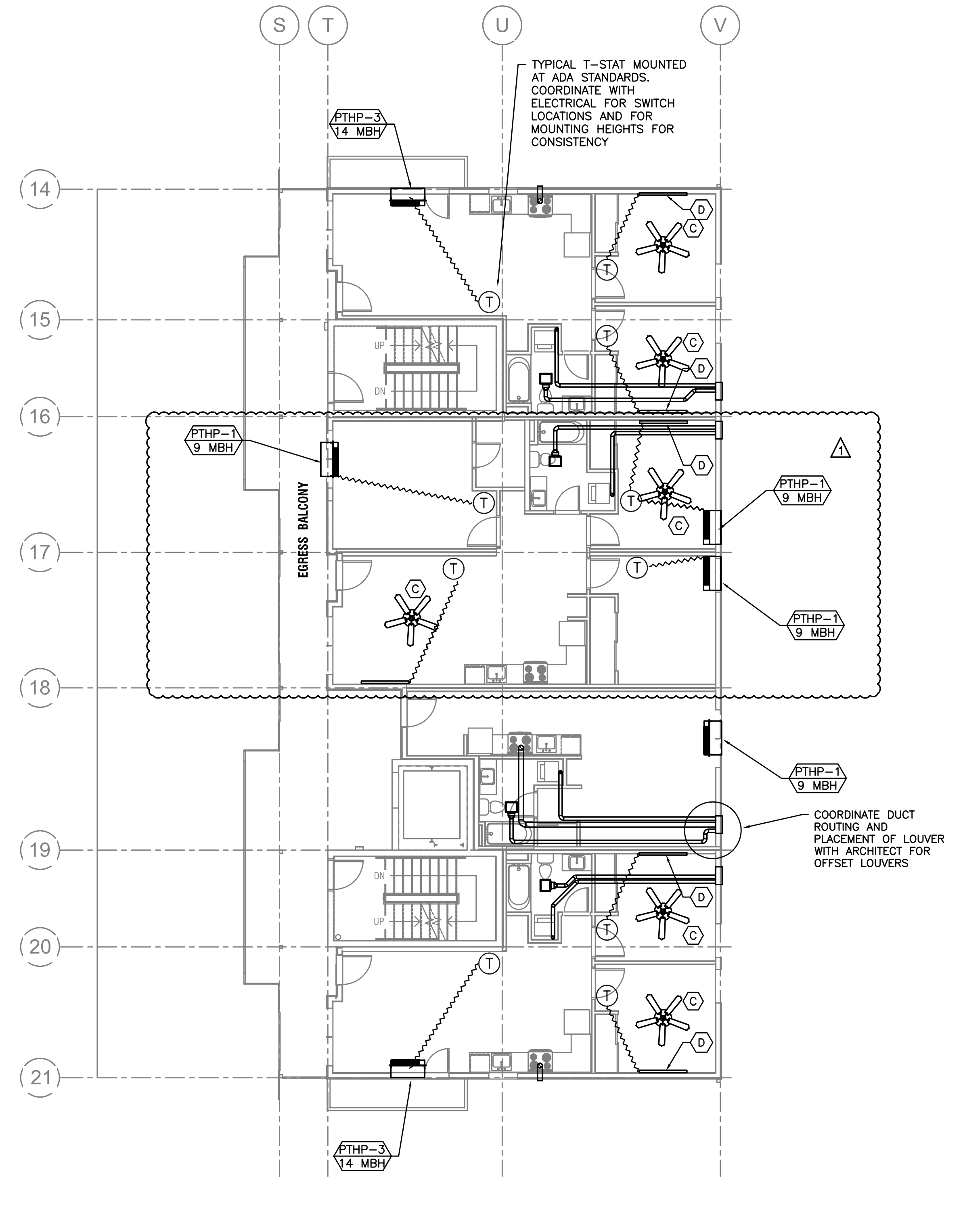


**1** BUILDING I - MECHANICAL LEVEL 1  
 M110 SCALE: 1/8" = 1'-0"

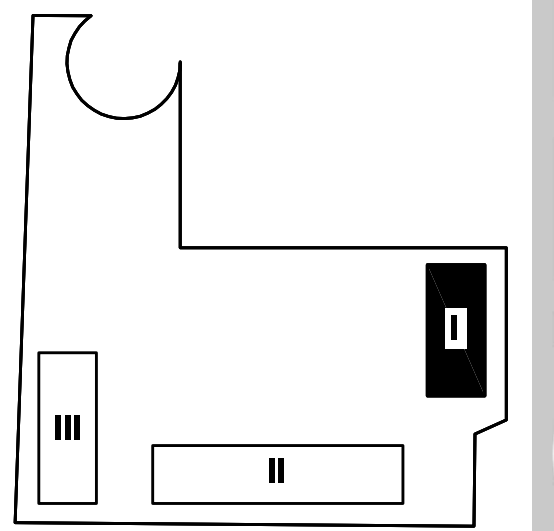


**2** BUILDING I - MECHANICAL LEVEL 2  
 M110 SCALE: 1/8" = 1'-0"

TYPICAL DRYER DUCT TO BE CONSTRUCTED AS FOLLOWS: MATERIAL SHALL HAVE A SMOOTH INTERIOR FINISH AND 0.016 INCH THICK. RIVET OR SCREW PENETRATES TO THE DUCT WALL ARE NOT ACCEPTABLE. DRYER DUCT SHALL BE SUPPORT EVERY 4 FOOT INTERVALS.

TYPICAL T-STAT MOUNTED AT ADA STANDARDS. COORDINATE WITH ELECTRICAL FOR SWITCH LOCATIONS AND FOR MOUNTING HEIGHTS FOR CONSISTENCY

COORDINATE DUCT ROUTING AND PLACEMENT OF LOUVER WITH ARCHITECT FOR OFFSET LOUVERS



**KEY PLAN**

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 CONTACT: Mark Denyer/Denise Taylor

**Project Location**  
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 3610 SE 29th Ave  
 Portland, OR 97202

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 SITEWORKS, INC. ONLY

Date: 2016.04.27

Drawn By: MARK DENYER

Phase: PERMIT DOCUMENTS

Revisions:

Number	Description	Date
0	Permit Set	2016.05.11
1	Checksheet Response	2016.08.15
2	Utility Coordination	2016.09.12
3	Checksheet Response	2016.09.13

Sheet Name  
 BUILDING I  
 MECHANICAL - LEVEL 1 & 2

Sheet No.

**M110**

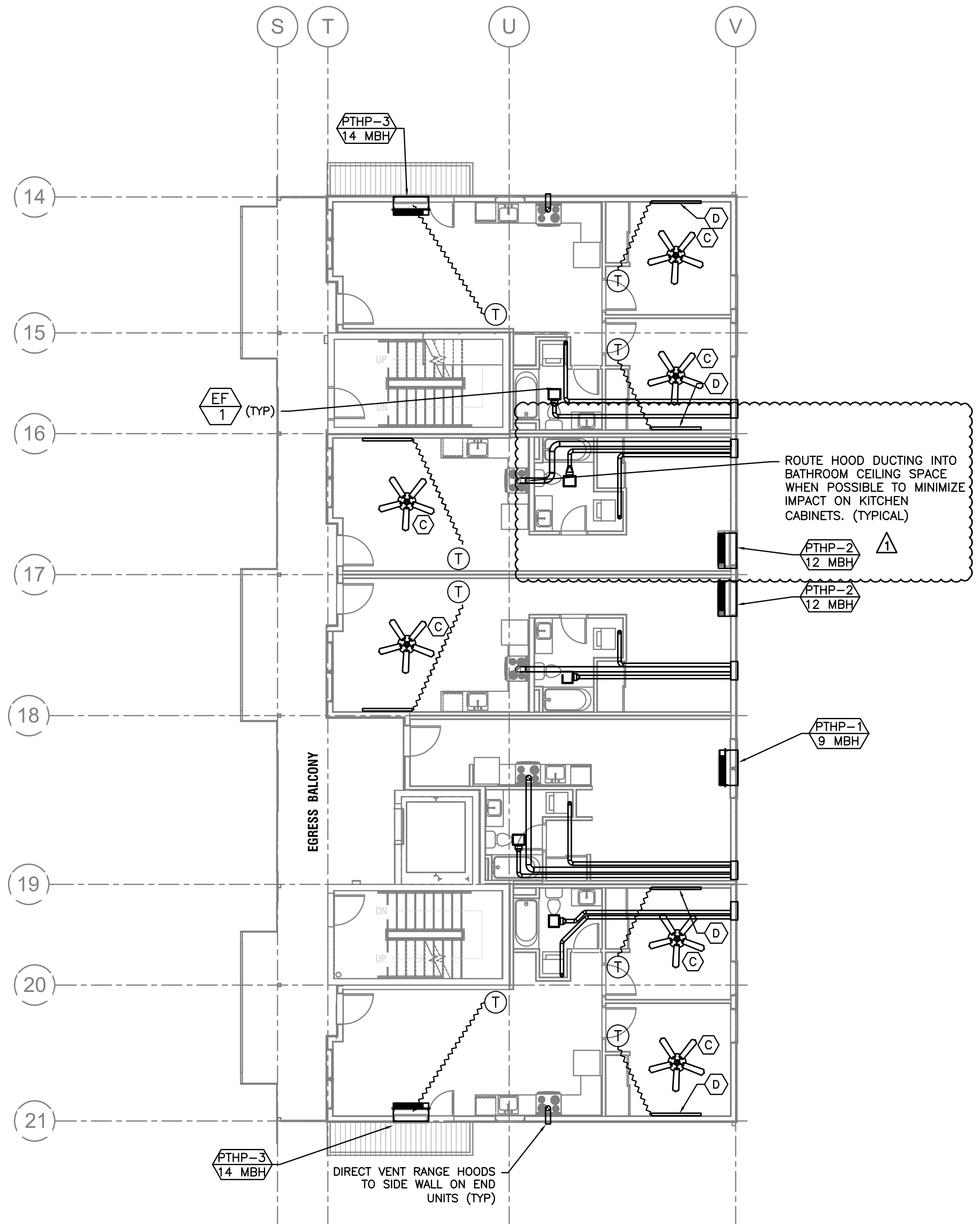
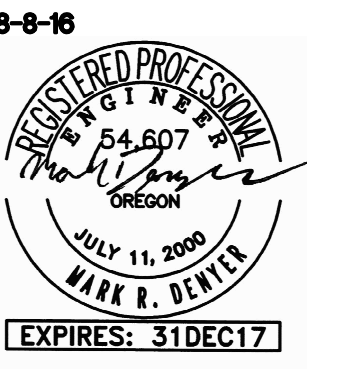
**GENERAL NOTES:**

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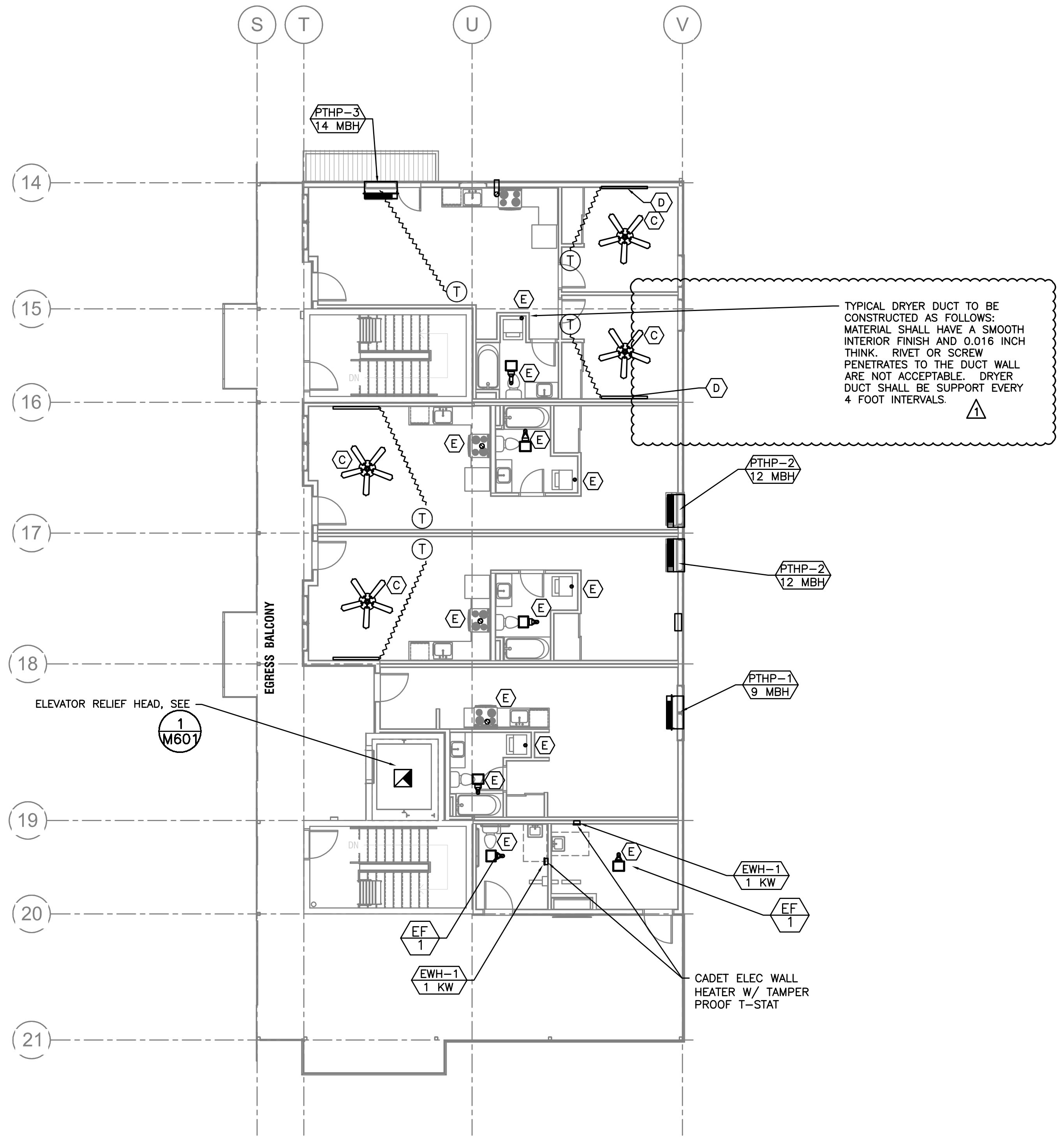
**SHEET NOTES:**

