

# MECHANICAL LEGEND

	(SA) SUPPLY AIR DIFFUSER	AFF	ABOVE FINISH FLOOR
	(RA) RETURN AIR DIFFUSER	DOSA	DEDICATED OUTSIDE AIR ROOF TOP UNIT
	(EXH) EXHAUST AIR DIFFUSER	B.D.	BOTTOM OF DUCT
	(OSA OR OA) OUTSIDE AIR	BHP	BRASS HORSEPOWER
	DIRECTIONAL AIR FLOW	BTU	BRITISH THERMAL UNITS
	MANUAL VOLUME DAMPER	CFM	CUBIC FEET PER MINUTE
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	CONN.	CONNECTION
	RETURN AIR DUCT UP & DOWN	CONT.	CONTINUATION
	EXHAUST AIR DUCT UP & DOWN	CW	DOMESTIC COLD WATER
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	DB	DRY BULB
	RETURN AIR DUCT UP & DOWN	DIA.	DIAMETER
	EXHAUST AIR DUCT UP & DOWN	DIST.	DISTRIBUTION
	BRANCH SELECTOR BOX	EAT	ENTERING AIR TEMPERATURE
	THERMOSTAT OR TEMP. SENSOR	EAT	ENTERING AIR TEMPERATURE
	NOTE	EAT	ENTERING AIR TEMPERATURE
	EQUIPMENT DESIGNATOR	EAT	ENTERING AIR TEMPERATURE
	FLOW LIMITING CONTROL VALVE	EAT	ENTERING AIR TEMPERATURE
	BALL VALVE	EAT	ENTERING AIR TEMPERATURE
	GATE VALVE	EAT	ENTERING AIR TEMPERATURE
	CHECK VALVE	EAT	ENTERING AIR TEMPERATURE
	BALANCING VALVE	EAT	ENTERING AIR TEMPERATURE
	THERMOMETER	EAT	ENTERING AIR TEMPERATURE
	DIRECTION OF FLOW	EAT	ENTERING AIR TEMPERATURE
	PUMP	EAT	ENTERING AIR TEMPERATURE
	STRAINER	EAT	ENTERING AIR TEMPERATURE
	PRESSURE GAUGE	EAT	ENTERING AIR TEMPERATURE
	PETE'S PLUG	EAT	ENTERING AIR TEMPERATURE
	DOUBLE CHECK ASSEMBLY	EAT	ENTERING AIR TEMPERATURE
	PRESSURE REDUCING VALVE	EAT	ENTERING AIR TEMPERATURE
	UNION	EAT	ENTERING AIR TEMPERATURE
	2-WAY CONTROL VALVE	EAT	ENTERING AIR TEMPERATURE
	3-WAY CONTROL VALVE	EAT	ENTERING AIR TEMPERATURE
	CAP	EAT	ENTERING AIR TEMPERATURE
	SMOKE DETECTOR	EAT	ENTERING AIR TEMPERATURE
	FIRE DAMPER	EAT	ENTERING AIR TEMPERATURE
	AUTO DAMPER	EAT	ENTERING AIR TEMPERATURE

# MAKE-UP-AIR UNIT

MARK NUMBER	MAU 1
TYPE	INDIRECT
CFM	2,500
OSA	100%
EXTERNAL SP. (H2O)	1.0
ECM MOTOR HP	2.3
FAN RPM	2,221
DISCHARGE DIRECTION	VERTICAL
WHEEL TYPE AND SIZE, IN.	SWSI AF, 14
CONTROLLED BY.	DDC
FILTER TYPE	30%-2" DISPOSABLE
GAS INPUT (MBH)	300
GAS OUTPUT (MBH)	240
ENT. AIR °F	20°F
LVG. AIR °F	110°F
EFFICIENCY	80%
DESIGN WEIGHT (LBS)	1,500
SMOKE DETECTOR	YES
ELECTRICAL V/P	460/3
BASIS OF DESIGN: DAIKIN	DAHA07A

# AIR HANDLING UNIT

MARK NUMBER	DAH 1
SYSTEM	DANCE S25
TYPE	ROOF TOP SPLIT
TOTAL CFM	2,800
MIN. OSA (CFM)	280
DCV MAX. OSA (CFM)	840
WHEEL TYPE AND SIZE, IN.	SWSI AF, 14
EXTERNAL S.P., IN. W.C.	1.25
RPM	2,272
HP	2.3
ECONOMIZER 100%	YES
FILTER TYPE	30%
GAS HEATING INPUT/OUTPUT, MBH	300/240
EAT/LAT, °F	20/99
TURNDOWN RATIO	5:1
THERMAL EFFICIENCY, %	80
CFM	2,800
NET TOTAL/SENSIBLE COOLING(MBh)	104/73
ENT. EVAP AIR TEMP (DB/WB.)	81/67
LEAVING. EVAP AIR TEMP (DB/WB.)	57/55
AMBIENT AIR (°F)	95
REFRIGERANT TYPE	R-410A
UNIT DIMENSIONS, L"xW"xH", INCHES	91"x58"x57"
UNIT WEIGHT (LBS.)	1,215
SMOKE DETECTOR IN RETURN DUCT	YES
REMOTE CO2 SENSOR	YES
FLUE DEFLECTOR	YES
VIBRATION ISOLATION CURB	NO
ELECTRICAL CONNECTION, V/PH	460/3
BASIS OF DESIGN: DAIKIN	DAHA07A
UNIT LABEL	DAC 1
NOMINAL TONS	7
COMPRESSORS (NUMBER)	2
EER	12.8
ELECTRICAL CONNECTION, V/PH	460/3
WEIGHT	586
BASIS OF DESIGN: DAIKIN	RCS11F125D

# FURNACE WITH CONDENSING UNITS

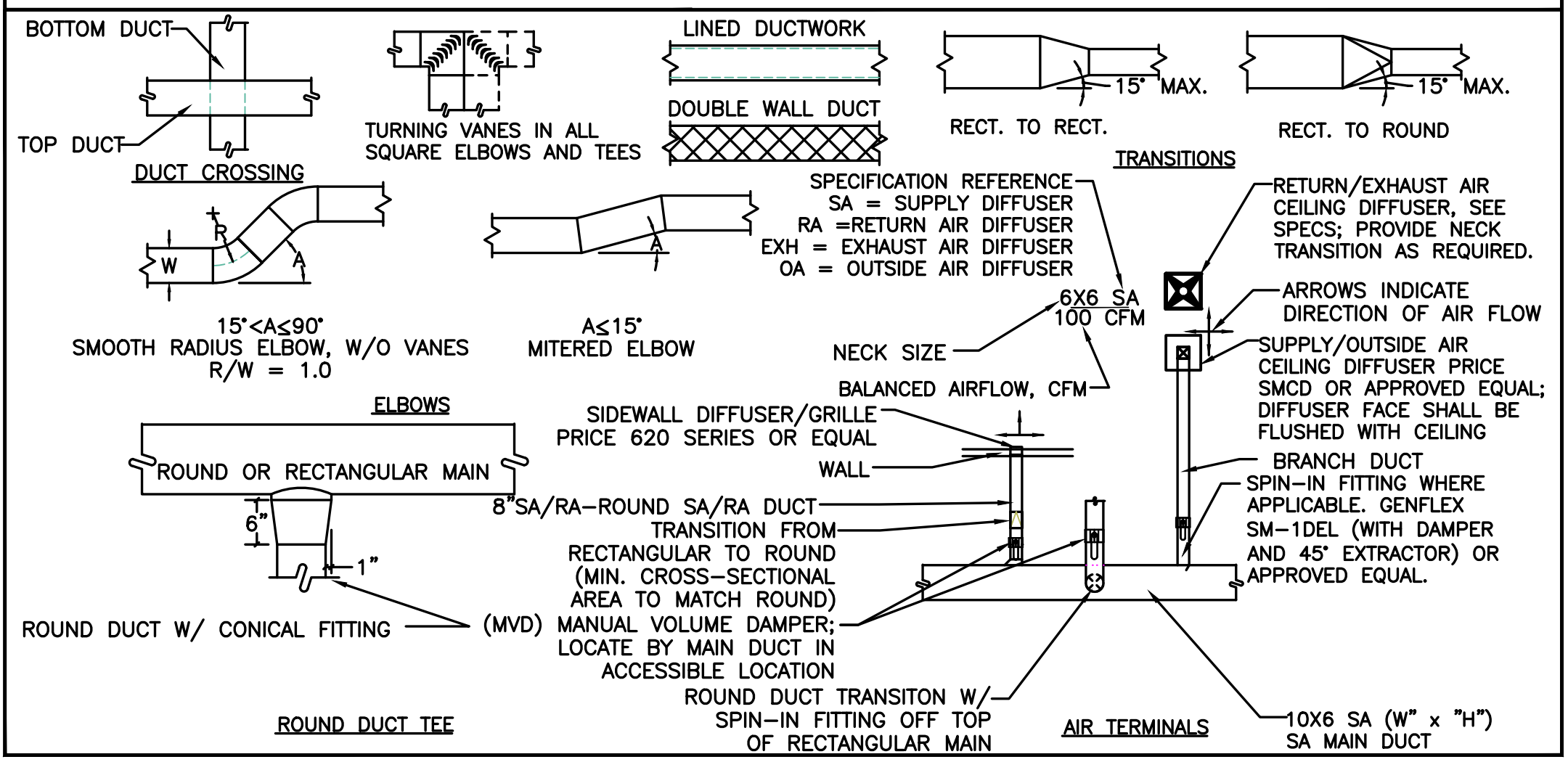
MARK NUMBER	F 1	F 2	F 3	F 4	F 5	F 6
SYSTEM	CLASSROOM W-4	CLASSROOM W-3	CLASSROOM W-2	SCIENCE W-5 & WORKROOM E109	CLASSROOM W-6	
TYPE	TWINNED FURNACES					
CONFIGURATION	HORIZONTAL	HORIZONTAL	HORIZONTAL	UPBLAST	UPBLAST	HORIZONTAL
FUEL	NATURAL GAS	NATURAL GAS	NATURAL GAS	NATURAL GAS	NATURAL GAS	NATURAL GAS
TOTAL CFM	1,200	1,200	1,200	1,100	1,100	1,350
ECONOMIZER	YES	YES	YES	YES	YES	YES
MIN. OSA (CFM)	110	110	110	115	115	125
DCV MAX. OSA (CFM)	440	440	440	1,175	1,175	735
MIN. EXTERNAL SP. (H2O)	0.50	0.50	0.50	0.50	0.50	0.50
VARIABLE SPEED ECM	YES	YES	YES	YES	YES	YES
FILTER TYPE	2" MERV 8	2" MERV 8	2" MERV 8	2" MERV 8	2" MERV 8	2" MERV 8
GAS INPUT HIGH/LOW, MBH	80/56	80/56	80/56	80/56	80/56	100/96
GAS OUTPUT HIGH/LOW, MBH	76.8/53.8	76.8/53.8	76.8/53.8	76.8/53.8	76.8/53.8	70/67.2
STAGES	2	2	2	2	2	2
AFUE %	96	96	96	96	96	96
FURNACE ELECTRICAL REQUIREMENTS, V/PH	115/1					
CONDENSING UNIT MARK NUMBER	CU 1	CU 2	CU 3	CU 4	CU 5	CU 6
NOMINAL COOLING CAPACITY, TONS	4	4	4	3	3	4
EAT, °F DB/WB	83/64	83/64	83/64	85/65	85/65	85/65
LAT, °F DB/WB	55/50	55/50	55/50	55/50	55/50	55/50
AMBIENT AIR (°F)	95	95	95	95	95	95
AHRI COMBINATION EFFICIENCY SEER/EER	13/11	13/11	13/11	13/11	13/11	13/11
WALL MOUNTED CO2 SENSOR	YES	YES	YES	YES	YES	YES
REFRIGERANT	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
COOLING COIL DESIGN MODEL: DAIKIN	CHPF4860D6	CHPF4860D6	CHPF4860D6	CVPF4860D6	CVPF4860D6	CHPF4860D6
FURNACE WEIGHT INCLUDING COIL (LBS)	220	220	220	200	200	240
CONDENSING UNIT WEIGHT W/OUT CURB (LBS)	189	189	189	196	196	189
FURNACE BASIS OF DESIGN: DAIKIN	DM96VE0804CNA	DM96VE0804CNA	DM96VE0804CNA	DM96VE0804CNA	DM96VE0803BNA	DM96VE1004CNA
CONDENSING UNIT BASIS OF DESIGN: DAIKIN	DX13SA0484A	DX13SA0484A	DX13SA0484A	DX13SA0364A	DX13SA0364A	DX13SA0484A
CONDENSING UNIT ELECTRICAL REQUIREMENTS, V/PH	480/3					

# EXHAUST FANS

MARK NUMBER	EF BV
TYPE	ROOF
SYSTEM	(E)BOILER ROOM
CFM	1,000
TOTAL SP. (IN H2O)	0.317
RPM	1,725
WHEEL TYPE	B.I.
DRIVE TYPE	DIRECT
MOTOR HP	1/6
CONTROLLED BY	SENSOR
INTERLOCKED WITH	FAN/LOUVER DAMPER
DAMPER TYPE	AUTO
ISOLATION	RIB
DESIGN WEIGHT (LBS)	29
MAX. SONES	10.4
ELECTRICAL (V/φ) (POWER)	115/1
BASIS OF DESIGN: GREENHECK	G-095-VG

\* - PROVIDE FAN WITH VARI-GREEN DRIVE 100 W/ ON-BOARD POTENTIOMETER DIAL.  
 \*\* - PROVIDE WITH SOLID STATE SPEED CONTROL NEAR FAN FOR BALANCING.

# AIR DISTRIBUTION DETAILS



# ROOFTOP UNITS

TAG	Unit Weight, Lbs	Basis of Design (Daikin)	Electrical		Smoke Detector	Supply Fan										EAT		LAT		Ambient		Compressor		Heating					
			Voltage	EER / SEER		Airflow (CFM)	Min OSA (CFM)	Max OSA (CFM)	ESP (inH2O)	Motor Size (HP)	Power Exhaust	Economizer 100%	Filter	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	Total Capacity (Btu/hr)	Sensible Capacity (Btu/hr)	DB (°F)	Stages	Qty	Refrigerant	Type	Size	Stages	Total Capacity (Btu/hr)	EDB (°F)	LDB (°F)
AC-1	619	DSG060	460/60/3	11.6/14.0	NO	1860	118	470	1.00	1.0 HP	YES	YES	2" MERV 8	80	64	56.9	53.7	56596	51000	95	1 step	1	R410A	Gas	115/86 MBH	2 Stage	92000	60	105.6
AC-2	2433	MPS025B	460/60/3	10	YES	9600	518	2070	1.25	7.5 HP	YES	YES	2" MERV 8	79	64	54.5	53.1	304630	284134	95	2 steps	2	R410A	Gas	400 MBH	2 Stage	324000	60	91.1
AC-3	619	DSG060	460/60/3	11.6/14.0	NO	1860	41	165	1.00	1.0 HP	YES	YES	2" MERV 8	77	62	56.9	53.6	56529	50000	95	1 step	1	R410A	Gas	115/86 MBH	2 Stage	92000	60	105.8
AC-4	597	MPS015B	460/60/3	11.1	YES	5800	901	3605	1.25	5.0 HP	YES	YES	2" MERV 8	87	65	55.1	53.4	179178	167519	95	2 steps	2	R410A	Gas	350 MBH	2 Stage	284000	60	105.1
AC-5	2000	MPS020B	460/60/3	11.1	YES	9220	765	3060	1.25	7.5 HP	YES	YES	2" MERV 8	82	64	57.8	55	244183	238048	95	2 steps	2	R410A	Gas	400 MBH	2 Stage	324000	60	92.4
AC-6	1095	MPS008B	460/60/3	11.2	YES	3280	193	770	1.25	2.0 HP	YES	YES	2" MERV 8	80	63	55.1	53.7	98801	94703	95	2 steps	2	R410A	Gas	225 MBH	2 Stage	182250	60	111.2
AC-7	1165	MPS010B	460/60/3	11.2	YES	3550	270	1080	1.25	3.0 HP	YES	YES	2" MERV 8	81	64	53.2	52.4	119188	110266	95	2 steps	2	R410A	Gas	225 MBH	2 Stage	182250	60	107.3

WHOLE SHEET

SHEET IS REVISED PER ADDENDUM #2.

615 SE JACKSON STREET  
 PORTLAND, OR 97202  
 503.234.0544  
 503.234.0677  
 paul@paulbentleyarchitect.com

PAUL BENTLEY Architect A.I.A. P.C.

1-ADD #2 2/22/2018  
 2-ADD #3 3/2/2018  
 3-PHASE#2 6.12.18

CONSTRUCTION SET-6.10.18

MEDIA CONSULTING ENGINEERS  
 2007 S.E. Ash St.  
 Portland, OR 97214  
 PHN: (503) 234-0544  
 FAX: (503) 234-0677  
 WWW.MEDIA-ENG.COM  
 CONTACT: Elena von Kamerns

A NEW REMODEL PROJECT FOR:  
**SHERWOOD HIGH SCHOOL**  
 SHERWOOD, OR  
 16956 SW MEINCKE ROAD

REGISTERED PROFESSIONAL  
 1788  
 JULY 25, 1995  
 SCOTT W. MILLER  
 EXPIRES: 31DEC18

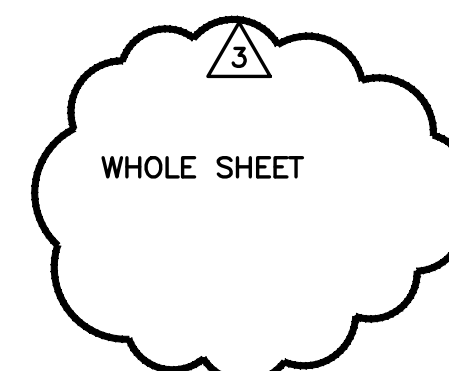
DRAWN BY: EVK  
 CHECKED BY: SWM  
 DATE: 1-30-18  
 TITLE: MECHANICAL SCHEDULES  
 SCALE: NTS

