

CITY STAMP

PROJECT

# MLK & FAILING BUILDING 3

3830 NE MARTIN LUTHER  
KING JR BLVD  
PORTLAND, OR 97212

DRAWING TITLE  
**MECH PLAN -  
LEVEL 1**

REVISIONS

6-3-21



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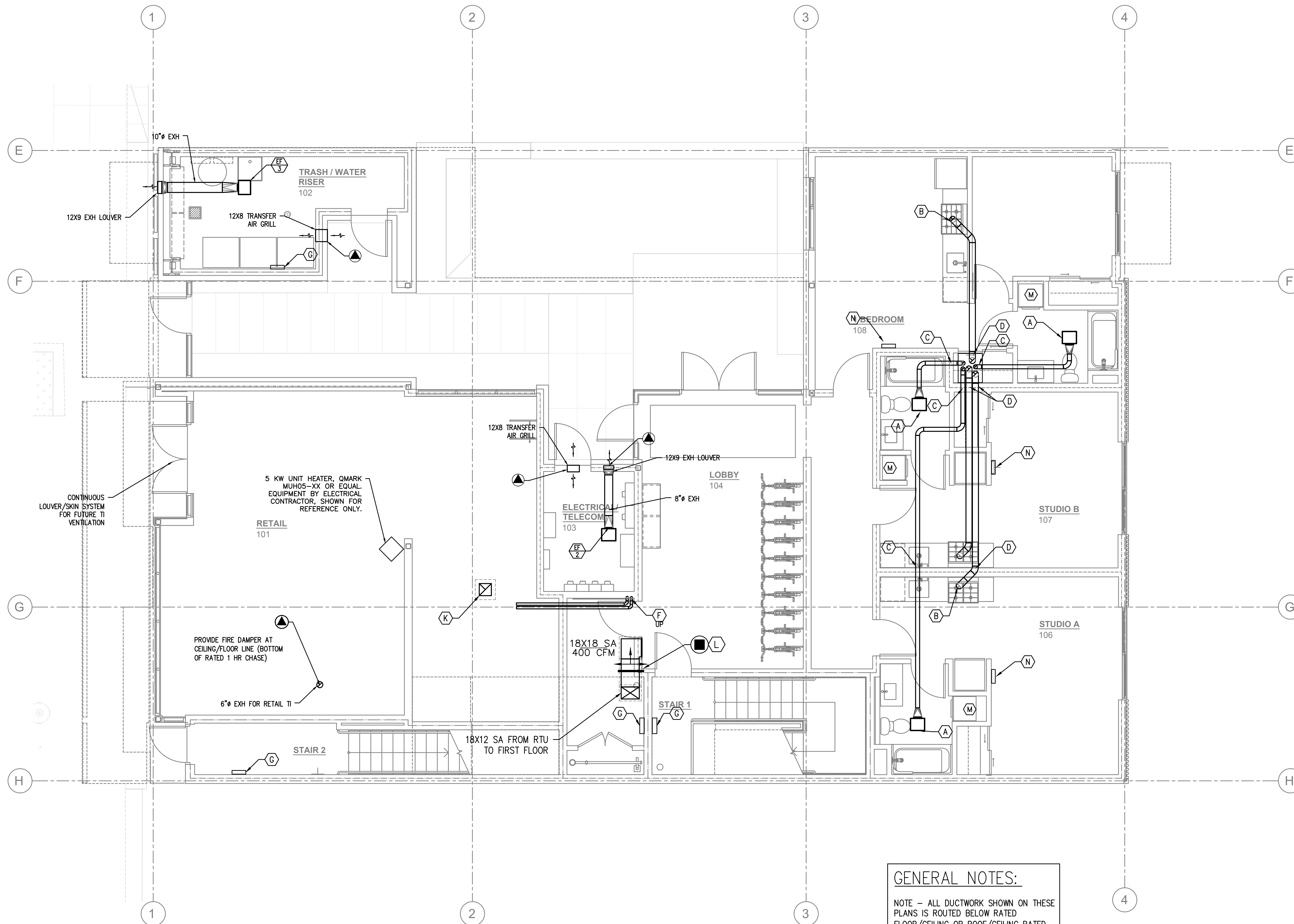
DATE June 17, 2022

JOB NO. 18.16

DRAWING NO.

# M2.01

CONSTRUCTION



- KEY NOTES:**
- (A) 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 (1) (M6.01) (EF 1)
  - (B) 6" HOOD DUCT TO ROOF/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. PER 2019 OMSC 505.3 HOOD DUCTS SHALL HAVE SMOOTH INNER WALLS AND SHALL BE AIR TIGHT AND BE EQUIPPED WITH A BACKDRAFT DAMPER.
  - (C) FOR 4" UL FIRE PENETRATION DETAIL, SEE (2) (M6.00)
  - (D) FOR 6" FIRE PENETRATION DETAIL, SEE (1) (M6.00)
  - (E) 4" BATH EXHAUST AND 6" RANGE EXHAUST UP TO TO ROOF.
  - (F) LINE SETS FOR FUTURE TI SPLIT SYSTEMS, FROM LEVEL 1 RETAIL SPACE TO ROOF.
  - (G) 1.5KW WALL HEATER QMARK AMH4404F OR EQUAL. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY.
  - (H) FOR AC PORT DETAIL, SEE (4) (M6.01)
  - (I) FOR REFRIGERANT ROOF PENETRATION, SEE (3) (M6.01)
  - (J) FOR ROOFTOP OUTLET HOOD SEE (4) (M6.01)
  - (K) 12X12 GREASE EXHAUST (WITH FIRE WRAP IN 22X22 SHAFT SPACE) ROUTED FROM ROOF (CAPPED) TO TI SPACE (CAPPED FOR FUTURE TI). PROVIDE VENTED CURB ADAPTER AND CAP FOR FUTURE GREASE EXHAUST FAN.
  - (L) SUPPLY AIR OR RETURN GRILLE, SIZED FOR BOTH FREE AREA AND FOR ACTUATOR ACCESS. SEE (1) (M6.02) FOR GRILLE INSTALLATION, AND SEE (2) (M6.02) FOR TYPICAL F/S INSTALLATION AND CONTROLS.
  - (M) CONDENSING DRYERS - NO VENTING REQUIRED.
  - (N) 1.5KW (2 KW IN STUDIO UNITS) CADET WALL HEATERS FOR LIVING UNITS, 120V. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY. PROVIDE WILL WALL MOUNTED T-STAT.

**VENTILATION CALCULATIONS:**

ALL DWELLING UNITS ARE VENTILATED BY NATURAL VENTILATION WITH OPERABLE WINDOWS (NO LIMITERS), BATHROOM EXHAUST FANS RUN CONTINUOUSLY (SIZED PER ASHRAE 62.2).

COMMON SPACES AND HALLWAYS ARE VENTILATED BY RTU'S TO EXCEED THE MINIMUM 0.06 CFM/SQ FT REQUIREMENT

SEE VENTILATION SCHEDULES FOR OTHER UNITS

**GENERAL NOTES:**

NOTE - ALL DUCTWORK SHOWN ON THESE PLANS IS ROUTED BELOW RATED FLOOR/CEILING OR ROOF/CEILING RATED ASSEMBLIES AND IS CONCEALED ABOVE FALSE SOFFITS/CEILINGS - SEE ARCHITECTURAL RCP PLANS FOR CEILING HEIGHTS.

**1** MECH PLAN - LEVEL 1  
M2.01 SCALE: 1/4" = 1'-0"

CITY STAMP

PROJECT

**MLK & FAILING  
BUILDING 3**

3830 NE MARTIN LUTHER  
KING JR BLVD  
PORTLAND, OR 97212

DRAWING TITLE  
**MECH PLAN -  
LEVEL 2**

REVISIONS

6-3-21



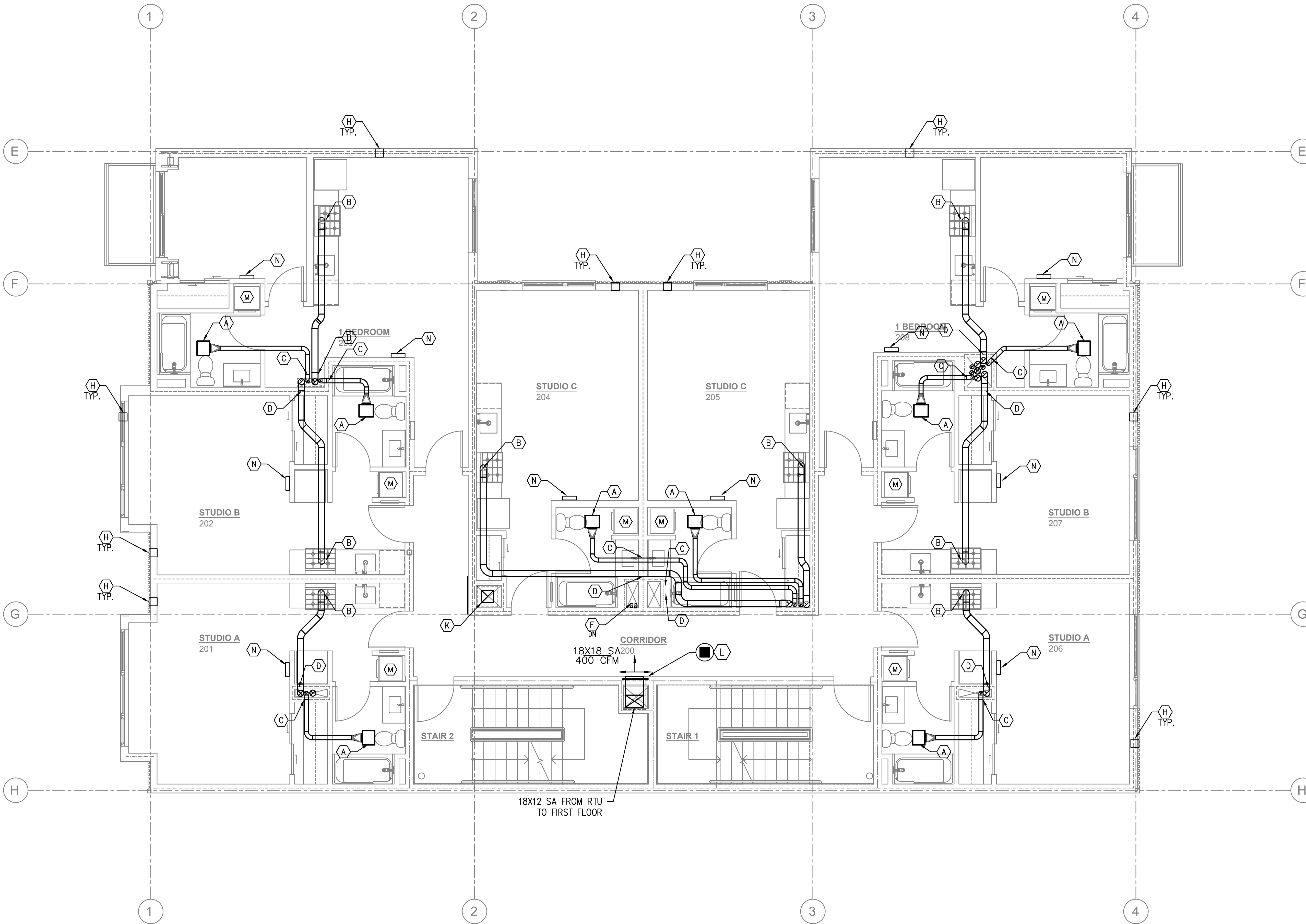
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DATE June 17, 2022  
JOB NO. 18.16

DRAWING NO.

**M2.02**

CONSTRUCTION



- KEY NOTES:**
- (A) 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 1 M6.01 EF 1
  - (B) 6" HOOD DUCT TO ROOF/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. PER 2019 IMSC 505.3 HOOD DUCTS SHALL HAVE SMOOTH INNER WALLS AND SHALL BE AIR TIGHT AND BE EQUIPPED WITH A BACKDRAFT DAMPER.
  - (C) FOR 4" UL FIRE PENETRATION DETAIL, SEE 2 M6.00
  - (D) FOR 6" FIRE PENETRATION DETAIL, SEE 1 M6.00
  - (E) 4" BATH EXHAUST AND 6" RANGE EXHAUST UP TO TO ROOF.
  - (F) LINE SETS FOR FUTURE T1 SPLIT SYSTEMS, FROM LEVEL 1 RETAIL SPACE TO ROOF.
  - (G) 1.5KW WALL HEATER QMARK AMH4404F OR EQUAL. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY.
  - (H) FOR AC PORT DETAIL, SEE 4 M6.01
  - (I) FOR REFRIGERANT ROOF PENETRATION, SEE 3 M6.01
  - (J) FOR ROOFTOP OUTLET HOOD SEE 4 M6.01
  - (K) 12X12 GREASE EXHAUST (WITH FIRE WHIP IN 22X22 SHAFT SPACE) ROUTED FROM ROOF (CAPPED) TO T1 SPACE (CAPPED FOR FUTURE T1). PROVIDE VENTED CURB ADAPTER AND CAP FOR FUTURE GREASE EXHAUST FAN.
  - (L) SUPPLY AIR OR RETURN GRILLE, SIZED FOR BOTH FREE AREA AND FOR ACTUATOR ACCESS. SEE 1 M6.02 FOR GRILLE INSTALLATION, AND SEE 2 M6.02 FOR TYPICAL F/S INSTALLATION AND CONTROLS.
  - (M) CONDENSING DRYERS - NO VENTING REQUIRED.
  - (N) 1.5KW (2 KW IN STUDIO UNITS) CADET WALL HEATERS FOR LIVING UNITS, 120V. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY. PROVIDE WILL WALL MOUNTED T-STAT.

