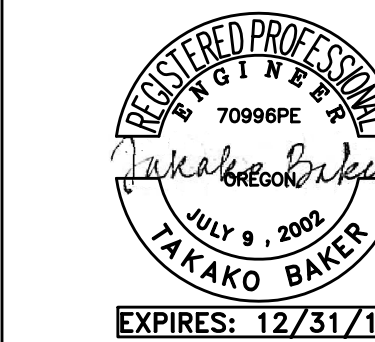


ASIAN HEALTH & SERVICE CENTER

SE 91ST AVE & SE FOSTER RD,
PORTLAND OR 97266

JOB NO. 15043.00



M Consulting Engineers
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I Portland, OR 97214
A PHN: (503) 234-0548
I INC. FAX: (503) 234-0877
CONTACT: TAKAKO BAKER

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07.15.2016	date:
100% SD	10.15.15
50% DD	12.09.15
100% DD	02.05.16
50% CD	03.30.16
75% CD	04.27.16
PERMIT SET	07.15.16

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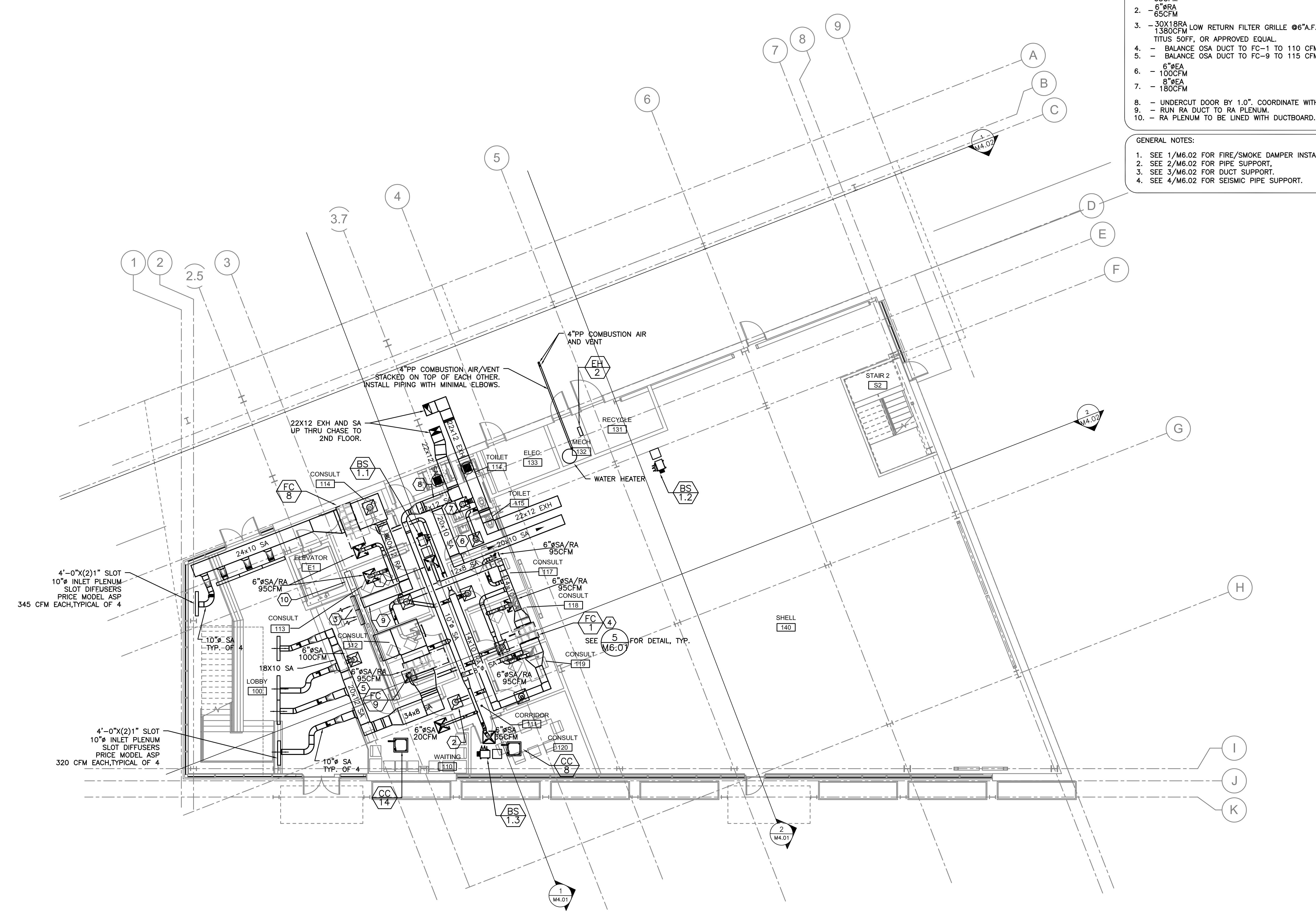
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FIRST FLOOR MECHANICAL PLAN

sheet:

M2.01

- KEYED NOTES:**
- 6" SA 65CFM
 - 6" RA 65CFM
 - 30X18RA 1350CFM LOW RETURN FILTER GRILLE @6"A.F.F. TITUS 50FF, OR APPROVED EQUAL.
 - BALANCE OSA DUCT TO FC-1 TO 110 CFM.
 - BALANCE OSA DUCT TO FC-9 TO 115 CFM.
 - 6" EA 100CFM
 - 8" EA 180CFM
 - UNDERCUT DOOR BY 1.0". COORDINATE WITH ARCHITECTURAL.
 - RUN RA DUCT TO RA PLENUM.
 - RA PLENUM TO BE LINED WITH DUCTBOARD.
- GENERAL NOTES:**
- SEE 1/M6.02 FOR FIRE/SMOKE DAMPER INSTALLATION DETAIL.
 - SEE 2/M6.02 FOR PIPE SUPPORT.
 - SEE 3/M6.02 FOR DUCT SUPPORT.
 - SEE 4/M6.02 FOR SEISMIC PIPE SUPPORT.

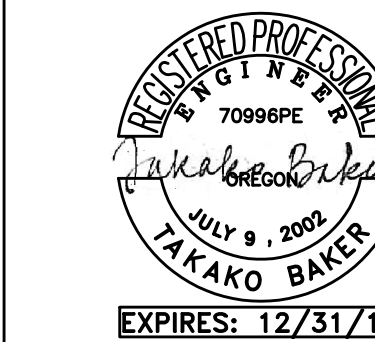


PROJECT NORTH
1 FIRST FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"
M2.01

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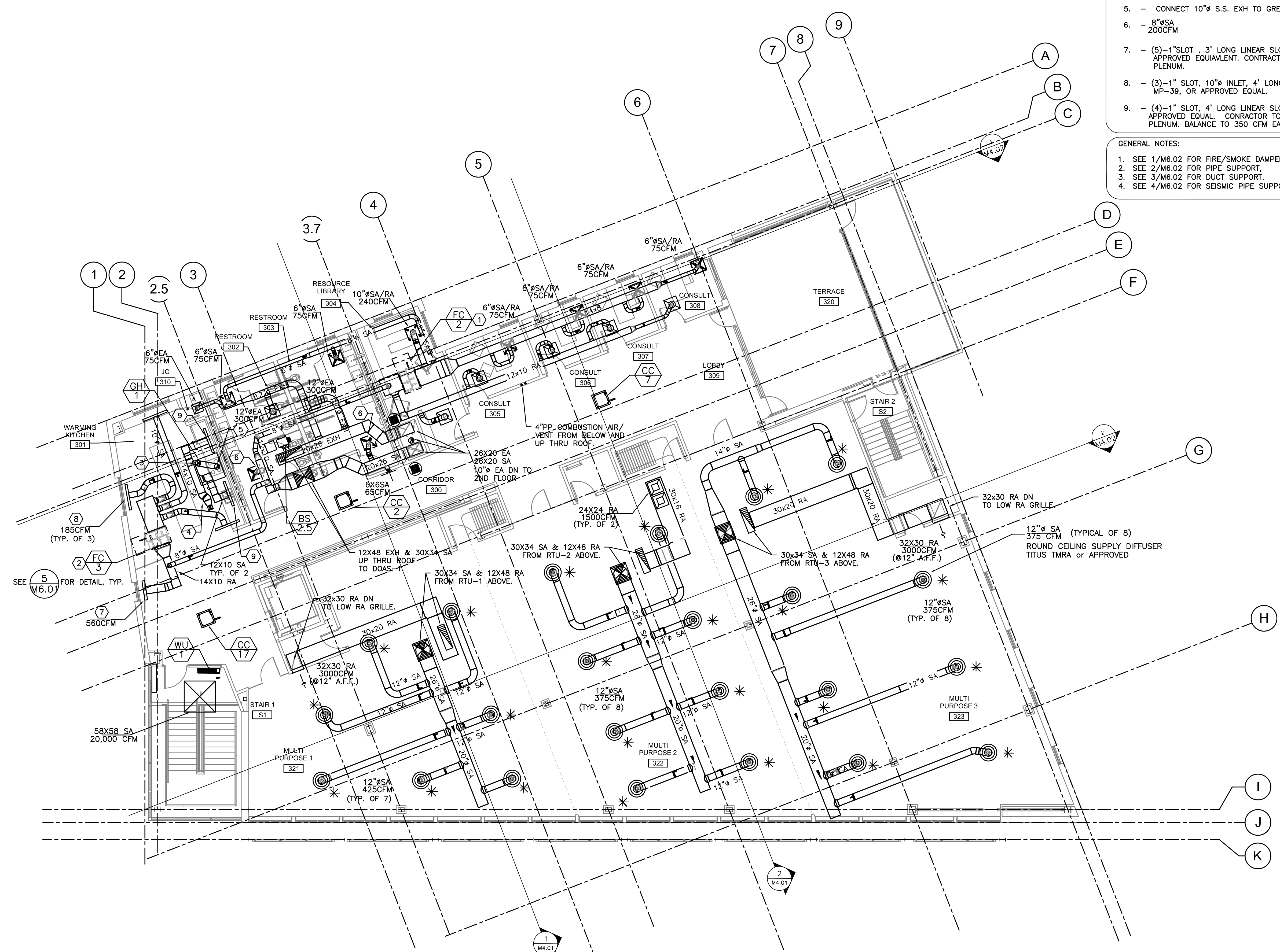
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THIRD FLOOR MECHANICAL PLAN

sheet:

M2.03

- KEYED NOTES:** (#)
- BALANCE OSA TO FC-2 TO 150 CFM.
 - BALANCE OSA TO FC-3 TO 40 CFM.
 - 10" S.S. EXHAUST DUCT UP THRU ROOF TO KEF-1.
 - MAKE-UP AIR DUCT UP THRU ROOF TO MAU-1.
 - CONNECT 10" S.S. EXH TO GREASE HOOD, GH-1.
 - 8" OSA 200CFM
 - (5)-1" SLOT, 3' LONG LINEAR SLOT RETURN. TITUS MLR-39, OR APPROVED EQUIVALENT. CONTRACTOR TO PROVIDE CUSTOM 14X10 INLET PLENUM.
 - (3)-1" SLOT, 10" INLET, 4' LONG LINEAR SLOT DIFFUSER. TITUS MP-39, OR APPROVED EQUAL.
 - (4)-1" SLOT, 4' LONG LINEAR SLOT DIFFUSER. TITUS ML-39, OR APPROVED EQUAL. CONTRACTOR TO PROVIDE A CUSTOM 12X10 INLET PLENUM. BALANCE TO 350 CFM EA.

- GENERAL NOTES:**
- SEE 1/M6.02 FOR FIRE/SMOKE DAMPER INSTALLATION DETAIL.
 - SEE 2/M6.02 FOR PIPE SUPPORT.
 - SEE 3/M6.02 FOR DUCT SUPPORT.
 - SEE 4/M6.02 FOR SEISMIC PIPE SUPPORT.



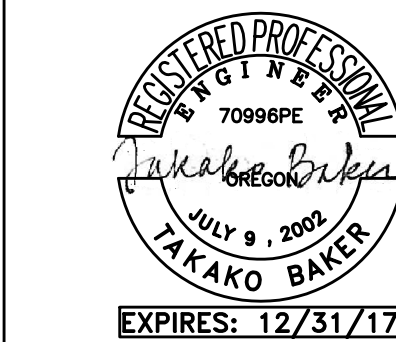
PROJECT NORTH
1 THIRD FLOOR MECHANICAL PLAN
M2.03 SCALE: 1/8" = 1'-0"



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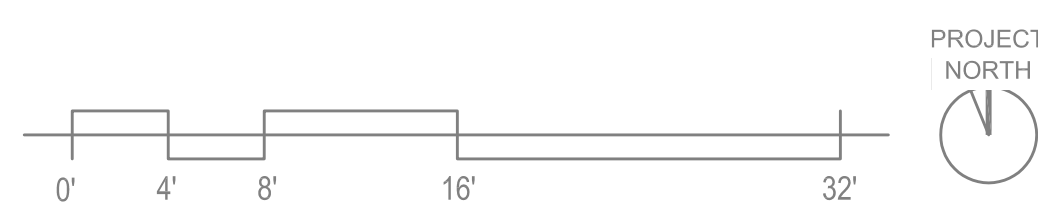
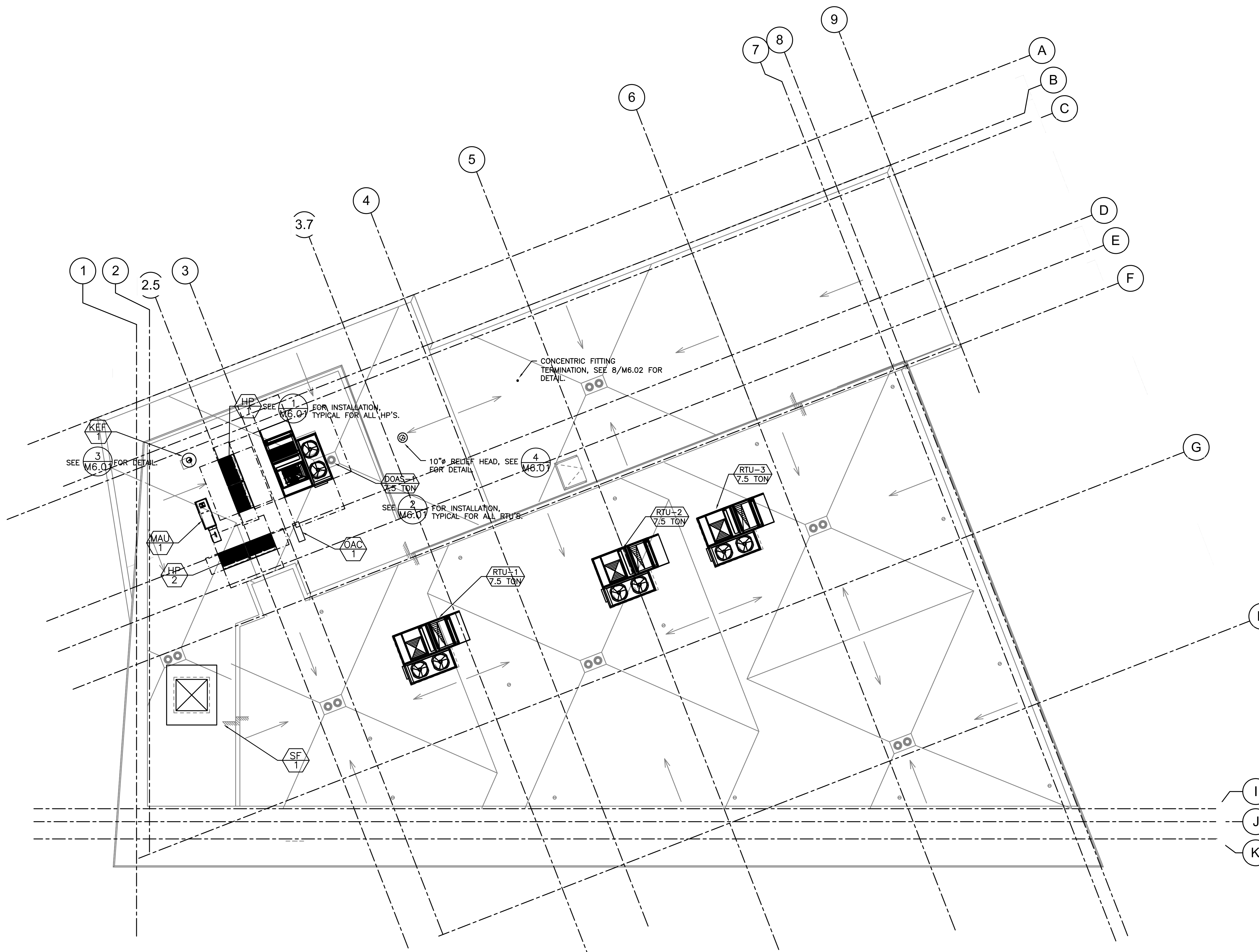
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title:
MECHANICAL ROOF PLAN

sheet:

M2.04



PROJECT NORTH

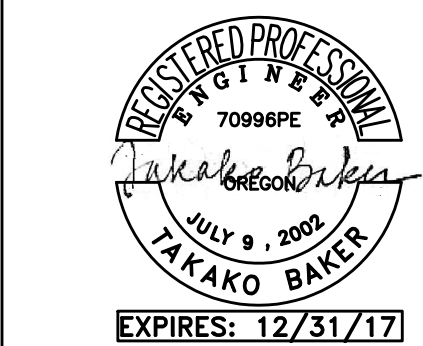
1 MECHANICAL ROOF PLAN

M2.04 SCALE: 1/8" = 1'-0"

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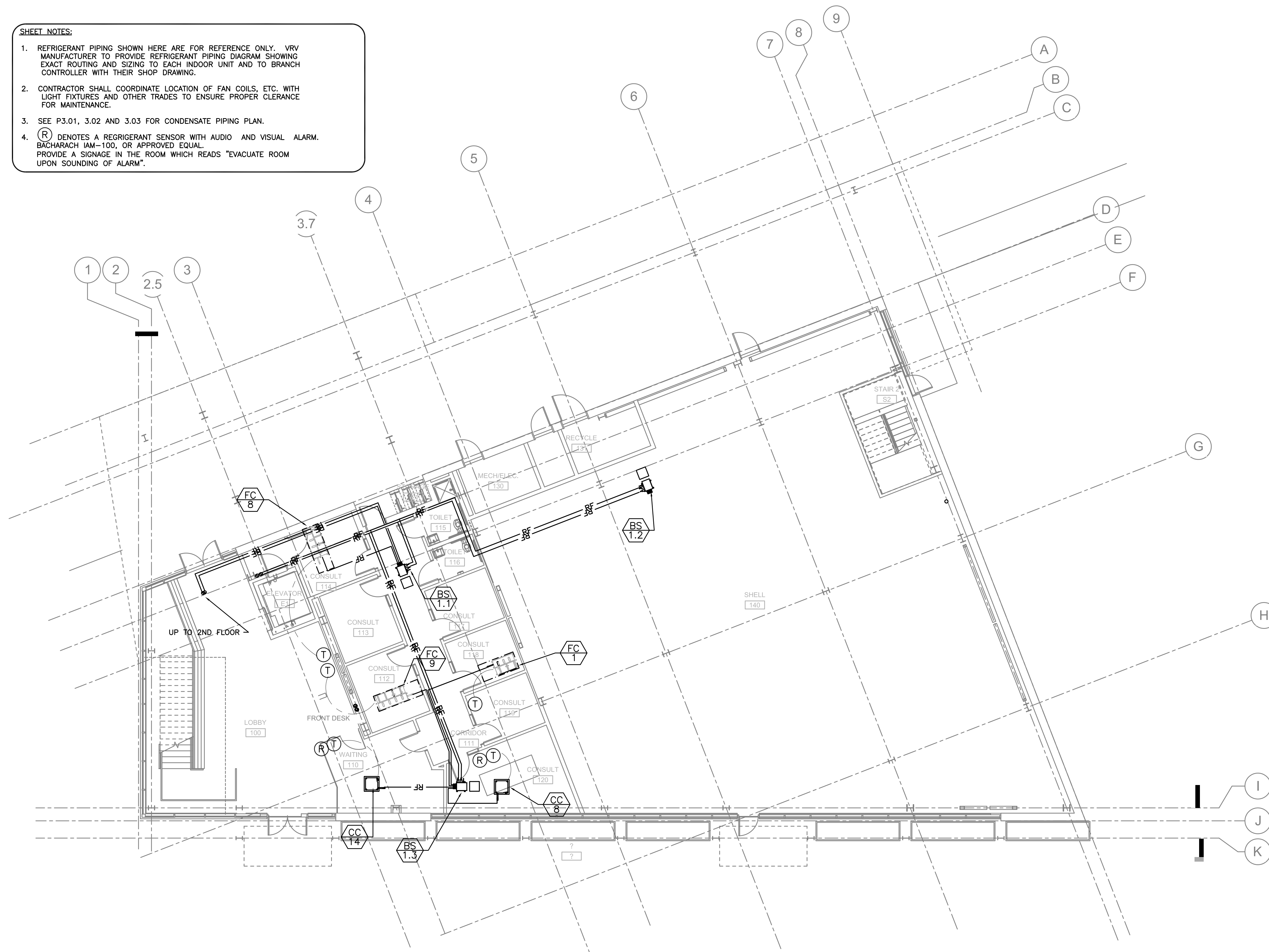
FIRST FLOOR REFRIGERANT PIPING PLAN

sheet:

M3.01

SHEET NOTES:

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- CONTRACTOR SHALL COORDINATE LOCATION OF FAN COILS, ETC. WITH LIGHT FIXTURES AND OTHER TRADES TO ENSURE PROPER CLERANCE FOR MAINTENANCE.
- SEE P3.01, 3.02 AND 3.03 FOR CONDENSATE PIPING PLAN.
- (R) DENOTES A REFRIGERANT SENSOR WITH AUDIO AND VISUAL ALARM. BACHARACH IAM-100, OR APPROVED EQUAL. PROVIDE A SIGNAGE IN THE ROOM WHICH READS "EVACUATE ROOM UPON SOUNDING OF ALARM".

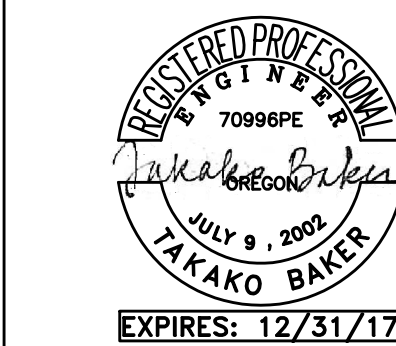


PROJECT NORTH
1 FIRST FLOOR REFRIGERANT PIPING PLAN
M3.01 SCALE: 1/8" = 1'-0"

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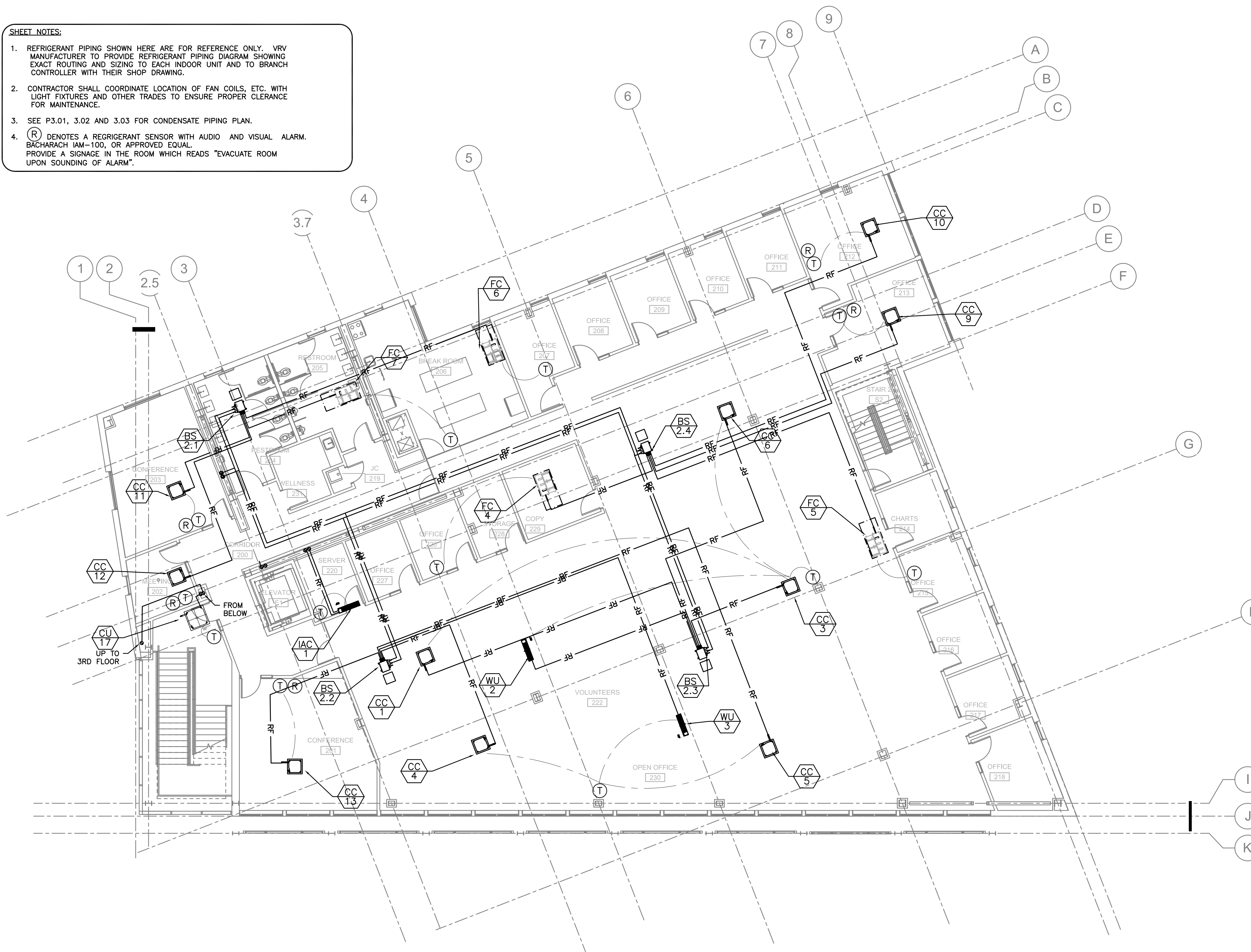
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SECOND FLOOR REFRIGERANT PIPING PLAN

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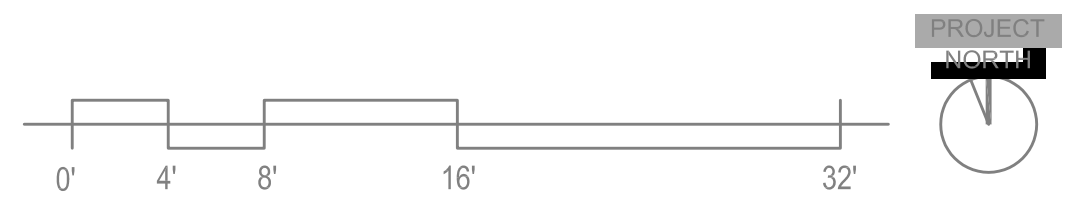
M3.02

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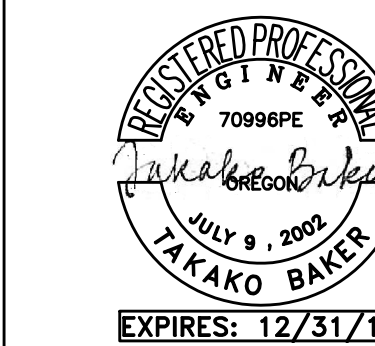
PROJECT NORTH
1 SECOND FLOOR REFRIGERANT PIPING PLAN
M3.02 SCALE: 1/8" = 1'-0"



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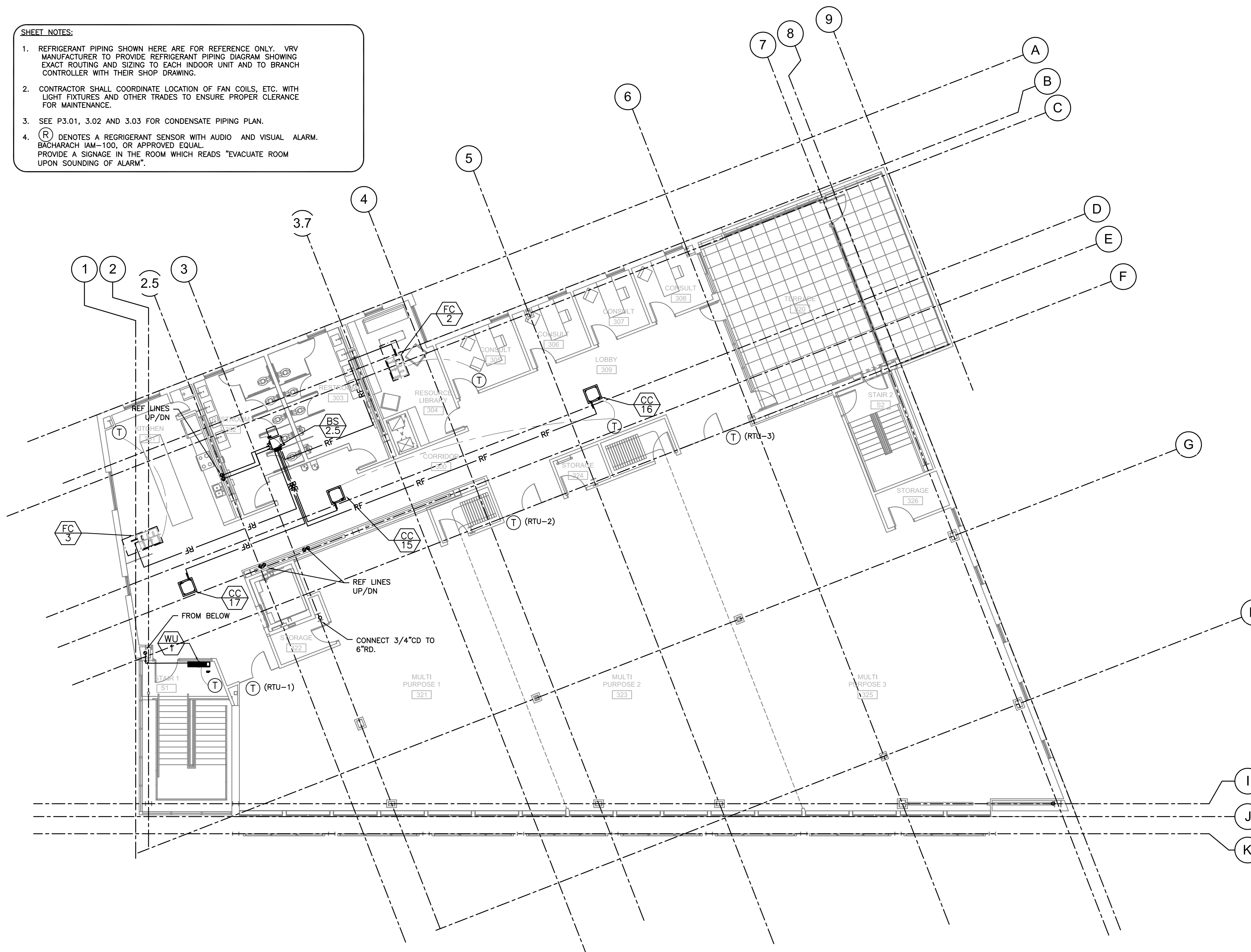
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THIRD FLOOR REFRIGERANT PIPING PLAN

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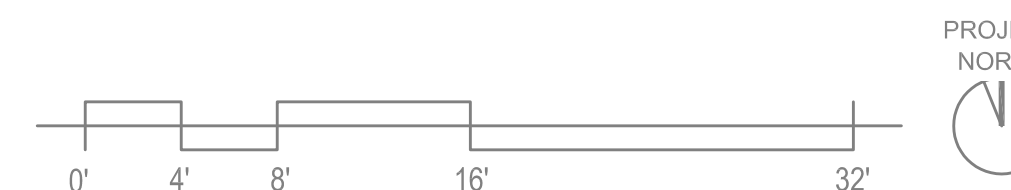
M3.03

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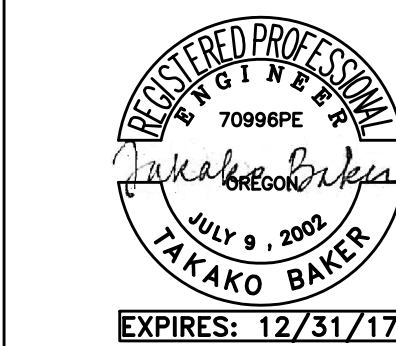
PROJECT NORTH
1 THIRD FLOOR REFRIGERANT PIPING PLAN
M3.03 SCALE: 1/8"=1'-0"



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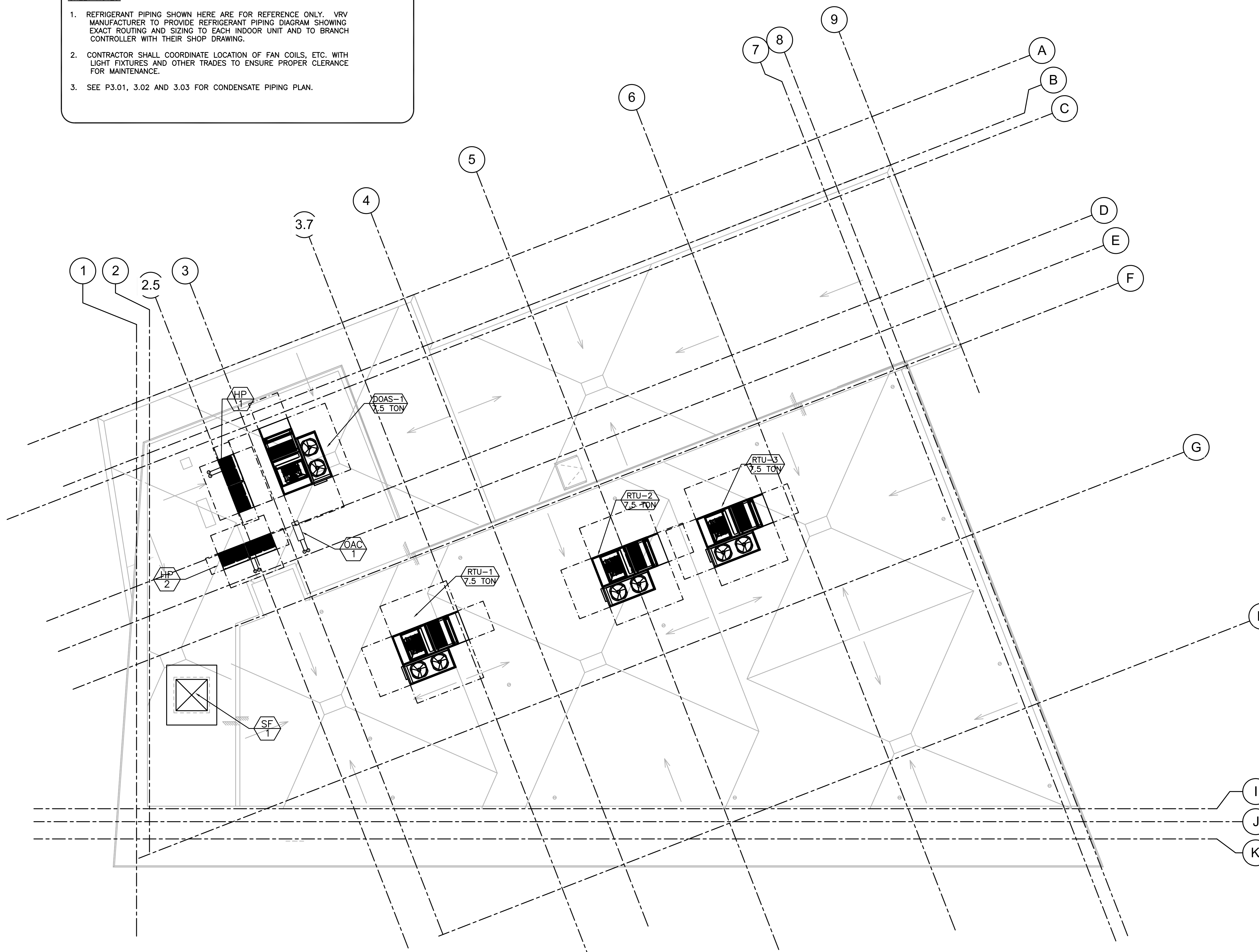
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**REFRIGERANT
PIPING ROOF
PLAN**

sheet:

M3.04

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- SEE P3.01, 3.02 AND 3.03 FOR CONDENSATE PIPING PLAN.