SEE SHEET M130 FOR SHEET & GENERAL NOTES

BACKGROUND UPDATES 8-15-16

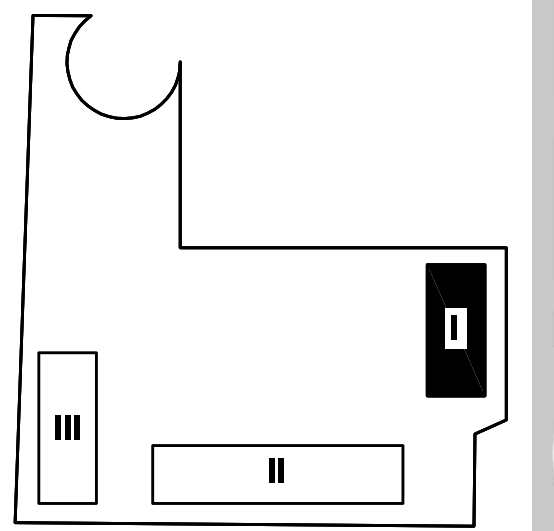


**1 BUILDING I - MECHANICAL LEVEL 3**  
 M111 SCALE: 1/8"=1'-0"



**2 BUILDING I - MECHANICAL LEVEL 4**  
 M111 SCALE: 1/8"=1'-0"

TYPICAL DRYER DUCT TO BE CONSTRUCTED AS FOLLOWS: MATERIAL SHALL HAVE A SMOOTH INTERIOR FINISH AND 0.016 INCH THICK. RIVET OR SCREW PENETRATES TO THE DUCT WALL ARE NOT ACCEPTABLE. DRYER DUCT SHALL BE SUPPORT EVERY 4 FOOT INTERVALS.



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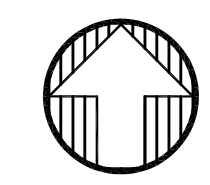
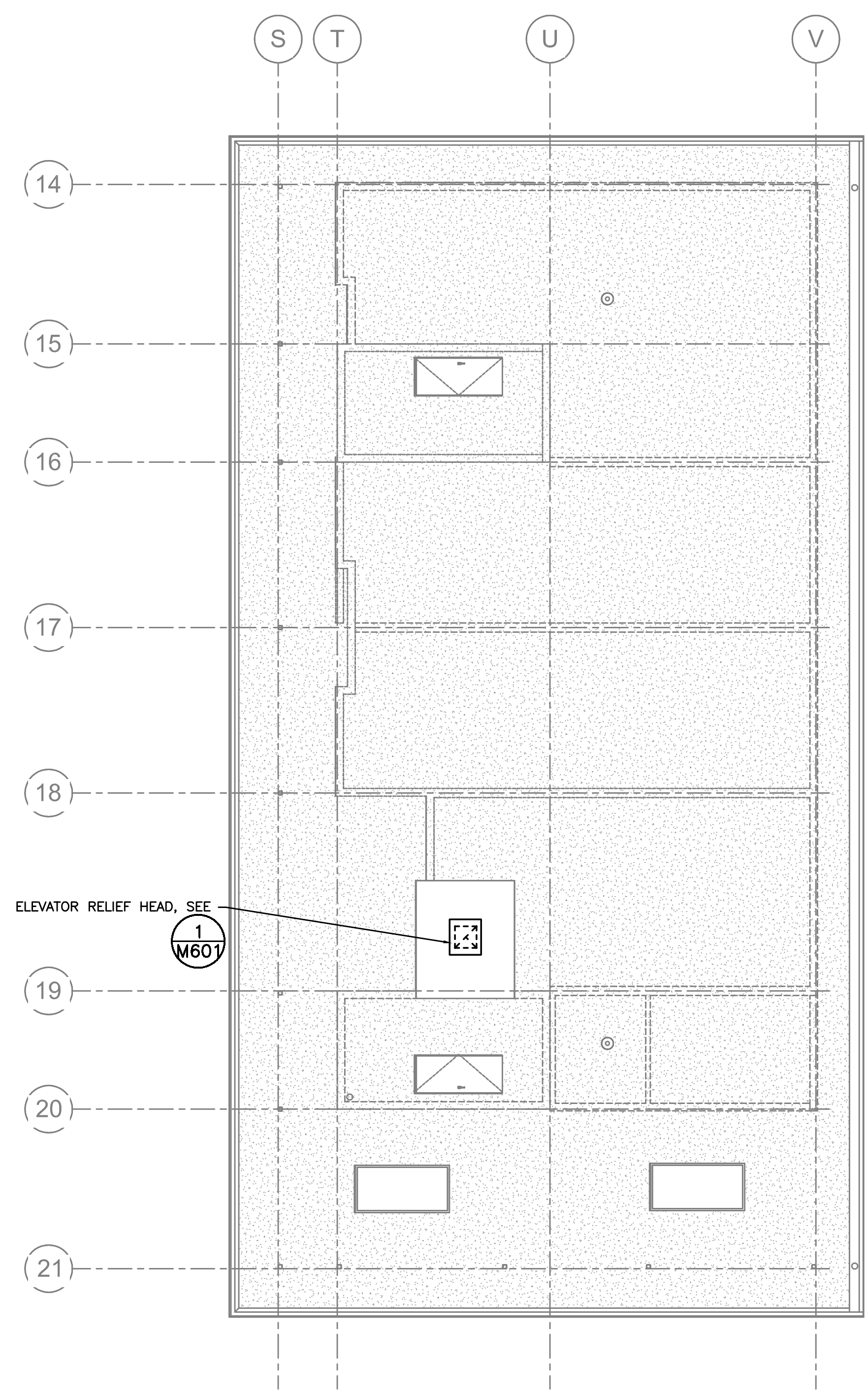
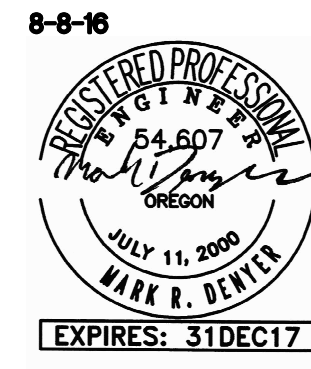
**Sheet Name**  
 BUILDING I  
 MECHANICAL - LEVEL 3 & 4

Sheet No.  
**M111**

BACKGROUND UPDATES 8-15-16

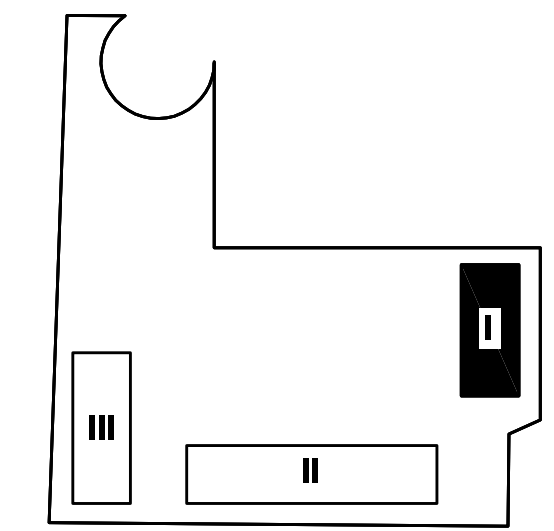
**GENERAL NOTES:**  
 ALL DUCTWORK TO BE AS STRAIGHT AS POSSIBLE, COORDINATE LOUVER, FAN AND DUCT LOCATIONS TO MINIMIZE ELBOWS.

**SHEET NOTES:**  
 SEE SHEET M130 FOR SHEET & GENERAL NOTES



**1** BUILDING I – MECHANICAL LEVEL ROOF DECK  
 SCALE: 1/8"=1'-0"

BACKGROUND UPDATES 8-15-16



KEY PLAN

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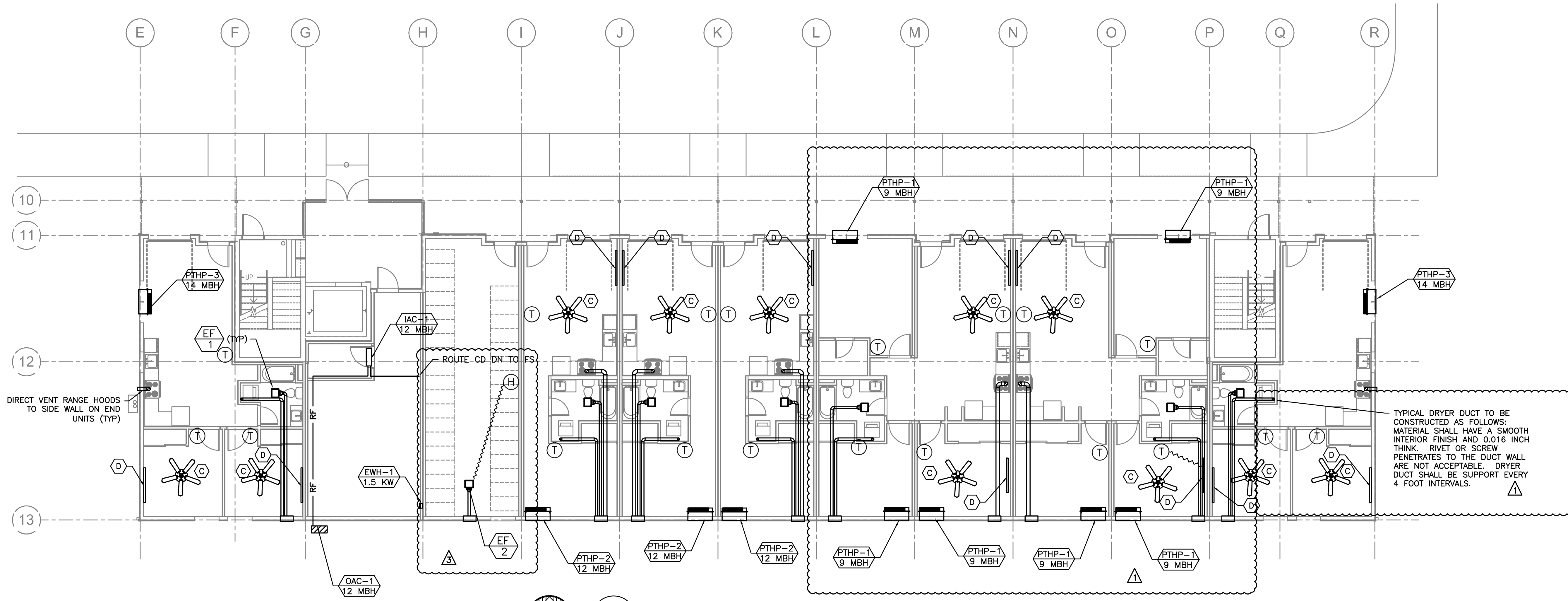
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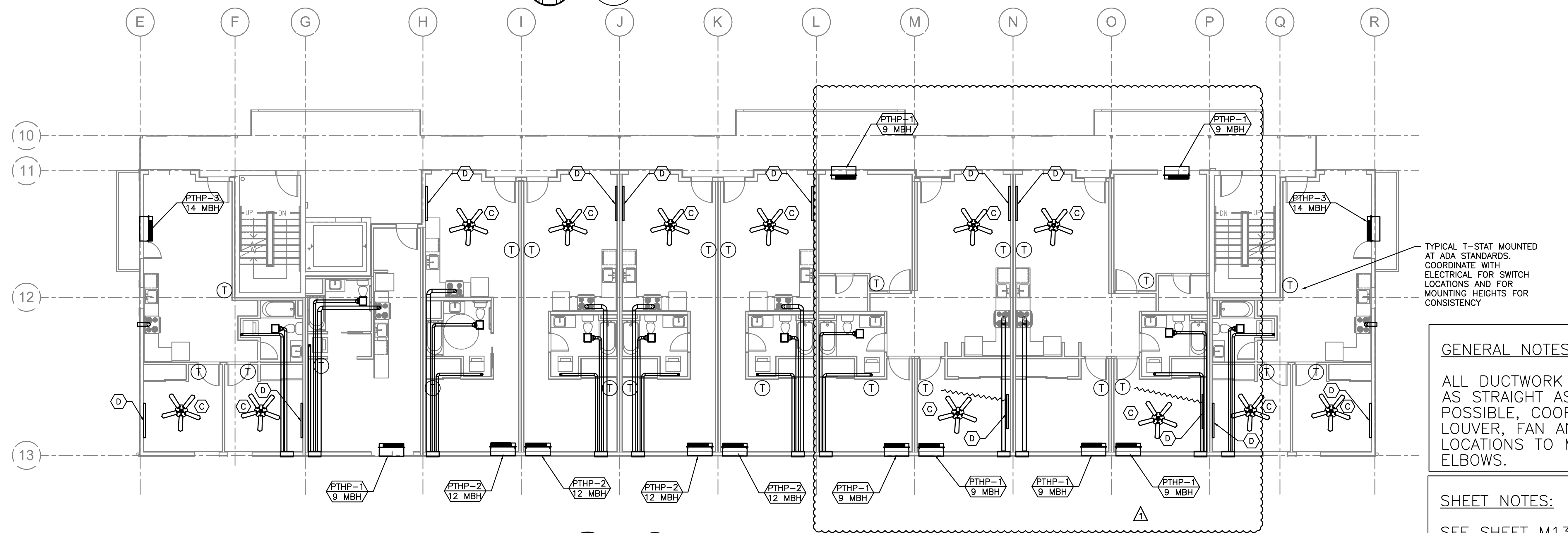
Sheet Name  
 BUILDING I  
 MECHANICAL- ROOF PLAN