SHEET NO:  
**M6.0**  
 1 OF 8

**VENTILATION AIR SCHEDULE**

ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF FIXTURES (PLUMBING)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/FP) OR (CFM/FIXT) *	OUTSIDE AIR REQUIREMENT (CFM/SQ. FT.)	OUTSIDE AIR REQUIRED (CFM)	ZONE OSA (CFM)	SUPPLY AIR (CFM)	PRIMARY OSA FRACTION	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency	Corrected OSA CFM	AIR SYSTEMS	
																Az
<b>RTU-1/CU-1</b>																
CORRIDORS	716	0		0		0.06	43	0.8	54	0.15	350	0	1.13	58	VAV-1-1	
E-13 CLASSROOM	737	35		26	10	0.12	348	0.8	436	1200	0.36	1200	0	0.92	472	VAV-1-1
E-11 CLASSROOM	737	35		26	10	0.12	348	0.8	436	1200	0.36	1200	0	0.92	472	VAV-1-2
E-10 CLASSROOM	737	35		26	10	0.12	348	0.8	436	1200	0.36	1200	0	0.92	472	VAV-1-3
E-8 CLASSROOM	737	35		26	10	0.12	348	0.8	436	1200	0.36	1200	0	0.92	472	VAV-1-4
HALLWAY	325	0		0	0	0.06	20	0.8	24	350	0.07	350	0	1.22	26	VAV-1-5
E-7 CLASSROOM	737	35		26	10	0.12	348	0.8	436	1200	0.36	1200	0	0.92	472	VAV-1-5
E-3 CLASSROOM	737	35		26	10	0.12	348	0.8	436	1200	0.36	1200	0	0.92	472	VAV-1-6
H100 ATTENDANCE	214	10		3	5	0.06	28	0.8	35	400	0.09	400	0	1.20	38	VAV-1-7
H101 BOOKEEPING/ATHLETICS	195	10		2	5	0.06	22	0.8	27	400	0.07	400	0	1.22	29	VAV-1-7
HALLWAY	325	0		0	0	0.06	20	0.8	24	200	0.12	200	0	1.16	26	VAV-1-7
H105 HUB	70	0		0	0	0.12	8	0.8	11	75	0.14	75	0	1.15	11	VAV-1-8
H111 WORKROOM	322	10		4	5	0.06	39	0.8	49	400	0.12	400	0	1.16	53	VAV-1-8
H109 HEALTH RM.	78	20		2	5	0.06	15	0.8	18	100	0.18	100	0	1.10	20	VAV-1-8
H106 SPO OFFICE	78	5		1	5	0.06	10	0.8	12	100	0.12	100	0	1.17	13	VAV-1-8
H107 ATHLETIC DIRECTOR	145	5		1	5	0.06	14	0.8	17	150	0.11	150	0	1.17	19	VAV-1-8
H110 ASSOS PRINCIPAL	145	5		1	5	0.06	14	0.8	17	150	0.11	150	0	1.17	19	VAV-1-8
H114 FILE ROOM	105	0		0	0	0.12	13	0.8	16	100	0.16	100	0	1.13	17	VAV-1-8
H112 & H113 TOILET	128	0	3	0	75		0			100		0	150		EF-1	
H127 HALLWAY	305	0		0	0	0.06	18	0.8	23	200	0.11	200	0	1.17	25	VAV-1-8
<b>TOTAL RTU-1:</b>	<b>7573</b>			<b>170</b>					<b>2941</b>	<b>10275</b>		<b>10175</b>	<b>150</b>	<b>0.92</b>	<b>3185</b>	
<b>CORRECTED TOTAL OUTDOOR AIR FLOW RATE CFM 3185 Corrected OSA Fraction Zs = 0.31</b>																
<b>RTU-2</b>																
E-12 CLASSROOM	735	35		26	10	0.12	348	0.8	435	1095	0.40	1095	0	0.81	537	VAV-2-1
G115 OFFICE	88	5		1	5	0.06	10	1.0	10	100	0.10	100	0	1.11	13	VAV-2-2
G116 PRINCIPAL	164	5		1	5	0.06	15	1.0	15	370	0.04	370	0	1.17	18	VAV-2-2
G114 & G126 CARRIER COUNSELING	1081	5		6	5	0.06	95	0.8	119	900	0.13	900	0	1.08	146	VAV-2-3
G117 HEALTH	164	10		2	5	0.06	20	0.8	25	125	0.20	125	0	1.01	31	VAV-2-3
G122 OFFICE	165	5		1	5	0.06	15	0.8	19	170	0.11	170	0	1.10	23	VAV-2-4
G123 COUNSELING	174	5		1	5	0.06	15	0.8	19	225	0.09	225	0	1.12	24	VAV-2-4
G125 OFFICE	112	5		1	5	0.06	12	0.8	15	180	0.08	180	0	1.13	18	VAV-2-4
G124 OFFICE	84	5		1	5	0.06	10	0.8	13	135	0.09	135	0	1.12	15	VAV-2-4
G127 WORKROOM	222	20		5	10	0.18	90	0.8	112	450	0.25	450	0	0.96	139	VAV-2-5
G130 PHOTO LAB	237	20		5	10	0.18	93	1.0	93	400	0.23	400	0	0.98	114	VAV-2-5
G131 DARK ROOM	45	20		1	10	0.18	18	0.8	23	75	0.30	75	0	0.91	28	VAV-2-5
G129 PROCESSING	134	10		2	5	0.06	18	0.8	23	75	0.30	75	0	0.91	28	VAV-2-5
E-1 CLASSROOM	685	35		24	10	0.12	322	0.8	403	1290	0.31	1290	0	0.90	497	VAV-2-6
E-9 CLASSROOM, G138 & G139	812	35		29	10	0.12	387	1.0	387	2625	0.15	2625	0	1.06	478	VAV-2-7
<b>TOTAL RTU-2:</b>	<b>4902</b>			<b>106</b>					<b>1709</b>	<b>8215</b>		<b>8215</b>	<b>0</b>	<b>0.81</b>	<b>2109</b>	
<b>CORRECTED TOTAL OUTDOOR AIR FLOW RATE CFM 2109 Corrected OSA Fraction Zs = 0.26</b>																
<b>RTU-3</b>																
E17 CLASSROOM	1241	25		32	10	0.12	469	0.8	586	1,700	0.34	1,700	0	1.03	732	VAV-3-1
E131 CORRIDOR	615	0		0	0	0.06	37	0.8	46	600	0.08	600	0	1.29	58	VAV-3-1
E104 STAFF DINING	860	10		9	5	0.06	97	0.8	121	1200	0.10	1200	0	1.27	151	VAV-3-2
W-32 CLASSROOM	1264	35		45	10	0.12	602	0.8	752	1700	0.44	1700	0	0.93	940	VAV-3-3
W-33 CLASSROOM	736	25		19	10	0.12	278	0.8	348	1100	0.32	1100	0	1.05	435	VAV-3-4
D127 STUDENT COMMONS	755	60		46	7.5	0.18	481	0.8	601	1100	0.55	1100	0	0.82	751	VAV-3-5
D129 STUDENT COMMONS	755	60		46	7.5	0.18	481	0.8	601	1100	0.55	1100	0	0.82	751	VAV-3-6
E101 CHEMICAL STORAGE	82	0		0	0	0.12	10	0.8	12	75	0.16	0	100	1.21	15	VAV-3-7
E102 CHEMICAL STORAGE	140	0		0	0	0.12	17	0.8	21	150	0.14	0	200	1.23	26	VAV-3-7
E103 PREP	623	35		22	10	0.12	295	0.8	368	880	0.42	880	0	0.95	460	VAV-3-7
D128 STUDENT COMMONS	1006	60		61	7.5	0.18	639	0.8	798	1400	0.57	1400	0	0.80	997	VAV-3-8
E131 CORRIDOR	615	0		0	0	0.06	37	0.8	46	600	0.08	600	0	1.29	58	VAV-3-8
<b>TOTAL RTU-3:</b>	<b>8692</b>			<b>280</b>					<b>4301</b>	<b>11605</b>		<b>11380</b>	<b>300</b>	<b>0.80</b>	<b>5373</b>	
<b>CORRECTED TOTAL OUTDOOR AIR FLOW RATE CFM 5373 Corrected OSA Fraction Zs = 0.46</b>																
<b>AHU-5/CU-74</b>																
D125 STUDENT COMMONS	6126	50		307	7.5	0.06	2670	1.0	2670	5500	0.49	5500	0	0.81	3288	VAV-5-1
D123 SERVING AREA	1850	35		65	7.5	0.18	821	1.0	821	2000	0.41	2000	0	0.89	1010	VAV-5-2
B104 HALL	262	0		0	0	0.06	16	1.0	16	225	0.07	225	0	1.23	19	VAV-5-2
D107 BREAK ROOM	113	10		2	5	0.06	17	1.0	17	275	0.06	275	0	1.24	21	VAV-5-3
H146 PROJECT STORAGE	174	0		0	0	0.12	21	1.0	21	150	0.14	150	0	1.16	26	VAV-5-3
D106 OFFICE	82	5		1	5	0.06	10	1.0	10	100	0.10	100	0	1.20	12	VAV-5-3
D118 HALL	126	0		0	0	0.06	8	1.0	8	250	0.03	250	0	1.27	9	VAV-5-3
D108 TOILET/RESTROOM	150	0	2	0	75		0			200		0	250			
S-1 CLASSROOM	644	35		23	10	0.12	307	1.0	307	1050	0.29	1050	0	1.00	378	VAV-5-3
A143 OFFICE	79	5		1	5	0.06	10	1.0	10	1000	0.01	1000	0	1.29	12	VAV-5-3
STAIR 3 AND UPSTAIRS	760	0		0	0	0.06	46	1.0	46	700	0.07	700	0	1.23	56	VAV-5-4
D114, D119 ELECTRICAL & MAINTENANCE	760	0		0	0	0.12	91	1.0	91	1325	0.07	1325	0	1.23	112	VAV-5-5
D113 IDF	80	0		0	0	0.12	10	1.0	10	50	0.19	50	0	1.11	12	VAV-5-5
D110 MECHANICAL	123	0		0	0	0.12	15	1.0	15	50	0.30	50	0	1.00	18	VAV-5-5
D111 MAINTENANCE	115	0		0	0	0.12	14	1.0	14	75	0.18	75	0	1.11	17	VAV-5-5
STAIR 2 AND UPSTAIRS	1150	0		0	0	0.06	69	1.0	69	900	0.08	900	0	1.22	85	VAV-5-5
<b>TOTAL AHU-1:</b>	<b>12584</b>			<b>399</b>					<b>4122</b>	<b>13850</b>		<b>13650</b>	<b>250</b>	<b>0.81</b>	<b>5076</b>	
<b>CORRECTED TOTAL OUTDOOR AIR FLOW RATE CFM 5076 Corrected OSA Fraction Zs = 0.37</b>																
<b>AHU-7/CU-75</b>																
G105 BREAK ROOM	76	15		2	5	0.06	15	0.8	18	150	0.12	150	0	1.17	21	VAV-7-1
G100 STORE	266	15		5	7.5	0.12	72	0.8	90	500	0.18	500	0	1.12	105	VAV-7-1
G104 OFFICE	67	5		1	5	0.06	9	0.8	11	100	0.11	100	0	1.18	13	VAV-7-1
G103 TOILET/RESTROOM	132	0	2	0	75		0			100		0	150			
E-18 SKILL CENTER	859	35		31	10	0.12	413	1.0	413	1000	0.41	1000	0	0.88	481	VAV-7-1
G102 QUIET ROOM	67	5		1	5											

<b>AC-4</b>																
C147 LOBBY/CORRIDOR	2319	150		348	7.5	0.06	2749	0.8	3436	5415	0.63	5415	0	0.97	3560	--
C148 WOMENS	170	0	2	0	75		0			145		0	275			--
C145 MENS	170	0	2	0	75		0			145		0	275			--
C146 TICKET BOOTHS	160	30		5	5	0.06	35	0.8	43	95	0.46	95	0	1.14	45	--
<b>TOTAL AC-4:</b>	<b>2819</b>			<b>353</b>					<b>3480</b>	<b>5800</b>		<b>5510</b>	<b>550</b>	<b>0.97</b>	<b>3605</b>	
<b>AC-5</b>																
S-19 THEATER	2650	100		265	10	0.12	2968	1.0	2968	8620	0.34	8620	0	0.98	3025	--
F122 CONTROL RM	140	30		5	5	0.06	33	1.0	33	600	0.06	600	0	1.27	34	--
<b>TOTAL AC-5:</b>	<b>2790</b>			<b>270</b>					<b>3001</b>	<b>9220</b>		<b>9220</b>	<b>0</b>	<b>0.98</b>	<b>3059</b>	
<b>AC-6</b>																
F-125 EXISTING AUDITORIUM	1223	50		62	10	0.12	767	1.0	767	3280	0.23	3280	0	1.00	767	--
<b>TOTAL AC-6:</b>	<b>1223</b>			<b>62</b>					<b>767</b>	<b>3280</b>		<b>3280</b>	<b>0</b>	<b>1.00</b>	<b>767</b>	
<b>AC-7</b>																
F115 VESTIBULE	274	0		0	0	0.06	16	0.8	21	200	0.10	200	0	1.20	21	--
F117, F118 DRESS	173	0		0	0	0.06	10	0.8	13	110	0.12	110	0	1.18	13	--
F116 TOILET	170	0	2	0	75		0			50		0	150			--
S-18 CHOIR CLASSROOM	1710	35		60	10	0.12	805	0.8	1007	3000	0.34	3000	0	0.96	1044	--
<b>TOTAL AC-7:</b>	<b>1710</b>			<b>60</b>					<b>1007</b>	<b>3360</b>		<b>3310</b>	<b>150</b>	<b>0.96</b>	<b>1079</b>	
<b>DAH-1/DAC-1</b>																
F-125 DANCE	2090	15		32	10	0.12	571	0.8	714	2800	0.25	2800	0	1.00	714	--
<b>TOTAL DAC-1:</b>	<b>2090</b>			<b>32</b>					<b>714</b>	<b>2800</b>		<b>2800</b>	<b>0</b>	<b>1.00</b>	<b>714</b>	
<b>MAU-1</b>																
C120 GIRLS LOCKER ROOMS	130	0		0	0	0.5	65	0.8	81	465	0.17	465	0	1.22	105	--
C113 TEAM ROOM	604	0		0	0	0.5	302	0.8	378	850	0.44	850	0	0.96	486	--
C116 TEAM ROOM	394	0		0	0	0.5	197	0.8	246	400	0.62	400	0	0.78	317	--
C115 WHIRLPOOL	135	0		0	0	0.12	16	0.8	20	75	0.27	75	0	1.12	26	--
C122, C149 STORAGE/JANITOR	150	0		0	0	0.12	18	0.8	23	80	0.28	80	0	1.11	29	--
C114 OFFICE	80	10		1	5	0.06	10	0.8	12	70	0.18	70	0	1.22	16	--
<b>TOTAL MAU-1:</b>	<b>1493</b>			<b>1</b>					<b>760</b>	<b>1940</b>		<b>1940</b>	<b>0</b>	<b>0.78</b>	<b>979</b>	
<b>AC-1</b>																
W-1 COMPUTER LAB	985	35		35	10	0.12	468	1.0	468	1860	0.25	1860	0	1.00	468	--
<b>TOTAL AC-1:</b>	<b>985</b>			<b>35</b>					<b>468</b>	<b>1860</b>		<b>1860</b>	<b>0</b>	<b>1.00</b>	<b>468</b>	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE    CFM                      468    Corrected OSA Fraction                      Zs =    0.25																
<b>AC-2</b>																
E118 MEDIA CENTER	2875	25		72	10	0.12	1065	1.0	1065	3885	0.27	3885	0	0.93	1151	--
E129 COMPUTER LAB	1430	35		51	10	0.12	682	1.0	682	2520	0.27	2520	0	0.93	737	--
E121 CONFERENCE ROOM	156	50		6	5	0.06	49	1.0	49	210	0.24	210	0	0.96	53	--
E117 CORRIDOR	2000	0		0	0	0.06	120	1.0	120	2385	0.04	2385	0	1.16	130	--
<b>TOTAL AC-2:</b>	<b>6461</b>			<b>131</b>					<b>2070</b>	<b>9600</b>		<b>9600</b>	<b>0</b>	<b>0.93</b>	<b>2070</b>	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE    CFM                      2070    Corrected OSA Fraction                      Zs =    0.22																
<b>AC-3</b>																
E126 IDF RM	112	0		0	0	0.06	9	1.0	9	250	0.00	250	0	0.99	11	--
E125 OFFICE	67	5		1	5	0.06	9	1.0	9	115	0.08	115	0	0.94	14	--
E124 OFFICE	110	5		1	5	0.06	12	1.0	12	90	0.13	90	0	0.99	11	--
E123 OFFICE	67	5		1	5	0.06	9	1.0	9	115	0.08	115	0	0.99	11	--
E127 BINDERY	365	10		4	5	0.06	42	1.0	42	300	0.14	300	0	0.93	52	--
E128 WORK ROOM	223	10		3	5	0.06	28	1.0	28	200	0.14	200	0	0.93	35	--
E117 CORRIDOR	746	0		0	0	0.06	45	1.0	45	195	0.23	195	0	0.84	56	--
E115, E116 RESTROOMS	237	0	2	0	75		0			100		0	200			--
E119 CONFERENCE ROOM	402	50		21	5	0.06	129	1.0	129	485	0.27	485	0	0.80	161	--
<b>TOTAL AC-3:</b>	<b>402</b>			<b>21</b>					<b>129</b>	<b>1850</b>		<b>1750</b>	<b>0</b>	<b>0.80</b>	<b>161</b>	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE    CFM                      161    Corrected OSA Fraction                      Zs =    0.09																
<b>F-1</b>																
W-4 CLASSROOM	690	35		25	10	0.12	333	1.0	333	1200	0.28	1200	0	1.00	333	--
<b>TOTAL F-1:</b>	<b>690</b>			<b>25</b>					<b>333</b>	<b>1200</b>		<b>1200</b>	<b>0</b>	<b>1.00</b>	<b>333</b>	
<b>F-2</b>																
W-3 CLASSROOM	710	35		25	10	0.12	335	1.0	335	1200	0.28	1200	0	1.00	443	--
<b>TOTAL F-2:</b>	<b>710</b>			<b>25</b>					<b>335</b>	<b>1200</b>		<b>1200</b>	<b>0</b>	<b>1.00</b>	<b>443</b>	
<b>F-3</b>																
W-2 CLASSROOM	710	35		25	10	0.12	335	1.0	335	1200	0.28	1200	0	1.00	443	--
<b>TOTAL F-3:</b>	<b>710</b>			<b>25</b>					<b>335</b>	<b>1200</b>		<b>1200</b>	<b>0</b>	<b>1.00</b>	<b>443</b>	
<b>F-4 &amp; F-5</b>																
E109 WORK ROOM	486	10		5	5	0.06	54	0.8	68	350	0.19	0	440	1.01	70	--
CORRIDOR	335	0		0	0	0.06	20	1.0	20	375	0.05	0	0	1.15	21	--
W-5 CLASSROOM	940	25		24	10	0.12	353	1.0	353	1475	0.24	740	735	0.96	367	--
<b>TOTAL F-4 &amp; F-5:</b>	<b>1761</b>			<b>29</b>					<b>441</b>	<b>2200</b>		<b>740</b>	<b>1175</b>	<b>0.96</b>	<b>458</b>	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE    CFM                      458    Corrected OSA Fraction                      Zs =    0.21																
<b>F-6</b>																
CORRIDOR	335	0		0	0	0.06	20	1.0	20	150	0.13	0	0	1.14	20	--
W-6 CLASSROOM	950	25		24	10	0.12	354	1.0	354	1200	0.30	465	735	0.96	360	--
<b>TOTAL F-6:</b>	<b>1285</b>			<b>24</b>					<b>374</b>	<b>1350</b>		<b>465</b>	<b>735</b>	<b>0.96</b>	<b>381</b>	



SHEET IS REVISED PER ADDENDUM #2.

**PAUL L BENTLEY Architect A.I.A. P.C.**

615 SE JACKSON STREET  
PORTLAND, OR 97214  
503.472.8273 OFFICE  
503.472.8273 FAX  
P.L.B@PAULBENTLEYARCHITECT.COM

1-ADD #2 2/22/2018  
3-PHASE#2 6.12.18

CONSTRUCTION SET-6.10.18

**M** Consulting Engineers  
2007 S.E. Ash St.  
Portland, OR 97214  
PHN: (503) 234-0548  
FAX: (503) 234-0877  
INC. WWW.MFIA-ENG.COM  
CONTACT: Elena von Kaments

A NEW REMODEL PROJECT FOR:

**SHERWOOD HIGH SCHOOL**

SHERWOOD, OR  
16956 SW MEINECKE ROAD

REGISTERED PROFESSIONAL  
ENGINEER  
17889  
SCOTT W. MILLER  
EXPIRES: 31DEC18

DRAWN BY: EVK  
CHECKED BY: SWM  
DATE: 1-30-18  
TITLE: MECHANICAL SCHEDULES  
SCALE: NTS

SHEET NO:  
**M6.2**  
3 OF 8



615 SE JACKSON STREET  
PORTLAND, OR 97202  
503.234.0648  
503.234.0649 FAX  
PAUL@PAULBENTLEYARCHITECT.COM

PAUL L BENTLEY Architect A.I.A. P.C.

