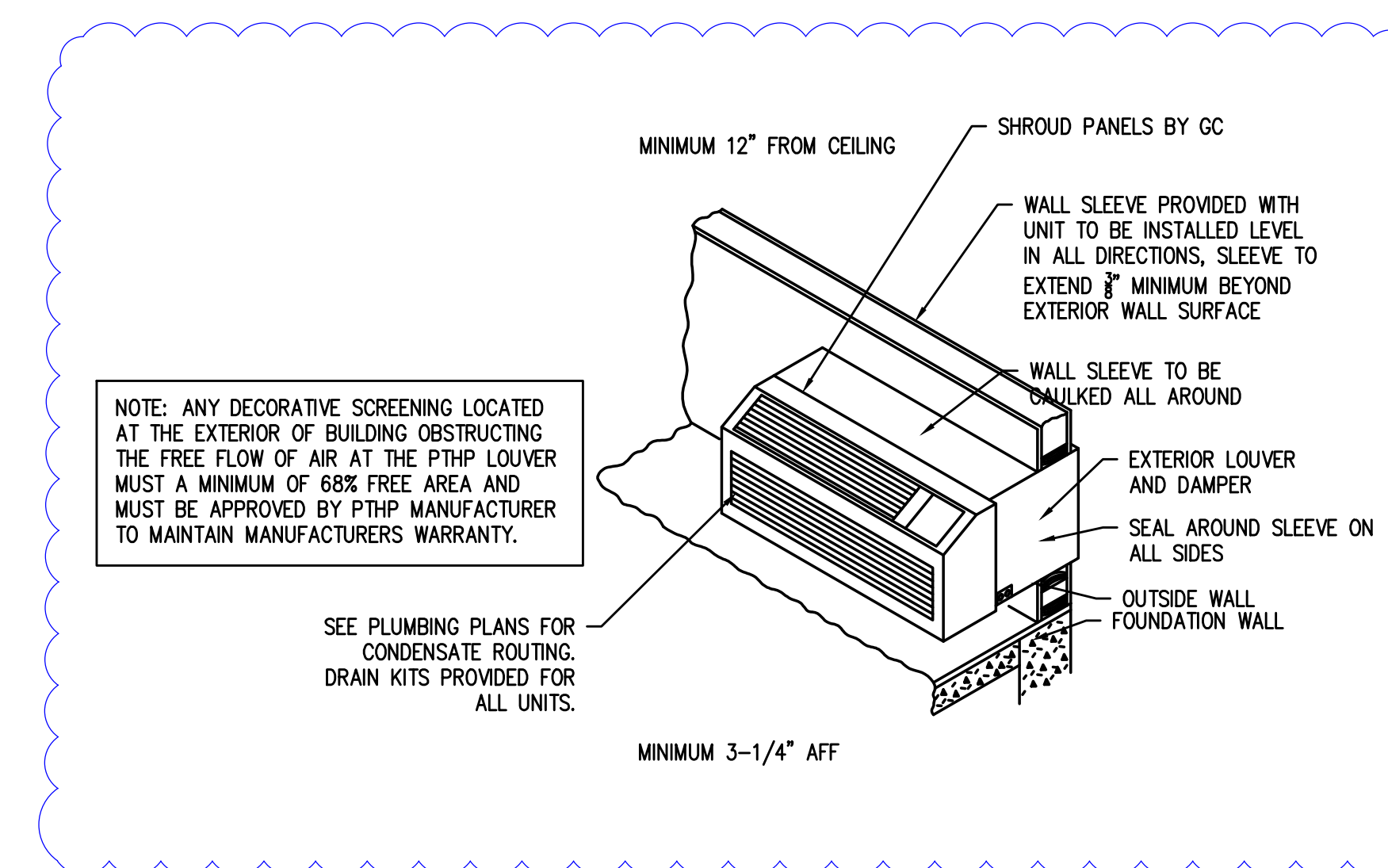


Specification Revised 7/16



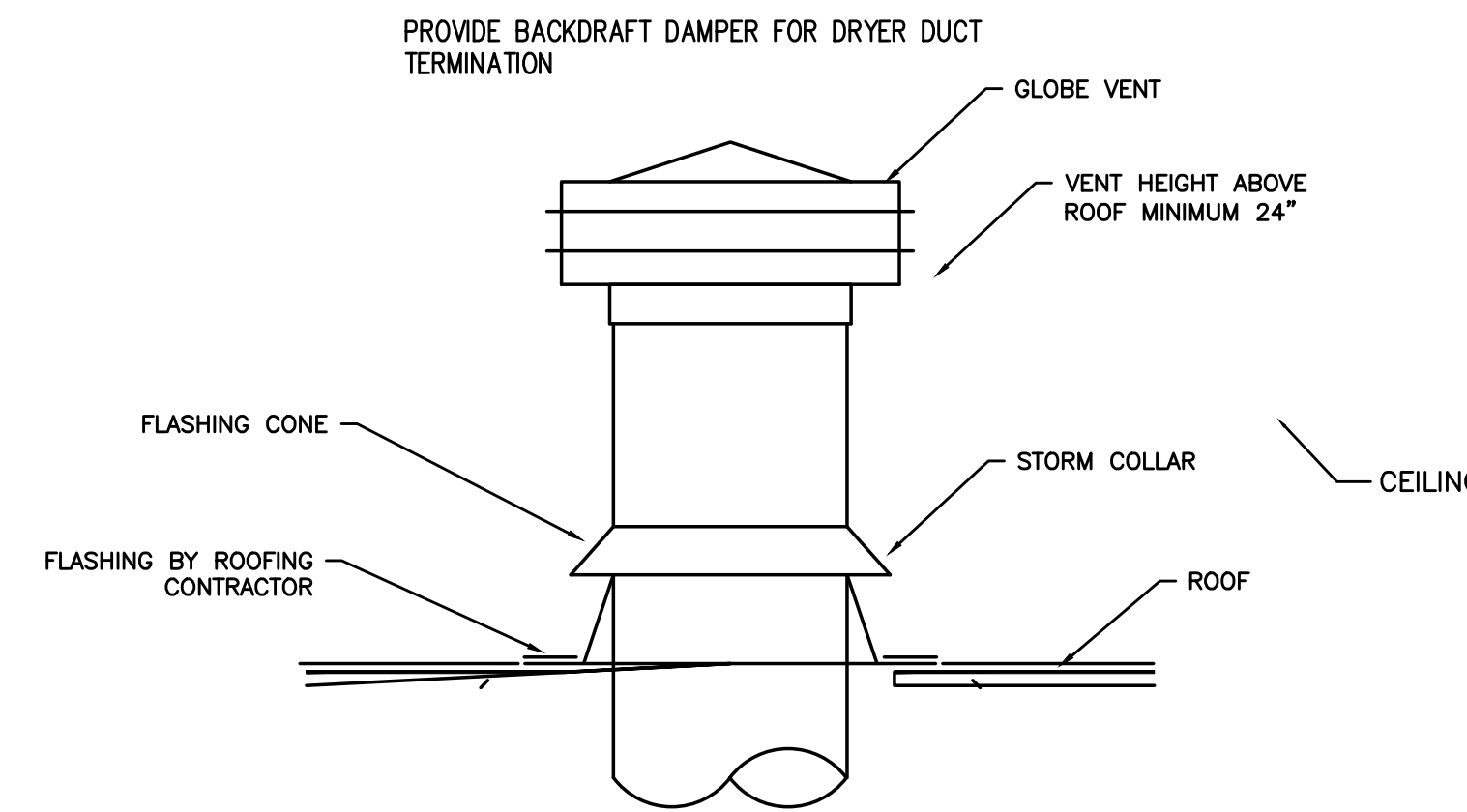
4 TYPICAL DRYER INSTALLATION