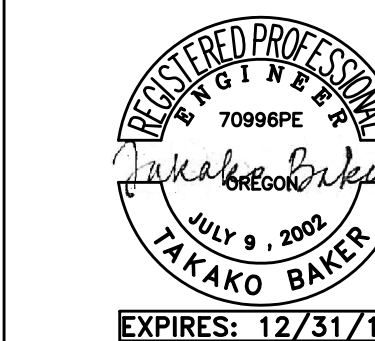


PROJECT NORTH
1 REFRIGERANT PIPING ROOF PLAN
M3.04 SCALE: 1/8"=1'-0"

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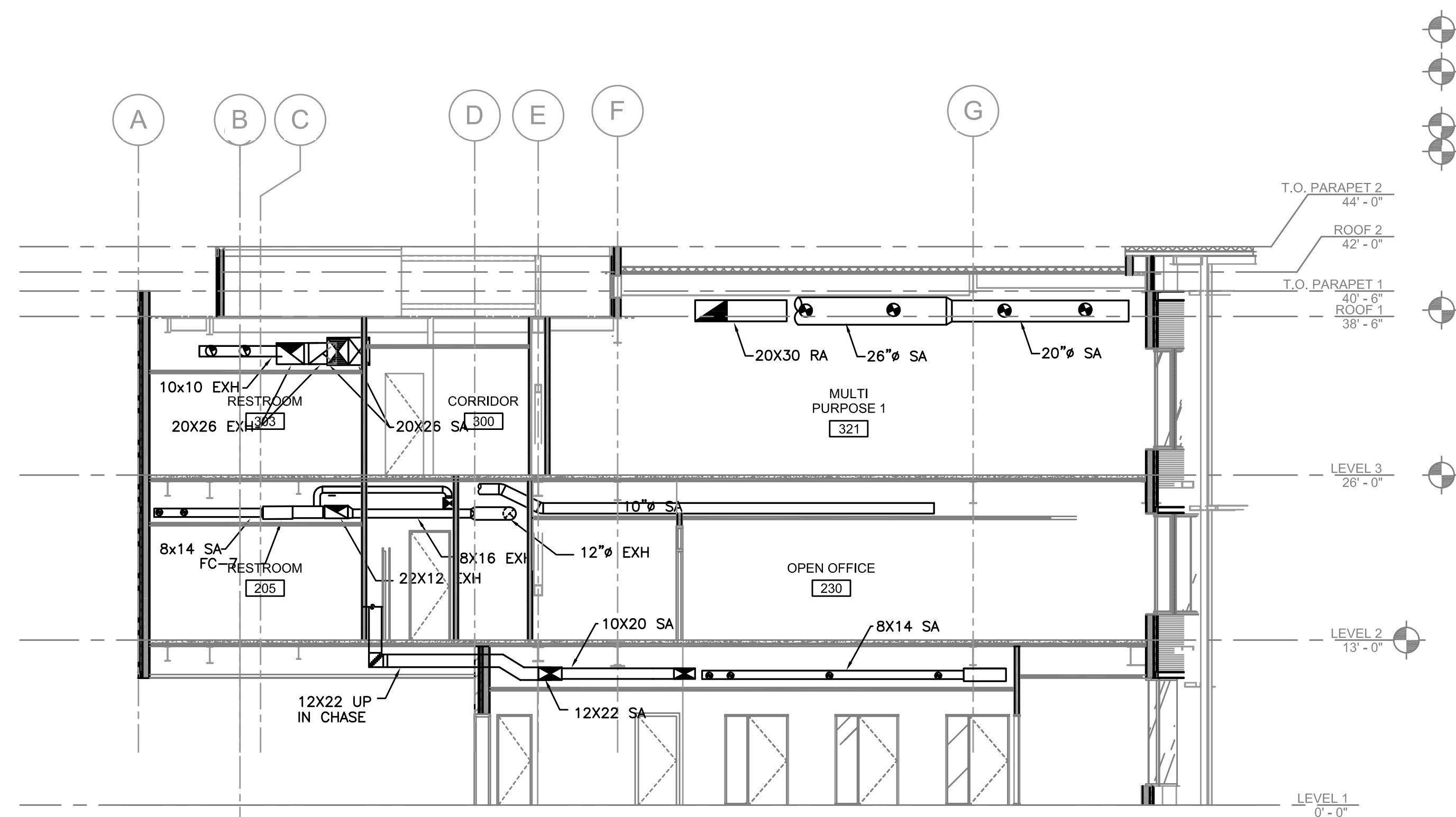
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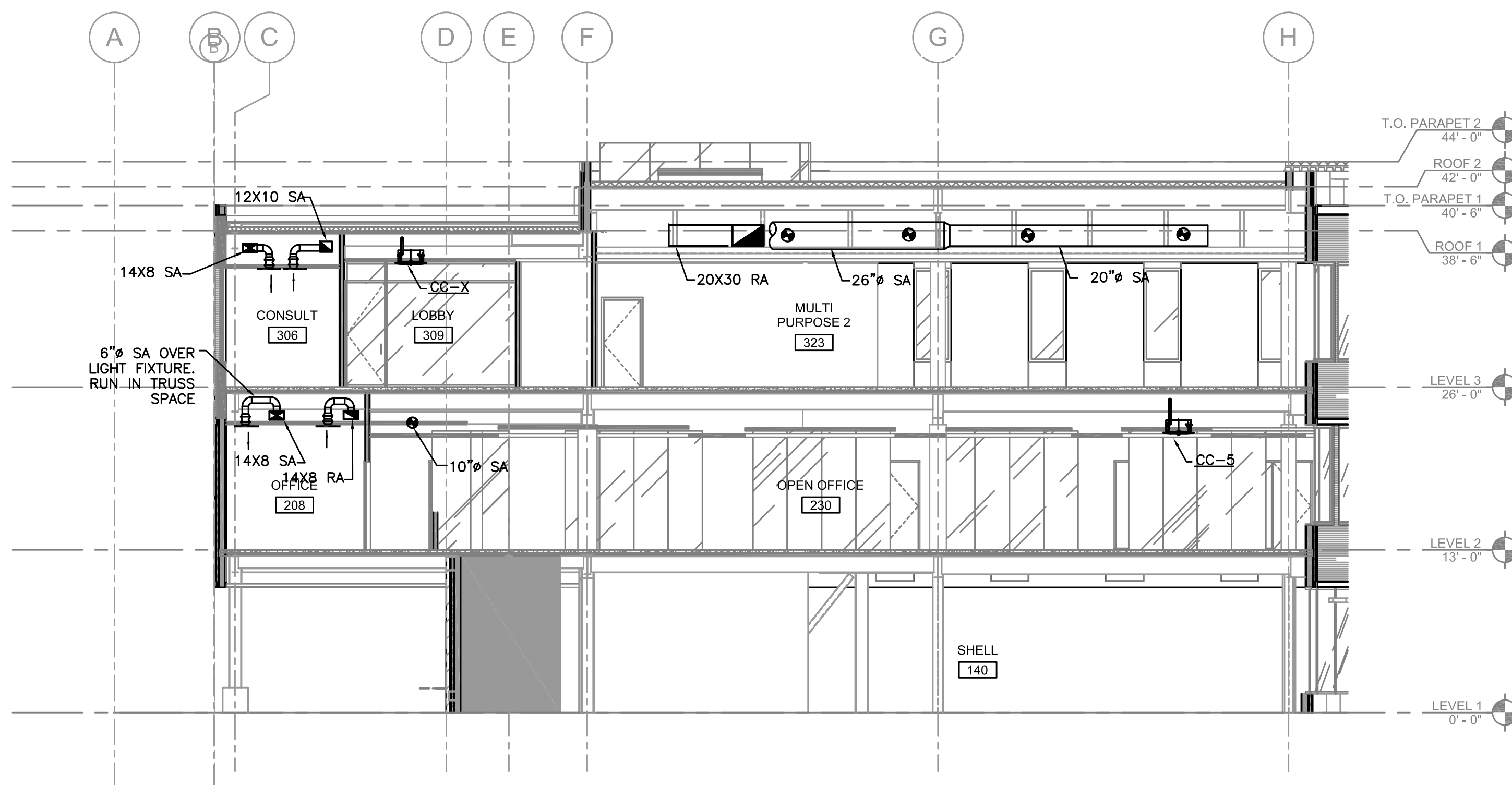
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MECHANICAL SECTION

sheet:

M4.01



1 HVAC SECTION 'B'
SCALE: M4.0



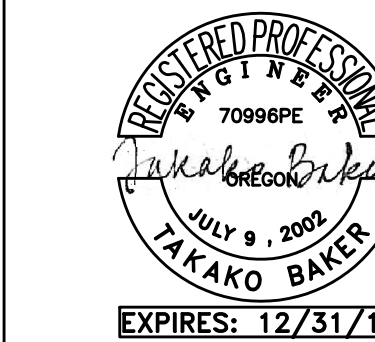
SECTION C

2 HVAC SECTION 'C'
SCALE: M4.0

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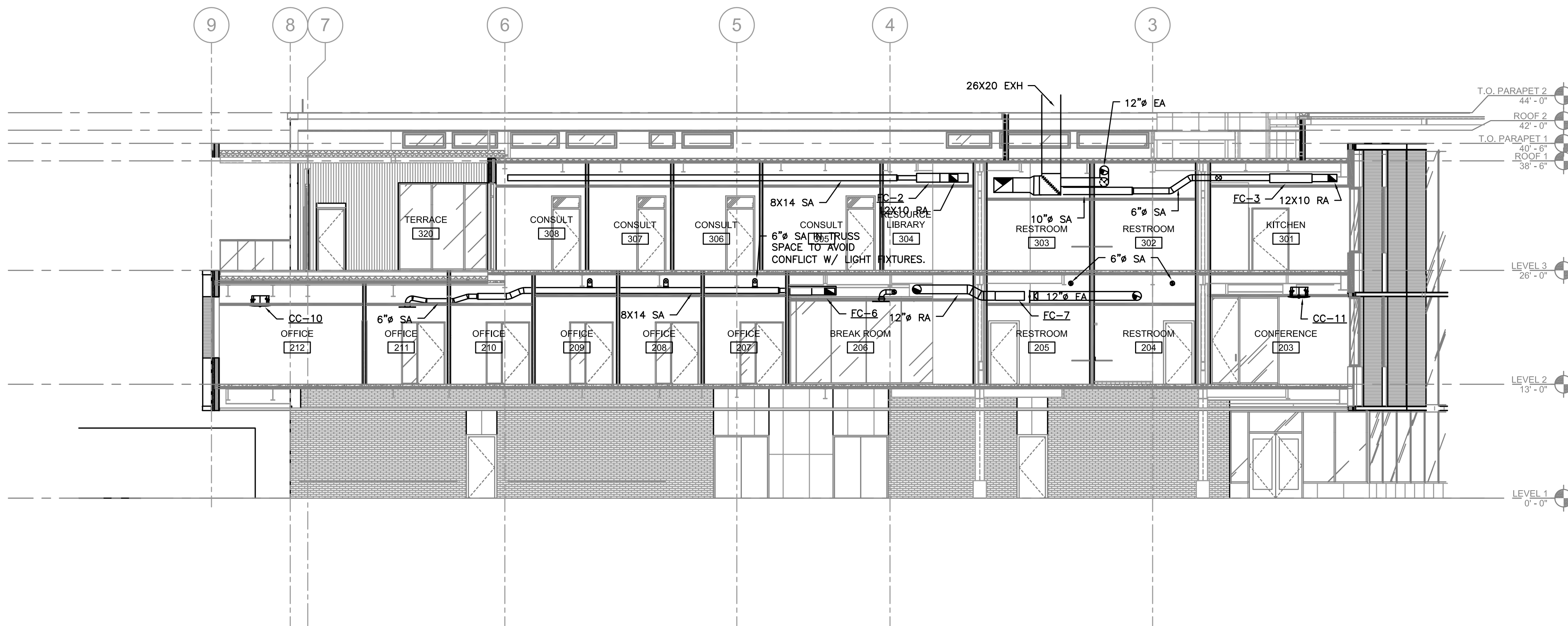
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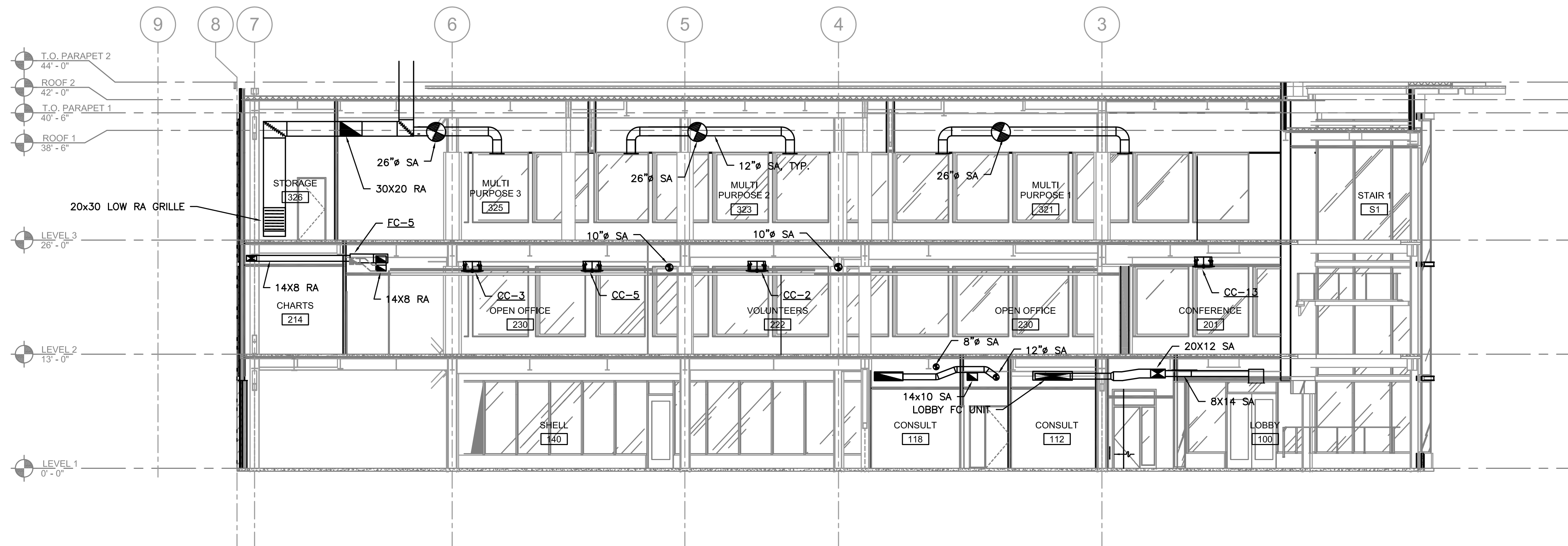
title:
MECHANICAL SECTION

sheet:

M4.02



1 HVAC SECTION 'E'
M4.02 SCALE:



2 HVAC SECTION 'F'
M4.02 SCALE:

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
	OR + 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
	..... VAV TERMINAL UNIT	EA	..... EXHAUST AIR
	..... VVT TERMINAL UNIT	EDB	..... ENTERING DRY BULB TEMPERATURE
	..... EXISTING	EWB	..... ENTERING WET BULB TEMPERATURE
	..... CONNECT TO EXISTING	EWT	..... ENTERING WATER TEMPERATURE
	..... THERMOSTAT OR TEMP. SENSOR	FF	..... FINISH FLOOR
	..... NOTE	FIXT.	..... FIXTURE
	..... EQUIPMENT DESIGNATOR	FPM	..... FEET PER MINUTE
	..... BALL VALVE	FPS	..... FEET PER SECOND
	..... GATE VALVE	FT	..... FEET / FOOT
	..... CHECK VALVE	GA.	..... GAUGE
	..... BALANCING VALVE	GPM	..... GALLONS PER MINUTE
	..... THERMOMETER	H	..... HEIGHT
	..... DIRECTION OF FLOW	HP	..... HORSEPOWER
	..... PUMP	I.D.	..... INSIDE DIAMETER
	..... STRAINER	IN.	..... INCHES
	..... PRESSURE GAUGE	L	..... LENGTH
	..... PETE'S PLUG	LBS.	..... POUNDS
	..... DOUBLE CHECK ASSEMBLY	LDB	..... LEAVING DRY BULB
	..... PRESSURE REDUCING VALVE	LWB	..... LEAVING WET BULB
	..... UNION	LWT	..... LEAVING WATER TEMPERATURE
	..... 2-WAY CONTROL VALVE	MAX.	..... MAXIMUM
	..... 3-WAY CONTROL VALVE	MBH	..... THOUSANDS OF BTUs PER HOUR
	..... CAP	MIN.	..... MINIMUM
	..... SMOKE DETECTOR	NC	..... NOISE CRITERIA
	..... MOTORIZED DAMPER	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

PACKAGE HP-ERV UNIT

MARK NUMBER	DOAS-1 7.5 TON	RTU-1 7.5 TON	RTU-2 7.5 TON	RTU-3 7.5 TON
SYSTEM	BUILDING VENTILATION	MULTIPURPOSE #1	MULTIPURPOSE #2	MULTIPURPOSE #3
TYPE	CV ENERGY RECOVERY UNIT	VAV ENERGY RECOVERY UNIT	VAV ENERGY RECOVERY UNIT	VAV ENERGY RECOVERY UNIT
SUPPLY FAN				
TOTAL SA CFM	3000	3000	3000	3000
MIN. CFM	3000	1200	1200	1200
OSA	100%	1056 CFM	890 CFM	1300 CFM
CO2 CONTROL/MIN OSA	NA	YES/100	YES/100	YES/200
FAN BHP/MOTOR HP	2.83/4.0	2.24/4.0	2.91/4.0	2.91/4.0
TOTAL SP. ("H2O)	3.9	3.1"	3.1"	3.1"
VFD/PRESSURE CONTROL	YES*	YES	YES	YES
EXHAUST FAN				
TOTAL EXHAUST CFM	3000	3000	3000	3000
MIN. CFM	3000	3000	3000	3000
FAN BHP/MOTOR HP	1.5/4.0	1/4.0	1/4.0	1/4.0
EXTERNAL SP. ("H2O)	1.25"	1.25"	1.25"	1.25"
VFD	YES*	YES	YES	YES
FILTER SIZE	TO FIT UNIT	TO FIT UNIT	TO FIT UNIT	TO FIT UNIT
FILTER TYPE - EXHAUST	2"- 30%	2"- 30%	2"- 30%	2"- 30%
FILTER TYPE - SUPPLY	4"- MERV 13	4"- MERV 13	4"- MERV 13	4"- MERV 13
HEATING				
GAS INPUT (MBH)	200 MBH	200 MBH	200 MBH	200 MBH
EFF.	80%	80%	80%	80%
MODULATING	5:1 TURNDOWN	5:1 TURNDOWN	5:1 TURNDOWN	5:1 TURNDOWN
HEAT PUMP-HEAT-COOL				
TOTAL CLG. (TONS)	7.5	7.5	7.5	7.5
SENSIBLE CLG. (MBH)	84.3	88.3	88.3	88.3
ENT. EVAP AIR TEMP (DB/WB.)	81/64.7	82.1/63.1	82.1/63.1	82.1/63.1
LVG. EVAP AIR TEMP (DB/WB.)	55.3/54.9	55.2/52.9	55.2/52.9	55.2/52.9
AMBIENT AIR (°F)	95	95	95	95
SEER/IEER	12.3 EER/19.6 IEER	12.3 EER/19.6 IEER	12.3 EER/19.6 IEER	12.3 EER/19.6 IEER
REFRIGERANT	410A	410A	410A	410A
COMPRESSOR	(1)INVERTOR/(1)FIXED	(1)INVERTOR/(1)FIXED	(1)INVERTOR/(1)FIXED	(1)INVERTOR/(1)FIXED
HP HEATING (MBH)	96.8	55.3	55.3	55.3
ENT. EVAP AIR TEMP (DB.)	57.9	57.9	57.9	57.9
LVG. EVAP AIR TEMP (DB.)	87.4	74.8	74.8	74.8
AMBIENT AIR (°F)	47	22	22	22
HEAT WHEEL				
RETURN AIR TEMP, SUMMER	75/62			
RETURN AIR TEMPS, WINTER	70/92			
SUMMER LEAVING AIR TEMP	81/67			
WINTER LEAVING AIR TEMP	54.5/48.4			
SUMMER EFFECTIVENESS TOTAL/SENS.	0.67/0.68	NONE		
HEATING EFFECTIVENESS TOTAL/SENS	0.67/0.68			
COOLING CAPACITY	53.4			
HEATING CAPACITY	163.7			
BY-PASS/STOP WHEEL	NO/YES	NO/YES	NO/YES	NO/YES
DESIGN WEIGHT (LBS.)	2910	2910	2910	2910
SMOKE DETECTOR (RETURN/EXHAUST DUCT)	YES	YES	YES	YES
ROOF CURB - VERTICAL DISCHARGE	YES	YES	YES	YES
SUPPLY DUCT DISCHARGE THERMOSTAT	YES	YES	YES	YES
BASIS OF DESIGN - DAIKIN REBEL	DPS007A	DPS007A	DPS007A	DPS007A

*FOR BALANCING

OUTDOOR UNITS - HEAT PUMPS

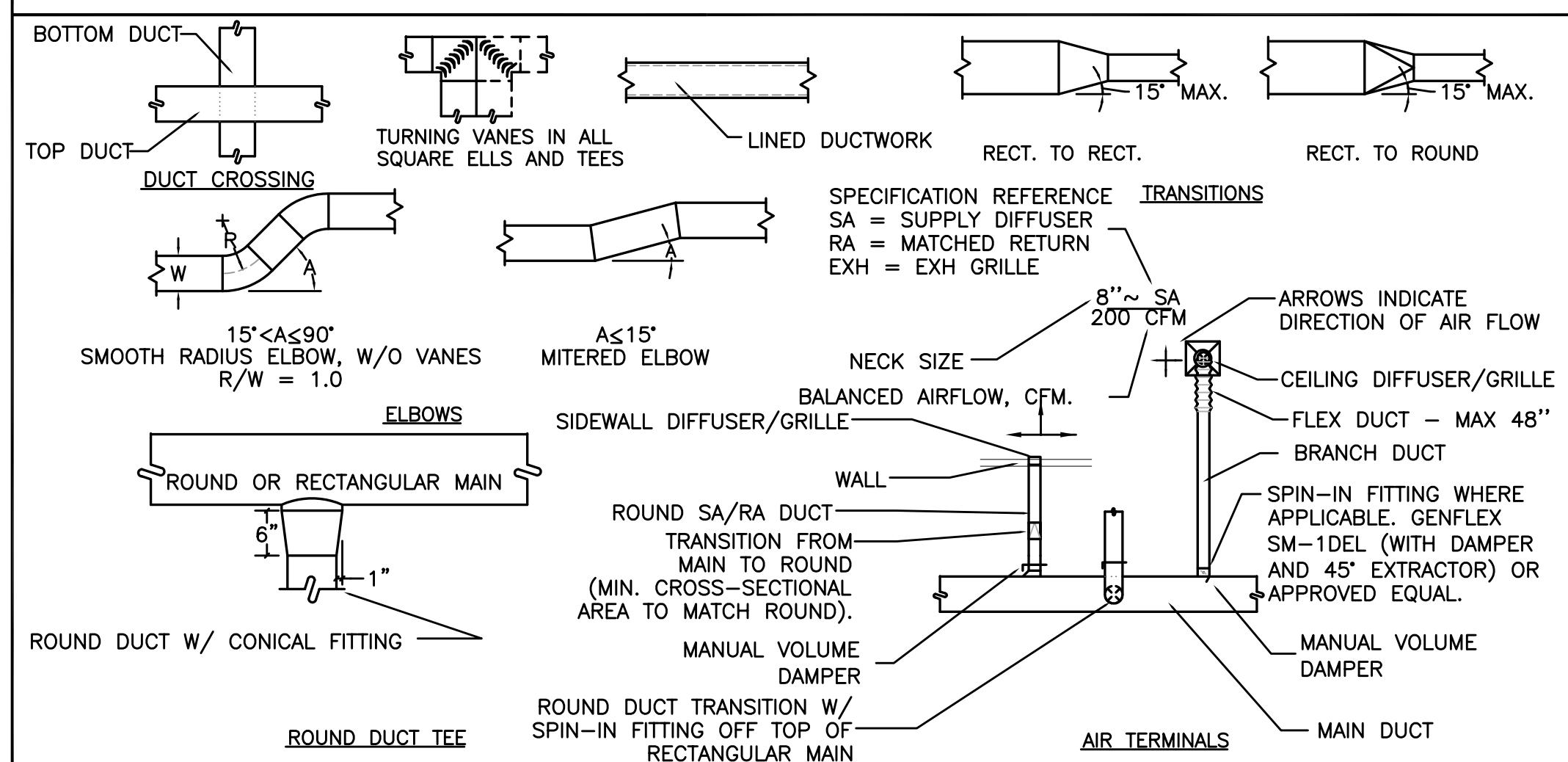
MARK NUMBER	HP 1	HP 2
SYSTEM - VRV - HEAT RECOVERY	WHOLE BUILDING	WHOLE BUILDING
TYPE	HEAT RECOVERY HEAT PUMP	HEAT RECOVERY HEAT PUMP
DAIKIN MODEL (BASIS OF DESIGN)	REYQ264TTJU	REYQ264TTJU
DAIKIN UNIT COMBINATION	REYQ120 & REYQ144	REYQ120 & REYQ144
NORMAL COOLING CAPACITY	22 TONS	22 TONS
NORMAL HEATING CAPACITY	297,000 BTUH	297,000 BTUH
MAX PIPING LENGTH	540 FT	540 FT
REFRIGERANT	410 A	410 A
REFRIGERANT CHARGE	25.8+25.8 LBS	25.8+25.8 LBS
OUTDOOR DESIGN TEMPS	92/22	92/22
WEIGHT	1483	1483
EER - NON DUCTED	--	--
IEER - NON DUCTED/DUCTED	21.6/18.1	21.6/18.1
HEATING COP - NON / DUCTED	3.6/3.4	3.6/3.4
HEATING COP 17F - NON / DUCTED	2.4/2.3	2.4/2.3
POWER - VOLTS/HZ/PH	208-230/60/3	208-230/60/3
COMPRESSOR TYPE	INVERTOR	INVERTOR
MCA	43 + 55	43 + 55
MCOCP	50+70	50+70
RLA	(15.0+15.0)+(16.2+22.6)	(15.0+15.0)+(16.2+22.6)
HEIGHT	67"	67"
WIDTH	97"	97"
DEPTH	30.5"	30.5"

WALL/CEILING HUNG AIR CONDITIONER

SYSTEM	DATA ROOM
INDOOR UNIT MARK NUMBER	IAC 1
TYPE (INDOOR UNIT)	WALL HUNG
OUTDOOR UNIT MARK NUMBER	OAC 1
TYPE (OUTDOOR UNIT)	WALL HUNG PLATFORM
COOLING CAPACITY	12,000 BTU/HR
CFM (HIGH/MED/LOW)	290/260/212
EFFICIENCY (SEER)	17
MAX PIPING LENGTH	65 FT
MAX PIPING ELEV. CHANGE	23 FT.
INDOOR UNIT DESIGN WT.	20 LBS.
OUTDOOR UNIT DESIGN WT.	75 LBS.
INDOOR UNIT MOUNTING HT.	54" *
PUMPED CONDENSATE	YES - **
BOD: DAIKIN	

* - COORDINATE EXACT MOUNTING LOCATION AND HEIGHT WITH DATA ROOM EQUIPMENT.
** - ROUTE CONDENSATE TO FLOOR DRAIN

AIR DISTRIBUTION DETAILS



EXHAUST/SUPPLY FANS

MARK NUMBER	SF 1
TYPE	PROP-HOOD * DIRECT DRIVE
SYSTEM	SMOKE PURGE
CFM	20,000
TOTAL SP. (IN H2O)	0.25
RPM	701
TIP SPEED (FPM)	8815
MOTOR WATTS/HP	5 HP/2.65 BHP
CONTROLLED BY	FIRE ALARM
INTERLOCK WITH	LOBBY LOUVERS
FAN SPEED CONTROLLER	VFD **
WHEEL TYPE	PROP
DAMPER	24 V
ISOLATION	OSHPD ***
DESIGN WEIGHT (LBS)	1100
MAX. SONES	32.0
ELECTRICAL ****	208/60/3
BASIS OF DESIGN:	GREENHECK
	RCS3-48-623

* - PROPELLER HOODED ROOF DIRECT DRIVE SUPPLY FAN WITH CAST ALUMINUM PROPELLER. UNIT TO INCLUDE ROOF CURB WITH INTEGRAL 24 V DAMPER/ACTUATOR.
 ** - VFD WITH INTEGRAL STARTER/DISCONNECT, VFD TO RAMP FAN TO FULL SPEED OVER 30 SECOND TIME INTERVAL.
 *** - FAN TO BE OSHPD SEISMIC CERTIFIED
 **** - ELECTRICAL DATA LISTED FOR REFERENCE ONLY, SEE ELECTRICAL DRAWINGS FOR SPECIFICS OF ELECTRICAL REQUIREMENTS FOR VOLTAGE/PHASE/MCA/MCOCP.

BRANCH SELECTOR BOX

MARK NUMBER	BS 1.1	BS 1.2	BS 1.3	BS 2.1	BS 2.2	BS 2.3	BS 2.4	BS 2.5
TYPE	MULTI PORT	MULTI PORT	MULTI PORT	MULTI PORT	MULTI PORT	MULTI PORT	MULTI PORT	MULTI PORT
VRV SYSTEM	HP-1	HP-2	HP-2	HP-2	HP-2	HP-2	HP-2	HP-2
MAX. CONNECT LOAD	144,000 BTUH	144,000 BTUH	144,000 BTUH	144,000 BTUH	144,000 BTUH	144,000 BTUH	144,000 BTUH	144,000 BTUH
HEIGHT	11.75"	11.75"	11.75"	11.75"	11.75"	11.75"	11.75"	11.75"
WIDTH	15"	15"	15"	15"	15"	15"	15"	15"
LENGTH	19"	19"	19"	19"	19"	19"	19"	19"
WEIGHT	50	50	50	50	50	50	50	50
POWER VOLTS/HZ/PHASE	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1
MCA	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
MOP	15	15	15	15	15	15	15	15
CONDENSATE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
DAIKIN MODEL	BS4Q54TVJ	BS4Q54TVJ	BS4Q54TVJ	BS4Q54TVJ	BS4Q54TVJ	BS4Q54TVJ	BS4Q54TVJ	BS4Q54TVJ
# OF PORTS	4	4	4	4	4	4	4	4
HEAT RECOVERY	YES	YES	YES	YES	YES	YES	YES	YES

ELECTRIC WALL HEATER

MARK NUMBER	EH 1	EH 2
SERVICE	STAIR 2	WOMEN 202
TYPE	WALL MOUNT	WALL MOUNT
OUTPUT	1.5 KW	1.5 KW
MOUNTING HEIGHT	18" A.F.F.	18" A.F.F.
CONTROL	INTEGRAL T-STAT	INTEGRAL T-STAT
BASIS OF DESIGN: QMARK		
TEMP SET POINT	65°F	65°F

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MECHANICAL SCHEDULES

sheet:

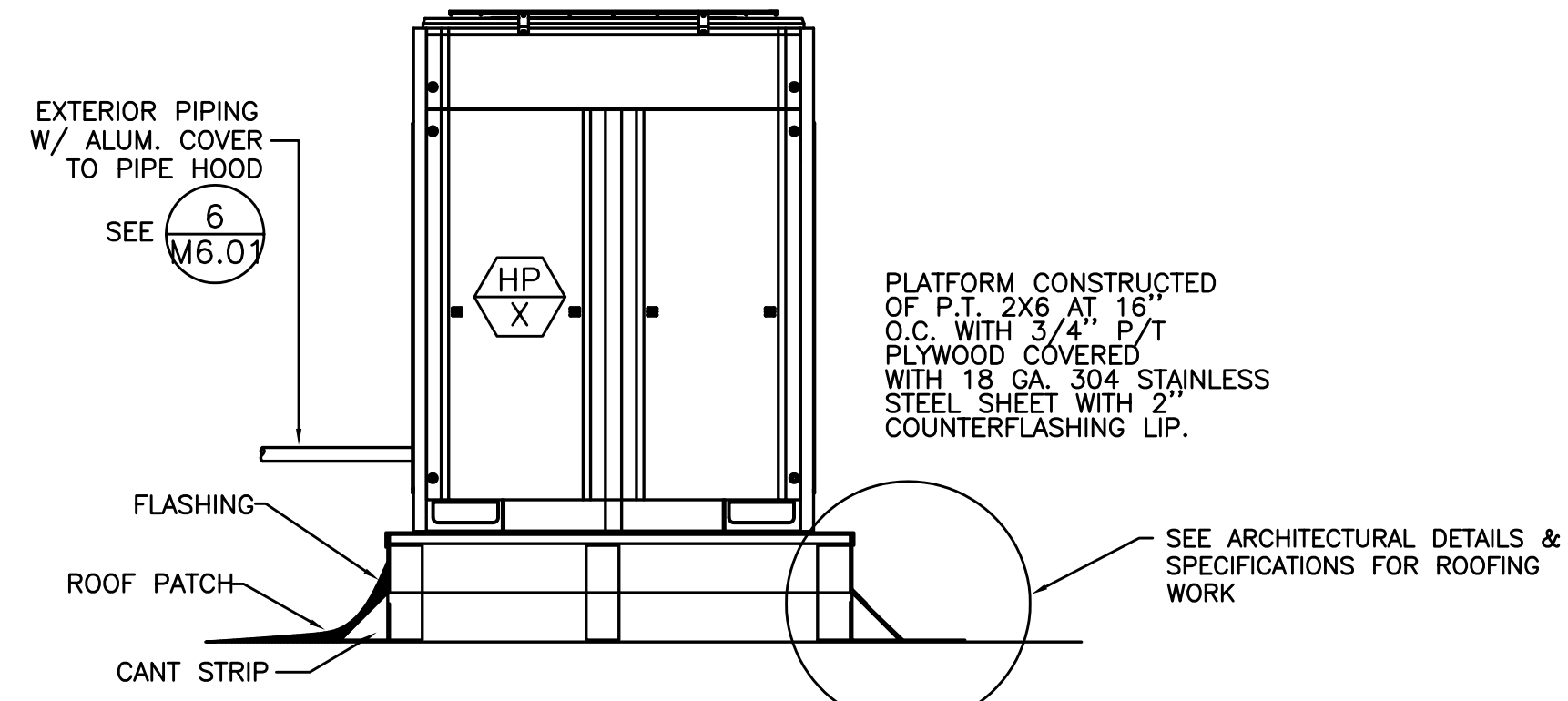
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VRV INDOOR UNITS

TAG #	TYPE	Heat Pump Unit	BOD: DAIKIN	Airflow (CFM)	Outside Air (CFM)	ESP ("W.G.)	Rated TOTAL Cooling (BTUH)	Rated Heating (BTUH)	Weight (LBS)	Electrical V/PH	Notes
FC-1	DUCTED FAN COIL	HP-1	FXMQ18	635	110	0.50"	18,000	20,000	80	208/1	1,2,3
FC-8	DUCTED FAN COIL	HP-1	FXMQ48	1377	0	0.50"	48,000	54,000	102	208/1	1,2,7
FC-9	DUCTED FAN COIL	HP-1	FXMQ48	1377	115	0.50"	48,000	54,000	102	208/1	1,2,7
CC-14	CEILING CASSETTE	HP-1	FXZQ07	320	20	-	7,500	8,700	45	208/1	2,3,4,6
CC-8	CEILING CASSETTE	HP-1	FXZQ07	320	35	-	7,500	8,700	45	208/1	2,3,4,6
CC-17	CEILING CASSETTE	HP-1	FXQ24	780	0	-	24,000	27,000	50	208/1	2,3,4,6
WU-1	WALL MOUNTED UNIT	HP-1	FXAQ24	635	0	-	24,000	26,500	35	208/1	2
TOTAL		HP-1			280		177,000	145,400			
FC-2	DUCTED FAN COIL	HP-2	FXMQ024	700	150	0.50"	24,000	27,000	80	208/1	1,2,3
FC-3	DUCTED FAN COIL	HP-2	FXMQ015	560	40	0.50"	15,000	17,000	80	208/1	1,2,3
FC-4	DUCTED FAN COIL	HP-2	FXMQ018	635	150	0.50"	18,000	20,000	80	208/1	1,2,3
FC-5	DUCTED FAN COIL	HP-2	FXMQ015	560	95	0.50"	15,000	17,000	80	208/1	1,2,3
FC-6	DUCTED FAN COIL	HP-2	FXMQ015	560	95	0.50"	15,000	17,000	80	208/1	1,2,3
FC-7	DUCTED FAN COIL	HP-2	FXMQ015	560	200	0.50"	15,000	17,000	80	208/1	1,2,3
CC-1	CEILING CASSETTE	HP-2	FXZQ 18	495	95	-	18,000	21,000	45	208/1	2,3,4,6
CC-2	CEILING CASSETTE	HP-2	FXZQ07	320	30	-	7,500	8,700	45	208/1	2,3,4,6
CC-3	CEILING CASSETTE	HP-2	FXZQ 18	495	95	-	18,000	21,000	45	208/1	2,3,4,6
CC-4	CEILING CASSETTE	HP-2	FXZQ 18	495	95	-	18,000	21,000	45	208/1	2,3,4,6
CC-5	CEILING CASSETTE	HP-2	FXZQ 18	495	95	-	18,000	21,000	45	208/1	2,3,4,6
CC-6	CEILING CASSETTE	HP-2	FXZQ 18	495	95	-	18,000	21,000	45	208/1	2,3,4,6
CC-7	CEILING CASSETTE	HP-2	FXZQ07	320	35	-	7,500	8,700	45	208/1	2,3,4,6
CC-9	CEILING CASSETTE	HP-2	FXZQ07	320	20	-	7,500	8,700	45	208/1	2,3,4,6
CC-10	CEILING CASSETTE	HP-2	FXZQ07	320	35	-	7,500	8,700	45	208/1	2,3,4,6
CC-11	CEILING CASSETTE	HP-2	FXZQ15	388	95	-	15,000	17,500	45	208/1	2,3,4,6
CC-12	CEILING CASSETTE	HP-2	FXZQ15	320	35	-	15,000	17,500	45	208/1	2,3,4,6
CC-13	CEILING CASSETTE	HP-2	FXZQ 18	495	95	-	18,000	21,000	45	208/1	2,3,4,6
WU-2	WALL MOUNTED UNIT	HP-2	FXAQ18	500	95	-	18,000	20,000	35	208/1	2
WU-3	WALL MOUNTED UNIT	HP-2	FXAQ18	500	95	-	18,000	20,000	35	208/1	2
TOTAL		HP-2			1,740		306,000	350,800			

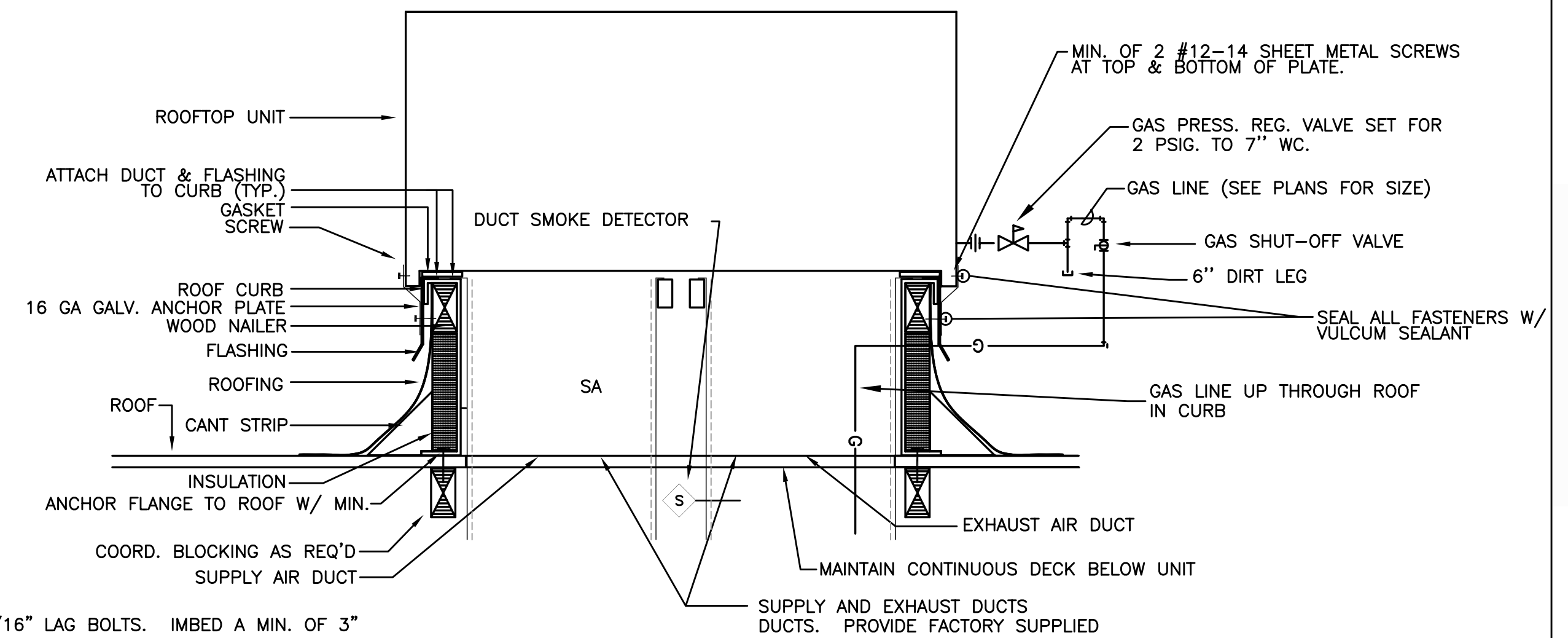
Notes

- DUCTED FAN COIL
- PROVIDE INTEGRAL CONDENSATE DRAIN PAN, FLOAT AND ALARM. PROVIDE EXTERNAL CONDENSATE PUMP.
- PROVIDE FIELD FABRICATED 2" MERV 8 FILTER RACK AND FILTER WITH MAXIMUM 0.15" WC PRESSURE DROP.
- 24"x24" CEILING CASSETTE (4-WAY)
- PROVIDE A SMOKE DETECTOR IN THE RA PLENUM.
- SUPPLY OSA DIRECTLY INTO ROOM.
- REMOTE FILTER @ RA GRILLE.