- 1-ADD #2 2/22/2018
- 2-ADD #3 3/2/2018
- 3-PHASE#2 6.12.18

CONSTRUCTION SET-6.10.18

**M** Consulting Engineers  
2007 S.E. Ash St.  
Portland, OR 97214  
PHN: (503) 234-0648  
FAX: (503) 234-0677  
INC. WWW.MPEA-ENG.COM  
CONTACT: Eleng von Kaments

A NEW REMODEL PROJECT FOR:

# SHERWOOD HIGH SCHOOL

SHERWOOD, OR  
16956 SW MEINECKE ROAD

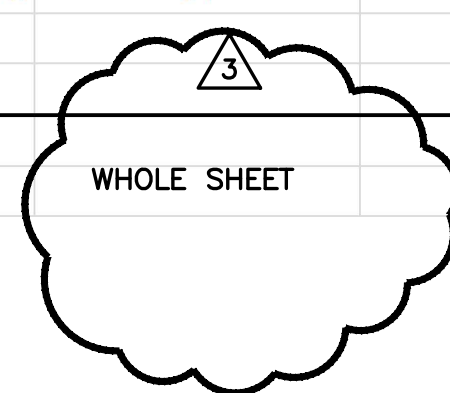


DRAWN BY:	EVK
CHECKED BY:	SWM
DATE:	1-30-18
TITLE:	MECHANICAL SCHEDULES
SCALE:	NTS

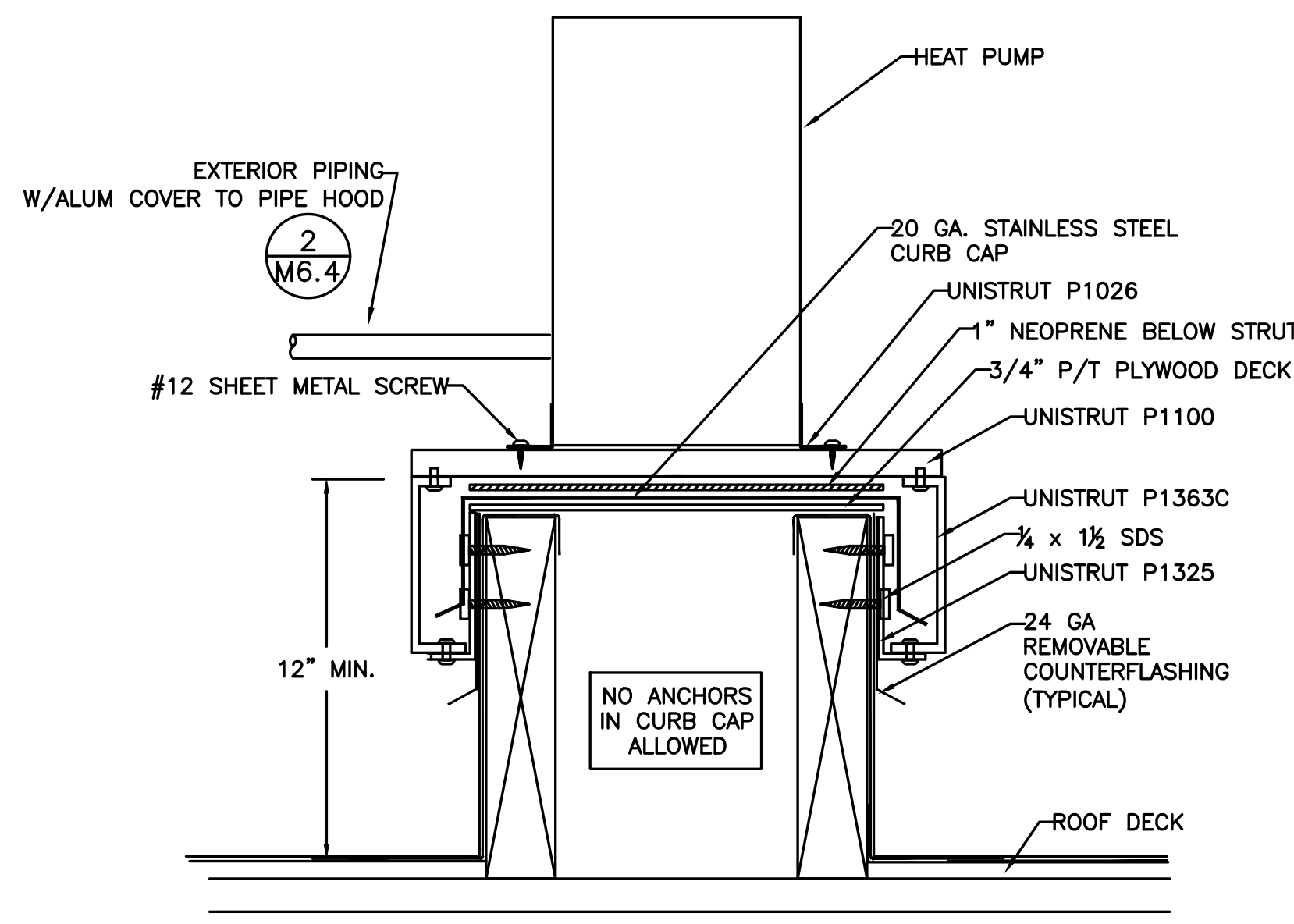
SHEET NO:	M6.3
	4 OF 8

RTU-1/CU-1 VAV BOXES WITH HOT WATER REHEAT																						
MARK NO.	TYPE	ZONE SQ. FT.	MAX COOLING CFM	20% OF COOLING CFM	MIN VENTILATION CFM	MIN 300 CFM	MAXIMUM DEADBAND CFM	MAXIMUM HEATING CFM 50% or VENT	INLET IN.	OUTLET IN.	SA INLET TEMP DEG. F	SA TEMP AT HEATING DEG. F	REHEAT COIL LOAD MBH	INLET WATER TEMP (F)	OUTLET WATER TEMP (F)	GPM	CONN. SIZE IN.	VALVE TYPE	MAX. STATIC LOSS *	MAX. DISCHARGE SOUND POWER LEVEL **	MAX. RADIATED SOUND POWER LEVEL **	CONTROL TYPE
VAV-1-1	VAV	1453	1550	310	530	0	530	775	14	20X16	55	100	37.7	140	110	2.5	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-1-2	VAV	737	1200	240	472	0	472	600	12	16X15	55	100	29.2	140	110	1.9	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-1-3	VAV	737	1200	240	472	0	472	600	12	16X15	55	100	29.2	140	110	1.9	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-1-4	VAV	737	1200	240	498	0	472	600	12	16X15	55	100	29.2	140	110	1.9	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-1-5	VAV	1062	1550	310	498	0	498	775	14	20X16	55	100	37.7	140	110	2.5	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-1-6	VAV	737	1200	240	478	0	472	600	12	16X15	55	100	29.2	140	110	1.9	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-1-7	VAV	734	1000	200	93	0	93	500	10	14X13	55	100	24.3	140	110	1.6	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-1-8	VAV	1376	1375	275	177	0	177	688	12	16X15	55	100	33.4	140	110	2.2	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
<b>TOTAL</b>		<b>7573</b>	<b>10275</b>		<b>3218</b>		<b>3186</b>	<b>5138</b>					<b>249.7</b>			<b>16.6</b>						
RTU-2 VAV BOXES WITH HOT WATER REHEAT																						
VAV-2-1	VAV	735	1095	219	1397	0	1095	1095	12	16X15	55	95	47.3	140	110	3.2	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-2-2	VAV	252	470	94	81	0	94	235	8	12X10	55	95	10.2	140	110	0.7	1/2	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-2-3	VAV	1245	1025	205	460	0	460	513	12	16X15	55	95	22.1	140	110	1.5	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-2-4	VAV	535	710	142	209	0	209	355	10	14X13	55	95	15.3	140	110	1.0	1/2	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-2-5	VAV	638	1000	200	948	0	948	948	10	14X13	55	95	41.0	140	110	2.7	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-2-6	VAV	685	1290	258	1293	0	1290	1290	12	16X15	55	95	55.7	140	110	3.7	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-2-7	VAV	812	2625	525	1244	0	1244	1313	16	24X18	55	95	56.7	140	110	3.8	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
<b>TOTAL</b>		<b>4902</b>	<b>8215</b>		<b>5632</b>		<b>5340</b>	<b>5748</b>					<b>248.3</b>			<b>16.6</b>						
RTU-3 VAV BOXES WITH HOT WATER REHEAT																						
VAV-3-1	VAV	1856	2300	460	790	0	790	1150	16	24X18	55	95	49.7	140	110	3.3	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-3-2	VAV	860	1200	240	151	0	240	600	12	16X15	55	95	25.9	140	110	1.7	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-3-3	VAV	1264	1700	340	940	0	940	940	14	20X16	55	95	40.6	140	110	2.7	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-3-4	VAV	736	1100	220	435	0	435	550	12	16X15	55	95	23.8	140	110	1.6	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-3-5	VAV	755	1100	220	751	0	751	751	12	16X15	55	95	32.4	140	110	2.2	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-3-6	VAV	755	1100	220	751	0	751	751	12	16X15	55	95	32.4	140	110	2.2	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-3-7	VAV	845	1105	221	502	0	502	553	12	16X15	55	95	23.9	140	110	1.6	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-3-8	VAV	1621	2000	400	1055	0	1055	1055	14	20X16	55	95	45.6	140	110	3.0	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
<b>TOTAL</b>		<b>8692</b>	<b>11605</b>		<b>5375</b>		<b>4409</b>	<b>5295</b>					<b>228.7</b>			<b>18.3</b>						
AHU-5/CU-74 VAV BOXES WITH HOT WATER REHEAT																						
VAV-5-1	VAV	6126	5500	1100	3288	0	3288	3288	24X16	24X18	55	100	159.8	140	110	10.7	1 1/4	3-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-5-2	VAV	2112	2225	445	1030	0	1030	1113	16	24X18	55	100	54.1	140	110	3.6	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-5-3	VAV	1368	3025	605	458	0	605	1513	24X16	24X18	55	100	73.5	140	110	4.9	1	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-5-4	VAV	760	700	140	56	0	140	350	8	12X10	55	100	17.0	140	110	1.1	1/2	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-5-5	VAV	2228	2400	480	244	0	480	1200	16	24X18	55	100	58.3	140	110	3.9	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
<b>TOTAL</b>		<b>12594</b>	<b>13850</b>		<b>5076</b>		<b>5543</b>	<b>7463</b>					<b>362.7</b>			<b>24.2</b>						
AHU-7/CU-75 VAV BOXES WITH HOT WATER REHEAT																						
VAV-7-1	VAV	1487	2000	400	633	0	2000	2000	14	20X16	55	100	97.2	140	110	6.5	1	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-7-2	VAV	1138	1400	280	259	0	1400	1400	12	16X15	55	100	68.0	140	110	4.5	1	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-7-3	VAV	5511	5500	1100	2796	0	5500	5500	24X16	24X18	55	100	267.3	140	110	17.8	1 1/2	3-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-7-4	VAV	1230	2075	415	86	0	2075	2075	14	20X16	55	100	100.8	140	110	6.7	1	2-WAY CONTROL VALVE	0.75	67	59	DDC
<b>TOTAL</b>		<b>9366</b>	<b>10975</b>		<b>3774</b>		<b>10975</b>	<b>10975</b>					<b>533.4</b>			<b>35.6</b>						
AHU-13/CU-76 VAV BOXES WITH HOT WATER REHEAT																						
VAV-13-1	VAV	1842	1900	380	826	0	826	950	14	20X16	55	100	46.2	140	110	3.1	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-13-2	VAV	1619	1850	370	673	0	673	925	14	20X16	55	100	45.0	140	110	3.0	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-13-3	VAV	645	1300	260	457	0	457	650	12	16X15	55	100	31.6	140	110	2.1	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-13-4	VAV	1232	1950	390	777	0	777	975	14	20X16	55	100	47.4	140	110	3.2	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
VAV-13-5	VAV	1812	1750	350	667	0	667	875	14	20X16	55	100	42.5	140	110	2.8	3/4	2-WAY CONTROL VALVE	0.75	67	59	DDC
<b>TOTAL</b>		<b>7150</b>	<b>8750</b>		<b>3400</b>		<b>3400</b>	<b>4375</b>					<b>212.6</b>			<b>14.2</b>						

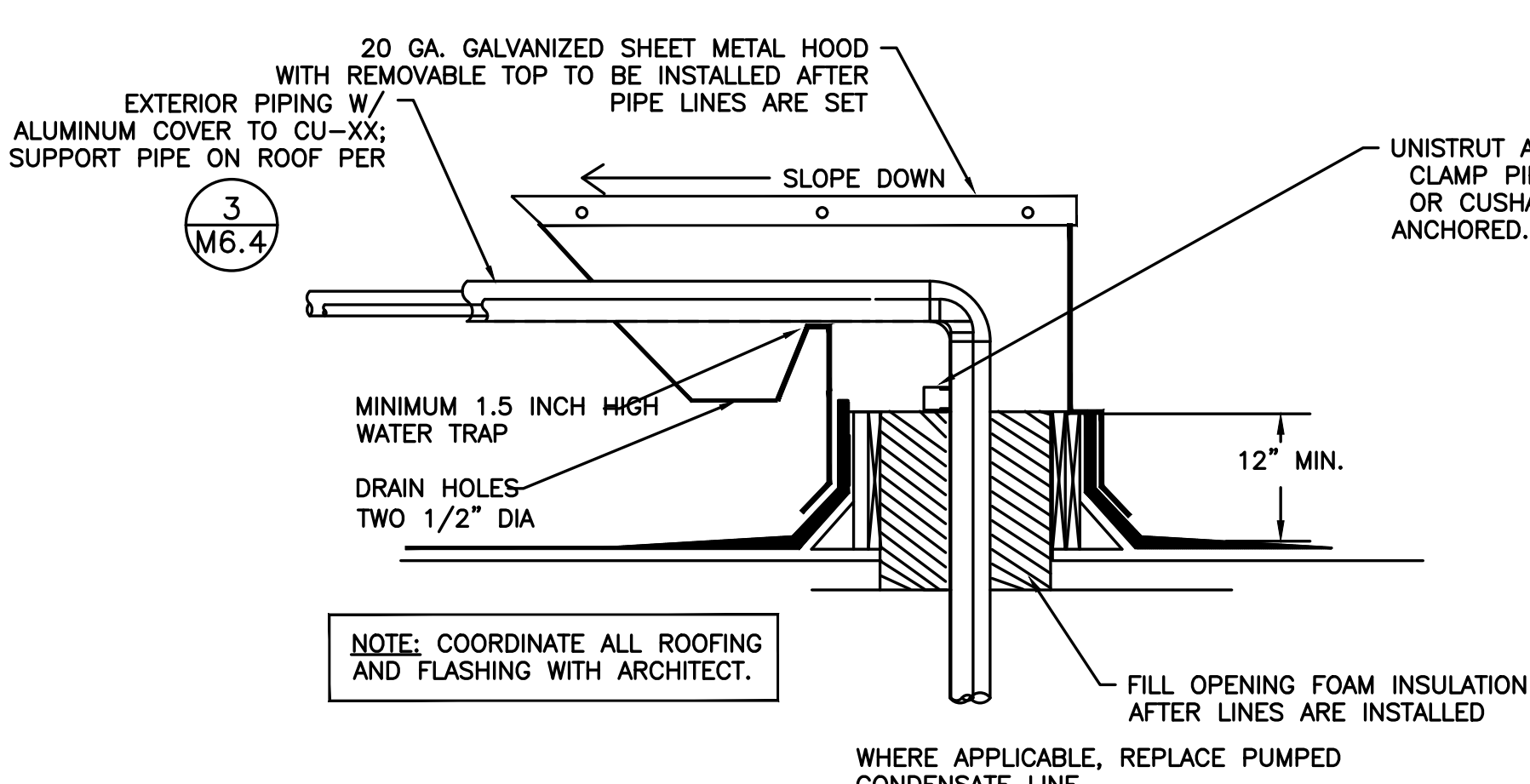
\* - INCLUDING COIL, SOUND ATTENUATOR SECTION & VAV BOX  
 \*\* - THIRD OCTAVE CERTIFIED RATING IN ACCORDANCE WITH ARI STANDARD 880-94



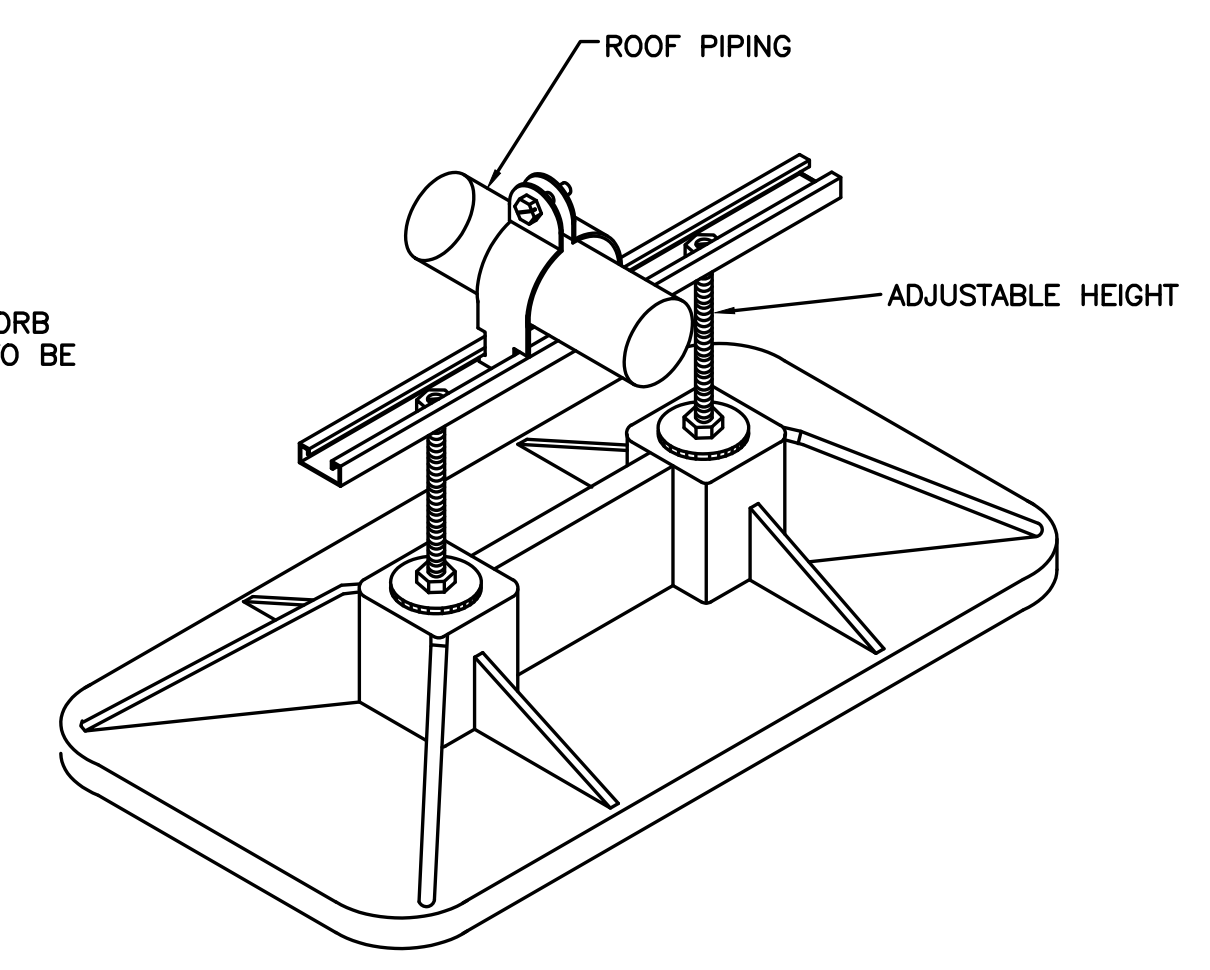
SHEET IS REVISED PER ADDENDUM #2.



