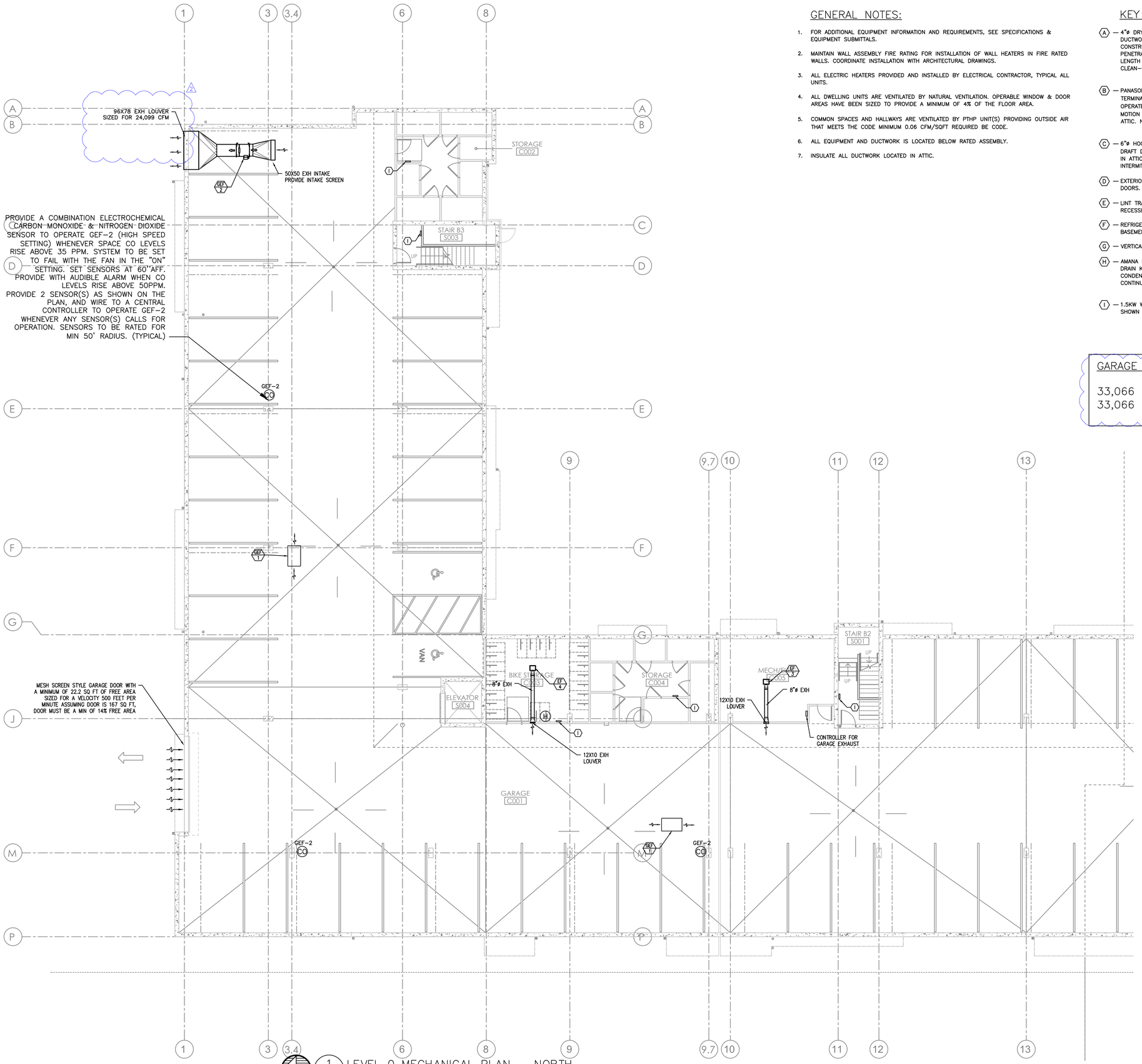

1 M2.00b LEVEL 0 MECHANICAL PLAN – NORTH
SCALE: 1/8" = 1' – 0"

GENERAL NOTES:

1. FOR ADDITIONAL EQUIPMENT INFORMATION AND REQUIREMENTS, SEE SPECIFICATIONS & EQUIPMENT SUBMITTALS.
2. MAINTAIN WALL ASSEMBLY FIRE RATING FOR INSTALLATION OF WALL HEATERS IN FIRE RATED WALLS. COORDINATE INSTALLATION WITH ARCHITECTURAL DRAWINGS.
3. ALL ELECTRIC HEATERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR, TYPICAL ALL UNITS.
4. ALL DWELLING UNITS ARE VENTILATED BY NATURAL VENTILATION. OPERABLE WINDOW & DOOR AREAS HAVE BEEN SIZED TO PROVIDE A MINIMUM OF 4% OF THE FLOOR AREA.
5. COMMON SPACES AND HALLWAYS ARE VENTILATED BY PTHP UNIT(S) PROVIDING OUTSIDE AIR THAT MEETS THE CODE MINIMUM 0.06 CFM/SQFT REQUIRED BE CODE.
6. ALL EQUIPMENT AND DUCTWORK IS LOCATED BELOW RATED ASSEMBLY.
7. INSULATE ALL DUCTWORK LOCATED IN ATTIC.

KEY NOTES:

(A) — 4"ø DRYER EXHAUST TO EXTERIOR—ROOF TERMINATION VIA SOFFIT(S) PROVIDED. INSULATE DUCTWORK IN ATTIC. 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/M6.01b

(B) — PANASONIC WHISPERGREEN CEILING FAN WITH 4"ø DUCT TO ROOF OR EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO FAN, FAN TO OPERATE AT LOW SPEED CONTINUOUS (30CFM) AND INCREASE TO 80CFM WHEN BUILT—IN MOTION SENSOR IS ACTIVATED. INSULATED FINAL 5' OF DUCTWORK, AND ALL DUCTWORK IN ATTIC. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. SEE 4/M6.01b EF 1 EF 2

(C) — 6"ø HOOD DUCT TO ROOF/EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO HOOD. INSULATED FINAL 5' OF DUCTWORK AND ALL DUCTWORK IN ATTIC. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. HOOD FAN TO OPERATE INTERMITTENTLY.

(D) — EXTERIOR EXHAUST PLENUM – SEE 1/M6.02b MAINTAIN 36" CLEAR TO OPERABLE WINDOWS AND DOORS.

(E) — LINT TRAPS ON ALL DRYERS, SEE 2/M6.02b FOR TYP DETAIL. 4"ø DRYER EXHAUST DUCT WITH RECESSED DRYER BOX.

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(I) — 1.5KW WALL HEATER QMARK AWH4404F OR EQUAL. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY.

GARAGE EXHAUST CALCULATIONS:

2

33,066 sq ft x 0.05 cfm/sq ft = 1,653 CFM
33,066 sq ft x 0.75 cfm/sq ft = 24,099 CFM

SEQUENCE OF OPERATIONS CO & NO2 SENSORS:

PROVIDE A COMBINATION ELECTROCHEMICAL CARBON MONOXIDE & NITROGEN DIOXIDE SENSOR (SYSTEM) TO OPERATE GEF-2 (SEE TAG ON SENSOR) WHENEVER SPACE CO & NO2 LEVELS RISE ABOVE SET POINT.
SYSTEM TO BE SET TO FAIL WITH THE FAN IN THE "ON" SETTING. SET SENSORS AT 60"AFF.
PROVIDE 6 SENSOR(S) AS SHOWN ON THE PLAN, AND WIRE TO A CENTRAL CONTROLLER TO OPERATE GEF-2 WHENEVER ANY SENSOR(S) CALLS FOR OPERATION.
SENSORS TO BE RATED FOR MIN 50' RADIUS
SOO:

- RISING TRIP POINT – ENGAGE SECOND FAN(S) WHEN CO LEVELS RISE ABOVE 35 PPM AND NO2 LEVELS RISE ABOVE 2.0 PPM.
- FALLING TRIP POINT – DISENGAGE SECOND FANS(S) WHEN CO LEVELS DROP TO 15 PPM AND NO2 LEVELS DROP TO 1.0 PPM.
- PROVIDE WITH AUDIBLE ALARM WHEN CO LEVELS RISE ABOVE 50 PPM AND NO2 LEVELS RISE ABOVE 2.8 PPM.

9-30-21

REGISTERED PROFESSIONAL ENGINEER
54,607
OREGON
JULY 11, 2008
MARK R. BENTEN
EXPIRES: 31DEC21

	3.28.2022	PLAN REVIEW	
	4.18.2022	PLAN REVIEW #2	
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COMMONS ON THE TUALATIN
6645 SW NYBERG LANE
BUILDING B

BASEMENT MECHANICAL PLAN - NORTH

TUALATIN OREGON 97225

PERMIT SET
11/22/21

JACOBS

MFA INC.