NOT TO SCALE



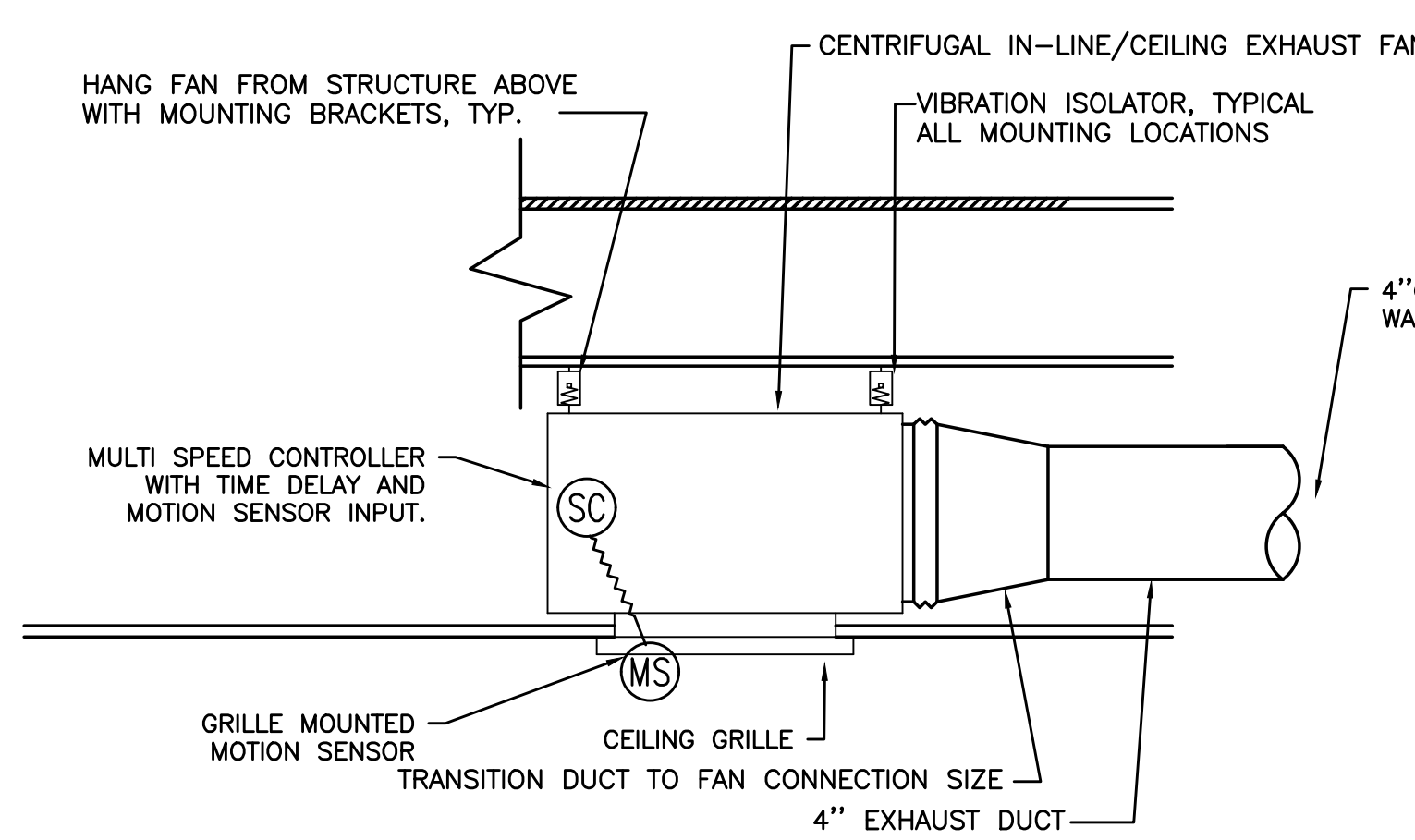
1 PTHP AT EXTERIOR WALL

NOT TO SCALE



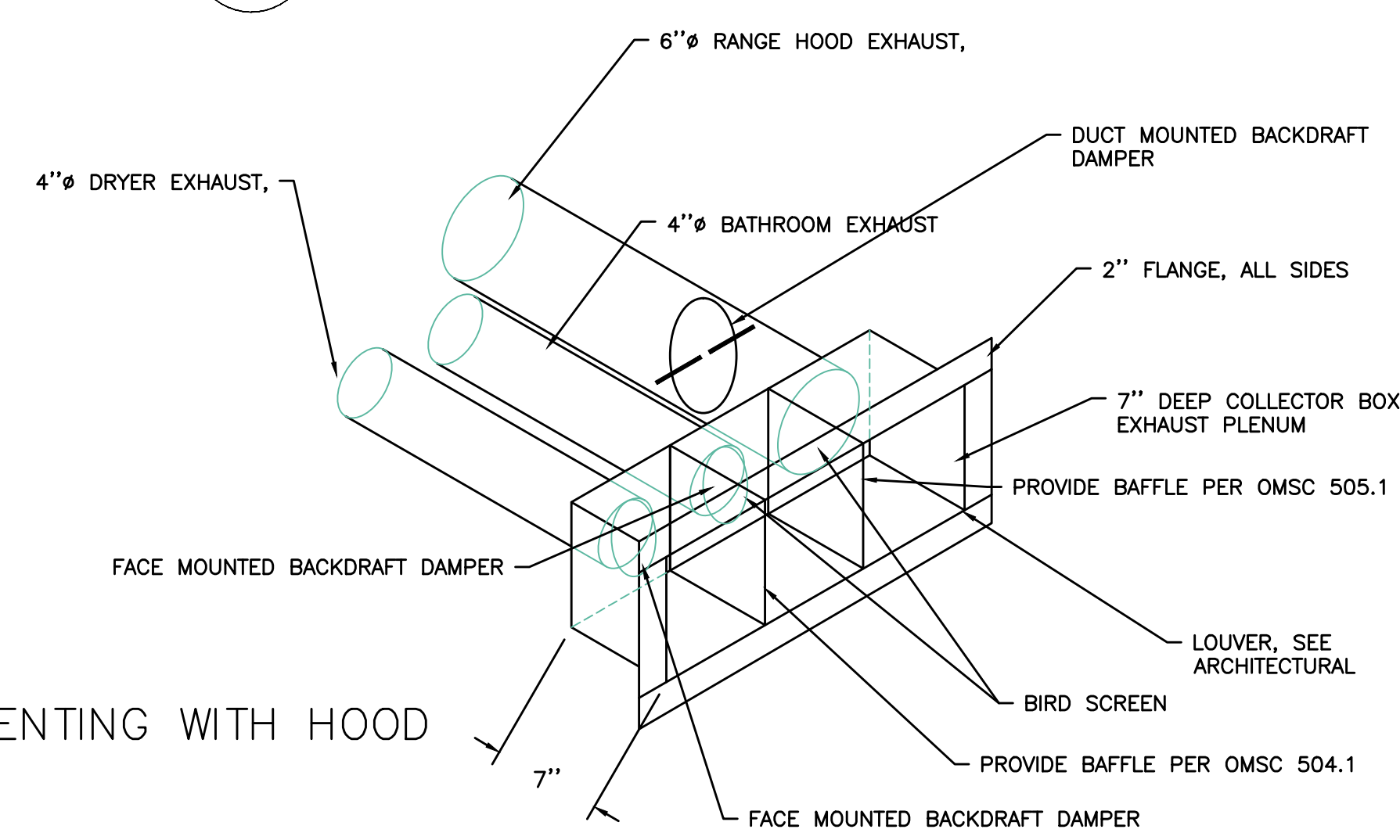
2 GLOBE STYLE ROOF VENT

NOT TO SCALE



5 RESTROOM EXHAUST FAN

SCALE: DETAIL



Date:	Proj. No.:	Plan Review #1:	Plan Review #2:	Plan Review #3:
9-29-21	10081	3-28-2022	4-18-2022	6-24-2022
Drawn By:	Checked By:	Design By:	Discn By:	Acc'd File:
MGA	MRD	MRD	MRD	