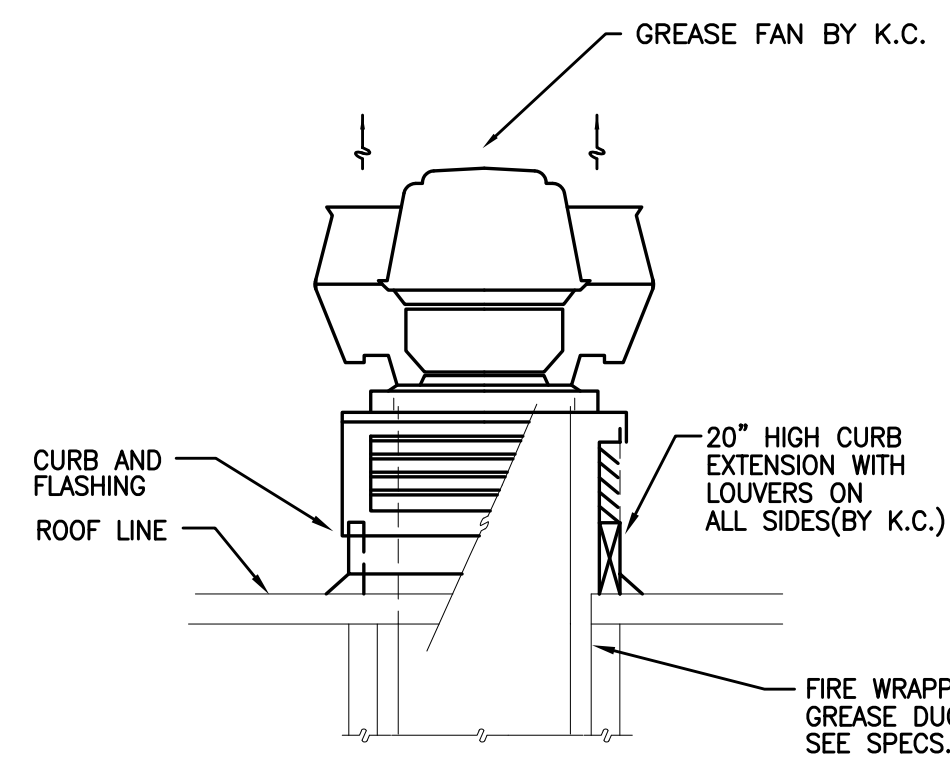
1 HEAT PUMP CURB

M6.01 SCALE: DETAIL



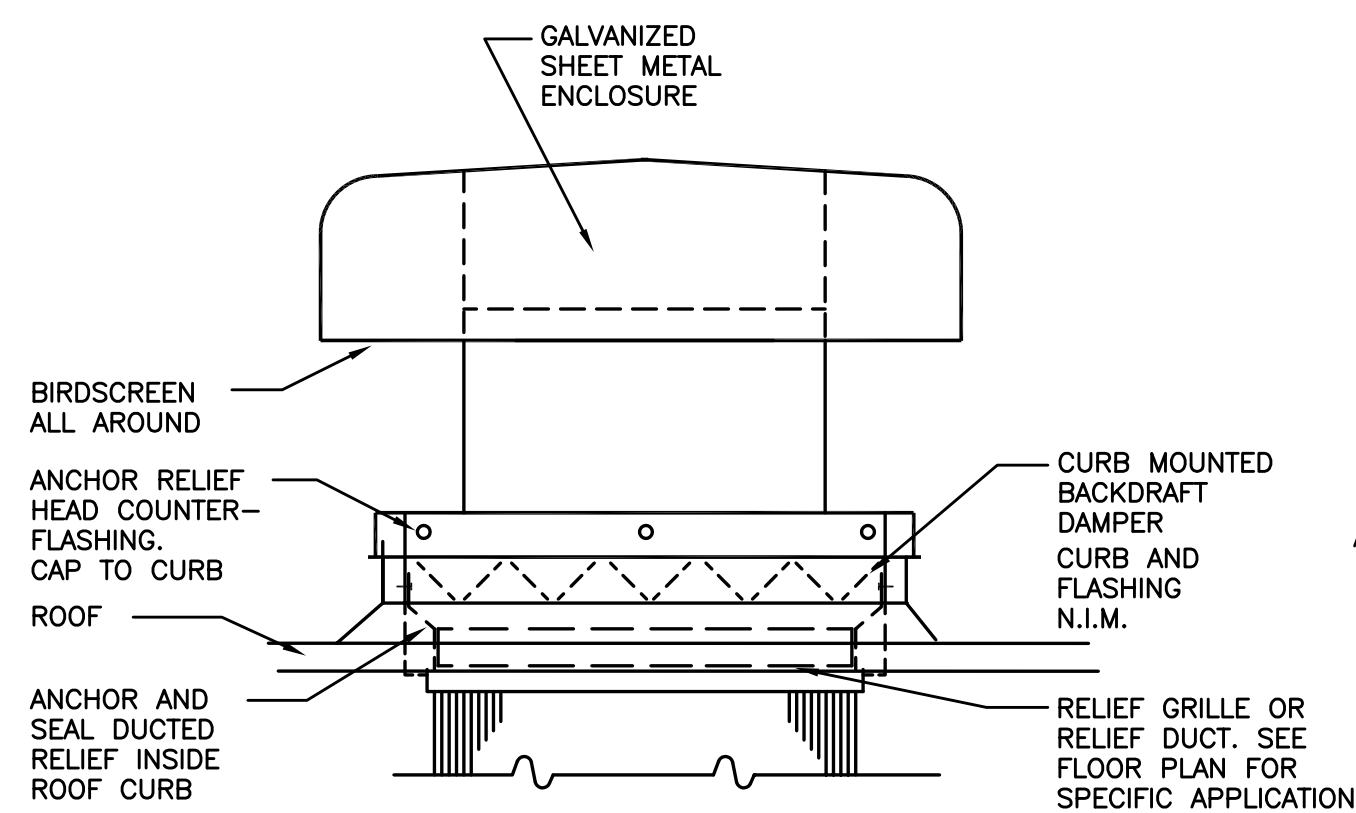
2 RTU & DOAS UNIT

M6.01 SCALE: DETAIL



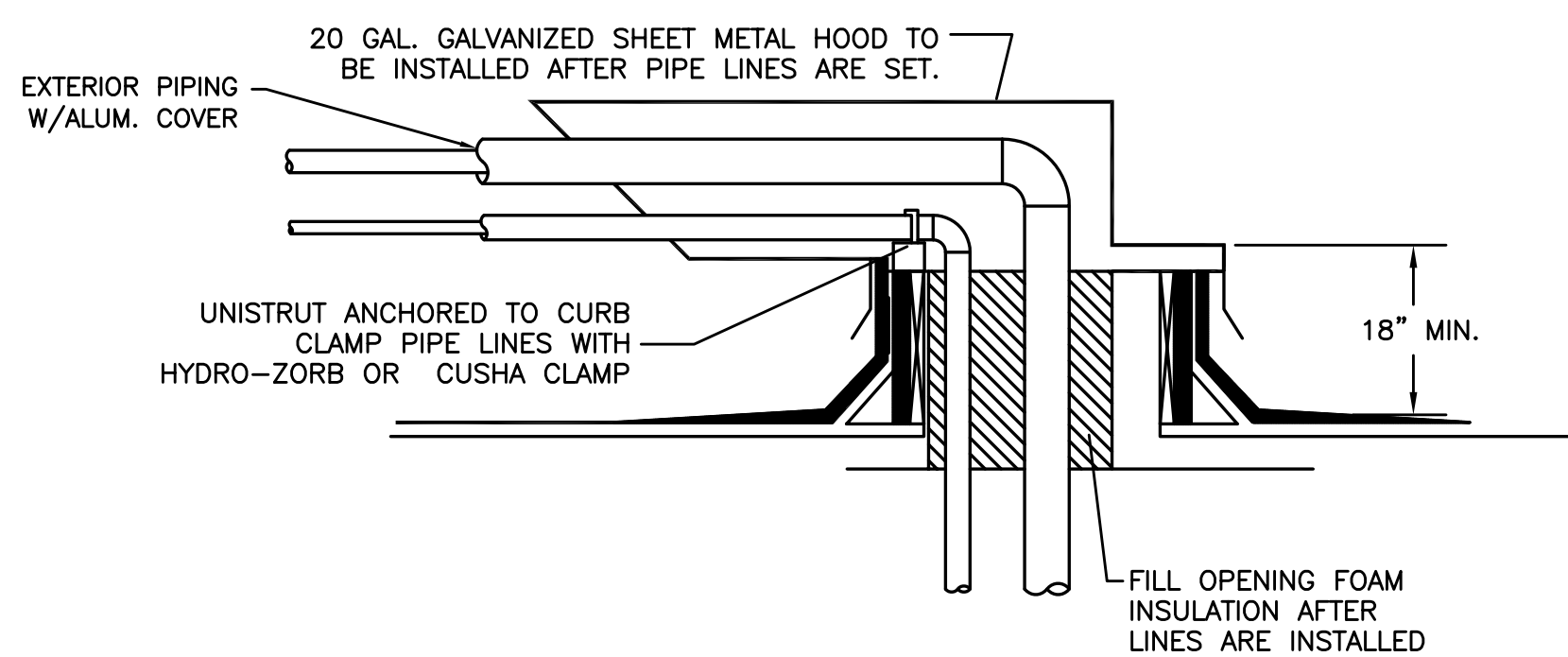
3 GREASE EXHAUST FAN

M6.01 SCALE: DETAIL



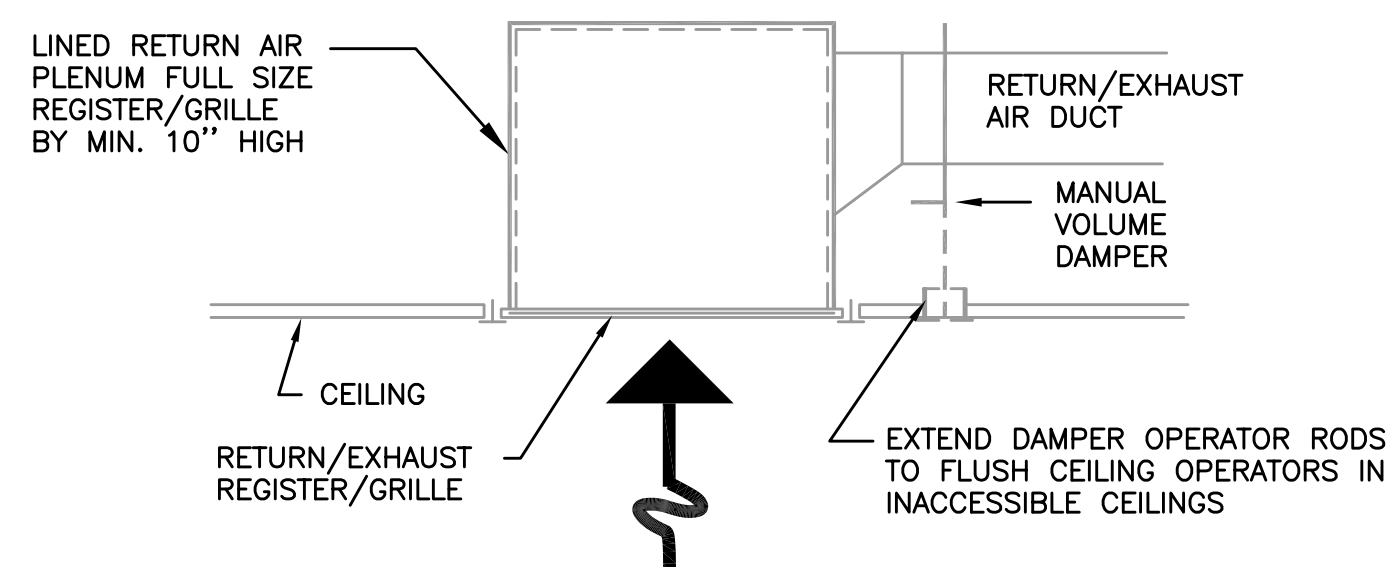
4 RELIEF VENT

M6.01 SCALE: DETAIL



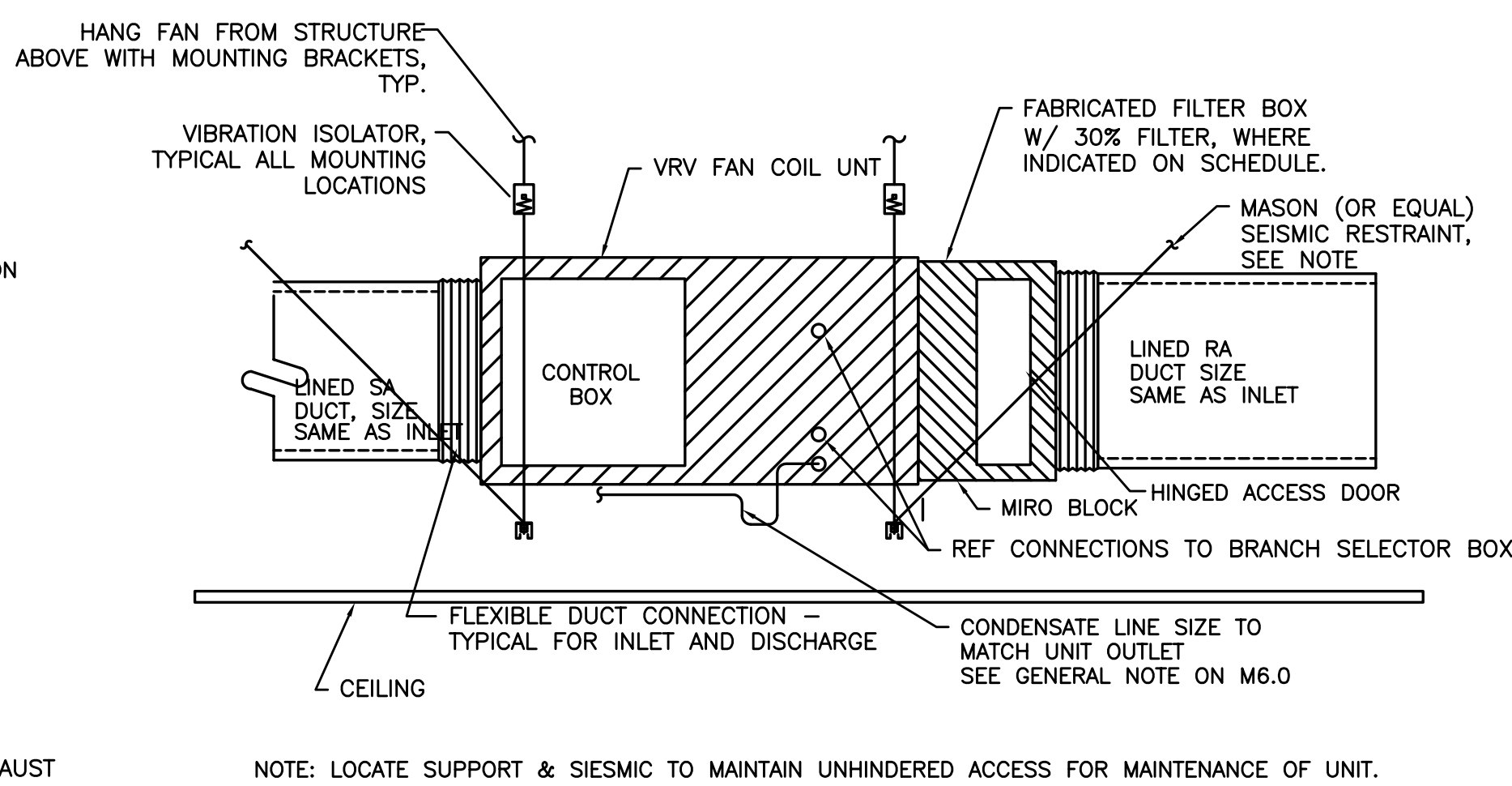
6 PIPE HOOD DETAIL

M6.01 SCALE: DETAIL



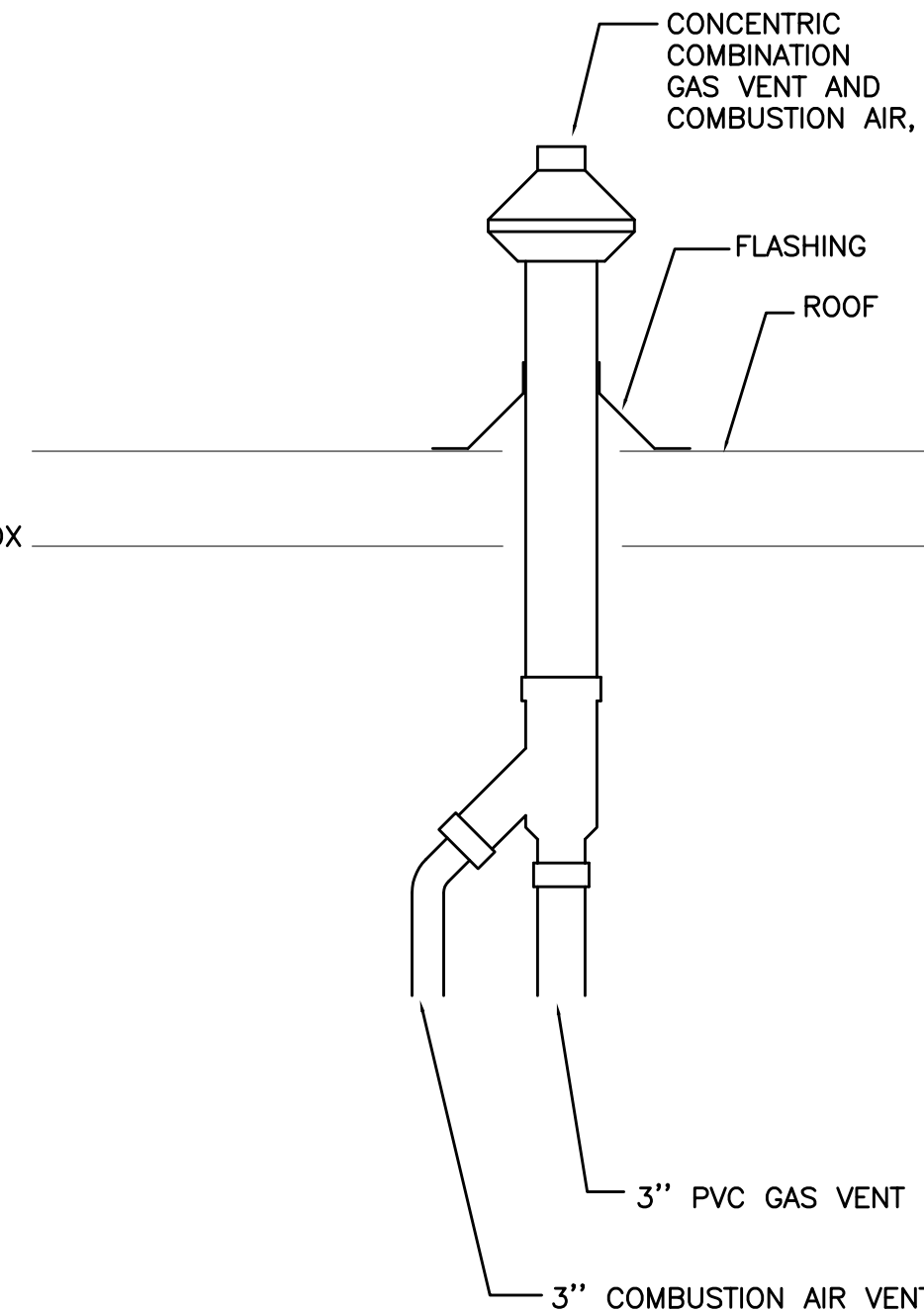
7 RA GRILLE DETAILS

M6.01 SCALE: DETAIL



5 VRV DUCTED FAN COIL (FC)

M6.01 SCALE: DETAIL



8 CONCENTRIC GAS VENT

M6.02 DETAIL

HOLST

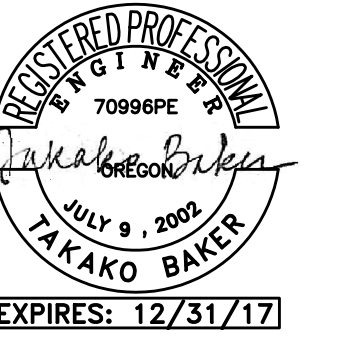
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07.15.2016

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100% SD	10.15.15
50% DD	12.09.15
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50% CD	03.30.16
75% CD	04.27.16
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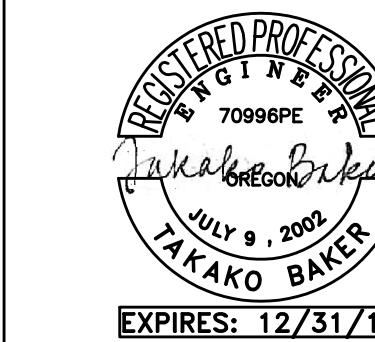
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title:

MECHANICAL
DETAILS

sheet:

M6.01



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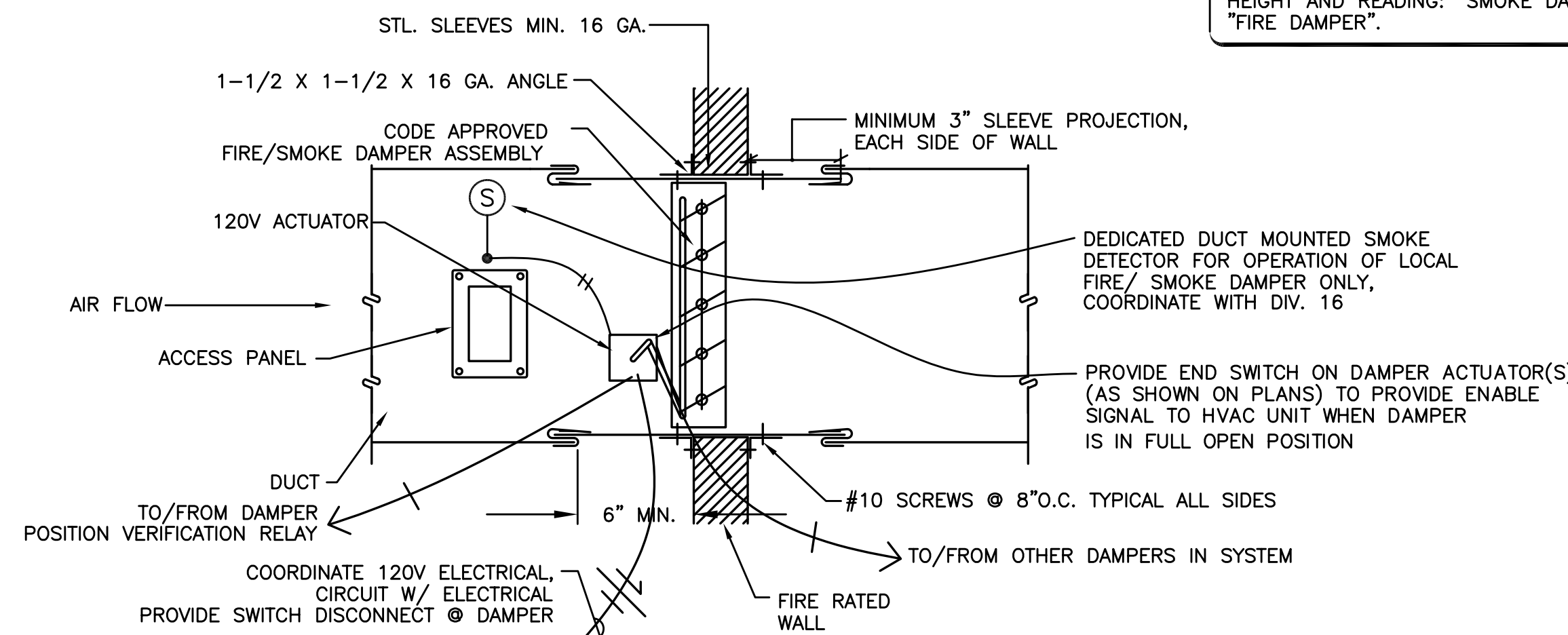
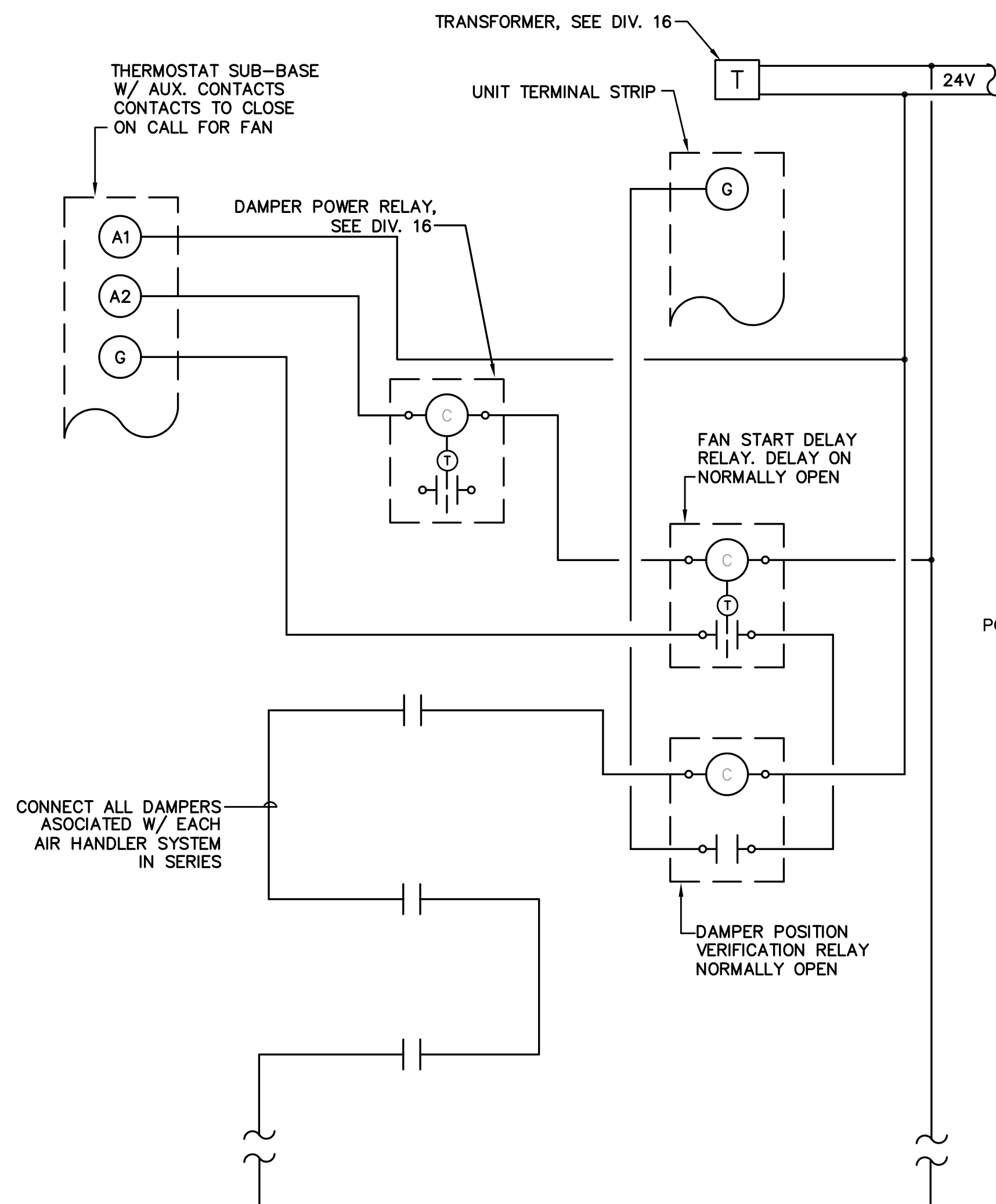
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100% DD	02.05.16
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75% CD	04.27.16
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revision: date:

title:
**MECHANICAL
KITCHEN HOOD
DETAILS AND
SCHEDULE**

sheet:

M6.02

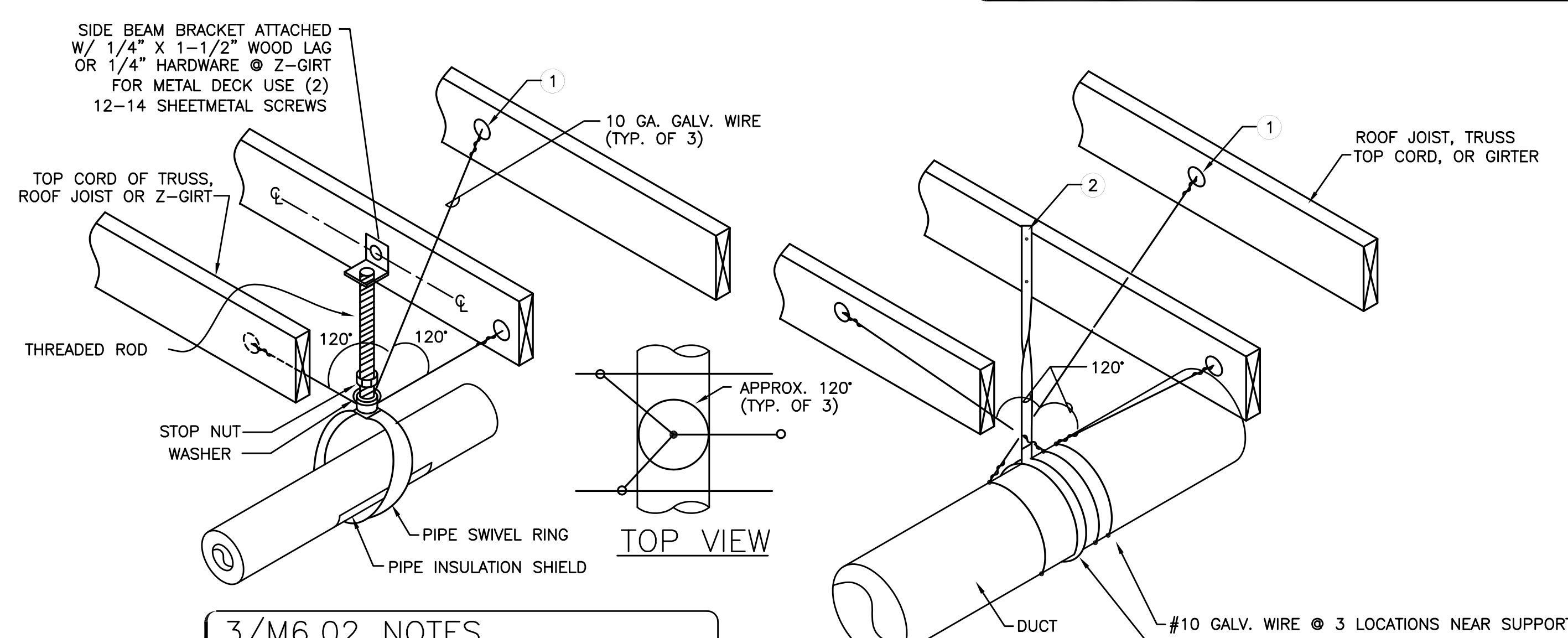


1 FIRE/SMOKE DAMPER W/SMOKE DETECTOR
M6.02 NOT TO SCALE

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.

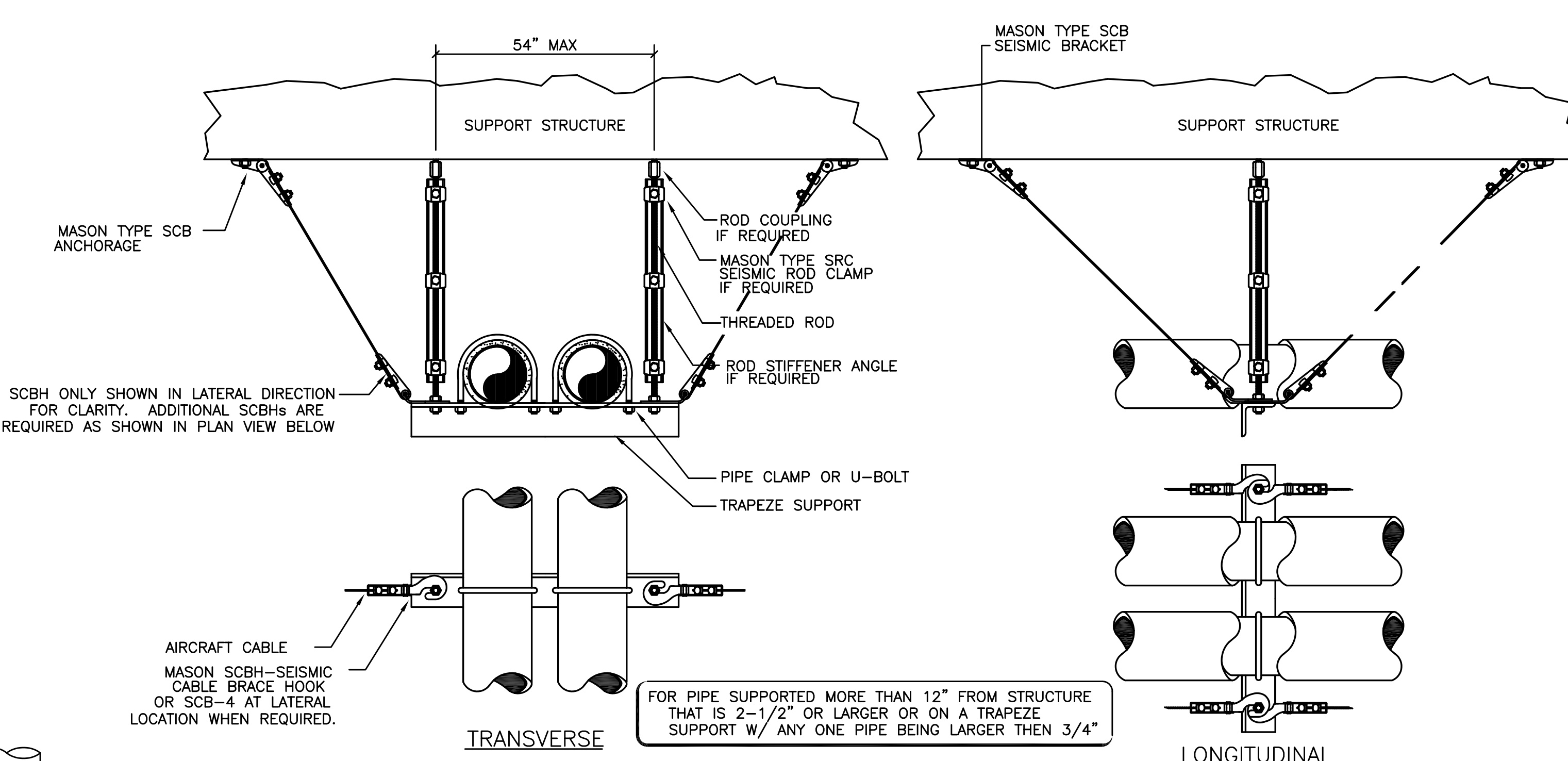
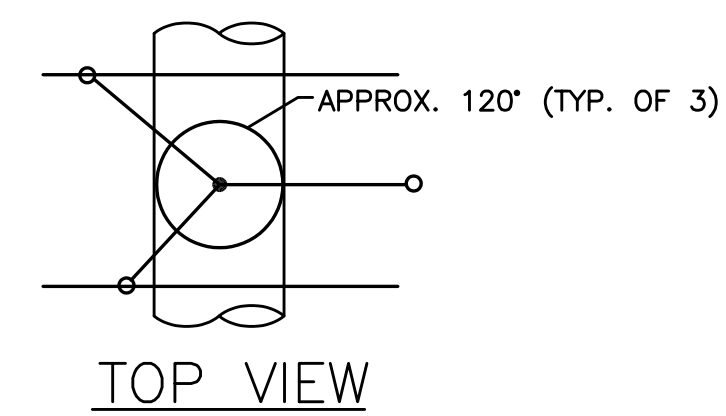
GENERAL NOTES:
PROVIDE ACCESS IN CEILING OR WALL FOR DAMPER AND SMOKE DETECTOR
SEE ELECTRICAL DRAWINGS FOR WIRING INSTALLATION

1/M6.02 NOTES
1 - 1/4" GALV. THREADED EYE BOLT @ CENTER OF WOOD MEMBER (TYP. OF 3). FOR Z-GIRT USE MACHINE THREAD EYE BOLT W/ JAMB NUT & 1/4" WASHER @ EACH SIDE OF GIRT. FOR METAL DECK USE 12 SHEETMETAL SCREWS & 16 GA. MIN STRUT ANGLE CLIP
2 - ATTACH TO TOP CORD, OF TRUSS ONLY OR WOOD JOIST W/ #12 X 1-5/8 DECK SCREW @ MIN. 1" FROM WOOD MATERIAL EDGE. ATTACH TO Z-GIRT W/ (2) #12 TEK SCREWS. FOR METAL DECK USE (2) 12-14 SHEETMETAL SCREWS



3/M6.02 NOTES
1 - 1/4" GALV. THREADED EYE BOLT @ CENTER OF WOOD MEMBER (TYP. OF 3). FOR 2 GIRT USE MACHINE THREAD EYE BOLT W/ JAMB NUT & 1/4" WASHER @ EACH SIDE OF GIRT USE 12 SHEETMETAL SCREWS & 16 GA. MIN. 16 GA. MIN STRUT ANGLE CLIP
FOR SINGLE 1-1/2" TO 3" STEEL LINES
FOR SINGLE 2" COPPER LINES

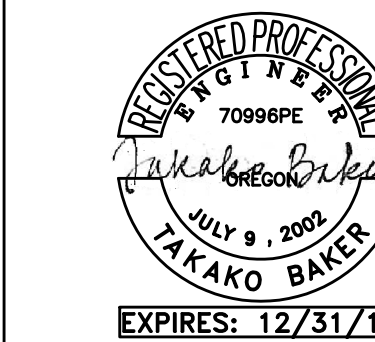
FOR SHEETMETAL DUCTS 11" TO 27" IN DIAMETER & ALL SQUARE OR RECTANGULAR DUCTS (STRAP ALONE IS SUFFICIENT FOR DUCTS SMALLER THAN 11" IN DIAMETER)
STRAP INTERVAL MAY BE DECREASED (LESS THAN 96" O/C TO REDUCE THE NEED FOR WIRE TIES AS DETAILED. CONSULT ENGINEER OR SMACNA STANDARDS



5 SEISMIC PIPE SUPPORT
M6.02 SCALE: DETAIL

3 PIPE SUPPORT
M6.02 SCALE: DETAIL

4 DUCT SUPPORT
M6.02 SCALE: DETAIL

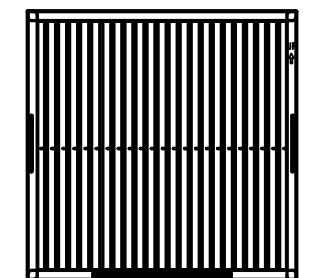


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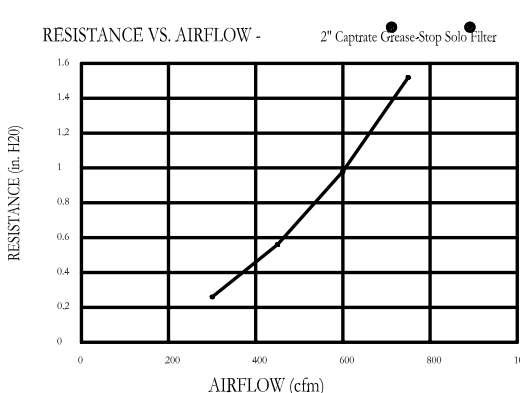
REVISIONS	
DESCRIPTION	DATE

CAPTIVE
 OREGON OFFICE
 2702 NE 114th Ave, Suite 2, Vancouver, WA, 98664 PHONE: (360) 828-5418 FAX: (360) 828-5418 EMAIL: rsg98@captiveaire.com www.captiveaire.com

AHSC
 PORTLAND, OR, 97202
 DATE: 6/6/2016
 DWG.#: 2674919
 DRAWN BY: kcurtis
 SCALE: 3/4" = 1'-0"
 MASTER DRAWING
 SHEET NO. 1



Captrate
Grease-Stop Solo Filter




Filter Detail
CAPTRATE®

EXHAUST CFM=LENGTH OF HOOD X CFM/LIN.FT. (LOAD)
SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED
TOTAL DUCT AREA=144 X CFM
DUCT LENGTH= TOTAL DUCT AREA / DUCT DEPTH

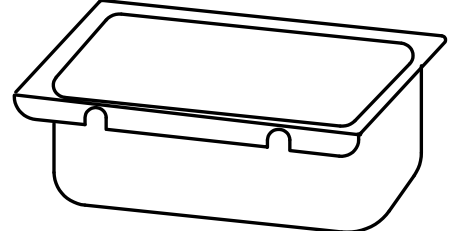
CALCULATIONS UTILIZED

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH:

- NFPA #96
- ETL SANITATION
- B.O.C.A. #93-18
- ULC 34416
- IBOS PFD # ETL NO. 83137
- ETL LISTED 3054804-001
- LOS ANGELES #R98000
- ETL IS LISTED TO ULG STANDARDS



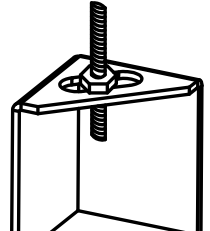
BUILDING CODES



Grease cup will be supported by 2 studs on the inside wall of the hood. The grease will drain through a concealed grease trough and into this removable cup.