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2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
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WWW.MFA-ENG.COM

SHEET
M2.00b

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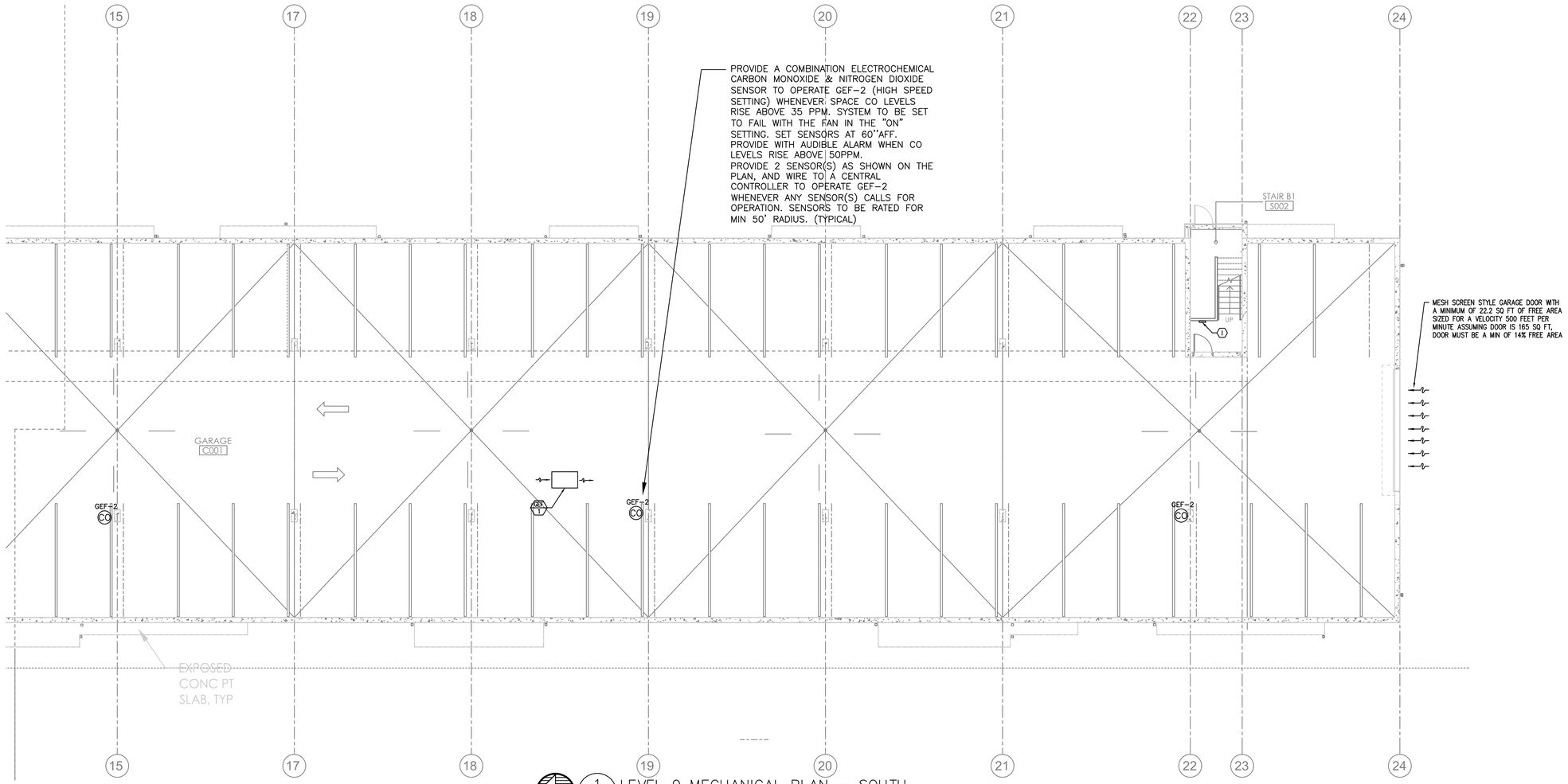

1/M2.01b LEVEL 0 MECHANICAL PLAN — SOUTH
SCALE: 1/8" = 1' - 0"

9-30-21

REGISTERED PROFESSIONAL ENGINEER
54,607
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MARK R. BENTEN
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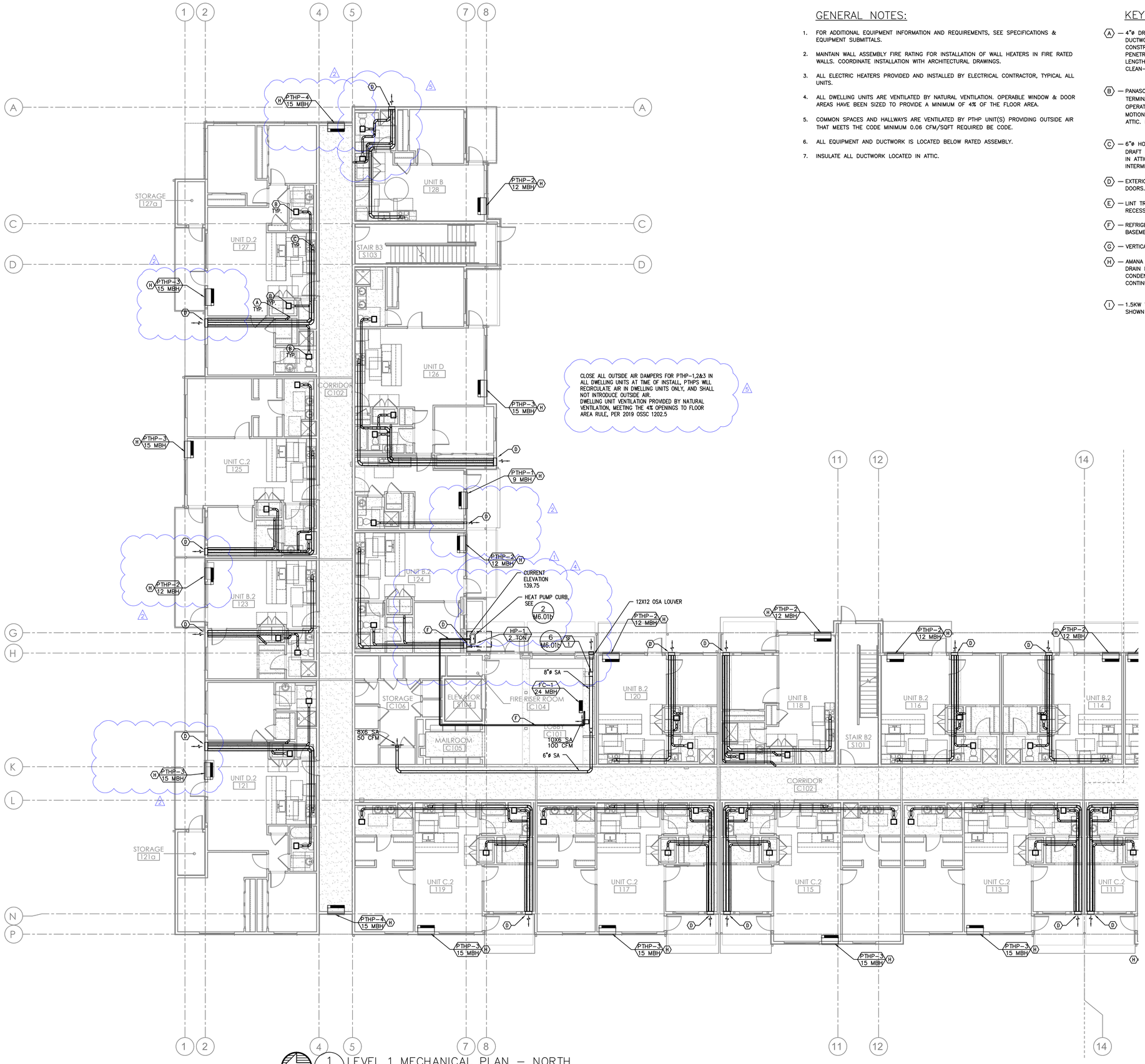

1 M2.04b LEVEL 1 MECHANICAL PLAN – NORTH
SCALE: 1/8" = 1'-0"

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9-30-21

REGISTERED PROFESSIONAL ENGINEER
54,607
OREGON
JULY 11, 2008
MARK R. BENTEN
EXPIRES: 31DEC21

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Chkd By: MRD
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COMMONS ON THE TUALATIN
6645 SW NYBERG LANE
BUILDING B
TUALATIN

LEVEL 1 MECHANICAL PLAN - NORTH
OREGON 97225

PERMIT SET
11/22/21

JACOBS

MFIA INC.

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PHN: (503) 234-0546
FAX: (503) 234-0677
WWW.MFIA-ENG.COM

