

01 January, 2000

1

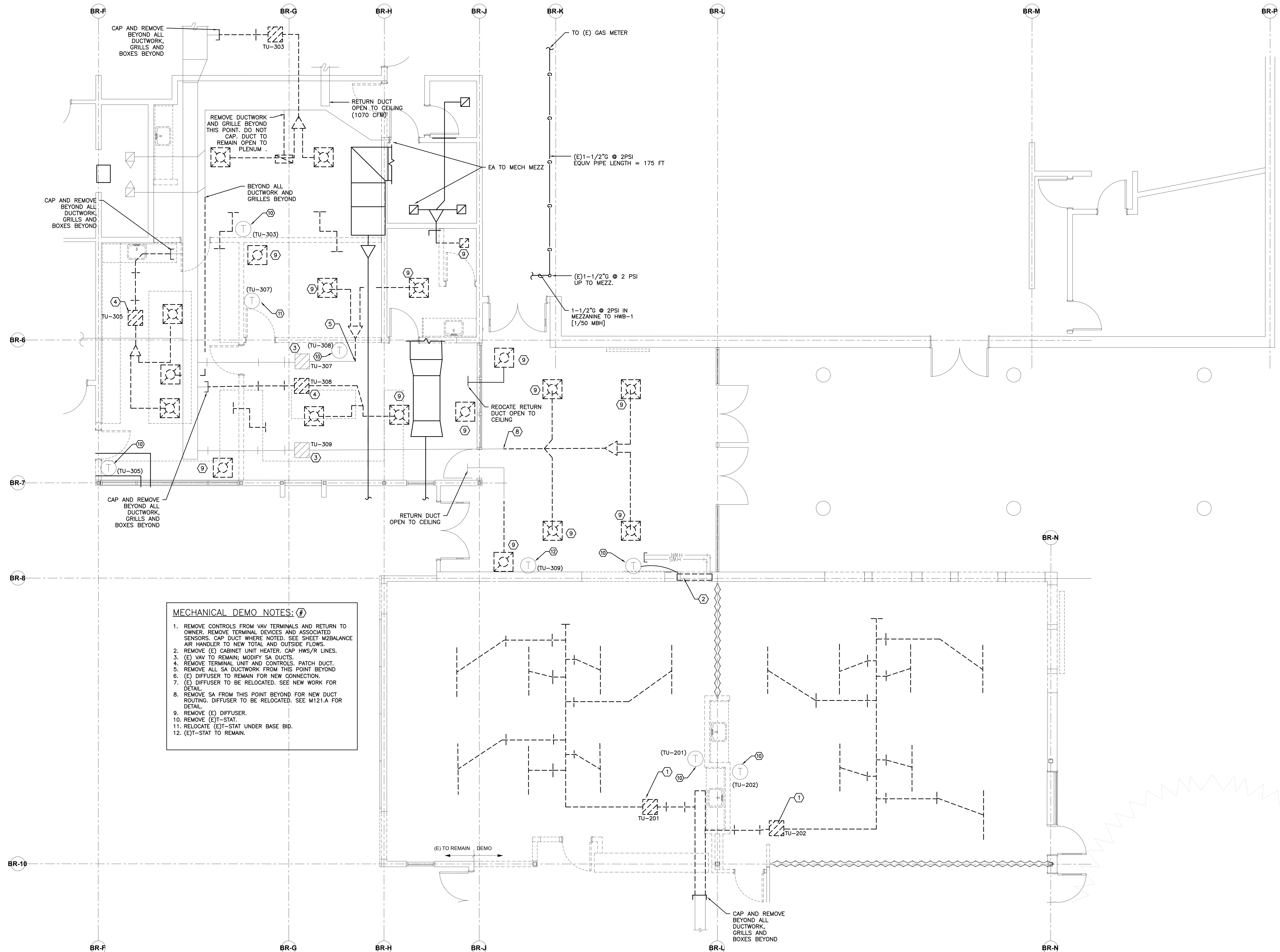
2

3

4

5

6

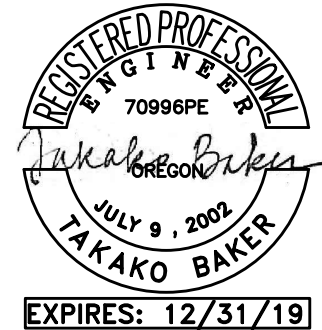


- MECHANICAL DEMO NOTES: (#)**
1. REMOVE CONTROLS FROM VAV TERMINALS AND RETURN TO OWNER. REMOVE TERMINAL DEVICES AND ASSOCIATED SENSORS. CAP DUCT WHERE NOTED. SEE SHEET M2BALANCE AIR HANDLER TO NEW TOTAL AND OUTSIDE FLOWS.
 2. REMOVE (E) CABINET UNIT HEATER. CAP HWS/R LINES.
 3. (E) VAV TO REMAIN. MODIFY SA DUCTS.
 4. REMOVE TERMINAL UNIT AND CONTROLS. PATCH DUCT.
 5. REMOVE ALL SA DUCTWORK FROM THIS POINT BEYOND
 6. (E) DIFFUSER TO REMAIN FOR NEW CONNECTION.
 7. (E) DIFFUSER TO BE RELOCATED. SEE NEW WORK FOR DETAIL.
 8. REMOVE SA FROM THIS POINT BEYOND FOR NEW DUCT ROUTING. DIFFUSER TO BE RELOCATED. SEE M121.A FOR DETAIL.
 9. REMOVE (E) DIFFUSER.
 10. REMOVE (E)T-STAT.
 11. RELOCATE (E)T-STAT UNDER BASE BID.
 12. (E)T-STAT TO REMAIN.

1 MECHANICAL DEMO PLAN — BRIDGEPORT
M111.A SCALE: 1/4" = 1'-0"

BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575
www.bora.co



Tigard Tualatin School District
Bridgeport Elementary School
Bridgeport Elementary School
5505 SW Bondard Road
Tualatin, Oregon 97062

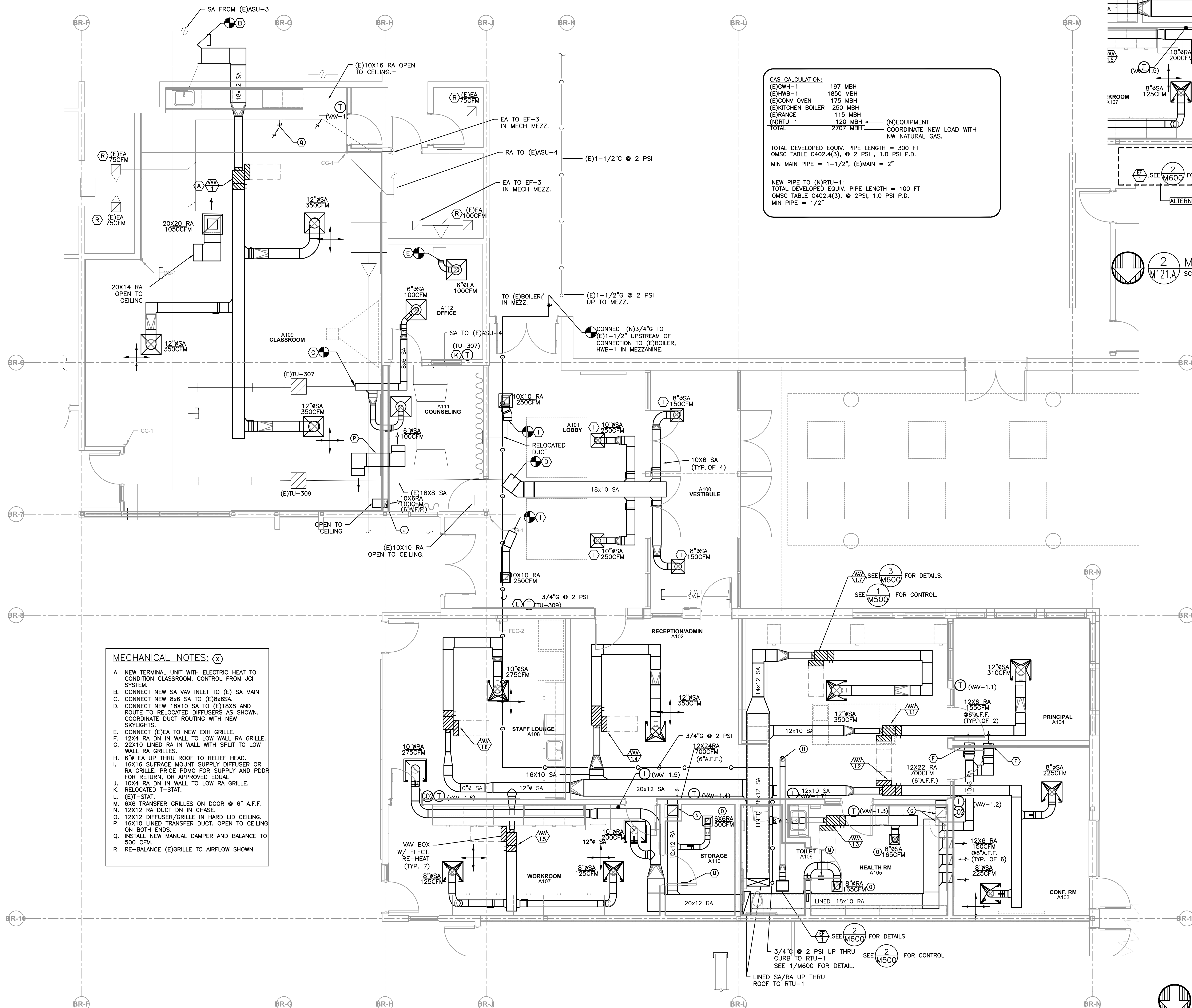
MARK	DATE	DESCRIPTION
------	------	-------------

Issued:	03/06/2018
Scale:	As Indicated
Drawn By:	TB
Reviewed By:	---
File:	