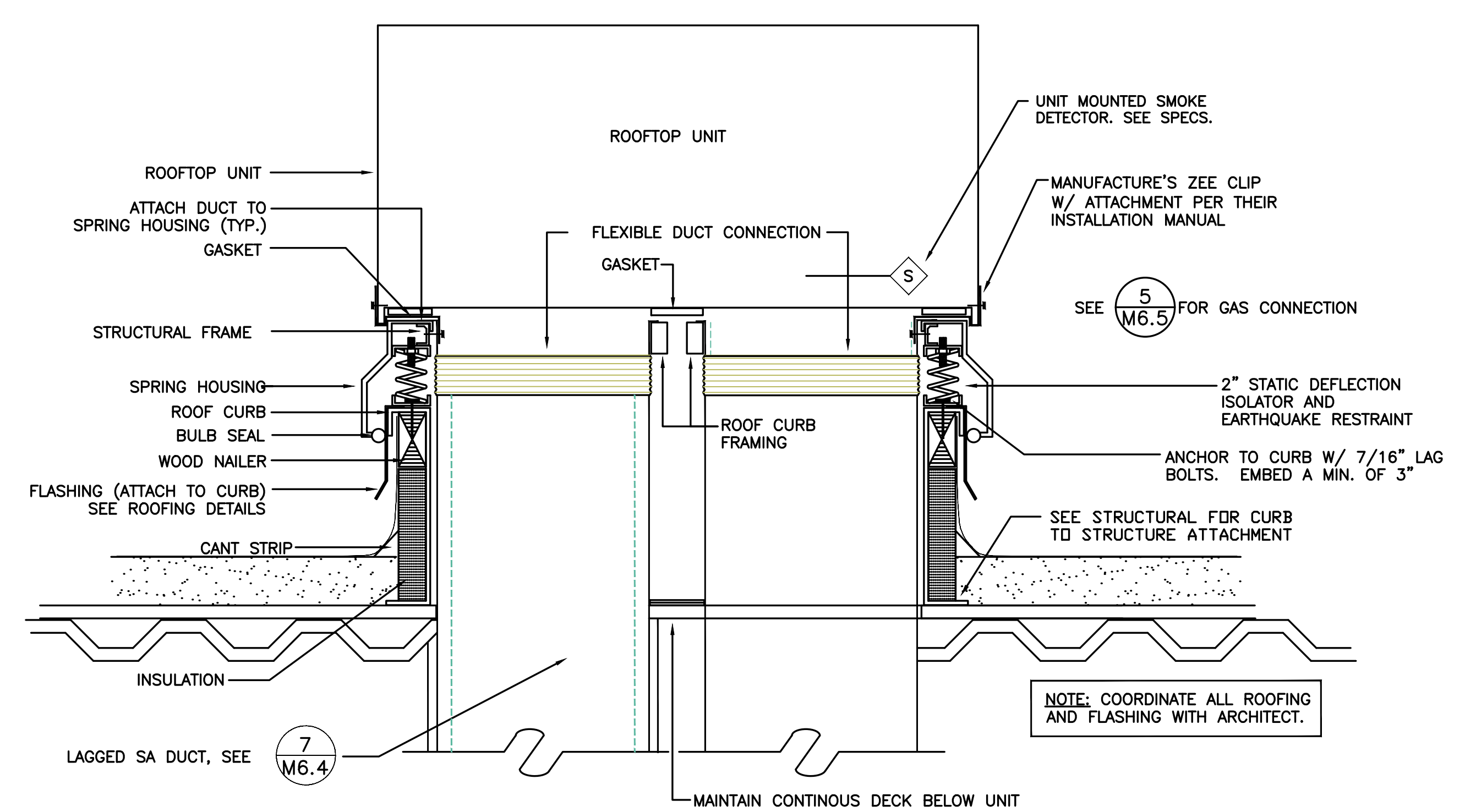
**1** SMALL CONDENSING UNIT CURB DETAIL  
 SCALE: DETAIL  
 M6.4



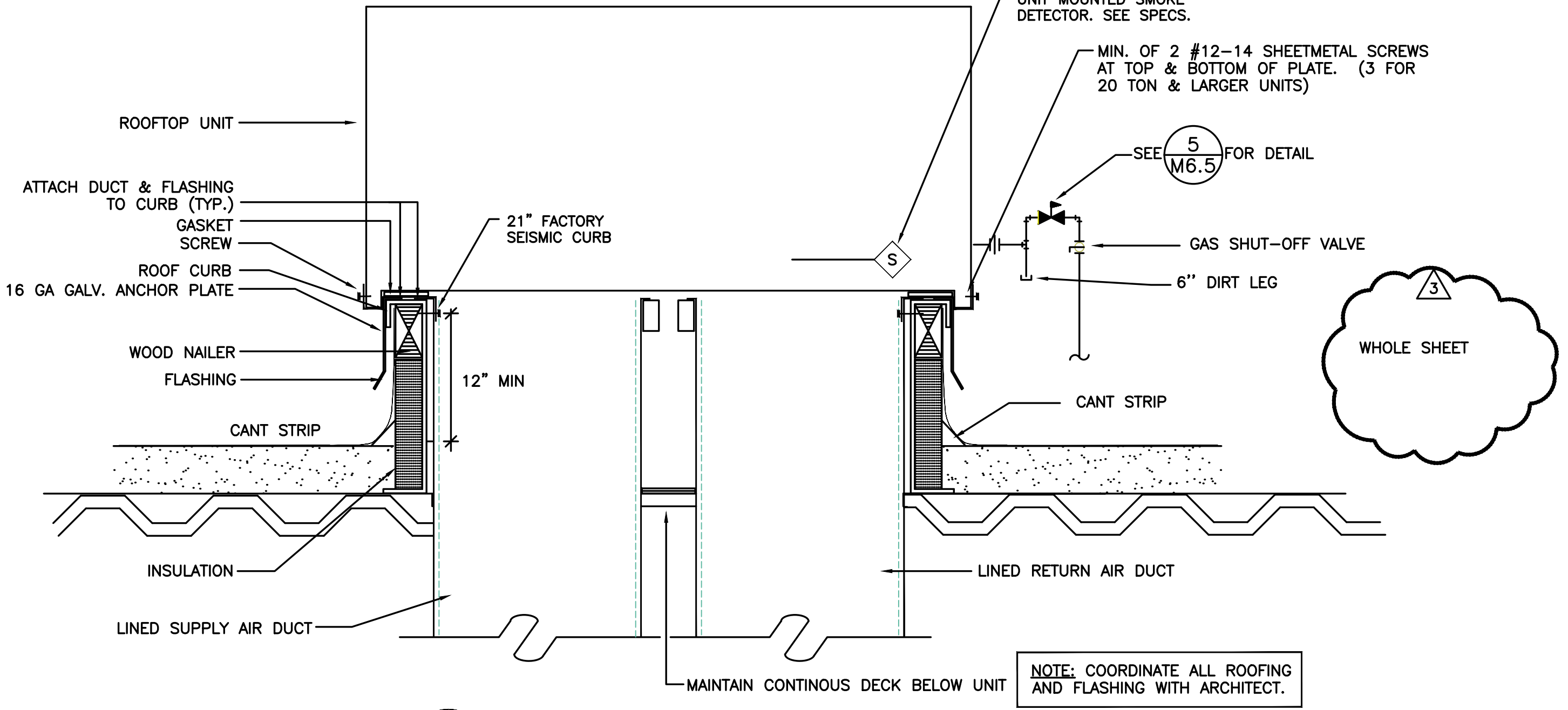
**2** REFRIGERANT PIPE HOOD  
 SCALE: DETAIL  
 M6.4



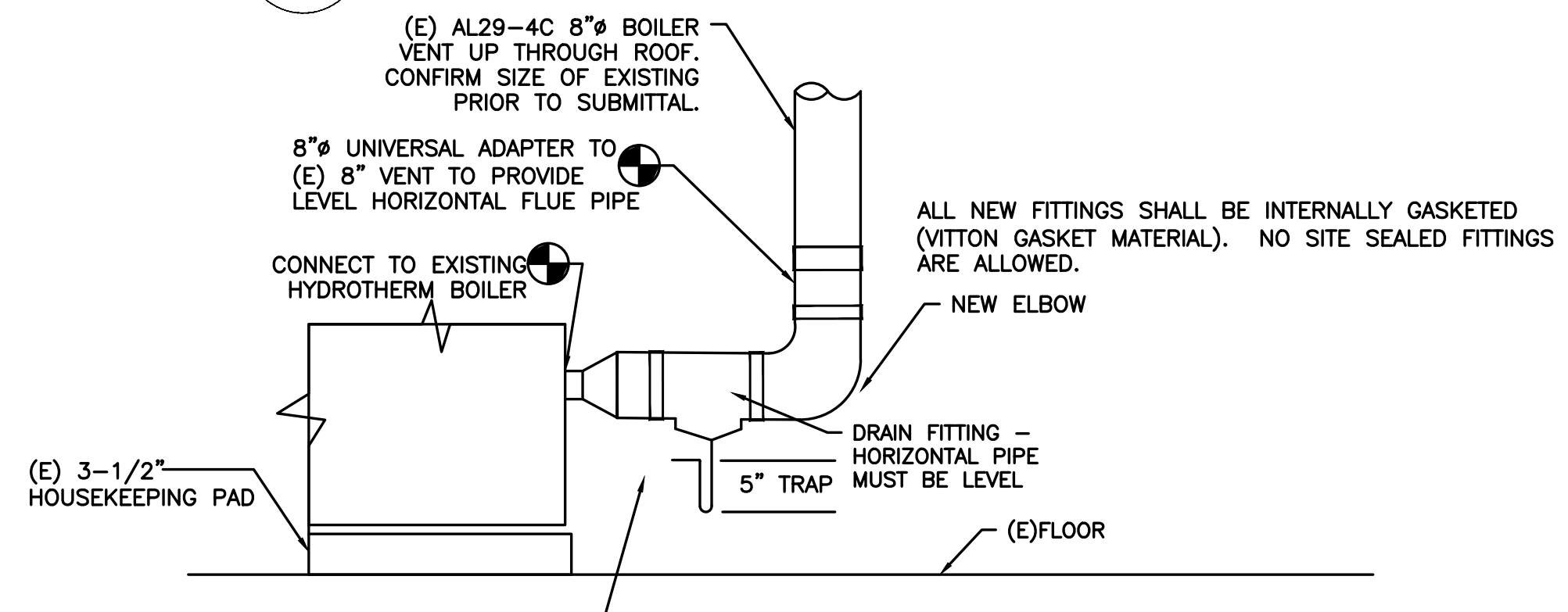
**3** ROOF PIPING SUPPORT DETAIL  
 SCALE: DETAIL  
 M6.4



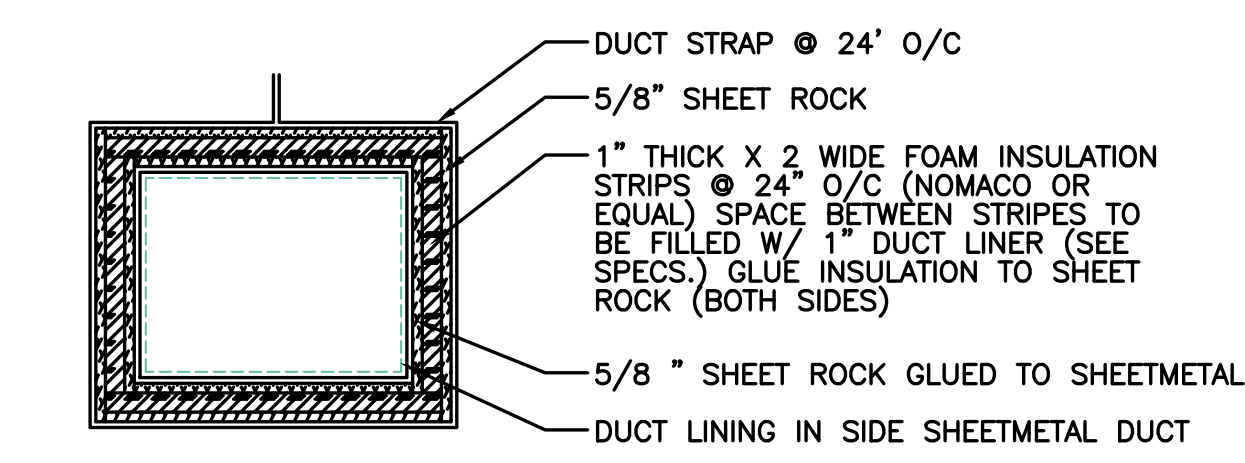
**4** AC & RTU-XX (7 TONS OR MORE) DETAIL  
 SCALE: DETAIL  
 M6.4



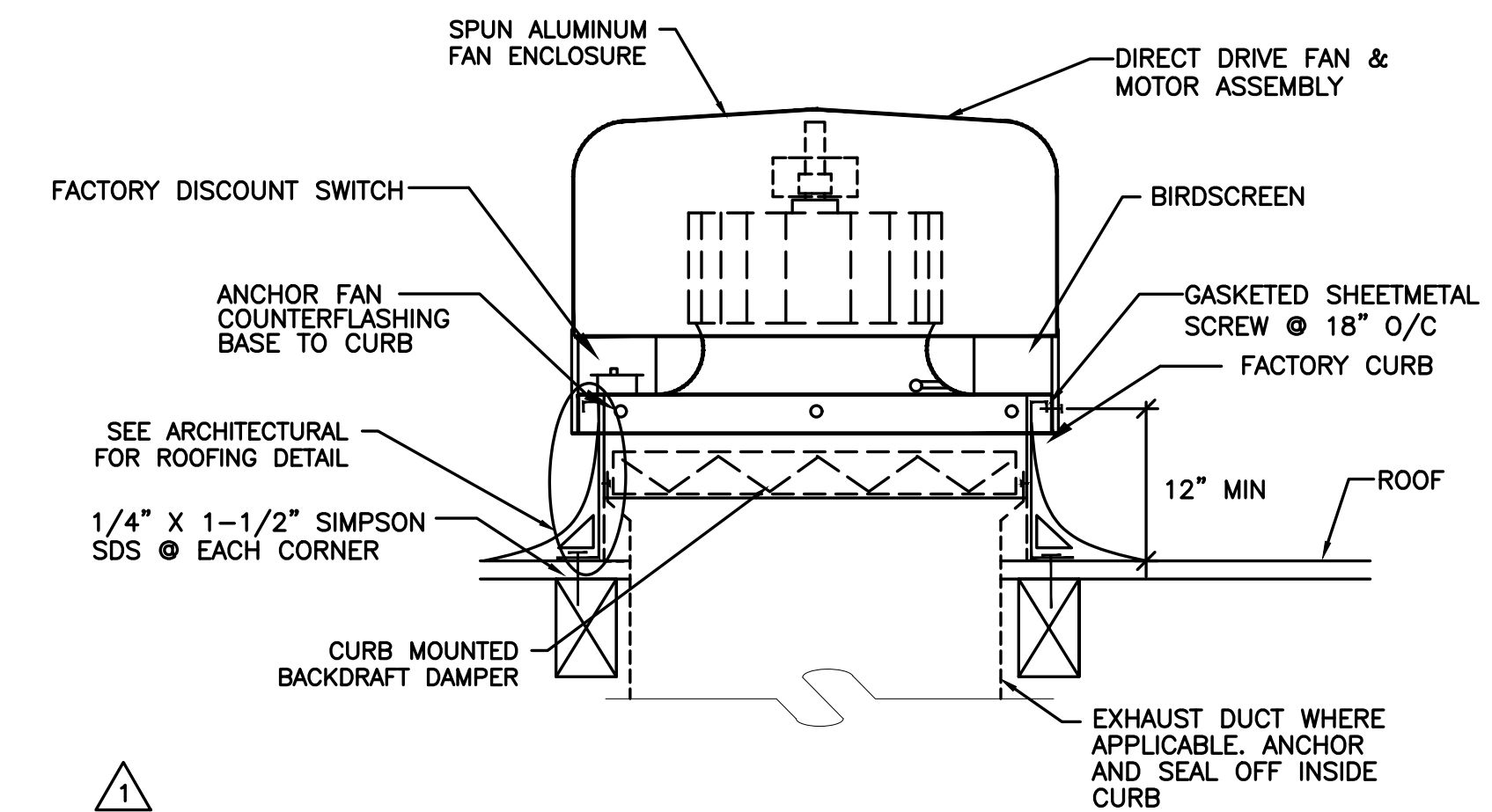
**5** ROOFTOP UNIT CURB DETAIL FOR AC UNITS  
 SCALE: DETAIL  
 M6.4 (6 TONS OR LESS)



**6** BOILER FLUE DETAIL  
 SCALE: DETAIL  
 M6.4



**7** LAGGED DUCT  
 SCALE: DETAIL  
 M6.4



**8** ROOF MOUNTED EXHAUST FAN  
 SCALE: DETAIL  
 M6.4

SHEET IS REVISED PER ADDENDUM #2.

**PAUL L BENTLEY ARCHITECT A.I.A. P.C.**  
 615 SE JACKSON STREET  
 PORTLAND, OR 97214  
 PH: (503) 234-0548  
 FAX: (503) 234-0877  
 WWW.MPIA-ENG.COM  
 CONTACT: Elena von Kamens

CONSTRUCTION SET-6.10.18

ADD #2 2/22/2018  
 ADD #3 3/2/2018  
 PHASE#2 6.12.18

A NEW REMODEL PROJECT FOR:

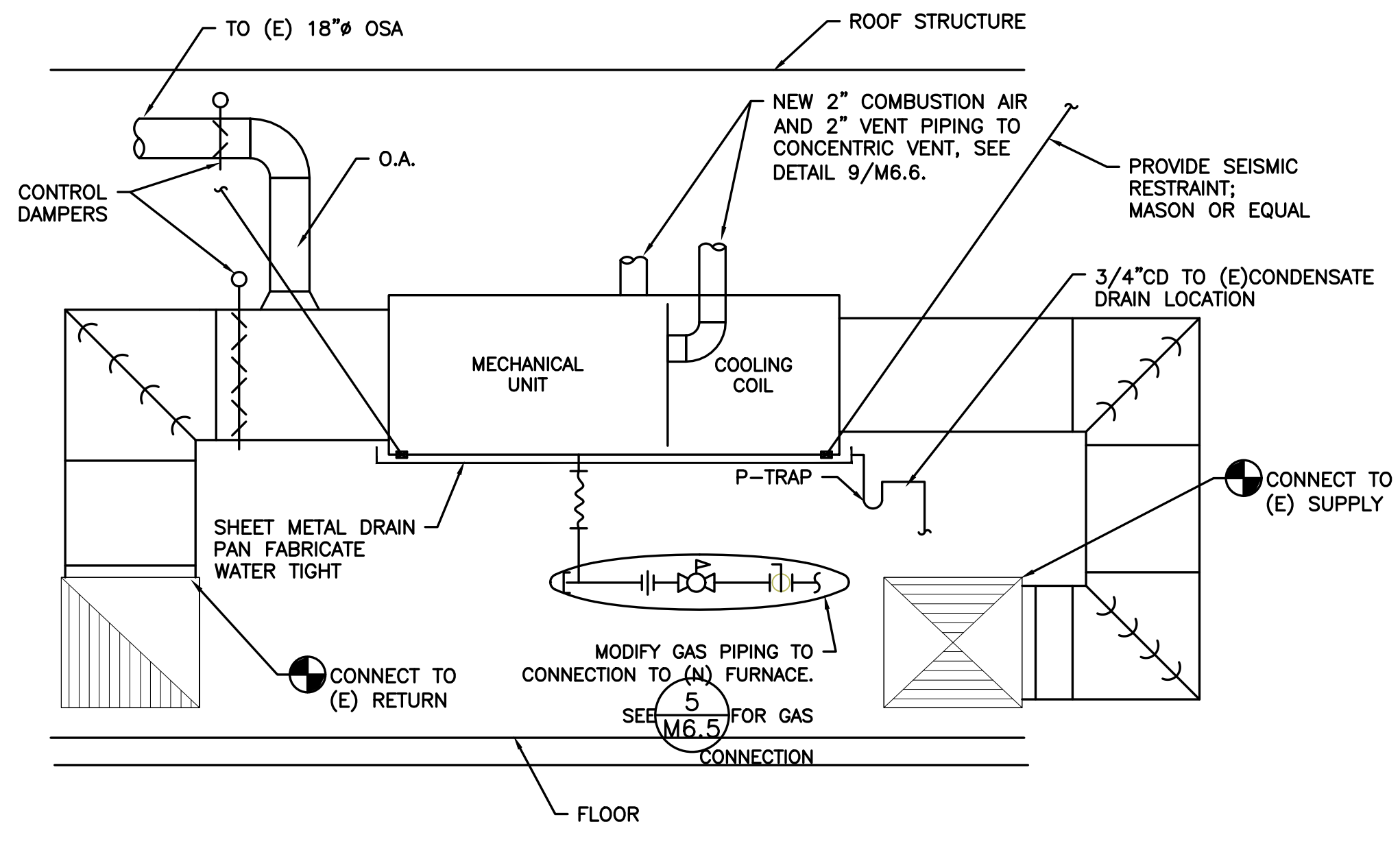
**SHERWOOD HIGH SCHOOL**

16956 SW MEINECKE ROAD  
 SHERWOOD, OR

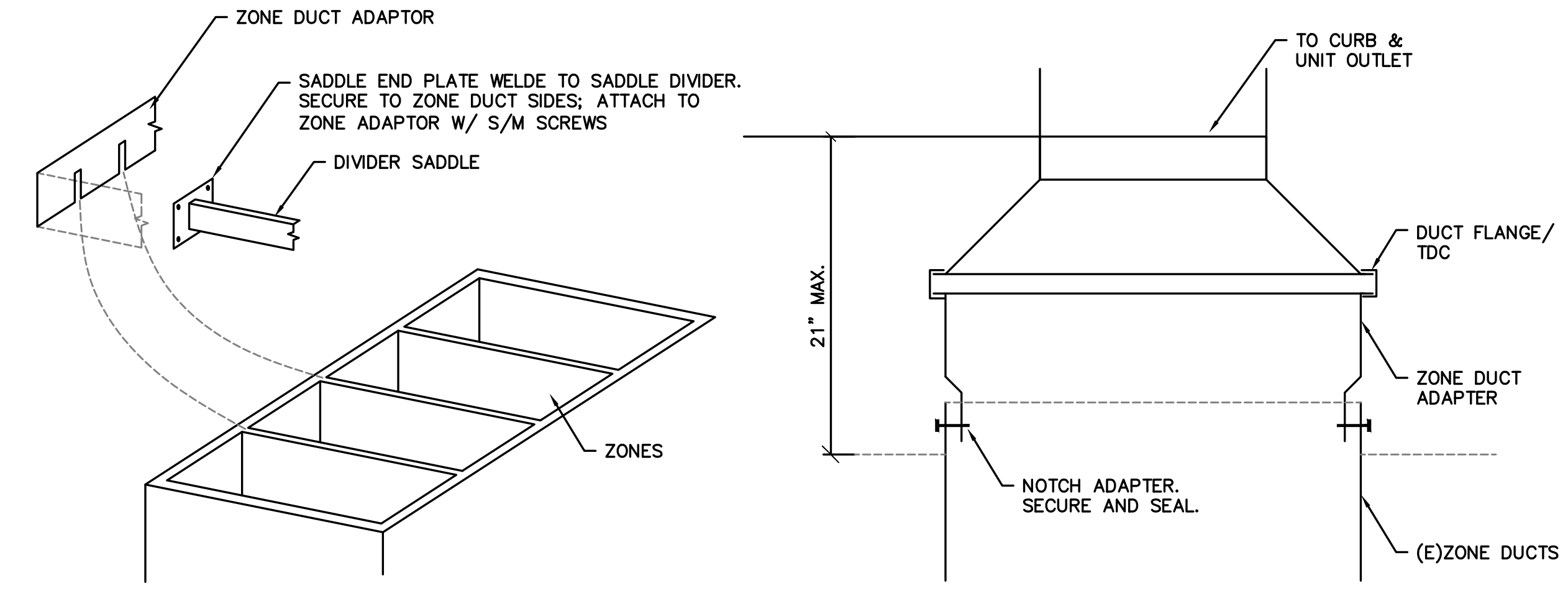
REGISTERED PROFESSIONAL ENGINEER  
 17884  
 JULY 25, 1993  
 SCOTT W. MILLER  
 EXPIRES: 31DEC18