SHEET
M2.04b

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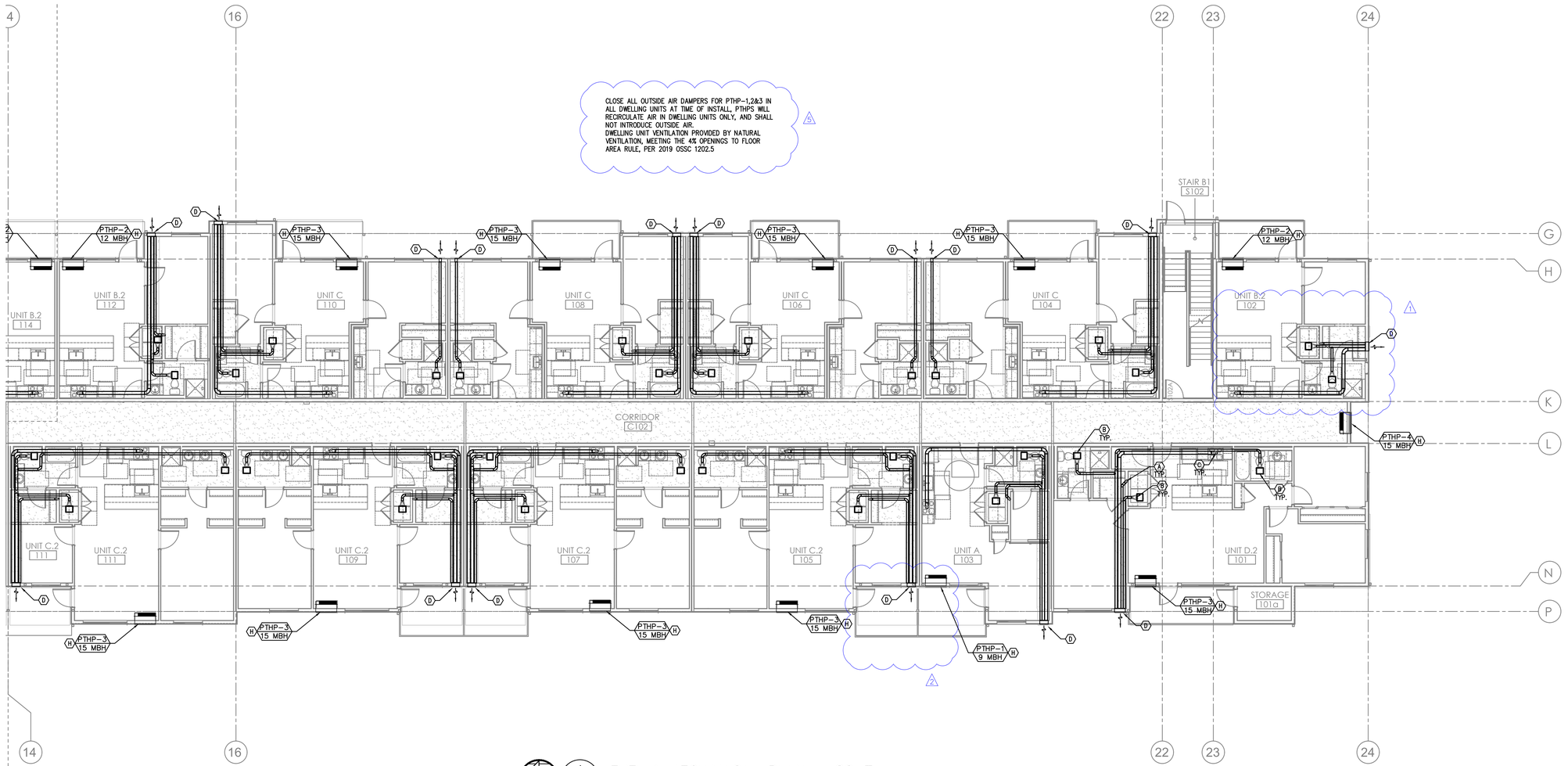

1/M2.05b LEVEL 1 MECHANICAL PLAN — SOUTH
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9-30-21

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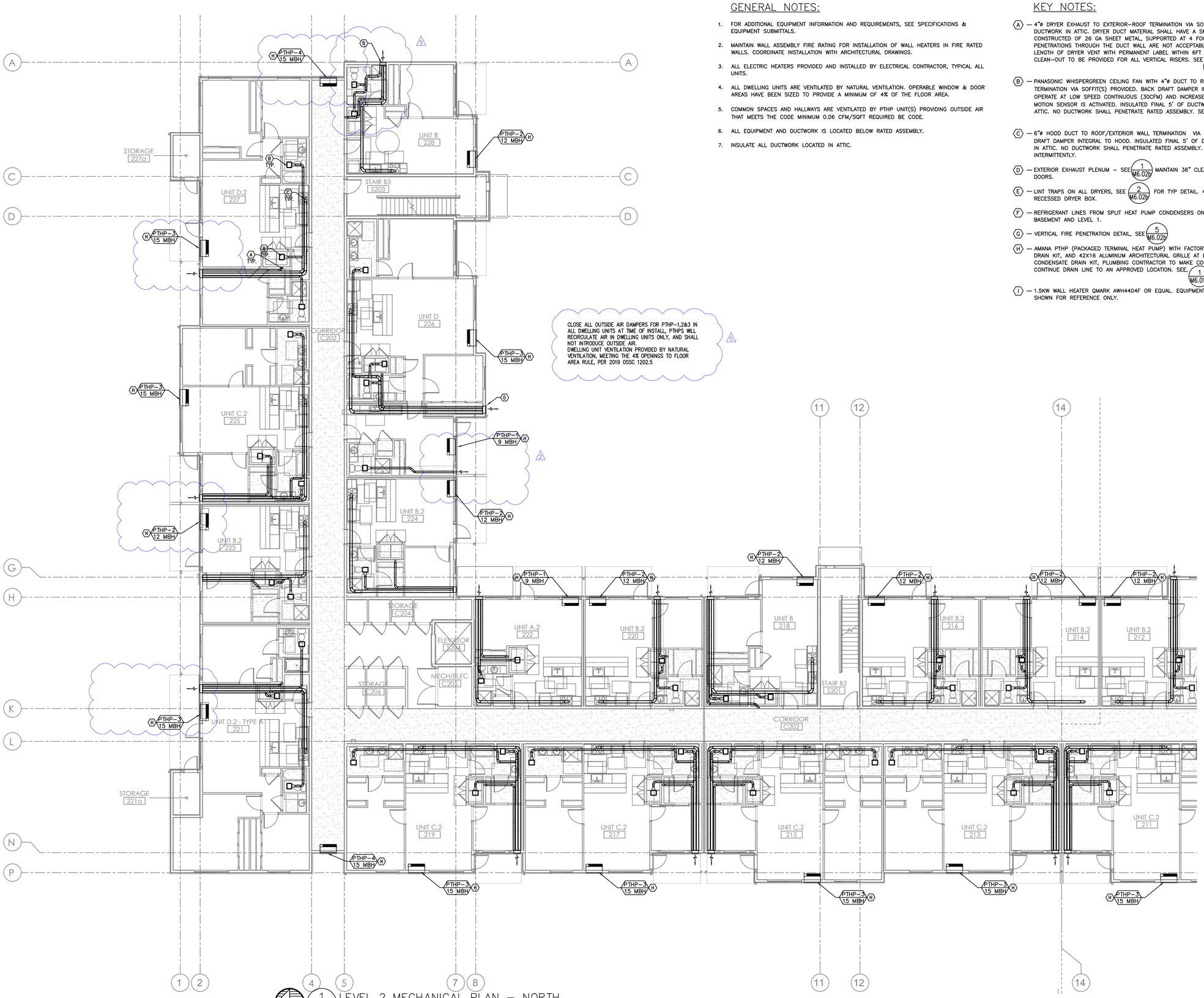

1 M2.06b LEVEL 2 MECHANICAL PLAN – NORTH

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2. MAINTAIN WALL ASSEMBLY FIRE RATING FOR INSTALLATION OF WALL HEATERS IN FIRE RATED WALLS. COORDINATE INSTALLATION WITH ARCHITECTURAL DRAWINGS.
3. ALL ELECTRIC HEATERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR, TYPICAL ALL UNITS.
4. ALL DWELLING UNITS ARE VENTILATED BY NATURAL VENTILATION. OPERABLE WINDOW & DOOR AREAS HAVE BEEN SIZED TO PROVIDE A MINIMUM OF 4% OF THE FLOOR AREA.
5. COMMON SPACES AND HALLWAYS ARE VENTILATED BY PTHP UNIT(S) PROVIDING OUTSIDE AIR THAT MEETS THE CODE MINIMUM 0.06 CFM/SQFT REQUIRED BE CODE.
6. ALL EQUIPMENT AND DUCTWORK IS LOCATED BELOW RATED ASSEMBLY.
7. INSULATE ALL DUCTWORK LOCATED IN ATTIC.

KEY NOTES:

(A) — 4"ø DRYER EXHAUST TO EXTERIOR–ROOF TERMINATION VIA SOFFIT(S) PROVIDED. INSULATE DUCTWORK IN ATTIC. 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/M6.01b

(B) — PANASONIC WHISPERGREEN CEILING FAN WITH 4"ø DUCT TO ROOF OR EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO FAN, FAN TO OPERATE AT LOW SPEED CONTINUOUS (30CFM) AND INCREASE TO 80CFM WHEN BUILT–IN MOTION SENSOR IS ACTIVATED. INSULATED FINAL 5' OF DUCTWORK, AND ALL DUCTWORK IN ATTIC. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. SEE 4/M6.01b EF 1 EF 2

(C) — 6"ø HOOD DUCT TO ROOF/EXTERIOR WALL TERMINATION VIA SOFFIT(S) PROVIDED. BACK DRAFT DAMPER INTEGRAL TO HOOD. INSULATED FINAL 5' OF DUCTWORK AND ALL DUCTWORK IN ATTIC. NO DUCTWORK SHALL PENETRATE RATED ASSEMBLY. HOOD FAN TO OPERATE INTERMITTENTLY.

(D) — EXTERIOR EXHAUST PLENUM – SEE 1/M6.02b MAINTAIN 36" CLEAR TO OPERABLE WINDOWS AND DOORS.