COMMONS ON THE TUALATIN
 6845 SW NYBERG LANE
 BUILDING E
 MECHANICAL SCHEDULES/DETAILS
 TUALATIN OREGON 97225



Consulting Engineers
 2007 S.E. Ash St.
 Portland, OR 97214
 P: (503) 234-0648
 F: (503) 234-0677
www.mfa-inc.com

SHEET

M6.00c

This End Should Be Installed Up
(unless stackable unit or on pedestal)

-WARNING-
Sharp Edges

✓ Save Space
✓ Save Energy
✓ Reduce Fire Hazard

the dryerbox

CLASSIFIED
UL US

See W-1729 Firestop System in UL Directory Referenced From File Number 01003. Complete Marking on Product.

Installation Instructions

- All standard American clothes dryers have an exhaust port in the center of the rear panel at the very bottom. Therefore, it is best to install the Dryerbox® as low as possible so that the bottom tab is at or slightly below the finished floor level (Diagram A)—not applicable if stackable unit or on a pedestal.
- Attach Dryerbox® to stud and bottom plate at a minimum of 3 corners.
- This Dryerbox is designed to accommodate an upward exhaust direction. Optionally this unit can be mounted in a downward exhaust direction for a stacked dryer or one on a 1½ inch pedestal. A lying-on-its-side orientation is also an option. For floor standing dryers venting down, the Model 4D or 3D are recommended.
- When installing the 4 1/4" deep Dryerbox® (Model 425) into a 2x4 wall, fit out the respective wall 1/4" with a 1x2 furring strip to provide adequate depth or use the 3 1/2" Model 350.
- When installing in an exterior frame wall, you should add insulation or duct board to the back-side of the box to minimize condensation and temperature transfer.
- To achieve a fire resistance rating (one-hour F & T) min. 2x6 wood or metal framing is required. The Dryerbox unit must be installed in accordance with the UL Cabinet System listing. An extra layer of type-X drywall must be installed in the ID of the stud cavity in which the Dryerbox is located. Drywall must be attached to nailers (minimum 1" x 2") located on the inside of the cavity wall studs. Secure nailers to wall framing at max 16 in. OC. The screws used to attach the inner layer of drywall shall be spaced a maximum of 16 inches apart. For metal studs, mineral wool (min density 4 pcf) must fill the entire Dryerbox wall cavity and minimum R13 Fiberglass insulation in adjacent cells. For wood studs, mineral wool or R19 Fiberglass insulation must fill the Dryerbox cavity. Visit www.dryerbox.com/firestop for more detail.
- Gas line termination options: For black iron pipe, wrap vinyl tape around throat where it penetrates. For corrugated stainless steel tubing, secure the CSST termination fitting with a Jamb nut to securely affix the termination to the receptacle. The gas port can be enlarged or relocated easily with a step bit.
- The new Duct Support Tab (Diagram B) in top port will assist in maintaining the ideal penetration length of the 4" Snaplock rigid conduit of 2 inches. Create a "hook" by bending the tab at the weakened or scored location. Break-away when duct is fully supported in-place. Seal penetration with foil tape or sealant caulk.
- Snaplock pipe can be vented up (Diagram C) to a roof jack (see dryerjack.com), to a side-wall vent hood (Diagram D) or downwards to a crawl space or floor joist system with two elbows. Use the Model 4D or 3D to go down.
- Use a Roto-zip-bit router tool to cut the drywall leaving a caulk joint for the painter (Diagram E). It is best to caulk or mud this void (required for One-Hour Rating).
- The baseboard is best terminated with a tapered back-cut into the rim extension on either side of box (Diagram G).
- Exposed metal can be left unpainted or can be sprayed with an acrylic latex or oil-based (alkyd) paint when the rest of the wall, trim or baseboard is painted.