1/2 Pint Grease Cup Detail

1/2" DIA. ALL THREAD ROD CONNECTED TO ROOF JOIST THROUGH ANOTHER HANGING ANGLE
1/2" DIA. HEAVY DUTY NUT ONE HOLE AND ONE BELOW HANGING ANGLE



* ROD AND NUTS TO BE SUPPLIED BY INSTALLING CONTRACTOR. HANGING ANGLE IS PRE-PUNCHED AT FACTORY.

ND-2 HANGING ANGLE DETAIL
HANGING ANGLES WILL BE LOCATED IN THE FOLLOWING LOCATIONS FOR WALL CANOPIES

HOOD STYLE	DIM FROM REAR	DIM FROM FRONT (24" High Hood)	DIM FROM FRONT (30" High Hood)
Wall Exhaust Only	4.166"	2.25"	2.25"
		2.25"	2.25"
Back Shelf Exhaust Only	4.166"	2.25"	2.25"
		2.25"	2.25"
Condensate	2.25"	2.25"	

HANGING ANGLE LOCATIONS

HOOD INFORMATION - Job#2674919

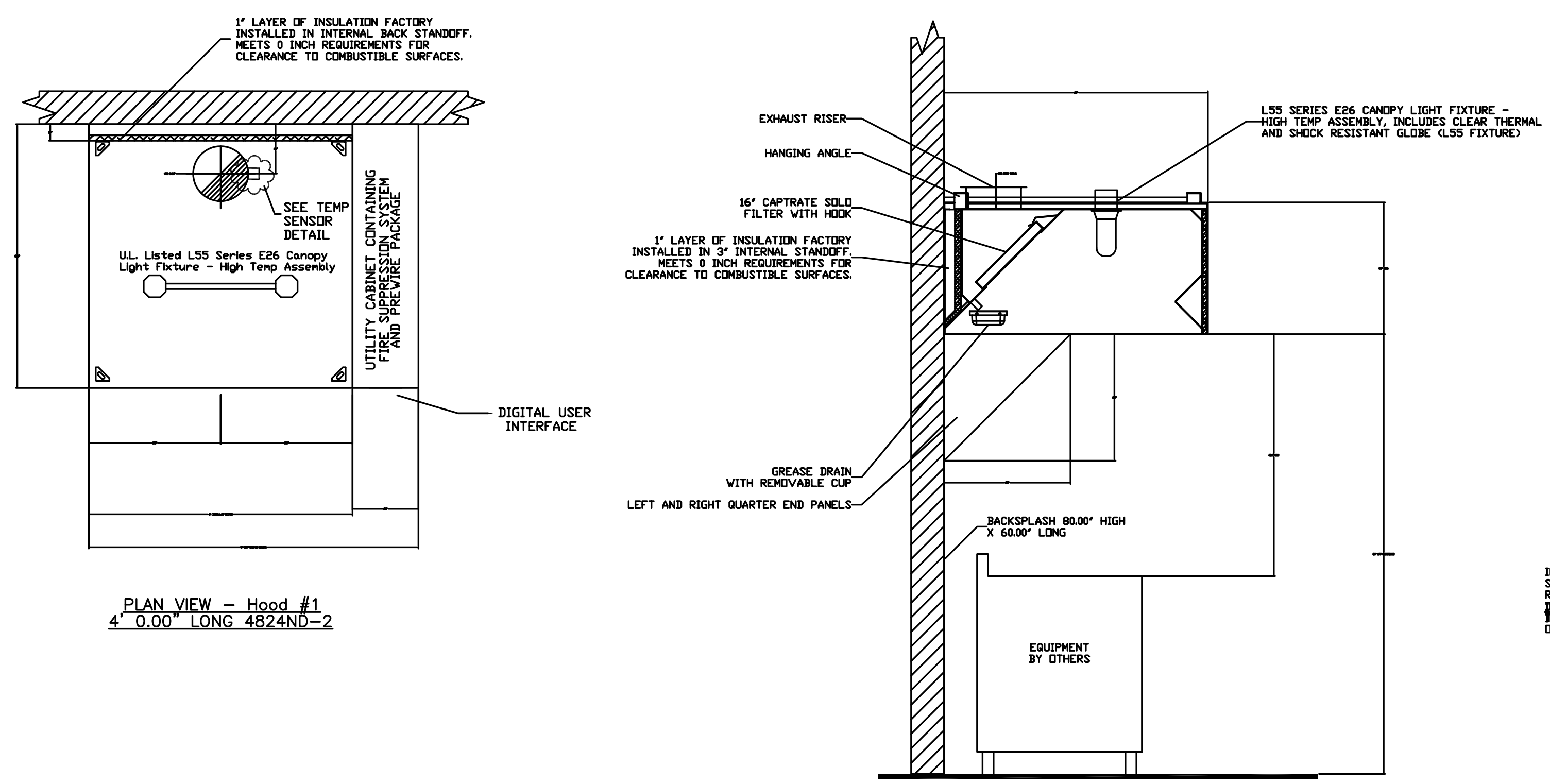
HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	TOTAL EXH. CFM	EXHAUST PLENUM RISER(S)			HOOD CONSTRUCTION	HOOD CONFIG.			
						WIDTH	LENG.	HEIGHT		DIA.	CFM	S.P.	END TO END	ROW
1		4824 ND-2	4' 0.00"	450 Deg.	700		4'	10'	700	-0.444'	430 SS Where Exposed	ALONE	ALONE

HOOD INFORMATION

HOOD NO.	TAG	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WGT		
		TYPE	QTY.	HEIGHT	LENGTH	EFFICIENCY @ 9 MICRONS	QTY.	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM	ELECTRICAL			SWITCHES	
1		Captrate Solo Filter	2	16"	16"	93% See Filter Spec.	2	L55 Series E26	ND	Right	12"x48"x24"	Ansul R102	1.5	SC-211110FP	1 Light 1 Fan	YES	343 LBS

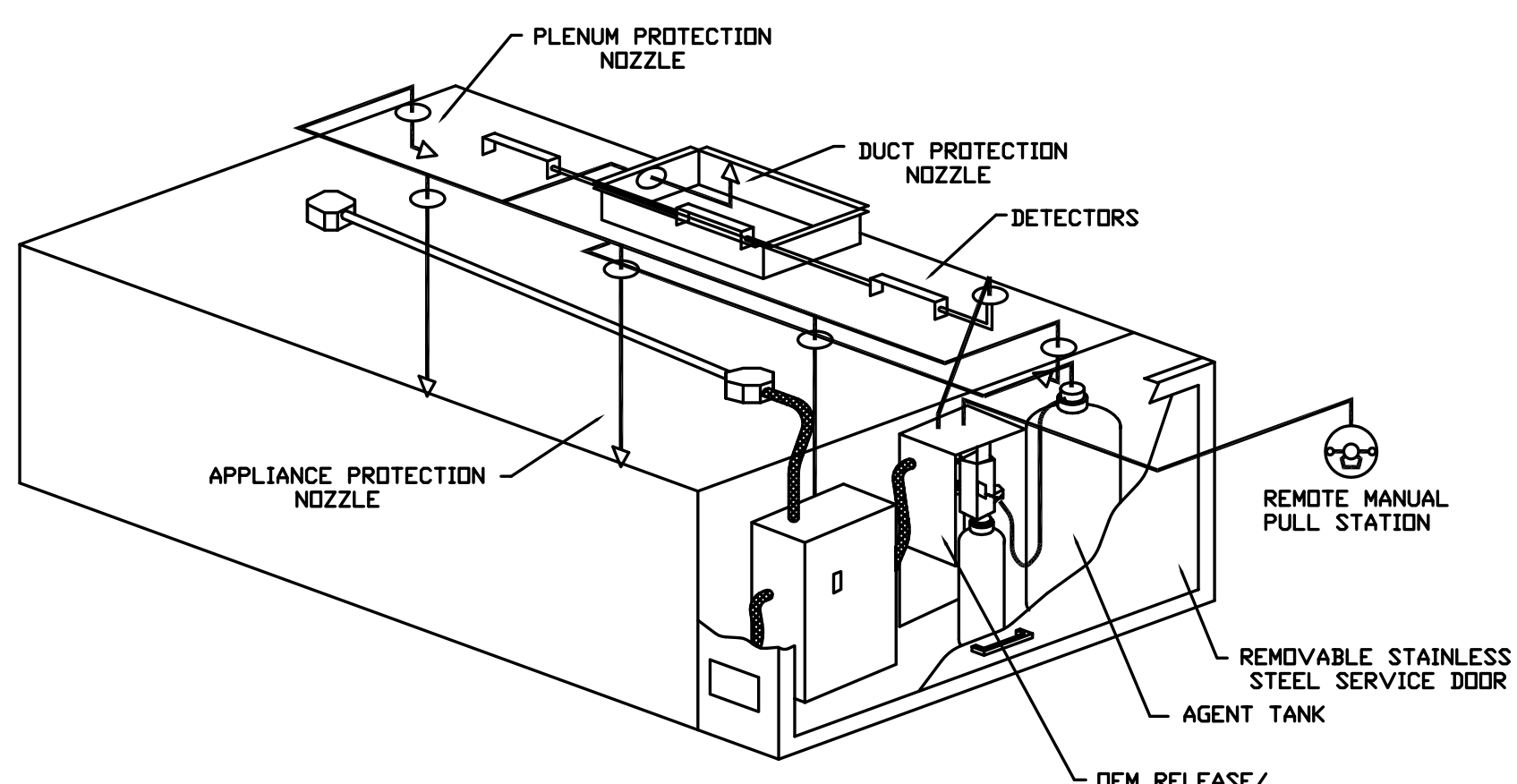
HOOD OPTIONS

HOOD NO.	TAG	OPTION
1		BACKSPLASH 80.00" High X 60.00" Long 430 SS Vertical
		LEFT QUARTER END PANEL 23" Top Width, 0" Bottom Width, 23" High 430 SS
		RIGHT QUARTER END PANEL 23" Top Width, 0" Bottom Width, 23" High 430 SS
		INSULATION FOR BACK OF HOOD

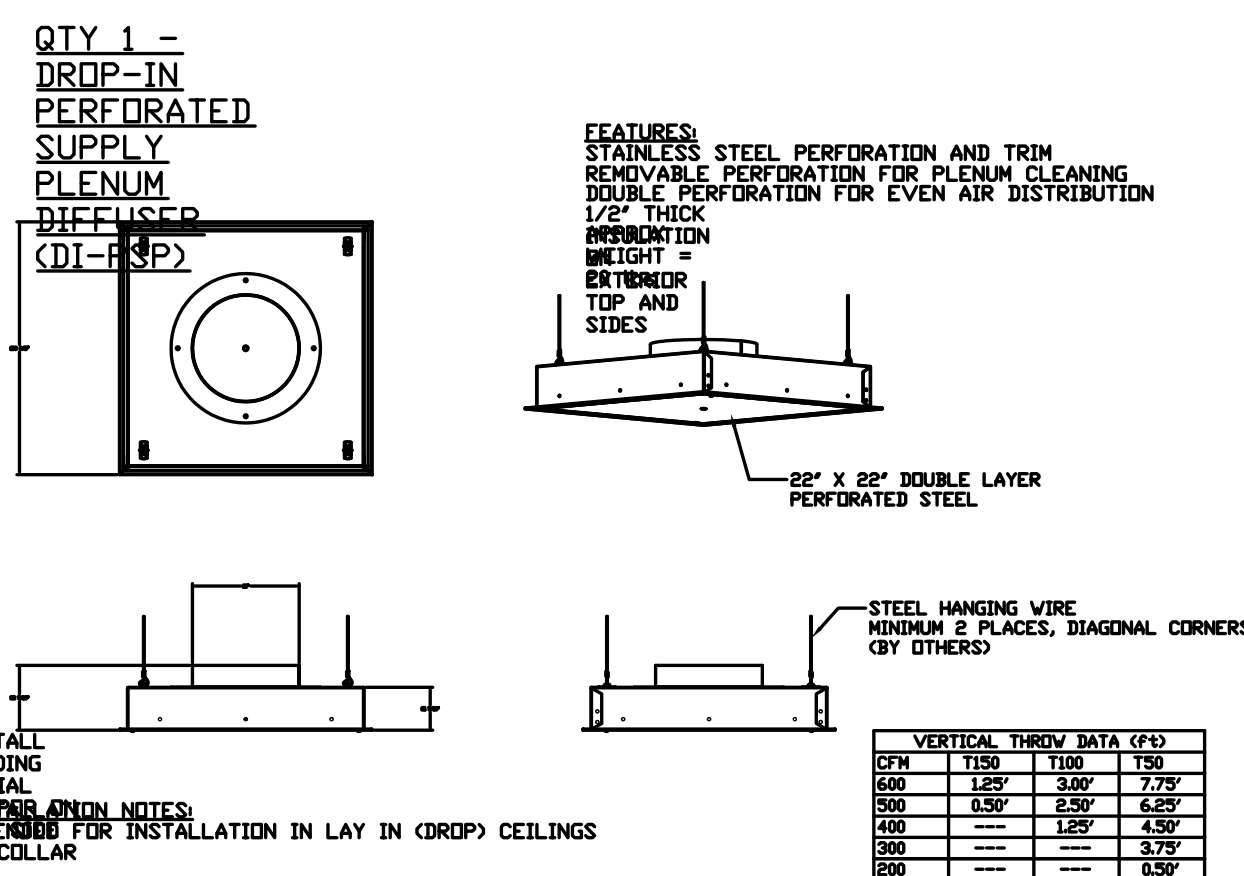


PLAN VIEW - Hood #1
4' 0.00" LONG 4824ND-2

SECTION VIEW - MODEL 4824ND-2
HOOD - #1



TYPICAL ANSUL R-102 SYSTEM LAYOUT



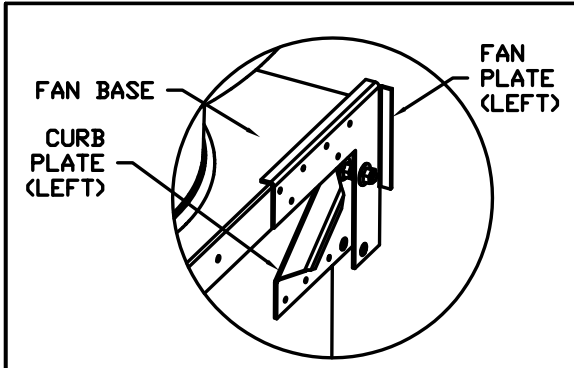
FOR QUESTIONS, CALL
KURT CURTIS: REGIONAL MANAGER
PHONE: (360) 828-5418
FAX: (360) 227-5983
EMAIL: kurt.curtis@captiveaire.com

PERMIT SET

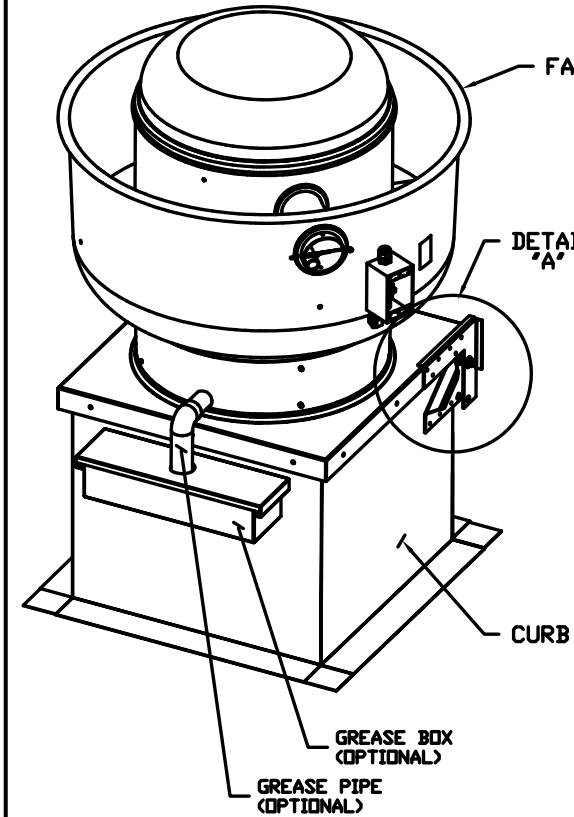
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100% SD	10.15.15
50% DD	12.09.15
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PERMIT SET	07.15.16

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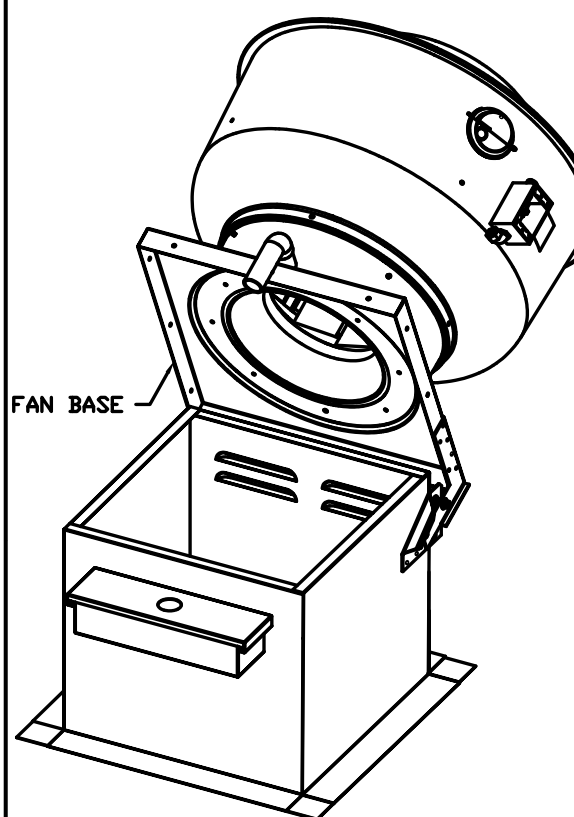
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MECHANICAL
KITCHEN HOOD
DETAILS AND
SCHEDULE



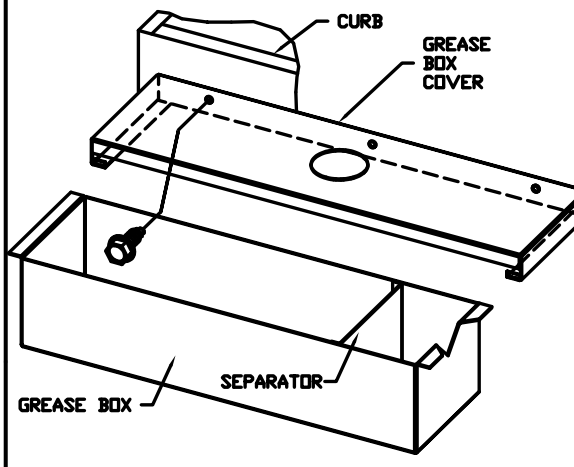
HINGE KIT DETAIL



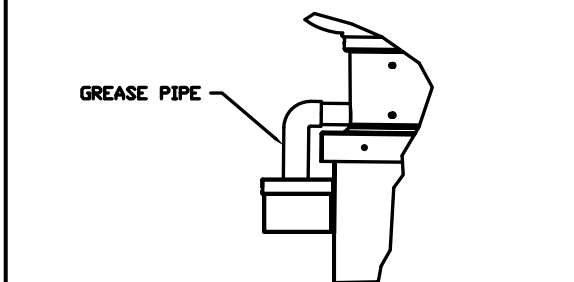
FAN IN CLOSED POSITION



FAN IN OPEN POSITION



ATTACH GREASE BOX COVER TO THE CURB 3" BELOW TOP EDGE OF CURB. USING (3) LONG (3/4" LG) SCREWS AS SHOWN. INSTALL GREASE PIPE AS SHOWN.



GREASE BOX INSTALLATION

EXHAUST FAN INFORMATION - Job#2674919

FAN UNIT NO.	TAG	FAN UNIT MODEL #	CFM	ESP.	RPM	H.P.	B.H.P.	#	VOLT	FLA	WEIGHT (LBS.)	SONES
1		DU33HFA	700	0.750	1452	0.333	0.2080	1	208	2.6	65	11

FAN OPTIONS

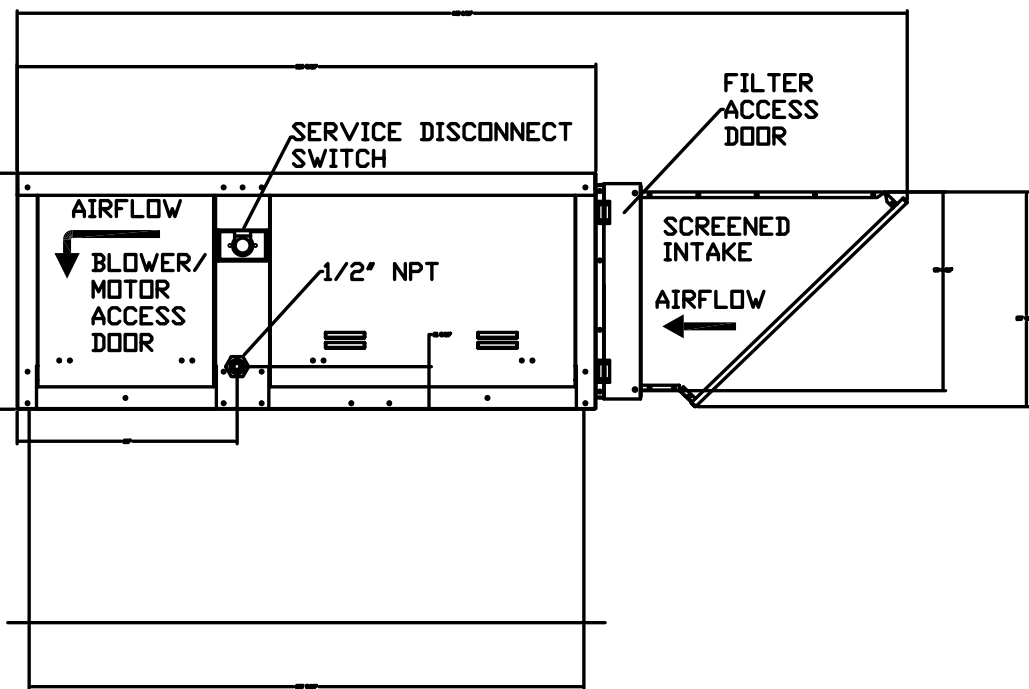
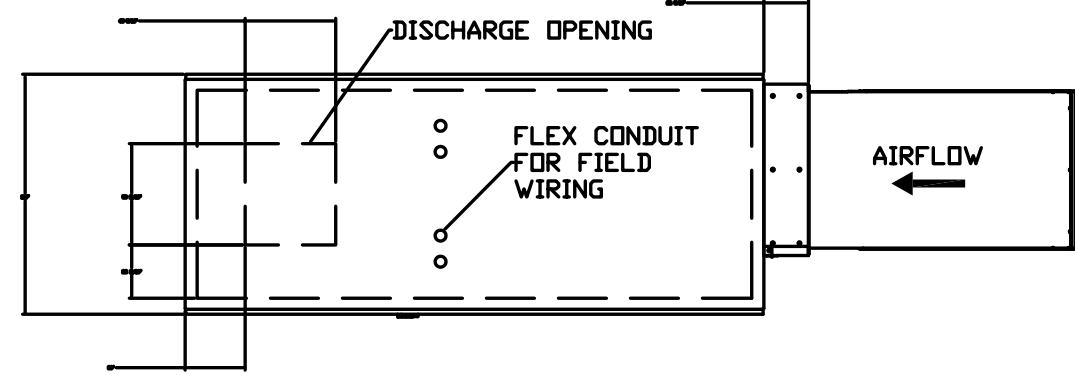
FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)
1		1 - Grease Box 1 - ECM Wiring Package-Exhaust Fans - Manual Speed Control. 1 - Fan Base Ceramic Seal - For Grease Ducts 1 - 3 Year Extended Motor Warranty 1 - Inlet Pressure Gauge, 0-35"
2		1 - Manifold Pressure Gauge, -5 to 15" wc 1 - 3 Year Extended Motor Warranty 1 - Extra Set of Belts 1 - Motorized Intake Damper (D76)

CURB ASSEMBLIES

NO.	DN FAN	WEIGHT	ITEM	SIZE
1	# 1	34 LBS	Curb	19,500"W x 19,500"L x 22,000"H Vented Hinged
2	# 2	50 LBS	Curb	19,500"W x 52,000"L x 20,000"H Insulated

FAN #2 D76 - HEATER
1. LOW CFM DIRECT FIRED HEATER. BELT DRIVE.
2. INTAKE HOOD WITH EZ FILTERS
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT
4. GAS PRESSURE GAUGE, 0-35" 2.5" DIAMETER, 1/4" THREAD SIZE
5. GAS PRESSURE GAUGE, -5 TO 15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE
6. 3 YEAR EXTENDED WARRANTY FOR FAN MOTOR. PARTS ONLY DOES NOT INCLUDE LABOR.
7. EXTRA SET OF V-BELTS. ONLY TO BE ORDERED AS FAN OPTION AT THE TIME FAN IS ORDERED.
8. MOTORIZED BACK DRAFT DAMPER 13" X 17" FOR D76 COMPACT DIRECT FIRED HEATERS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, TF1205 ACTUATOR INCLUDED

SUPPLY SIDE HEATER INFORMATION
WINTER TEMPERATURE = 50°F. TEMP. RISE = 55°F.
BTUS CALCULATED @ STANDARD AIR DENSITY
OUTPUT BTUS AT ALTITUDE OF 0.0 FT. = 35640
INPUT BTUS AT ALTITUDE OF 0.0 FT. = 38739



ROOF OPENING 2" SMALLER THAN CURB DIMENSION

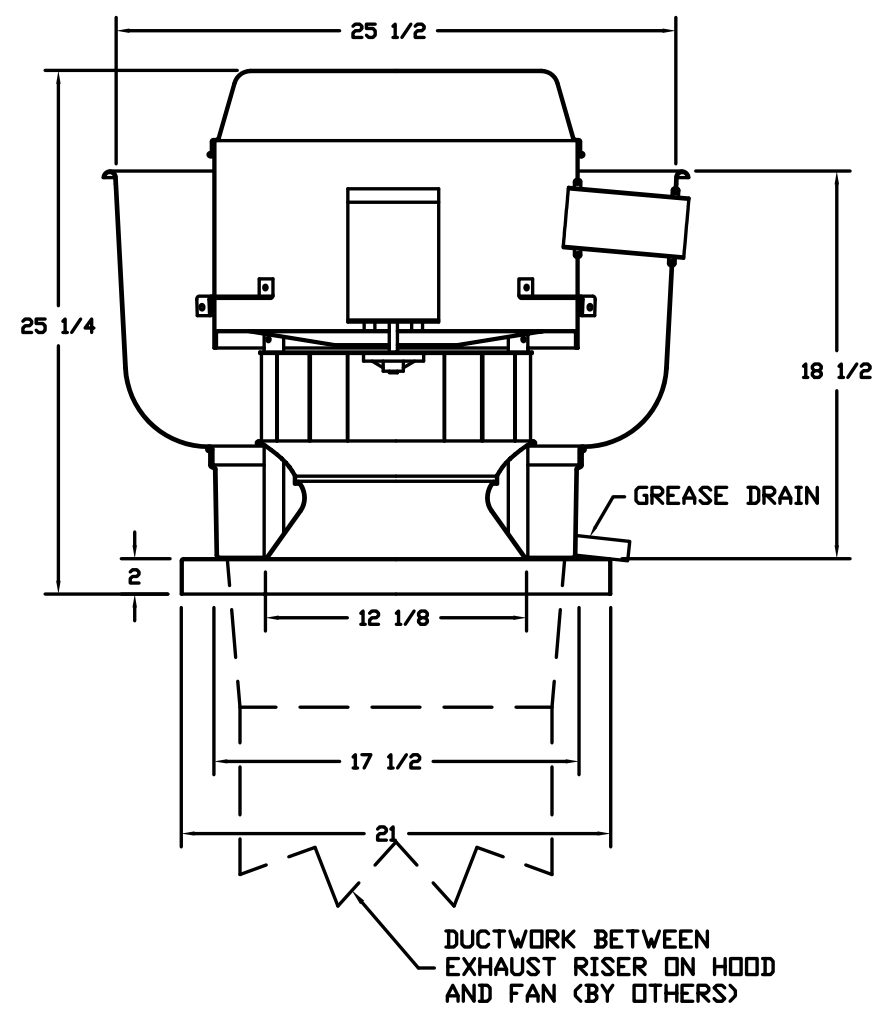
MUA FAN INFORMATION - Job#2674919

FAN UNIT NO.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	CFM	ESP.	RPM	H.P.	B.H.P.	#	VOLT	FLA	WEIGHT (LBS.)	SONES
2		D76	G7	D.6	600	0.600	1395	0.750	0.3540	1	208	3.7	337	14.1

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO.	TAG	INPUT BTUS	OUTPUT BTUS	TEMP. RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE
2		38739	35640	55 deg F	7 in. w.c. - 14 in. w.c.	Natural

FAN #1 DU33HFA - EXHAUST FAN



FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS)
- RESTAURANT MODEL
- UL705 AND UL762
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- WEATHERPROOF DISCONNECT
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

NORMAL TEMPERATURE TEST

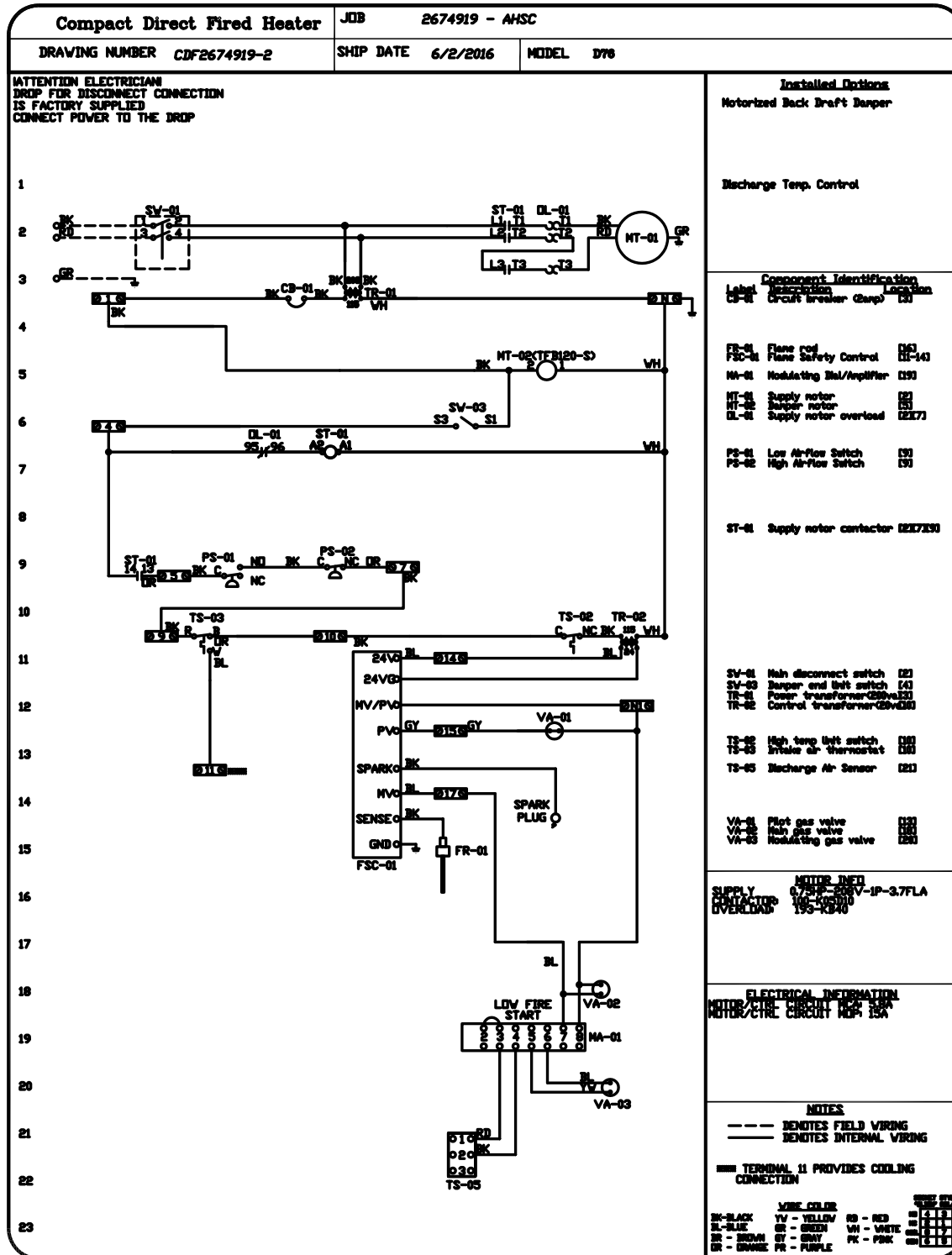
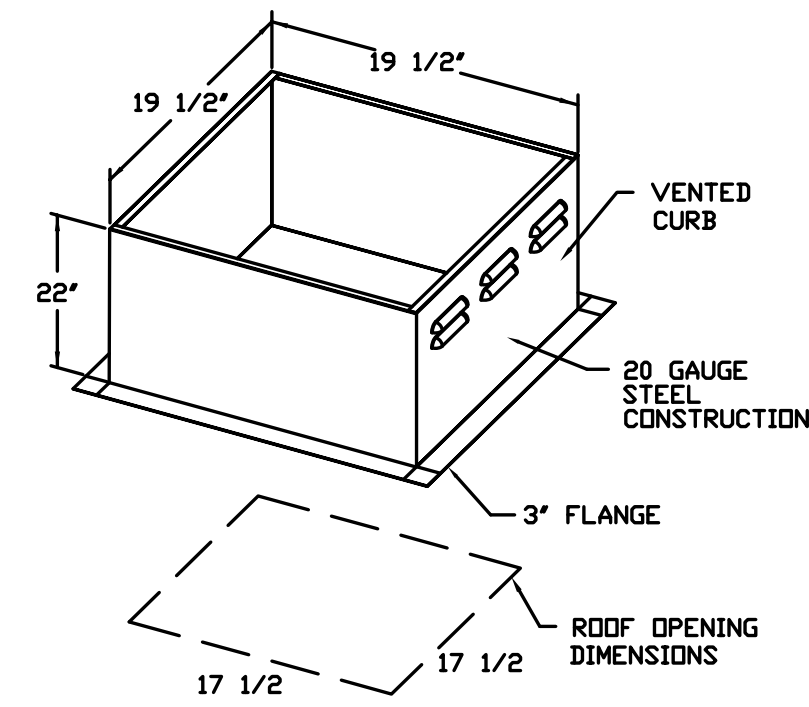
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST

EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

- GREASE BOX
- ECM WIRING PACKAGE-EXHAUST FANS - MANUAL SPEED CONTROL.
- FAN BASE CERAMIC SEAL - FOR GREASE DUCTS
- 3 YEAR EXTENDED MOTOR WARRANTY



FOR QUESTIONS, CALL
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REVISIONS

NO.	DESCRIPTION	DATE
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DATE: 6/6/2016
DWG.#: 2674919
DRAWN BY: kcurtis
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 2

HOLST

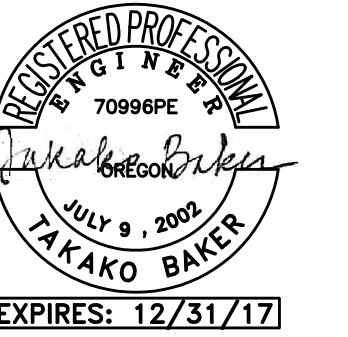
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JOB NO. 15043.00



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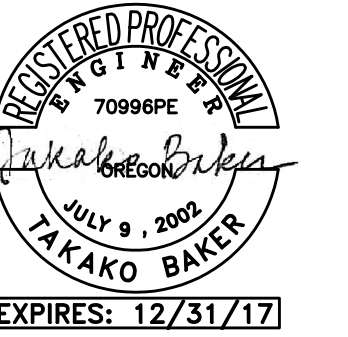
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50% DD	12.09.15	
100% DD	02.05.16	
50% CD	03.30.16	
75% CD	04.27.16	
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revision: date:

MECHANICAL
KITCHEN FANS
DETAILS AND
SCHEDULE

sheet:

M6.04



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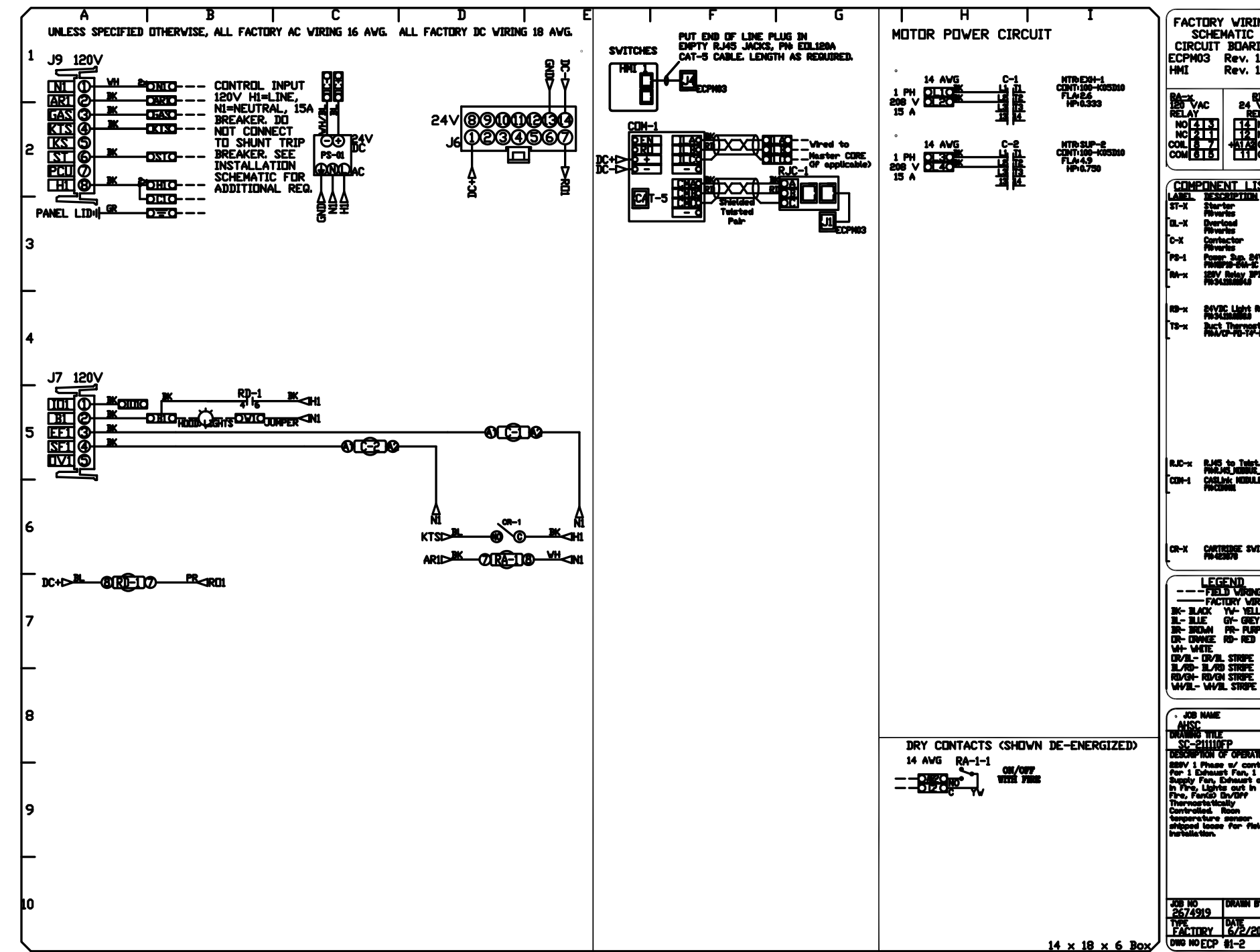
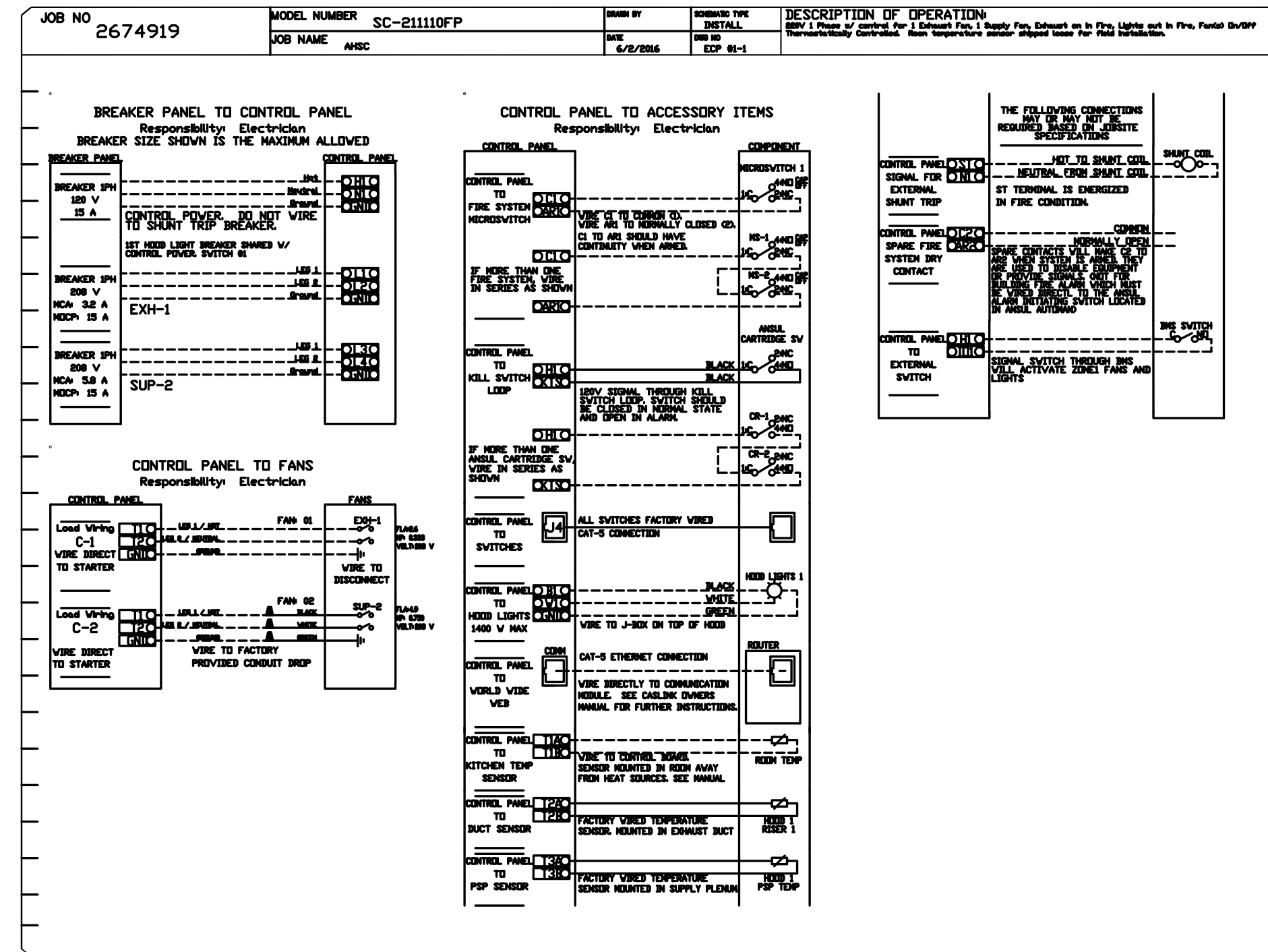
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sheet:

M6.05

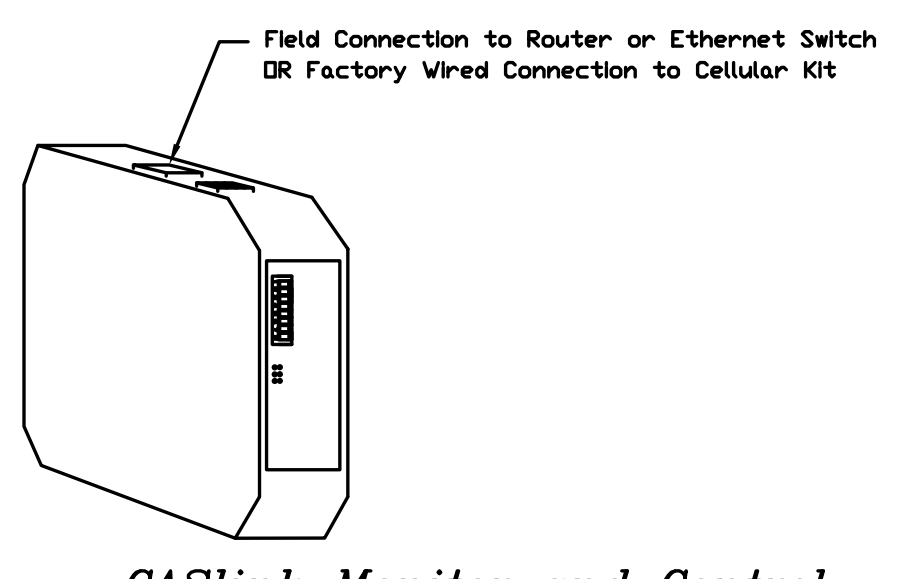
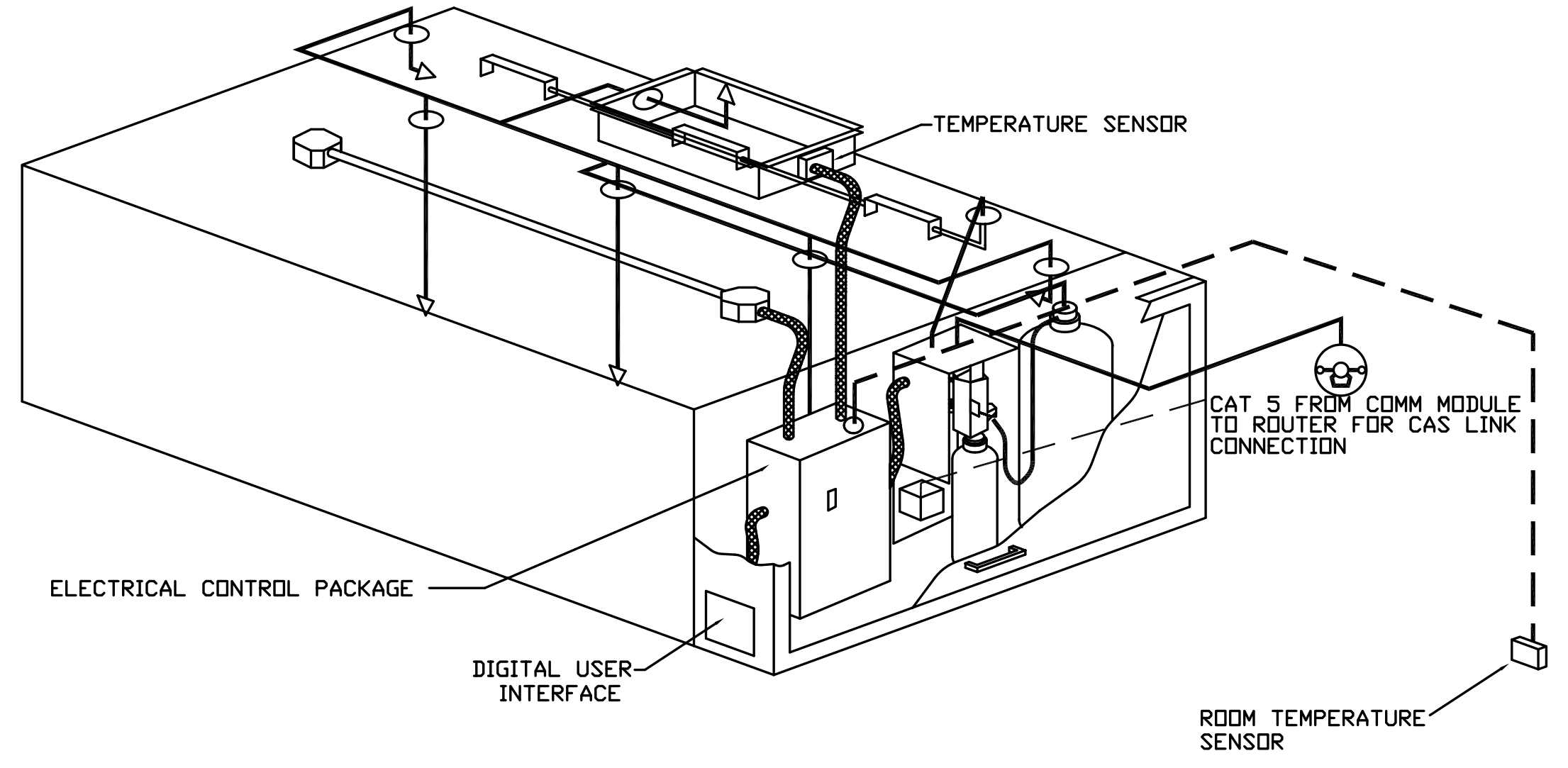
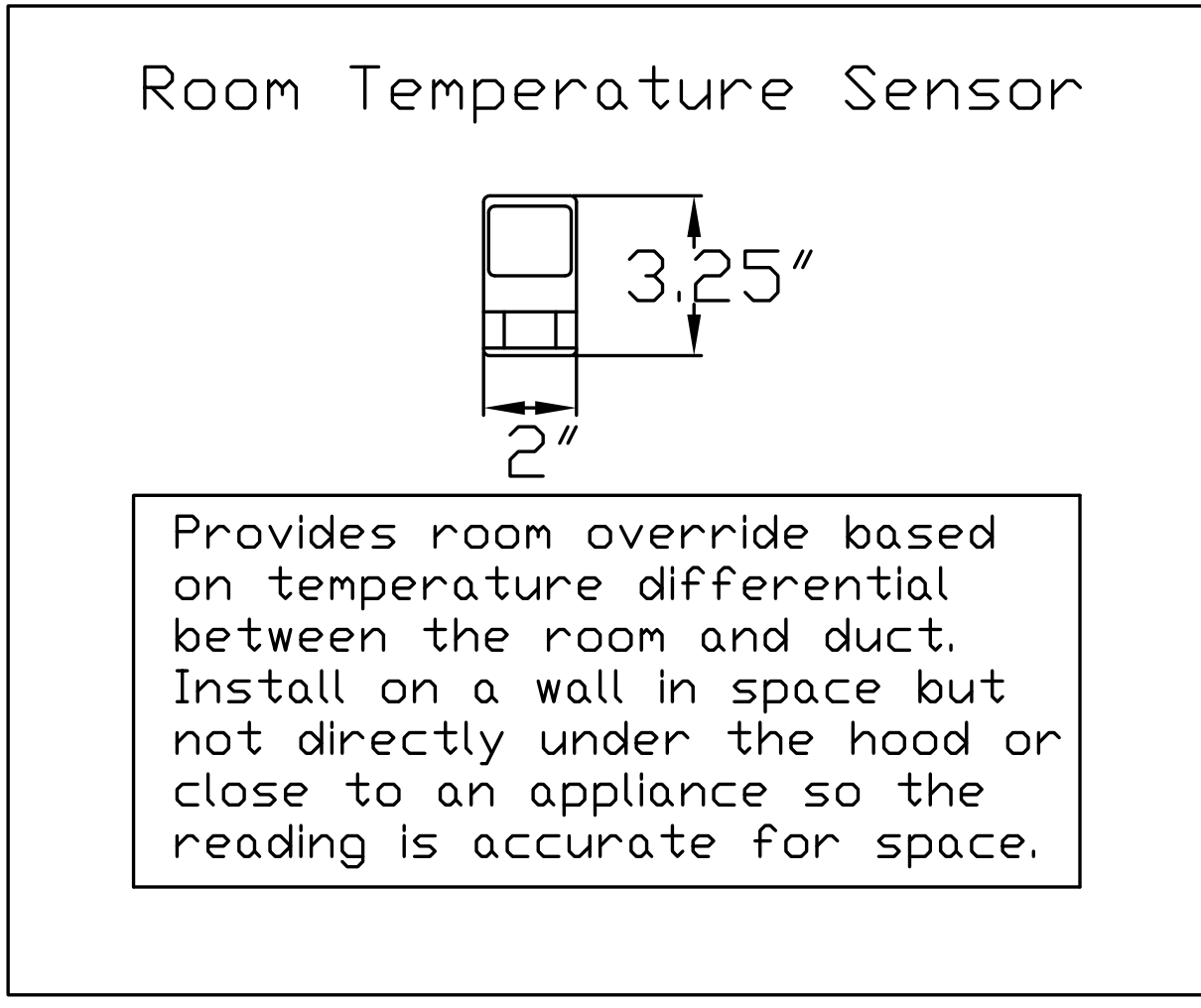
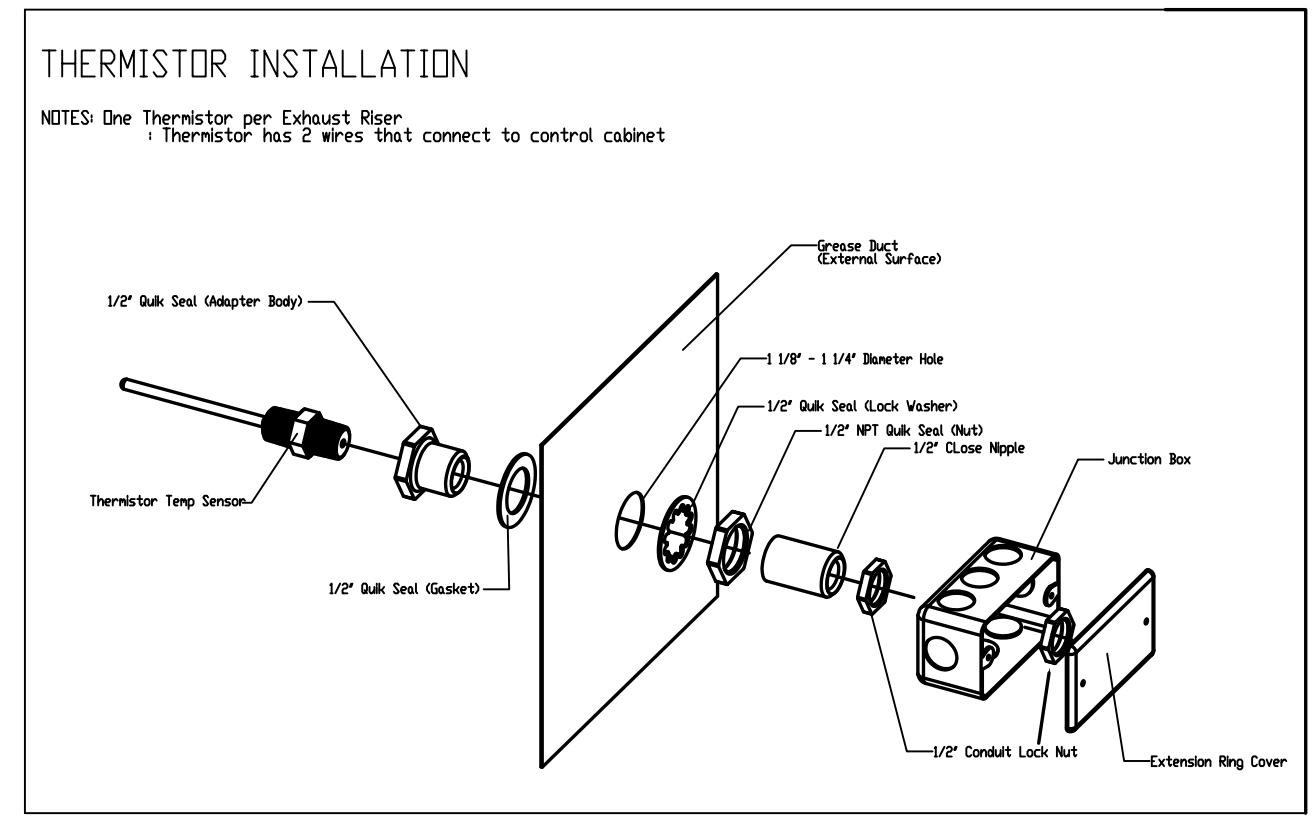
ELECTRICAL PACKAGES - Job#2674919

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	HP.	VOLT.	FLA	
1		SC-21110FP	Utility Cabinet Right	Utility Cabinet Right	1 Light	Smart Controls Thermostatic Control	Exhaust	1	0.333	208	2.6
					1 Fan		Supply	1	0.750	208	3.7

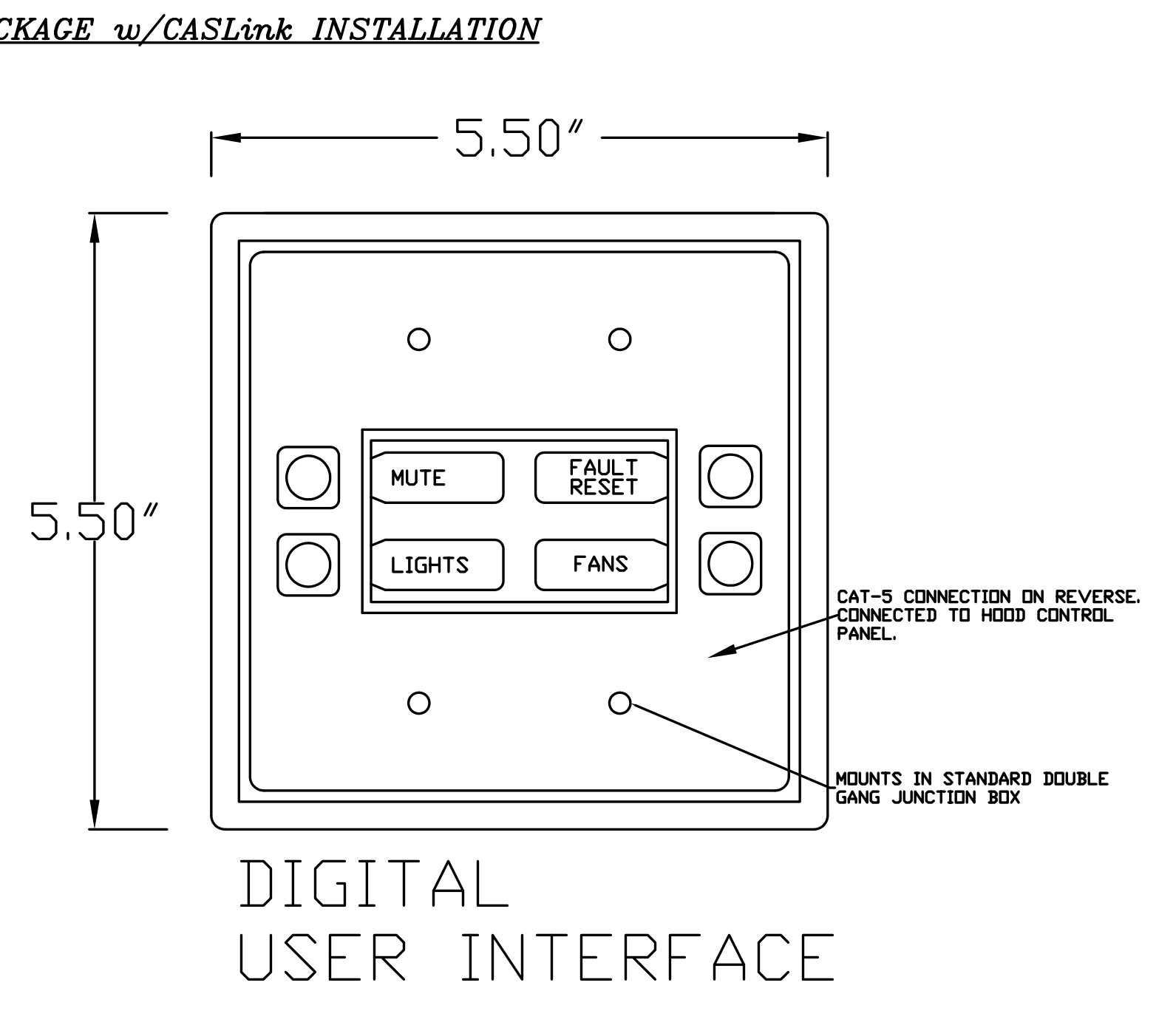


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FAX: (919) 227-5983
EMAIL: kurt.curtis@captiveaire.com

IT IS THE RESPONSIBILITY OF THE EC TO MAKE ALL FIELD CONNECTIONS INTO AND OUT OF THE CAPTIVEAIRE CONTROL PANEL INCLUDING BUT NOT LIMITED TO LOW VOLTAGE, CAT 5, 24V WIRES TO ALL TEMP SENSORS, INCLUDING THE ROOM TEMP SENSOR, MOTOR LINE VOLTAGE POWER FEEDS, AND CONTROL WIRING.
REFER TO WIRING SCHEMATICS IN THIS DRAWING AND POSTED INSIDE OF THE CONTROL CABINET



- Hood control panel to support communications to cloud-based Building Management Systems.
- Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.
- Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.



REVISIONS

NO.	DESCRIPTION	DATE

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PORTLAND, OR, 97202

DATE: 6/6/2016
DWG.#: 2674919
DRAWN BY: kcurtis
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 3

FACTORY BUILT DOUBLE WALL GREASE DUCT MODEL DW-2R SPECIFICATION:

FURNISH DOUBLE WALL, FACTORY BUILT GREASE DUCT FOR USE WITH TYPE I KITCHEN HOODS, WHICH CONFORMS TO THE REQUIREMENTS OF NFPA-96. PRODUCTS SHALL BE ETL LISTED TO UL-1978 AND UL-2221 FOR VENTING AIR AND GREASE VAPORS FROM COMMERCIAL COOKING OPERATION. TESTING HAS BEEN EXTENDED TO RECOGNIZE ASTM E2336 AND AC101 DUE TO SIMILAR TESTING CRITERIA. MODELS DW-2R, 3R AND 3Z ARE USED FOR GREASE DUCT APPLICATIONS WHEN INSTALLED IN ACCORDANCE WITH THESE INSTRUCTIONS AND NFPA 96; STANDARD FOR VENTILATION CONTROL AND FIRE PROTECTION OF COMMERCIAL COOKING OPERATIONS. DOUBLE WALL GREASE DUCTS ARE LISTED FOR A CONTINUOUS INTERNAL TEMPERATURE OF 500 DEGREES F AND INTERMITTENT TEMPERATURES OF 2000 DEGREES F.

THE DUCT SECTIONS SHALL BE CONSTRUCTED OF AN INNER DUCT WALL AND AN OUTER WALL WITH INSULATION IN BETWEEN. THE INNER DUCT WALL SHALL BE CONSTRUCTED OF .036 INCH THICK, 430 TYPE STAINLESS STEEL AND BE AVAILABLE IN DIAMETERS 8" THROUGH 24". THE OUTER WALL SHALL BE CONSTRUCTED OF STAINLESS STEEL AT A MINIMUM OF .024 INCH THICKNESS. THE DUCT, BASED ON MODEL NUMBER, SHALL INCLUDE LAYERS OF SUPER WOOL 607 PLUS INSULATION BETWEEN THE INNER AND OUTER WALL. GREASE DUCT JOINTS SHALL BE HELD TOGETHER BY MEANS OF FORMED V CLAMPS AND SEALED WITH 3M FIRE BARRIER 2000+. THE DUCT WALL ASSEMBLY SHALL BE TESTED AT 3/4" OR ZERO INCH CLEARANCE, ACCORDING TO CLASSIFICATIONS.

CLASSIFICATIONS AND CLEARANCES

UL 2221: STANDARD FOR FIRE RESISTIVE GREASE DUCT ENCLOSURE ASSEMBLIES. CHAPTER 7 OF THIS STANDARD REFERENCES A TEST LABELED INTERNAL FIRE TEST. SECTION 7.1.1 REFERENCES TWO INSTALLATION CONDITIONS, CONDITION A AND CONDITION B. CONDITION A REPRESENTS ALL INSTALLATION CONDITION EXCEPT FOR INSTALLATION WITHIN NON-VENTILATED COMBUSTIBLE ENCLOSURES. CONDITION B REPRESENTS INSTALLATION WITHIN A NON-VENTILATED COMBUSTIBLE ENCLOSURE.

MODEL DW-2R IS CLASSIFIED UNDER UL2221 AS AN ALTERNATE TO 2-HR FIRE RESISTIVE SHAFT ENCLOSURES WITH A REDUCED CLEARANCE TO COMBUSTIBLES (SIZES 8" TO 16" DIAMETER). MODEL 2R IS LISTED IN ACCORDANCE WITH THE REQUIREMENTS FOR DUCT ENCLOSURE CONDITION B.

MODEL DW-2R: 3/4" CLEARANCE TO COMBUSTIBLES FROM THE SURFACE OF THE DUCT OUTER SHELL; ZERO INCH CLEARANCE FROM COMBUSTIBLES FROM THE TIP OF THE OUTER V BAND.

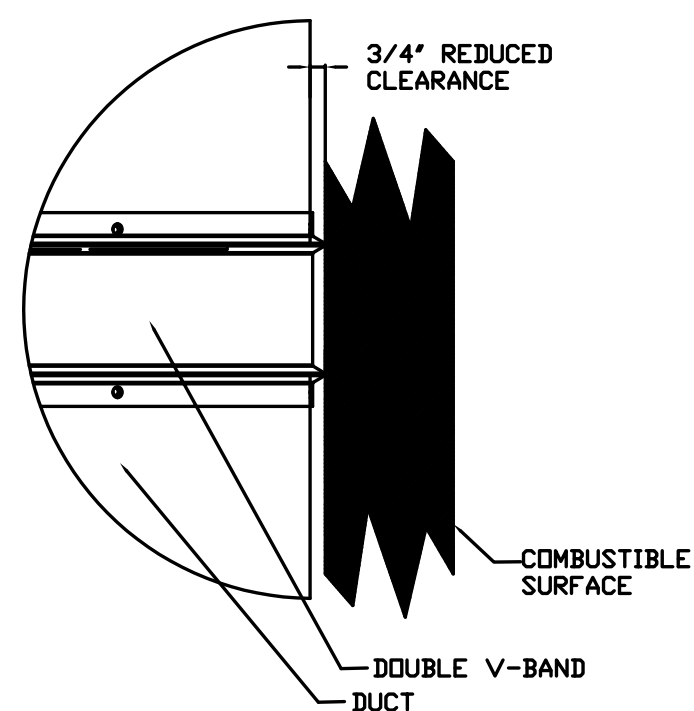
DOUBLE WALL GREASE DUCT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S "INSTALLATION, OPERATION AND MAINTENANCE MANUAL," ETL LISTING, STATE AND LOCAL CODES. FANS SHALL BE SUPPORTED INDEPENDENTLY FROM THE GREASE DUCT SECTIONS. PROTECT GREASE DUCT FROM TWISTING OR MOVEMENT CAUSED BY FAN TORQUE OR VIBRATION.

CERTIFICATIONS:

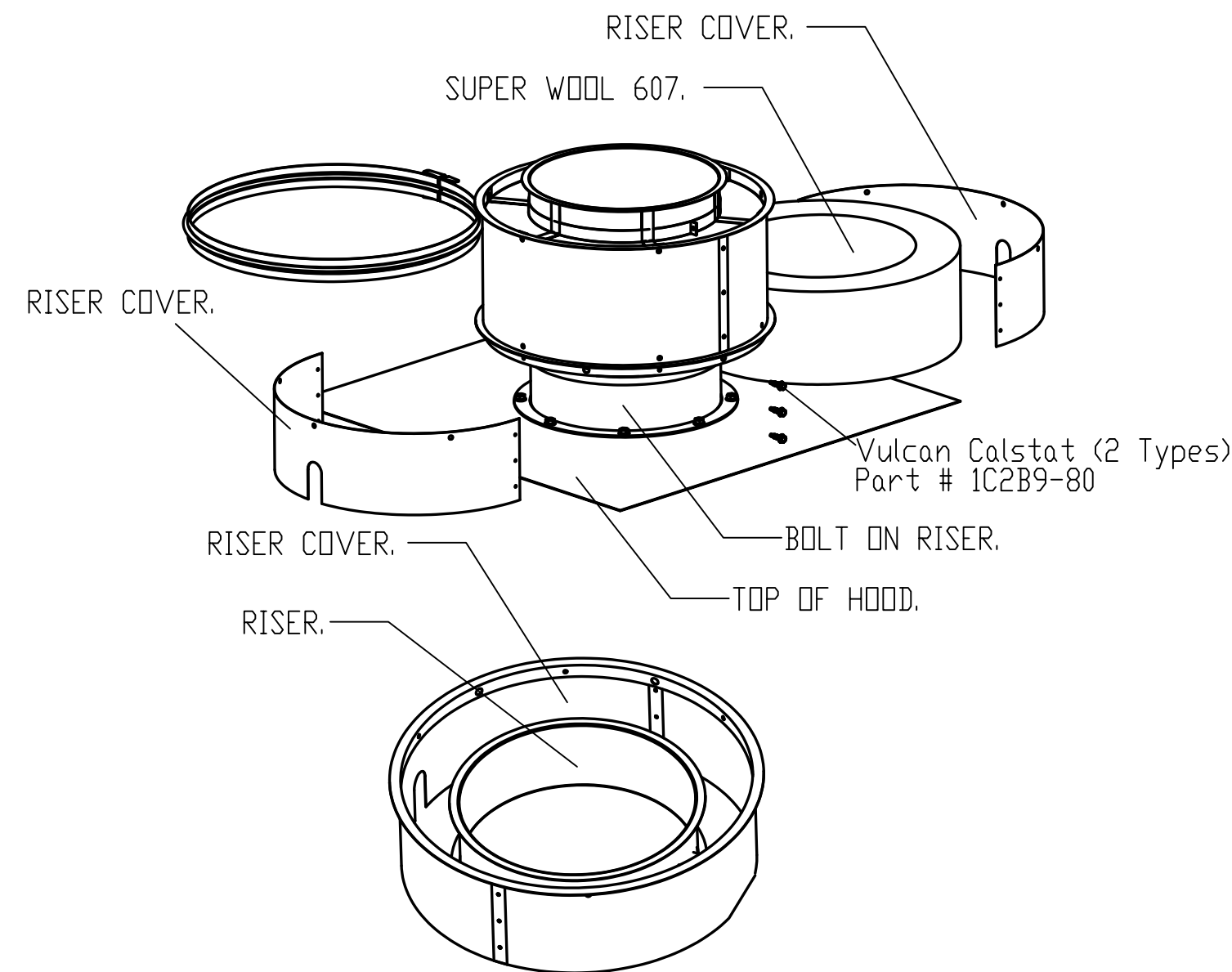
THE DW-2R SERIES HAS BEEN CERTIFIED BY ITS. THIS CERTIFICATION MARK INDICATES THAT THE PRODUCT HAS BEEN TESTED TO AND HAS MET THE MINIMUM REQUIREMENTS OF A WIDELY RECOGNIZED (CONSENSUS) U.S. AND CANADIAN PRODUCTS SAFETY STANDARD, THAT THE MANUFACTURING SITE HAS BEEN AUDITED, AND THAT THE APPLICANT HAS AGREED TO A PROGRAM OF PERIODIC FACTORY FOLLOW-UP INSPECTIONS TO VERIFY CONTINUED PERFORMANCE.

FOR QUESTIONS, CALL
 KURT CURTIS, REGIONAL MANAGER
 PHONE: (360) 828-5418
 FAX: (919) 227-5983
 EMAIL: kurt.curtis@captiveaire.com

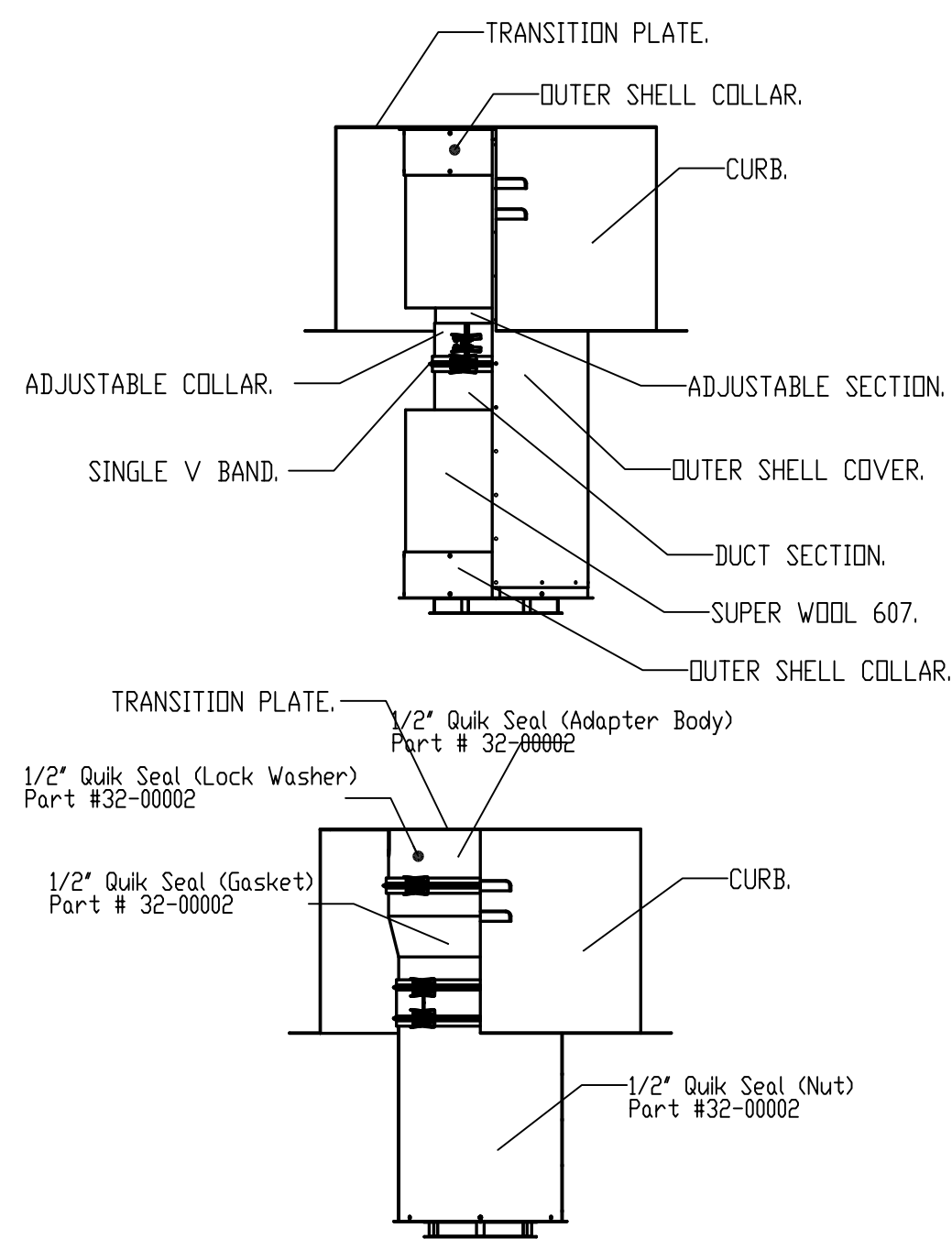
**REDUCED CLEARANCE
 DETAIL**



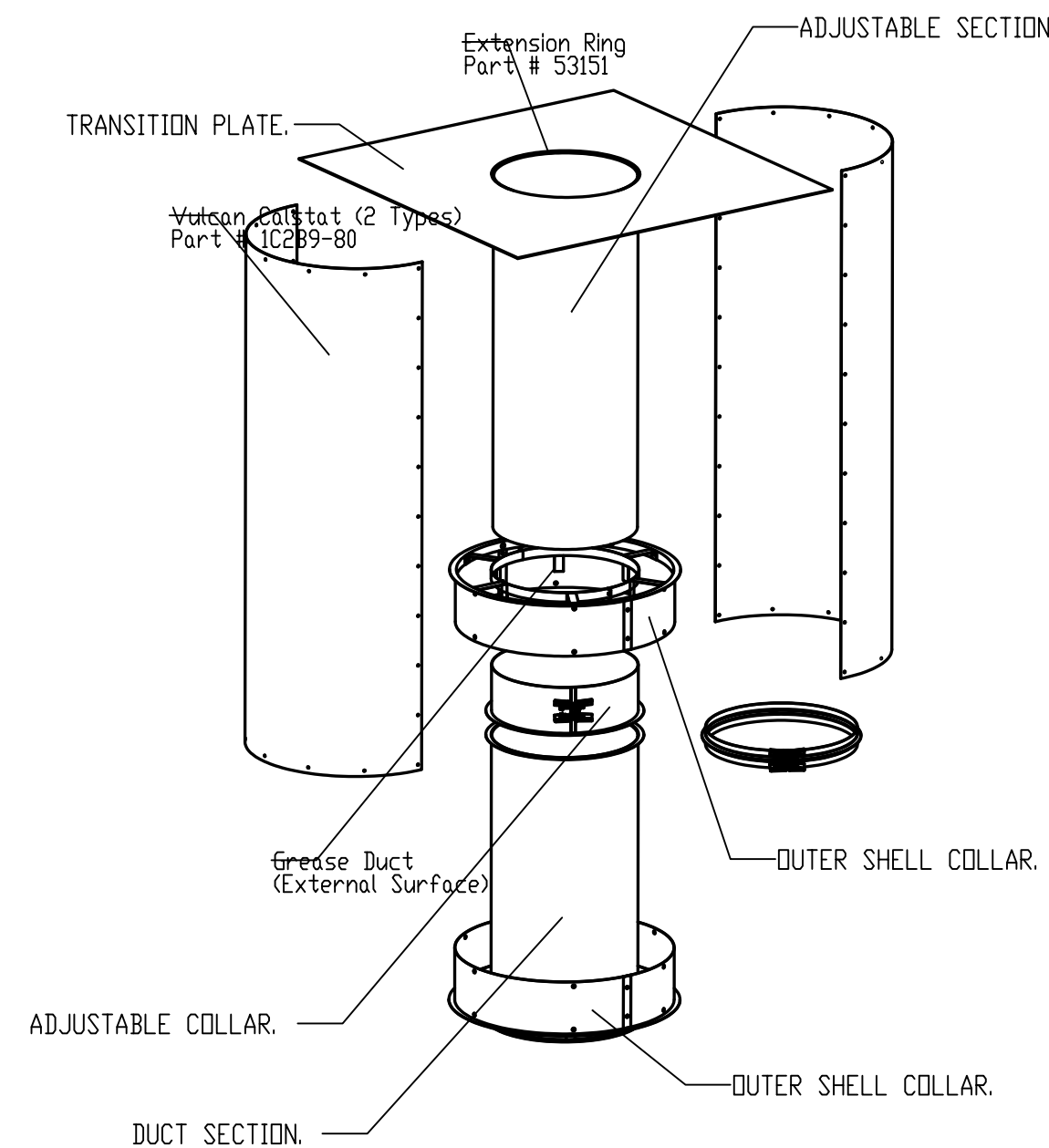
DOUBLE WALL DUCT RISER COVER



DOUBLE WALL DUCT TRANSITION PLATE



DOUBLE WALL DUCT ADJUSTABLE SECTION



REVISIONS	
DESCRIPTION	DATE

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DATE: 6/6/2016
 DWG.#: 2674919
 DRAWN BY: kcurtis
 SCALE: 3/4" = 1'-0"
 MASTER DRAWING

SHEET NO. 4

HOLST

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 PORTLAND, OR
 97214

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 SERVICE
 CENTER**

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JOB NO. 15043.00



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PERMIT SET	07.15.16

revision: date:

title: MECHANICAL
 GREASE DUCT
 DETAIL

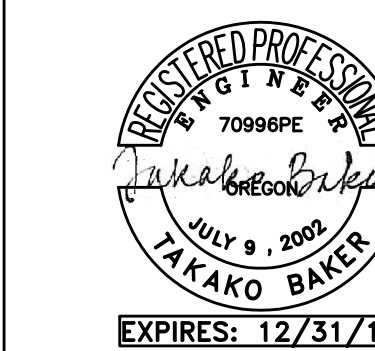
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ASIAN HEALTH & SERVICE CENTER

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issue:	date:
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100% DD	02.05.16
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75% CD	04.27.16
PERMIT SET	07.15.16

revision: date:

title: **MECHANICAL VENTILATION SCHEDULE**

sheet:

M6.07

ASHRAE Standard 62.1-2004-2010

By MFIA Inc.