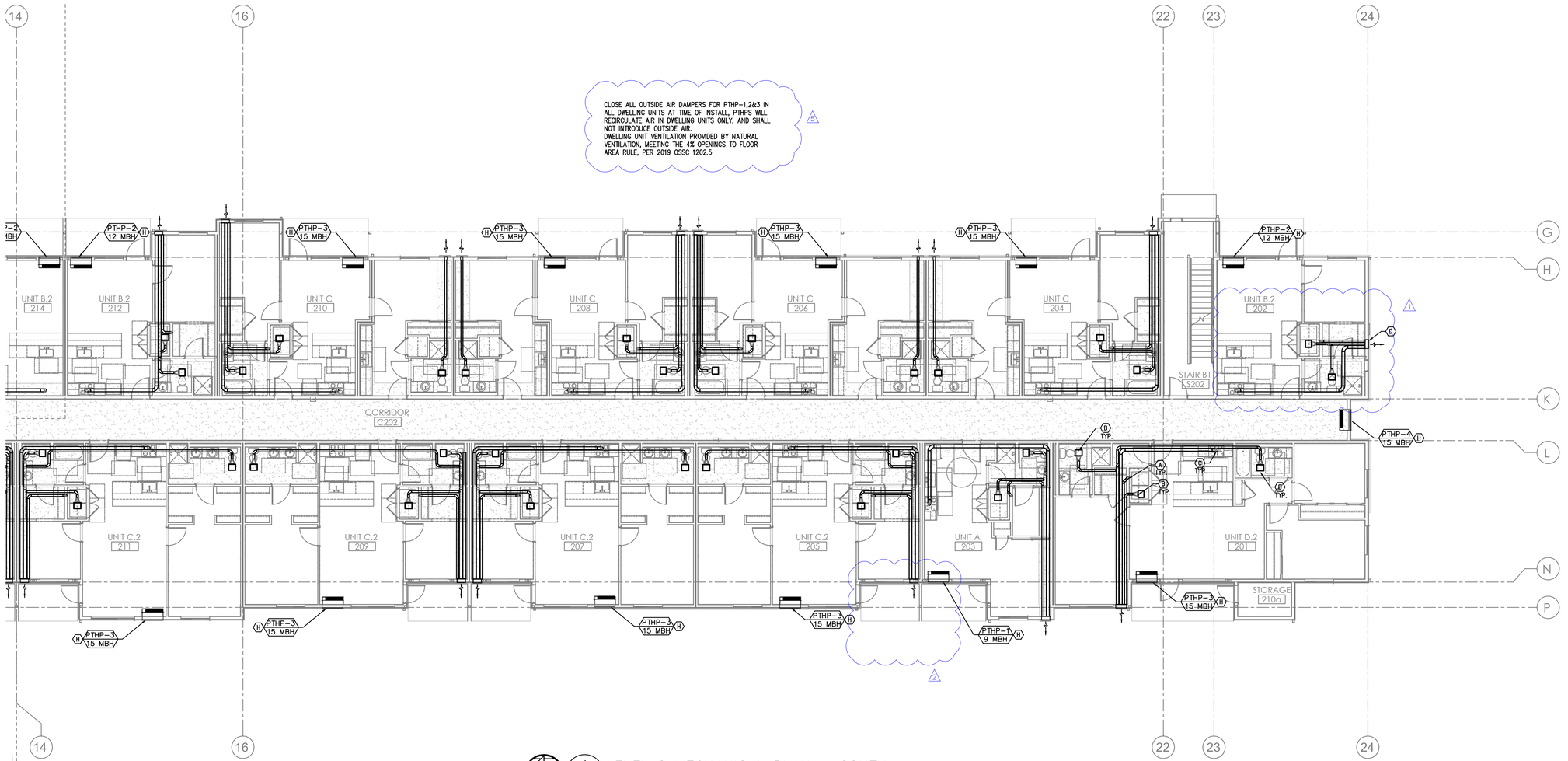
(E) — LINT TRAPS ON ALL DRYERS, SEE 2/M6.02b FOR TYP DETAIL. 4"ø DRYER EXHAUST DUCT WITH RECESSED DRYER BOX.

(F) — REFRIGERANT LINES FROM SPLIT HEAT PUMP CONDENSERS ON GROUND TO FAN COILS IN BASEMENT AND LEVEL 1.

(G) — VERTICAL FIRE PENETRATION DETAIL, SEE 5/M6.02b

(H) — AMANA 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, 1/M6.01b

(I) — 1.5KW WALL HEATER QMARK AWH4404F OR EQUAL. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY.



1/M2.07b LEVEL 2 MECHANICAL PLAN – SOUTH
SCALE: 1/8" = 1' – 0"

9-30-21

REGISTERED PROFESSIONAL ENGINEER
54,607
OREGON
JULY 11, 2008
MARK R. BENTER
EXPIRES: 31DEC21

Date:	9-29-21		
Proj No:	10081	3.28.2022	PLAN REVIEW
Drawn By:	MGA	4.18.2022	PLAN REVIEW #2
Chkd By:	MRD	6.7.2022	PLAN REVIEW #4
DSGN By:	MRD	6.24.2022	PLAN REVIEW #5
Acad File:			

COMMONS ON THE TUALATIN
6645 SW NYBERG LANE
BUILDING B
TUALATIN OREGON 97225

LEVEL 2 MECHANICAL PLAN - SOUTH

PERMIT SET
11/22/21

JACOBS

MFA INC.

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SHEET
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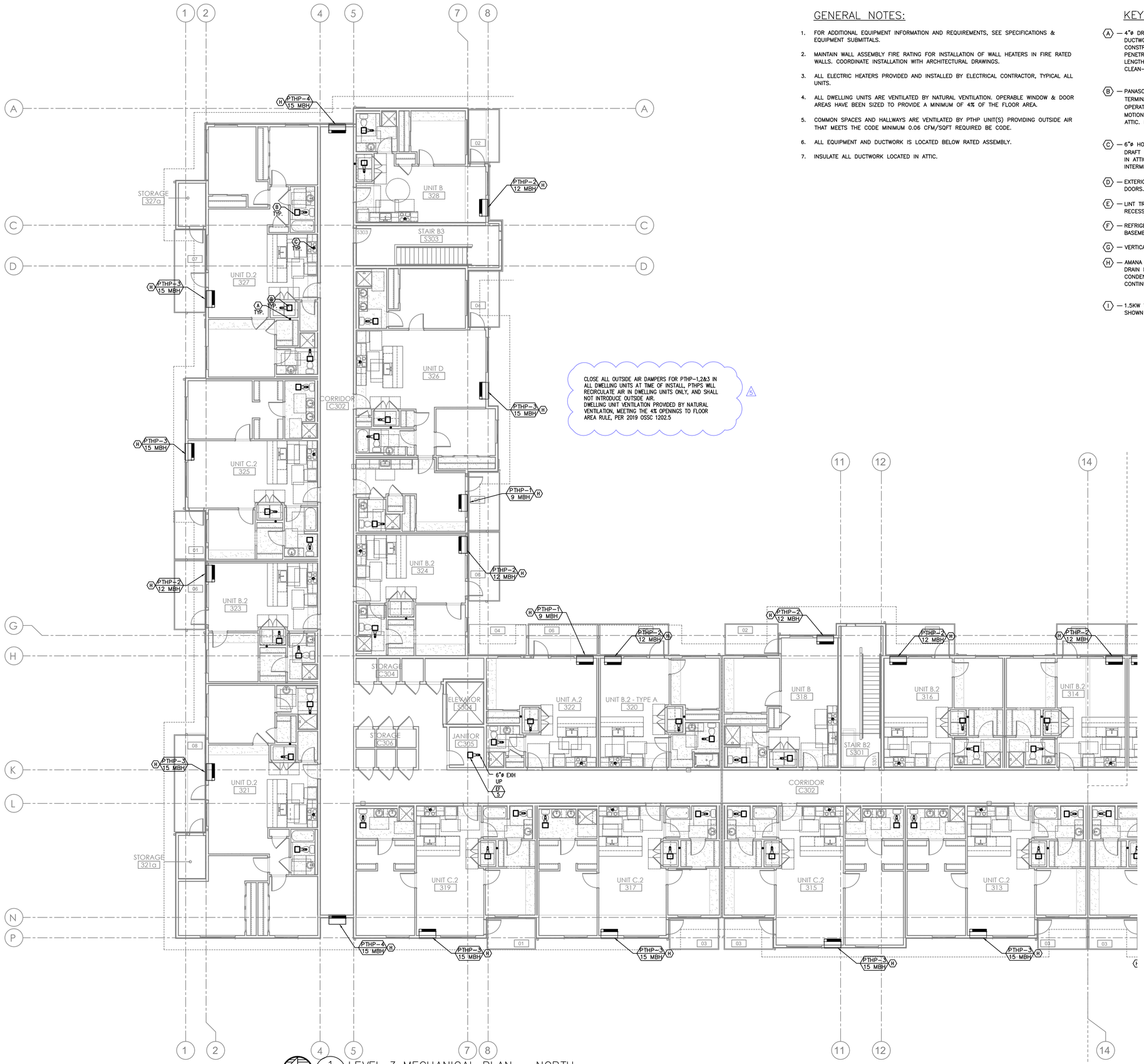

1 M2.08b LEVEL 3 MECHANICAL PLAN – NORTH
SCALE: 1/8" = 1' – 0"

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LEVEL 3 MECHANICAL PLAN - NORTH