**VENTILATION CALCULATIONS:**

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SEE VENTILATION SCHEDULES FOR OTHER UNITS

**1** MECH PLAN - LEVEL 2  
M2.02 SCALE: 1/4" = 1'-0"



CITY STAMP

PROJECT

# MLK & FAILING BUILDING 3

3830 NE MARTIN LUTHER  
KING JR BLVD  
PORTLAND, OR 97212

DRAWING TITLE  
**MECH PLAN -  
LEVEL 3**

REVISIONS

6-3-21



EXPIRES: 31DEC21

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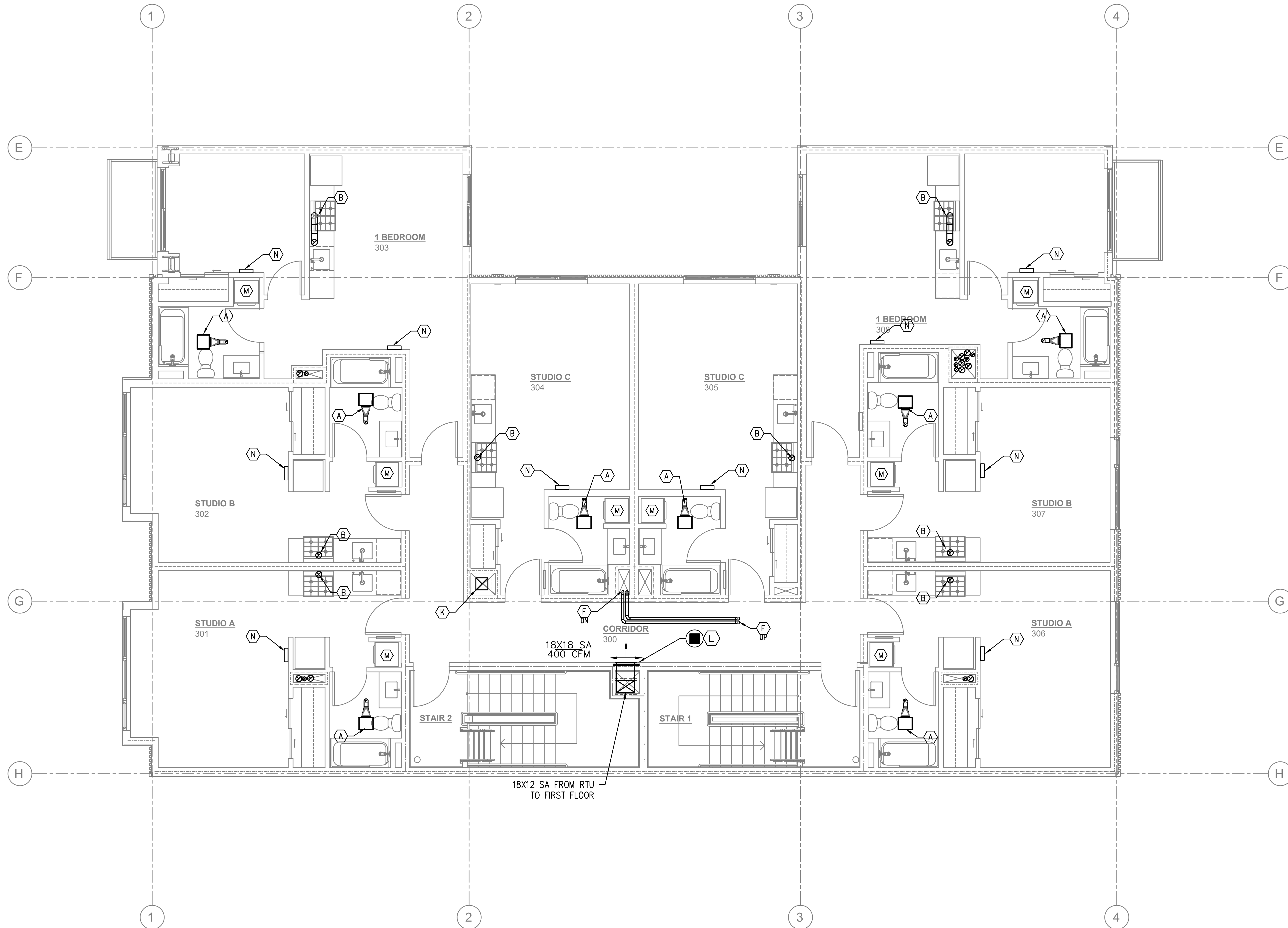
DATE June 17, 2022

JOB NO. 18.16

DRAWING NO.

# M2.03

CONSTRUCTION



**KEY NOTES:**

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- (H) FOR AC PORT DETAIL, SEE (4) (M6.01)
- (I) FOR REFRIGERANT ROOF PENETRATION, SEE (3) (M6.01)
- (J) FOR ROOFTOP OUTLET HOOD SEE (4) (M6.01)
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- (L) SUPPLY AIR OR RETURN GRILLE, SIZED FOR BOTH FRESH AIR AND FOR ACTUATOR ACCESS. SEE (1) FOR GRILLE INSTALLATION, AND SEE (2) FOR TYPICAL F/S INSTALLATION (M6.02) AND CONTROLS.
- (M) CONDENSING DRYERS - NO VENTING REQUIRED.
- (N) 1.5KW (2 KW IN STUDIO UNITS) CADET WALL HEATERS FOR LIVING UNITS, 120V. EQUIPMENT BY ELECTRICAL CONTRACTOR. SHOWN FOR REFERENCE ONLY. PROVIDE WILL WALL MOUNTED 1-STAT.

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**1** MECH PLAN - LEVEL 3  
M2.03 SCALE: 1/4" = 1'-0"

CITY STAMP

PROJECT

**MLK & FAILING  
BUILDING 3**

3830 NE MARTIN LUTHER  
KING JR BLVD  
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DRAWING TITLE  
**MECH PLAN -  
LEVEL 4**

REVISIONS

6-3-21



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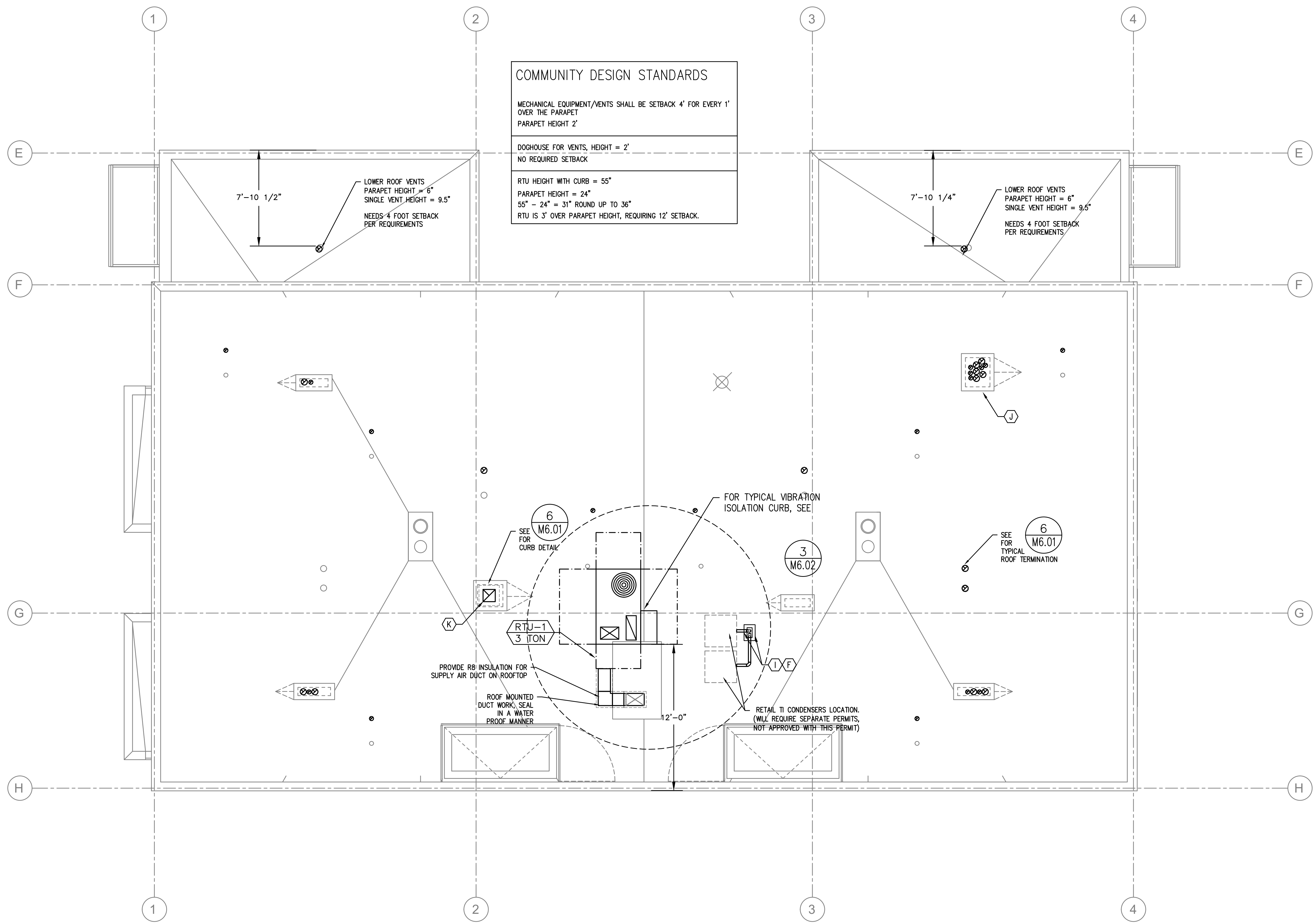
DATE June 17, 2022

JOB NO. 18.16

DRAWING NO.