DRAWN BY: EVK  
 CHECKED BY: SWM  
 DATE: 1-30-18  
 TITLE: MECHANICAL DETAILS  
 SCALE: NTS

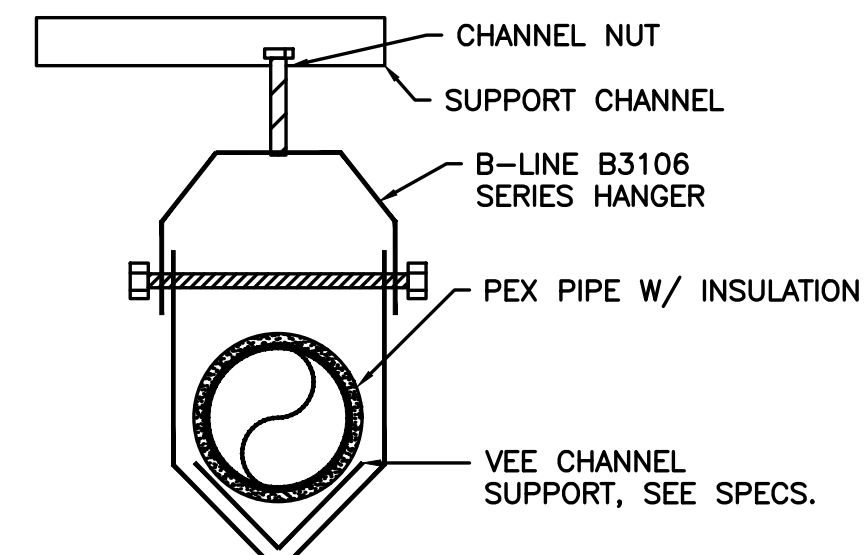
SHEET NO:  
**M6.4**  
 5 OF 8



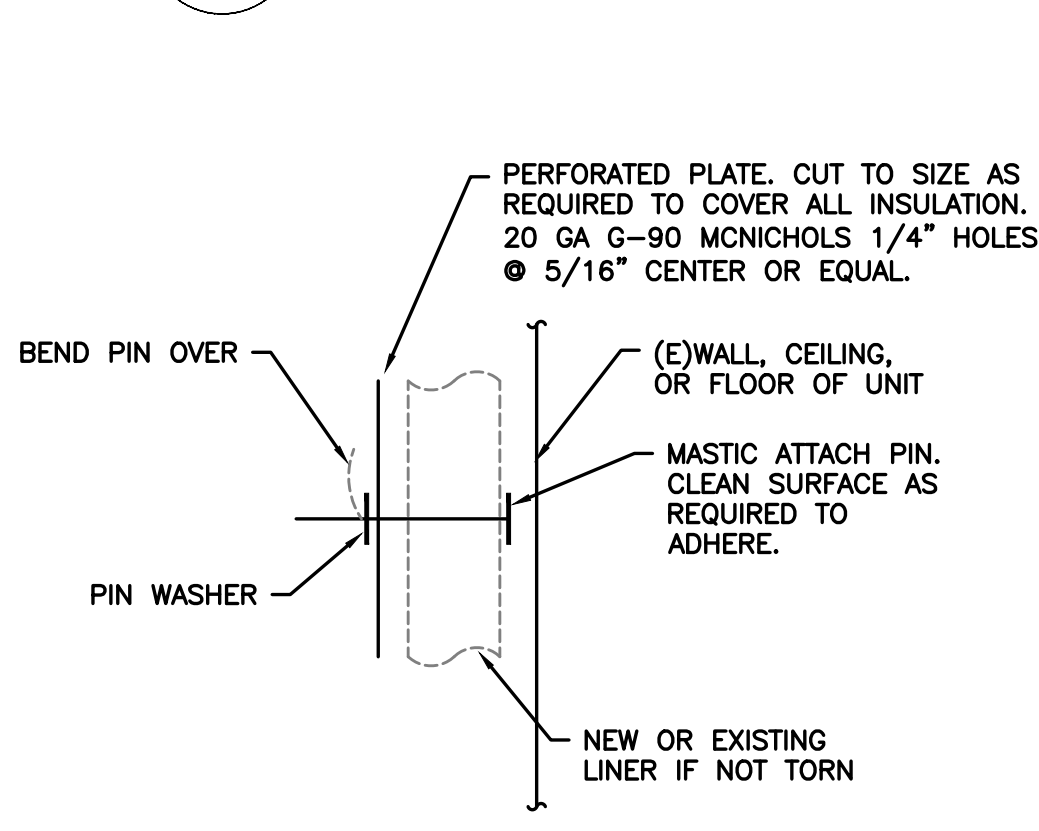
**4 FURNACE DETAIL**  
M6.5 SCALE: DETAIL



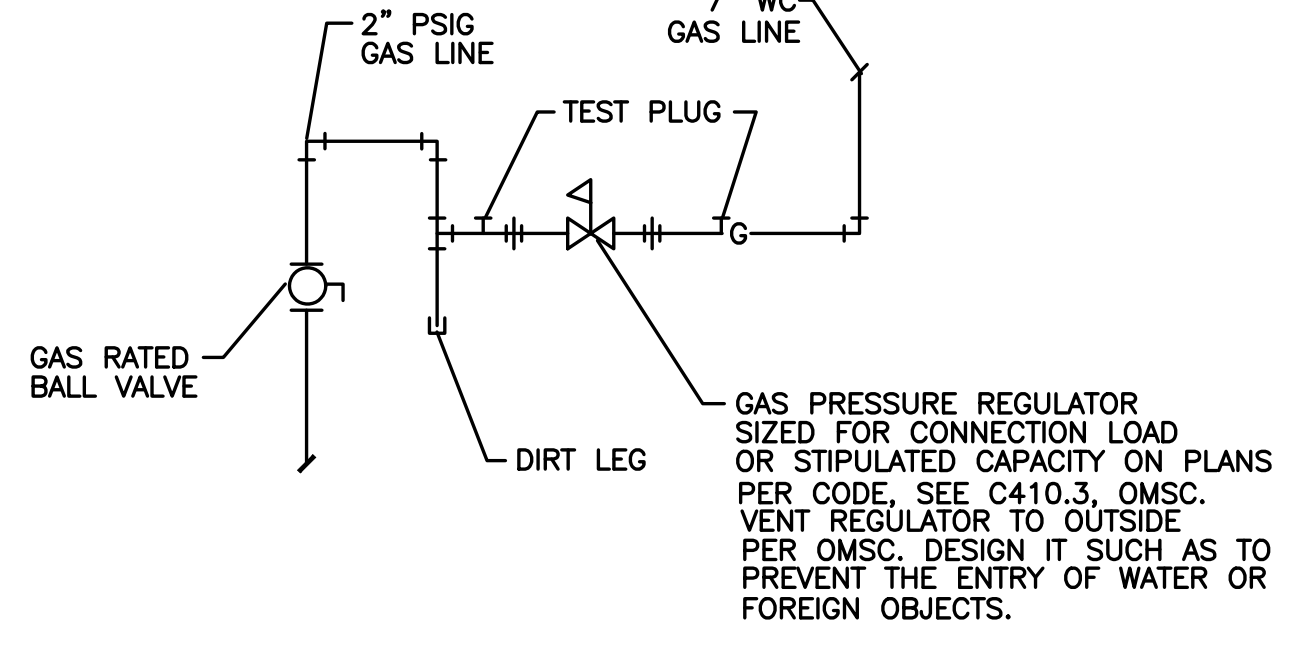
**1 CONNECT TO EXISTING MZ DUCTS**  
M6.5 NTS



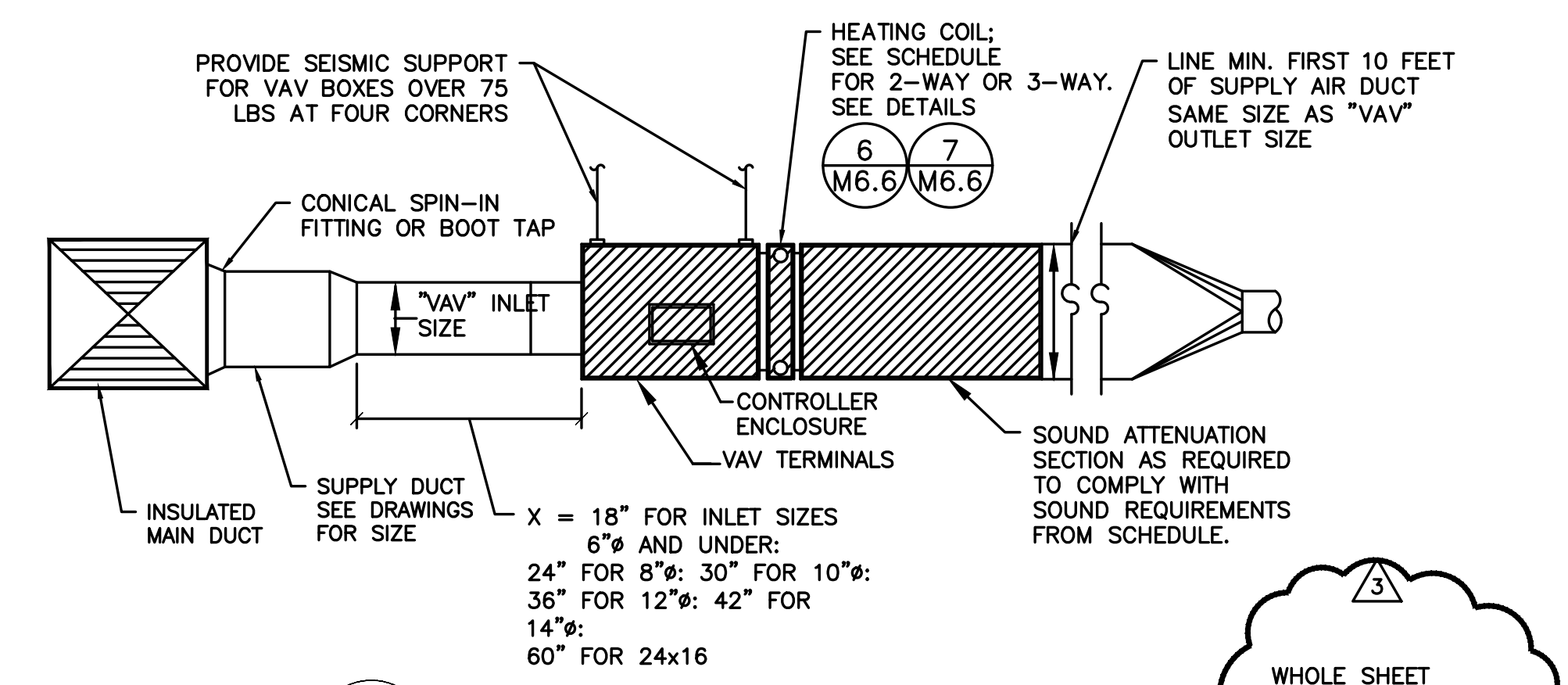
**8 PEX SUPPORT**  
M6.5 SCALE: DETAIL



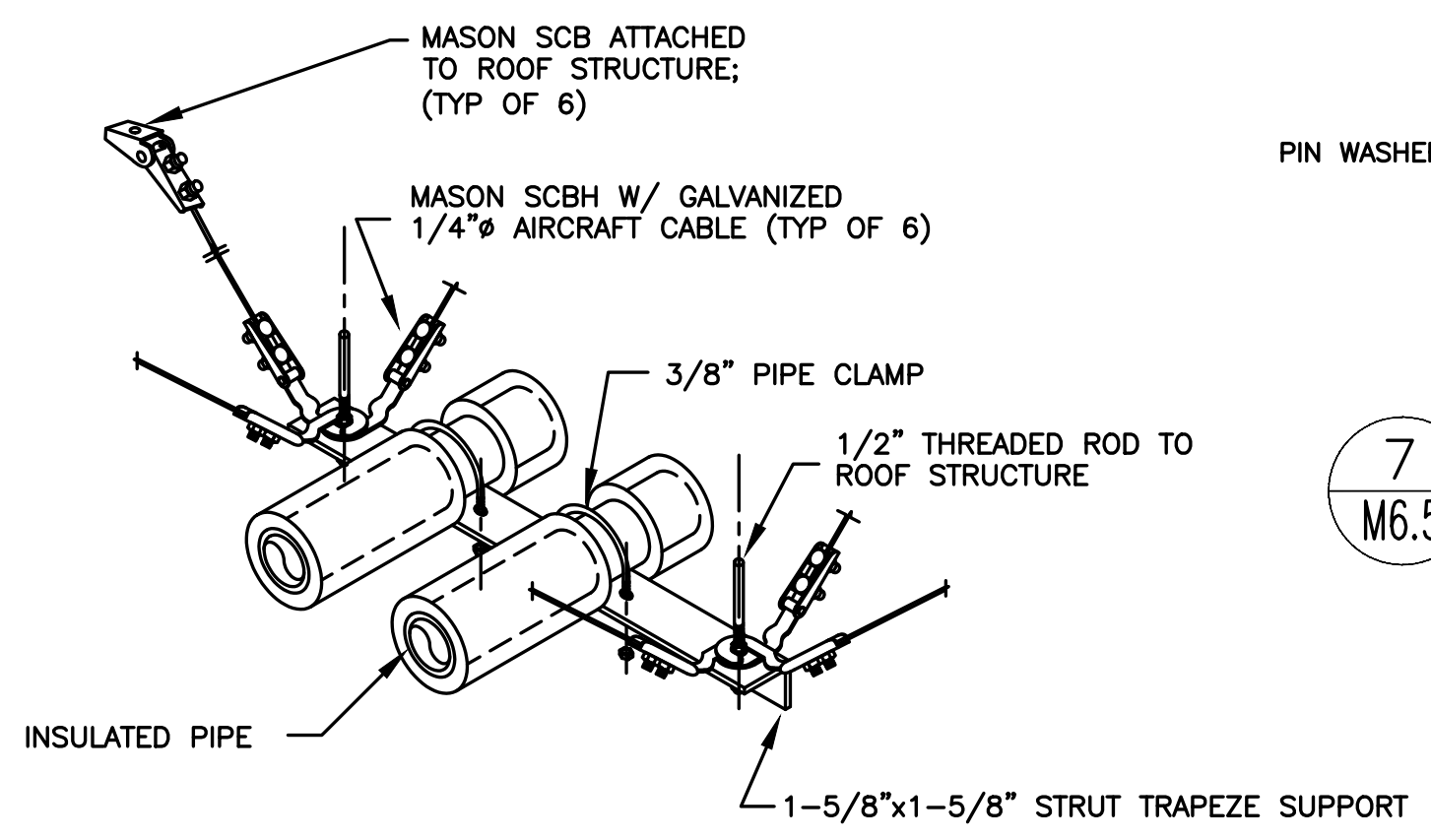
**7 (E) UNIT LINER REPAIR**  
M6.5 SCALE: DETAIL



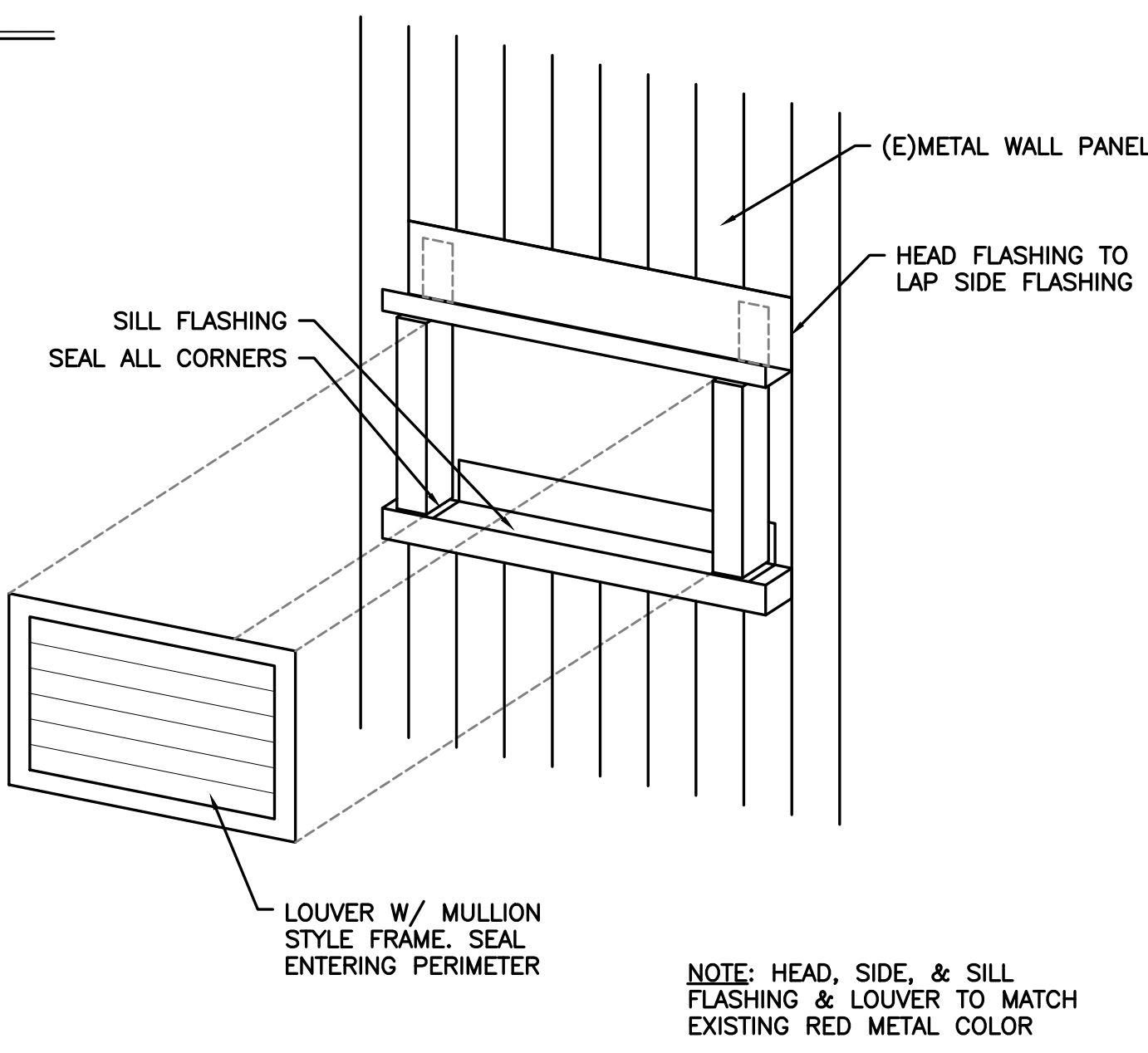
**5 GAS REG. DETAIL**  
M6.5 SCALE: DETAIL