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SHEET
M2.08b

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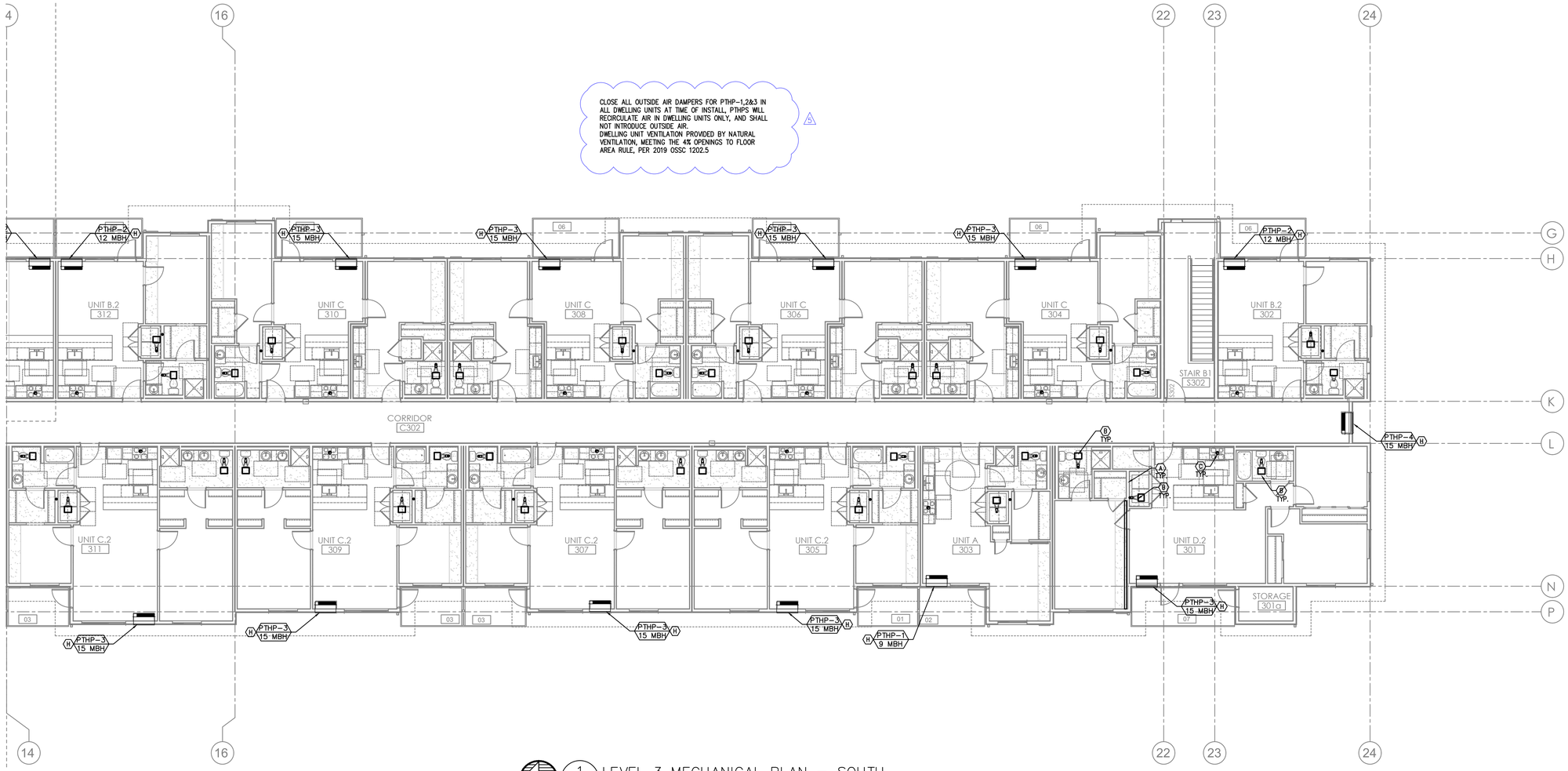

1/M2.09b LEVEL 3 MECHANICAL PLAN — SOUTH
SCALE: 1/8" = 1' - 0"

9-30-21

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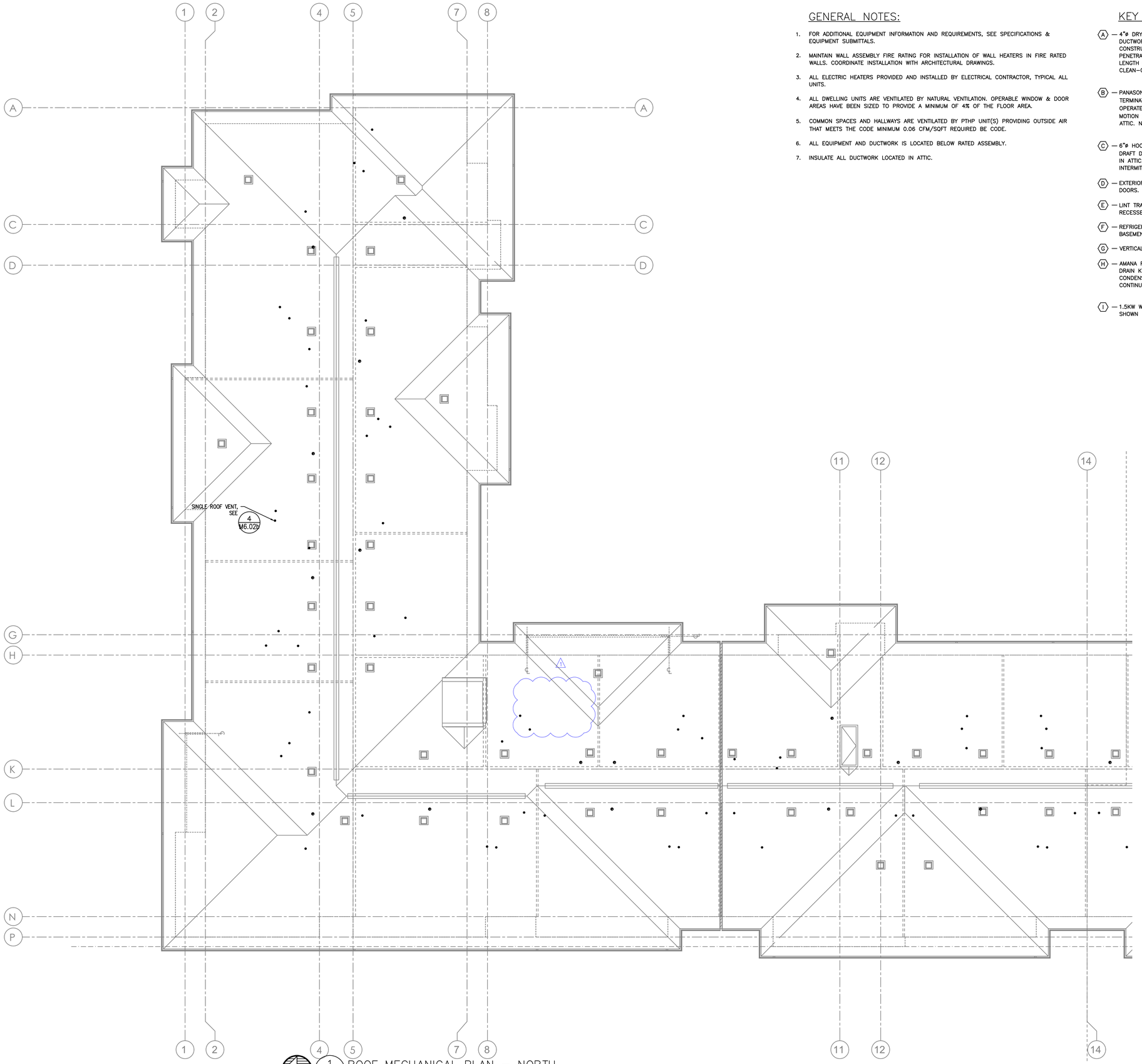

1 M2.10b ROOF MECHANICAL PLAN – NORTH
SCALE: 1/8" = 1' – 0"

GENERAL NOTES:

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SHEET
M2.10b

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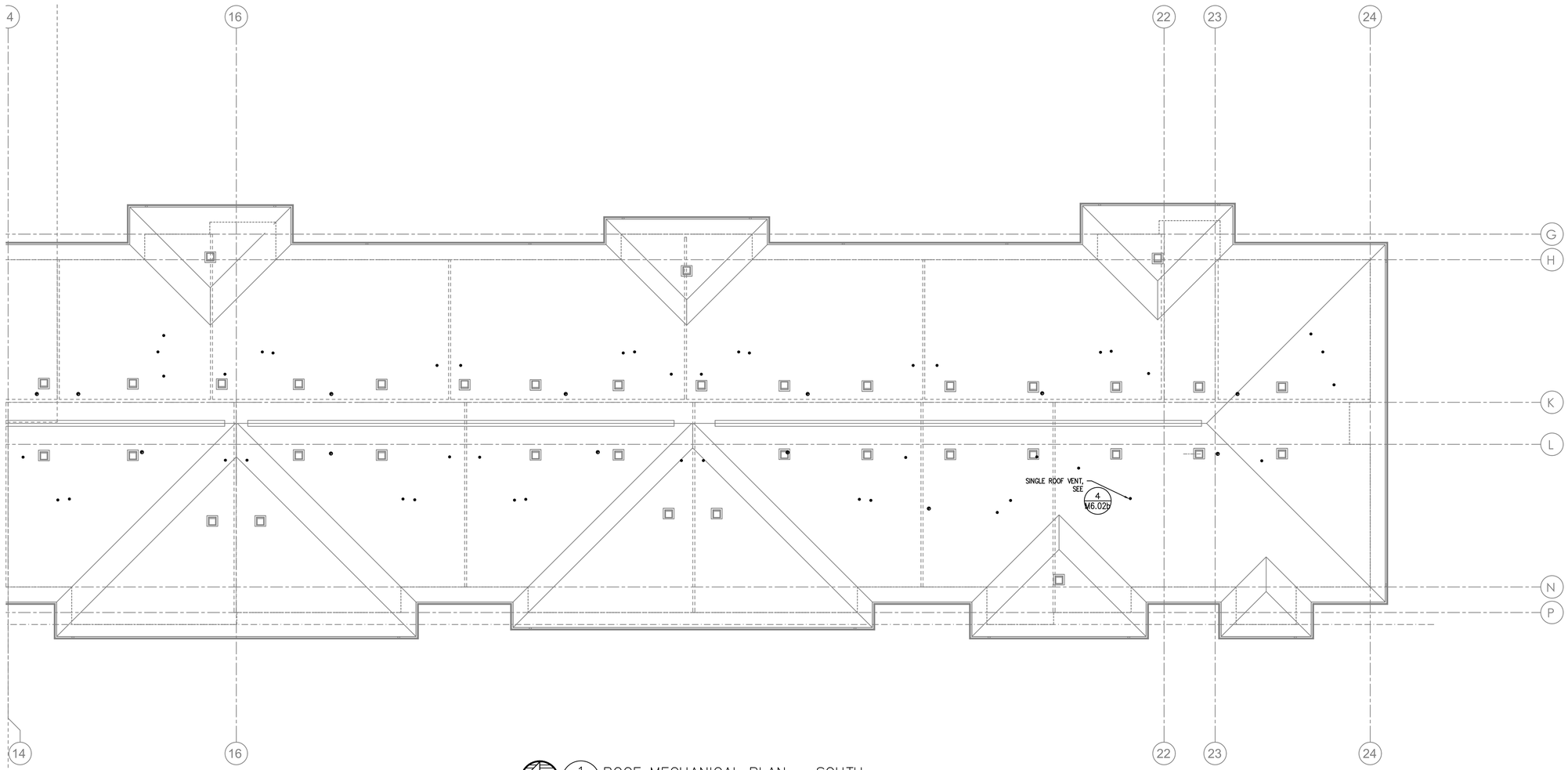