Copyright 16015
PERMIT SET

MECHANICAL DEMO PLAN
BRIDGEPORT ES

M111



MECHANICAL NOTES: (X)

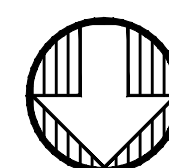
- NEW TERMINAL UNIT WITH ELECTRIC HEAT TO CONDITION CLASSROOM. CONTROL FROM JCI SYSTEM.
- CONNECT NEW SA VAV INLET TO (E) SA MAIN.
- CONNECT NEW 8x6 SA TO (E) 8x6 SA.
- CONNECT NEW 18x10 SA TO (E) 18x8 AND ROUTE TO RELOCATED DIFFUSERS AS SHOWN. COORDINATE DUCT ROUTING WITH NEW SKYLIGHTS.
- CONNECT (E) SA TO NEW EXH GRILLE.
- 12x4 RA DN IN WALL TO LOW WALL RA GRILLE.
- 22x10 LINED RA IN WALL WITH SPLIT TO LOW WALL RA GRILLES.
- 6" EA UP THRU ROOF TO RELIEF HEAD.
- 16x16 SURFACE MOUNT SUPPLY DIFFUSER OR RA GRILLE. PRICE PDMC FOR SUPPLY AND PDOR FOR RETURN, OR APPROVED EQUAL.
- 10x4 RA DN IN WALL TO LOW RA GRILLE.
- RELOCATED T-STAT.
- (E)Y-STAT.
- 6x6 TRANSFER GRILLES ON DOOR @ 6" A.F.F.
- 12x12 RA DUCT DN IN CHASE.
- 12x12 DIFFUSER/GRILLE IN HARD LID CEILING.
- 16x10 LINED TRANSFER DUCT. OPEN TO CEILING ON BOTH ENDS.
- INSTALL NEW MANUAL DAMPER AND BALANCE TO 500 CFM.
- RE-BALANCE (E)GRILLE TO AIRFLOW SHOWN.

GAS CALCULATION:

(E)GWH-1	197 MBH	(N)EQUIPMENT	
(E)HWB-1	1850 MBH		
(E)CONV OVEN	175 MBH		
(E)KITCHEN BOILER	250 MBH		
(E)RANGE	115 MBH		
(N)RTU-1	120 MBH		
TOTAL	2707 MBH	COORDINATE NEW LOAD WITH	NW NATURAL GAS.

TOTAL DEVELOPED EQUIV. PIPE LENGTH = 300 FT
OMSC TABLE C402.4(3), @ 2 PSI, 1.0 PSI P.D.
MIN MAIN PIPE = 1-1/2", (E)MAIN = 2"

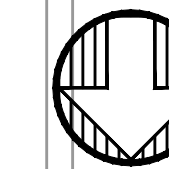
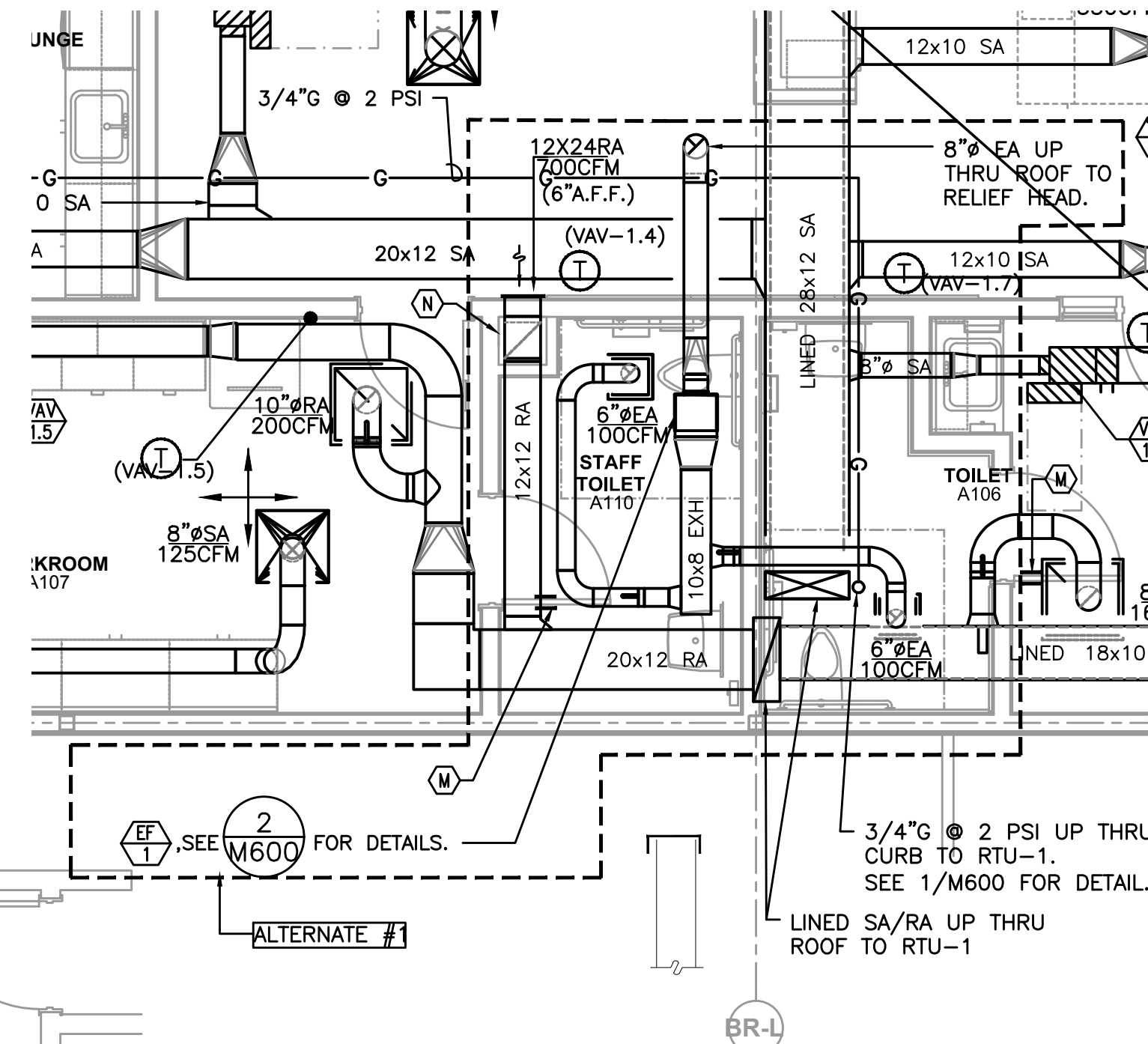
NEW PIPE TO (N)RTU-1:
TOTAL DEVELOPED EQUIV. PIPE LENGTH = 100 FT
OMSC TABLE C402.4(3), @ 2PSI, 1.0 PSI P.D.
MIN PIPE = 1/2"



1

MECHANICAL PLAN - BRIDGEPORT

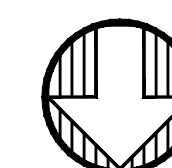
SCALE: 1/4" = 1'-0"



2

MECHANICAL PLAN ALTERNATE 1

SCALE: 1/4" = 1'-0"



3

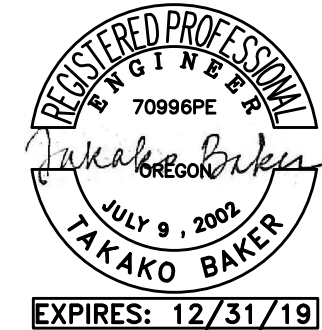
MECHANICAL PLAN - BOYS&GIRLS

SCALE: 1/4" = 1'-0"

BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575

www.bora.co



Tigard Tualatin School District

Bridgeport Elementary School

Bridgeport School
5505 SW Bondard Road
Tualatin, Oregon 97062

MARK DATE DESCRIPTION

Issued: 03/06/2018

Scale: As Indicated

Drawn By: TB

Reviewed By: ---

File:

Copyright 16015

PERMIT SET

MECHANICAL PLAN
BRIDGEPORT

M121

1/16/2017 9:45:54 AM

1

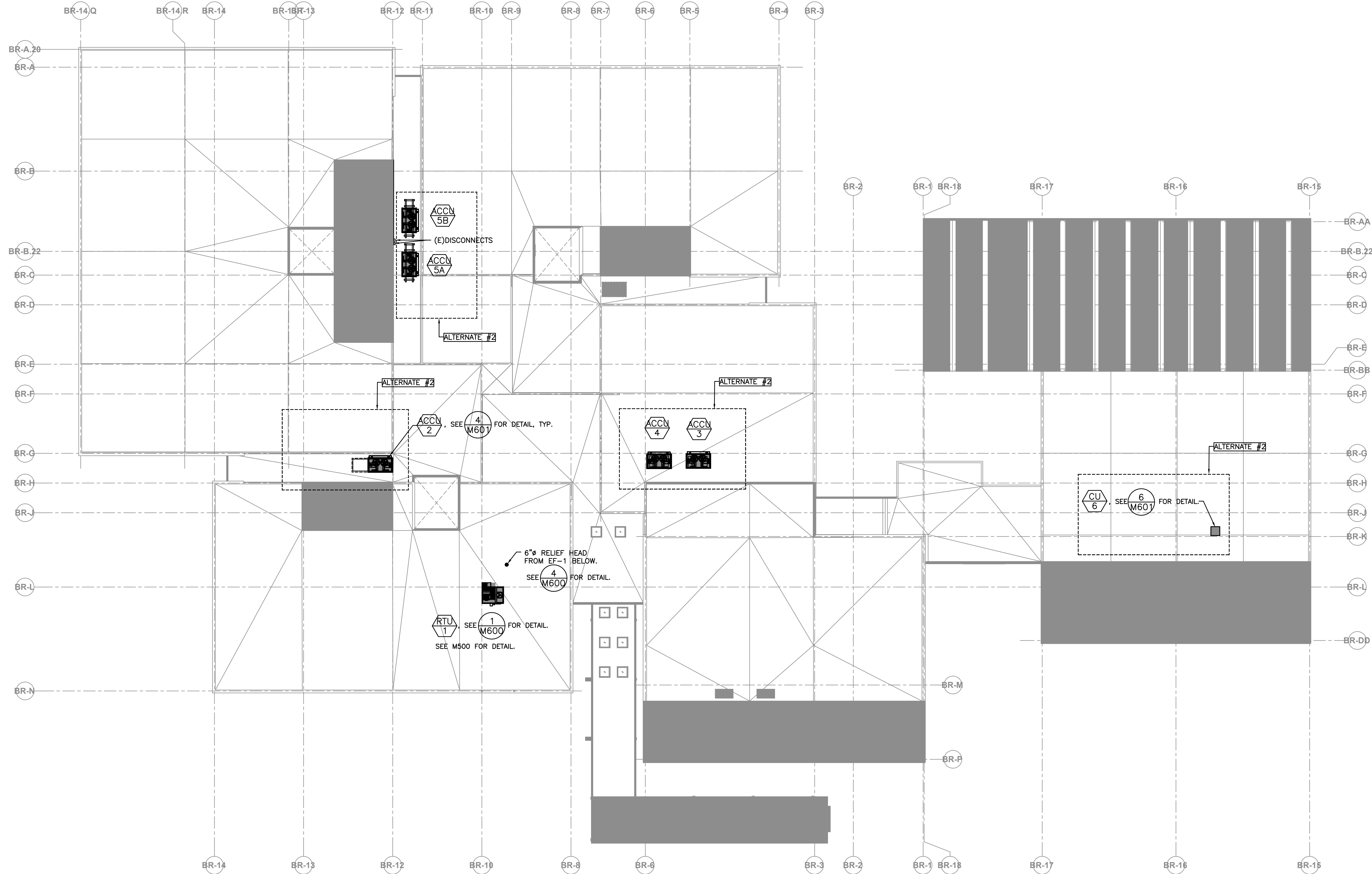
2

3

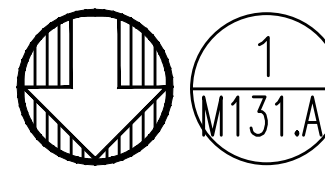
4

5

6



- ALTERNATE #2 SCOPE:
1. REMOVE (E)R-22 CONDENSING UNIT, CURB, CONTROLS AND DX COIL IN ASSOCIATED AHU.
 2. SEE M2.00 FOR LOCATION OF AHU'S AND REFRIGERANT LINE PIPING, AND ADDITIONAL ALTERNATE #2 WORK.



MECHANICAL ROOF PLAN — BRIDGEPORT

SCALE: 1/4" = 1' - 0"

MARK DATE DESCRIPTION

Issued: 03/06/2018
Scale: As Indicated
Drawn By: TB
Reviewed By: ---
File:

Copyright 16015

PERMIT SET

MECHANICAL ROOF PLAN
BRIDGEPORT

M131

6

5

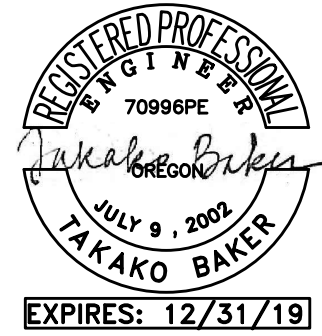
4

3

2

BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575
www.bora.co



Bridgeport Elementary School
5505 SW Bondard Road
Tualatin, Oregon 97062

1/16/2017 9:45:54 AM

1

2

3

4

5

6



1 OVERALL MECHANICAL PLAN - ALTERNATE #2
M200A SCALE: 1/16" = 1'-0"

CONTROL DRAWING KEYED NOTES - ALTERNATES:

1. PROVIDE DIGITAL DAMPER ACTUATOR AT OSA, RELIEF AND MIXING DAMPERS TO REPLACE EXISTING PNEUMATIC ACTUATORS. RETROFIT EXISTING HEATING VALVE WITH DIGITAL ACTUATOR KIT. CONFIRM VALVE CONFIGURATION PRIOR TO SUBMITTAL.
2. PROVIDE DIGITAL DAMPER ACTUATOR AT EXHAUST DAMPER TO REPLACE (E)PNEUMATIC ACTUATOR.
3. REMOVE (E)R-22 DX COIL AND REPLACE WITH NEW R-410A DX COIL.
4. PROVIDE DIGITAL DAMPER ACTUATOR. CONNECT NEW ACTUATOR TO EXISTING JCI SYSTEM CONTROL PANEL. ALTER PROGRAMMING AS REQUIRED FOR THE NEW DIGITAL DEVICE.
5. PROVIDE DIGITAL DAMPER ACTUATOR AT OSA, MIN OSA, RELIEF AND MIX DAMPERS TO REPLACE EXISTING PNEUMATIC ACTUATORS. RETROFIT EXISTING HEATING VALVE WITH DIGITAL ACTUATOR KIT. CONFIRM VALVE CONFIGURATION PRIOR TO SUBMITTAL.
6. PROVIDE DIGITAL DAMPER ACTUATOR AT OSA AND RA DAMPERS TO REPLACE EXISTING PNEUMATIC ACTUATORS. RETROFIT EXISTING HEATING VALVE WITH DIGITAL ACTUATOR KIT. CONFIRM VALVE CONFIGURATION PRIOR TO SUBMITTAL.
7. RETROFIT HEATING COIL VALVE WITH DIGITAL ACTUATOR KIT, AND REPLACE (E)PNEUMATIC T-STAT WITH DIGITAL SENSOR.
8. RETROFIT (E)BOOSTER HEATING COIL VALVE WITH DIGITAL ACTUATOR KIT. CONFIRM VALVE CONFIGURATION PRIOR TO SUBMITTAL.
9. REMOVE (E)CONDENSING UNIT AND (E) CURB AND REPLACE WITH NEW. PROVIDE NEW CONTROLS. SEE M131 FOR ROOF PLAN.
10. REMOVE (E)PNEUMATIC DAMPER ACTUATOR AT STEAM AND STOVE HOODS (EF-5 & EF-6) AND REPLACE WITH DIGITAL DAMPER ACTUATOR. ALTER PROGRAMMING AS REQUIRED FOR THE NEW DIGITAL DEVICE.
11. PROVIDE DIGITAL DAMPER ACTUATOR AT OSA, MIN OSA & RETURN DAMPERS TO REPLACE EXISTING PNEUMATIC ACTUATORS. RETROFIT EXISTING HEATING VALVE WITH DIGITAL ACTUATOR KIT. CONFIRM VALVE CONFIGURATION PRIOR TO SUBMITTAL.
12. (E)FIRE SMOKE DAMPER - REMOVE (E)PNEUMATIC DAMPER ACTUATOR AND REPLACE WITH NEW DIGITAL ACTUATOR.
13. REROFIT (E)3-WAY VALVE AT THE BOILER WITH DIGITAL ACTUATOR KIT. CONFIRM VALVE CONFIGURATION PRIOR TO SUBMITTAL.
14. PROVIDE DIGITAL OSA DAMPER, FACE/BY-PASS DAMPER TO REPLACE (E)PNEUMATIC ACTUATORS. RETROFIT (E)BOOSTER HEATING COIL VALVE WITH DIGITAL ACTUATOR KIT. CONFIRM VALVE SIZING PRIOR TO SUBMITTAL.
15. R-410A CONDENSING UNIT TO REMAIN. NO WORK REQUIRED.
16. REMOVE AND REPLACE (E)REFRIGERANT LINES WITH NEW, RUN NEW PIPING USING EXISTING ROUTING AND PENETRATION THRU THE MEZZANINE WALL. SEE 5/M6.05 FOR ROOF MOUNTED PIPING DETAIL.

CONTROL DRAWING GENERAL NOTES:

1. WHERE EXISTING PNEUMATIC DEVICES ARE REMOVED, REMOVE ALL ASSOCIATED PNEUMATIC PIPING AND CONTROLS. CONNECT NEW ACTUATOR / DDC DEVICES TO EXISTING JCI SYSTEM CONTROL PANEL. ALTER PROGRAMMING AS REQUIRED FOR THE NEW DIGITAL DEVICE.
2. CONFIRM DAMPER AND VALVE SIZES PRIOR TO SUBMITTAL. APPROX DAMPER SIZES ARE SHOWN ON SCHEDULE.
3. PATCH WALL WHERE PNEUMATIC DEVICES ARE REMOVED FROM FINISHED ROOM/WALL.