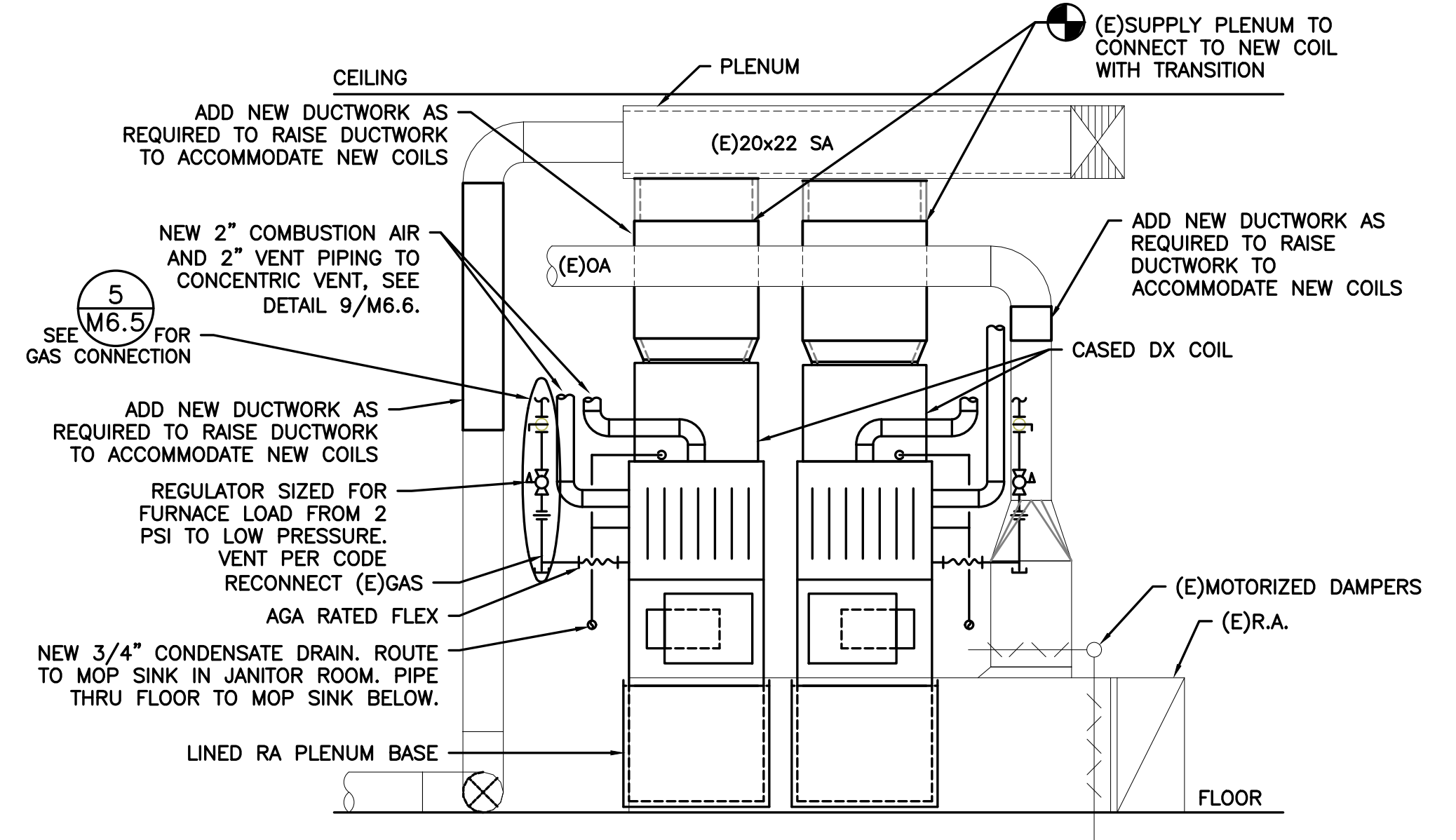
**2 TYPICAL VAV BOX DETAIL**  
M6.5 SCALE: DETAIL



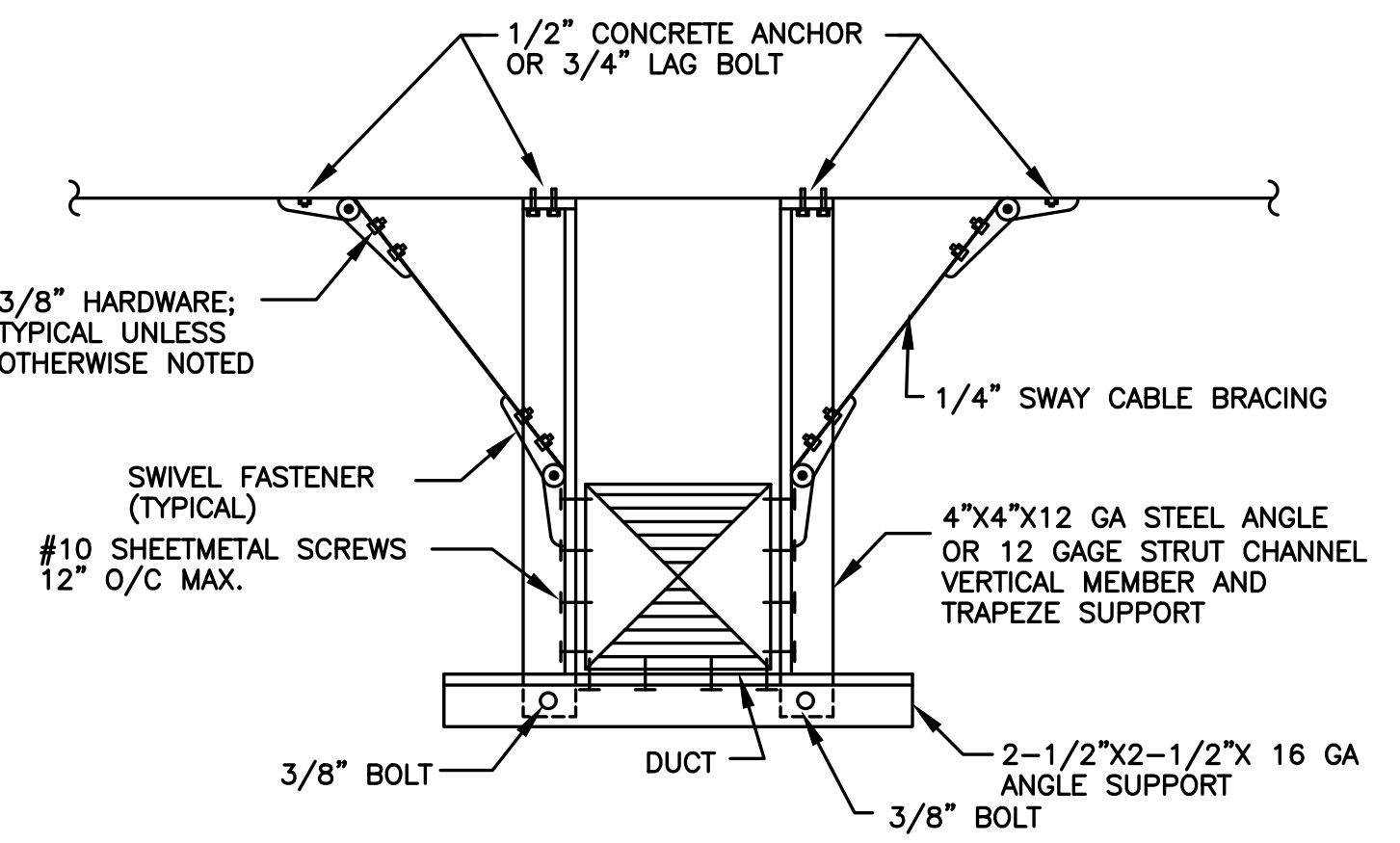
**9 TRAPEZE SEISMIC PIPE SUPPORT**  
M6.5 SCALE: DETAIL



**6 LOUVER DETAIL**  
M6.5 SCALE: DETAIL

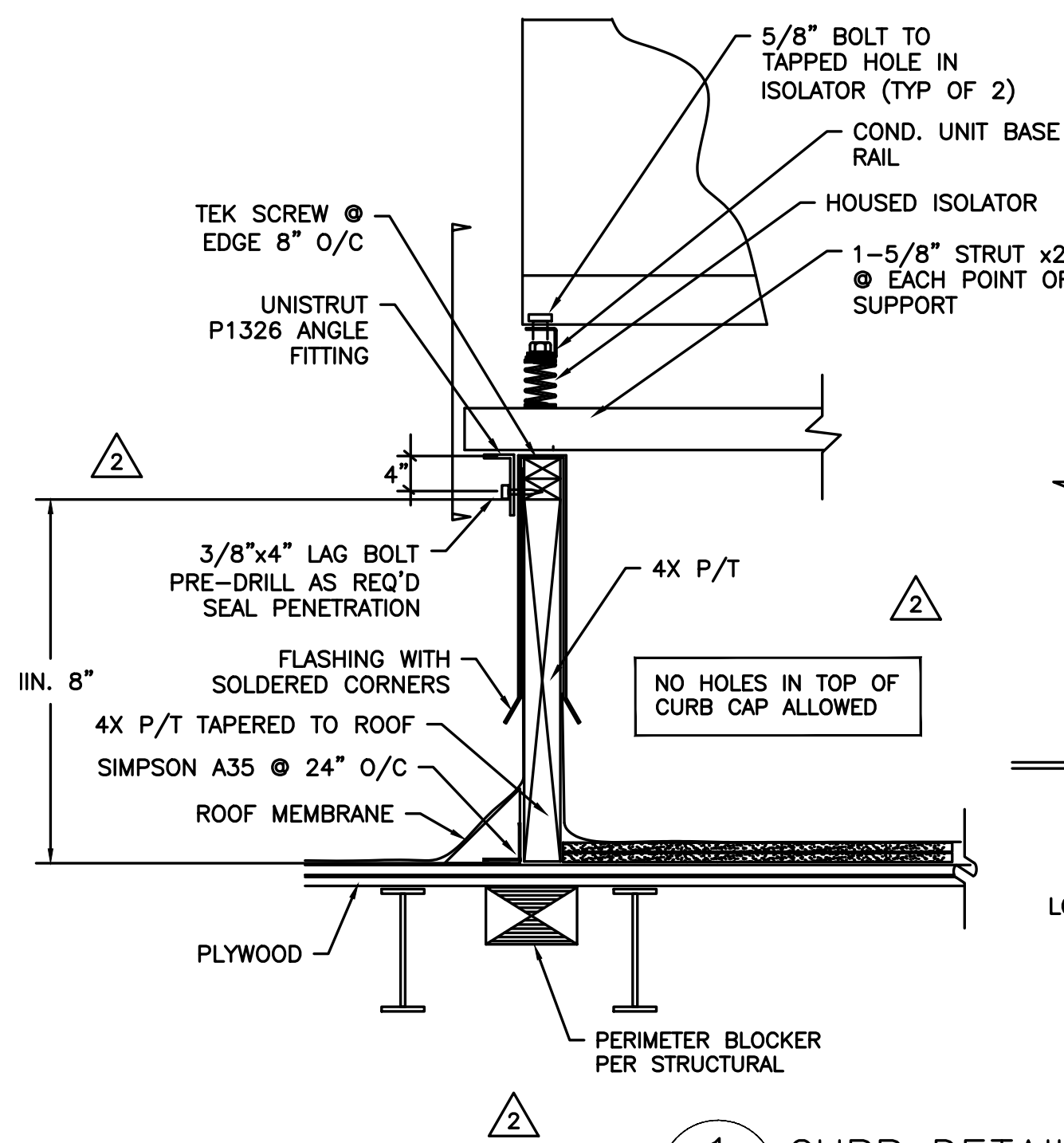


**3 F-4 AND 5 DETAIL**  
M6.5 SCALE: DETAIL

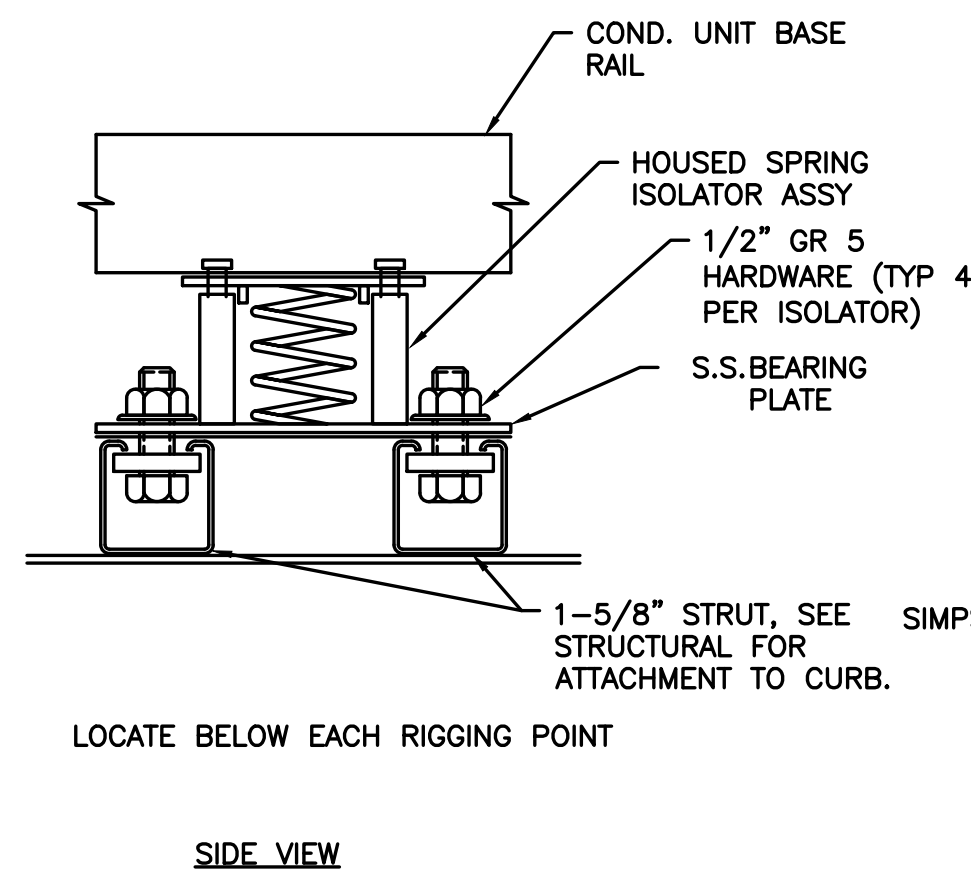


**10 DUCT SEISMIC SUPPORT BRACE**  
M6.5 SCALE: DETAIL

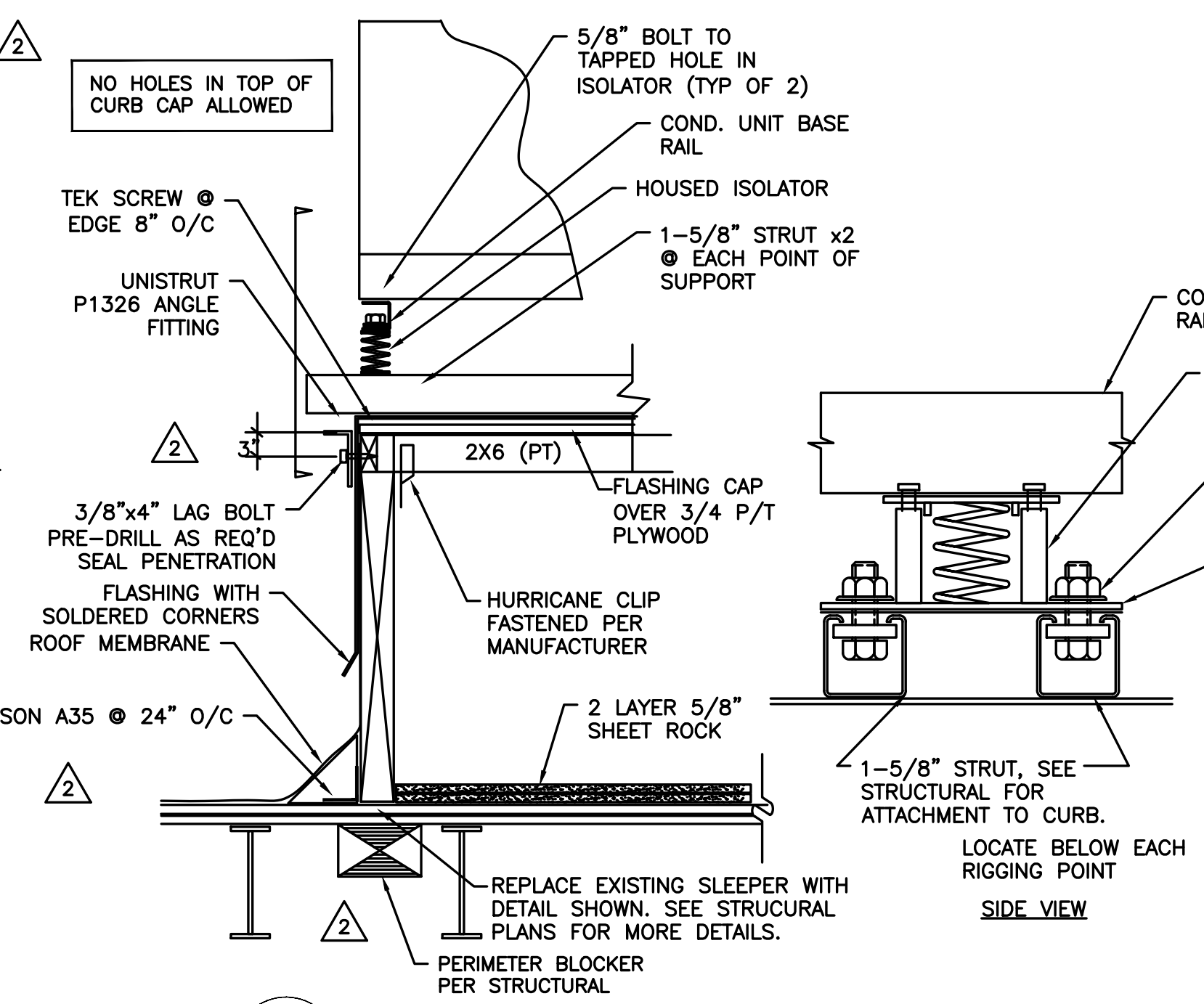
SHEET IS REVISED PER ADDENDUM #2.