1/M2.11b ROOF MECHANICAL PLAN — SOUTH
SCALE: 1/8" = 1' - 0"

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SHEET
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MECHANICAL LEGEND

- SUPPLY AIR DIFFUSER
- RETURN AIR GRILLE
- EXHAUST AIR GRILLE
- PERFORATED RETURN AIR PANEL
- OR — DIRECTIONAL AIR FLOW
- MANUAL VOLUME DAMPER
- SUPPLY OR OUTSIDE AIR DUCT UP & DOWN
- RETURN AIR DUCT UP & DOWN
- EXHAUST AIR DUCT UP & DOWN
- SUPPLY OR OUTSIDE AIR DUCT UP & DOWN
- RETURN AIR DUCT UP & DOWN
- EXHAUST AIR DUCT UP & DOWN
- VAV TERMINAL UNIT
- VVT TERMINAL UNIT
- (E) EXISTING
- CONNECT TO EXISTING
- AC-4 THERMOSTAT OR TEMP. SENSOR
- ? NOTE
- XX/? EQUIPMENT DESIGNATOR
- BALL VALVE
- GATE VALVE
- CHECK VALVE
- BALANCING VALVE
- THERMOMETER
- DIRECTION OF FLOW
- PUMP
- STRAINER
- PRESSURE GAUGE
- PETE'S PLUG
- DOUBLE CHECK ASSEMBLY
- PRESSURE REDUCING VALVE
- UNION
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- CAP
- S — SMOKE DETECTOR
- MOTORIZED DAMPER

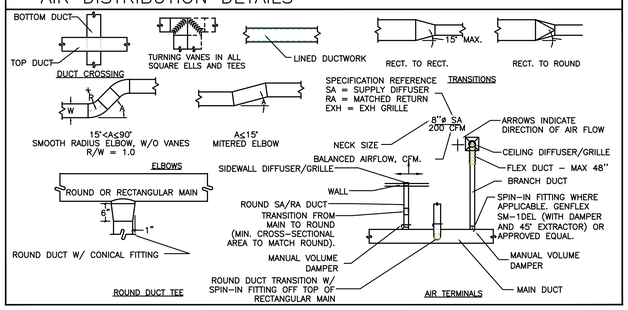
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
B.D.	BOTTOM OF DUCT
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNITS
CFM	CUBIC FEET PER MINUTE
CONN.	CONNECTION
CONT.	CONTINUATION
CW	DOMESTIC COLD WATER
DB	DRY BULB
DIA.	DIAMETER
DIST.	DISTRIBUTION
EA	EXHAUST AIR
EDB	ENTERING DRY BULB TEMPERATURE
EWB	ENTERING WET BULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
FF	FINISH FLOOR
FIXT.	FIXTURE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT.	FEET / FOOT
GA.	GAUGE
GPM	GALLONS PER MINUTE
H	HEIGHT
HP	HORSEPOWER
I.D.	INSIDE DIAMETER
IN.	INCHES
L	LENGTH
LBS.	POUNDS
LDB	LEAVING DRY BULB
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX.	MAXIMUM
MBH	THOUSANDS OF BTUs PER HOUR
MIN.	MINIMUM
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

AIR DISTRIBUTION DETAILS



EXHAUST FANS

MARK NUMBER	EF-1	EF-2	EF-3	EF-4	EF-5
TYPE	CEILING CABINET	CEILING CABINET	CEILING CABINET	CEILING CABINET	CEILING CABINET
SYSTEM	BATHROOM	LAUNDRY	MECH/ELEC	BIKE STORAGE	JAN
CFM	30/80	30/80	100	200	50
TOTAL SP. (IN H20)	0.20	0.20	0.125	0.125	0.125
RPM	1062/1146	1062/1146	1250	740	1250
TIP SPEED (FPM)	NA	NA	–	––	–
MOTOR WATTS OR HP	5/11.7 W	5/11.7 W	100 W	127 W	100 W
CONTROLLED BY	*	*	CONTINUOUS	HUMIDISTAT	CONTINUOUS
INTERLOCK WITH	MOTION SENSOR	LIGHTS	NONE	NONE	NONE
FAN SPEED CONTROLLER	YES	YES	NO	YES	NO
WHEEL TYPE	BI	BI	FC	BI	FC
BACK DRAFT DAMPER	YES	YES	GRAVITY	GRAVITY	GRAVITY
ISOLATION	RUBBER	RUBBER	RUBBER	RUBBER	RUBBER
DESIGN WEIGHT (LBS)	25	25	25	23	25
MAX. SONES	0.3/0.6	0.3/0.6	1.5	1.7	1.5
MAX AMPS – ***	0.27	0.27	1.3	1.8	1.3
POWER (VOLTS/PHASE/HZ) – ***	120/1/60	120/1/60	120/60/1	120/60/1	120/60/1
BASIS OF DESIGN:	PANASONIC FV-05-11VKS2	PANASONIC FV-05-11VKS2	BROAN L100	BROAN L200	BROAN L100

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

GARAGE EXHAUST FANS

MARK NUMBER	GEF-1 X3	GEF-2
TYPE	CENTRIFGAL JET FAN	SQ IN-LINE BELT DRIVE
SYSTEM	GARAGE CIRCULATION	GARAGE
CFM	3,384	24,099
TOTAL SP. (IN H20)	NA	0.1
RPM	1650	2141
TIP SPEED (FPM)	––	14,424
MOTOR WATTS OR HP	1.5 KW	15 HP
CONTROLLED BY	CONTINUOUS	VFD
INTERLOCK WITH	NONE	CO/NO2
FAN SPEED CONTROLLER	YES	NO
WHEEL TYPE	BI	BI
BACK DRAFT DAMPER	NONE	NONE
ISOLATION	SPRING	SPRING
DESIGN WEIGHT (LBS)	60	600
MAX. SONES OR dBA	83 dBA	95 dBA
MAX AMPS – ***	6.13 AMPS	46.2 FLA
POWER (VOLTS/PHASE/HZ) – ***	230/60/3	208/60/3
BASIS OF DESIGN:	S&P JET FAN IFFT –50N	GREENHECK TBI–FS–4L30–150

*** – 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

INDOOR UNITS – *

MARK NUMBER	FC-1 24 MBH
SYSTEM	LOBBY C101
TYPE	WALL MOUNTED
EFFICIENCY	SEE OUTDOOR UNIT
NOMINAL COOLING CAPACITY	24,000 BTUH
HEATING CAPACITY	24,000 BTUH
TOTAL SUPPLY CFM	870
OSA CFM	––
EXTERNAL SP. ("H20)	0.125
VOLTS/PHASE**	208–1
MCA/MOP**	SEE OUTDOOR UNIT
WEIGHT	50
BASIS OF DESIGN	CARRIER 40MAQB24––3
OUTDOOR UNIT	HP-1 2 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

OUTDOOR UNITS – SPLIT SYSTEM

MARK NUMBER	HP-1 2 TON
SYSTEM	LOBBY C101
TYPE	1–PORT HEAT PUMP
NORMAL COOLING CAPACITY	24,000 BTUH
NORMAL HEATING CAPACITY	24000 BTUH
EFFICIENCY SEER/EER	20/12.5
EFFICIENCY HSPF/COP	10/3.22
REFRIGERANT	410 A
REFRIGERANT CHARGE	––
MAX OPERATING TEMPS	122/–4
MAX PIPING LENGTH	98 FT
MAX PIPING HEIGHT	65 FT
VOLTS–PHASE – **	208/230–1 PHASE
MCA/MOP – **	15/25 AMPS
COMPRESSOR	VARIABLE SPEED
WEIGHT	150 LBS
BASIS OF DESIGN	CARRIER 38MAQB24–––3

** – 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 DUCT HEATER

MARK NUMBER	SF-1
SIZE (KW)	1.44 KW
DUCT SIZE	8"ø
STEPS	2
MCA	12.6
POWER (VOLTS/PHASE) *	120/1
BASIS OF DESIGN: HOTPOD	HP8