SHEET NOTES:  
 SEE SHEET M130 FOR  
 SHEET & GENERAL  
 NOTES

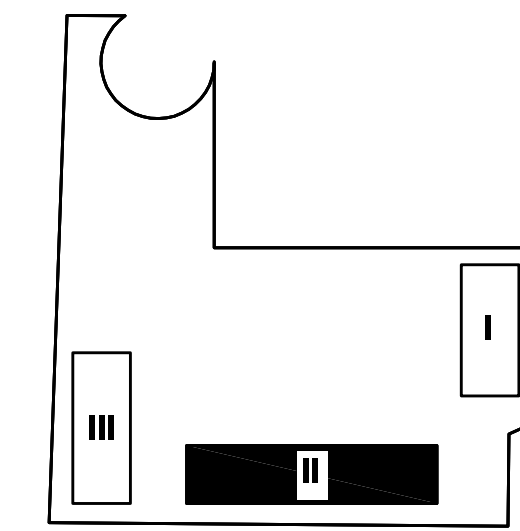
Sheet No.  
**M112**



1 BUILDING II - MECHANICAL LEVEL 1  
M120 SCALE: 1/8"=1'-0"



2 BUILDING II - MECHANICAL LEVEL 2  
M120 SCALE: 1/8"=1'-0"



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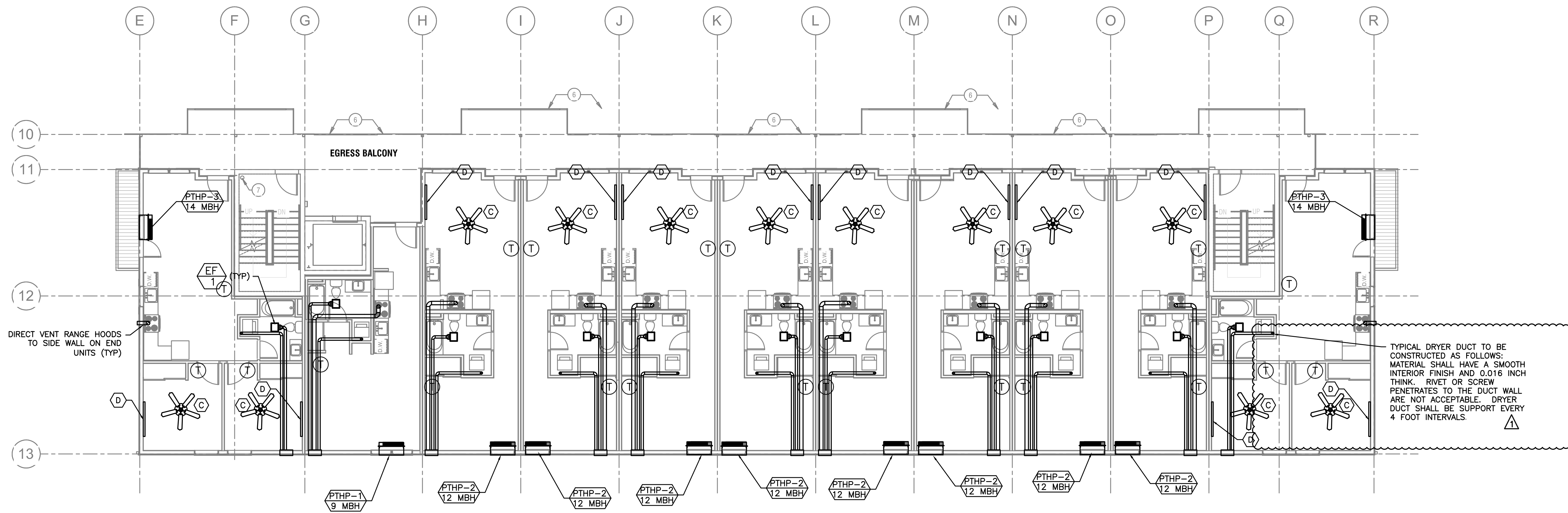
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SHEET NOTES:  
SEE SHEET M130 FOR SHEET & GENERAL NOTES

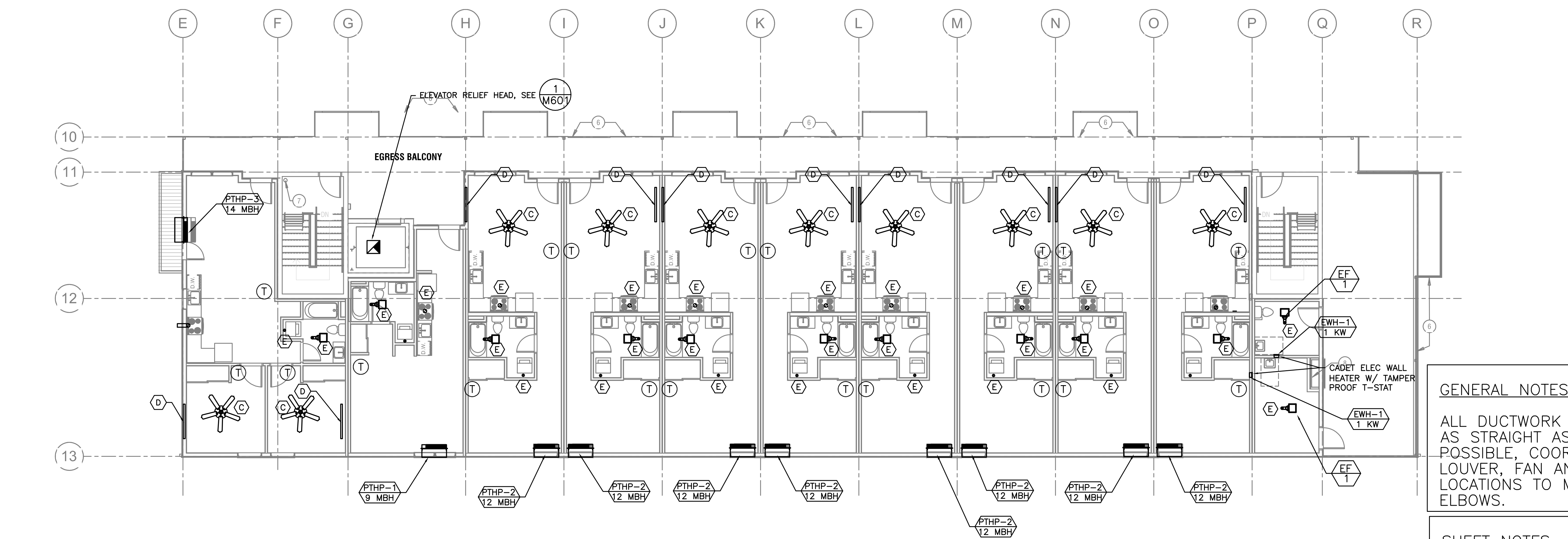
Sheet Name  
BUILDING II  
MECHANICAL - LEVEL 1 & 2