System Ventilation Requirements

AHU Location	Description	∑ Vpz cfm	Ps People	∑ Pz People	D Ps / ∑ Pz	Vou cfm	Vps cfm	Xs	Ev	Vot cfm	%OA Vot / Vps
Alternative 1											
Zone	RTU-1	Cooling	2,851	138	138	1.00	1,056	2,851	0.370	1,056	37.0
		Heating	1,056	138	138	1.00	1,056	1,056	1.000	1,056	100.0
Zone	RTU-2	Cooling	2,064	116	116	1.00	891	2,064	0.432	891	43.2
		Heating	891	116	116	1.00	891	891	1.000	891	100.0
Zone	RTU-3	Cooling	2,441	170	170	1.00	1,307	2,441	0.536	1,307	53.6
		Heating	1,307	170	170	1.00	1,307	1,307	1.000	1,307	100.0
Room	VRV-1	Cooling	10,610	47	47	1.00	873	10,610	0.082	873	8.2
		Heating	10,610	47	47	1.00	873	10,610	0.082	873	8.2
Zone	Data Room	Cooling	0	0	0	0.00	0	0	0.000	0	0.0
		Heating	0	0	0	0.00	0	0	0.000	0	0.0
Room Direct OA	Freeze Proof	Cooling	0	0	0	0.00	0	0	0.000	0	0.0
		Heating	0	0	0	0.00	0	0	0.000	0	0.0
Room	VRV-2	Cooling	11,148	120	120	1.00	1,751	11,148	0.157	1,751	15.7
		Heating	11,148	120	120	1.00	1,751	11,148	0.157	1,751	15.7

* Apply Single Zone Ventilation Calculation

Project Name: Asian Health Center
Dataset Name: 9097LEED.TRC

TRACE® 700 v6.3.2 calculated at 12:13 PM on 04/29/2016
Alternative - 1 ASHRAE Standard 62.1-2004/2007 Report Page 1 of 10

ASHRAE Standard 62.1-2004-2010

By MFIA Inc.

Ventilation Parameters

System Zone Room	Occupancy Category	Rp cfm / p	Pz People	Ra cfm/ft²	Az ft²	Vbz cfm	Std 170 Min OA ach	— Cooling — Ez	Voz cfm	— Heating — Ez	Voz cfm
Alternative 1											
321 Multi Purpose 1	Multi-purpose assembly (IEQ Cr 2)	6.50	137.69	0.08	2,065	1,056		1.00	1,056	1.00	1,056
RTU-1		6.50	137.69	0.08	2,065	1,056			1,056		1,056
322 Multi Purpose 2	Multi-purpose assembly (IEQ Cr 2)	6.50	116.23	0.08	1,743	891		1.00	891	1.00	891
RTU-2		6.50	116.23	0.08	1,743	891			891		891
323 Multi Purpose 3	Multi-purpose assembly (IEQ Cr 2)	6.50	170.45	0.08	2,557	1,307		1.00	1,307	1.00	1,307
RTU-3		6.50	170.45	0.08	2,557	1,307			1,307		1,307
100 Lobby	Corridors (IEQ Cr 2)	0.00	3.62	0.08	1,086	85		1.00	85	1.00	85
FC-8-9		0.00	3.62	0.08	1,086	85			85		85
110 Waiting	Corridors (IEQ Cr 2)	0.00	0.85	0.08	254	20		1.00	20	1.00	20
CC-14		0.00	0.85	0.08	254	20			20		20
112 Consult	Office space (IEQ Cr 2)	6.50	0.56	0.08	80	10		1.00	10	1.00	10
113 Consult	Office space (IEQ Cr 2)	6.50	0.51	0.08	73	9		1.00	9	1.00	9
116 Toilet	Corridors (IEQ Cr 2)	0.00	0.27	0.08	80	6		1.00	6	1.00	6
115 Toilet	Corridors (IEQ Cr 2)	0.00	0.29	0.08	87	7		1.00	7	1.00	7
114 Consult	Office space (IEQ Cr 2)	6.50	0.73	0.08	105	13		1.00	13	1.00	13
117 Consult	Office space (IEQ Cr 2)	6.50	0.71	0.08	101	12		1.00	12	1.00	12
118 Consult	Office space (IEQ Cr 2)	6.50	0.72	0.08	103	13		1.00	13	1.00	13
119 Consult	Office space (IEQ Cr 2)	6.50	0.72	0.08	103	13		1.00	13	1.00	13
111 Clinic Corridor	Corridors (IEQ Cr 2)	0.00	1.03	0.08	309	24		1.00	24	1.00	24
FC-1		4.64	5.54	0.08	1,041	107			107		107
120 Consult	Office space (IEQ Cr 2)	6.50	1.73	0.08	248	31		1.00	31	1.00	31
CC-8		6.50	1.73	0.08	248	31			31		31
140 Shell Office	Office space (IEQ Cr 2)	6.50	34.18	0.08	4,887	603		1.00	603	1.00	603
FC-SHELL		6.50	34.18	0.08	4,887	603			603		603
S1 Stair	Corridors (IEQ Cr 2)	0.00	1.19	0.08	356	28		1.00	28	1.00	28
CC-17-18		0.00	1.19	0.08	356	28			28		28
VRV-1		5.50	47.10	0.08	7,872	873			873		873
309 Lobby	Corridors (IEQ Cr 2)	0.00	2.60	0.08	779	61		1.00	61	1.00	61

Project Name: Asian Health Center
Dataset Name: 9097LEED.TRC

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Ventilation Parameters

System Zone Room	Occupancy Category	Rp cfm / p	Pz People	Ra cfm/ft²	Az ft²	Vbz cfm	Std 170 Min OA ach	— Cooling — Ez	Voz cfm	— Heating — Ez	Voz cfm
Alternative 1											
CC-16		0.00	2.60	0.08	779	61			61		61
305 Consult	Office space (IEQ Cr 2)	6.50	0.84	0.08	120	15		1.00	15	1.00	15
306 Consult	Office space (IEQ Cr 2)	6.50	0.67	0.08	96	12		1.00	12	1.00	12
307 Consult	Office space (IEQ Cr 2)	6.50	0.67	0.08	96	12		1.00	12	1.00	12
308 Consult	Office space (IEQ Cr 2)	6.50	0.69	0.08	99	12		1.00	12	1.00	12
304 RESOURCE	Office space (IEQ Cr 2)	6.50	1.56	0.08	223	28		1.00	28	1.00	28
FC-2		6.50	4.43	0.08	633	78			78		78
300 Corridor	Corridors (IEQ Cr 2)	0.00	2.69	0.08	807	63		1.00	63	1.00	63
301 Kitchen	Conference/ meeting (IEQ Cr 2)	6.50	12.65	0.08	380	112		1.00	112	1.00	112
302 Restroom	Corridors (IEQ Cr 2)	0.00	0.82	0.08	245	19		1.00	19	1.00	19
303 Restroom	Corridors (IEQ Cr 2)	0.00	0.82	0.08	245	19		1.00	19	1.00	19
FC-3		4.85	16.97	0.08	1,676	213			213		213
214 Office	Office space (IEQ Cr 2)	6.50	0.80	0.08	115	14		1.00	14	1.00	14
215 Office	Office space (IEQ Cr 2)	6.50	0.86	0.08	123	15		1.00	15	1.00	15
216 Office	Office space (IEQ Cr 2)	6.50	0.82	0.08	118	15		1.00	15	1.00	15
217 Office	Office space (IEQ Cr 2)	6.50	0.82	0.08	118	15		1.00	15	1.00	15
218 Office	Office space (IEQ Cr 2)	6.50	4.00	0.08	133	36		1.00	36	1.00	36
FC-5		6.50	7.31	0.08	606	95			95		95
230 Open Office	Office space (IEQ Cr 2)	6.50	37.13	0.08	5,310	656		1.00	656	1.00	656
CC-1 TO CC-7		6.50	37.13	0.08	5,310	656			656		656
201 Conference	Conference/ meeting (IEQ Cr 2)	6.50	10.00	0.08	331	91		1.00	91	1.00	91
CC-13		6.50	10.00	0.08	331	91			91		91
200 Corridor	Corridors (IEQ Cr 2)	0.00	3.43	0.08	1,030	80		1.00	80	1.00	80
219 Storage	Corridors (IEQ Cr 2)	0.00	0.11	0.08	32	2		1.00	2	1.00	2
229 Copy	Office space (IEQ Cr 2)	6.50	1.19	0.08	169	21		1.00	21	1.00	21
226-227 Office	Office space (IEQ Cr 2)	6.50	0.95	0.08	135	17		1.00	17	1.00	17
231 WELLNESS	Office space (IEQ Cr 2)	6.50	1.42	0.08	204	25		1.00	25	1.00	25
FC-4		3.26	7.09	0.08	1,570	146			146		146
212 Office	Office space (IEQ Cr 2)	6.50	1.91	0.08	273	34		1.00	34	1.00	34
CC-10		6.50	1.91	0.08	273	34			34		34
207 Office	Office space (IEQ Cr 2)	6.50	1.08	0.08	154	19		1.00	19	1.00	19

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Dataset Name: 9097LEED.TRC

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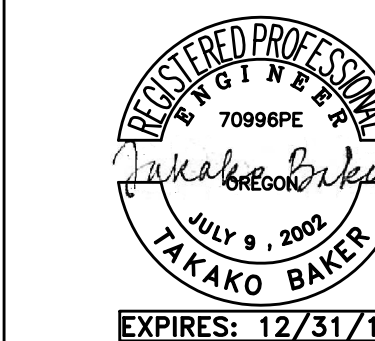
Ventilation Parameters

System Zone Room	Occupancy Category	Rp cfm / p	Pz People	Ra cfm/ft²	Az ft²	Vbz cfm	Std 170 Min OA ach	— Cooling — Ez	Voz cfm	— Heating — Ez	Voz cfm
Alternative 1											
208 Office	Office space (IEQ Cr 2)	6.50	1.08	0.08	154	19		1.00	19	1.00	19
209 Office	Office space (IEQ Cr 2)	6.50	1.08	0.08	154	19		1.00	19	1.00	19
210 Office	Office space (IEQ Cr 2)	6.50	1.08	0.08	154	19		1.00	19	1.00	19
211 Office	Office space (IEQ Cr 2)	6.50	1.08	0.08	154	19		1.00	19	1.00	19
FC-6		6.50	5.39	0.08	771	95			95		95
213 Office	Office space (IEQ Cr 2)	6.50	1.09	0.08	155	19		1.00	19	1.00	19
CC-9		6.50	1.09	0.08	155	19			19		19

ASIAN HEALTH & SERVICE CENTER

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Ventilation Calculations for Cooling Design

System Zone Room	Box Type	Vpz cfm	Vfan cfm	Vdz cfm	Vpz-min cfm	Voz-clg cfm	Zd	Ep	Er	Fa	Fb	Fc	Evz
Alternative 1													
321 Multi Purpose 1	None	2,851	2,851	2,851	1,056	1,056	1,000	1.00	0.00	1.00	1.00	1.00	0.370 *
RTU-1		2,851	2,851	2,851	1,056	1,056							0.370
RTU-1		2,851	2,851	2,851	1,056	1,056							0.370
322 Multi Purpose 2	None	2,064	2,064	2,064	891	891	1,000	1.00	0.00	1.00	1.00	1.00	0.432 *
RTU-2		2,064	2,064	2,064	891	891							0.432
RTU-2		2,064	2,064	2,064	891	891							0.432
323 Multi Purpose 3	None	2,441	2,441	2,441	1,307	1,307	1,000	1.00	0.00	1.00	1.00	1.00	0.536 *
RTU-3		2,441	2,441	2,441	1,307	1,307							0.536
RTU-3		2,441	2,441	2,441	1,307	1,307							0.536
100 Lobby	Single Fan CV	2,103	2,103	2,103	210	85	0.403	1.00	0.00	1.00	1.00	1.00	0.000
FC-8-9		2,103	2,103	2,103	210	85							1.000
110 Waiting	Single Fan CV	136	136	136	20	20	1,000	1.00	0.00	1.00	1.00	1.00	0.000
CC-14		136	136	136	20	20							1.000
112 Consult	Single Fan CV	29	29	29	10	10	1,000	1.00	0.00	1.00	1.00	1.00	0.000
113 Consult	Single Fan CV	27	27	27	9	9	1,000	1.00	0.00	1.00	1.00	1.00	0.000
116 Toilet	Single Fan CV	30	30	30	6	6	1,000	1.00	0.00	1.00	1.00	1.00	0.000
115 Toilet	Single Fan CV	33	33	33	7	7	1,000	1.00	0.00	1.00	1.00	1.00	0.000
114 Consult	Single Fan CV	39	39	39	13	13	1,000	1.00	0.00	1.00	1.00	1.00	0.000
117 Consult	Single Fan CV	37	37	37	12	12	1,000	1.00	0.00	1.00	1.00	1.00	0.000
118 Consult	Single Fan CV	38	38	38	13	13	1,000	1.00	0.00	1.00	1.00	1.00	0.000
119 Consult	Single Fan CV	38	38	38	13	13	1,000	1.00	0.00	1.00	1.00	1.00	0.000
111 Clinic Corridor	Single Fan CV	126	126	126	24	24	1,000	1.00	0.00	1.00	1.00	1.00	0.000
FC-1		396	396	396	107	107							1.000
120 Consult	Single Fan CV	898	898	898	90	31	0.340	1.00	0.00	1.00	1.00	1.00	0.000
CC-8		898	898	898	90	31							1.000
140 Shell Office	Single Fan CV	4,543	4,543	4,543	603	603	1,000	1.00	0.00	1.00	1.00	1.00	0.000
FC-SHELL		4,543	4,543	4,543	603	603							1.000
S1 Stair	Single Fan CV	2,535	2,535	2,535	253	28	0.110	1.00	0.00	1.00	1.00	1.00	0.000
CC-17-18		2,535	2,535	2,535	253	28							1.000
VRV-1		10,610	10,610	10,610	1,284	873							1.000
Data Room		0	0	0	0	0							0.000
Data Room		0	0	0	0	0							0.000
Freeze Proof		0	0	0	0	0							0.000

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Ventilation Calculations for Cooling Design

System Zone Room	Box Type	Vpz cfm	Vfan cfm	Vdz cfm	Vpz-min cfm	Voz-clg cfm	Zd	Ep	Er	Fa	Fb	Fc	Evz
Alternative 1													
309 Lobby	Single Fan CV	389	389	389	61	61	1,000	1.00	0.00	1.00	1.00	1.00	0.000
CC-16		389	389	389	61	61							1.000
305 Consult	Single Fan CV	64	64	64	15	15	1,000	1.00	0.00	1.00	1.00	1.00	0.000
306 Consult	Single Fan CV	58	58	58	12	12	1,000	1.00	0.00	1.00	1.00	1.00	0.000
307 Consult	Single Fan CV	58	58	58	12	12	1,000	1.00	0.00	1.00	1.00	1.00	0.000
308 Consult	Single Fan CV	89	89	89	12	12	1,000	1.00	0.00	1.00	1.00	1.00	0.000
304 RESOURCE	Single Fan CV	216	216	216	28	28	1,000	1.00	0.00	1.00	1.00	1.00	0.000
FC-2		485	485	485	78	78							1.000
300 Corridor	Single Fan CV	461	461	461	63	63	1,000	1.00	0.00	1.00	1.00	1.00	0.000
301 Kitchen	Single Fan CV	336	336	336	112	112	1,000	1.00	0.00	1.00	1.00	1.00	0.000
302 Restroom	Single Fan CV	93	93	93	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000
303 Restroom	Single Fan CV	93	93	93	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000
FC-3		984	984	984	213	213							1.000
214 Office	Single Fan CV	105	105	105	14	14	1,000	1.00	0.00	1.00	1.00	1.00	0.000
215 Office	Single Fan CV	107	107	107	15	15	1,000	1.00	0.00	1.00	1.00	1.00	0.000
216 Office	Single Fan CV	106	106	106	15	15	1,000	1.00	0.00	1.00	1.00	1.00	0.000
217 Office	Single Fan CV	106	106	106	15	15	1,000	1.00	0.00	1.00	1.00	1.00	0.000
218 Office	Single Fan CV	129	129	129	36	36	1,000	1.00	0.00	1.00	1.00	1.00	0.000
FC-5		551	551	551	95	95							1.000
230 Open Office	Single Fan CV	5,539	5,539	5,539	656	656	1,000	1.00	0.00	1.00	1.00	1.00	0.000
CC-1 TO CC-7		5,539	5,539	5,539	656	656							1.000
201 Conference	Single Fan CV	767	767	767	91	91	1,000	1.00	0.00	1.00	1.00	1.00	0.000
CC-13		767	767	767	91	91							1.000
200 Corridor	Single Fan CV	393	393	393	80	80	1,000	1.00	0.00	1.00	1.00	1.00	0.000
219 Storage	Single Fan CV	12	12	12	2	2	1,000	1.00	0.00	1.00	1.00	1.00	0.000
229 Copy	Single Fan CV	63	63	63	21	21	1,000	1.00	0.00	1.00	1.00	1.00	0.000
226-227 Office	Single Fan CV	50	50	50	17	17	1,000	1.00	0.00	1.00	1.00	1.00	0.000
231 WELLNESS	Single Fan CV	76	76	76	25	25	1,000	1.00	0.00	1.00	1.00	1.00	0.000
FC-4		594	594	594	146	146							1.000
212 Office	Single Fan CV	279	279	279	34	34	1,000	1.00	0.00	1.00	1.00	1.00	0.000
CC-10		279	279	279	34	34							1.000
207 Office	Single Fan CV	77	77	77	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000
208 Office	Single Fan CV	77	77	77	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000

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Ventilation Calculations for Cooling Design

System Zone Room	Box Type	Vpz cfm	Vfan cfm	Vdz cfm	Vpz-min cfm	Voz-clg cfm	Zd	Ep	Er	Fa	Fb	Fc	Evz
Alternative 1													
209 Office	Single Fan CV	77	77	77	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000
210 Office	Single Fan CV	77	77	77	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000
211 Office	Single Fan CV	77	77	77	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000
FC-6		385	385	385	95	95							1.000
213 Office	Single Fan CV	165	165	165	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000
CC-9		165	165	165	19	19							1.000
204 Restroom	Single Fan CV	96	96	96	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000
205 Restroom	Single Fan CV	96	96	96	19	19	1,000	1.00	0.00	1.00	1.00	1.00	0.000
206 Breakroom	Single Fan CV	300	300	300	99	99	1,000	1.00	0.00	1.00	1.00	1.00	0.000
FC-7		492	492	492	137	137							1.000
203 Conference	Single Fan CV	336	336	336	95	95	1,000	1.00	0.00	1.00	1.00	1.00	0.000
CC-11		336	336	336	95	95							1.000
202 Meeting	Single Fan CV	180	180	180	34	34	1,000	1.00	0.00	1.00	1.00	1.00	0.000
CC-12		180	180	180	34	34							1.000
VRV-2		11,148	11,148	11,148	1,751	1,751							1.000

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PERMIT SET

07.15.2016

Issue:	Date:
100% SD	10.15.15
50% DD	12.09.15
100% DD	02.05.16
50% CD	03.30.16
75% CD	04.27.16
PERMIT SET	07.15.16

revision: date:

title: **MECHANICAL VENTILATION SCHEDULE**

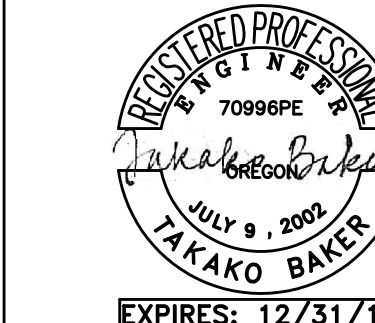
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M6.08

ASIAN HEALTH & SERVICE CENTER

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PERMIT SET

07.15.2016

Issue:	date:
100% SD	10.15.15
50% DD	12.09.15
100% DD	02.05.16
50% CD	03.30.16
75% CD	04.27.16
PERMIT SET	07.15.16

revision: date:

title:

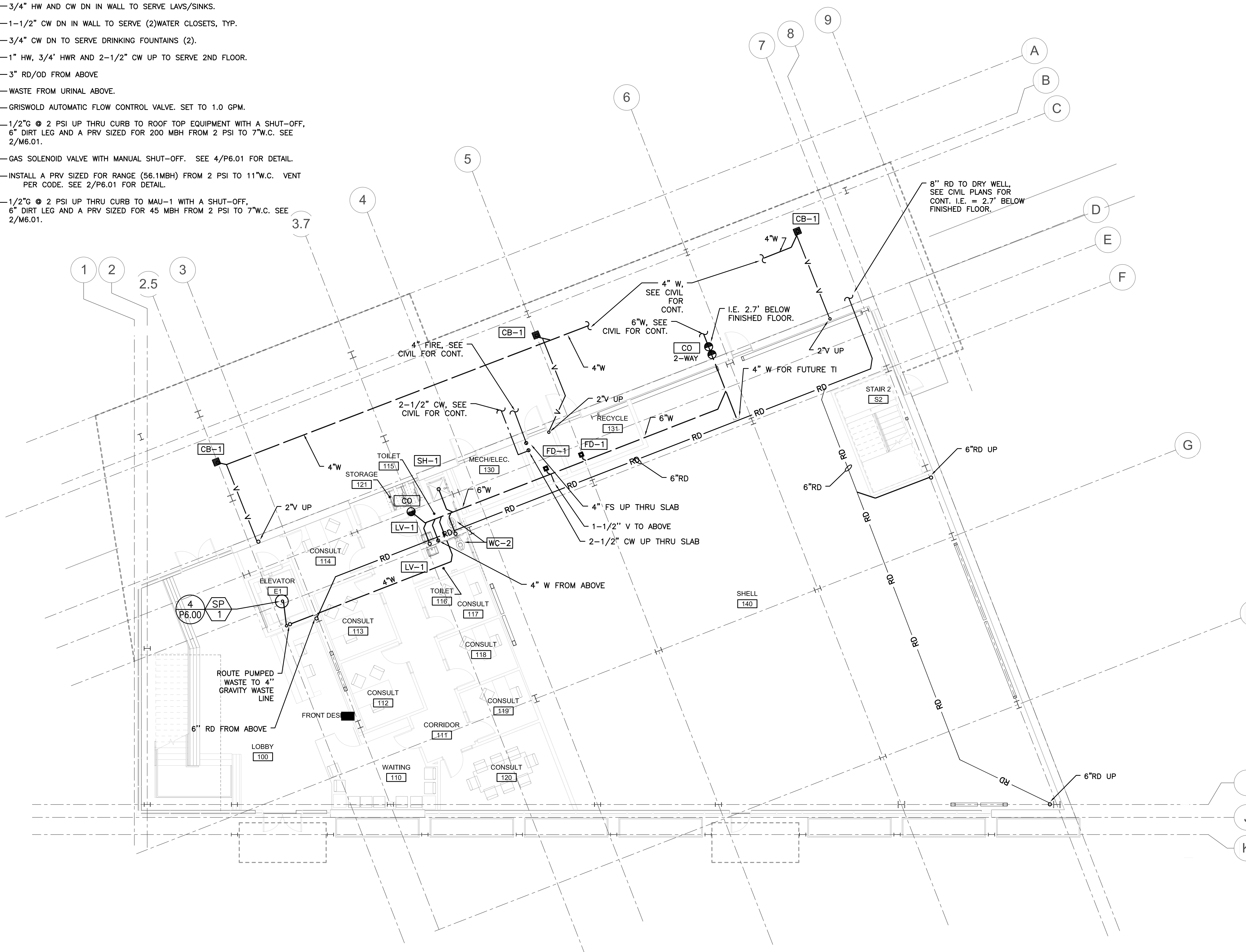
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PLUMBING
PLAN**

sheet:

P2.00

PLUMBING NOTES

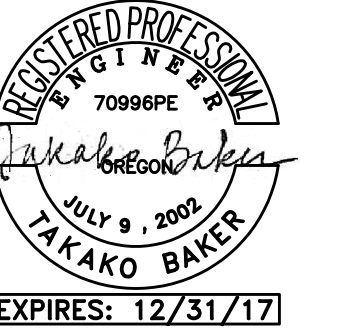
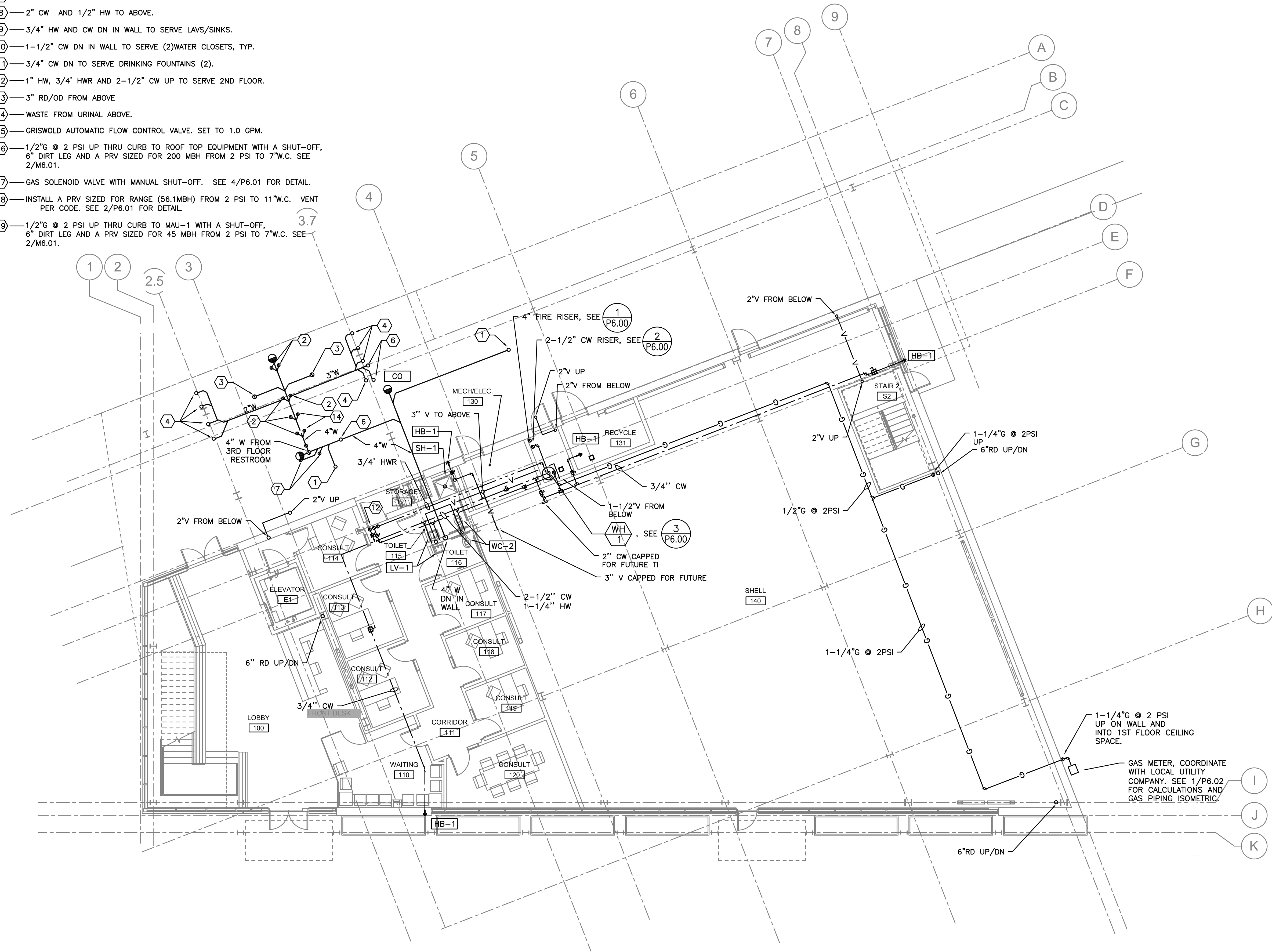
- ①—WASTE FROM SERVICE SINK ABOVE.
- ②—WASTE FROM WATER CLOSET ABOVE.
- ③—WASTE FROM FLOOR DRAIN ABOVE.
- ④—WASTE FROM LAVATORY(S) ABOVE.
- ⑤—3" WASTE DN IN WALL.
- ⑥—WASTE FROM SINK ABOVE.
- ⑦—WASTE FROM DRINKING FOUNTAIN ABOVE.
- ⑧—2" CW AND 1/2" HW TO ABOVE.
- ⑨—3/4" HW AND CW DN IN WALL TO SERVE LAVS/SINKS.
- ⑩—1-1/2" CW DN IN WALL TO SERVE (2)WATER CLOSETS, TYP.
- ⑪—3/4" CW DN TO SERVE DRINKING FOUNTAINS (2).
- ⑫—1" HW, 3/4" HWR AND 2-1/2" CW UP TO SERVE 2ND FLOOR.
- ⑬—3" RD/OD FROM ABOVE
- ⑭—WASTE FROM URINAL ABOVE.
- ⑮—GRISWOLD AUTOMATIC FLOW CONTROL VALVE. SET TO 1.0 GPM.
- ⑯—1/2"G @ 2 PSI UP THRU CURB TO ROOF TOP EQUIPMENT WITH A SHUT-OFF, 6" DIRT LEG AND A PRV SIZED FOR 200 MBH FROM 2 PSI TO 7"W.C. SEE 2/M6.01.
- ⑰—GAS SOLENOID VALVE WITH MANUAL SHUT-OFF. SEE 4/P6.01 FOR DETAIL.
- ⑱—INSTALL A PRV SIZED FOR RANGE (56.1MBH) FROM 2 PSI TO 11"W.C. VENT PER CODE. SEE 2/P6.01 FOR DETAIL.
- ⑲—1/2"G @ 2 PSI UP THRU CURB TO MAU-1 WITH A SHUT-OFF, 6" DIRT LEG AND A PRV SIZED FOR 45 MBH FROM 2 PSI TO 7"W.C. SEE 2/M6.01.



PROJECT NORTH
1 UNDERSLAB PLUMBING PLAN
SCALE: 1/8" = 1'-0"
P2.00

PLUMBING NOTES (X)

- ①—WASTE FROM SERVICE SINK ABOVE.
- ②—WASTE FROM WATER CLOSET ABOVE.
- ③—WASTE FROM FLOOR DRAIN ABOVE.
- ④—WASTE FROM LAVATORY(S) ABOVE.
- ⑤—3" WASTE DN IN WALL.
- ⑥—WASTE FROM SINK ABOVE.
- ⑦—WASTE FROM DRINKING FOUNTAIN ABOVE.
- ⑧—2" CW AND 1/2" HW TO ABOVE.
- ⑨—3/4" HW AND CW DN IN WALL TO SERVE LAVS/SINKS.
- ⑩—1-1/2" CW DN IN WALL TO SERVE (2) WATER CLOSETS, TYP.
- ⑪—3/4" CW DN TO SERVE DRINKING FOUNTAINS (2).
- ⑫—1" HW, 3/4" HWR AND 2-1/2" CW UP TO SERVE 2ND FLOOR.
- ⑬—3" RD/OD FROM ABOVE
- ⑭—WASTE FROM URINAL ABOVE.
- ⑮—GRISWOLD AUTOMATIC FLOW CONTROL VALVE. SET TO 1.0 GPM.
- ⑯—1/2"G @ 2 PSI UP THRU CURB TO ROOF TOP EQUIPMENT WITH A SHUT-OFF, 6" DIRT LEG AND A PRV SIZED FOR 200 MBH FROM 2 PSI TO 7"W.C. SEE 2/M6.01.
- ⑰—GAS SOLENOID VALVE WITH MANUAL SHUT-OFF. SEE 4/P6.01 FOR DETAIL.
- ⑱—INSTALL A PRV SIZED FOR RANGE (56.1MBH) FROM 2 PSI TO 11"W.C. VENT PER CODE. SEE 2/P6.01 FOR DETAIL.
- ⑲—1/2"G @ 2 PSI UP THRU CURB TO MAU-1 WITH A SHUT-OFF, 6" DIRT LEG AND A PRV SIZED FOR 45 MBH FROM 2 PSI TO 7"W.C. SEE 2/M6.01.



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100% SD	10.15.15
50% DD	12.09.15
100% DD	02.05.16
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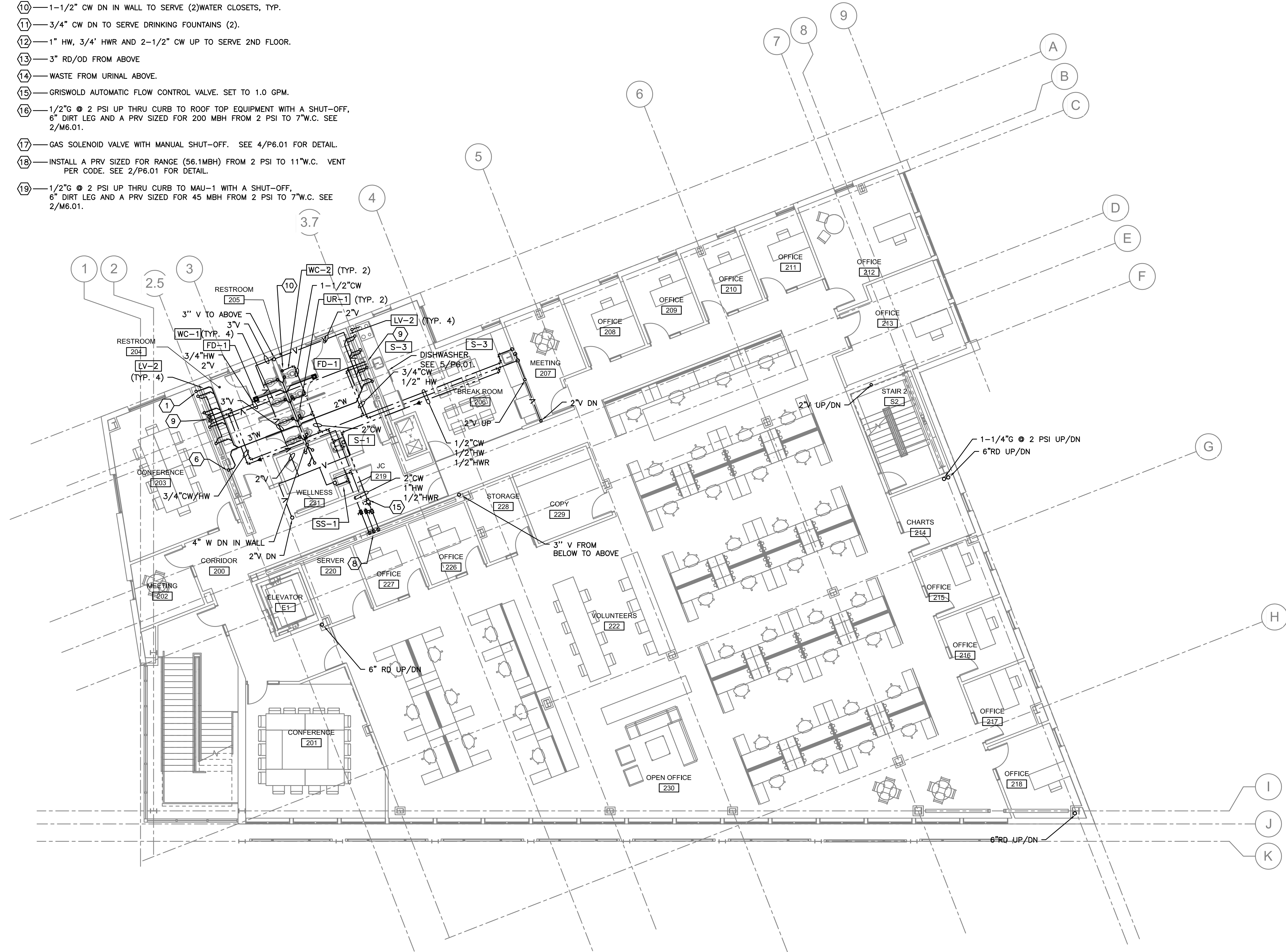
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FIRST FLOOR PLUMBING PLAN

sheet:

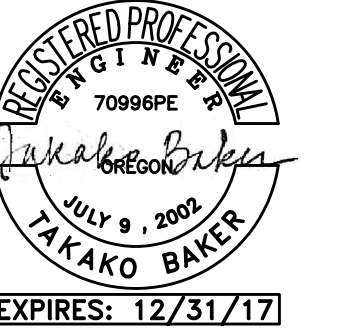
P2.01

PLUMBING NOTES (X)

- ①—WASTE FROM SERVICE SINK ABOVE.
- ②—WASTE FROM WATER CLOSET ABOVE.
- ③—WASTE FROM FLOOR DRAIN ABOVE.
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- ⑬—3" RD/OD FROM ABOVE
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- ⑯—1/2"G @ 2 PSI UP THRU CURB TO ROOF TOP EQUIPMENT WITH A SHUT-OFF, 6" DIRT LEG AND A PRV SIZED FOR 200 MBH FROM 2 PSI TO 7"W.C. SEE 2/M6.01.
- ⑰—GAS SOLENOID VALVE WITH MANUAL SHUT-OFF. SEE 4/P6.01 FOR DETAIL.
- ⑱—INSTALL A PRV SIZED FOR RANGE (56.1MBH) FROM 2 PSI TO 11"W.C. VENT PER CODE. SEE 2/P6.01 FOR DETAIL.
- ⑲—1/2"G @ 2 PSI UP THRU CURB TO MAU-1 WITH A SHUT-OFF, 6" DIRT LEG AND A PRV SIZED FOR 45 MBH FROM 2 PSI TO 7"W.C. SEE 2/M6.01.