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

1

DEFERRED SUBMITTALS - MECHANICAL

DEFERRED SUBMITTALS SHOWING THE ANCHOR DETAILS AND CALCULATION WILL BE PROVIDED TO THE CITY OF PORTLAND 30 DAYS PRIOR TO THE START OF WORK AND SHALL INCLUDE THE FOLLOWING EQUIPMENT

EQUIPMENT	DESCRIPTION	WEIGHT	SUBMITTED	INSPECTOR CHECK
GEF-2	GARAGE EXHAUST	350 LBS		
HP-1	HP CONDENSER	250 LBS		

1

RESIDENTIAL VENTILATION SCHEDULE

DWELLING UNIT AREA, (SQ FT)
STUDIO = 520
1 BED = 565
2 BED = 950
3 BED = 1391

Table 4-1a (I-P) Ventilation Air Requirements, cfm ANSI/ASHRAE Standard 62.2-2019

	Bedrooms				
Floor Area, ft²	**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

PACKAGED TERMINAL HEAT PUMP

MARK NUMBER	PTHP-1 9 MBH	PTHP-2 12 MBH	PTHP-3 15 MBH	PTHP-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	11,500	14,000	14,000
HEATING CAPACITY (BTUH) @ 47°F OUTDOOR AIR TEMP	9,000	11,500	14,000	14,000
ELECTRIC HEATING CAPACITY (KW)	2.5	3.5	3.5	3.5
CFM (HI/LOW) (WET COIL)	290/264	290/264	340/314	340/314
MIN OSA (CFM)	65 CFM	65 CFM	65 CFM	65 CFM
LVG. AIR TEMP (°F)	55°F	55°F	55°F	55°F
REMOTE THERMOSTAT	YES	YES	YES	YES
EFFICIENCY (EER)	11.2	10.2	10.2	9.6
EFFICIENCY (COP)	3.5	3.5	3.1	3.1
ARCHITECTURAL GRILLE	YES	YES	YES	YES
DESIGN WT. (LBS)	135	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	14/15	19.5/20	19.5/20	19.5/20
REFRIGERANT	410a	410a	410a	410a
REFRIGERANT CHARGE	1.34 LBS	1.34 LBS	1.95 LBS	1.95 LBS
CONDENSATE DRAIN KIT *	YES – *	YES – *	YES – *	YES – *
AMANA	PTH093E	PTH123E	PTH153E	PTH153E

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

1

VENTILATION AIR SCHEDULE - CORRIDORS

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
	Az		**Pz**	**Rp**	**Ra**	**Vbz**	**Ez**	**Voz**	**Vpz**	**Zp**			**Evz**		
CORRIDORS	2995	0	0	0	0.06	180	0.8	225	1000	0.22	1000	0	0.91	246.79	PTHP-4
STORAGE	300	0	0	0	0.12	36	0.8	45	1000	0.05	1000	0	1.09	49.44	SF-1
TOTAL	**3295**		**0**			**216**		**270**	**2000**		**2000**	**0**	**0.91**	**296**	
								Vou	**Vps**				**Ev**		
					CORRECTED TOTAL OUTDOOR AIR FLOW RATE			**296**	**CFM**	**Corrected OSA Fractio**			**Zs =**	**0.15**	

9-30-21

REGISTERED PROFESSIONAL ENGINEER
54,607
OREGON
JULY 11, 2008
MARK R. BENTEN
EXPIRES: 31DEC21

Date:	9-29-21	3.28.2022	PLAN REVIEW			
Proj No:	10081	4.18.2022	PLAN REVIEW #2			
Drawn By:	MGA	6.7.2022	PLAN REVIEW #4			
Chkd By:	MRD	6.24.2022	PLAN REVIEW #5			
DSGN By:	MRD					
Acad File:						

COMMONS ON THE TUALATIN
6645 SW NYBERG LANE
BUILDING B
MECHANICAL SCHEDULES
TUALATIN OREGON 97225

PERMIT SET
11/22/21

JACOBS

MFA INC.

Consulting Engineers
2007 S.E. Ash St.
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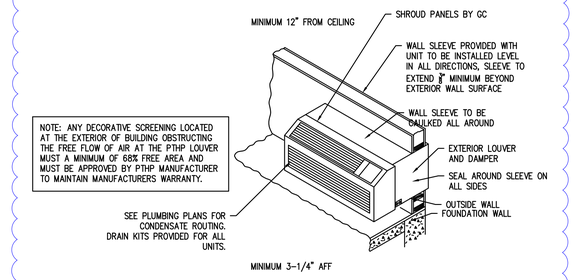
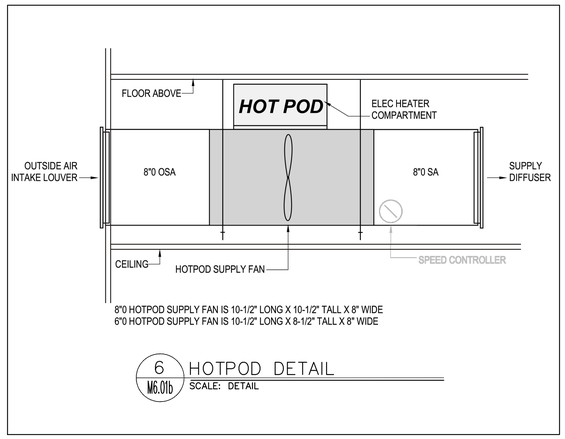
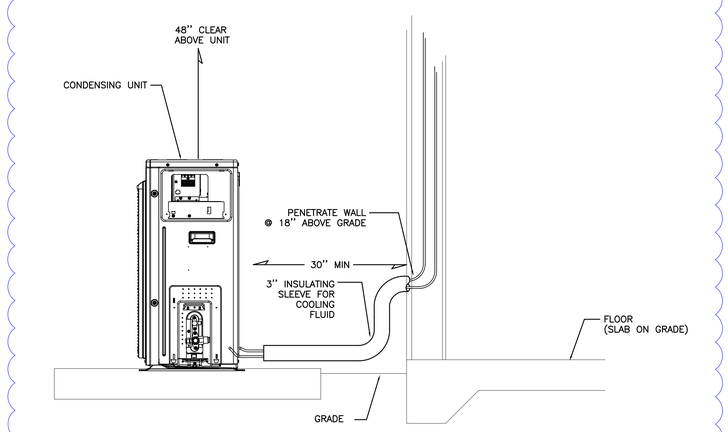
SHEET
M6.00



1 M6.01b PTHP AT EXTERIOR WALL
NOT TO SCALE



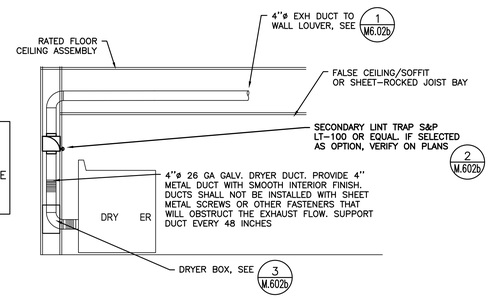
6 M6.01b HOTPOD DETAIL
SCALE: DETAIL



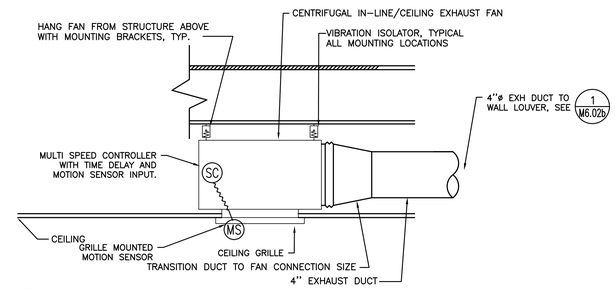
2 M6.01b HEAT PUMP CURB
DETAIL

DRYER DUCT LABEL

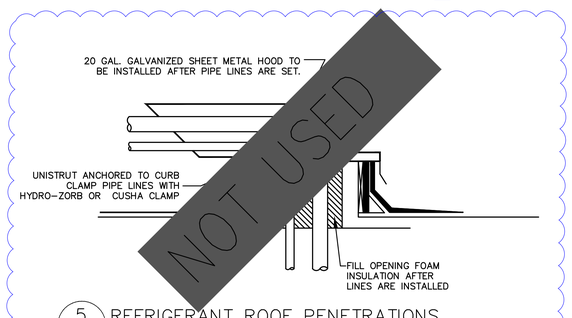
PROVIDE PERMANENT LABEL WITHIN 6' OF DRYER STATING THE EQUIVALENT LENGTH OF THE INSTALLED DRYER DUCT



3 M6.01b TYPICAL DRYER INSTALLATION
NOT TO SCALE



4 M6.01b RESTROOM EXHAUST FAN
SCALE: DETAIL



5 M6.01b REFRIGERANT ROOF PENETRATIONS
DETAIL

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 JVX3300SJSS – Stainless steel

Model JVX3300EJES – Slate

CFM/SONES RATINGS	
Exhaust High Speed (HS)	200/8.0
Exhaust Working Speed (WS)	100/1.5

GE APPLIANCES

Specification Revised 5/16

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 adaptors 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.

OPTIONAL ACCESSORIES (AVAILABLE AT ADDITIONAL COST)

Filter Kit JX81L– Recirculating Charcoal Filter Kit To be used when the Spacemaker microwave oven cannot be vented to the outside.

GE APPLIANCES

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, 800.626.2000.