**M2.04**

CONSTRUCTION



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SEE VENTILATION SCHEDULES FOR OTHER UNITS

**1** MECH PLAN - ROOF  
M2.04 SCALE: 1/4" = 1'-0"



# 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
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	DB	DRY BULB
+	RETURN AIR DUCT UP & DOWN	DIA.	DIAMETER
+	EXHAUST AIR DUCT UP & DOWN	DIST.	DISTRIBUTION
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	EA	EXHAUST AIR
+	RETURN AIR DUCT UP & DOWN	EDB	ENTERING DRY BULB TEMPERATURE
+	EXHAUST AIR DUCT UP & DOWN	EWB	ENTERING WET BULB TEMPERATURE
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	EWT	ENTERING WATER TEMPERATURE
+	RETURN AIR DUCT UP & DOWN	FF	FINISH FLOOR
+	EXHAUST AIR DUCT UP & DOWN	FIXT.	FIXTURE
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	FPM	FEET PER MINUTE
+	RETURN AIR DUCT UP & DOWN	FPS	FEET PER SECOND
+	EXHAUST AIR DUCT UP & DOWN	FT.	FEET / FOOT
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	GA.	GAUGE
+	RETURN AIR DUCT UP & DOWN	GPM	GALLONS PER MINUTE
+	EXHAUST AIR DUCT UP & DOWN	H	HEIGHT
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	HP	HORSEPOWER
+	RETURN AIR DUCT UP & DOWN	I.D.	INSIDE DIAMETER
+	EXHAUST AIR DUCT UP & DOWN	IN.	INCHES
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	L	LENGTH
+	RETURN AIR DUCT UP & DOWN	LBS.	POUNDS
+	EXHAUST AIR DUCT UP & DOWN	LDB	LEAVING DRY BULB
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	LWB	LEAVING WET BULB
+	RETURN AIR DUCT UP & DOWN	LWT	LEAVING WATER TEMPERATURE
+	EXHAUST AIR DUCT UP & DOWN	MAX.	MAXIMUM
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	MBH	THOUSANDS OF BTUS PER HOUR
+	RETURN AIR DUCT UP & DOWN	MIN.	MINIMUM
+	EXHAUST AIR DUCT UP & DOWN	NC	NOISE CRITERIA
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	N.C.	NORMALLY CLOSED
+	RETURN AIR DUCT UP & DOWN	N.M.	NOT IN MECHANICAL
+	EXHAUST AIR DUCT UP & DOWN	NO.	NUMBER
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	N.O.	NORMALLY OPEN
+	RETURN AIR DUCT UP & DOWN	O.A.	OUTSIDE AIR
+	EXHAUST AIR DUCT UP & DOWN	P	PERSON
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	PSI	POUNDS PER SQUARE INCH
+	RETURN AIR DUCT UP & DOWN	P/T	PRESSURE / TEMPERATURE
+	EXHAUST AIR DUCT UP & DOWN	R.A.	RETURN AIR
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	RECT.	RECTANGULAR
+	RETURN AIR DUCT UP & DOWN	REQ'D	REQUIRED
+	EXHAUST AIR DUCT UP & DOWN	S.A.	SUPPLY AIR
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	S.P.	STATIC PRESSURE
+	RETURN AIR DUCT UP & DOWN	SQ.	SQUARE
+	EXHAUST AIR DUCT UP & DOWN	TEMP.	TEMPERATURE
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	TYP.	TYPICAL
+	RETURN AIR DUCT UP & DOWN	VAV	VARIABLE AIR VOLUME
+	EXHAUST AIR DUCT UP & DOWN	W	WIDTH
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	WB	WET BULB
+	RETURN AIR DUCT UP & DOWN	WPD	WATER PRESSURE DROP
+	EXHAUST AIR DUCT UP & DOWN	Ø	DIAMETER
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	---	---
+	RETURN AIR DUCT UP & DOWN	(E)	EXISTING
+	EXHAUST AIR DUCT UP & DOWN	---	---
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	(D)	DEMOLISH
+	RETURN AIR DUCT UP & DOWN	---	---
+	EXHAUST AIR DUCT UP & DOWN	---	---
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	HWS	(HWS) HEATING WATER SUPPLY
+	RETURN AIR DUCT UP & DOWN	HWR	(HWR) HEATING WATER RETURN
+	EXHAUST AIR DUCT UP & DOWN	▲	FIRE DAMPER
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	■	FIRE / SMOKE DAMPER
+	RETURN AIR DUCT UP & DOWN	⊕	SMOKE DAMPER
+	EXHAUST AIR DUCT UP & DOWN	---	---
+	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	---	---
+	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	---	---
+	RETURN AIR DUCT UP & DOWN	---	---
+	EXHAUST AIR DUCT UP & DOWN	---	---

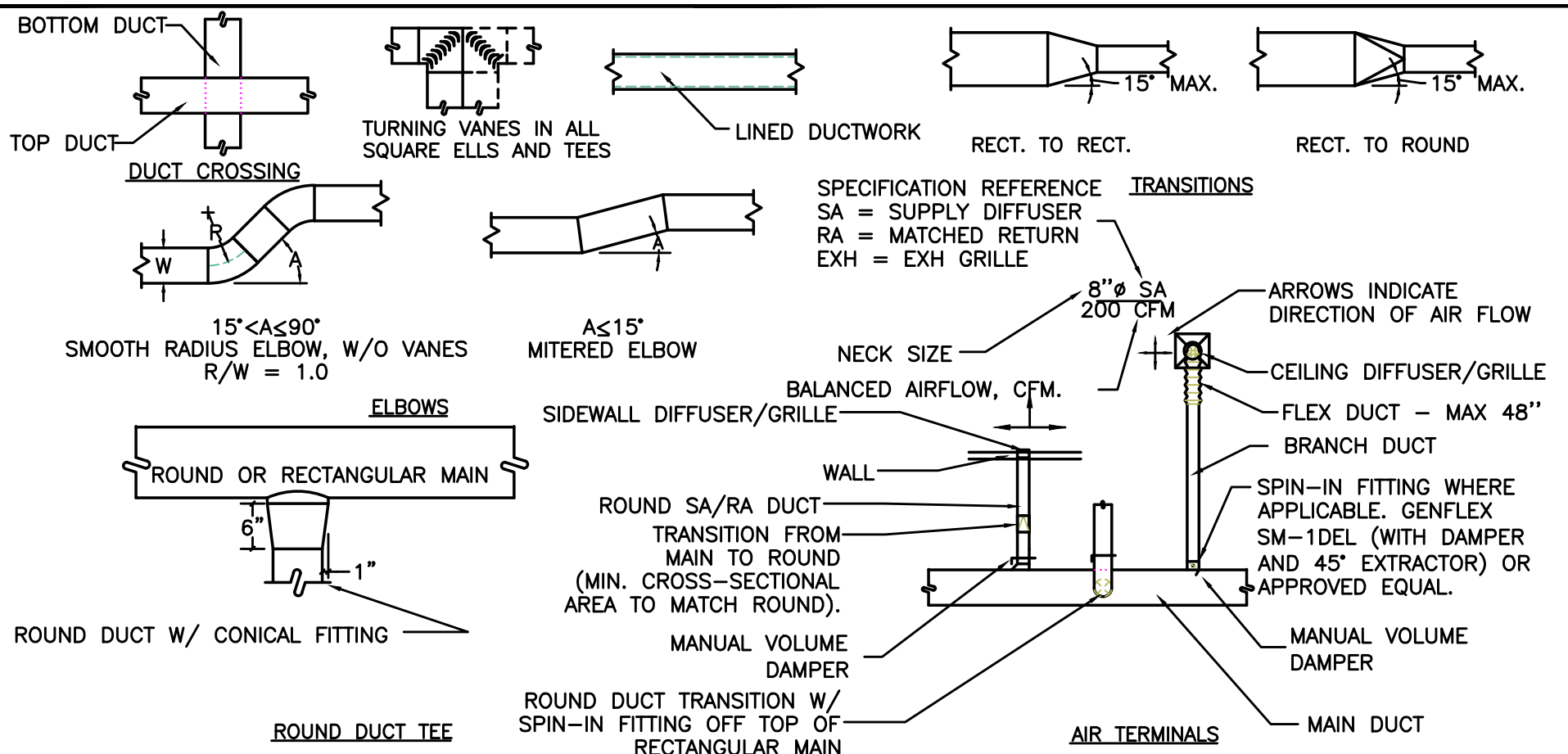
# ROOFTOP HVAC UNITS

MARK NUMBER	RTU-1 3 TON
SYSTEM	CORRIDORS
TYPE	C.V.
DISCHARGE	VERTICAL
TOTAL CFM	1200
ECONOMIZER	100% OSA
MIN. OSA	100%
MAX OSA (FULL OCCUPANCY)	NA
CO2 CONTROL	NA
EXTERNAL SP. (H2O)	0.75
TOTAL SP. (H2O)	---
RPM	2181
WHEEL TYPE/ SIZE	F.C. 10" (DIRECT)
MOTOR HP.	1.0 HP
POWER EXH FAN/ACCESSORY	NONE
MIN FILTER SIZE	2-16X25
FILTER TYPE	2" - 30%
GAS INPUT/OUTPUT (MBH)	115 / 82
EFF. (AFUE)	80.0%
STAGES/TYPE	2-HIGH HEAT**
TOTAL CLG. (TONS)	3.0
SENSIBLE CLG. (MBH)	28.3
ENT. EVAP AIR TEMP (DB/WB.)	90/67
LVG. EVAP AIR TEMP (DB/WB.)	55/54
AMBIENT AIR (F)	95
EER/SEER	12.5 / 15.0
REFRIGERANT	410A
REFRIGERANT CHARGE	XX
DESIGN WEIGHT (LBS.)	605
SMOKE DETECTOR (SUPPLY DUCT)	NO
SPRING ISOLATION ROOF CURB	YES
CONVENIENCE OUTLET - ALWAYS POWERED	YES
VOLTAGE/PHASE - ***	208/3
MCA/MOCP - ***	29/35 AMPS
BASIS OF DESIGN - CARRIER MODEL	48HCTA04A0A5

--- UNIT TO RUN CONTINUOUSLY  
 \*\* - PROVIDE STAINLESS STEEL HEAT EXCHANGER.  
 \*\*\* - ELECTRICAL DATA LISTED FOR REFERENCE ONLY. COORDINATE WITH ELECTRICAL DESIGN BUILD CONTRACTOR FOR VOLTAGE AND PHASE REQUIREMENTS

1 FIRE PENETRATION DETAIL - 6" DUCTS  
M6.00 DETAIL

# AIR DISTRIBUTION DETAILS



<p><b>System No. W-L-5143</b></p> <p>ANSI/UL1479 (ASTM E814)   CANULC S115</p> <p>F Rating - 1 and 2 Hr (See Items 1 and 5)   F Rating - 1 and 2 Hr (See Items 1 and 5)</p> <p>T Rating - 1/2 Hr   FT Rating - 1/2 Hr</p> <p>FH Rating - 1 and 2 Hr (See Items 1 and 5)   FTH Rating - 1/2 Hr</p>	
<p><b>Section A-A</b></p>	
<p>1. Wall Assembly - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:</p> <p>A. Studs - "C" shaped studs 1-5/8 in. (41 mm) wide by 2-1/2 in. (64 mm) deep, fabricated from 25 MSG galv steel, spaced max 24 in. (610 mm) OC.</p> <p>B. Gypsum Boards - One layer of 1/2 in. (12.5 mm) thick, 24 in. (610 mm) wide gypsum liner and one or two layers of 5/8 in. (16 mm) thick, 4 ft. (122 cm) wide gypsum board with square or tapered edges. The gypsum board type, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 4 in. (102 mm).</p>	
<p><b>Hilti Firestop Systems</b></p> <p>Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 27, 2015</p> <p>Page: 1 of 2</p>	

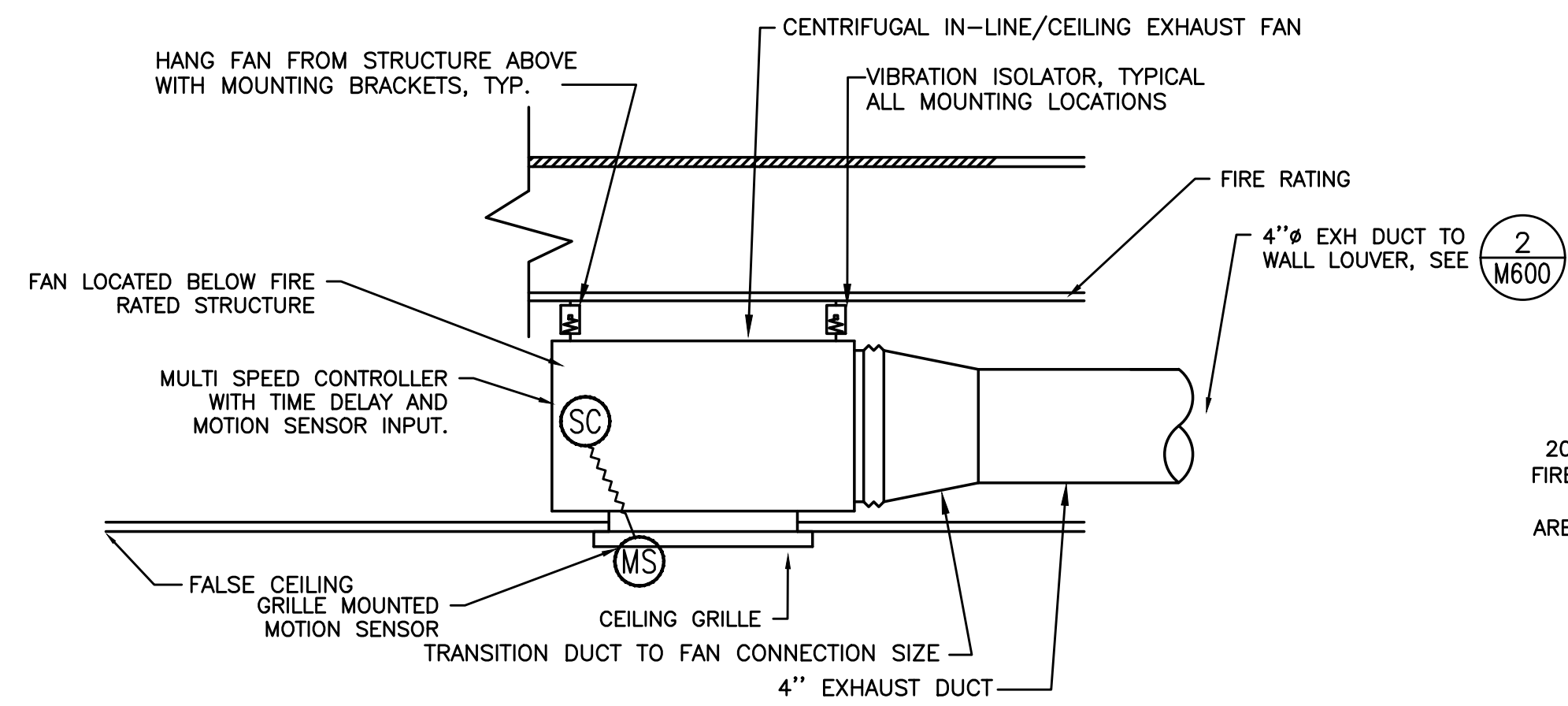
<p><b>System No. W-L-5143</b></p> <p>ANSI/UL1479 (ASTM E814)   CANULC S115</p> <p>F Rating - 1 and 2 Hr (See Items 1 and 5)   F Rating - 1 and 2 Hr (See Items 1 and 5)</p> <p>T Rating - 1/2 Hr   FT Rating - 1/2 Hr</p> <p>FH Rating - 1 and 2 Hr (See Items 1 and 5)   FTH Rating - 1/2 Hr</p>			
<p><b>Section A-A</b></p>			
<p>1A. Wall Assembly - As an alternate to the above wall assembly, the 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:</p> <p>A. Studs - Wall framing may consist of either wood studs or steel channel studs. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. Wood studs to consist of 2 in. x 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC.</p> <p>B. Gypsum Boards - Thickness, type, number of layers and fasteners as required in the individual Wall and Partition Design. Max diam of opening is 4 in. (102 mm).</p> <p>C. The hourly F, FH Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.</p> <p>3. Through Penetrations - One metallic pipe or tube to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of the wall assembly. The following types and sizes of metallic pipes or tubing may be used:</p> <p>A. Copper Tubing - Nom 1 in. (25 mm) diam (or smaller) Type L copper tubing</p> <p>B. Copper Pipe - Nom 1 in. (25 mm) diam (or smaller) Regular (or heavier) copper pipe</p> <p>4. Tube Insulation - Plastic - Nom 3/4 in. (19 mm) thick acrylonitrile butadiene/styrene (ABS/PVC) flexible foam furnished in the form of tubing. The firestop system shall consist of the following:</p> <p>A. Packing Material - Min 1-5/8 in. or 2-1/4 in. (41 or 57 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into sleeves on one side of the wall as a permanent form for 1 and 2 hr walls, respectively. Packing material to be recessed from the room side of wall as required to accommodate the required thickness of fill material. In alternate wall assembly, packing material to be flush with either side of the wall and be recessed from the other side of the wall to accommodate the required thickness of fill material.</p> <p>B. Fill, Void or Cavity Material - Sealant - Min 1-1/2 in. (38 mm) thickness of fill material applied within sleeve, flush with room surface of wall or either wall surface in the alternate wall assembly.</p> <p>HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE Sealant or FS-ONE MAX Intumescent Sealant</p> <p>* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.</p>			
<p><b>Hilti Firestop Systems</b></p> <p>Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 27, 2015</p> <p>Page: 2 of 2</p>			