Sheet No.  
**M120**

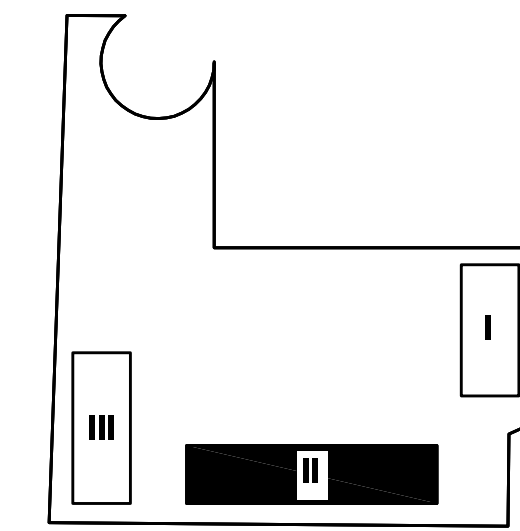
BACKGROUND UPDATES 8-15-16



1 BUILDING II - MECHANICAL LEVEL 3  
M121 SCALE: 1/8" = 1'-0"



2 BUILDING II - MECHANICAL LEVEL 4  
M121 SCALE: 1/8" = 1'-0"



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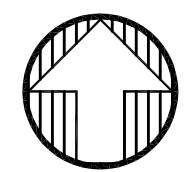
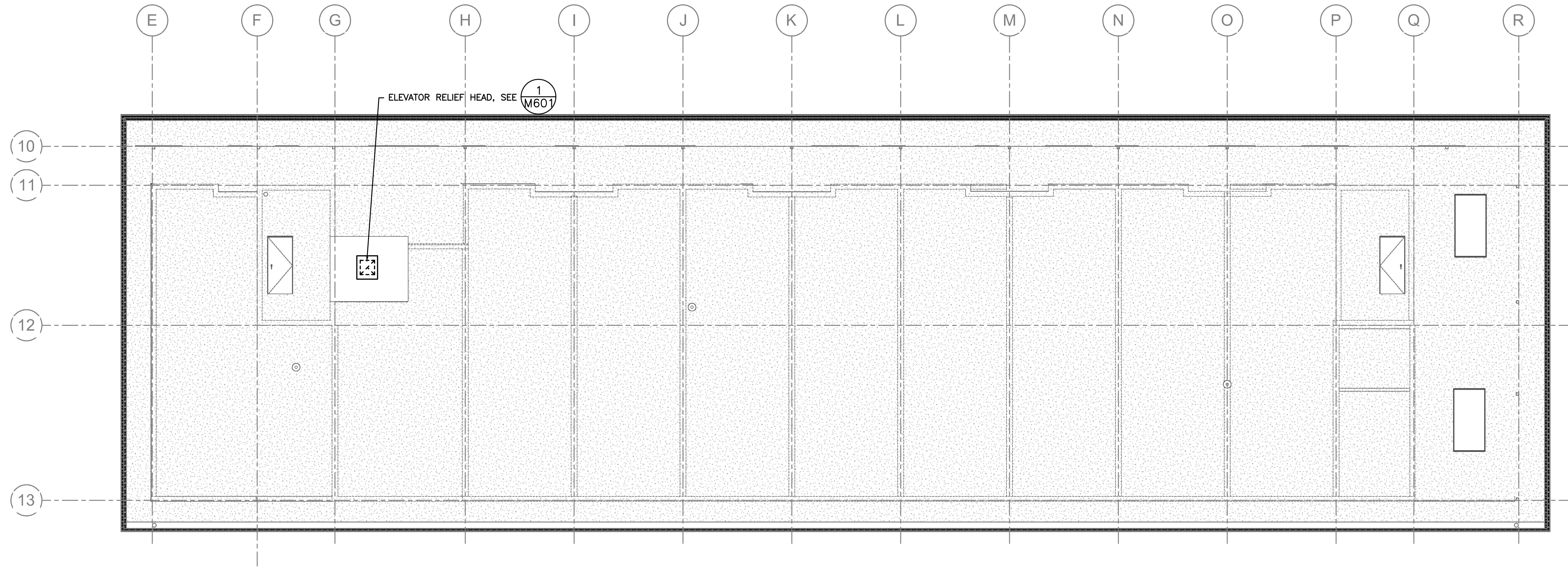
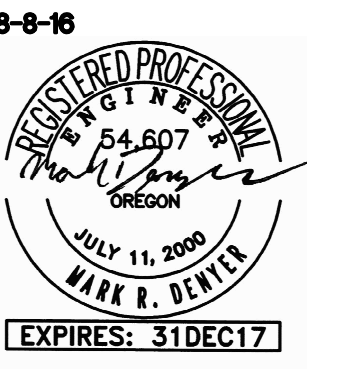
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SHEET NOTES:  
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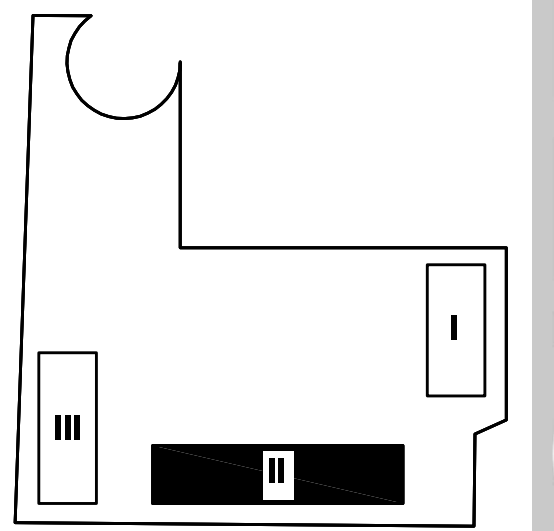
Sheet Name  
BUILDING II  
MECHANICAL - LEVEL 3 & 4

Sheet No.  
**M121**

BACKGROUND UPDATES 8-15-16



1 BUILDING II - MECHANICAL ROOF PLAN  
 M122 SCALE: 1/8"=1'-0"



KEY PLAN

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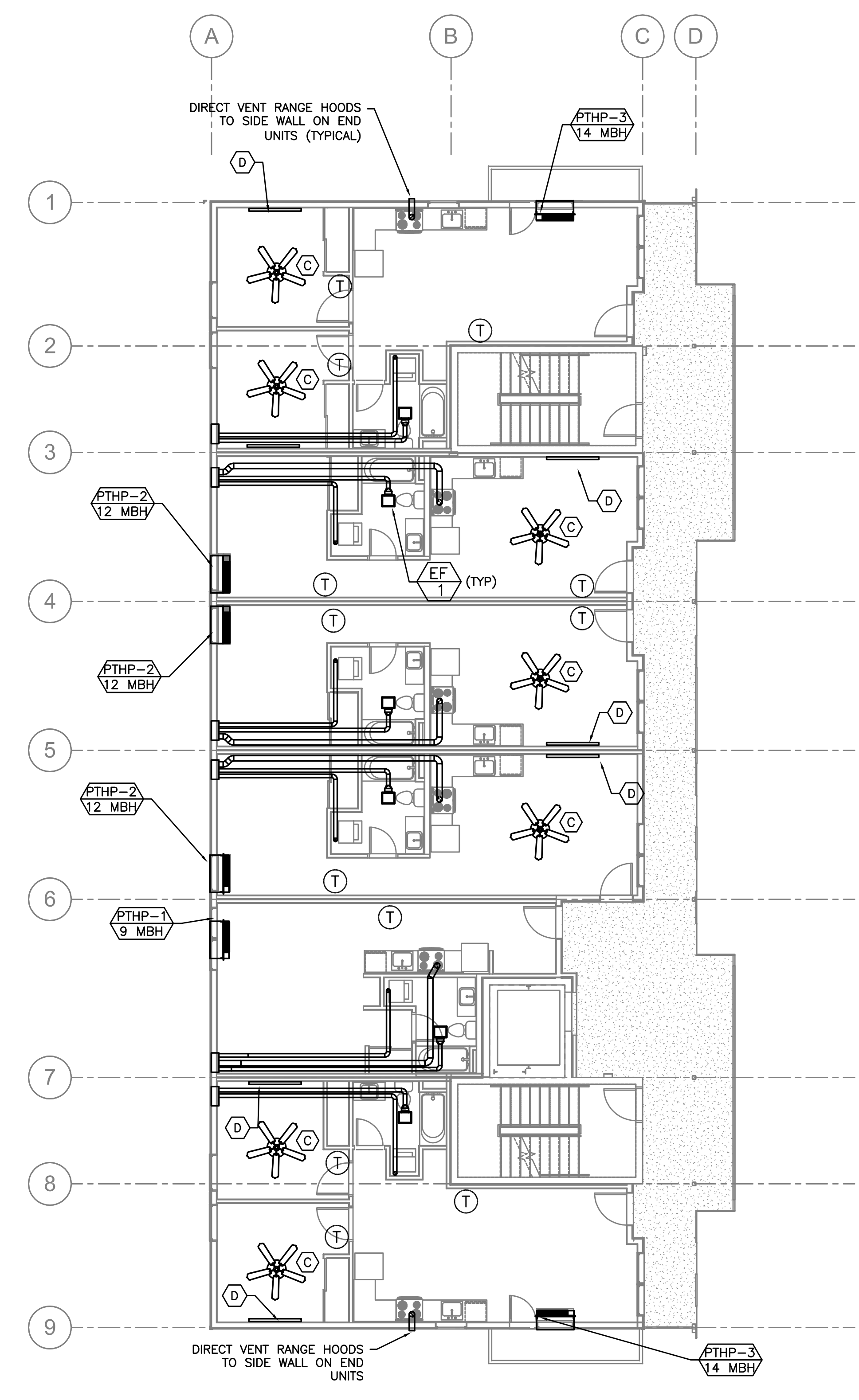
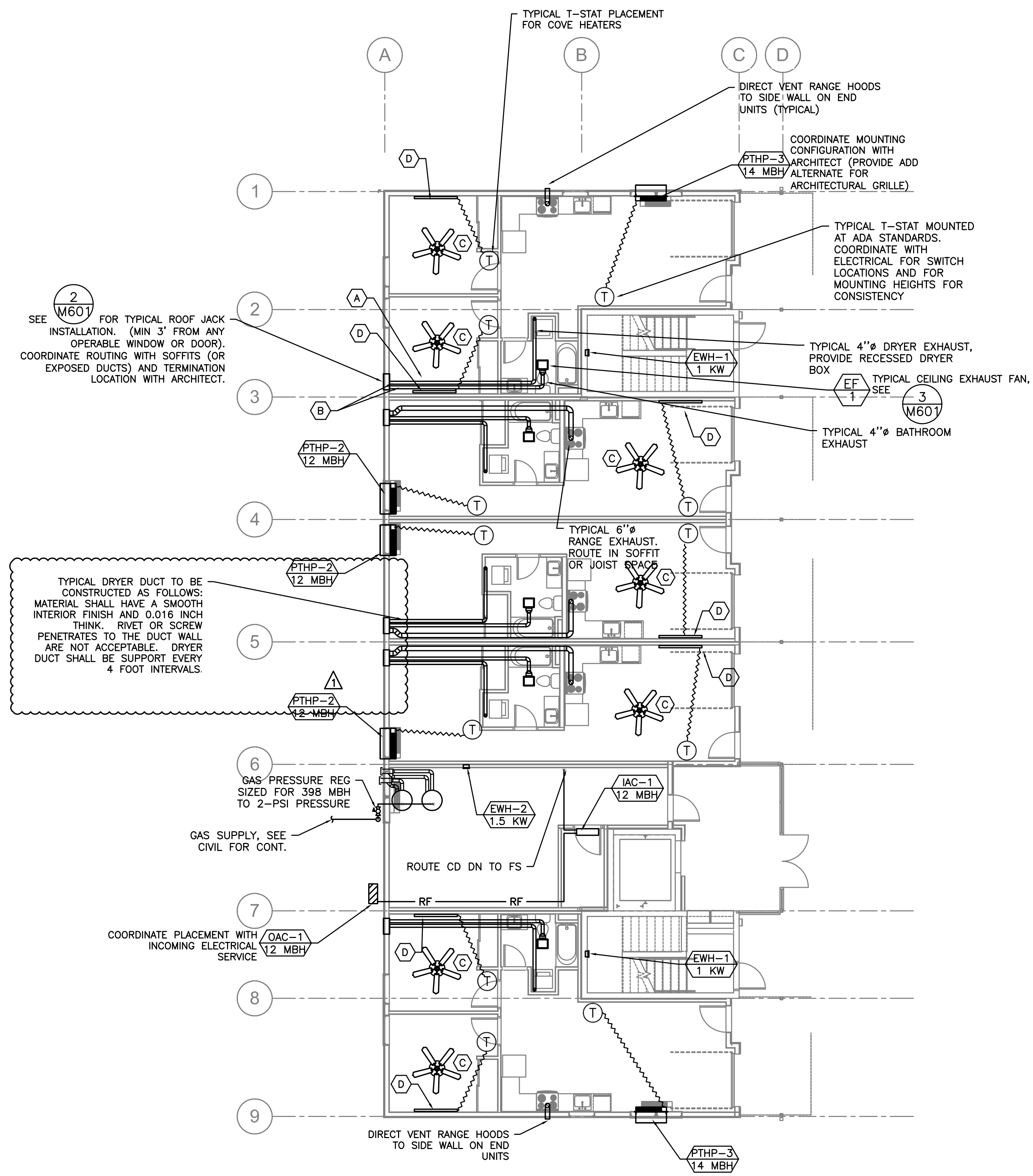
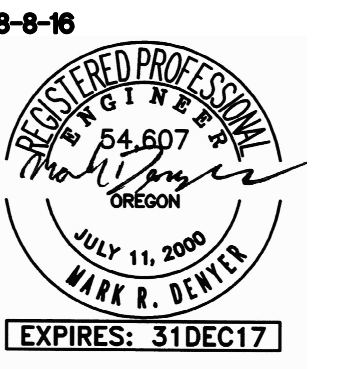
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Sheet Name  
 BUILDING II  
 MECHANICAL - ROOF PLAN

SHEET NOTES:  
 SEE SHEET M130 FOR  
 SHEET & GENERAL  
 NOTES

Sheet No.  
**M122**

BACKGROUND UPDATES 8-15-16



SEE **M601** FOR TYPICAL ROOF JACK INSTALLATION. (MIN 3" FROM ANY OPERABLE WINDOW OR DOOR). COORDINATE ROUTING WITH SOFFITS (OR EXPOSED DUCTS) AND TERMINATION LOCATION WITH ARCHITECT.

TYPICAL DRYER DUCT TO BE CONSTRUCTED AS FOLLOWS: MATERIAL SHALL HAVE A SMOOTH INTERIOR FINISH AND 0.016 INCH THICK. RIVET OR SCREW PENETRATES TO THE DUCT WALL ARE NOT ACCEPTABLE. DRYER DUCT SHALL BE SUPPORT EVERY 4 FOOT INTERVALS.