Specification Revised 9/20

9-30-21

REGISTERED PROFESSIONAL ENGINEER
54,607
OREGON
JULY 11, 2008
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COMMONS ON THE TUALATIN
6645 SW NYBERG LANE
BUILDING B
TUALATIN OREGON 97225

MECHANICAL DETAILS

PERMIT SET
11/22/21

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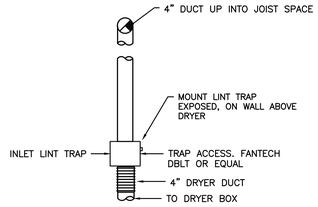
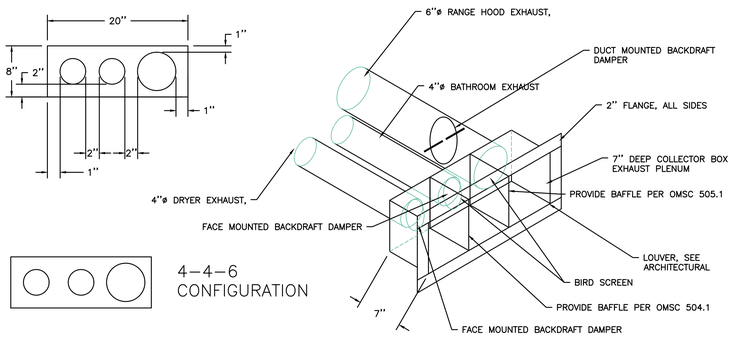


2 / M6.02b LINT TRAP DETAIL



4–4–6 CONFIGURATION

1 / M6.02b SIDE WALL DWELLING UNIT VENTING WITH HOOD
NOT TO SCALE

GFD55ESSN/ESPN

GE® 7.8 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:

1. Determine the number of 90° turns needed for your installation. If you exhaust to the side or bottom of dryer, add one turn.
2. 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.

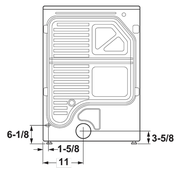
Dryers must be exhausted to the outside.

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 dampered 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.

Domestic dryer models	Number of 90° turns	Best performance: Maximum length of 4" dia. **rigid metal** duct, Exhaust hood type: A 4" opening	B 2-1/2" opening
	0	90 ft.	60 ft.
	1	60 ft.	45 ft.
	2	45 ft.	35 ft.
	3	35 ft.	25 ft.
	4	25 ft.	15 ft.



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, 800.626.2000.

Listed by Underwriters Laboratories

Specification Revised 11/19

GTX22EASK

GE Appliances Series 6.2 Cu. Ft. Capacity Aluminized 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:

1. Determine the number of 90° turns needed for your installation. If you exhaust to the side or bottom of dryer, add one turn.
2. 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.

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FOR MORE INFORMATION ON VENTING KITS AND ACCESSORIES, PLEASE CALL 1-800-GE-CARES.

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

Domestic dryer models	Number of 90° turns	BEST PERFORMANCE: Maximum length of 4" dia rigid metal duct, Exhaust hood type: A 4" opening	B 2-1/2" opening
Long Vent 6.1-7.4 cu. ft. capacity electric & gas (GTD33, GTD42, GTD45, GTD65, GTX22, GTX33, GTX42 and GTX65)	0	120 ft.	90 ft.
	1	100 ft.	75 ft.
	2	85 ft.	65 ft.
	3	70 ft.	55 ft.
	4	60 ft.	45 ft.
	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.

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, 800.626.2000.

Listed by Underwriters Laboratories

Specification Revised 7/16

DRYER BOX

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

- ✓ Save Space
- ✓ Save Energy
- ✓ Reduce Fire Hazard

–WARNING– Sharp Edges

Made in the USA

the dryerbox®

CLASSIFIED cULus — See W-L-7129 Firestop System in UL Directory Referenced From File Number R21933. Complete Marking on Product.

Installation Instructions

1. 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.
2. Attach Dryerbox® to stud and bottom plate at a minimum of 3 corners.
3. 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 13 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.
4. When installing the 4¼" deep Dryerbox® (Model 425) into a 2x4 wall, fir out the respective wall ¾" with a 1x2 furring strip to provide adequate depth or use the 3 ½" Model 350.
5. 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.
6. 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 18 in. OC. The screws used to attach the inner layer of drywall shall be spaced a maximum of 18 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.
7. 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.
8. 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 locations. Break-away when duct is fully supported in-place. Seal penetration with foil tape or sealant caulk.
9. 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.
10. 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).
11. The baseboard is best terminated with a tapered back-cut into the rim extension on either side of box (Diagram E).
12. 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.

Diagram A — For 2x4 walls, add a single furring strip to each stud or use the 3 ½" deep Dryerbox. Rest Dryerbox on bottom plate or on floor. Install box as low as possible and as near to the center of the proposed dryer

Diagram B

Venting Options

Vent up to a roof jack or soft vent — Diagram C

Vent to a side or rear wall hood — Diagram D

Caulk void left from router

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

Butt baseboard to rim and back-cut slightly

Install Dryerbox on bottom plate or floor near center of appliance

InOvate Dryer Products
250 S. Central Blvd. Suite 207
Jupiter, FL 33458 USA

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

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

Resources for other well made ventilation products by InOvate:
www.Dryer-Eli.com • www.DryerFlex.com • www.DryerJack.com
www.DryerPlacard.com • www.DryerWallVent.com

Toll Free: (888) 443-7937

More installation instructions at www.dryerbox.com

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

Model 425
(4 ¼" Deep)

Part Number: DB-425

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

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UK-425

3 / M6.02b DRYER BOX DETAIL
NOT TO SCALE

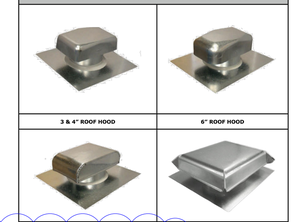
SUBMITTAL

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

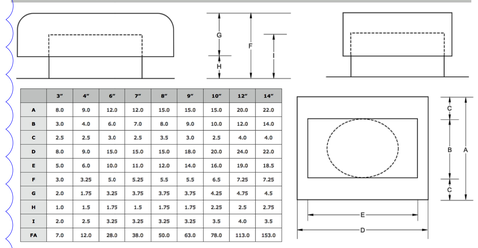
SIZE	ITEM#	LBS
3"	JV 328	0.50
4"	JV 428	1.00
6"	JV 626	2.00
7"	JV 726	2.50
8"	JV 826	3.00
10"	JV 1026	5.00
12"	JV 1226	6.25
14"	JV 1424	7.00

J-VENT - STANDARD GALVANIZED HOOD



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

Hood Dimensions



	3"	4"	6"	7"	8"	9"	10"	12"	14"
A	8.0	9.0	12.0	12.0	15.0	15.0	15.0	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	8.0	9.0	15.0	15.0	15.0	18.0	20.0	24.0	22.0
E	5.0	6.0	10.0	11.0	12.0	14.0	16.0	19.0	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
FA	7.0	12.0	28.0	38.0	50.0	63.0	78.0	113.0	153.0

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

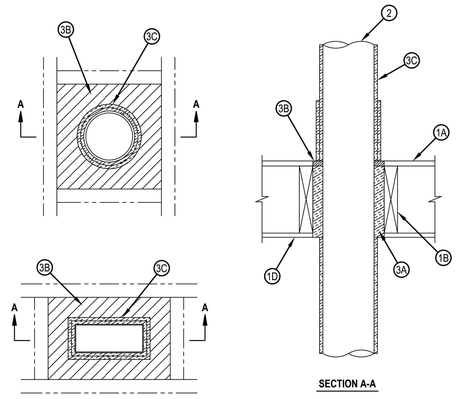
4 / M6.02b LOW PROFILE ROOF VENT
NOT TO SCALE

System No. F-C-7057

FC 7057

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

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



Hilti Firestop Systems

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System No. F-C-7057

FC 7057

1. 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 L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory. The general construction details of the floor-ceiling assembly are summarized below:
   A. 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.
   B. 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 firestopped. Additional framing members installed to form a square enclosure around the perimeter of the opening in the floor and ceiling.
   C. 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.
   D. Gypsum Board* — Nom 4 ft (1.2 m) 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.
2. 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.
2A. 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.
3. Firestop System — The firestop system shall consist of the following:
   A. 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.
   B. 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 — Fyre-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
   C. Duct Wrap Materials* — 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. Tie 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 12 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 edges shall be sealed with min 3 in. (76 mm) wide pressure sensitive aluminum foil tape.
      UNIFRAX I L L C — FyreWrap® DPS or FyreWrap® 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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5 / M6.02b FIRE PENETRATION DETAIL – VERTICAL 4" & 6" DUCTS
NOT TO SCALE

9-30-21

REGISTERED PROFESSIONAL ENGINEER — 54,607 — OREGON — JULY 11, 2008 — MARK R. BENTER — EXPIRES: 31DEC21

	3.28.2022	PLAN REVIEW	
	4.18.2022	PLAN REVIEW #2	
	6.7.2022	PLAN REVIEW #4	
	6.24.2022	PLAN REVIEW #5	
Date:	9-29-21		
Proj No:	10081		
Drawn By:	MGA		
Chkd By:	MRD		
DSGN By:	MRD		
Acad Files:			

COMMONS ON THE TUALATIN
6645 SW NYBERG LANE
BUILDING B
TUALATIN OREGON 97225

MECHANICAL DETAILS

PERMIT SET
11/22/21

JACOBS

MEI INC.

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SHEET
M6.02