2 FIRE PENETRATION DETAIL - 4" DUCTS  
M6.00 DETAIL

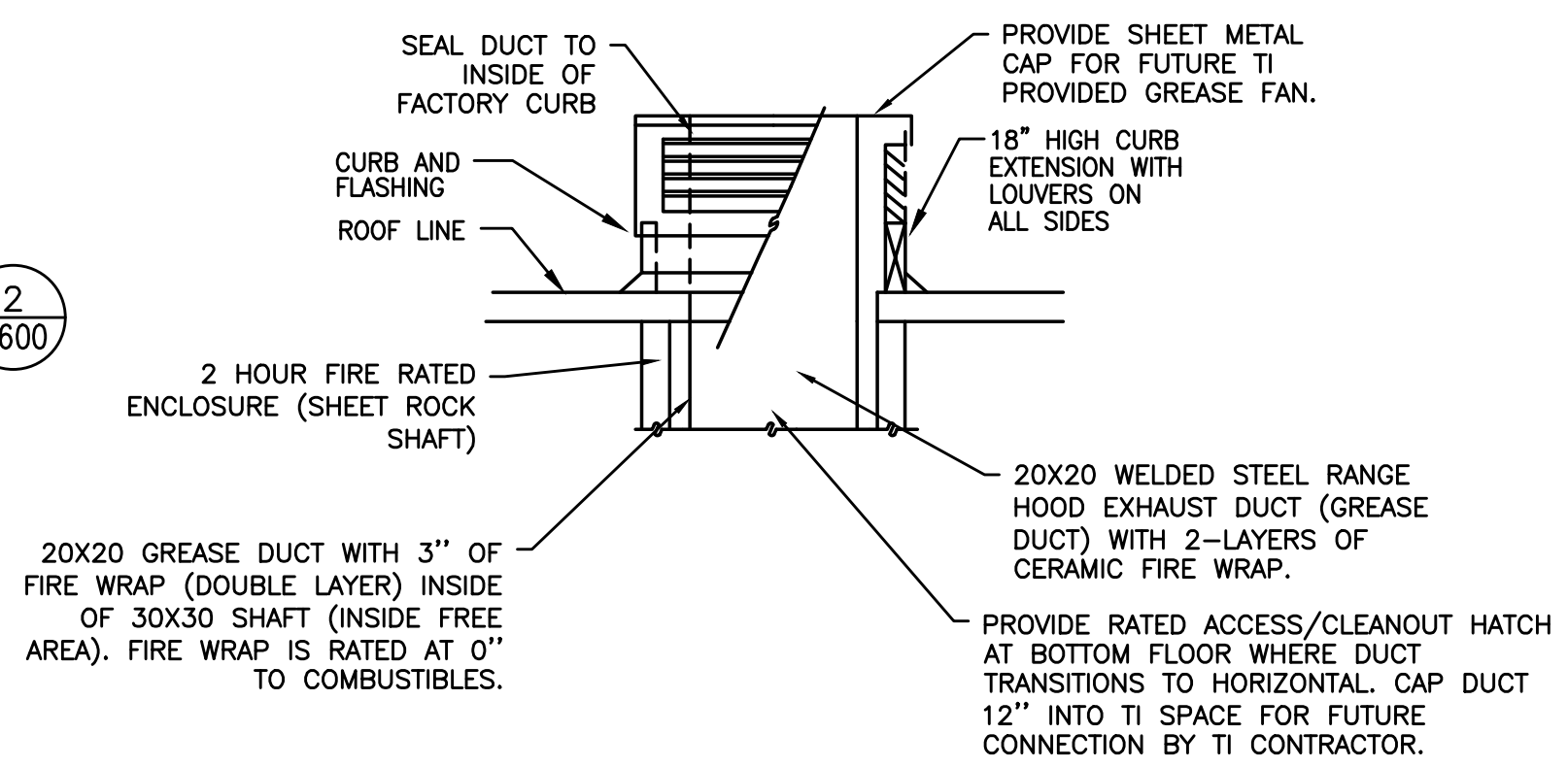
# MLK & FAILING BUILDING 3

# DRAWING TITLE MECHANICAL SCHEDULES - DETAILS

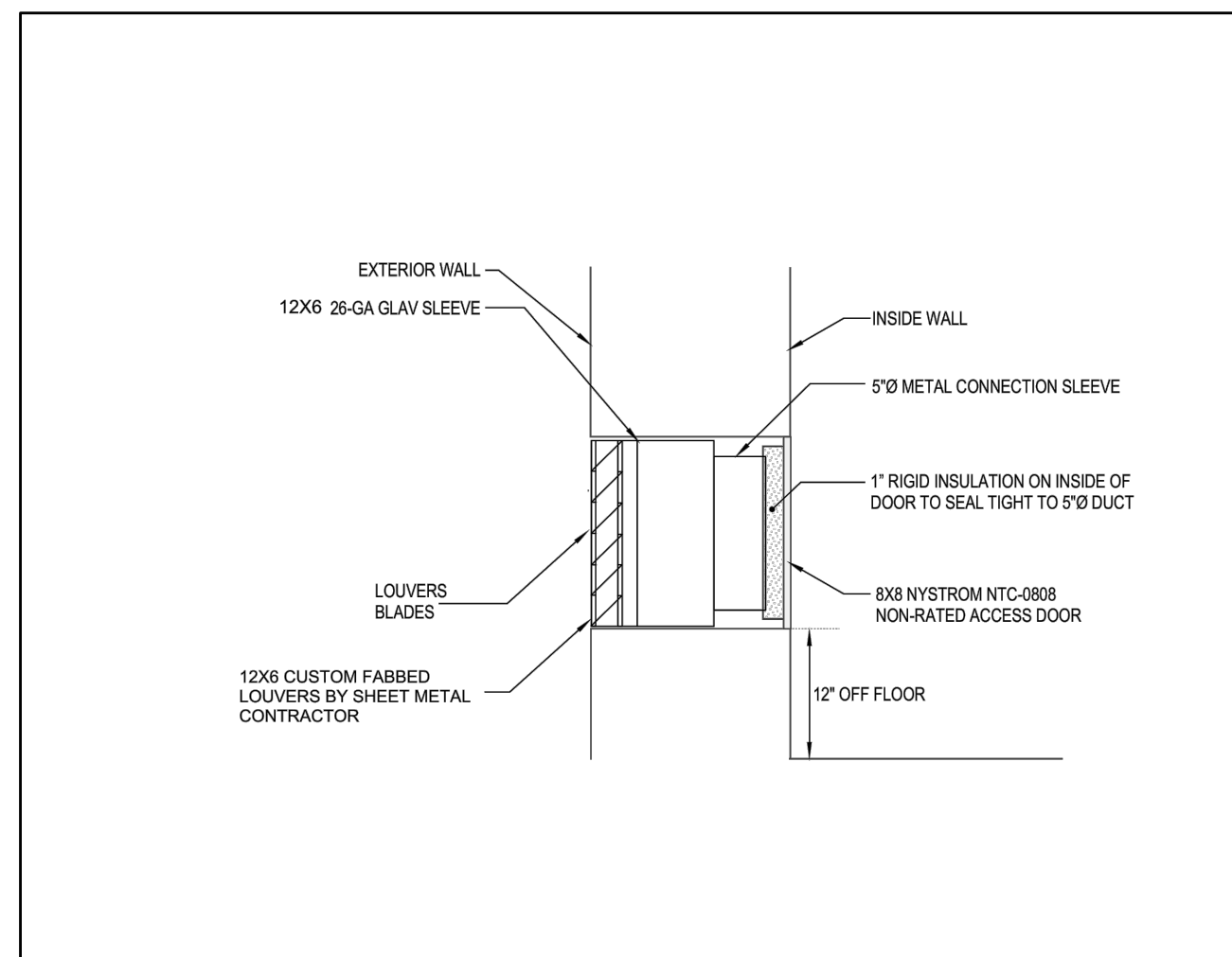




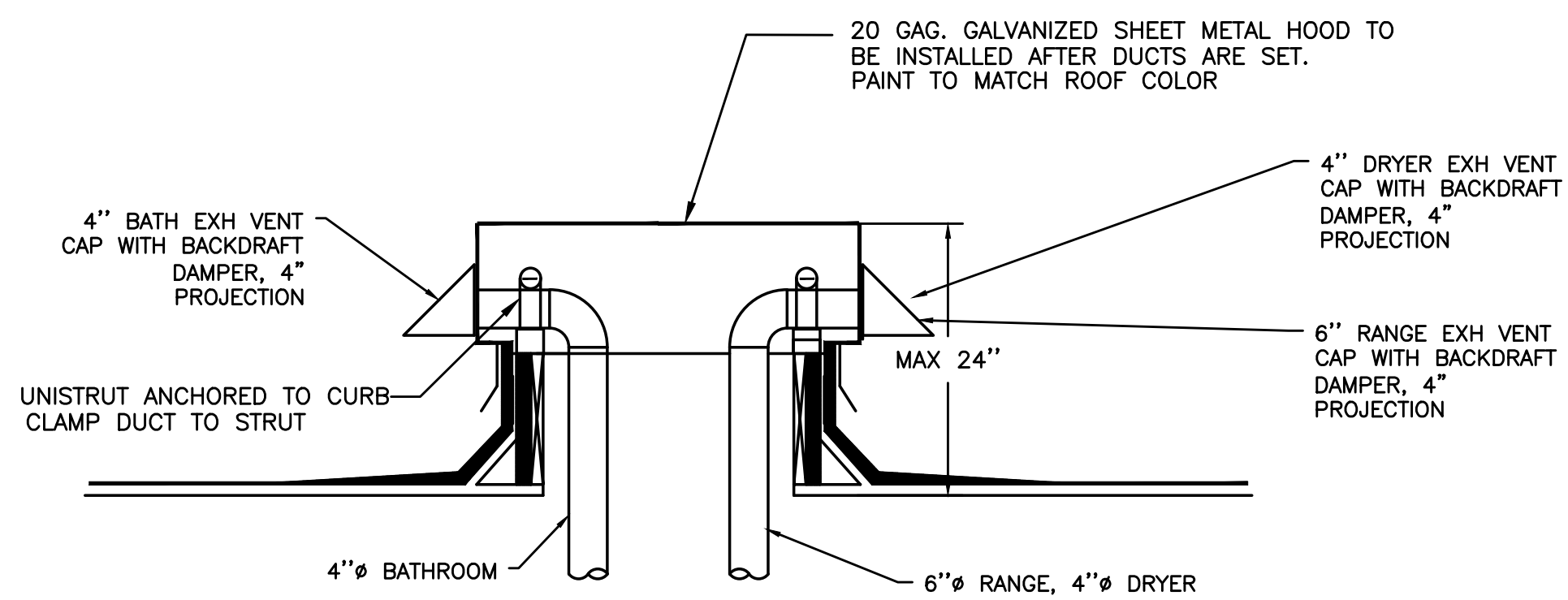
1 RESTROOM EXHAUST FAN  
M6.01 SCALE:DETAIL