EQUIP TAG	GPM	2-WAY/3-WAY	MODULATING/2-POSITION/DANFOSS	NOTES
ASU-1	6.1	3	MODULATING	20X16 FACE/BY-PASS DAMPERS
ASU-2	5.9	3	MODULATING	
ASU-3	6	2	MODULATING	
ASU-4	4.8	2	MODULATING	
ASU-5	7	3	MODULATING	
ASU-6	2.7	2	MODULATING	
ASU-7	5.6	2	MODULATING	
ASU-8	8.3	3	MODULATING	
ASU-9	2.2	2	MODULATING	
ASU-10	3.3	2	MODULATING	
ASU-11	12.7	3	MODULATING	
CUH-2	1.3	3	MODULATING	
CUH-3	1.3	2	MODULATING	
UH-1	2.5	3	MODULATING	
UH-2	1.5	2	MODULATING	
UH-3	1.5	2	MODULATING	
UH-4	1.5	2	MODULATING	
UH-5	1.5	2	MODULATING	
UH-6	1.5	2	MODULATING	
UH-7	1.5	2	MODULATING	
UH-8	2.5	2	MODULATING	
CUH-4	1.3	2	MODULATING	
BHC-2	2.4	2	MODULATING	
BOILER	123	3	MODULATING	

MARK DATE DESCRIPTION

Issued: 03/06/2018

Scale: As Indicated

Drawn By: TB

Reviewed By: ---

File:

Copyright 16015

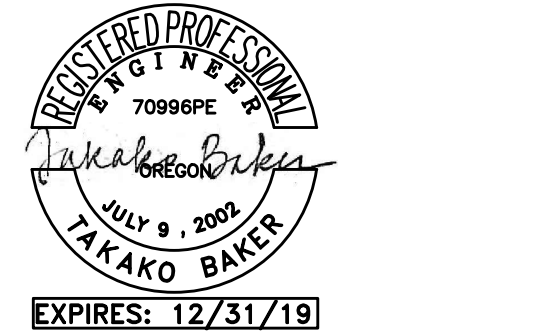
PERMIT SET

OVERALL MECHANICAL
PLAN - ALTERNATE #2

M200

BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575
www.bora.co



Bridgeport School
Elementary School
5505 SW Bondard Road
Tualatin, Oregon 97062

6

5

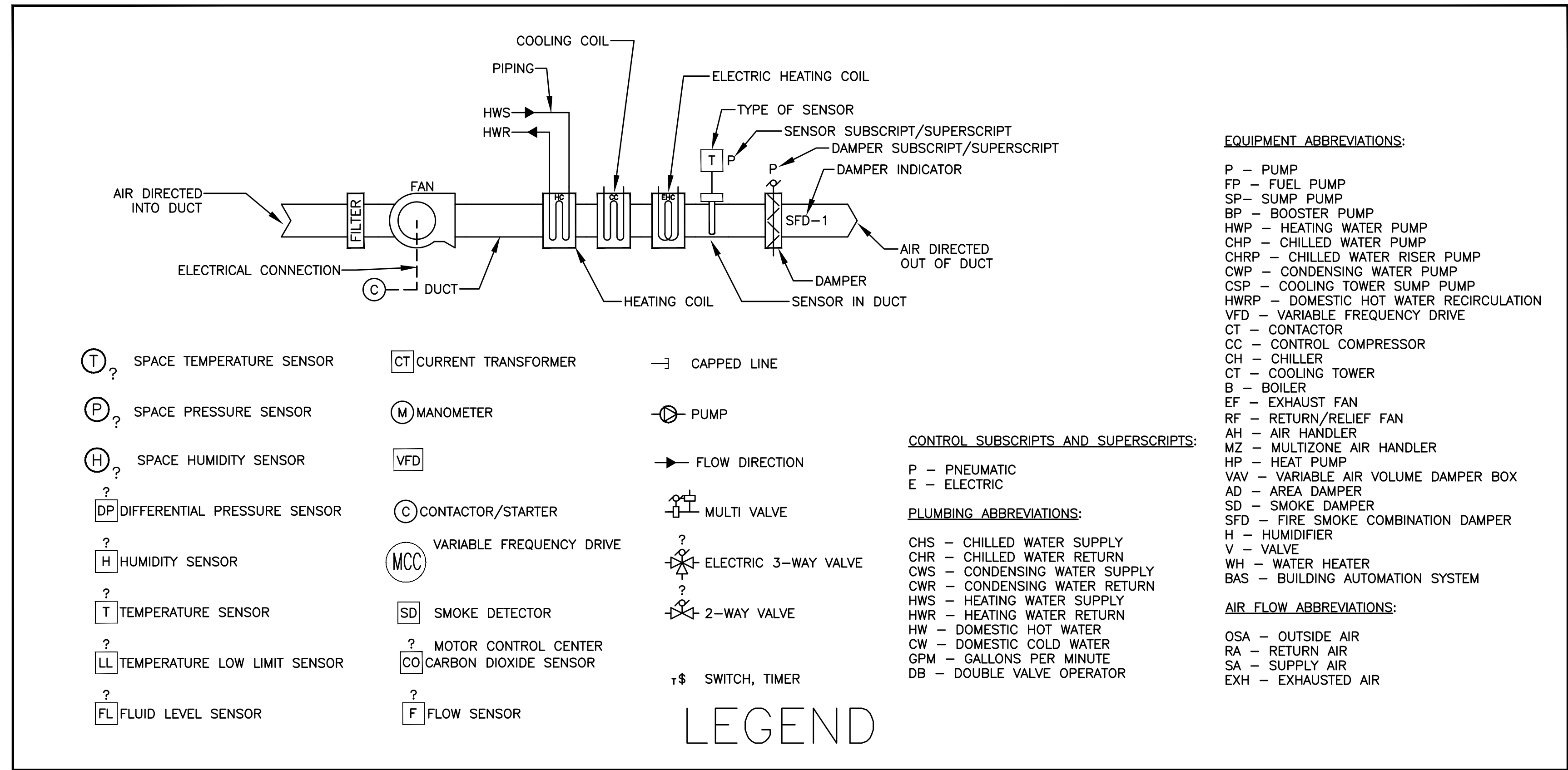
4

3

2

1

1/16/2017 9:45:54 AM



1 VAV BOX W/ ELECT RH CONTROL DIAGRAM
M5.00 SCALE: SCHEMATIC

2 EXHAUST FAN CONTROL DIAGRAM
M5.00 SCALE: SCHEMATIC

CONTROLS FOR VAV TERMINAL UNIT, SEE 1/M5.00

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
SPACE TEMP		X			
AIR FLOW		X			
DAMPER POSITION				X	
DISCHARGE TEMPERATURE		X			
ELECTRIC HEATER				X	
ECONO ON/OFF			X		
SPACE OCCUPANCY	X				
SPACE CO2		X			

CONTROLS FOR EXHAUST FANS, SEE 2/M5.00

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
START/STOP TYP. OF ALL STATUS	X		X		

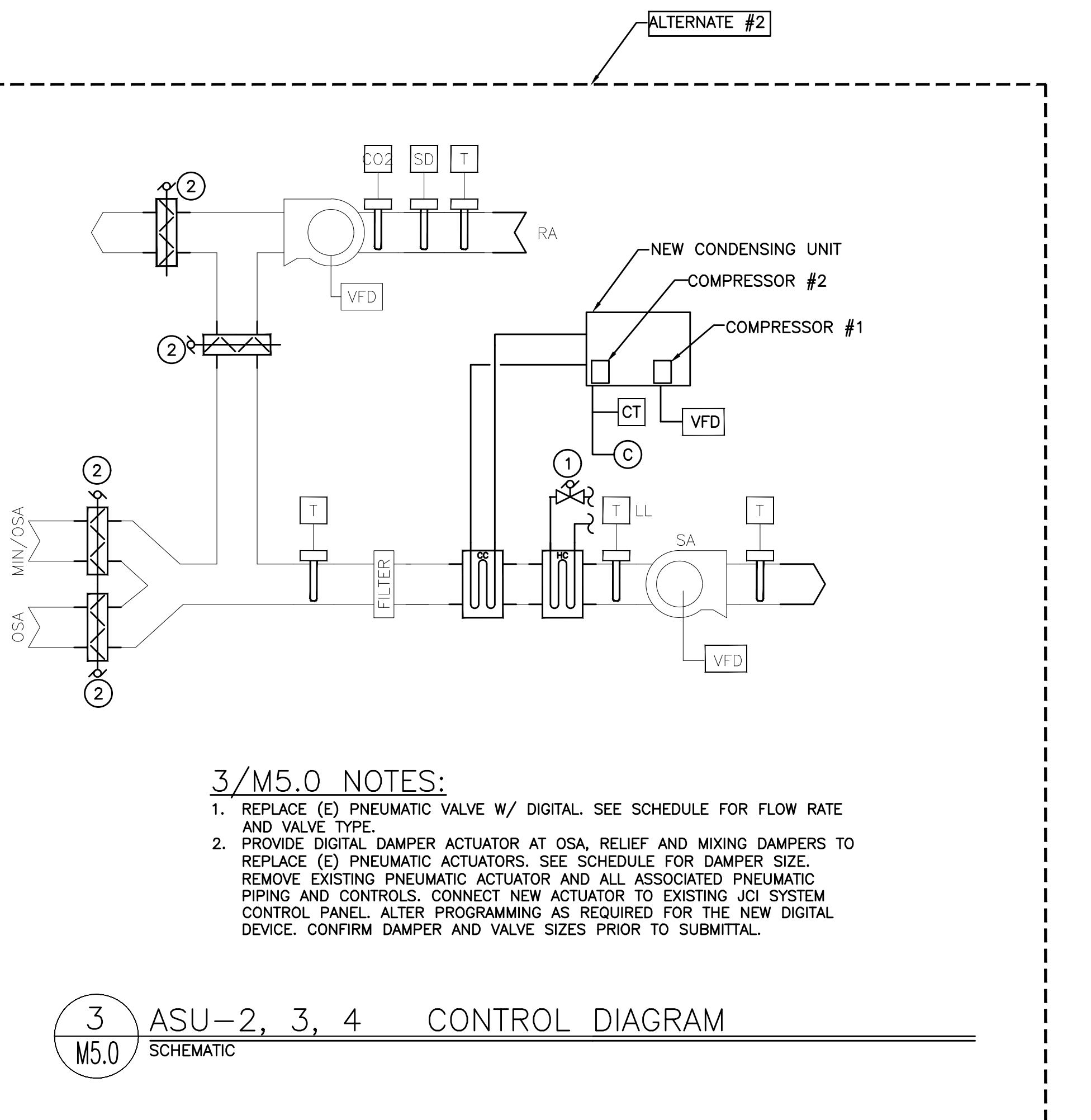
CONTROLS FOR RTU-1 (*)