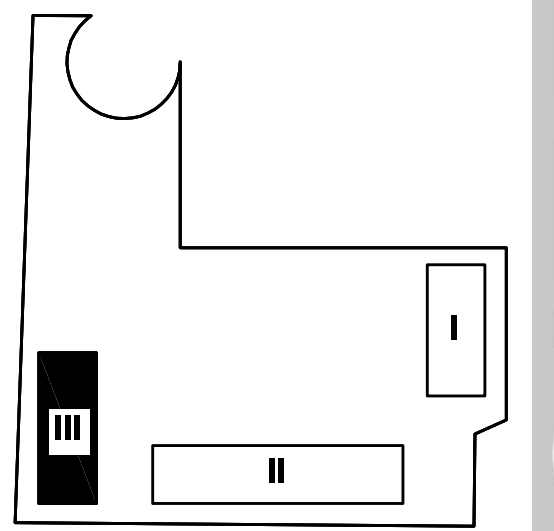
**1 BUILDING III -MECHANICAL LEVEL 1**  
 M130 SCALE: 1/8"=1'-0"

- GENERAL NOTES:**
- A** — 6"Ø RANGE HOOD EXHAUST ROUTED FROM RANGE TO EXTERIOR WALL, KEEP DUCT AS HIGH IN SPACE AS POSSIBLE, AND TERMINATE WITH A SIDE WALL VENT, WITH A BACKDRAFT DAMPER. INSULATE FINAL 5' OF DUCTWORK. SEE **M601**
  - B** — 4"Ø BATHROOM AND DRYER EXHAUST ROUTED TO EXTERIOR WALL, TERMINATE WITH SIDE WALL VENT, PROVIDE BACKDRAFT DAMPER AT EXTERIOR WALL (EXHAUST FAN TO HAVE INTEGRAL BACKDRAFT DAMPER). INSULATE FINAL 5' OF DUCTWORK SEE **M601**
  - C** — CEILING FAN, SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS
  - D** — COVE HEATER **CH-1** (750 W) SEE ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING LOCATIONS
  - E** — 4"Ø BATHROOM AND DRYER OR 6"Ø RANGE HOOD DUCT UP THROUGH ROOF WITH WEATHER PROOF VENT CAP.

**2 BUILDING III -MECHANICAL LEVEL 2**  
 M130 SCALE: 1/8"=1'-0"

**GENERAL NOTES:**  
 ALL DUCTWORK TO BE AS STRAIGHT AS POSSIBLE, COORDINATE LOUVER, FAN AND DUCT LOCATIONS TO MINIMIZE ELBOWS.

BACKGROUND UPDATES 8-15-16



**KEY PLAN**

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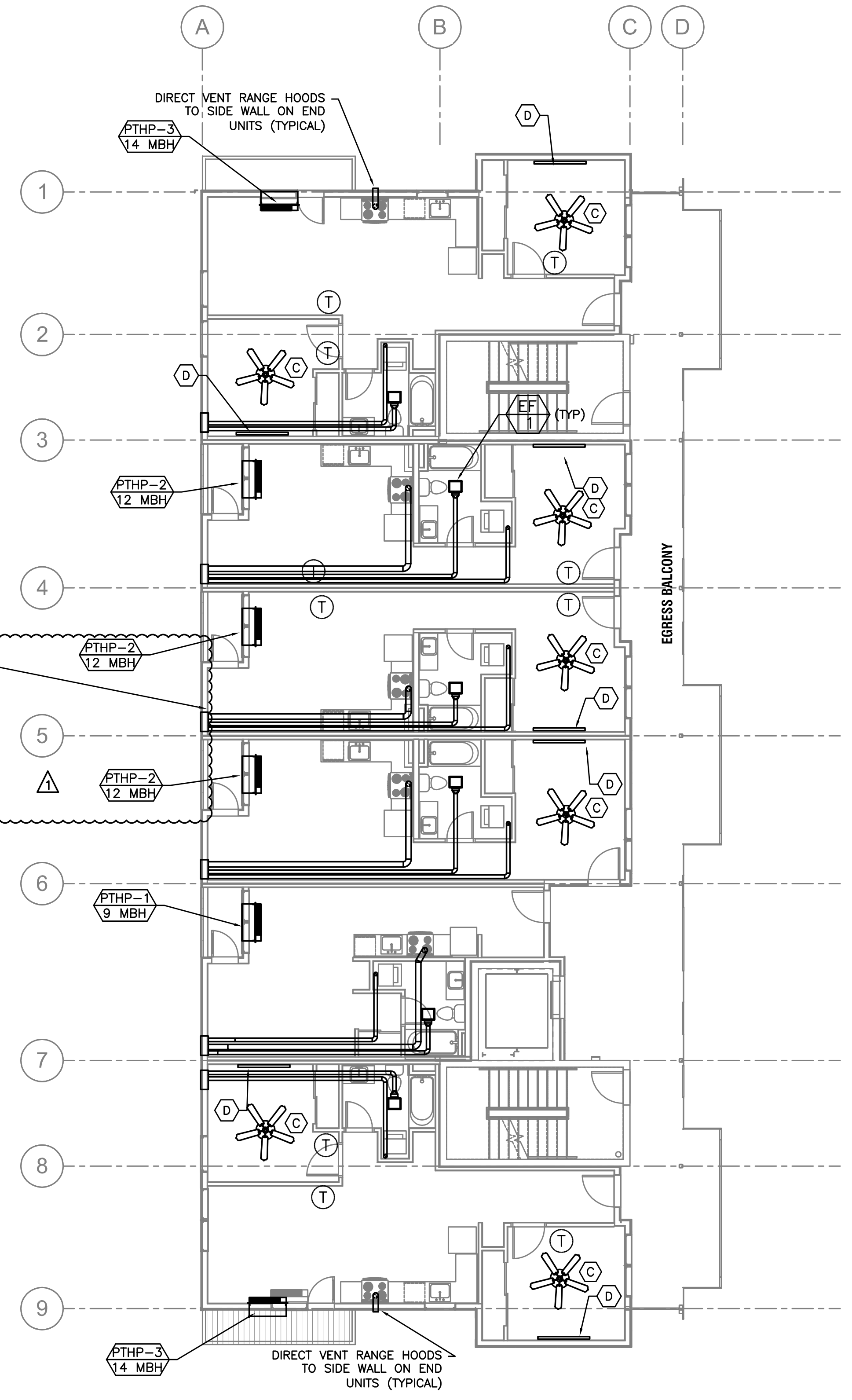
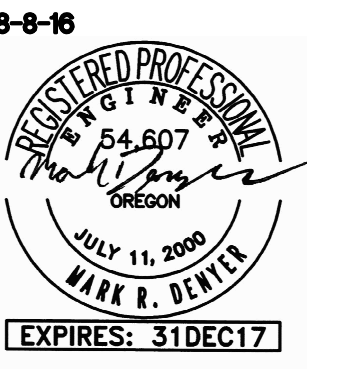
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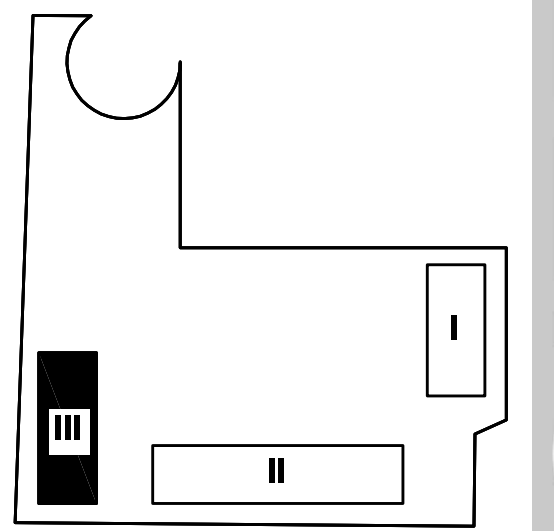
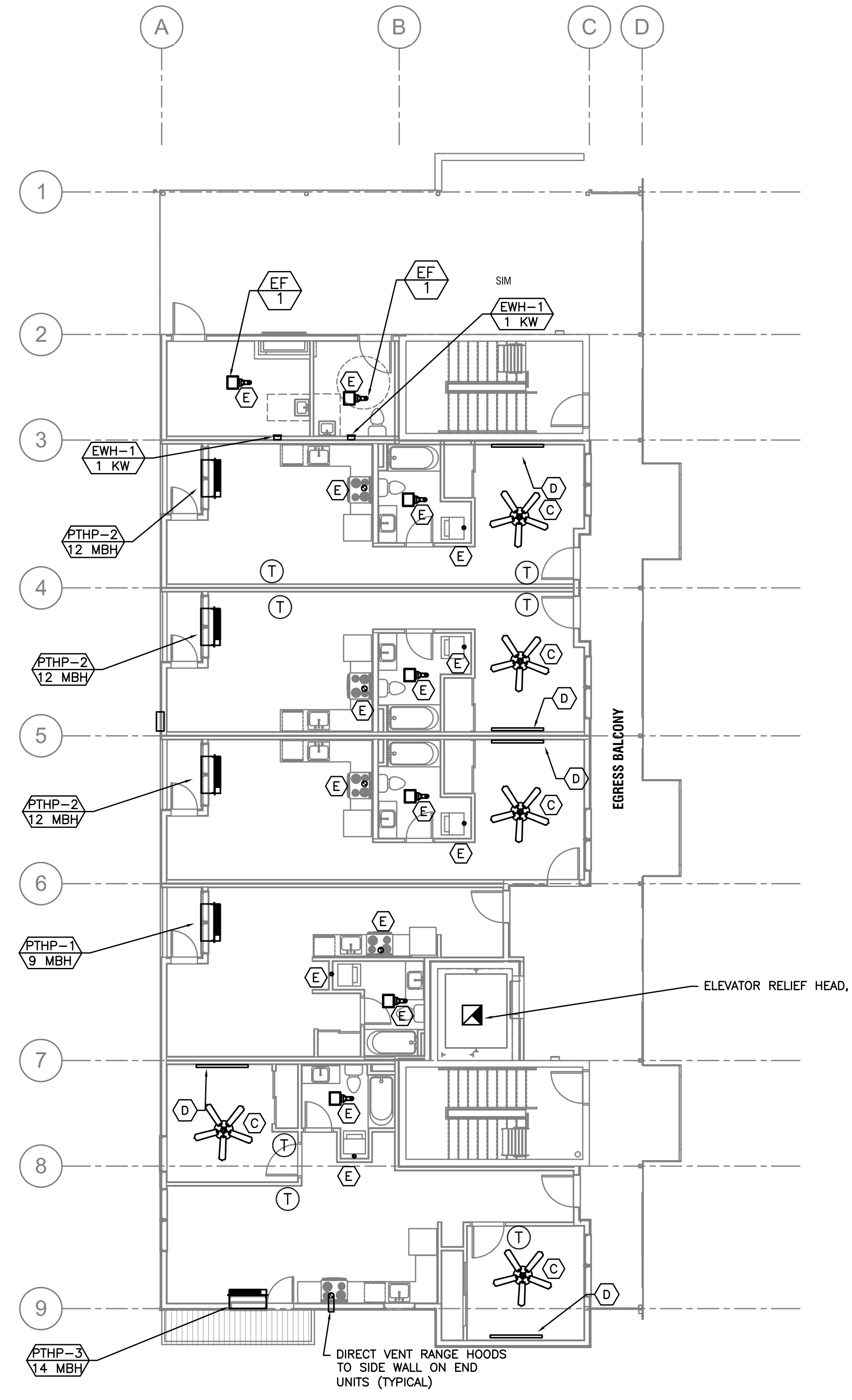
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**Sheet Name**  
 BUILDING III  
 MECHANICAL - LEVEL 1 & 2

**Sheet No.**  
**M130**



TYPICAL DRYER DUCT TO BE CONSTRUCTED AS FOLLOWS: MATERIAL SHALL HAVE A SMOOTH INTERIOR FINISH AND 0.016 INCH THICK. RIVET OR SCREW PENETRATES TO THE DUCT WALL ARE NOT ACCEPTABLE. DRYER DUCT SHALL BE SUPPORT EVERY 4 FOOT INTERVALS.



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Sheet Name  
 BUILDING III  
 MECHANICAL - LEVEL 3 & 4

Sheet No.  
**M131**

**GENERAL NOTES:**

- (A) 6" RANGE HOOD EXHAUST ROUTED FROM RANGE TO EXTERIOR WALL, KEEP DUCT AS HIGH IN SPACE AS POSSIBLE, AND TERMINATE WITH A SIDE WALL VENT, WITH A BACKDRAFT DAMPER. INSULATE FINAL 5' OF DUCTWORK. SEE 2/M601
- (B) 4" BATHROOM AND DRYER EXHAUST ROUTED TO EXTERIOR WALL, TERMINATE WITH SIDE WALL VENT, PROVIDE BACKDRAFT DAMPER AT EXTERIOR WALL (EXHAUST FAN TO HAVE INTEGRAL BACKDRAFT DAMPER). INSULATE FINAL 5' OF DUCTWORK SEE 2/M601
- (C) CEILING FAN, SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS
- (D) COVE HEATER CH-1 750 W SEE ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING LOCATIONS
- (E) 4" BATHROOM AND DRYER OR 6" RANGE HOOD DUCT UP THROUGH ROOF WITH WEATHER PROOF VENT CAP.