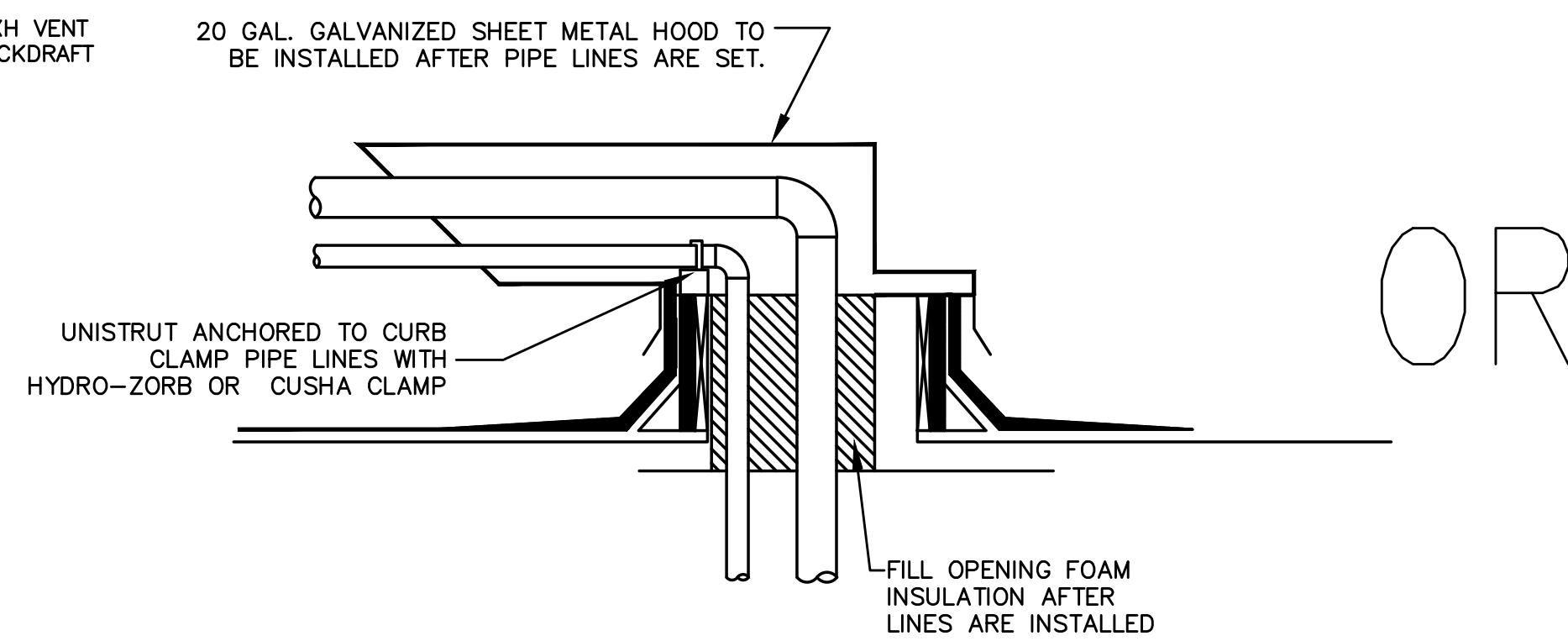
2 GREASE DUCT/CURB TERMINATION  
M6.01 NOT TO SCALE



4 AC VENT PORT WITH ACCESS DOOR  
M6.01 NOT TO SCALE



5 ROOFTOP OUTLET HOOD  
M6.01 NOT TO SCALE



3 REFRIGERANT ROOF PENETRATIONS  
M6.01 DETAIL

**RV28**  
Goose-Neck Roof Vent

Technical  
Data Sheet

**FEATURES & BENEFITS**

- Provides all-weather ventilation with 5" of additional height for snow clearance.
- Maximize inventories turns with single hood size and separate 4 to 8-inch easy snap-in adapters.
- Patented design eliminates leaky joints and maximizes water protection with one-piece, molded hood.
- Ensures watertight installation with over-sized flange.
- Resists damage from sun and hail with UV-protected, impact resistant polymer resin.
- Simple intake/exhaust conversion via removable damper.

**PRODUCT DIMENSIONS**  
HOOD SIZE: H: 15.7" / W: 15.3" D: 9.5"

**COLOURS**

- Black (25)
- Light Grey (31)
- Dark Grey (28)
- Tan (45)
- Dark Brown (68)

**APPLICATIONS**

- Dryer Venting
- Bathroom Venting
- Range Venting
- Heat Recovery Venting (HRV)
- Intake

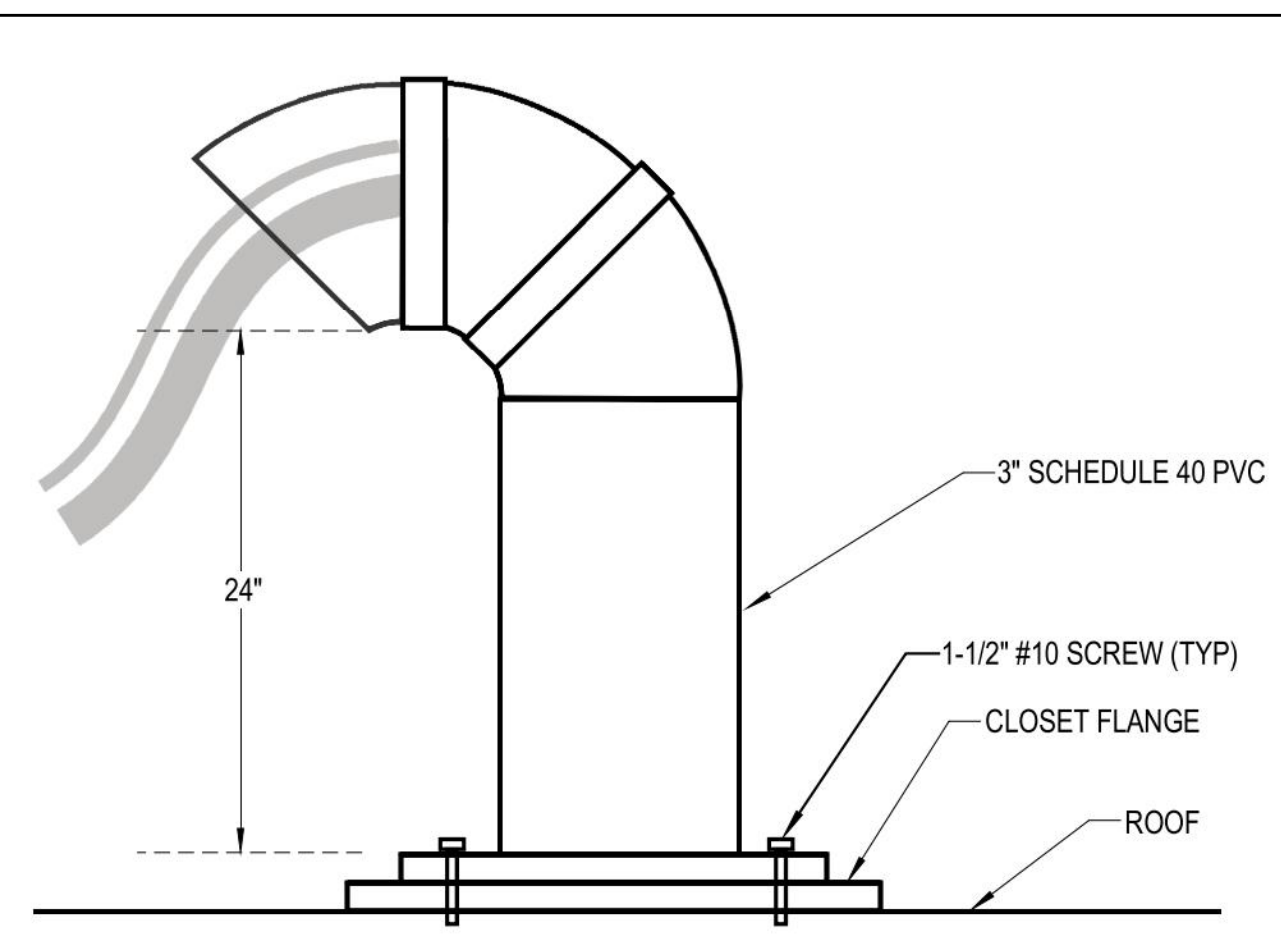
**PART NUMBER/SIZING**

Part #	Size	Free Area	Description	Pkg
RV28	7"x7"x9.38"	26.5 sq. in.	Exhaust vent with screen	5/box (bulk 120 avlb)
RV28NS	7"x7"x9.38"	31.8 sq. in.	Exhaust vent without screen	5/box (bulk 120 avlb)
RV28-4	4" Dia.	12.6 sq. in.	Duct adapter: 4"	30/box
RV28-5	5" Dia.	19.6 sq. in.	Duct adapter: 5"	30/box
RV28-6	6" Dia.	26.5 sq. in.	Duct adapter: 6"	25/box
RV28-7	7" Dia.	26.5 sq. in.	Duct adapter: 7"	25/box
RV28-8	8" Dia.	26.5 sq. in.	Duct adapter: 8"	18/box