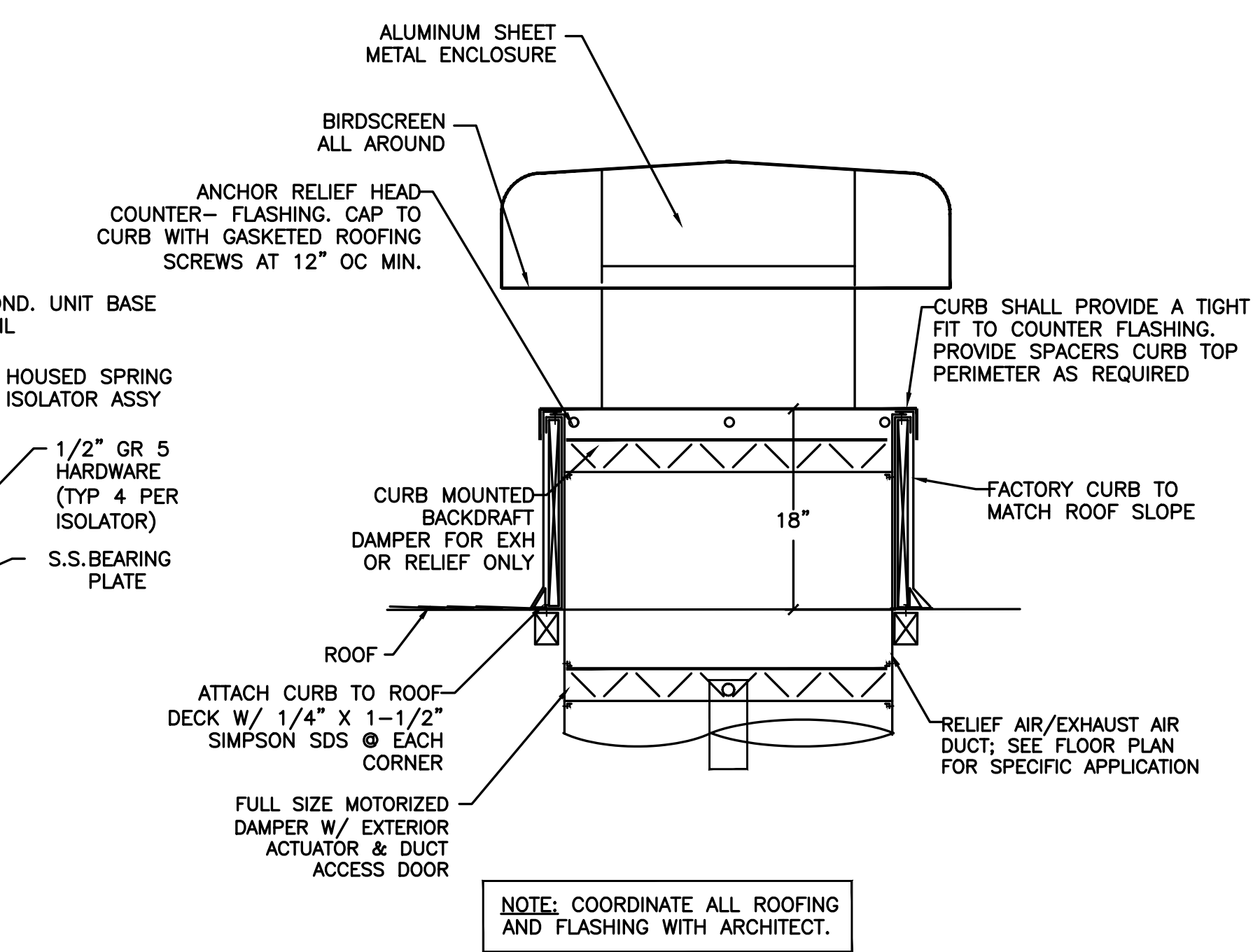
1 CURB DETAIL FOR CU-74  
M6.6 SCALE: DETAIL



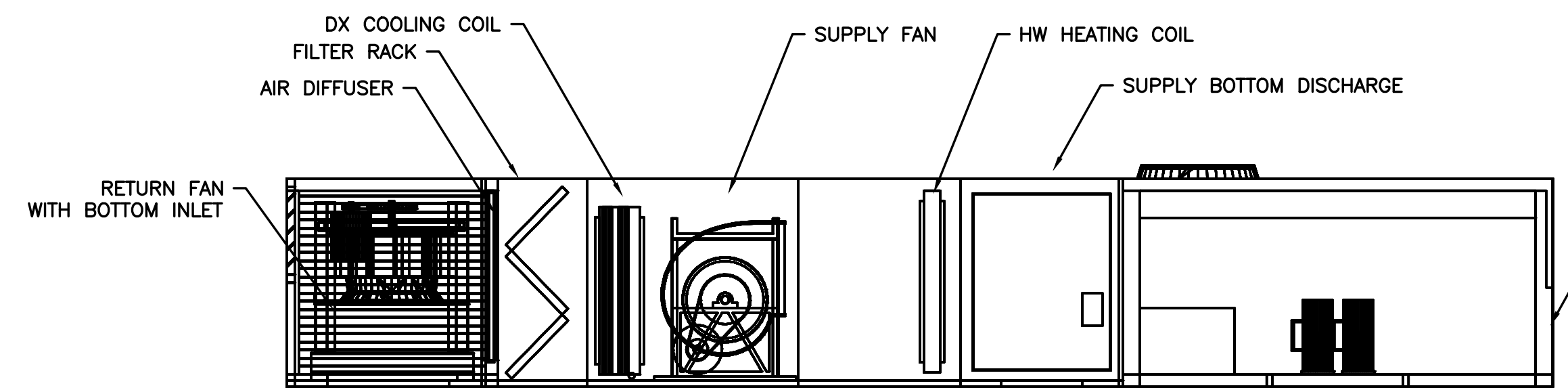
SIDE VIEW



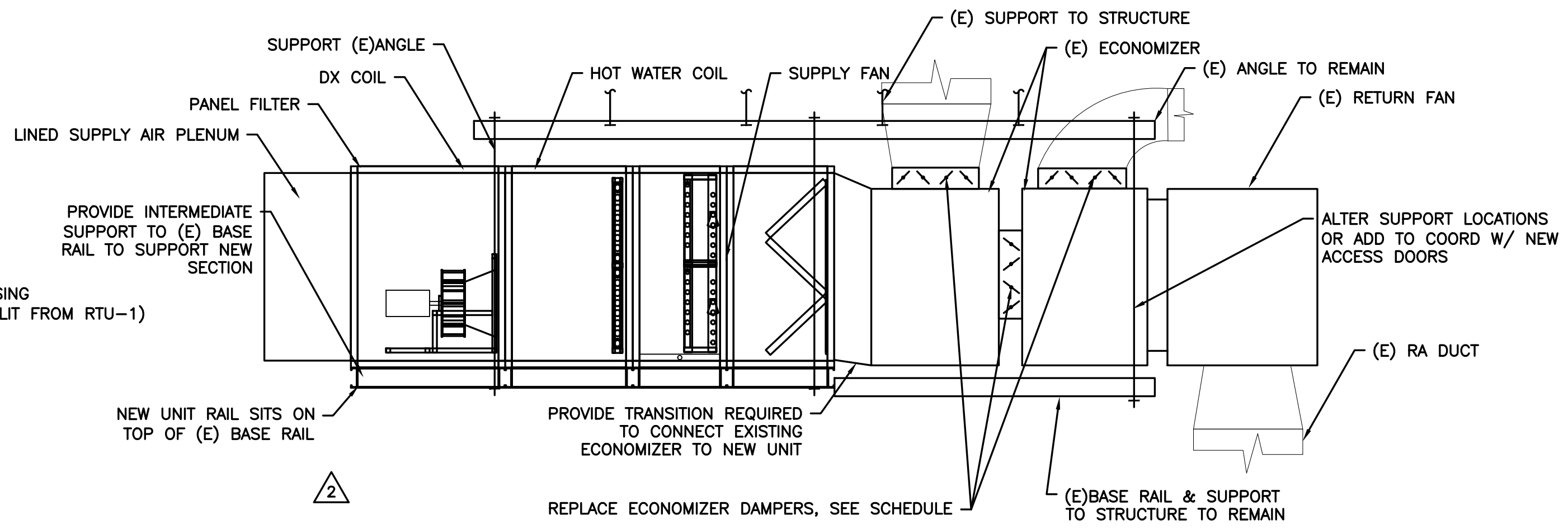
2 CURB DETAIL FOR CONDENSING UNITS (10 TONS OR LARGER)  
M6.6 SCALE: DETAIL



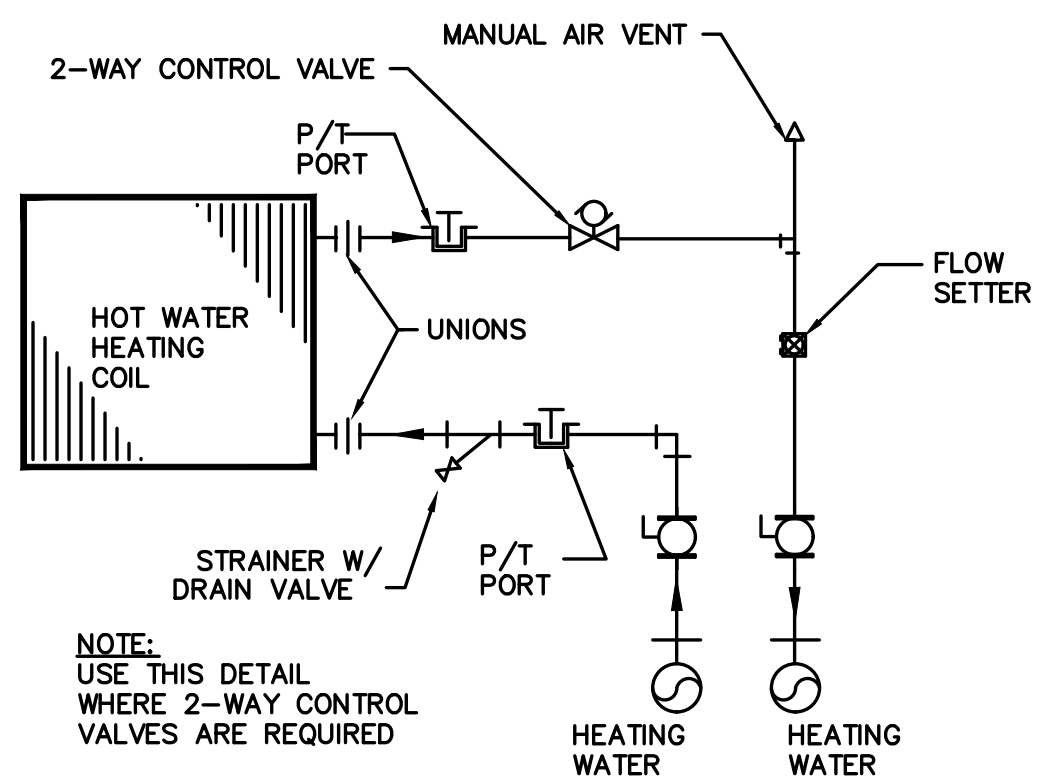
3 RELIEF HEAD  
M6.6 SCALE: DETAIL



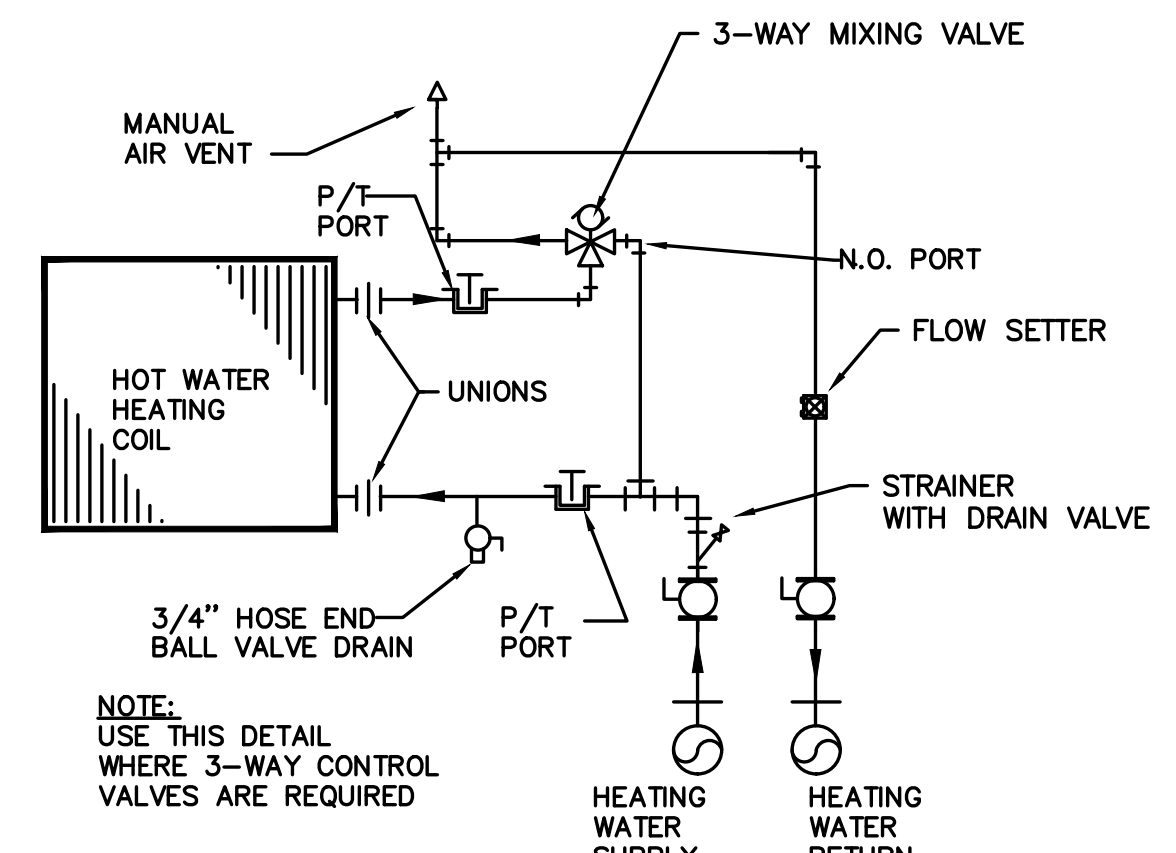
4 VAV ROOF TOP UNIT RTU-1, RTU-2 & RTU-3 DETAIL  
M6.6 NTS



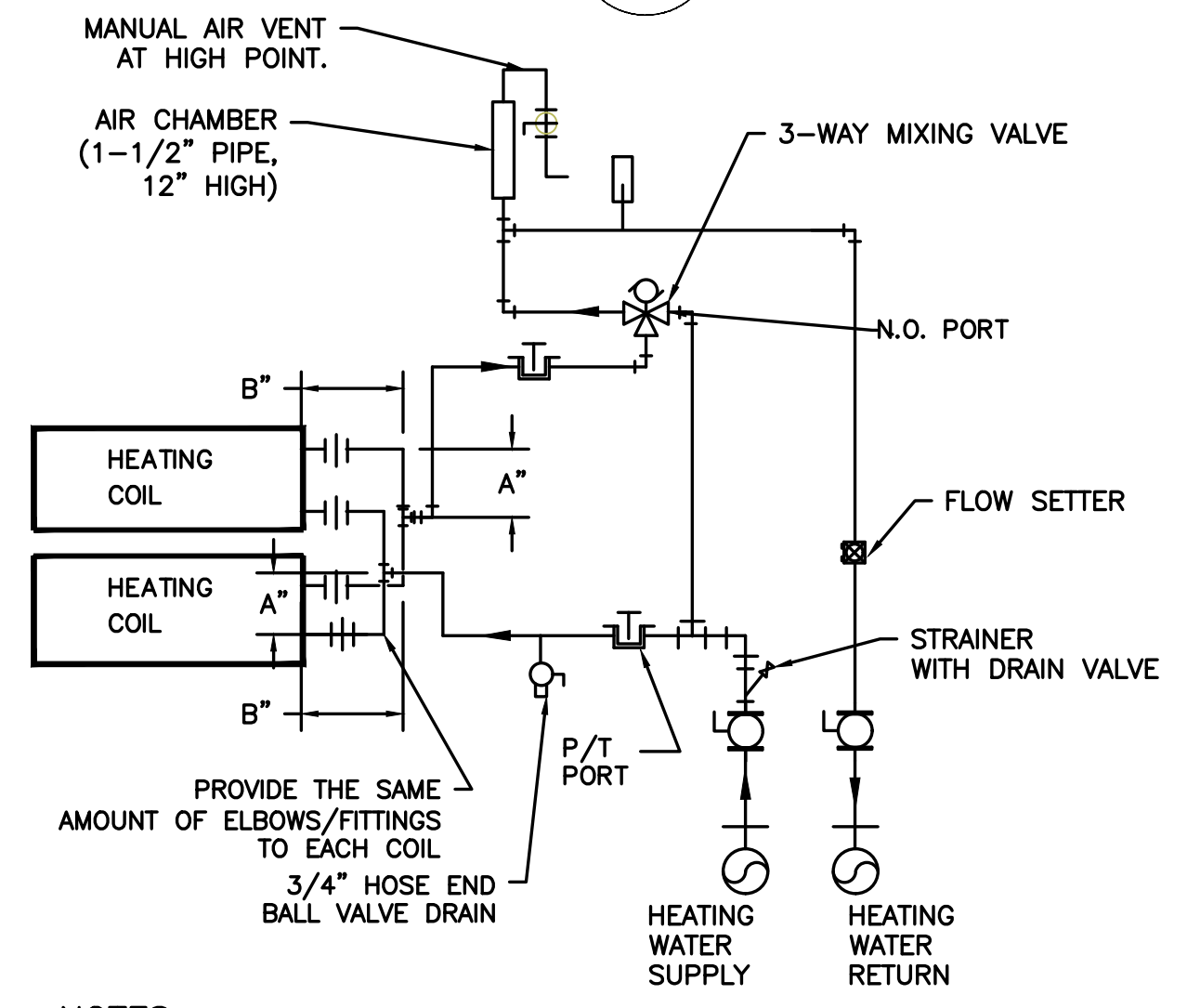
5 AHU-5, 7 & 13 AIR HANDLING UNIT DETAIL  
M6.6 NTS



6 2-WAY CONTROL VALVE  
M6.6 SCALE: DETAIL

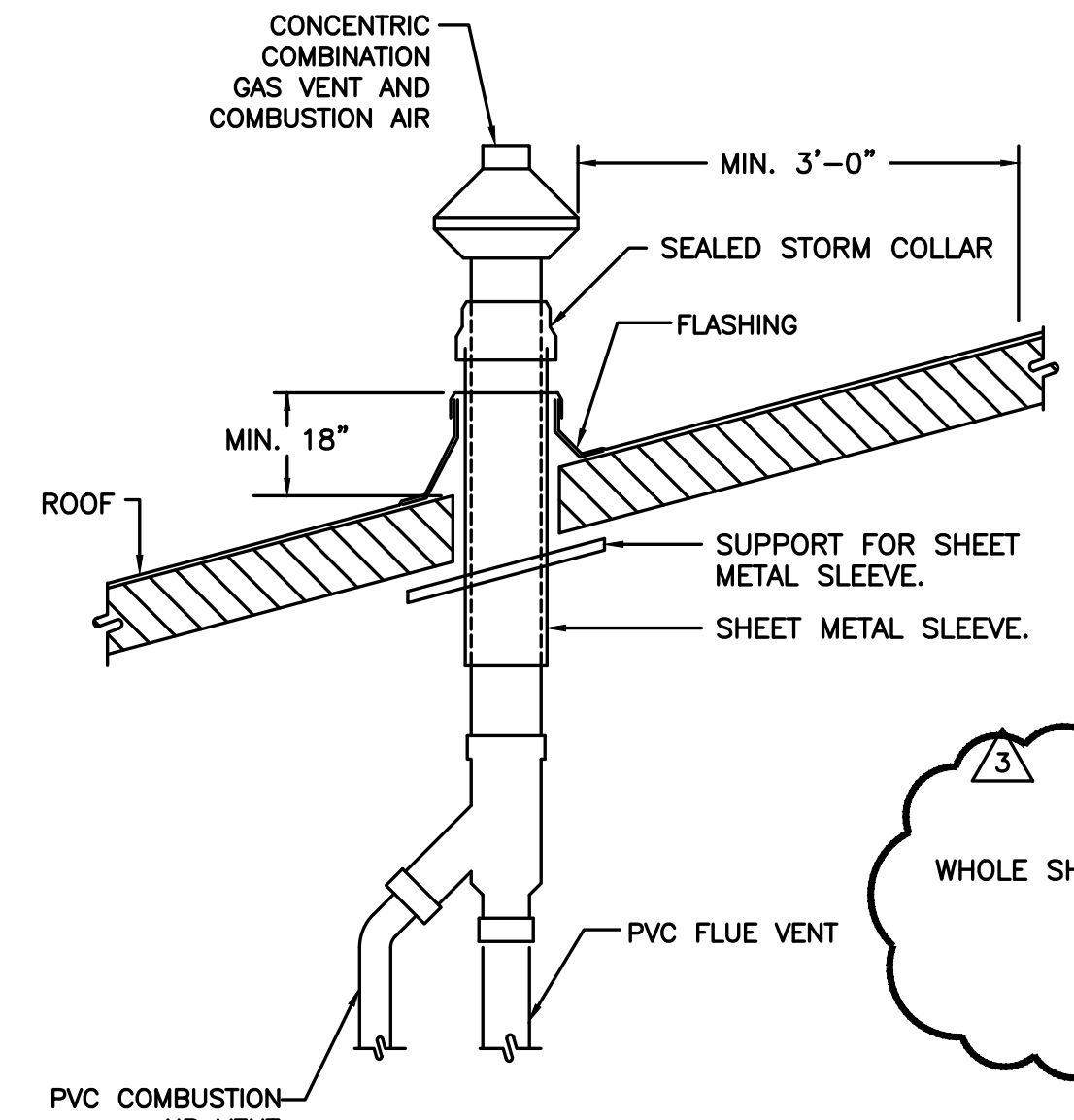


7 3-WAY MIXING VALVE  
M6.6 SCALE: DETAIL



NOTES:  
1. PROVIDE BUTTERFLY VALVES FOR PIPING 2-1/2" AND LARGER AND BALL VALVES FOR PIPING 2" AND SMALLER.  
2. PIPE SIZE PER SCHEDULE.  
3. PROVIDE DIELECTRIC UNION BETWEEN DISSIMILAR PIPING MATERIALS. (UNION OR FLANGE)  
4. 3/4" BALL VALVE WITH HOSE END CONNECTIONS AND CAP.  
5. NORMAL POSITION TO PROVIDE FULL HEATING.