**1 BUILDING III -MECHANICAL LEVEL 3**  
 M131 SCALE: 1/8"=1'-0"

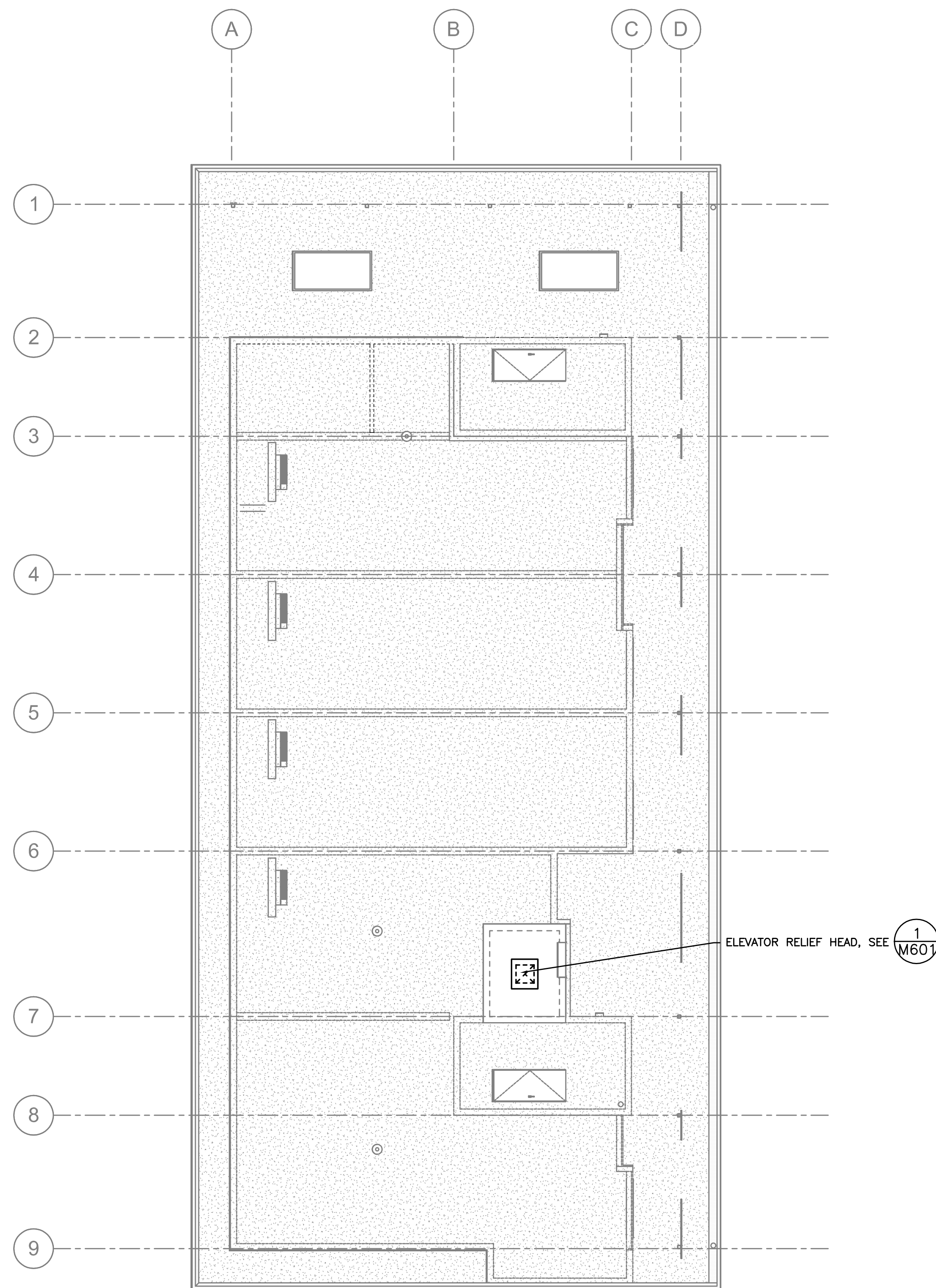
**2 BUILDING III -MECHANICAL LEVEL 4**  
 M131 SCALE: 1/8"=1'-0"

**GENERAL NOTES:**

ALL DUCTWORK TO BE AS STRAIGHT AS POSSIBLE, COORDINATE LOUVER, FAN AND DUCT LOCATIONS TO MINIMIZE ELBOWS.

BACKGROUND UPDATES 8-15-16

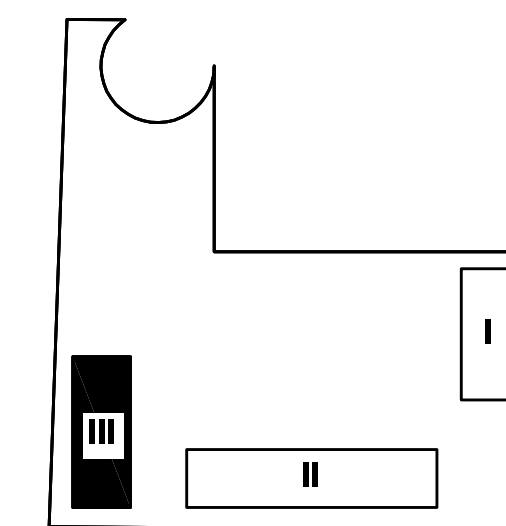




1 BUILDING III - MECHANICAL ROOF PLAN  
M132 SCALE: 1/8"=1'-0"

GENERAL NOTES:

- A — 6"Ø RANGE HOOD EXHAUST ROUTED FROM RANGE TO EXTERIOR WALL, KEEP DUCT AS HIGH IN SPACE AS POSSIBLE, AND TERMINATE WITH A SIDE WALL VENT, WITH A BACKDRAFT DAMPER. INSULATE FINAL 5' OF DUCTWORK. SEE
- B — 4"Ø BATHROOM AND DRYER EXHAUST ROUTED TO EXTERIOR WALL, TERMINATE WITH SIDE WALL VENT, PROVIDE BACKDRAFT DAMPER AT EXTERIOR WALL (EXHAUST FAN TO HAVE INTEGRAL BACKDRAFT DAMPER). INSULATE FINAL 5' OF DUCTWORK SEE
- C — CEILING FAN, SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS
- D — COVE HEATER SEE ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING LOCATIONS
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Sheet Name  
 BUILDING III  
 MECHANICAL - ROOF PLAN

Sheet No.

M132

BACKGROUND UPDATES 8-15-16



## MECHANICAL LEGEND

[Symbol]	SUPPLY AIR DIFFUSER	AFF	ABOVE FINISH FLOOR
[Symbol]	RETURN AIR GRILLE	AHU	AIR HANDLING UNIT
[Symbol]	EXHAUST AIR GRILLE	B.D.	BOTTOM OF DUCT
[Symbol]	PERFORATED RETURN AIR PANEL	BHP	BRAKE HORSEPOWER
[Symbol]	DIRECTIONAL AIR FLOW	BTU	BRITISH THERMAL UNITS
[Symbol]	MANUAL VOLUME DAMPER	CFM	CUBIC FEET PER MINUTE
[Symbol]	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	CONN.	CONNECTION
[Symbol]	RETURN AIR DUCT UP & DOWN	CONT.	CONTINUATION
[Symbol]	EXHAUST AIR DUCT UP & DOWN	CW	DOMESTIC COLD WATER
[Symbol]	VAV TERMINAL UNIT	DB	DRY BULB
[Symbol]	WT TERMINAL UNIT	DIA.	DIAMETER
[Symbol]	EXISTING	DIST.	DISTRIBUTION
[Symbol]	CONNECT TO EXISTING	EA	EXHAUST AIR
[Symbol]	THERMOSTAT OR TEMP. SENSOR	EDB	ENTERING DRY BULB TEMPERATURE
[Symbol]	NOTE	EWB	ENTERING WET BULB TEMPERATURE
[Symbol]	EQUIPMENT DESIGNATOR	EWT	ENTERING WATER TEMPERATURE
[Symbol]	BALL VALVE	FF	FINISH FLOOR
[Symbol]	GATE VALVE	FIXT.	FIXTURE
[Symbol]	CHECK VALVE	FPM	FEET PER MINUTE
[Symbol]	BALANCING VALVE	FPS	FEET PER SECOND
[Symbol]	THERMOMETER	FT.	FEET / FOOT
[Symbol]	DIRECTION OF FLOW	GA.	GAUGE
[Symbol]	PUMP	GPM	GALLONS PER MINUTE
[Symbol]	STRAINER	H	HEIGHT
[Symbol]	PRESSURE GAUGE	HP	HORSEPOWER
[Symbol]	PETE'S PLUG	I.D.	INSIDE DIAMETER
[Symbol]	DOUBLE CHECK ASSEMBLY	IN.	INCHES
[Symbol]	PRESSURE REDUCING VALVE	L	LENGTH
[Symbol]	UNION	LBS.	POUNDS
[Symbol]	2-WAY CONTROL VALVE	LDB	LEAVING DRY BULB
[Symbol]	3-WAY CONTROL VALVE	LWB	LEAVING WET BULB
[Symbol]	CAP	LWT	LEAVING WATER TEMPERATURE
[Symbol]	SMOKE DETECTOR	MAX.	MAXIMUM
[Symbol]	MOTORIZED DAMPER	MBH	THOUSANDS OF BTUs PER HOUR
[Symbol]		MIN.	MINIMUM
[Symbol]		NC	NOISE CRITERIA
[Symbol]		N.C.	NORMALLY CLOSED
[Symbol]		N.I.M.	NOT IN MECHANICAL
[Symbol]		NO.	NUMBER
[Symbol]		N.O.	NORMALLY OPEN
[Symbol]		O.A.	OUTSIDE AIR
[Symbol]		P	PERSON
[Symbol]		PSI	POUNDS PER SQUARE INCH
[Symbol]		P/T	PRESSURE / TEMPERATURE
[Symbol]		R/A	RETURN AIR
[Symbol]		RECT.	RECTANGULAR
[Symbol]		REQ'D	REQUIRED
[Symbol]		S.A.	SUPPLY AIR
[Symbol]		S.P.	STATIC PRESSURE
[Symbol]		SQ.	SQUARE
[Symbol]		TEMP.	TEMPERATURE
[Symbol]		TYP.	TYPICAL
[Symbol]		VAV	VARIABLE AIR VOLUME
[Symbol]		W	WIDTH
[Symbol]		WB	WET BULB
[Symbol]		WPD	WATER PRESSURE DROP
[Symbol]		ø	DIAMETER
[Symbol]		(E)	EXISTING
[Symbol]		(D)	DEMOLISH
[Symbol]			NEW WORK
[Symbol]		HWS	(HWS) HEATING WATER SUPPLY
[Symbol]		HWR	(HWR) HEATING WATER RETURN
[Symbol]		▲	FIRE DAMPER
[Symbol]		■	FIRE / SMOKE DAMPER
[Symbol]		△	SMOKE DAMPER
[Symbol]		<b>SEISMIC BRACING</b>	
[Symbol]			LATERAL BRACING
[Symbol]			LONGITUDINAL BRACING
[Symbol]			LONGITUDINAL & LATERAL BRACING

## OUTDOOR UNITS – SPLIT SYSTEM HEAT PUMP

MARK NUMBER	OAC-1 12 MBH
SYSTEM	ELEVATOR
TYPE	1-PORT HEAT PUMP
NORMAL COOLING CAPACITY	12,000 BTUH
NORMAL HEATING CAPACITY	12,900 BTUH
EFFICIENCY SEER/EEER	19.0/12.5
EFFICIENCY HSPF/COP	9.0/3.7
REFRIGERANT	410 A
REFRIGERANT CHARGE	2.1 LBS
MAX OPERATING TEMPS	115/5
MAX PIPING LENGTH	98.4 FT
MAX PIPING HEIGHT	65.6 FT
VOLTS-PHASE	208/1
MCA/MOP	8.75/15.0 AMPS
COMPRESSOR	INVERTER
WEIGHT	104 LBS
BASIS OF DESIGN – DAIKIN	RXS12LVJU

## INDOOR UNITS – \*\*

MARK NUMBER	IAC-1 12 MBH
SYSTEM GROUND FLOOR	ELEVATOR
TYPE	WALL HUNG
EFFICIENCY	SEE OUTDOOR UNIT
NOMINAL COOLING CAPACITY	12,000 BTUH
HEATING CAPACITY	12,300 BTUH
TOTAL SUPPLY CFM	155/205/307/403
OSA CFM	NONE
EXTERNAL SP. ("H2O)	0.0
VOLTS/PHASE	FROM OUT DOOR UNIT
MCA/MOP	SEE CUT SHEET
WEIGHT	30
BASIS OF DESIGN-DAIKIN	FTXS12LVJU
OUTDOOR UNIT	OAC-1 12 MBH

\*\* - PROVIDE ALL UNITS THAT CANNOT BE DRAINED BY GRAVITY WITH A CONDENSATE PUMP. ROUTE CONDENSATE DRAINS FROM EACH UNIT TO FLOOR DRAINS SHOWN ON PLUMBING PLANS. KEEP ALL CONDENSATE DRAINS HIDDEN WITHIN STRUCTURE AS MUCH AS POSSIBLE. COORDINATE ALL CONDENSATE LINES WITH ARCHITECT PRIOR TO INSTALLATION.