**CONTACT US FOR MORE INFORMATION:**  
1.604.881.7875 | info@primexvents.com  
1/18

primex  
primexvents.com

6 ROOFTOP OUTLET HOOD - SINGLE DUCT  
M6.01 NOT TO SCALE



CITY STAMP

PROJECT

**MLK & FAILING BUILDING 3**

3830 NE MARTIN LUTHER KING JR BLVD  
 PORTLAND, OR 97212

DRAWING TITLE  
**MECHANICAL DETAILS**

REVISIONS

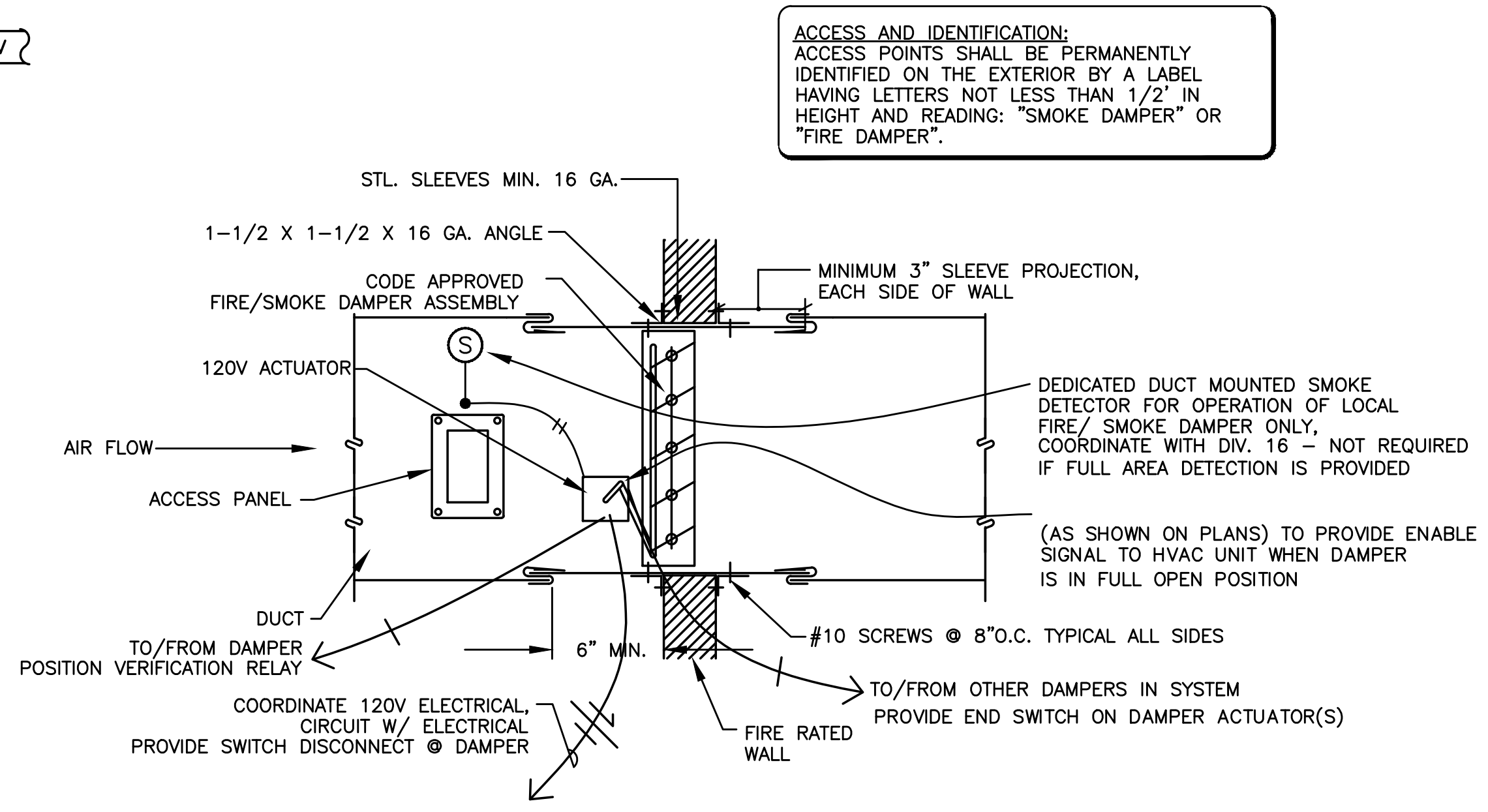
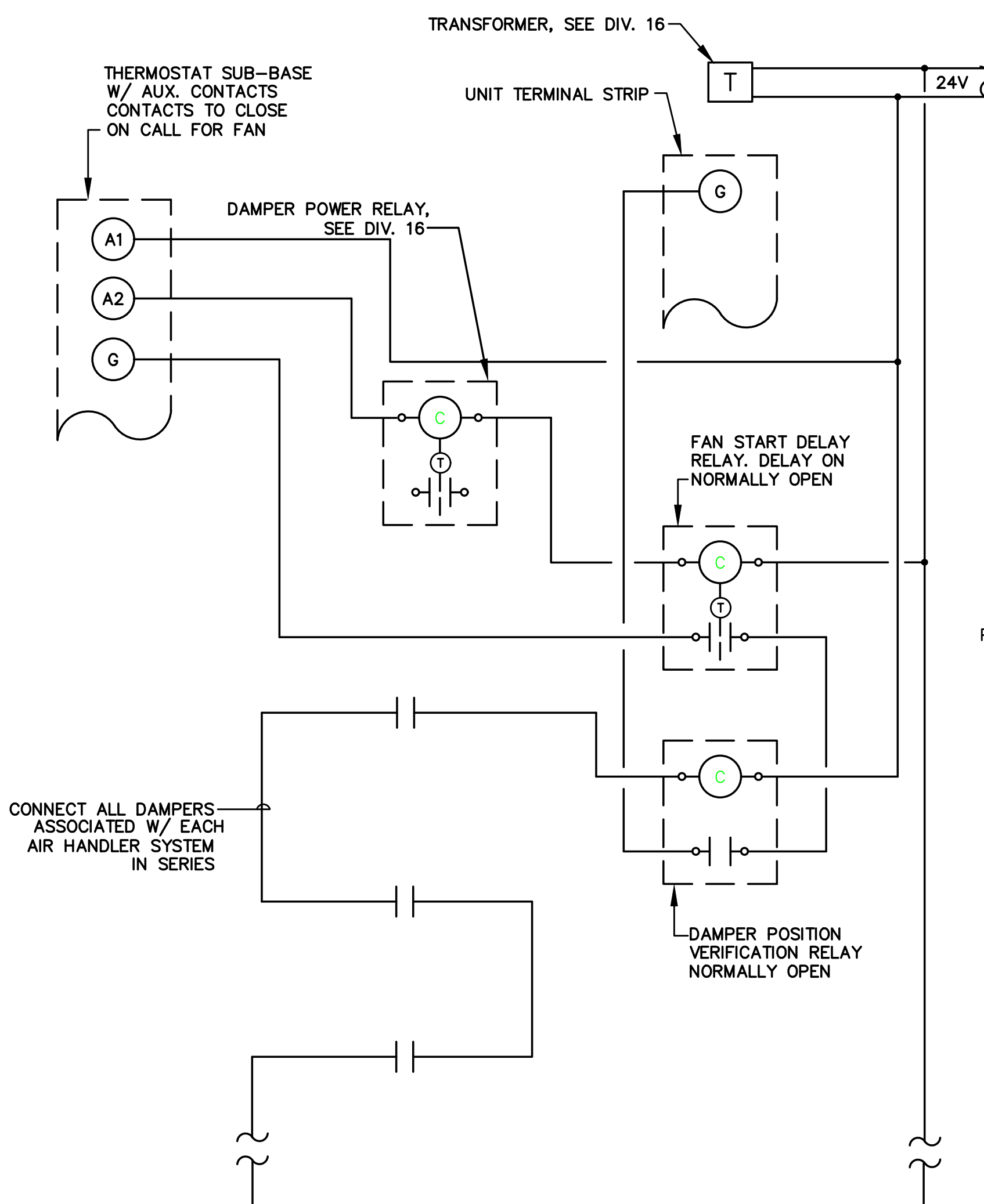
6-3-21

REGISTERED PROFESSIONAL ENGINEER  
 No. 54,607  
 OREGON  
 JULY 11, 2000  
 MARK R. DENYER  
 EXPIRES: 31DEC21

DATE June 17, 2022  
 JOB NO. 18.16  
 DRAWING NO.

**M6.01**  
 CONSTRUCTION





**2** FIRE/SMOKE DAMPER W/SMOKE DETECTOR  
M6.02 NOT TO SCALE

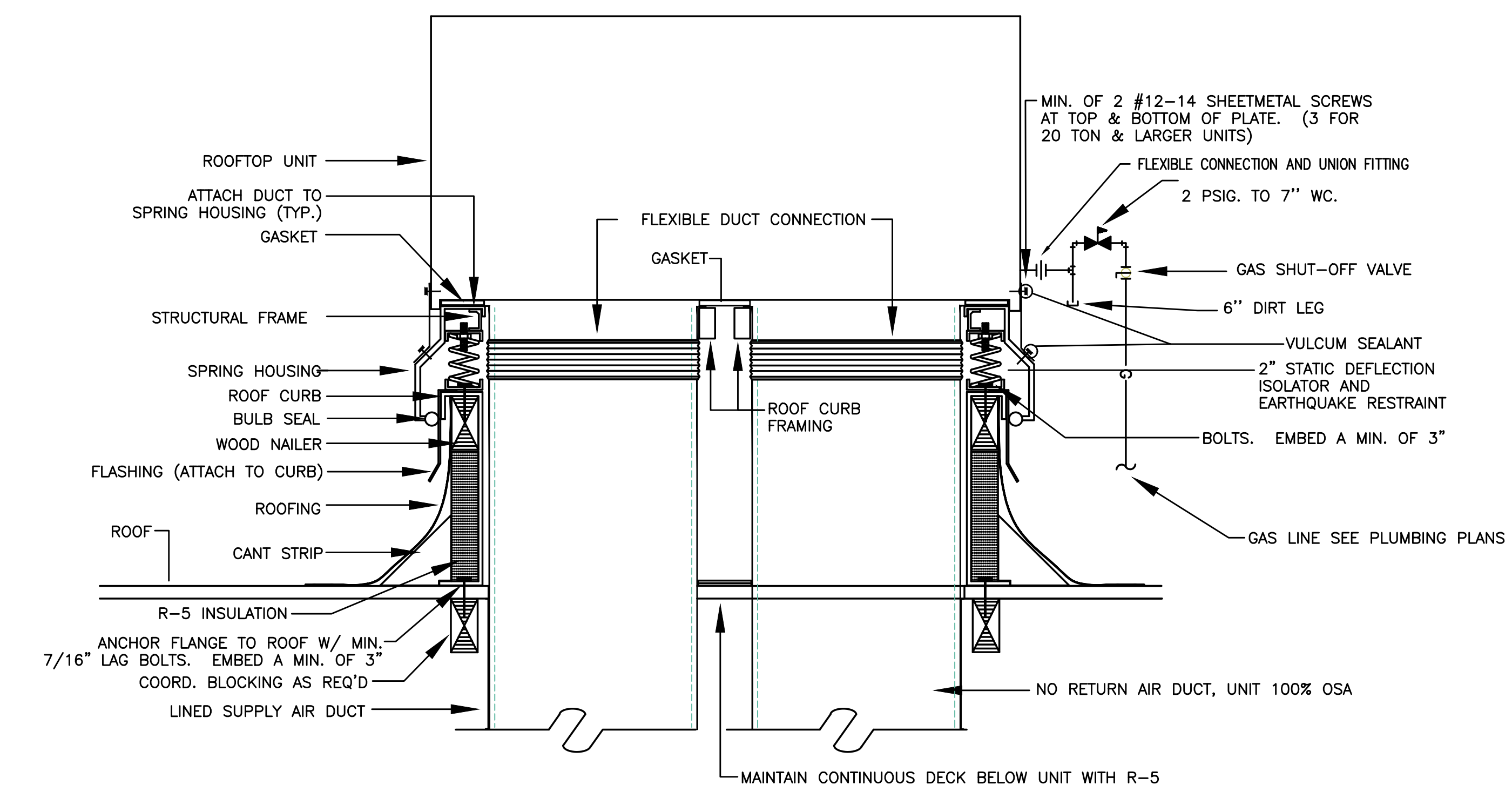
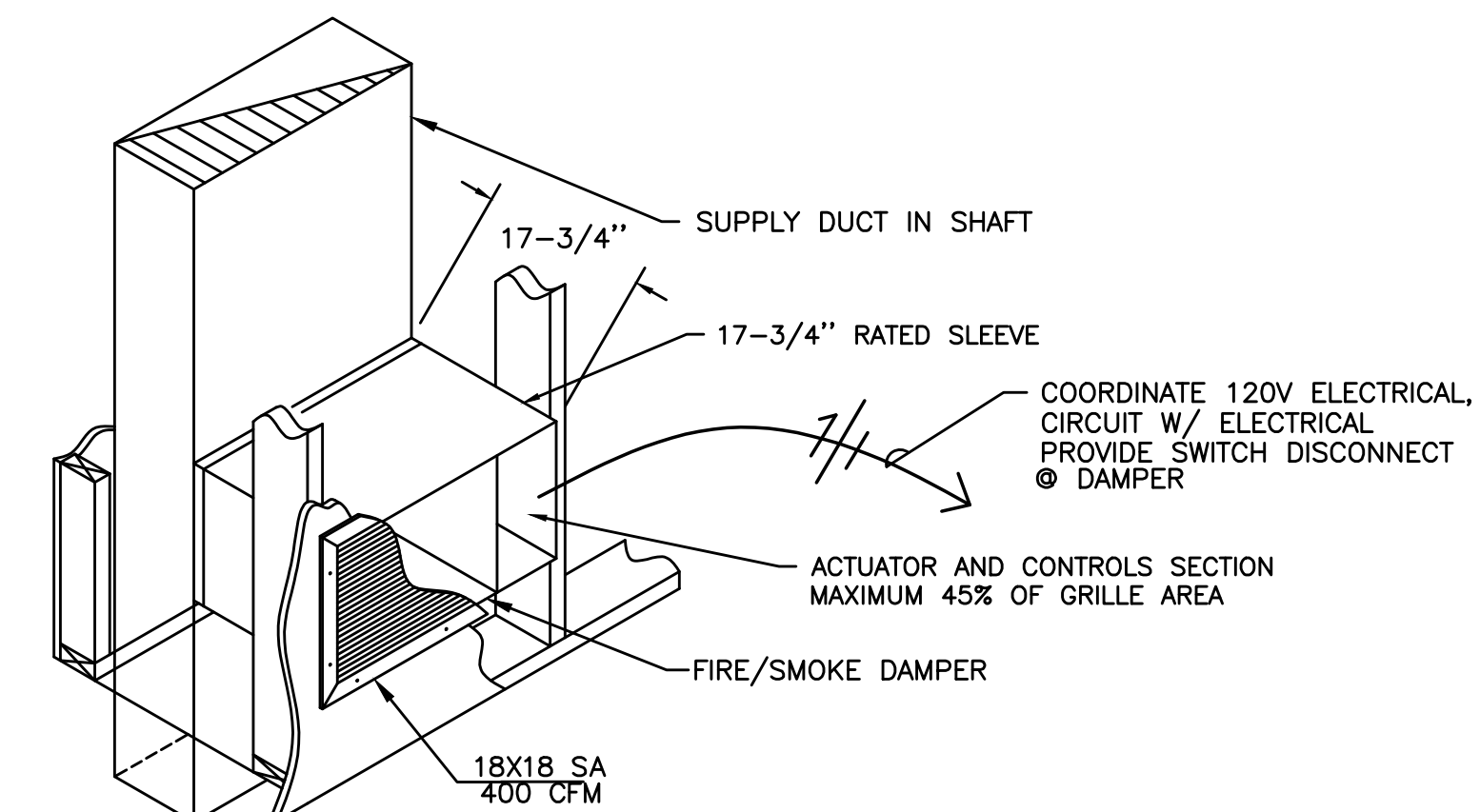
**NOTE:**

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.