PROJECT NORTH
1 SECOND FLOOR PLUMBING PLAN
 P2.02 SCALE: 1/8" = 1'-0"



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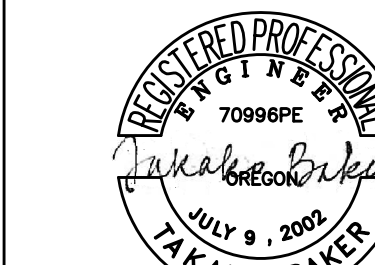
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P2.02

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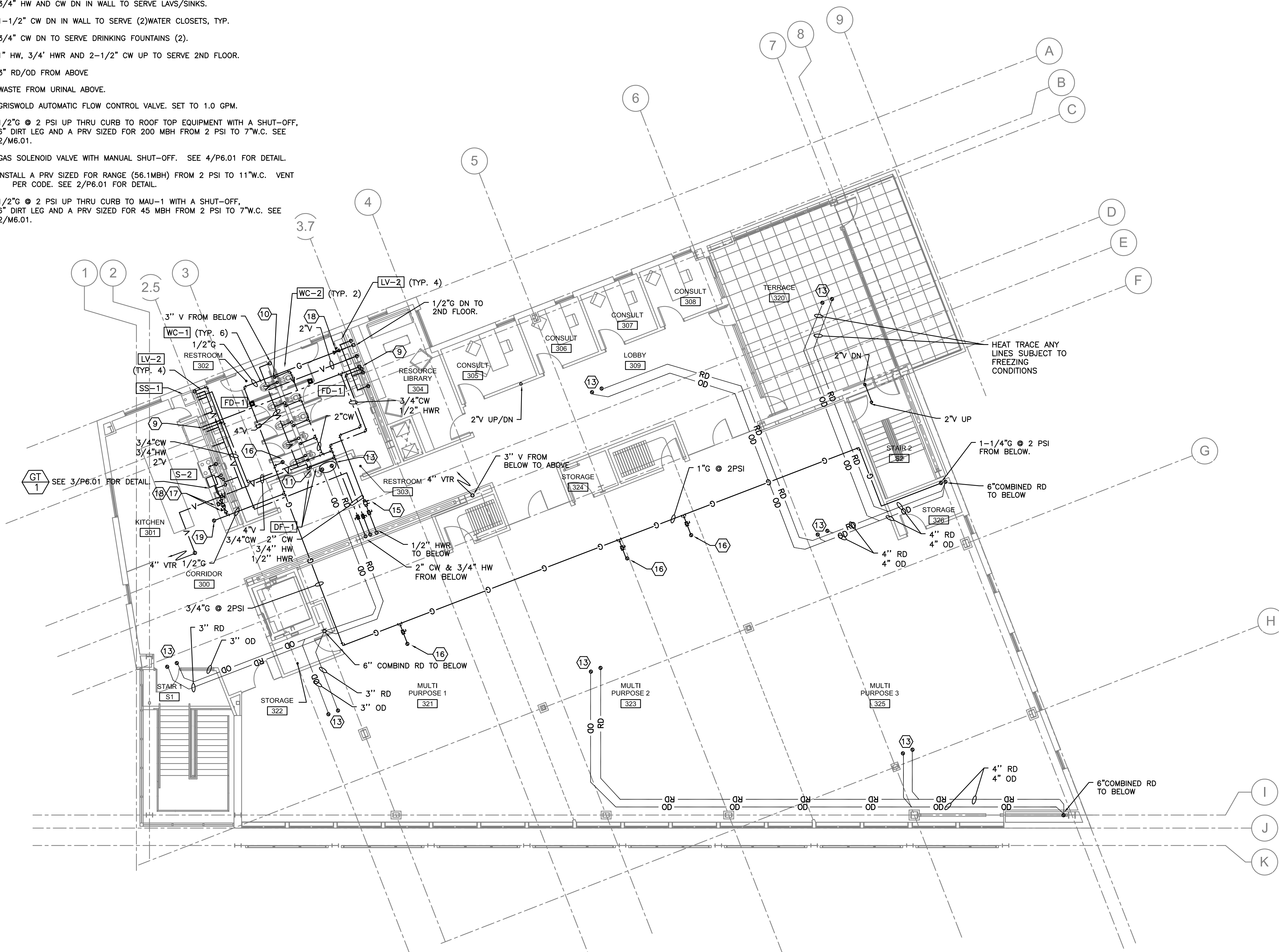
THIRD FLOOR PLUMBING PLAN

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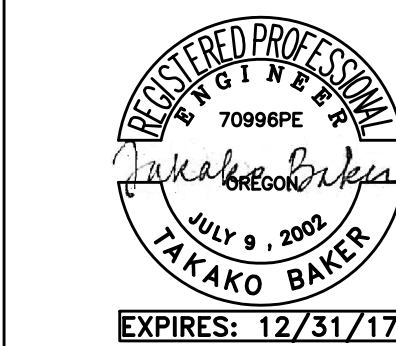
P2.03

PLUMBING NOTES (X)

- ①—WASTE FROM SERVICE SINK ABOVE.
- ②—WASTE FROM WATER CLOSET ABOVE.
- ③—WASTE FROM FLOOR DRAIN ABOVE.
- ④—WASTE FROM LAVATORY(S) ABOVE.
- ⑤—3" WASTE DN IN WALL.
- ⑥—WASTE FROM SINK ABOVE.
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- ⑱—INSTALL A PRV SIZED FOR RANGE (56.1MBH) FROM 2 PSI TO 11"W.C. VENT PER CODE. SEE 2/P6.01 FOR DETAIL.
- ⑲—1/2"G @ 2 PSI UP THRU CURB TO MAU-1 WITH A SHUT-OFF, 6" DIRT LEG AND A PRV SIZED FOR 45 MBH FROM 2 PSI TO 7"W.C. SEE 2/M6.01.



PROJECT NORTH
1 THIRD FLOOR PLUMBING PLAN
P2.03 SCALE: 1/8" = 1'-0"



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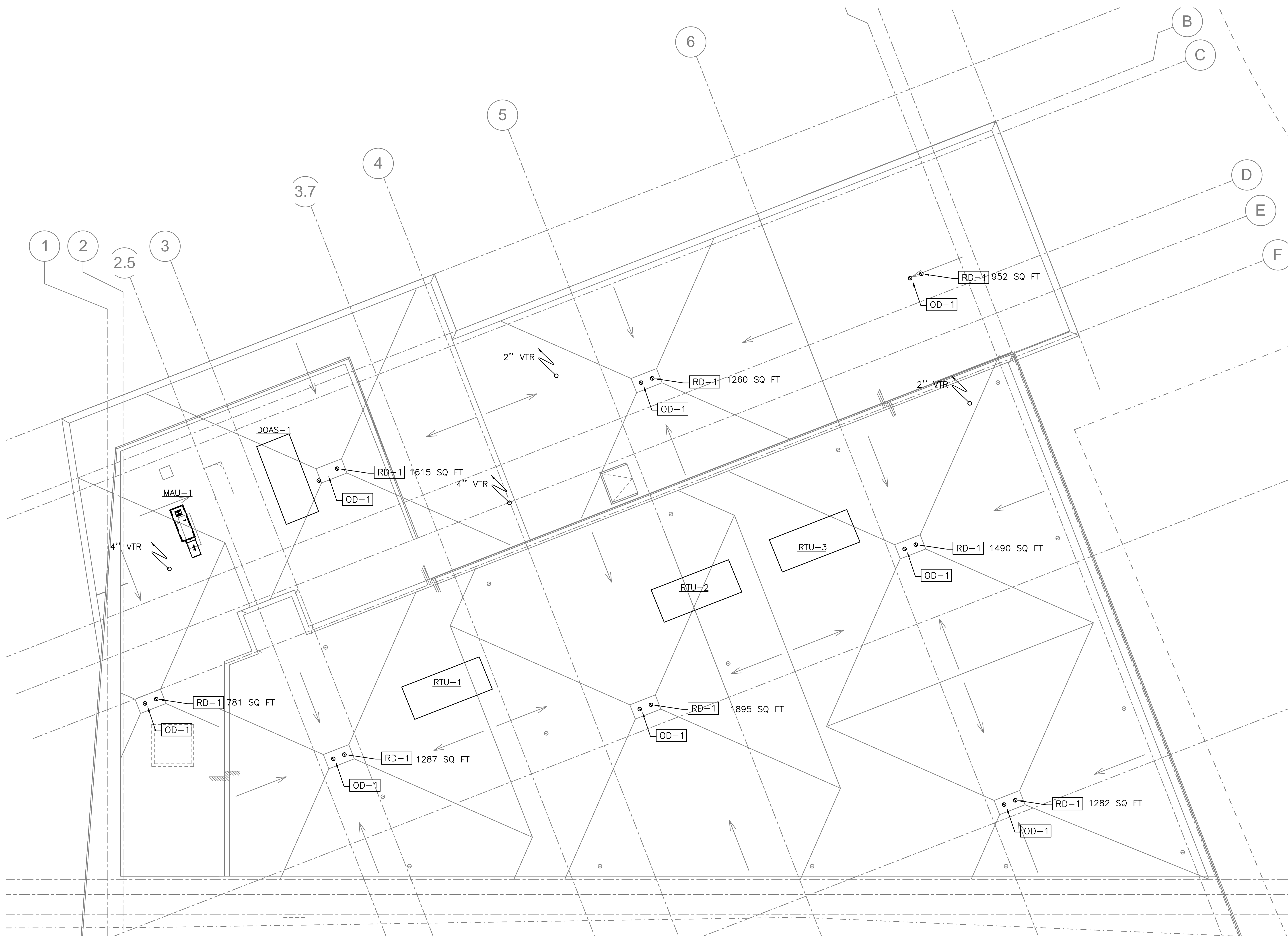
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title:
**PLUMBING
ROOF
PLAN**

sheet:
P2.04

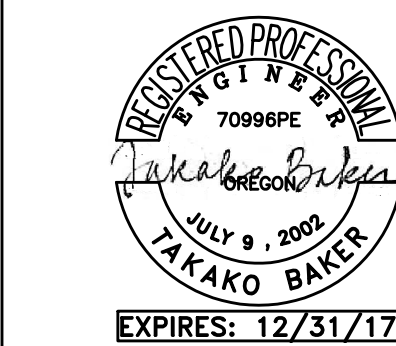


PROJECT NORTH
1 PLUMBING ROOF PLAN
SCALE: 1/8"=1'-0"
P2.04

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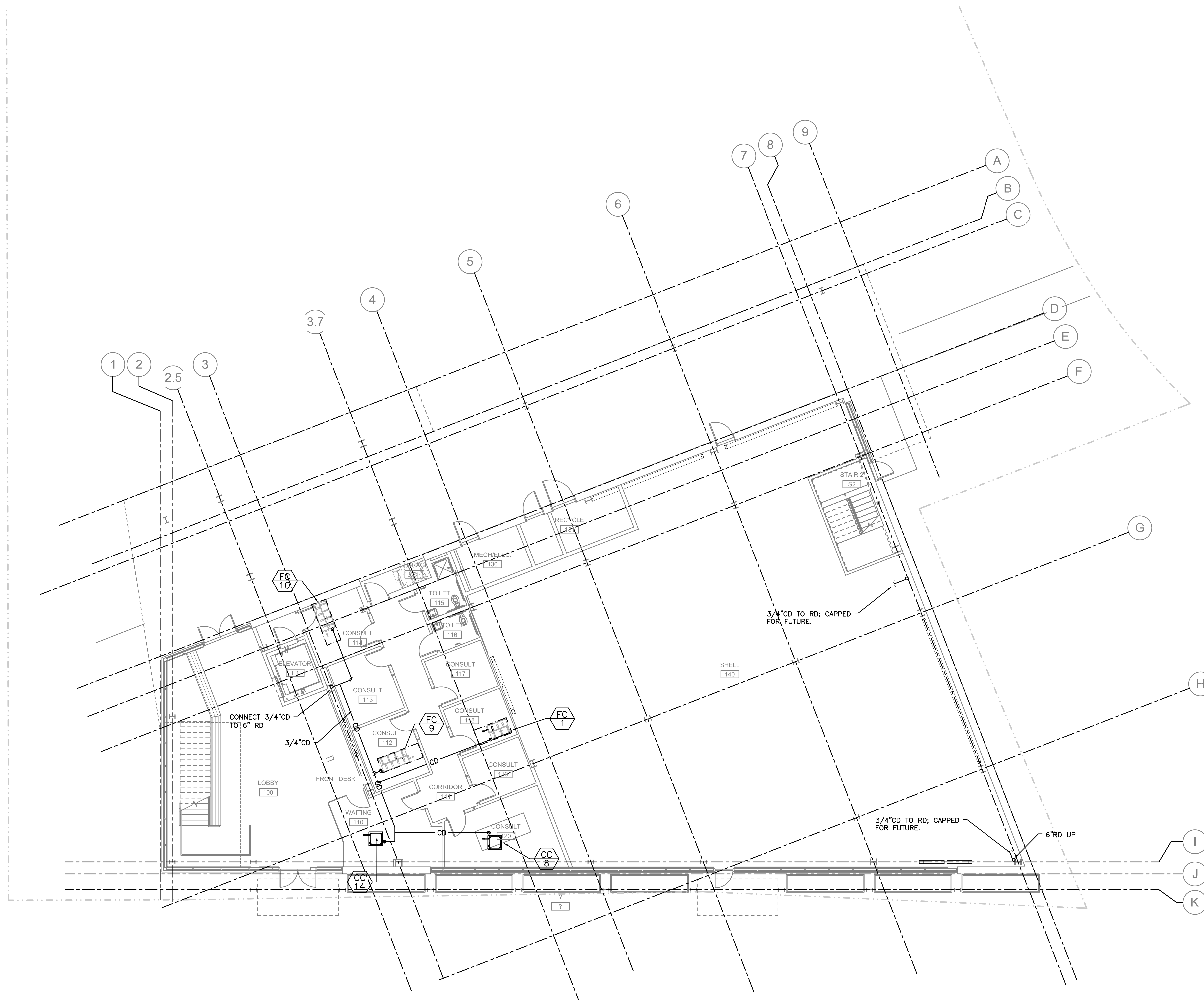
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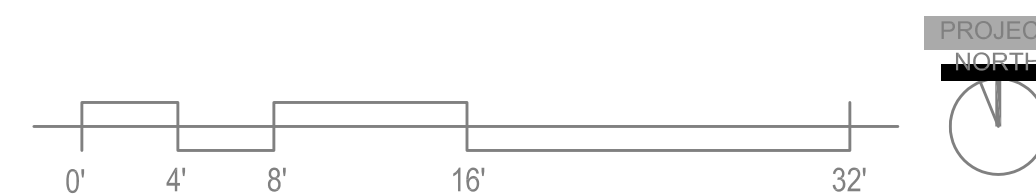
FIRST FLOOR CD PIPING PLAN

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P3.01



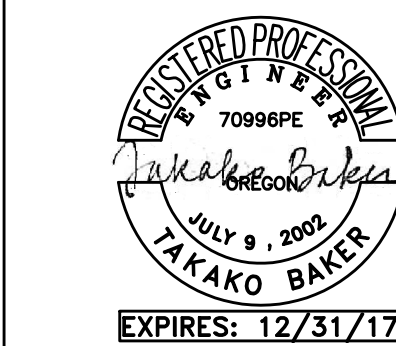
PROJECT NORTH
1 FIRST FLOOR CD PIPING PLAN
P3.01 SCALE: 1/8" = 1'-0"



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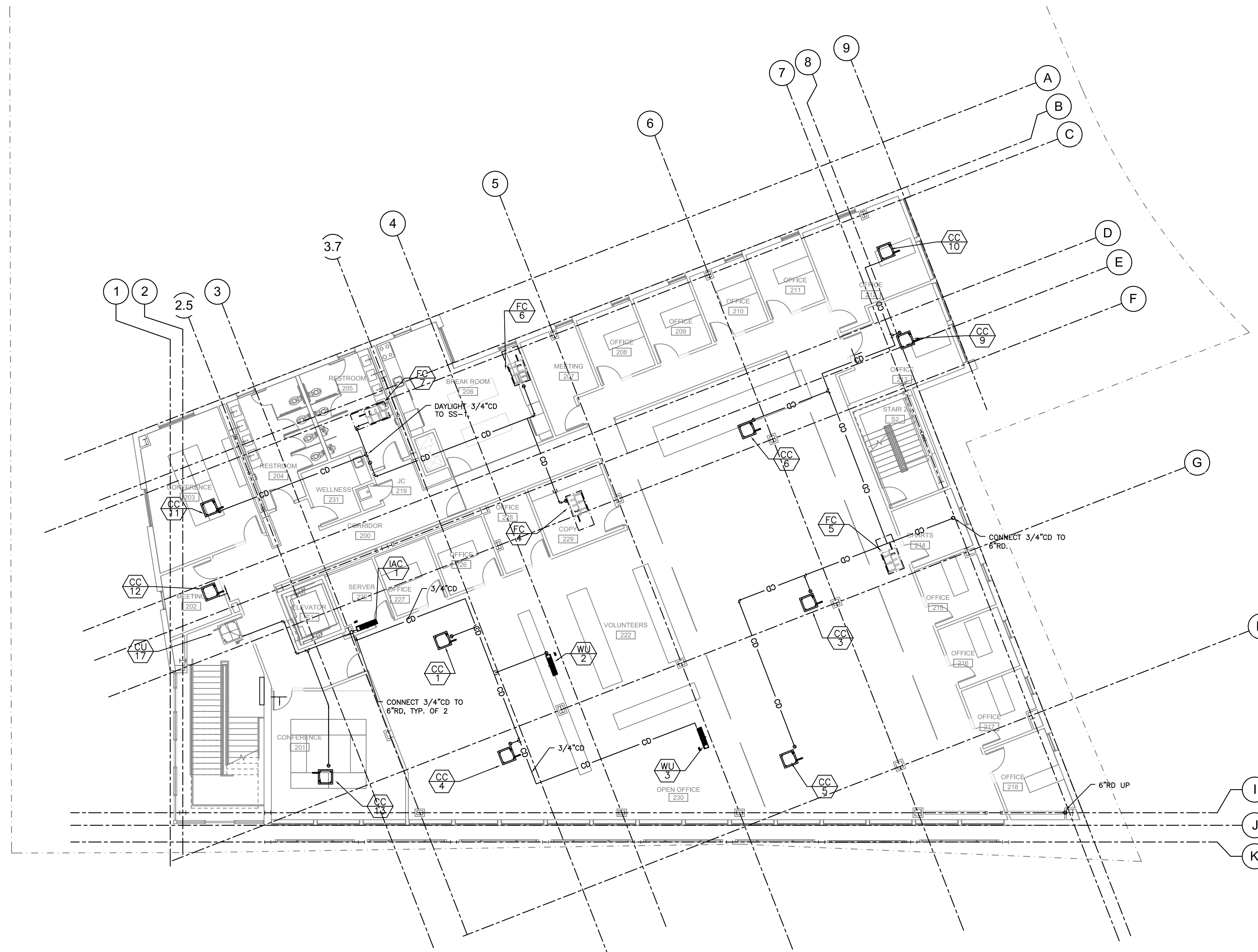
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SECOND FLOOR CD PIPING PLAN

sheet:

P3.02



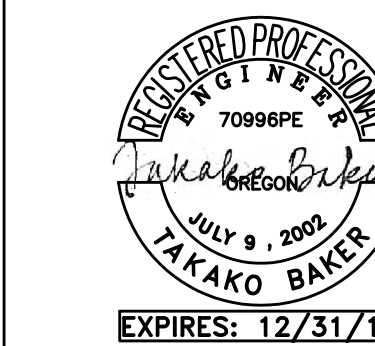
PROJECT NORTH
1 SECOND FLOOR CD PIPING PLAN
P3.02 SCALE: 1/8" = 1'-0"



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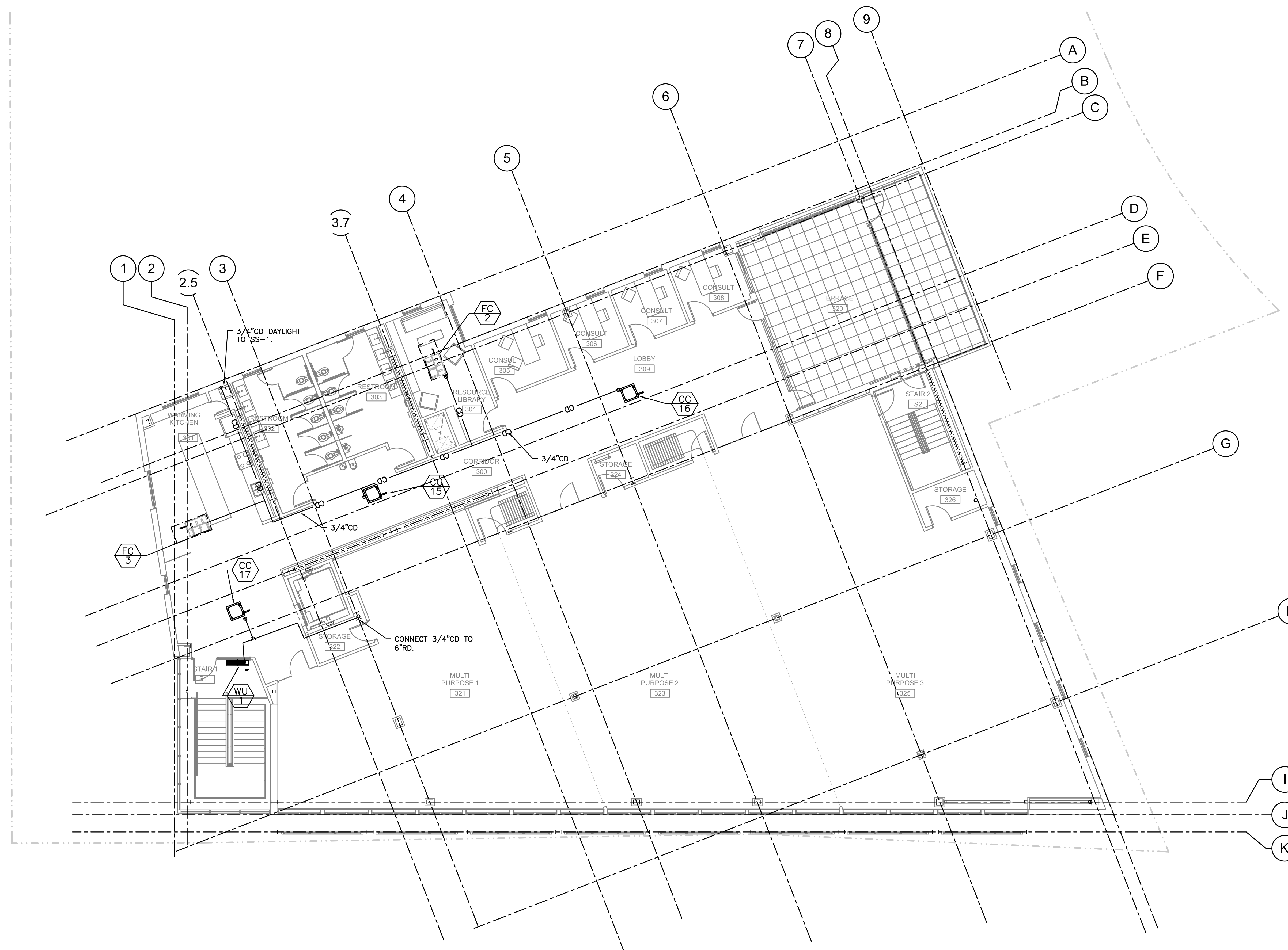
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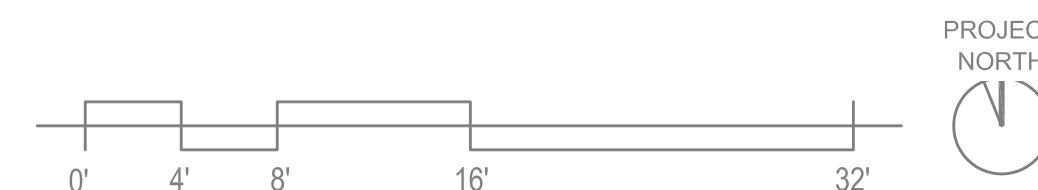
THIRD FLOOR CD PIPING PLAN

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P3.03



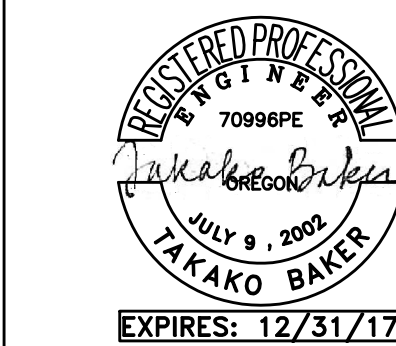
PROJECT NORTH
1 THIRD FLOOR CD PIPING PLAN
M3.03 SCALE: 1/8" = 1'-0"



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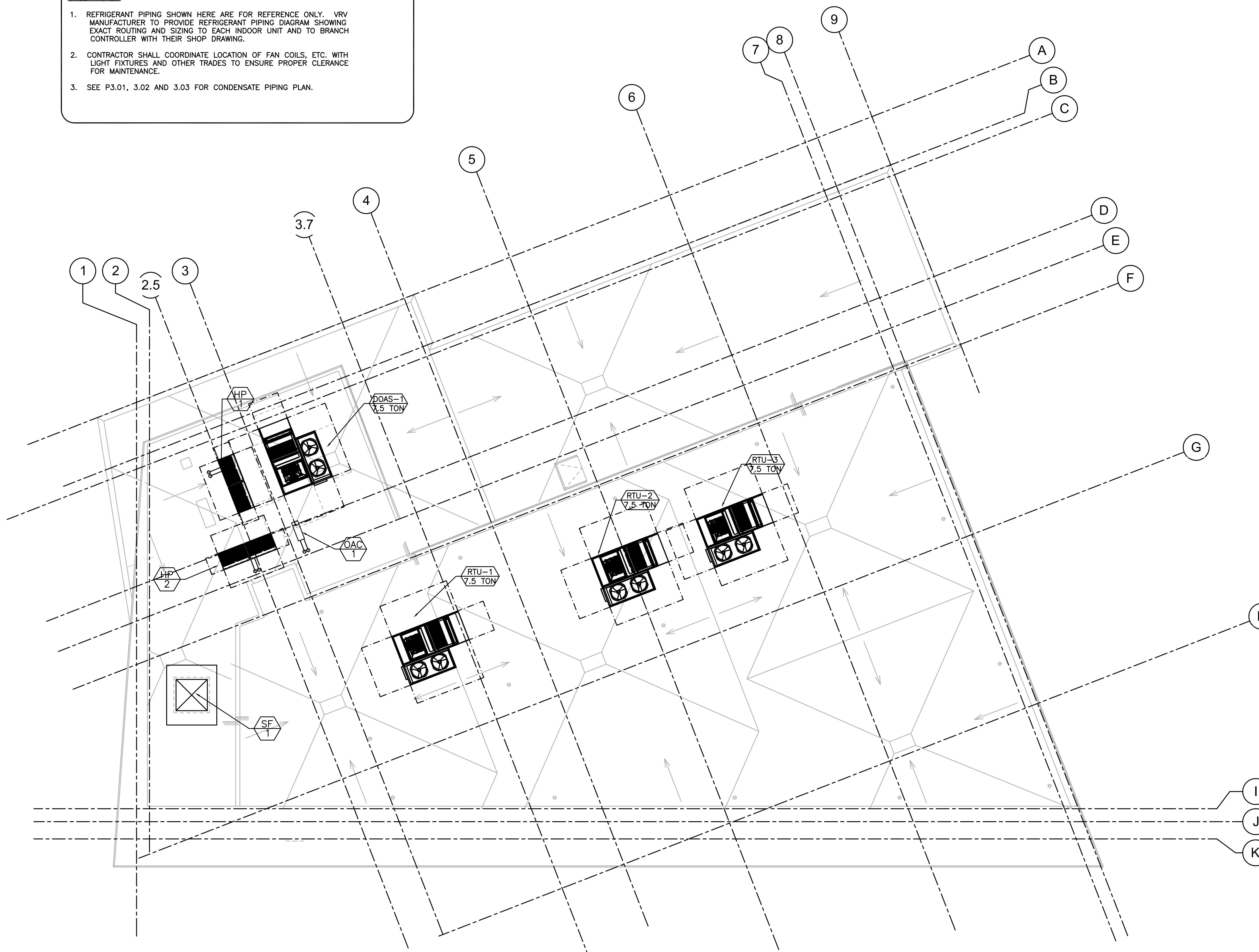
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REFRIGERANT PIPING ROOF PLAN

sheet:

M3.04

SHEET NOTES:

- REFRIGERANT PIPING SHOWN HERE ARE FOR REFERENCE ONLY. VRY MANUFACTURER TO PROVIDE REFRIGERANT PIPING DIAGRAM SHOWING EXACT ROUTING AND SIZING TO EACH INDOOR UNIT AND TO BRANCH CONTROLLER WITH THEIR SHOP DRAWING.
- CONTRACTOR SHALL COORDINATE LOCATION OF FAN COILS, ETC. WITH LIGHT FIXTURES AND OTHER TRADES TO ENSURE PROPER CLERANCE FOR MAINTENANCE.
- SEE P3.01, 3.02 AND 3.03 FOR CONDENSATE PIPING PLAN.



PROJECT NORTH
1 REFRIGERANT PIPING ROOF PLAN
M3.04 SCALE: 1/8"=1'-0"

PLUMBING LEGEND

AFF	.....	ABOVE FINISHED FLOOR	---	(CW)	COLD WATER	⊕	.....	EQUIPMENT MARK NUMBER
ARCH	.....	ARCHITECTURAL	---	(HW)	HOT WATER	XXX	.....	FIXTURE MARK
B.G.	.....	BELOW GRADE	---	(HWR)	HOT WATER RECIRC	(E)	.....	EXISTING
BTU	.....	BRITISH THERMAL UNIT	---	(HT)	HOT WATER HEAT TRACED	#	.....	NOTE
CAP.	.....	CAPACITY	---	(W)	BELOW GRADE WASTE	⊕	.....	CONNECT TO EXISTING
C.I.	.....	CAST IRON	---	(V)	VENT	↑	.....	CAP
COMP.	.....	COMPARTMENT	---	(RD)	RAIN DRAIN	⊕	.....	TEE
CONT.	.....	CONTINUATION	---	(OD)	OVERFLOW RAIN DRAIN	⊕	.....	ELBOW
CU.	.....	CUBIC	---	(FDC)	FIRE DEPARTMENT CONNECTION	⊕	.....	CLEANOUT
DF	.....	DRINKING FOUNTAIN	---	(A)	COMPRESSED AIR	⊕	.....	DOUBLE CHECK ASSEMBLY
DI	.....	DEIONIZED (WATER)	---	(PHW)	PROCESS HOT WATER	⊕	.....	PRESSURE/TEMP RELIEF VALVE
DIAL	.....	DIAMETER	---	(PCW)	PROCESS COLD WATER	⊕	.....	BUTTERFLY VALVE
ELEV.	.....	ELEVATION	---	(VAC)	VACUUM	⊕	.....	GAS PRESSURE REGULATING VALVE
EW	.....	ELECTRIC WATER COOLER	---	(G)	NATURAL GAS	⊕	.....	TOP CONNECTION
FD	.....	FLOOR DRAIN	---	(F)	FIRE WATER	⊕	.....	BOTTOM CONNECTION
FDC	.....	FIRE DEPARTMENT CONNECTION	---	(D)	DEMOLISH, (R) RELOCATE	⊕	.....	PIPE TURNED UP, PIPE TURNED DOWN
F.F.	.....	FINISH FLOOR	---	(E)	EXISTING	⊕	.....	GATE VALVE
FLG.	.....	FLANGE	---	(NEW WORK)	NEW WORK	⊕	.....	BALL VALVE
FT	.....	FOOT / FEET	---			⊕	.....	BALANCING VALVE
G	.....	GAS	---			⊕	.....	CHECK VALVE
GA.	.....	GAUGE	---			⊕	.....	UNION
GALV.	.....	GALVANIZED	---			⊕	.....	DOUBLE CHECK ASSEMBLY
GPM	.....	GALLONS PER MINUTE	---					
G.V.	.....	GATE VALVE	---					
HP	.....	HORSEPOWER	---					
HR.	.....	HOUR	---					
I.E.	.....	INVERT ELEVATION	---					
kw	.....	KILOWATT	---					
LAV	.....	LAVATORY	---					
LBS	.....	POUNDS	---					
MAX.	.....	MAXIMUM	---					
MBH	.....	THOUSANDS OF BTUS PER HOUR	---					
MIN.	.....	MINIMUM	---					
M.J.	.....	MECHANICAL JOINT	---					
N.I.M.	.....	NOT IN MECHANICAL	---					
OS&Y	.....	OUTSIDE STEM & YOKE	---					
PROT.	.....	PROTECTION	---					
PRV	.....	PRESSURE REDUCING VALVE	---					
PSI, PSIG	.....	POUNDS PER SQUARE INCH	---					
P/T	.....	PRESSURE / TEMPERATURE	---					
REQ'D	.....	REQUIRED	---					
RPBP	.....	REDUCED PRESSURE BACKFLOW PREVENTER	---					
RPM	.....	REVOLUTIONS PER MINUTE	---					
TYP.	.....	TYPICAL	---					
UR	.....	URINAL	---					
VTR	.....	VENT THROUGH ROOF	---					
WC	.....	WATER CLOSET	---					

PLUMBING CONNECTION SCHEDULE

MARK	FIXTURE	W	V	CW	HW105	HW140	G	REMARKS
WC-1	WATER CLOSET	3"	2"	1"	-	-	-	FLOOR MOUNT, SENSOR FLUSH VALVE, 1.1 GPF
WC-2	WATER CLOSET	3"	2"	1"	-	-	-	FLOOR, SENSOR FLUSH VALVE, ADA 1.1 GPF
UR-1	URINAL	2"	2"	1"	-	-	-	WALL HUNG, SENSOR FLUSH VALVE, 0.125 GPF
LV-1	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	-	-	RECT., WALL HUNG, 0.35GPM SENSOR*
LV-2	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	-	-	RECT., COUNTER MOUNT, 0.35GPM SENSOR*
S-1	SINK(WELLNESS)	1-1/2"	1-1/2"	1/2"	1/2"	-	-	1-COMP, STAINLESS STEEL, 1.5 GPM, ADA
S-2	SINK(KITCHEN)	1-1/2"	1-1/2"	1/2"	1/2"	-	-	2-COMP, STAINLESS STEEL, 1.5 GPM, ADA
S-3	SINK (BREAK)	1-1/2"	1-1/2"	1/2"	1/2"	-	-	1-COMP, STAINLESS STEEL, 1.5 GPM, ADA
SH-1	SINK	2"	1-1/2"	1/2"	1/2"	-	-	1.5 GPM SHOWER HEAD
HB-1	HOSE BIBB	-	-	3/4"	-	-	-	NON-FREEZE
FD-1	FLOOR DRAIN	3"	V.L.	-	-	-	-	J.R. SMITH 2005A (ROUND)
DF-1	DRINKING FOUNTAIN	1-1/2"	1-1/2"	1/2"	-	-	-	DUAL HEIGHT WITH COOLER
RD-1	RAIN DRAIN	3"	-	-	-	-	-	JR SMITH #1010
OD-1	OVERFLOW	3"	-	-	-	-	-	JR SMITH #1080

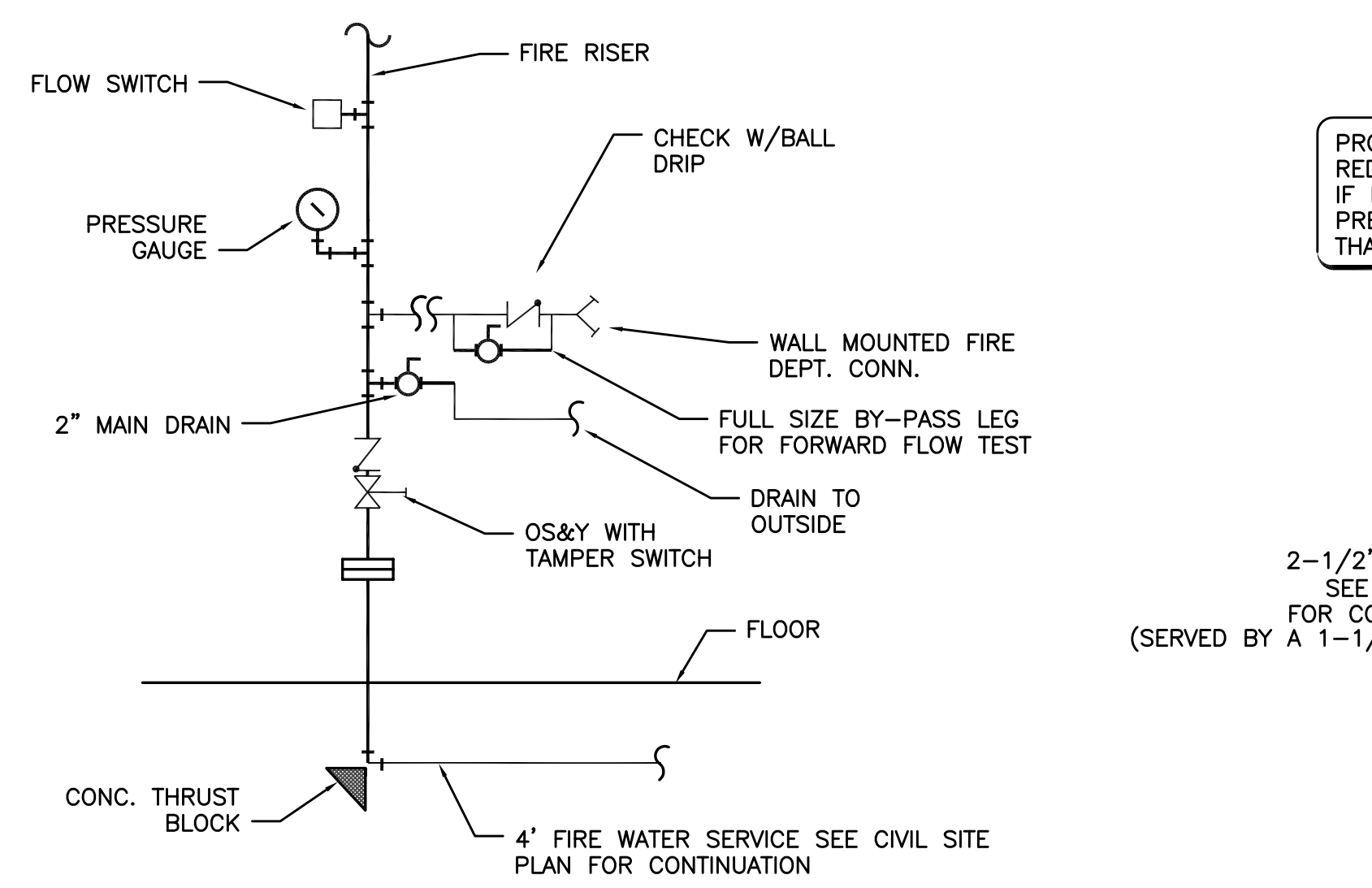
V.L. - VENTED LINE
* HARD WIRED

GAS WATER HEATERS	
MARK NUMBER	WH 1
FUEL	NATURAL GAS
CAPACITY (GAL)	60
INPUT RATE (MBH)	125
RECOVERY CAP. @ 140F TR (GPH)	145
EFFICIENCY (%)	94
GAS VENT/COMBUSTION AIR DIA. (PP)	3"
DESIGN WEIGHT (LBS)	1450
BASIS OF DESIGN: BRADFORD WHITE	EF-60T-125