8 MULTIPLE COILS 3-WAY MIXING VALVE PIPING DIAGRAM  
M6.6 SCALE: DETAIL



9 CONCENTRIC GAS VENT  
M6.6 DETAIL

1/M6.6 NOTES:  
1. PROVIDE BUTTERFLY VALVES FOR PIPING 2-1/2" AND LARGER AND BALL VALVES FOR PIPING 2" AND SMALLER.  
2. PIPE SIZE PER SCHEDULE.  
3. SEE SPECS FOR CONNECTION OF DISSIMILAR METALS.  
4. NORMAL CONTROL VALVE POSITION TO PROVIDE FULL HEATING.

SHEET IS REVISED PER ADDENDUM #2.

615 SE JACKSON STREET  
PORTLAND, OR 97202  
PH: (503) 234-0848  
FAX: (503) 234-0877  
WWW.MPIA-ENG.COM  
CONTACT: Elena von Kamens

PAUL L BENTLEY Architect A.I.A. P.C.

CONSTRUCTION SET-6.10.18

Consulting Engineers  
2007 S.E. Ash St.  
Portland, OR 97214  
PH: (503) 234-0848  
FAX: (503) 234-0877  
WWW.MPIA-ENG.COM  
CONTACT: Elena von Kamens

A NEW REMODEL PROJECT FOR:

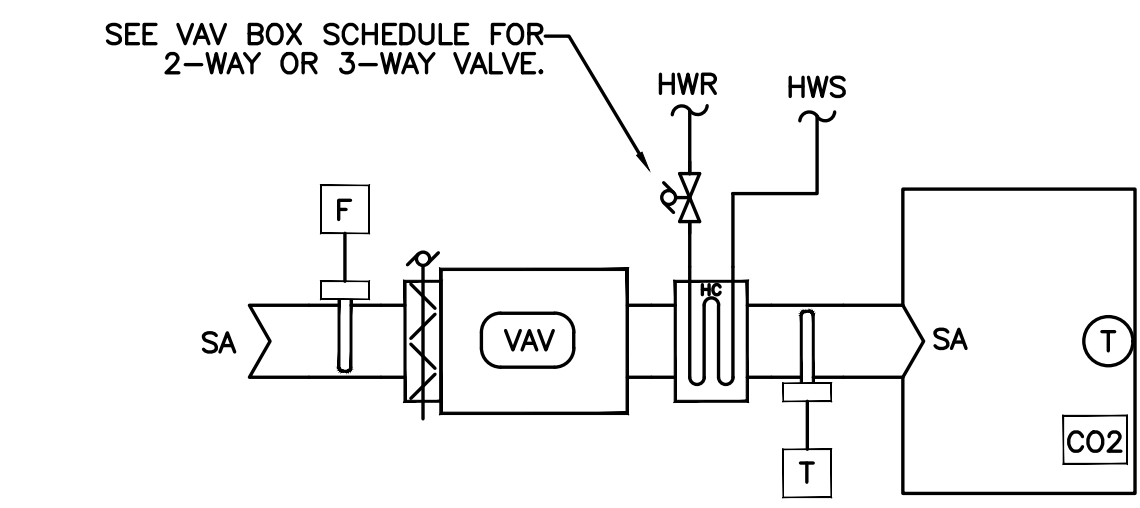
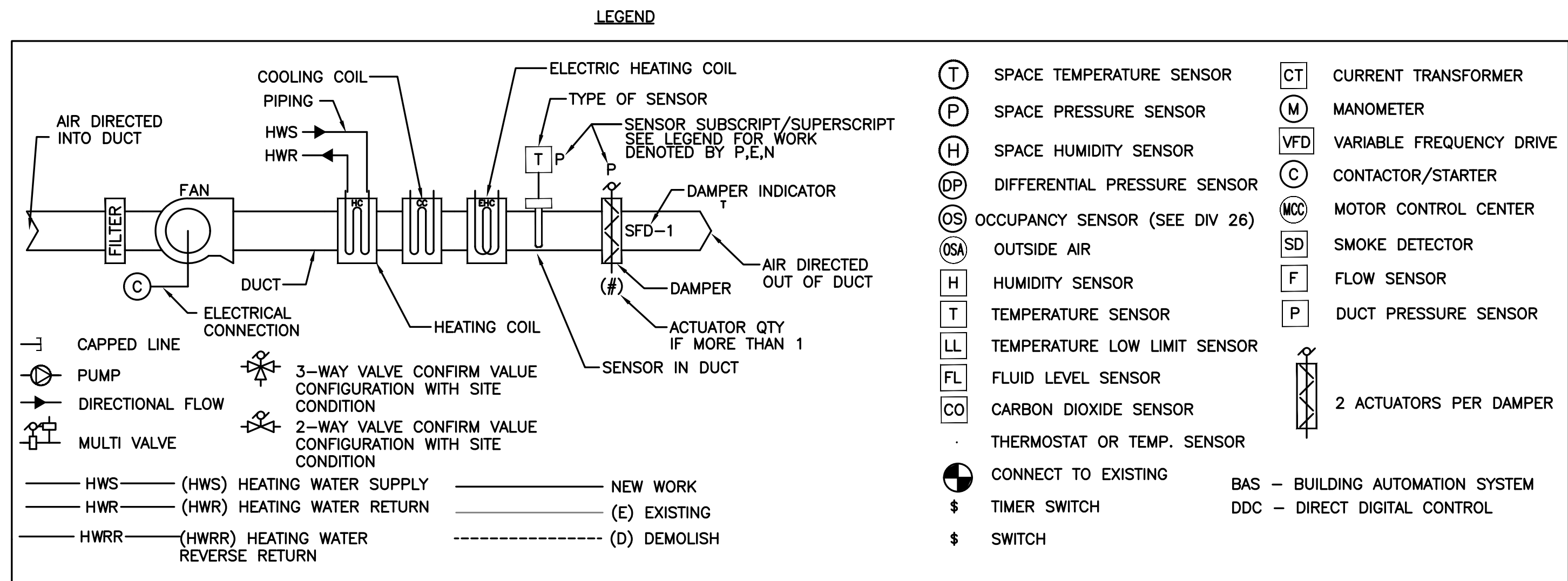
**SHERWOOD HIGH SCHOOL**

16956 SW MEINECKE ROAD  
SHERWOOD, OR

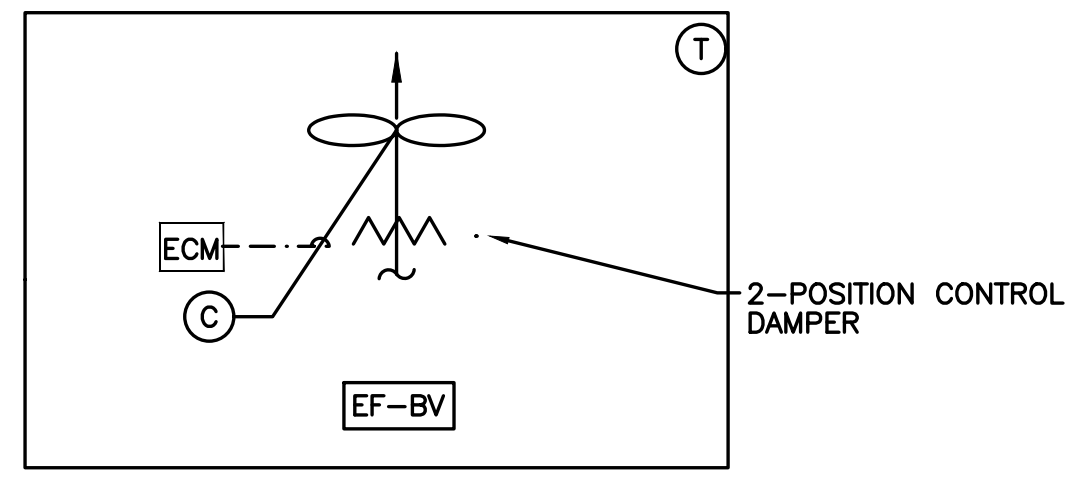
REGISTERED PROFESSIONAL ENGINEER  
1788  
JULY 25, 1995  
SCOTT W. MILLER  
EXPIRES: 31DEC18

DRAWN BY: EVK  
CHECKED BY: SWM  
DATE: 1-30-18  
TITLE: MECHANICAL DETAILS  
SCALE: NTS

SHEET NO:  
**M6.6**  
7 OF 8

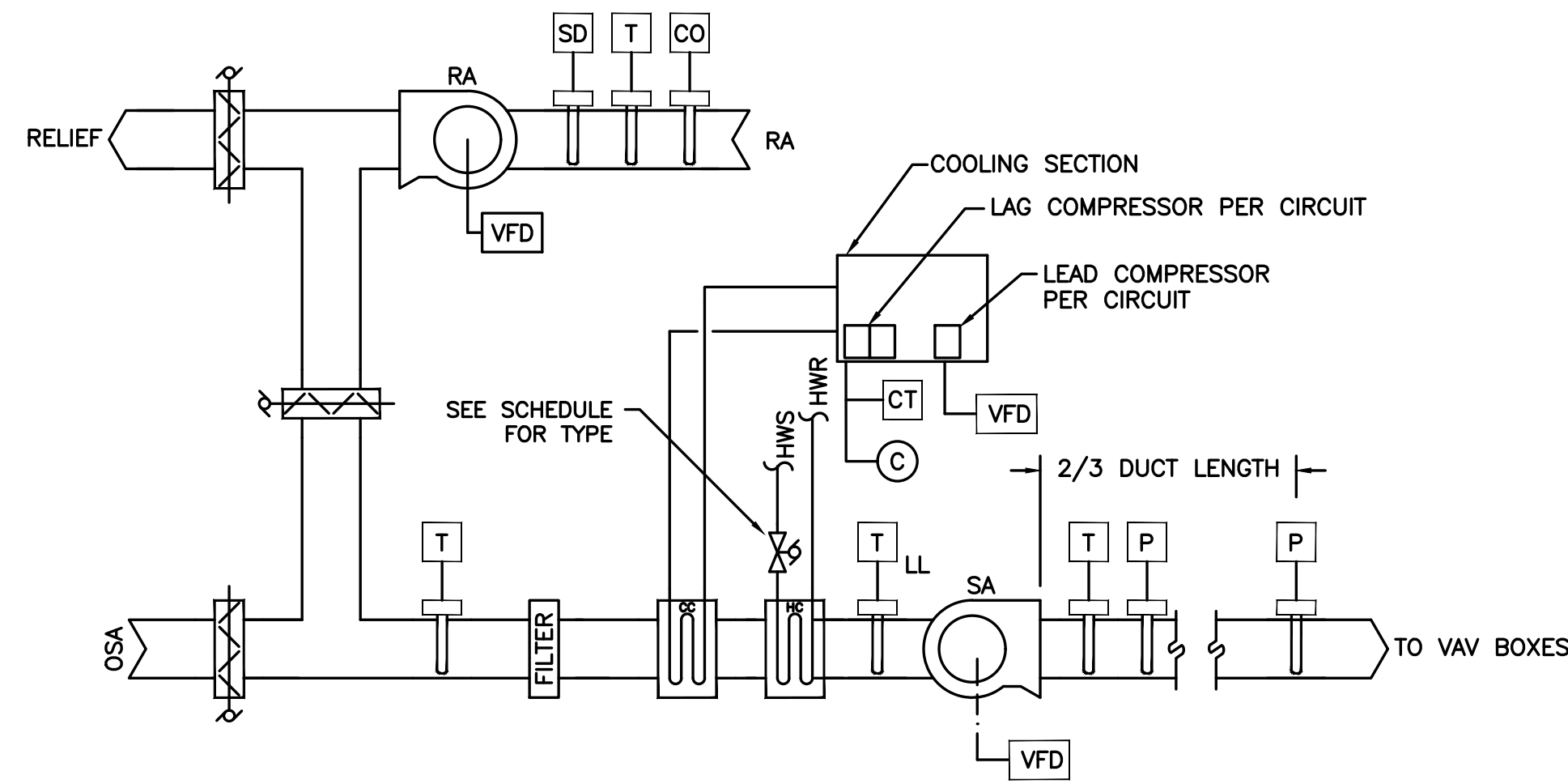


**1 STANDARD VAV BOX CONTROL DIAGRAM**  
 M6.7 SCHEMATIC

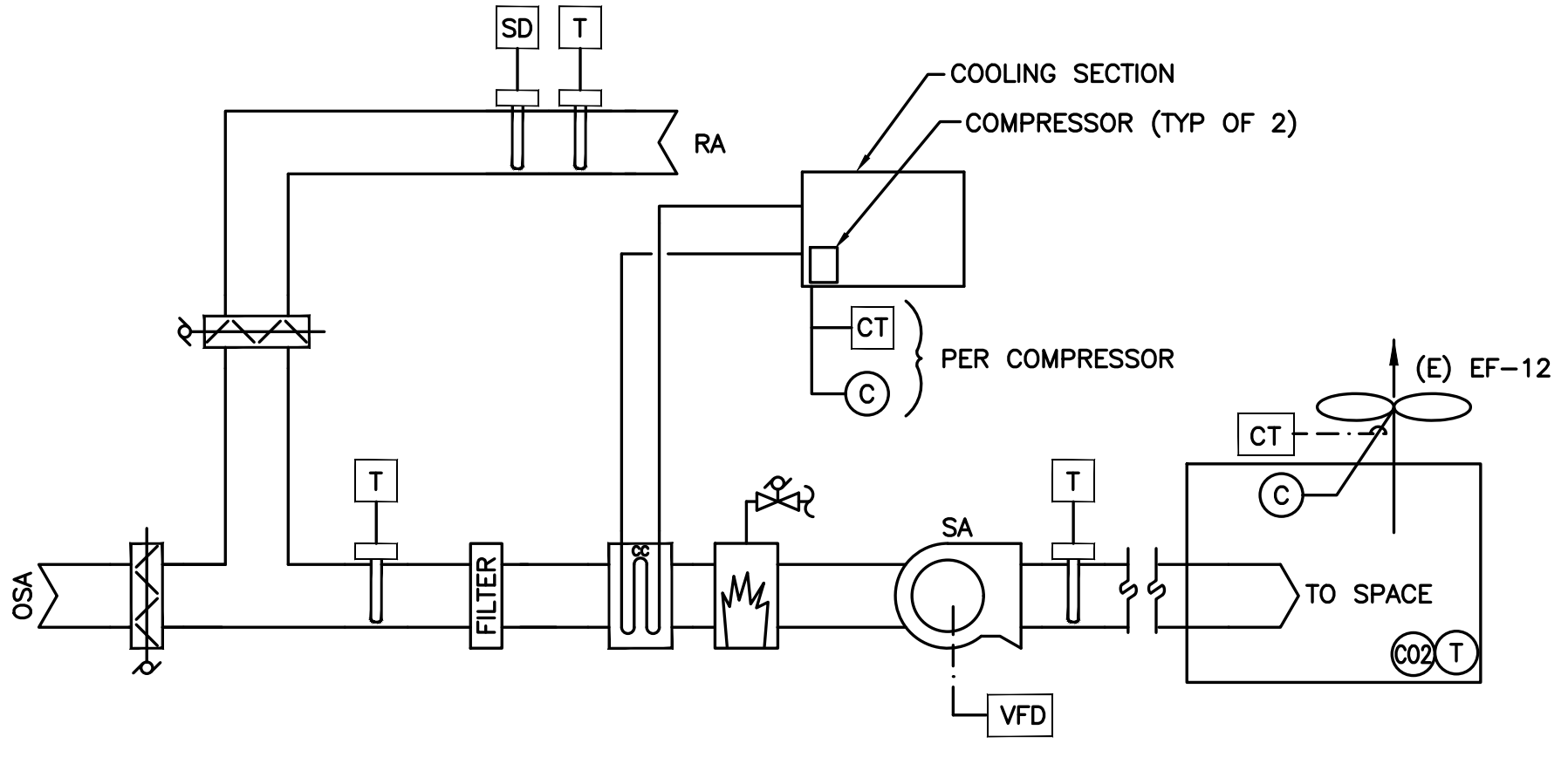


**2 BOILER EXHAUST FAN CONTROL DIAGRAM**  
 M6.7 SCHEMATIC

NOTES:  
 • OPEN FAN AND OSA LOUVER DAMPERS WITH EF-B OPERATION.



**3 VAV SYSTEM CONTROL DIAGRAM**  
 M6.7 SCHEMATIC



**4 DAH-1 CONTROL DIAGRAM**  
 M6.7 SCHEMATIC

**CONTROLS FOR VAV TERMINAL UNIT, SEE 1/M6.7**

POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
SPACE TEMP		X				X
AIR FLOW		X				X
DAMPER POSITION				X		
HEATING VALVE				X		X
DISCHARGE TEMPERATURE		X				X
CO2 LEVEL		X			X	X

**CONTROLS FOR BOILER EXHAUST FAN, SEE 2/M6.7**

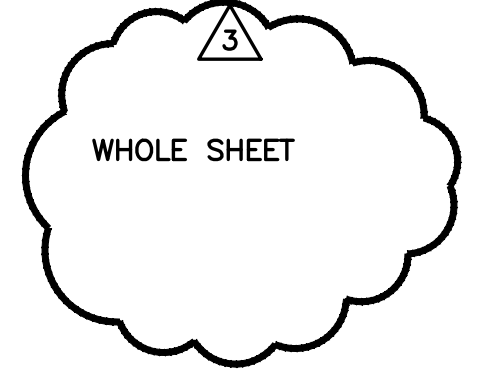
POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
FAN MOTOR STATUS					X	
START/STOP			X			
SPACE TEMP		X			X	X
DAMPER POSITION			X			

**CONTROLS FOR VAV, RTU, OR AH, SEE 3/M6.7**

POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
SUPPLY FAN START/STOP			X			
RA FAN START/STOP			X			
SUPPLY FAN STATUS	X				X	X
RA FAN STATUS	X				X	X
RA FAN SPEED				X	X	X
SUPPLY FAN SPEED			X	X	X	X
DISCHARGE AIR TEMPERATURE		X				X
MIXED AIR TEMPERATURE		X				
RETURN AIR TEMP		X				
SMOKE DETECTOR	X				X	
OUTSIDE DAMPER POSITION				X		X
EXHAUST DAMPER POSITION				X		
RETURN AIR DAMPER POSITION				X		
COMPRESSOR COMMAND (TYP)			X			
COMPRESSOR STATUS (TYP)	X				X	X
COMPRESSOR SPEED (LEAD ONLY PER CIRCUIT)				X		
HEATING WATER VALVE				X		
DUCT PRESSURE		X				X
DUCT PRESSURE ALARM	X				X	X
FREEZE STAT	X				X	
RA CO2		X				X

**CONTROLS FOR DAH-1, SEE 4/M6.7**

POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
SUPPLY FAN START/STOP			X			
RELIEF FAN START/STOP			X			
SUPPLY FAN STATUS	X				X	X
RELIEF FAN STATUS	X				X	X
SUPPLY FAN SPEED				X	X	X
DISCHARGE AIR TEMPERATURE		X				X
MIXED AIR TEMPERATURE		X				
RETURN AIR TEMP		X				
SMOKE DETECTOR	X				X	
OUTSIDE DAMPER POSITION				X		X
RETURN AIR DAMPER POSITION				X		
COMPRESSOR COMMAND (TYP)			X			
COMPRESSOR STATUS (TYP)	X				X	X
HEATING WATER MODULATION				X		X
SPACE TEMP		X				
SPACE CO2		X			X	



△  
 SHEET IS REVISED PER ADDENDUM #2.

1-ADD #2 2/22/2018  
 3-PHASE#2 6.12.18

CONSTRUCTION SET-6.10.18  
 MFI Consulting Engineers  
 2007 S.E. Ash St.  
 Portland, OR 97214  
 PHN: (503) 234-0548  
 FAX: (503) 234-0577  
 INC. WWW.MFIA-ENG.COM  
 CONTACT: Eleng von Kaments

A NEW REMODEL PROJECT FOR:

**SHERWOOD HIGH SCHOOL**

16956 SW MEINCKE ROAD  
 SHERWOOD, OR

REGISTERED PROFESSIONAL  
 1788  
 JULY 25, 1999  
 SCOTT W. MILLER  
 EXPIRES: 31DEC18

DRAWN BY:	EVK
CHECKED BY:	SWM
DATE:	1-30-18
TITLE:	CONTROL DIAGRAMS
SCALE:	NTS

SHEET NO:	M6.7
	8 OF 8