## PACKAGED TERMINAL HEAT PUMP

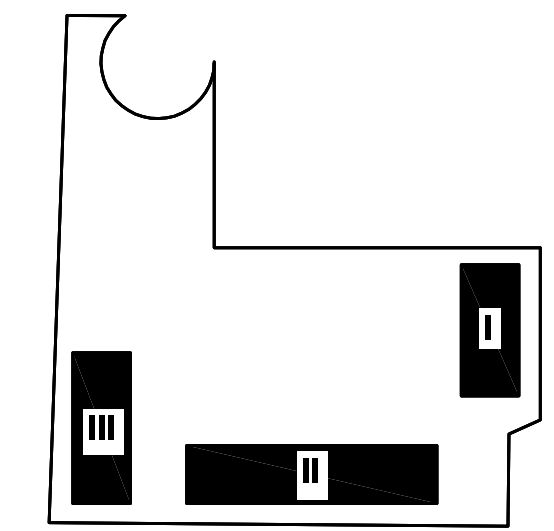
MARK NUMBER	PTH-1 9 MBH	PTH-2 12 MBH	PTH-3 15 MBH
TYPE	THRU-THE-WALL HEAT PUMP	THRU-THE-WALL HEAT PUMP	THRU-THE-WALL HEAT PUMP
SYSTEM	UNITS	UNITS	UNITS
NOMINAL COOLING CAPACITY (BTUH)	9,000	12,000	14,400
HEATING CAPACITY (BTUH)	8,300	11,500	13,800
47°F OUTDOOR AIR TEMP			
ELECTRIC HEATING CAPACITY (KW)	2.5	3.5	3.5
CFM (HI/LOW) (WET COIL)	330/245	340/245	390/340
MIN OSA (CFM)	0 - *	0 - *	0 - *
LVG. AIR TEMP (°F)	55°F	55°F	55°F
REMOTE THERMOSTAT	YES	YES	YES
EFFICIENCY (EER)	11.5	10.7	9.7
EFFICIENCY (COP)	3.4	3.1	3.0
ARCHITECTURAL GRILLE	YES	YES	YES
DESIGN WT. (LBS)	130	135	145
ELECT (VOLTS/PHASE/HTZ)	208/1/60	230/1/60	230/1/60
TOTAL AMPS (HEAT)	11.2	15.5	15.5
MCA/MOP	14.1/15	19.5/20	19.5/20
CONDENSATE DRAIN KIT	YES	YES	YES
BASIS OF DESIGN: AMMANA	PTHP093	PTHP123	PTHP153

\* - VENTILATION PROVIDED BY OPERABLE WINDOWS (WINDOWS HAVE GREATER THAN 4% OPERABLE AREA).

## EXHAUST FANS

MARK NUMBER	EF 1	EF 2
TYPE	CEILING CABINET	CEILING CABINET
SYSTEM	BATHROOM	BIKE ROOM
CFM	30/90	100
TOTAL SP. (IN H2O)	0.20	0.125
RPM	1062/1146	1190
TIP SPEED (FPM)	NA	NA
MOTOR WATTS OR HP	5/11.7 WATTS	87 WATTS
CONTROLLED BY	*	HUMIDISTAT
INTERLOCK WITH	MOTION SENSOR	--
FAN SPEED CONTROLLER	YES	NO
WHEEL TYPE	BI	FC
BACK DRAFT DAMPER	YES	YES
ISOLATION	RUBBER	RUBBER
DESIGN WEIGHT (LBS)	25	25
MAX. SONES	0.3/0.6	0.7
MAX AMPS	0.27	1.1
POWER (VOLTS/PHASE/HTZ)	120/1/60	120/1/60
BASIS OF DESIGN:	PANASONIC FV-05-11VKS1	BROAN L100L

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



KEY PLAN

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**Project Location**  
SUNSHINE PORTLAND  
3610 SE 29th Ave  
Portland, OR 97202

THESE DRAWINGS ARE FOR CONSTRUCTION BY JEAN-PIERRE VEILLET SITEWORKS, INC. ONLY

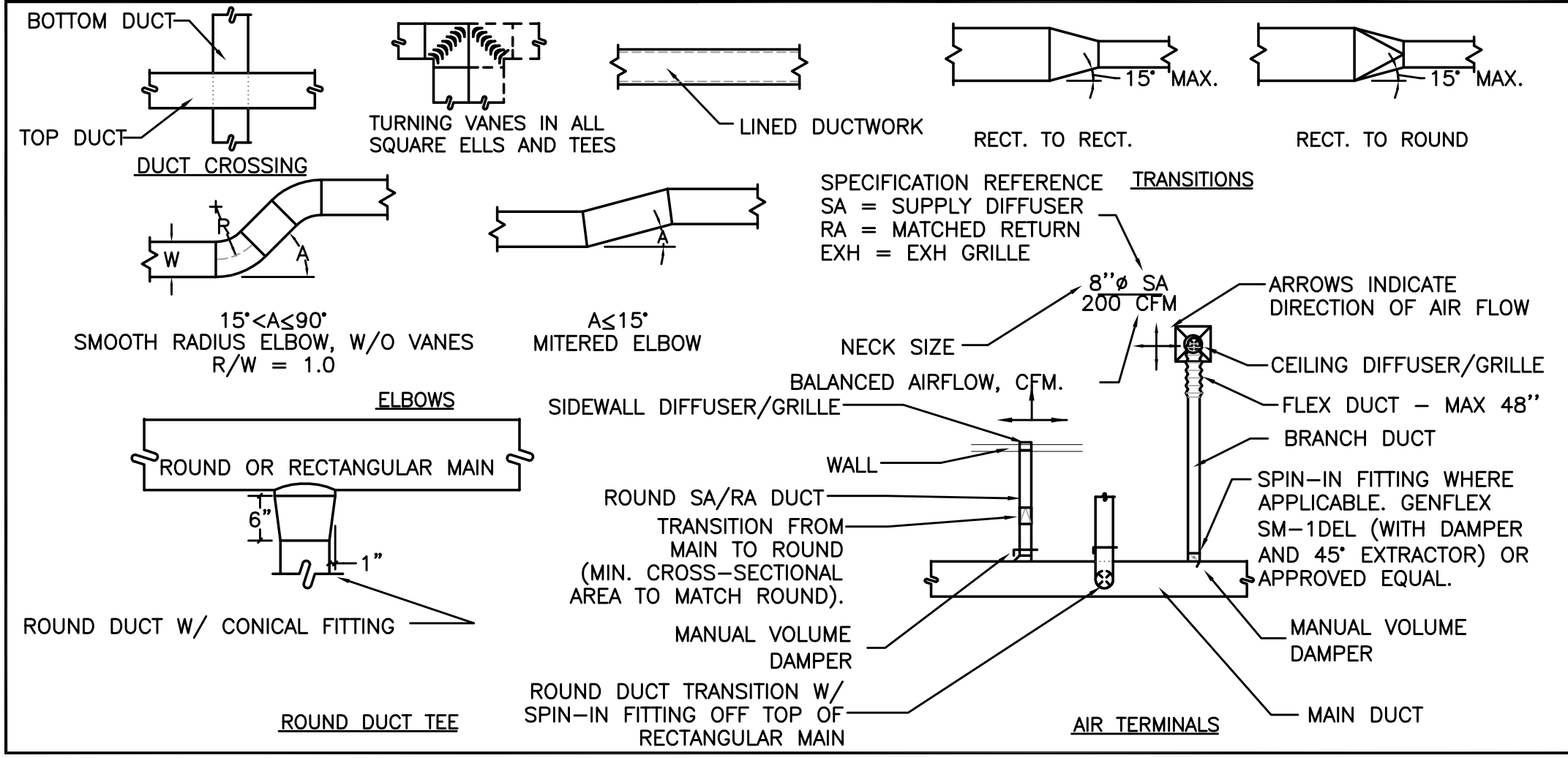
Date:	2016.04.27	
Drawn By:	Mark Denyer	
Phase:	PERMIT DOCUMENTS	
Revisions:		
Number	Description	Date
0	Permit Set	2016.05.11
1	Checksheet Response	2016.08.15
2	Utility Coordination	2016.09.12
3	Checksheet Response	2016.09.13

Sheet Name  
MECHANICAL SCHEDULES

Sheet No.

# M600

## AIR DISTRIBUTION DETAILS



## ELECTRIC WALL HEATER

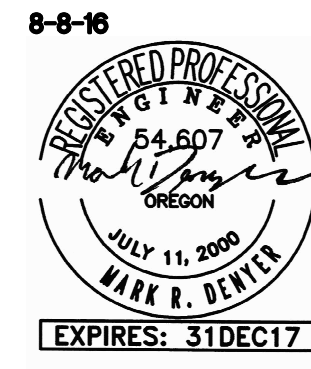
MARK NUMBER	EW-1 1 KW	EW-2 1.5 KW
TYPE	FAN COIL *	FAN COIL *
SYSTEM	RR/STORAGE	UTIL/STORAGE
VOLTS/PHASE	120/1	120/1
MCA	8.3 AMPS	12.5 AMPS
MOP	XX AMPS	XX AMPS
ELECT HEAT KW	1 KW	1 KW
HEAT CAPACITY (MBH)	3.4	5.1
BASIS OF DESIGN-CADET COM-PACK	CSC101TW	CSC151TW

\* PROVIDE TAMPER-PROOF THERMOSTAT, WALL CAN, AND GRILL

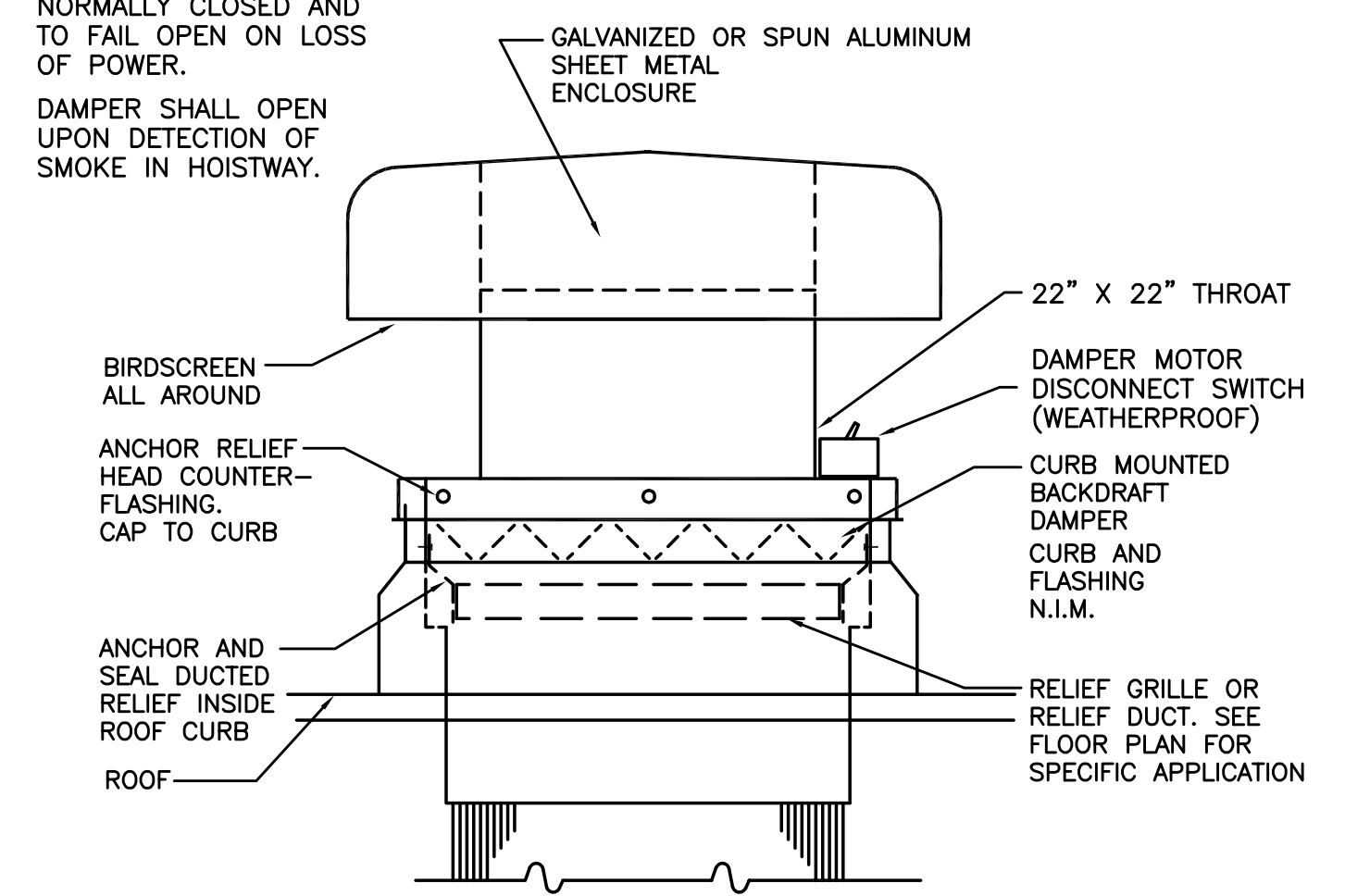
## ELECTRIC COVE HEATER

MARK NUMBER	CH-1 750 W
TYPE	COVE HEATER *
SYSTEM	DWELLING UNITS
VOLTS/PHASE	120/1
MCA	6.3 AMPS
MOP	XX AMPS
ELECT HEAT KW	750 W
HEAT CAPACITY (MBH)	2.56
BASIS OF DESIGN - KING	KCV1207V