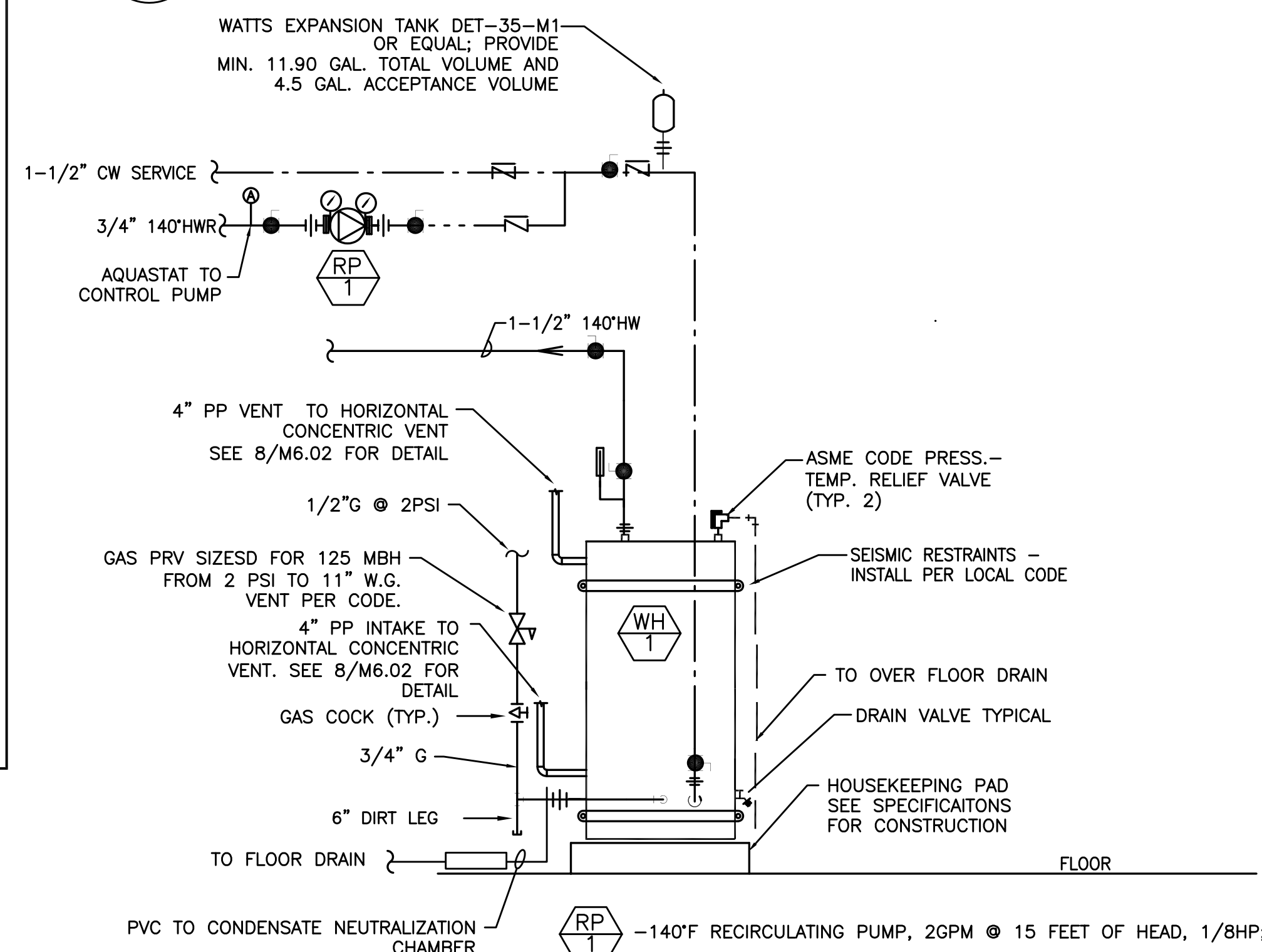
SUMP PUMP	
MARK NUMBER	SP 1
SYSTEM	ELEVATOR
TYPE	SUMP
FLOW RATE (GPM)	50
HEAD (FT H2O)	15
POWER (HP)	1/2 HP

GREASE INTERCEPTOR	
MARK NUMBER	GT 1
SERVICE	KITCHEN
CAPACITY (GPM)	25 GPM
INLET/OUTLET PIPE SIZE	3"
DESIGN WEIGHT-WET (LBS)	2313 LBS
BASIS OF DESIGN	SCHIER GB-25
QTY	1

NOTES:
1. PROVIDE WITH BUILT IN FLOW CONTROL & BUILT IN TEST CAP



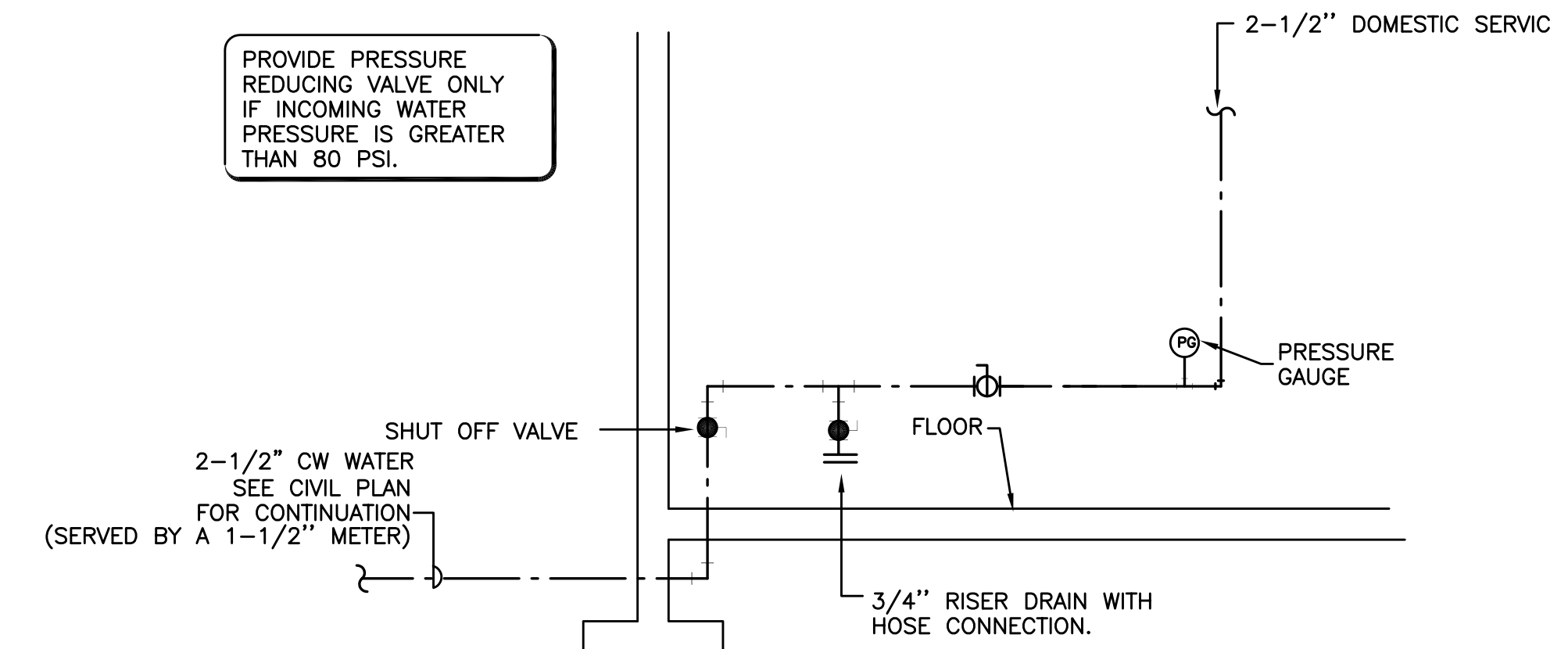
1 FIRE RISER DIAGRAM
P6.00 NO SCALE



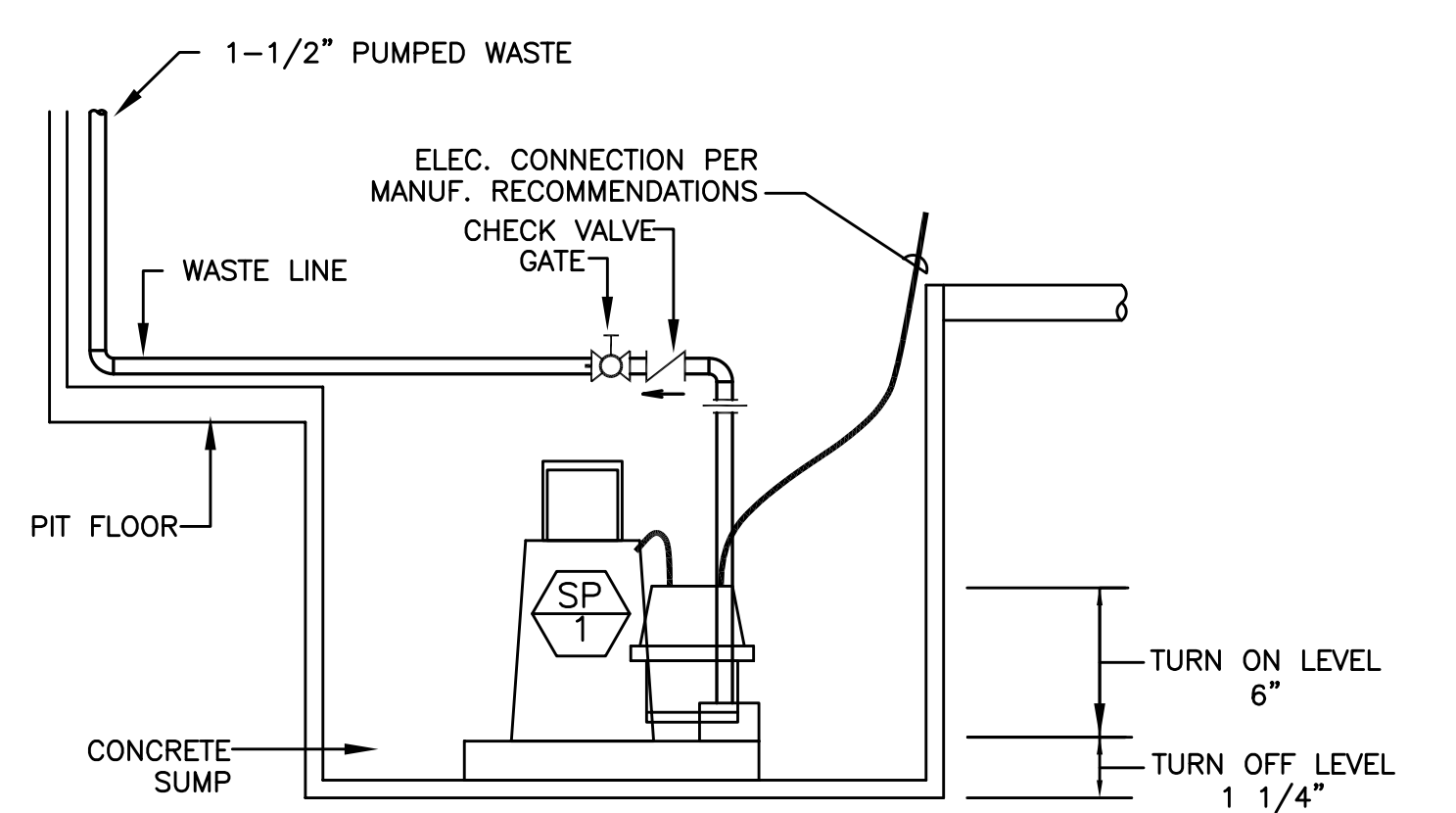
3 WATER HEATER PIPING DIAGRAM
P6.00 NO SCALE

FIXTURE TYPE	NUMBER OF FIXTURES	DOMESTIC WATER SERVICE			SANITARY WASTE SERVICE		
		WATER FIXTURE UNITS	TOTAL WSFU	TOTAL CW FIXTURE UNITS	TOTAL HW FIXTURE UNITS	DRAINAGE FIXTURE UNITS	TOTAL DFU
DRINKING FOUNTAIN / WATER COOLER (GENERAL USE)	1	0.5	0.5	0.5	0	0.5	0.5
LAVATORY (SINGLE)	18	1	18	13.5	13.5	1	18
LAVATORY (Future)	5	1	5	3.75	3.75	1	5
MOP BASIN	2	3	6	4.5	4.5	3	6
RECEPTOR (ELEVATOR WASTE)	1	0	0	0	0	100	100
RECEPTOR (INDIRECT WASTE)	5	-	-	-	-	1	5
SHOWERS, (STALL)	1	2	2	1.5	1.5	2	2
SINK GENERAL (1-1/2\"/>							

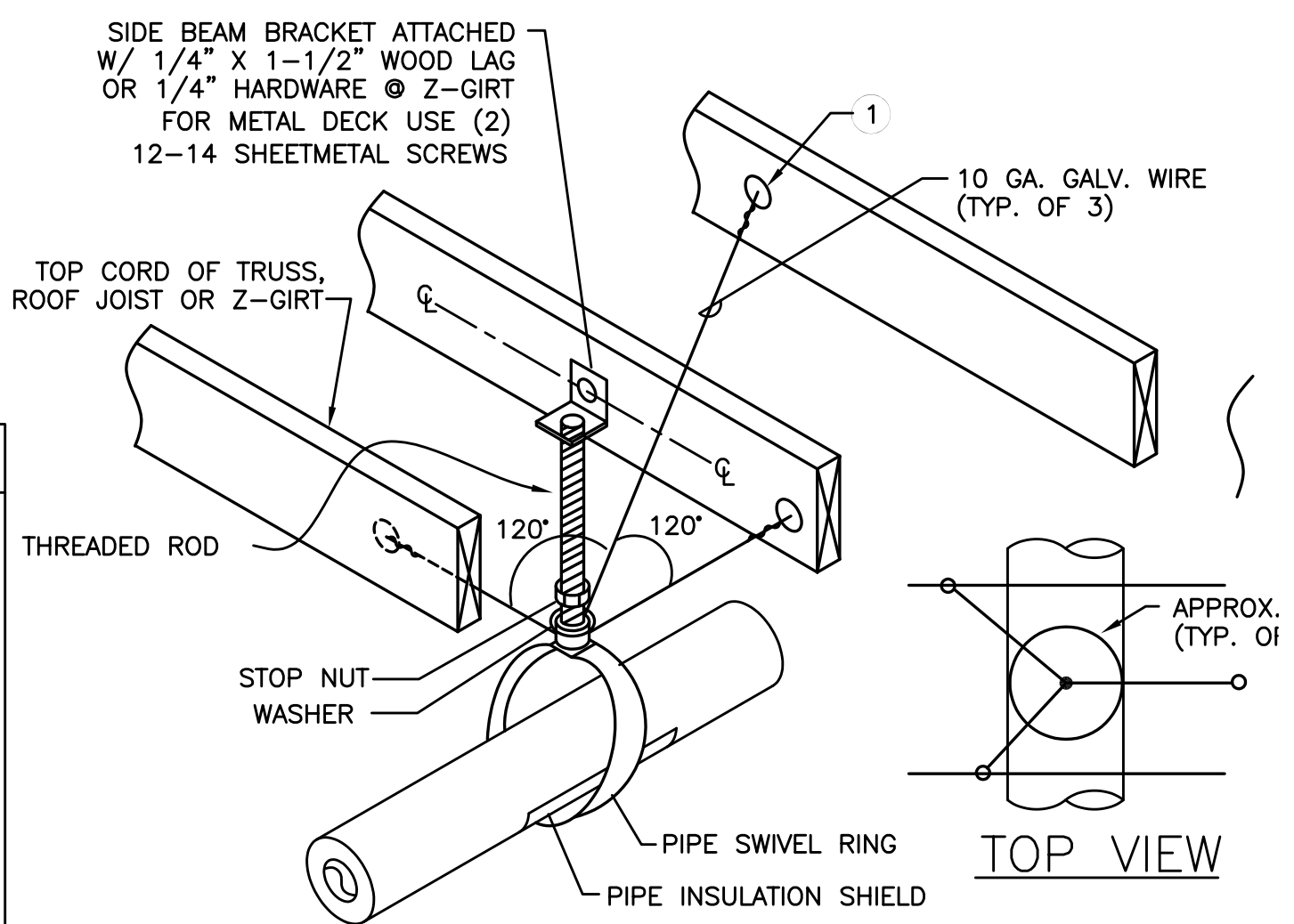
Grease Interceptor Calculations			
FIXTURE TYPE	NUMBER OF FIXTURES	DRAINAGE FIXTURE UNITS	TOTAL DFU
KITCHEN SINK	1	2	2
		TOTAL	2
HYDROMECHANICAL INTERCEPTOR (MIN. SIZE)		25	GPM



2 DCW RISER DIAGRAM
P6.00 NO SCALE



4 ELEVATOR SUMP PUMP
P6.00 SCALE: DETAIL



5/P6.00NOTES

- 1 - 1/4" GALV. THREADED EYE BOLT @ CENTER OF WOOD MEMBER (TYP. OF 3). FOR 2 GIRT USE MACHINE THREADED EYE BOLT W/ JAMB NUT & 1/4" WASHER @ EACH SIDE OF GIRT USE 12 SHEETMETAL SCREWS & 16 GA MIN. 16 GA. MIN STRUT ANGLE CLIP
- FOR SINGLE 1-1/2" TO 3" STEEL LINES
- FOR SINGLE 2" COPPER LINES

5 PIPE SUPPORT
P6.00 SCALE: DETAIL

HOLST

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PERMIT SET

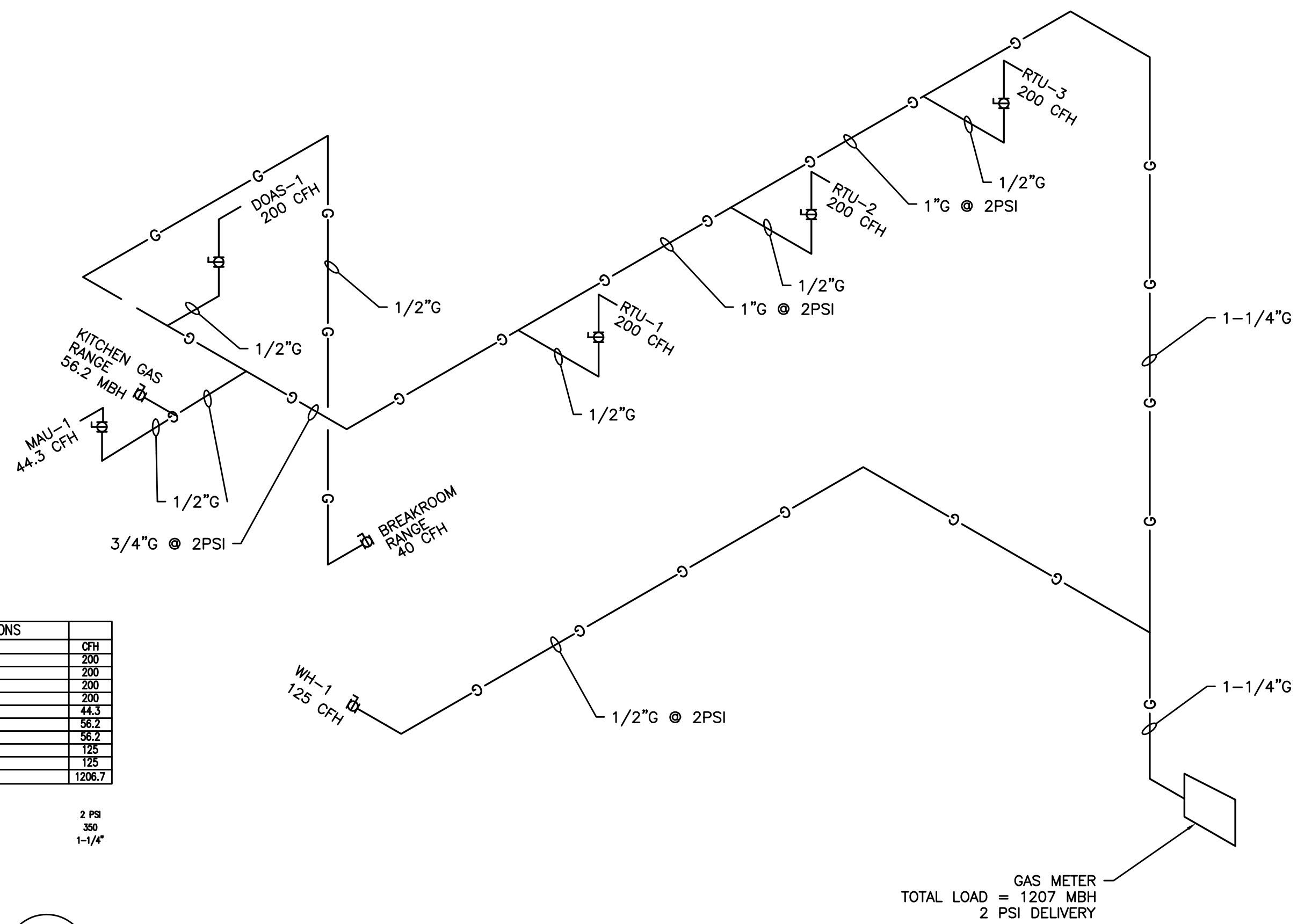
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50% DD	12.09.15
100% DD	02.05.16
50% CD	03.30.16
75% CD	04.27.16
PERMIT SET	07.15.16

revision: date:

PLUMBING SCHEDULES & DETAILS

sheet:

P6.00

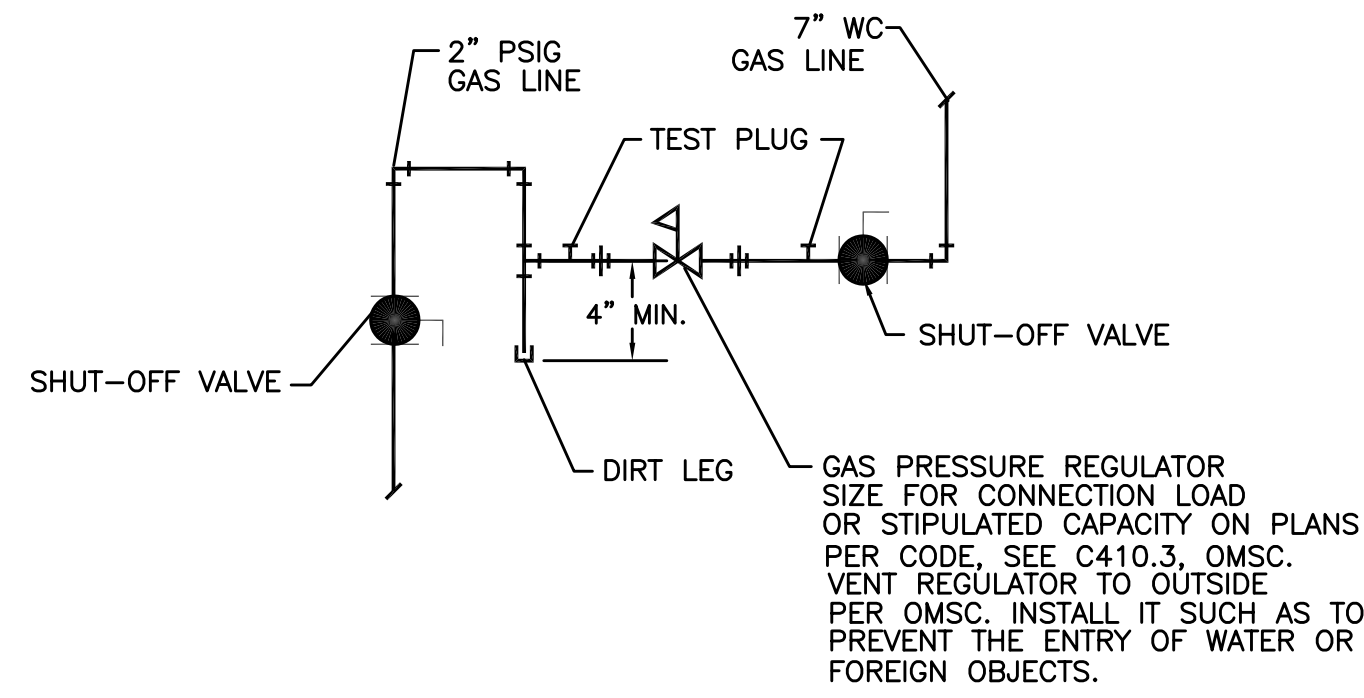


SIZING CALCULATIONS	
CFH	FEET
200	200
200	200
200	200
200	200
200	200
44.3	44.3
56.2	56.2
125	125
125	125
1206.7	1206.7

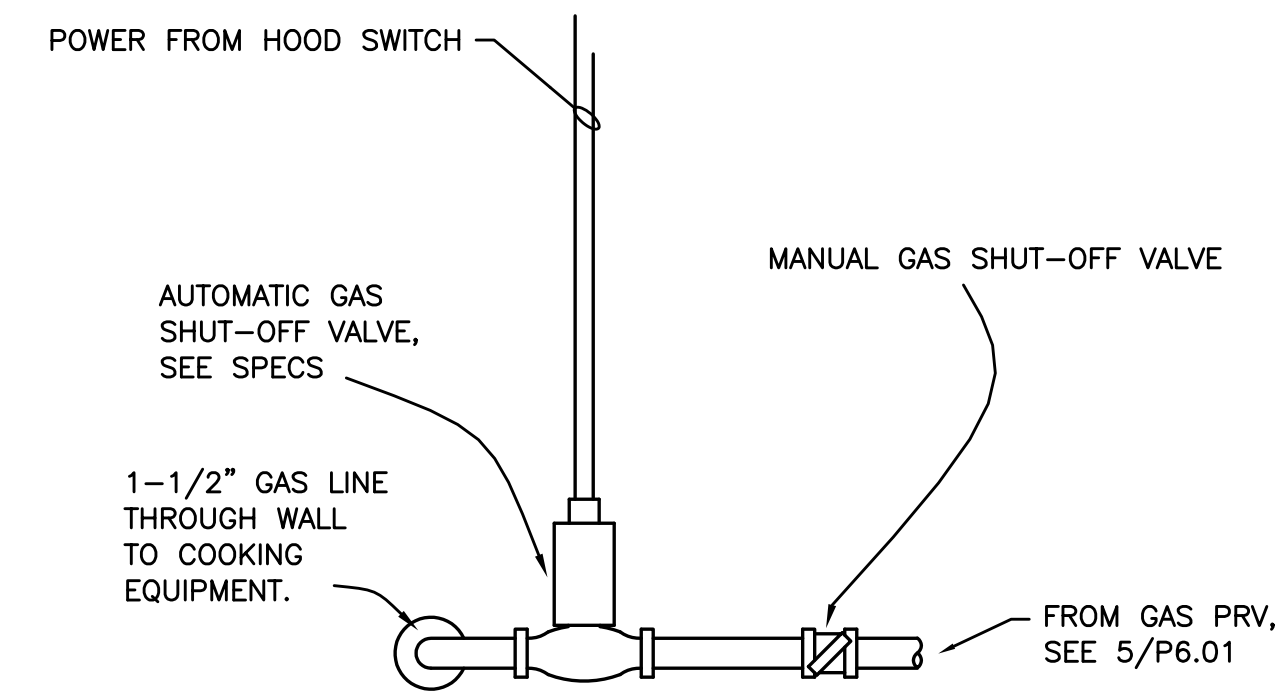
ABLE C402.14(2)
 2 PSI
 350
 FED PIPE LENGTH
 PIPE SIZE 1-1/4"

1 GAS PIPING DIAGRAM AND CALCULATIONS
 P6.01 NO SCALE

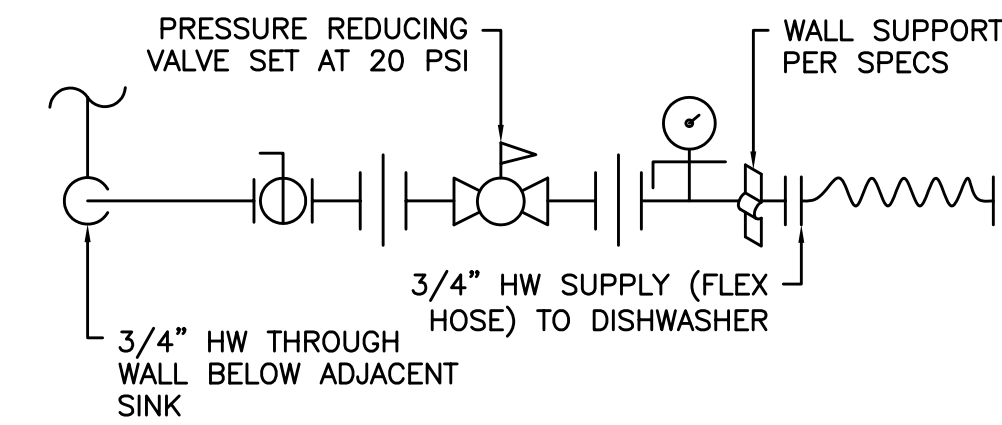
GAS METER
 TOTAL LOAD = 1207 MBH
 2 PSI DELIVERY



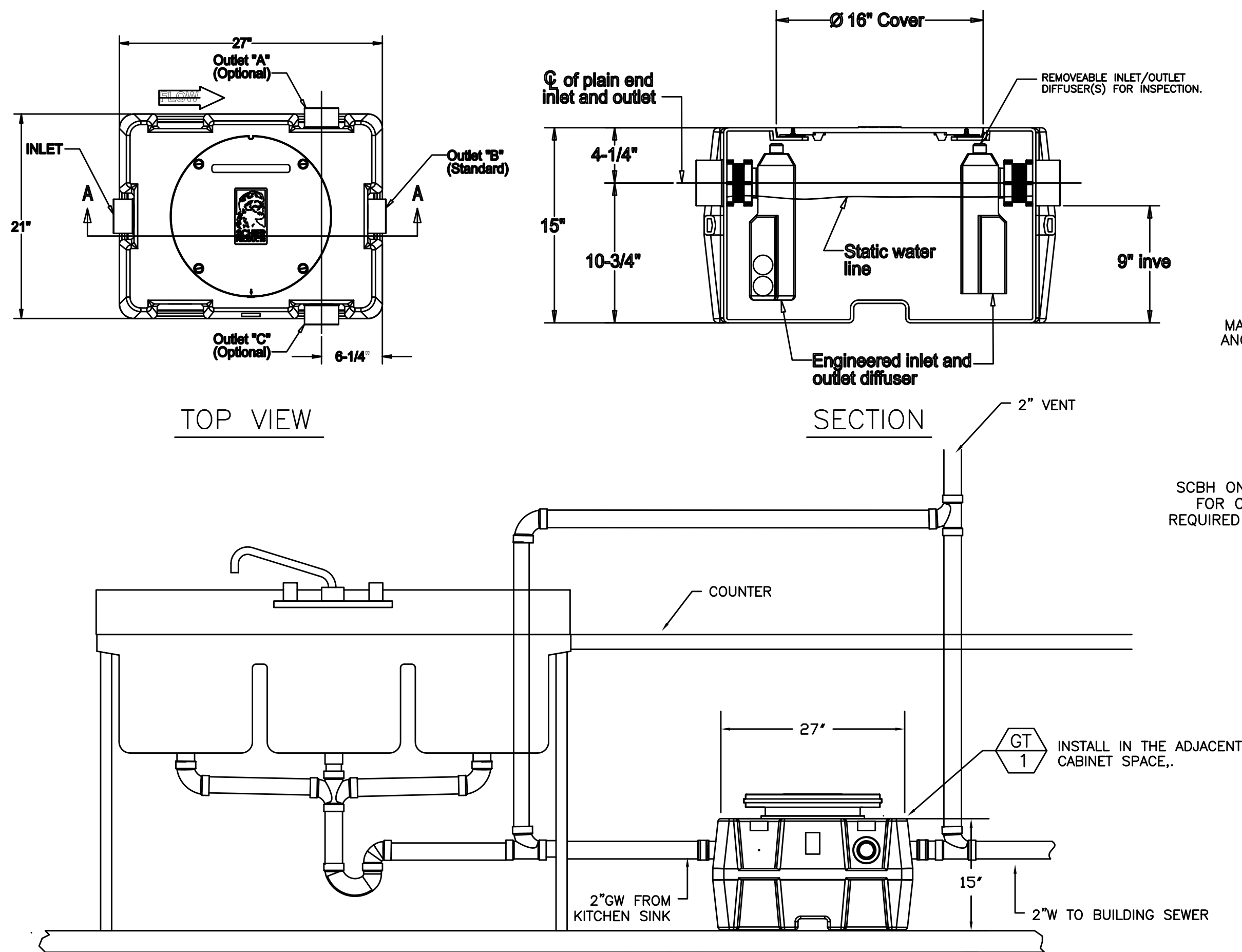
2 GAS PRV DETAIL
 P6.01 NTS



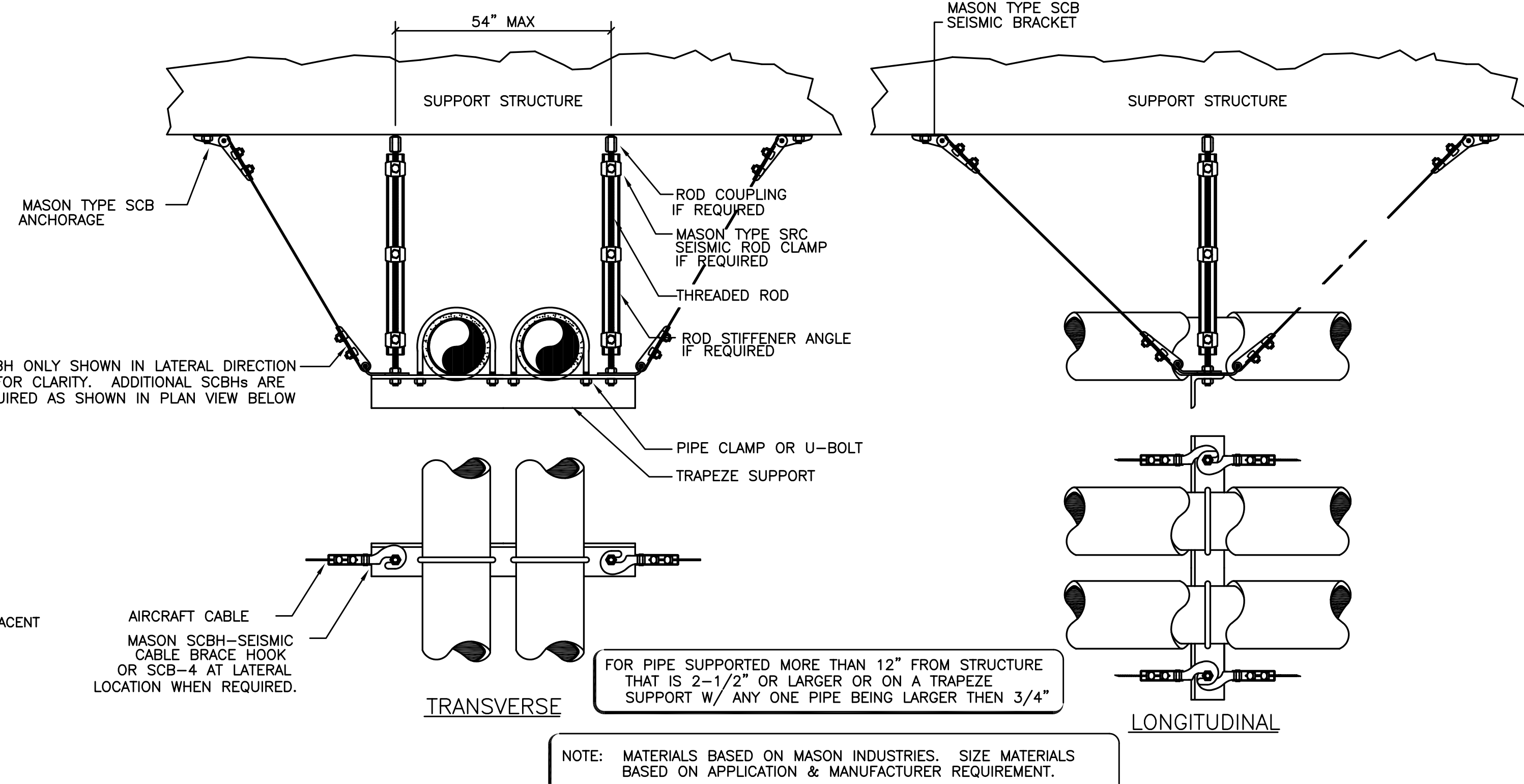
4 AUTO GAS SHUT-OFF ASSEMBLY
 P6.01 SCALE: NONE



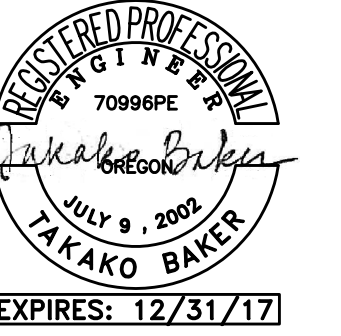
5 DISHWASHER CONNECTION
 P6.01 NTS



3 GREASE INTERCEPTOR DETAIL
 P6.01 SCALE: DETAIL



6 SEISMIC PIPE SUPPORT
 P6.01 SCALE: DETAIL



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07.15.2016	date:
100% SD	10.15.15
50% DD	12.09.15
100% DD	02.05.16
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75% CD	04.27.16
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