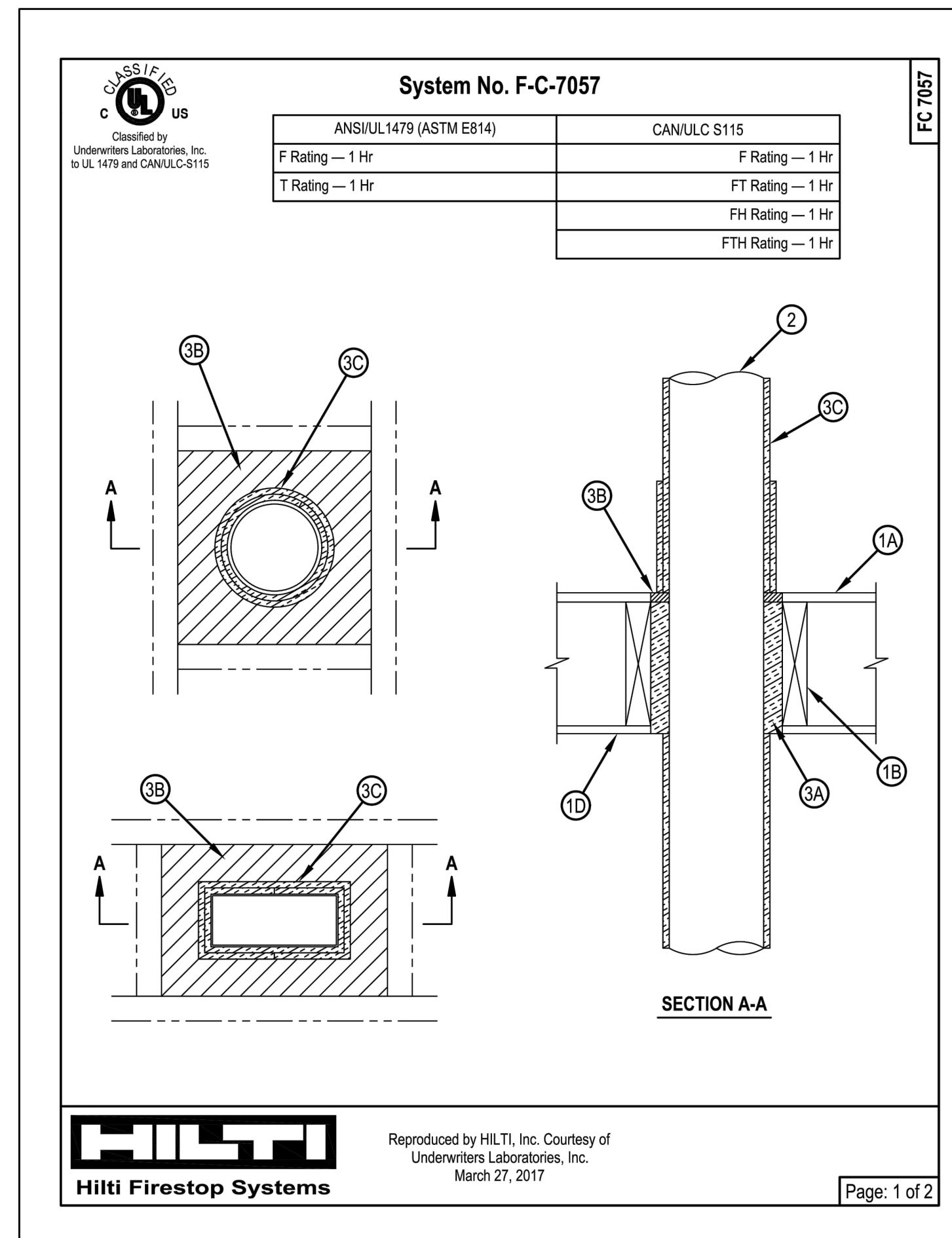
**GENERAL NOTES:**

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

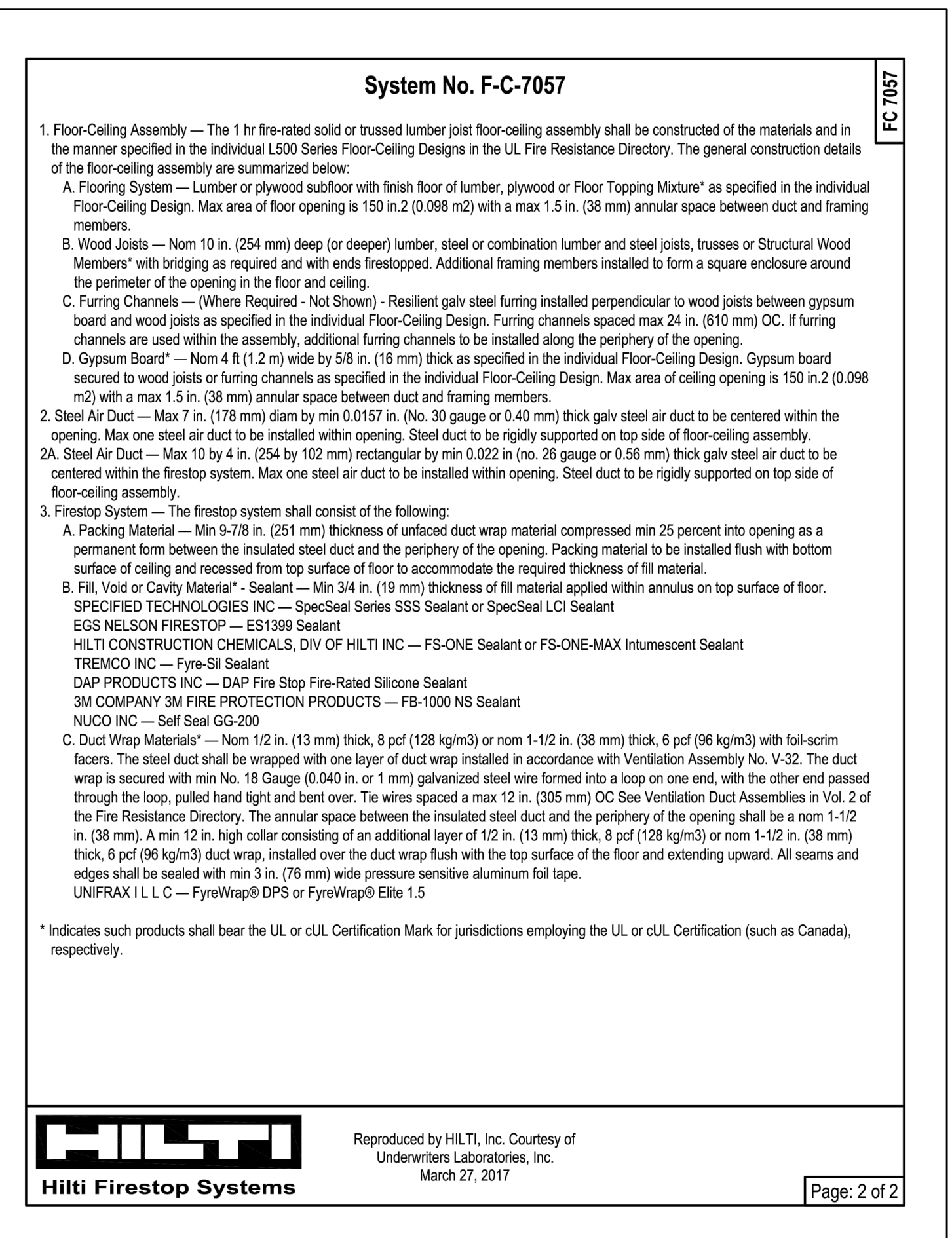
**1** HIGH SUPPLY W/ FIRE/SMOKE DAMPER  
M6.02 SCALE: DETAIL



**3** ROOF TOP UNIT W/ VIBRATION ISOLATION CURB  
M6.02 SCALE: DETAIL



**4** FIRE PENETRATION DETAIL - 6" DUCTS - HORIZONTAL  
M6.02 DETAIL





**DEFERRED SUBMITTALS - MECHANICAL**

DEFERRED SUBMITTALS SHOWING THE ANCHOR DETAILS AND CALCULATIONS 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
RTU-1	ROOF TOP HVAC UNIT	605 LBS		

**Duct Pressure Drop Calcs (worst case unit)**

Size inches	cfm	Duct Length ft	# Elbows	Pressure Elbows inches/h2o	Termination Fittings(s) inches of h2o	Total EQ Length	Friction in/100'	Total Pressure Drop of EQ length "H2O	Total with Fittings "H2O
4	bathroom 30	58	4	0.004196693	0.09	58	0.03	0.0174	0.12419877
6	NA 0	0	0	0.020739226	0	0	0.14	0	0
6	Range 150	45	3.5	0.019901365	0.09	45	0.14	0.063	0.22265478
8	0	0	0	0.011665815	0	0	0.4	0	0

**Fittings pressure Loss**

Duct size inches	CFM	Velocity ft/min	Fitting coefficient	Pressure Drop in/h20	Eq Length of Elbow /100' (Reference)
4	30	343.7747	0.57	0.0042	0.03
6	150	763.9437	0.57	0.020739	0.14
7	200	748.353	0.57	0.019901	0.14
8	200	572.9578	0.57	0.011666	0.07

Fan Specifications	WhisperGreen Select™ FV-05-11VKS1																	
Static Pressure in inches w.g.	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1					
Air Volume (CFM)	110	113	100	106	90	86	80	82	70	71	60	66	30	30	40	43	30	33
Noise (sones)	+0.3	0.6	+0.3	0.7	+0.3	0.6	+0.3	0.4	+0.3	0.4	+0.3	0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3
Power Consumption (watts)	9.8	10.1	8.0	14.0	6.5	11.7	5.5	10.2	4.3	8.6	3.8	7.9	3.2	6.5	2.7	5.7	2.4	5.0
Energy Efficiency (CFM/Watt)	11.3	7.2	13.0	7.9	14.5	6.9	15.3	8.4	17.2	8.7	17.5	8.8	15.1	8.1	16.3	8.2	14.2	7.8
Speed (RPM)	820	1200	850	1170	800	1140	814	1100	770	1110	790	1100	747	1050	730	1070	718	1000
Current (amps)	0.18	0.16	0.09	0.14	0.07	0.12	0.06	0.10	0.05	0.09	0.04	0.08	0.04	0.07	0.06	0.06	0.03	0.06
MAX. Current (amps)	6.27																	
Power Rating (0/160)	100/0																	
ENERGY STAR rated	Yes																	

90 elbow Radius=1

**Physical data**

**48HC 3 TO 6 TON PHYSICAL DATA**

48HC UNIT	48HC*04	48HC*05	48HC*06	48HC*07
NOMINAL TONS	3	4	5	6
BASE UNIT OPERATING WT (lb)	505	590	600	925

REFRIGERATION SYSTEM				
No. Circuits/No. Compressors/Type	1/1/Scroll	1/1/Scroll	1/1/Scroll	1/1-Stage Scroll
Puron® Refrigerant Charge (lb-oz)	9-0	12-8	13-8	14-0
Humid-Mizer® Puron Refrigerant Charge	11-0	19-12	20-0	22-8
Metering Device			TXV	
High Pressure Trip/Reset (psig)			630/505	
Low Pressure Trip/Reset (psig)			54/117	

EVAPORATOR COIL				
Material (Tube Fin)		Cu/Al		
Coil Type		3/8-in. R/TPF		
Rows/FPI	3/15	3/15	4/15	3/15
Total Face Area (ft²)	5.5	7.3	7.3	8.9
Condensate Drain Connection Size		3/4-in.		