22 Gauge Aluminumized Steel (safe, rust free & paintable)

Caulk void left from router

Zip-bit cut drywall and then caulk (preferred) or mud

Built baseboard to rim and back-cut slightly

Install Dryerbox on bottom plate or floor near center of appliance

In-Value Dryer Products
220 S. Central Blvd., Suite 207
Folsom, CA 95630 USA

US Patents: 6,419,102
7,731,045

Available throughout the country from supply houses, lumber yards and hardware centers who carry heating, ventilation and air conditioning parts and supplies.

The word Dryerbox is a registered trademark of In-Value Technologies, Inc. All rights reserved. Made in the USA.

Resources for other well made ventilation products by In-Value:
www.Dryer-El.com • www.Dryer-Flax.com • www.Dryer-Jack.com
www.Dryer-Placard.com • www.Dryer-Wall-Vent.com

Part Number: DB-425

Model 425 (4 1/4" Deep)

Locate a distributor near you by using the online supplier locator at www.dryerbox.com

© 2015 (Rev. 09/15) 1001-N2D

1 DRYER BOX DETAIL
M6.01e NOT TO SCALE

SUBMITTAL

Artis Metals Company

Artis Galvanized Roof J-Vents

- Multiple Uses
Gravity Attic Ventilator
Indoor Exhaust Hood
Use on any Roof Pitch
With Fine Mesh Bug Screen

SIZE	ITEM#	LBS
3"	JV 328	0.50
4"	JV 428	1.00
6"	JV 626	2.00
7"	JV 726	2.50
8"	JV 826	3.00
10"	JV 1026	5.00
12"	JV 1226	6.25
14"	JV 1424	7.00

REMOVE FINE MESH BUG SCREEN FROM ALL 4" DRYER EXHAUST.

Hood Dimensions

	3"	4"	6"	7"	8"	9"	10"	12"	14"
A	6.0	9.0	12.0	12.0	15.0	15.0	18.0	20.0	22.0
B	3.0	4.0	6.0	7.0	8.0	9.0	10.0	12.0	14.0
C	2.5	2.5	3.0	2.5	3.5	3.0	2.5	4.0	4.0
D	6.0	9.0	12.0	12.0	15.0	15.0	18.0	20.0	22.0
E	5.0	6.0	10.0	11.0	12.0	14.0	16.0	18.0	18.5
F	3.0	3.25	5.0	5.25	5.5	5.5	6.5	7.25	7.25
G	2.0	1.75	3.25	3.75	3.75	3.75	4.25	4.75	4.5
H	1.0	1.5	1.75	1.5	1.75	1.75	2.25	2.5	2.75
I	2.0	2.5	3.25	3.25	3.25	3.25	3.5	4.0	3.5
JA	7.0	12.0	28.0	38.0	50.0	63.0	78.0	113.0	133.0

Jacobs Heating - 4474 SE Milwaukie Ave - Portland, OR 97202 - JacobsHVAC.com

2 LOW PROFILE ROOF VENT
M6.01e NOT TO SCALE

ADA HOOD

JVX3300EJ/SJ

GE Appliances 30" Under the Cabinet Hood

FEATURES AND BENEFITS

- Easy installation - 10 minutes or less by one person
- Two-speed, 200-CFM venting system - Removes smoke, grease, odors and moisture
- Front controls - Enjoy easy access and a subtle appearance
- Cooktop lighting - Illuminate cooking space and surrounding surface
- Convertible venting options - Select recirculating or external venting
- Vertical and rear exhaust - Exhausts from the top or rear of the hood
- Appearance (Partially enclosed bottom) - Enjoy easy access to hood interior
- Dishwasher safe filter - Filters grease and is dishwasher-safe
- Model JVX3300ESJSS - Stainless steel
- Model JVX3300EJES - Slate

CFM/SONES RATINGS	
Exhaust High Speed (HS)	200/6.0
Exhaust Working Speed (WS)	100/1.5

Specification Revised 6/18

JVM3160RF/EF

GE® 1.6 cu. ft. Over-the-Range Microwave Oven

DIMENSIONS AND INSTALLATION INFORMATION (IN INCHES)

HOOD EXHAUST DUCT: Outside ventilation requires a HOOD EXHAUST DUCT. Read the following carefully.