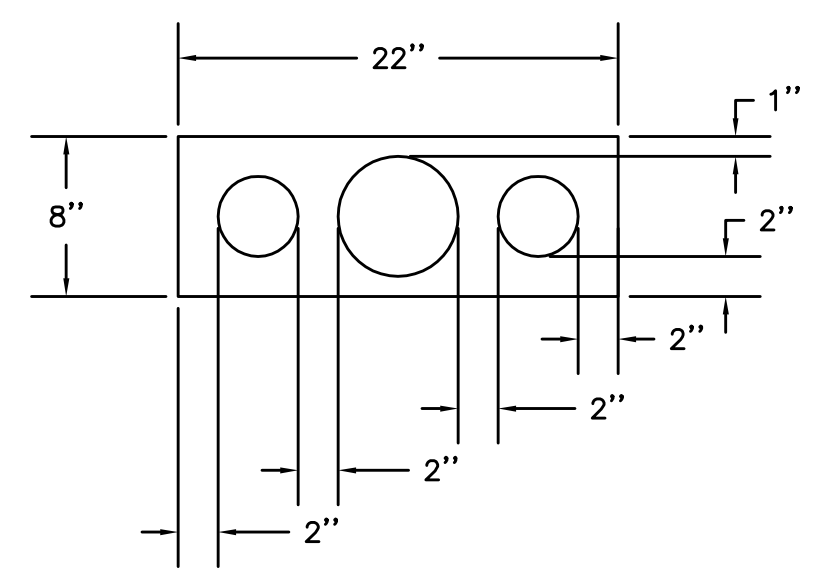
\* PROVIDE WALL MOUNT THERMOSTAT



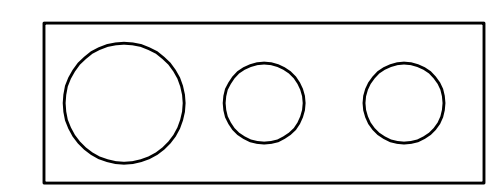
NOTE: DAMPER TO BE NORMALLY CLOSED AND TO FAIL OPEN ON LOSS OF POWER.  
DAMPER SHALL OPEN UPON DETECTION OF SMOKE IN HOISTWAY.



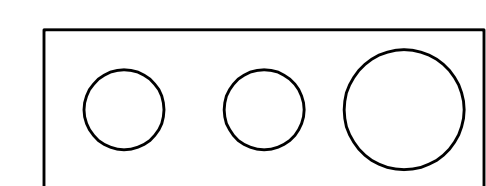
**1** ELEVATOR SHAFT RELIEF VENT  
M601 NOT TO SCALE



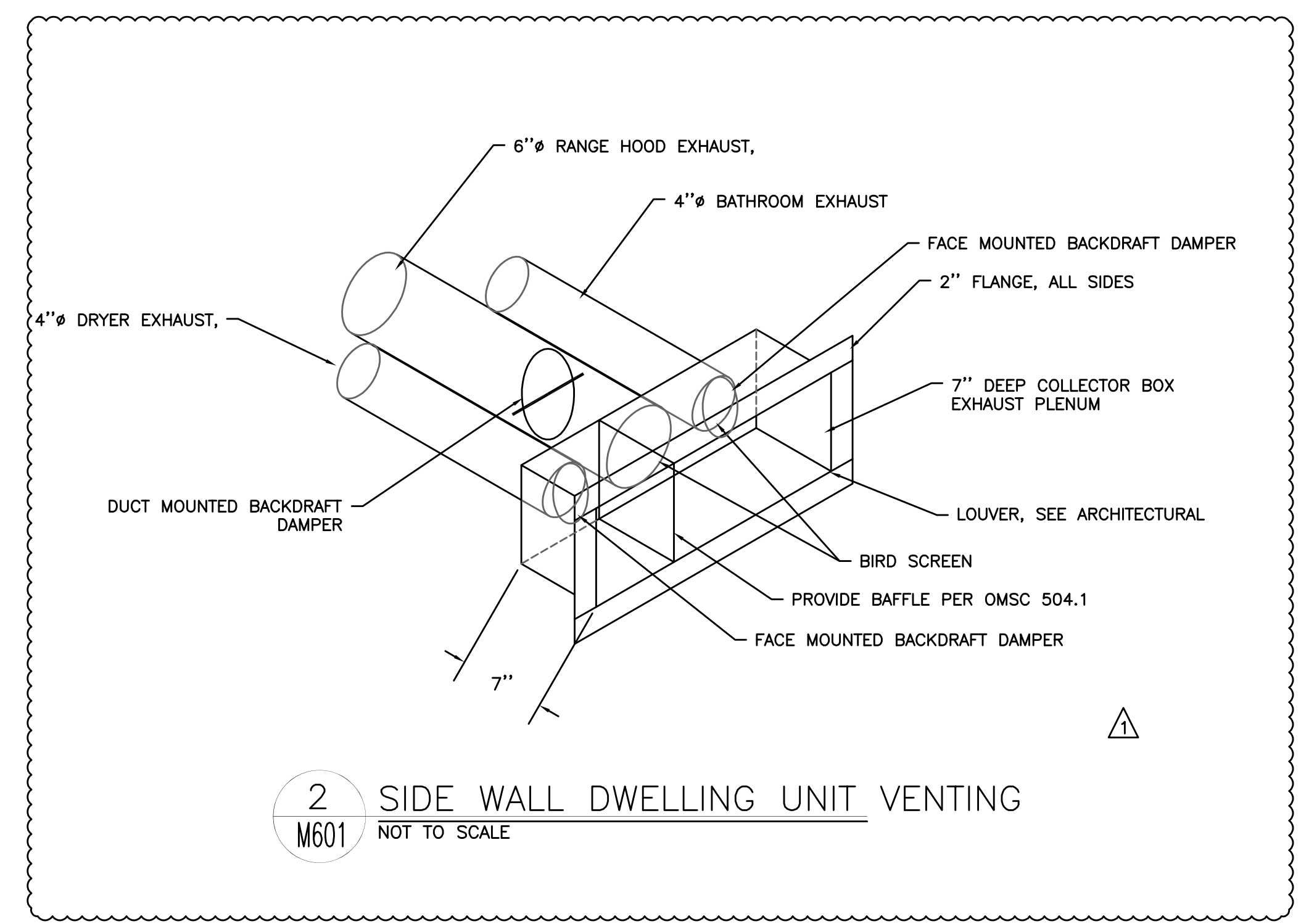
4-6-4 CONFIGURATION



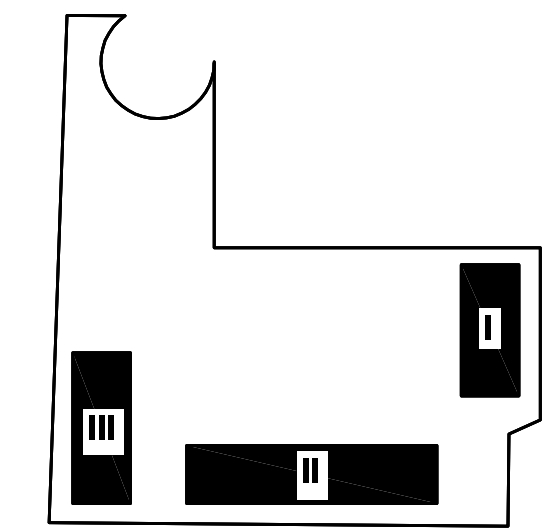
6-4-4 CONFIGURATION



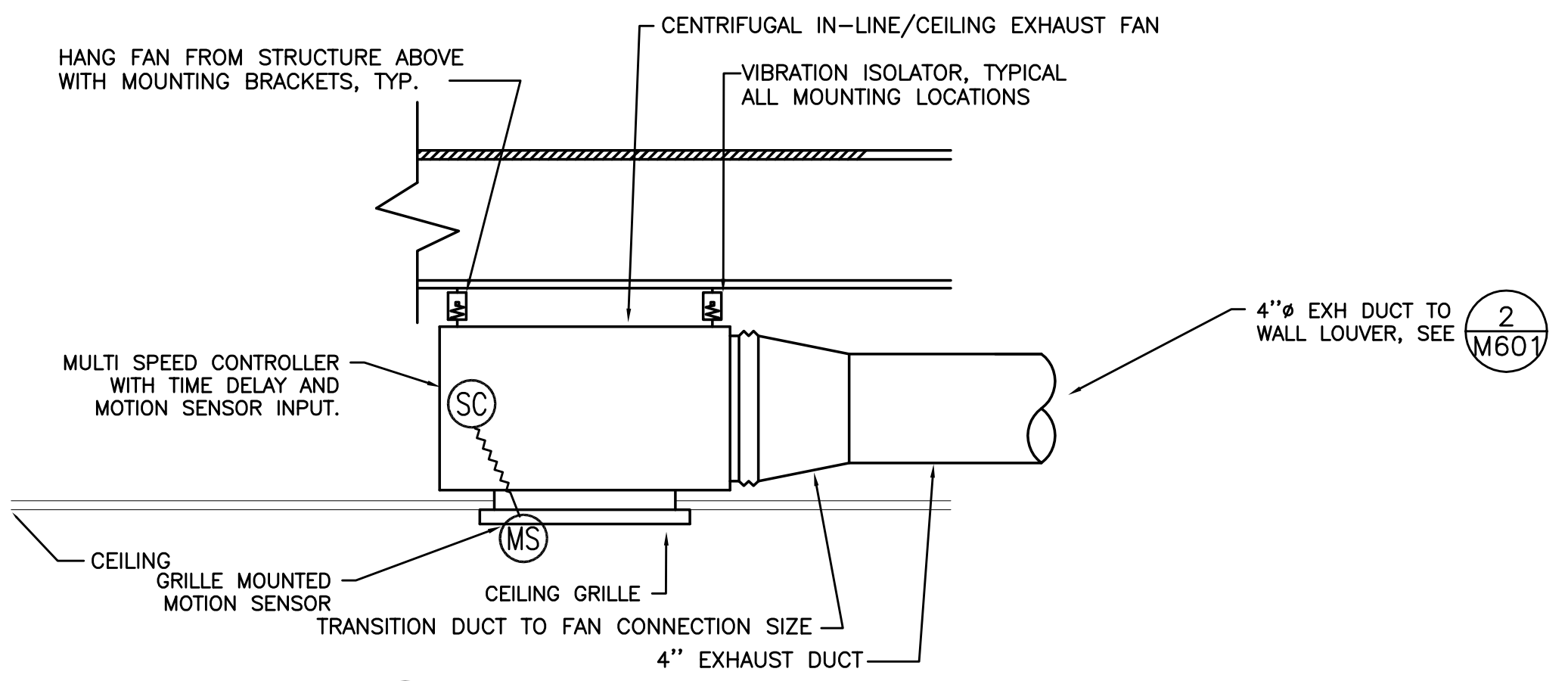
4-4-6 CONFIGURATION



**2** SIDE WALL DWELLING UNIT VENTING  
M601 NOT TO SCALE



KEY PLAN



**3** RESTROOM EXHAUST FAN  
M601 SCALE:DETAIL

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Date: 2016.04.27

Drawn By: Mark Denyer

Phase: PERMIT DOCUMENTS

Revisions:

Number	Description	Date
0	Permit Set	2016.05.11
1	Checksheet Response	2016.08.15
2	Utility Coordination	2016.09.12
3	Checksheet Response	2016.09.13

Sheet Name  
MECHANICAL  
DETAILS

Sheet No.  
**M601**