HUMID-MIZER COIL				
Material (Tube Fin)		Cu/Al		
Coil Type		3/8-in. R/TPF		
Rows/FPI	1/17	2/17	2/17	2/17
Total Face Area (ft²)	3.9	5/2	5/2	5/2

ENERGYX RECOVERY WHEEL				
Type	Enthalpy Lightweight Polymer with Silica Gel Desiccant Coating			
Model (Air/Exchange)	ERC-1904	ERC-2513C	ERC-2513C	ERC-2513C
Size (Dia. x Depth) (in.)	19 x 1	25 x 3	25 x 3	25 x 3
Nominal Drive Motor Hp	0.1	0.1	0.1	0.1

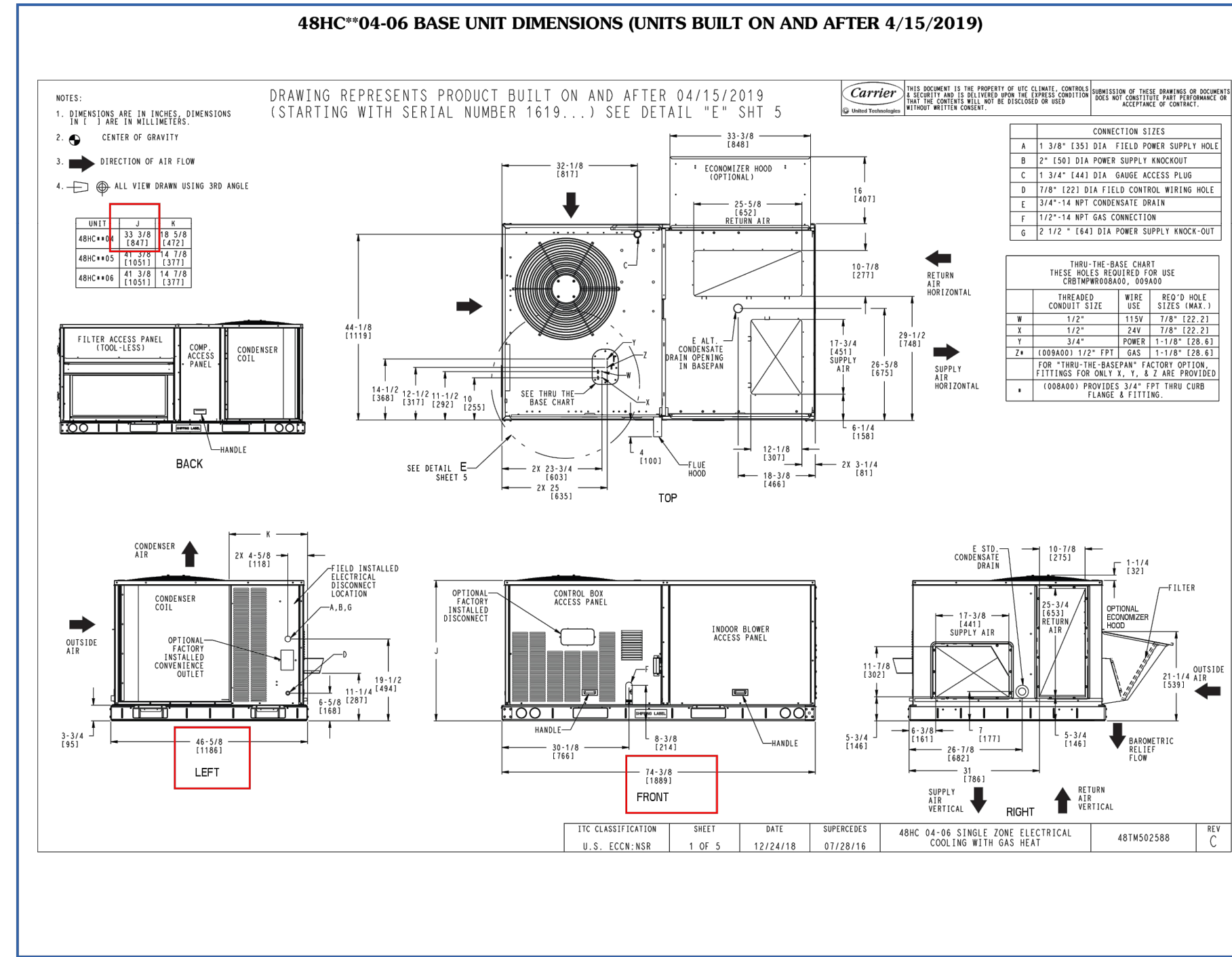
ENERGYX SUPPLY FAN #1				
Qty - Type	1 - Backward Curved			
Drive Type	Direct			
Blower Size (Diameter) [in. (mm)]	9.8 (250)	15.75 (400)	15.75 (400)	15.75 (400)
Nominal Motor Hp	0.2	1.2	1.2	1.2

ENERGYX EXHAUST FAN #1				
Qty - Type	1 - Backward Curved			
Drive Type	Direct			
Blower Size [in. (mm)]	15.75 (400)			
Nominal Motor Hp	1.2			

ENERGYX WHEEL FILTERS				
TYPE	2-in. Pleated, 30% Efficiency			
Outside Air (Qty) - Size (in.)	(1) 10 x 20 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2
Exhaust Air (Qty) - Size (in.)	(1) 10 x 20 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2
TYPE	Aluminum Water Filter			
Water Entrapment (Qty) - Size (in.)	(1) 28.75 x 12.25 x 1	(1) 28.75 x 14.75 x 1	(1) 35.75 x 15.25 x 1	(1) 35.75 x 15.25 x 1

See legend on page 12.

22



Base unit dimensions

LxWxH = 74.318" X 46.58" X 33.318"

**WhisperGreen Select**  
VENTILATION FAN



**Specification Submittal Data / Panasonic Ventilation Fan**

**Description:** Customizable Ventilation Fan shall be low noise ceiling mount rated for continuous run. Fan shall be ENERGY STAR® rated and certified by the Home Ventilating Institute (HVI). Evaluated by Underwriters Laboratories and conform to both UL and cUL safety standards.

**Motor/Blower:**

- Enclosed DC brushless motor technology rated for continuous run.
- Fan ventilation rates shall be manually adjustable for 50-80-110 CFM.
- Power rating shall be 120 volts and 60 Hz.
- Fan shall be UL listed for tub/shower enclosure when used with a GFCI protected circuit and used in insulated ceiling (TYPE I.C.).
- Fan equipped with a thermal cutoff fuse.
- Flame-retardant, permanently lubricated, plug-in motor.

**Housings:**

- Rust proof epoxy and polyester resin coating, 28 gauge galvanized steel body.
- Integrated dual 4" or 6" diameter duct adapter.
- Built-in metal baffle provides blocking for penetrations through drywall as an Air Barrier, and assists with the decrease in leakage in the Building Envelope during blower door testing.
- Built-in backdraft damper.
- Articulating and expandable installation bracket up to 24".

**Grilles:**

- Attractive design using Poly Pro material.
- Attaches directly to housing with torsion springs.
- Includes a motion sensor cap for use as a cover when the motion sensor Plug 'N Play™ module has not been selected.

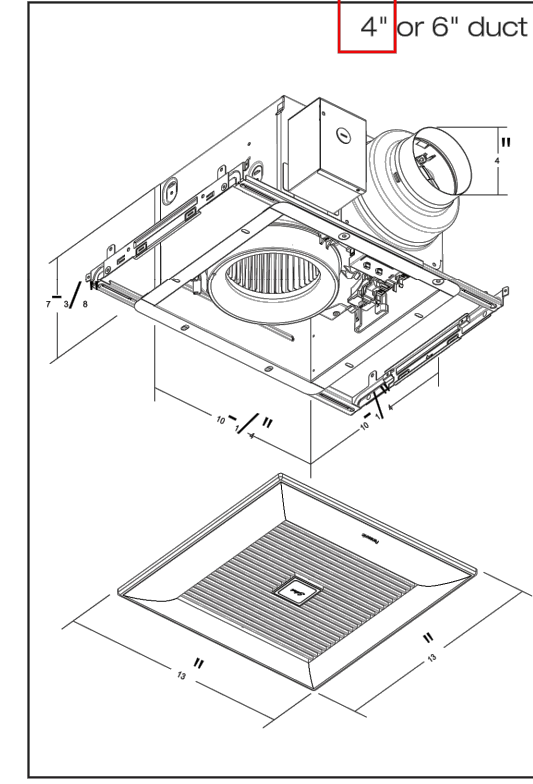
**Warranty:**

- ALL Parts: 3 Years from original purchase date.
- DC Motor: 6 Years from original purchase date.

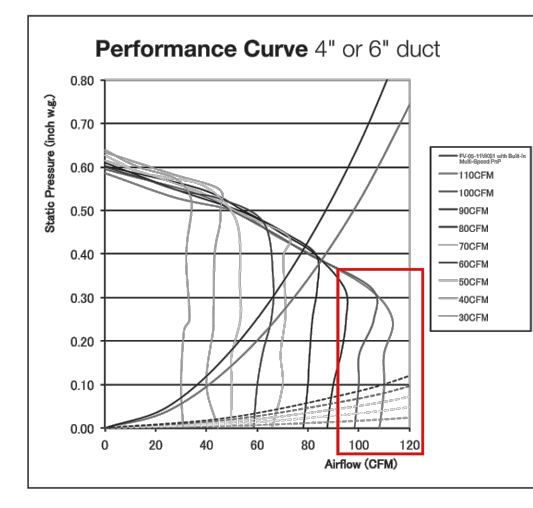
**Architectural Specifications:**

Customizable Ventilation Fan shall be ceiling mount, ENERGY STAR® rated type with multi-speed control (0, 30-100 CFM, in 10 CFM increments) that shall be built-in with a high/low adjustable delay timer and activated by a wall switch, Motion Sensor Plug 'N Play™ module or Condensation Sensor Plug 'N Play™ module. Features a built-in speed selector. Select from 0 to 110 CFM and no more than 0.3. All units are certified by the Home Ventilating Institute (HVI) at 0.1 w.g. with no less than 5.0/32/115 CFM and no more than <math>v\le 3.0/140/8\text{sones}</math> at 25 w.g. Power Consumption shall be no greater than 3.2/5.5/9.8 watts at 0.1 w.g. and 6.5/10.2/16.1 watts at 0.25 w.g. ENERGY STAR® rated with efficiency of no less than 15.1/15.3/11.5 CFM/watt at 0.1 w.g. and then 8.1/8.4/7.2 CFM/watt at 0.25 w.g. The motor shall be enclosed with brushless DC motor engineered to run continuously. DC motor speed shall automatically increase when the fan senses static pressure to maintain selected CFM. Power rating shall be 120v/60Hz. Duct diameter shall be no less than 4". Inclusive of an integrated dual 4" or 6" duct adapter. Plug 'N Play™ module provide up to two additional features. Select from Condensation Sensor, LED Night Light and Motion Sensor. Fan shall be UL and cUL listed for tub/shower enclosure when used with a GFCI protected circuit. Fan can be used to comply with ASHRAE 62.2, LEED, ENERGY STAR®, IAP, EarthCraft, California Title-24 and WA Ventilation Code.

**DC Motor Technology**  
When fan senses static pressure, its speed is automatically increased to ensure that the desired CFM is not compromised, which allows the fan to perform as rated.



FV-05-11VKS1



For complete installation instructions visit [us.panasonic.com/ventfans](http://us.panasonic.com/ventfans)

Model	Quantity	Comments	Project:
			Location:
			Architect:
			Engineer:
			Contractor:
			Submitted by:
			Date:

**WhisperGreen Select**  
VENTILATION FAN



**Plug 'N Play™ Modules**

Plug 'N Play™ modules provide up to two additional features (multi-speed is already built-in to FV-05-11VKS1). Select from Motion Sensor, Condensation Sensor and LED Night Light.

**FV-VS15VK1: Multi-Speed with Time Delay - N/A for this Fan, already built-in.**

Allows you to select the proper CFM settings to satisfy ASHRAE 62.2 continuous ventilation requirements. The fan runs continuously at a pre-set lower level (0, 100 CFM, in 10 CFM increments), then elevates to a maximum level of operation (0-110 CFM) when the wall switch is turned on, or when the motion sensor or Condensation Sensor module is activated. A High/Low delay timer returns the fan to the pre-set CFM level after a period of time set by the user.

**FV-MSVK1: Motion Sensor**

Automatically activates when someone enters the room. Once the settings have been applied, the fan becomes truly automatic. This module also activates a 20 minute delay off timer for the fan.

**FV-CSVK1: Condensation Sensor**

Helps control bathroom condensation to prevent mold and mildew. Sensor technology detects relative humidity and temperature to anticipate dew point, automatically turning the fan on to control humidity. Built-in Relative Humidity (RH) sensitivity adjustment enables fine tuning for moist conditions and for satisfying CalGreen requirements. When the condensation sensor is used in conjunction with multi-speed functionality, the fan will kick up to high speed when the condensation sensor detects moisture in the room. This module also activates a 20 minute delay off timer for the fan.

**FV-NLVK1: LED Night Light**

A photocell automatically turns on the 1 watt LED night light when darkness is sensed in the room. High/Low brightness switch enables you to fine tune the photocell to work in conjunction with the darkness level of your bathroom. This module also activates an automatic 20 minute delay off timer for the fan.

Panel with Fan Specifications, Most Efficient 2016 logo, and Panasonic logo.

WILLIAM / KAVEN

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CONTACT: MARK DENYER

CITY STAMP

PROJECT

**MLK & FAILING  
BUILDING 3**

3830 NE MARTIN LUTHER  
KING JR BLVD  
PORTLAND, OR 97212

DRAWING TITLE  
**MECHANICAL  
DETAILS**

REVISIONS



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DATE June 17, 2022  
JOB NO. 18.16

DRAWING NO.

**M6.03**

CONSTRUCTION