EXHAUST CONNECTION: The hood exhaust has been designed to mate with a standard 3-1/4" x 10" rectangular duct. If a round duct is required, a rectangular-to-round transition adaptor must be used. Do not use less than a 6" diameter duct.

REAR EXHAUST: If a rear or horizontal exhaust is to be used, care should be taken to align exhaust with space between studs, or wall should be prepared at the time it is constructed by leaving enough space between the wall studs to accommodate exhaust.

MAXIMUM DUCT LENGTH: For satisfactory air movement, the total duct length of 3-1/4" x 10" rectangular or 6" diameter round duct should not exceed 140 equivalent feet.

ELBOWS, TRANSITIONS, WALL AND ROOF CAPS, etc., present additional resistance to airflow and are equivalent to a section of straight duct which is longer than their actual physical size. When calculating the total duct length, add the equivalent length of all transitions and adapters plus the lengths of all straight duct sections. The chart below shows the approximate feet of equivalent length of some typical ducts.

DUCT	EQUIVALENT FEET
A. Rectangular-To-round Transition Adaptor	5 ft.
B. Wall Cap	40 ft.
C. 90° Elbow	10 ft.
D. 45° Elbow	5 ft.
E. 90° Elbow	25 ft.
F. 45° Elbow	5 ft.
G. Roof Cap	24 ft.

Specification Revised 6/20

System No. F-C-7057

CLASSIFIED
UL US

ANSI/UL 1479 (ASTM E814) CANULC S115

F Rating	FT Rating
1 Hr	1 Hr
1 Hr	1 Hr
1 Hr	1 Hr

SECTION A-A

Hilti Firestop Systems

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Page: 1 of 2

System No. F-C-7057

CLASSIFIED
UL US

ANSI/UL 1479 (ASTM E814) CANULC S115

- Floor-Ceiling Assembly - The 1 hr fire-rated solid or trussed lumber joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L501 Series Floor-Ceiling Designs in the UL Fire Resistance Directory. The general construction details of the floor-ceiling assembly are summarized below.
 - Flooring System - Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture as specified in the individual Floor-Ceiling Design. Max area of floor opening is 150 in.2 (0.098 m2) with a max 1.5 in. (38 mm) annular space between duct and framing members.
 - Wood Joists - Nom 10 in. (254 mm) deep (or deeper) lumber, steel or combination lumber and steel joists, trusses or Structural Wood Members with bridging as required and with ends freestopped. Additional framing members installed to form a square enclosure around the perimeter of the opening in the floor and ceiling.
 - Furring Channels - (Where Required - Not Shown) - Resilient galv steel furring installed perpendicular to wood joists between gypsum board and wood joists as specified in the individual Floor-Ceiling Design. Furring channels spaced max 24 in. (610 mm) OC. If furring channels are used within the assembly, additional furring channels to be installed along the periphery of the opening.
 - Gypsum Board - Nom 4 1/2 (112 mm) wide by 5/8 in. (16 mm) thick as specified in the individual Floor-Ceiling Design. Gypsum board secured to wood joists or furring channels as specified in the individual Floor-Ceiling Design. Max area of ceiling opening is 150 in.2 (0.098 m2) with a max 1.5 in. (38 mm) annular space between duct and framing members.
- Steel Air Duct - Max 7 in. (178 mm) diam by min 0.0157 in. (No. 30 gauge or 0.40 mm) thick galv steel air duct to be centered within the opening. Max one steel air duct to be installed within opening. Steel duct to be rigidly supported on top side of floor-ceiling assembly.
 - Steel Air Duct - Max 10 by 4 in. (254 by 102 mm) rectangular by min 0.022 in. (no. 26 gauge or 0.56 mm) thick galv steel air duct to be centered within the firestop system. Max one steel air duct to be installed within opening. Steel duct to be rigidly supported on top side of floor-ceiling assembly.
- Firestop System - The firestop system shall consist of the following:
 - Packing Material - Min 9-7/8 in. (251 mm) thickness of unfaced duct wrap material compressed min 25 percent into opening as a permanent form between the insulated steel duct and the periphery of the opening. Packing material to be installed flush with bottom surface of ceiling and recessed from top surface of floor to accommodate the required thickness of fill material.
 - Fill Void or Cavity Material - Sealant - Min 3/4 in. (19 mm) thickness of fill material applied within annulus on top surface of floor. SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant or SpecSeal LCI Sealant. EGS NELSON FIRESTOP - ES1399 Sealant. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE Sealant or FS-ONE-MAX Intumescent Sealant. TREMCO INC - Fire-Sil Sealant. DAP PRODUCTS INC - DAP Fire Stop Fire-Rated Silicone Sealant. 3M COMPANY 3M FIRE PROTECTION PRODUCTS - FB-1000 NS Sealant. NUCO INC - Self Seal GG-200.
 - Duct Wrap Material - Nom 1/2 in. (13 mm) thick, 8 pcf (128 kg/m3) or nom 1-1/2 in. (38 mm) thick, 6 pcf (96 kg/m3) with foil-scrim facers. The steel duct shall be wrapped with one layer of duct wrap installed in accordance with Ventilation Assembly No. V-32. The duct wrap is secured with min No. 18 Gauge (0.040 in. or 1 mm) galvanized steel wire formed into a loop on one end, with the other end passed through the loop, pulled hand tight and bent over. The wires spaced a max 12 in. (305 mm) OC. See Ventilation Duct Assemblies in Vol. 2 of the Fire Resistance Directory. The annular space between the insulated steel duct and the periphery of the opening shall be a nom 1-1/2 in. (38 mm). A min 1/2 in. high collar consisting of an additional layer of 1/2 in. (13 mm) thick, 8 pcf (128 kg/m3) or nom 1-1/2 in. (38 mm) thick, 6 pcf (96 kg/m3) duct wrap, installed over the duct wrap flush with the top surface of the floor and extending upward. All seams and UNIFRAX ILLC - FireWrap® GPS or FireWrap® Elite 1.5

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

Hilti Firestop Systems

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Page: 2 of 2

3 FIRE PENETRATION DETAIL - VERTICAL 4" & 6" DUCTS
M6.01e NOT TO SCALE

RESIDENTIAL VENTILATION SCHEDULE

DWELLING UNIT AREA, (SQ FT)

STUDIO = 520
1 BED = 565
2 BED = 950
3 BED = 1391

ANSI/ASHRAE Standard 62.2-2019

Floor Area, ft ²	Bedrooms				
	1	2	3	4	5
<500	30	38	45	53	60
501 to 1000	45	53	60	68	75
1001 to 1500	60	68	75	83	90
1501 to 2000	75	83	90	98	105
2001 to 2500	90	98	105	113	120
2501 to 3000	105	113	120	128	135
3001 to 3500	120	128	135	143	150
3501 to 4000	135	143	150	158	165
4001 to 4500	150	158	165	173	180
4501 to 5000	165	173	180	188	195



Date:	9-29-21	PLAN REVIEW #1	PLAN REVIEW #2	PLAN REVIEW #3
Proj No:	10081	3/28/2022	4/18/2022	6/24/2022
Drawn By:	MGA	MDR	MDR	MDR
Chkd By:	MDR	MDR	MDR	MDR
DCSN By:	MDR	MDR	MDR	MDR
Acad File:				

COMMONS ON THE TUALATIN
6845 SW NYBERG LANE
BUILDING E

MECHANICAL DETAILS

OREGON 97225
TUALATIN

PERMIT SET
11/22/21

JACOBS

MFI INC.

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SHEET

M6.01e