POINT DESCRIPTION	READ	WRITE	READ/WRITE
UNIT ENABLE/DISABLE			X
EXH FAN SPEED	X		
EXHAUST STATUS	X		
SUPPLY FAN STATUS	X		
SUPPLY FAN SPEED	X		
OUTSIDE AIR/ECONOMIZER DAMPER POSITION	X		
RA CO2	X		
RA TEMP	X		
DISCHARGE AIR TEMP	X		
DISCHARGE AIR PRESSURE	X		
MIXED AIR TEMP	X		
HEATING SECTION STATUS	X		
SMOKE DETECTOR	X		
COOLING STATUS	X		
ALARM CODE	X		
DISCHARGE AIR TEMP SETPOINT			X
DISCHARGE AIR PRESSURE SETPOINT			X

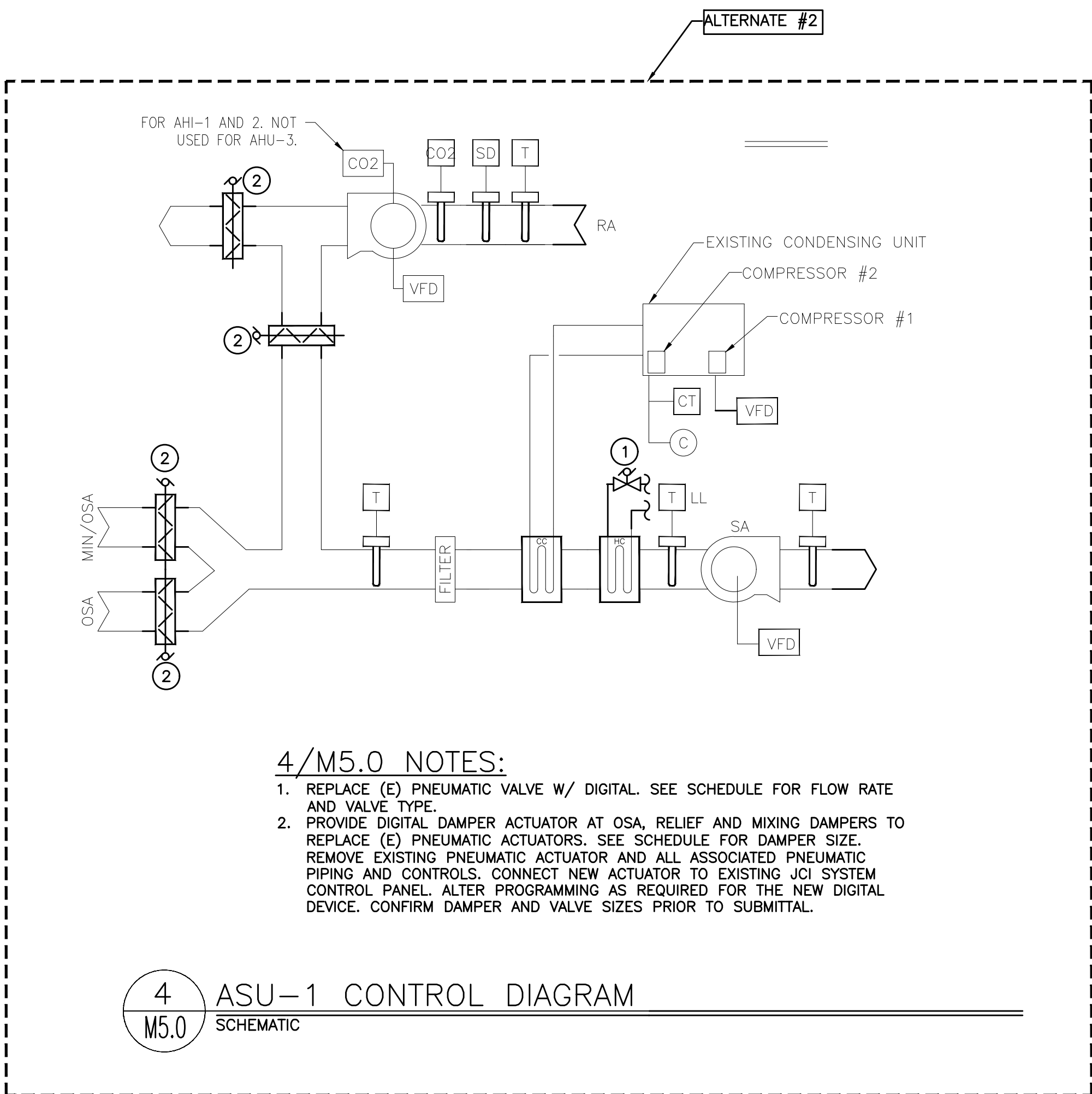
(*) MINIMUM POINTS TO BE MAPPED TO GRAPHIC

ASU-1, 2, 3, 4, 5, 8 & 9

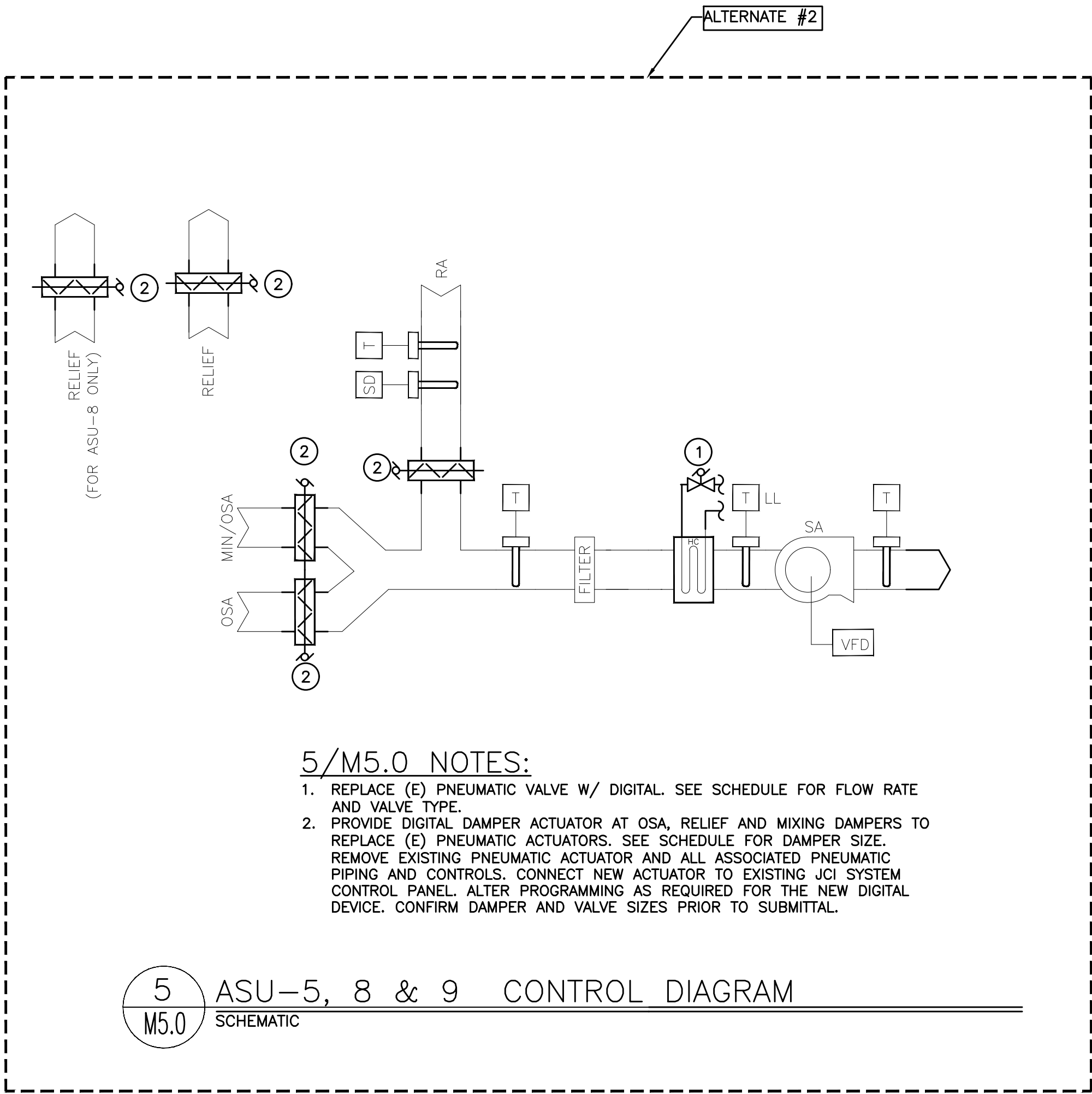
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OUTSIDE DAMPER POSITION				X	
MIN OSA DAMPER POSITION				X	
EXHAUST/RELIEF DAMPER POSITION				X	
EXHAUST/RETURN AIR DAMPER POSITION(ASU-8 ONLY)				X	
RETURN AIR DAMPER POSITION			X		
COMPRESSOR COMMAND (2 COMPRESSORS)			X		
COMPRESSOR STATUS (2 COMPRESSORS)	X				X
COMPRESSOR SPEED (COMPRESSOR #1)				X	
HEATING SECTION				X	



3 ASU-2, 3, 4 CONTROL DIAGRAM
M5.0 SCHEMATIC



4 ASU-1 CONTROL DIAGRAM
M5.0 SCHEMATIC

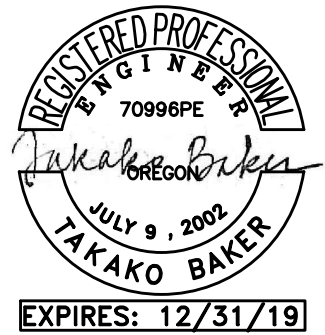


5 ASU-5, 8 & 9 CONTROL DIAGRAM
M5.0 SCHEMATIC

BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575

www.bora.co



Bridgeport Elementary School
5606 SW Bolland Road
Tualatin, Oregon 97062

MARK DATE DESCRIPTION

Issued: 03/06/2018

Scale: As Indicated

Drawn By: TB

Reviewed: ---

By: File:

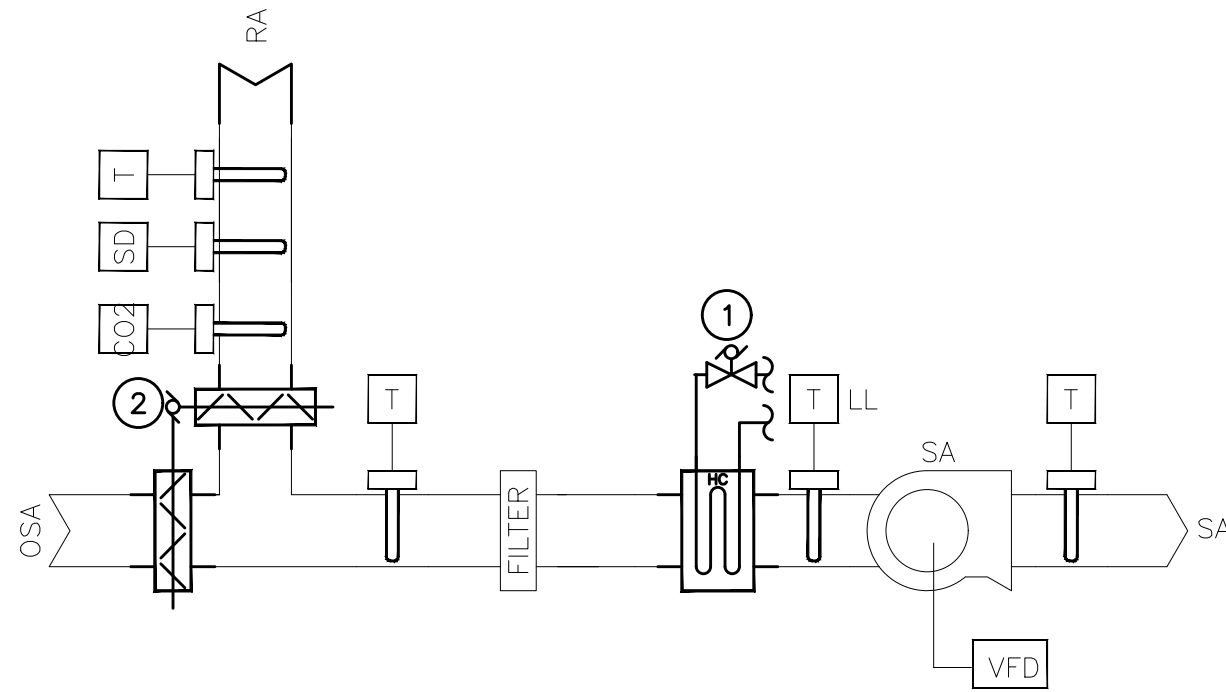
Copyright 16015

PERMIT SET

MECHANICAL CONTROLS

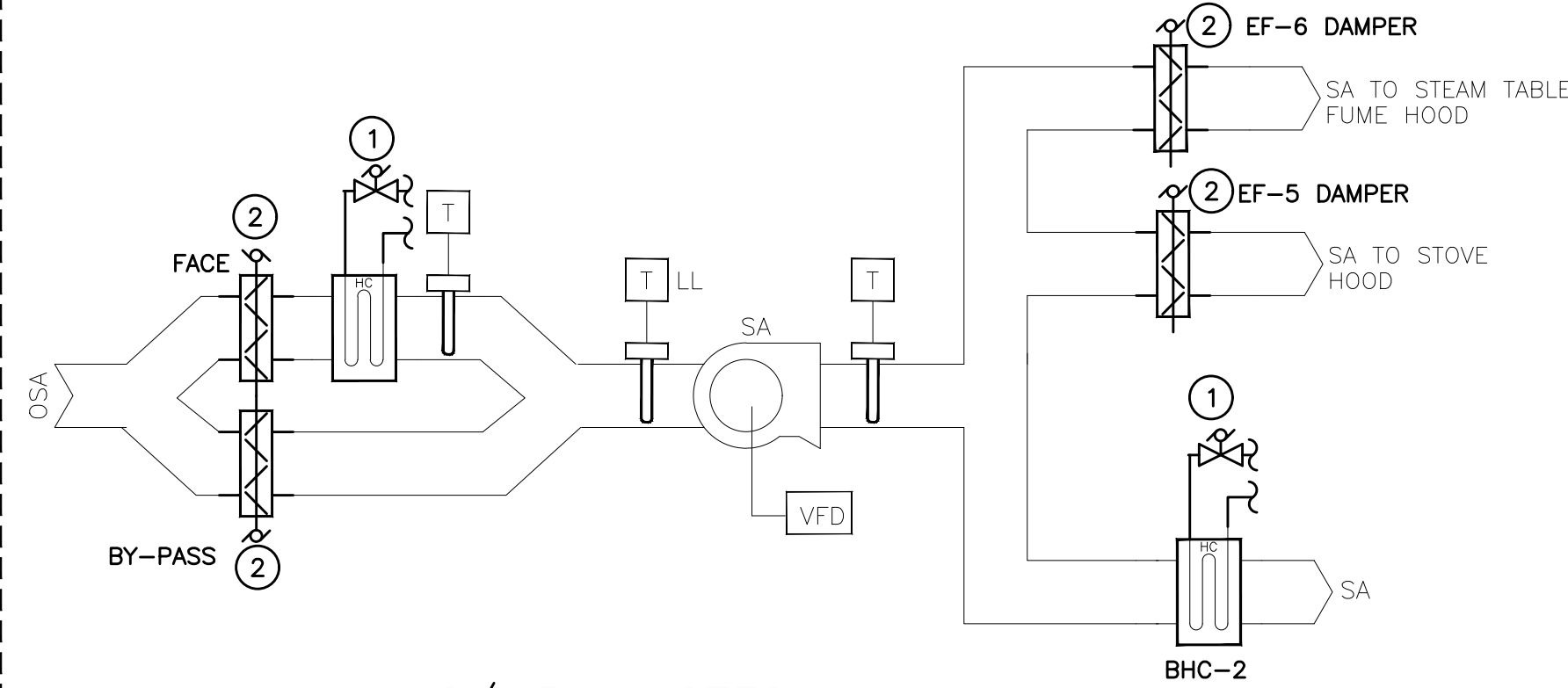
M500

ALTERNATE #2



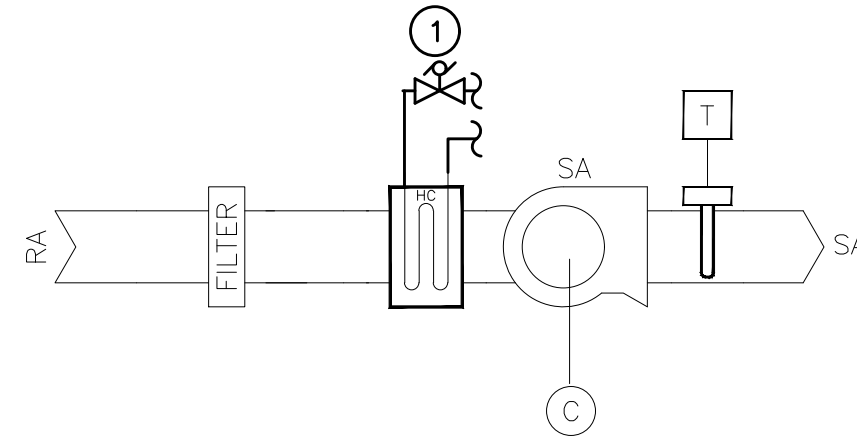
1
M5.1 ASU-6 CONTROL DIAGRAM
SCHEMATIC

ALTERNATE #2



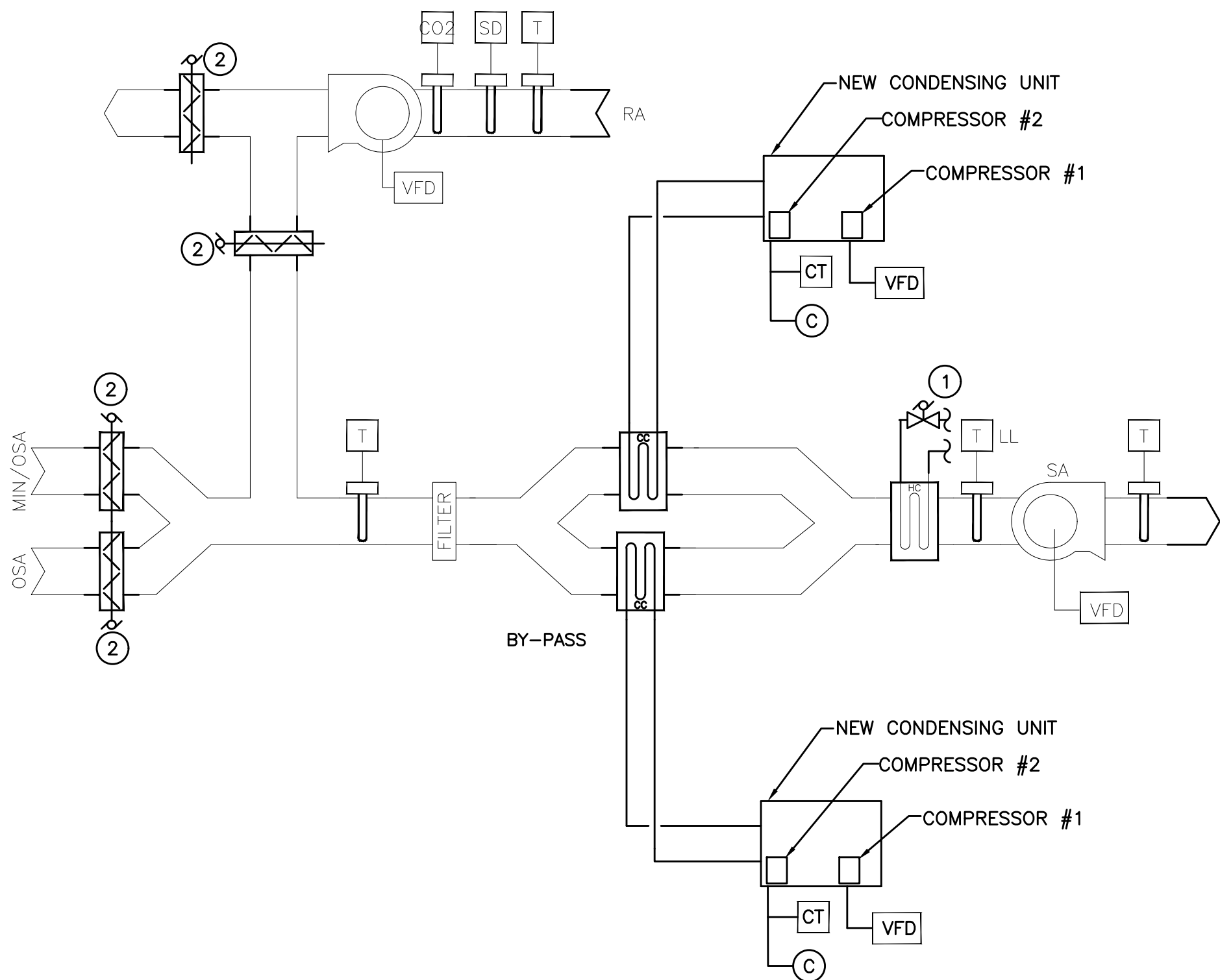
2
M5.1 ASU-7 CONTROL DIAGRAM
SCHEMATIC

ALTERNATE #2



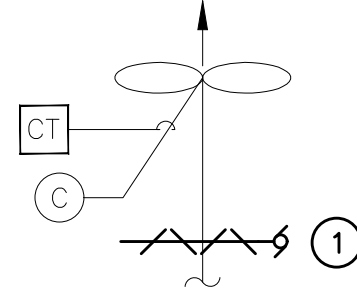
3
M5.1 ASU-10 CONTROL DIAGRAM
SCHEMATIC

ALTERNATE #2



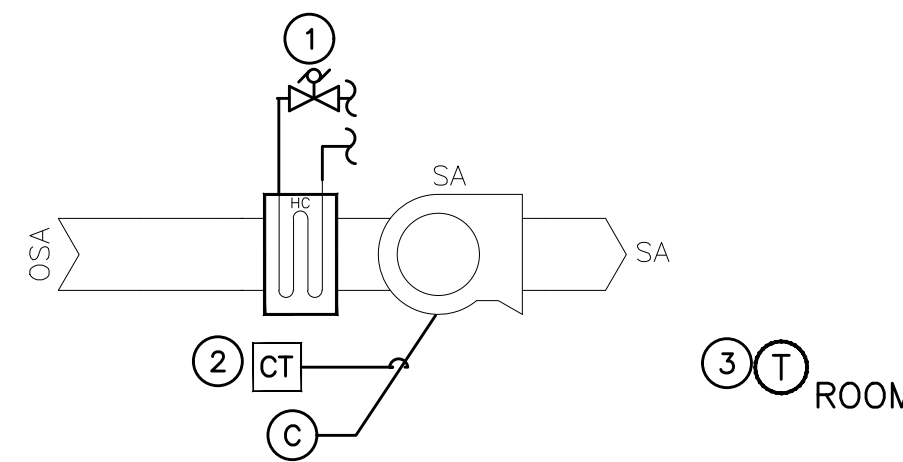
4
M5.1 ASU-11 CONTROL DIAGRAM
SCHEMATIC

ALTERNATE #2



5
M5.1 (E)EF-8 CONTROL
SCALE: SCHEMATIC

ALTERNATE #2



6
M5.1 UH AND CUH CONTROL DIAGRAM
SCHEMATIC

ALTERNATE #2

ASU-6					
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OUTSIDE/RA DAMPER POSITION				X	
HEATING SECTION				X	

ASU-7					
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FACE/BY-PASS DAMPER				X	
DAMPER POSITION (EF-5)				X	
DAMPER POSITION (EF-6)				X	
HEATING SECTION				X	
HEATING SECTION (BHC-2)				X	

ASU-10					
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
HEATING SECTION				X	

ASU-11					
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OUTSIDE DAMPER POSITION				X	
MIN OSA DAMPER POSITION				X	
EXHAUST/RELIEF DAMPER POSITION				X	
EXHAUST/RETURN AIR DAMPER POSITION(ASU-8 ONLY)				X	
RETURN AIR DAMPER POSITION				X	
COMPRESSOR COMMAND (2 COMPRESSORS)			X		
COMPRESSOR STATUS (2 COMPRESSORS)	X				X
COMPRESSOR SPEED (COMPRESSOR #1)				X	
COMPRESSOR COMMAND (2 COMPRESSORS)			X		
COMPRESSOR STATUS (2 COMPRESSORS)	X				X
COMPRESSOR SPEED (COMPRESSOR #1)				X	
HEATING SECTION				X	

CONTROLS FOR (E)EF-8					
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
EXHAUSTDAMPER POSITION				X	

CONTROLS FOR CU AND CUH					
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN START/STOP			X		
FAN STATUS			X		
HEATING VALVE				X	
ROOM TEMP		X			

MARK DATE DESCRIPTION

Issued: 03/06/2018

Scale: As Indicated

Drawn By: TB

Reviewed By: ---

File:

Copyright 16015

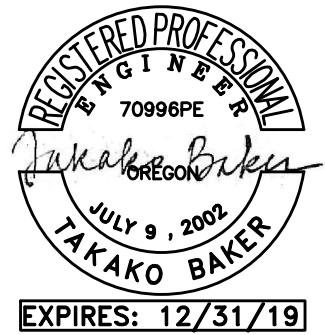
PERMIT SET

MECHANICAL CONTROLS

BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575

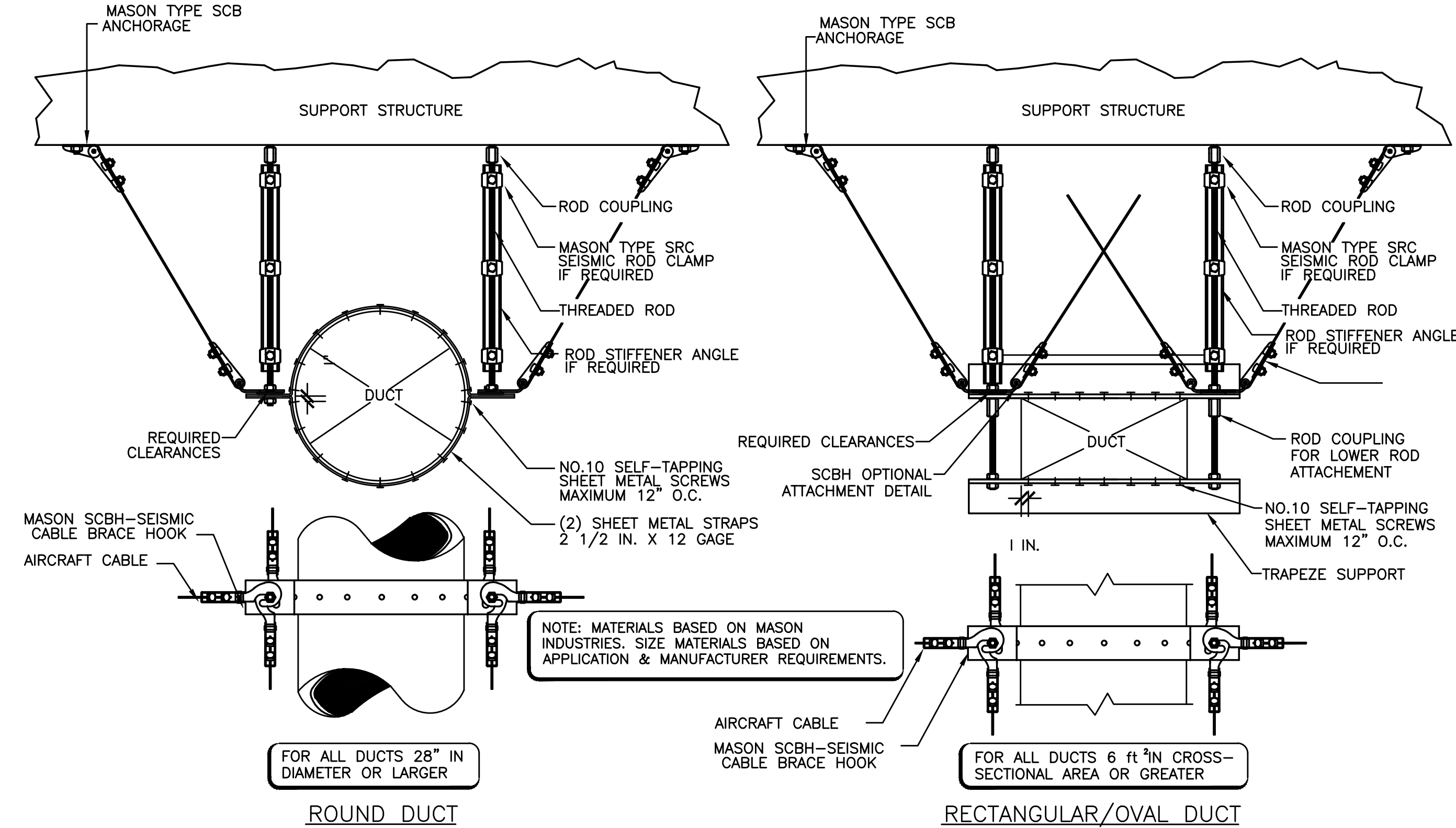
www.bora.co



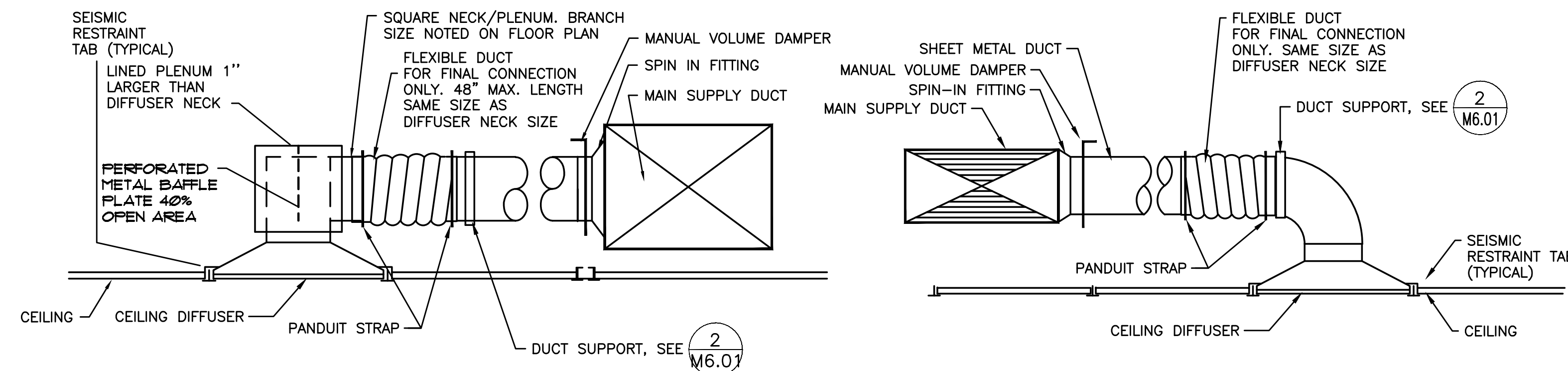
EXPIRES: 12/31/19

Bridgeport
Elementary School
5606 SW Boland Road
Tualatin, Oregon 97062

M501

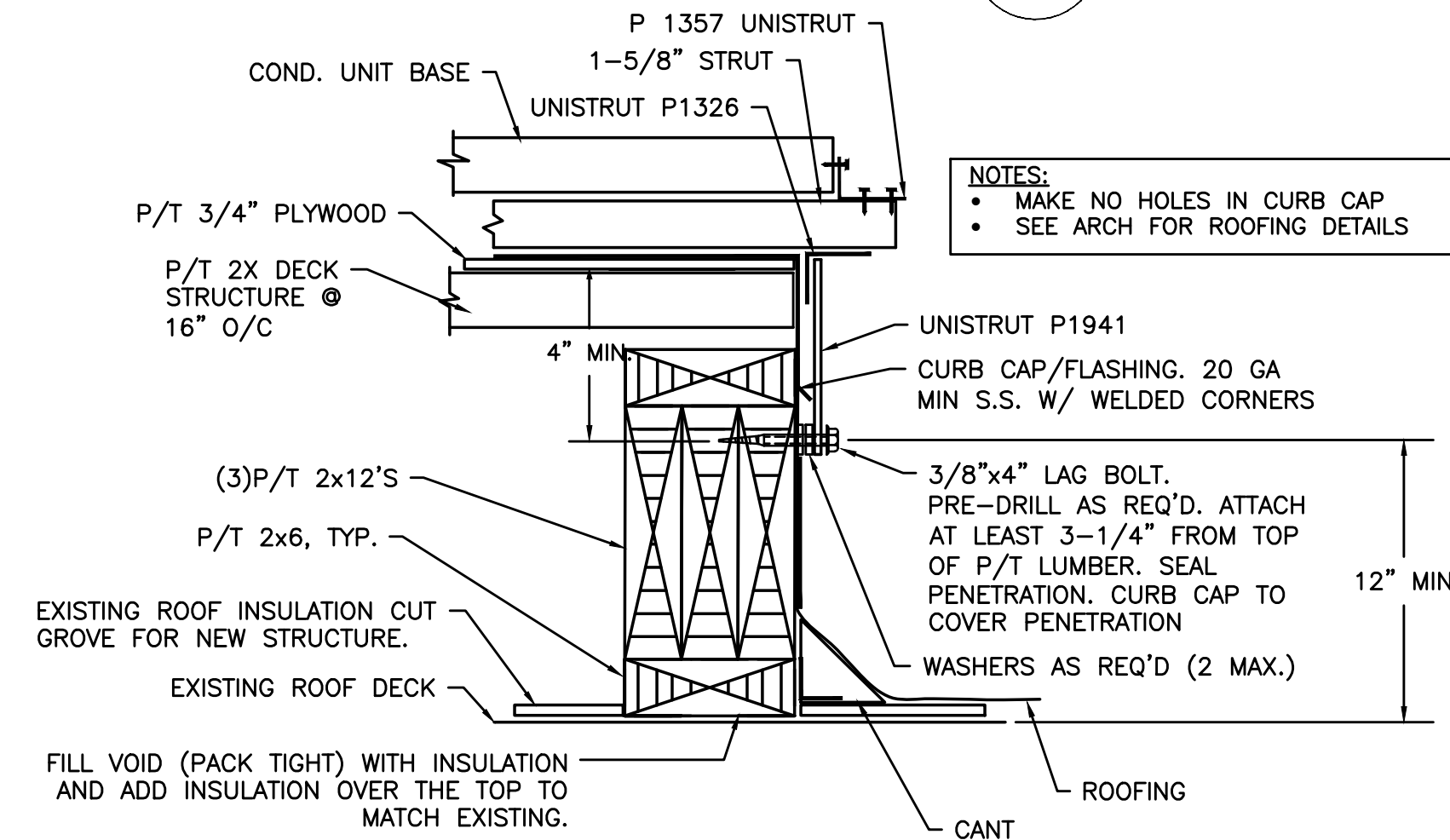


1 SEISMIC DUCT SUPPORT
SCALE: DETAIL



7 CEILING DIFFUSER DETAIL
SCALE: NONE

5 ROOF MOUNTED REFRIGERANT PIPE
SCALE: DETAIL



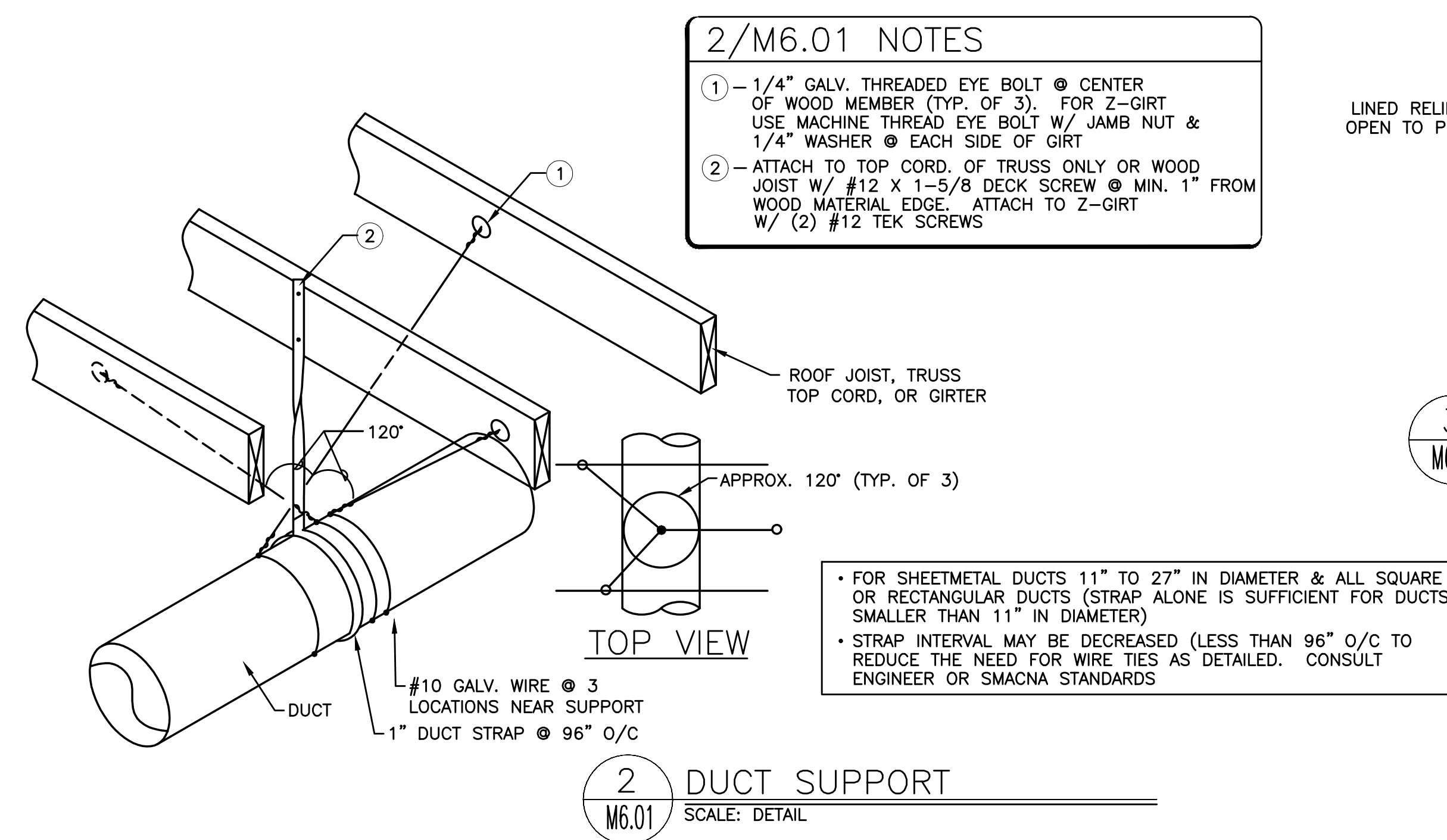
4 COMPRESSOR CURB
SCALE: DETAIL

VENTILATION AIR SCHEDULE RTU-1

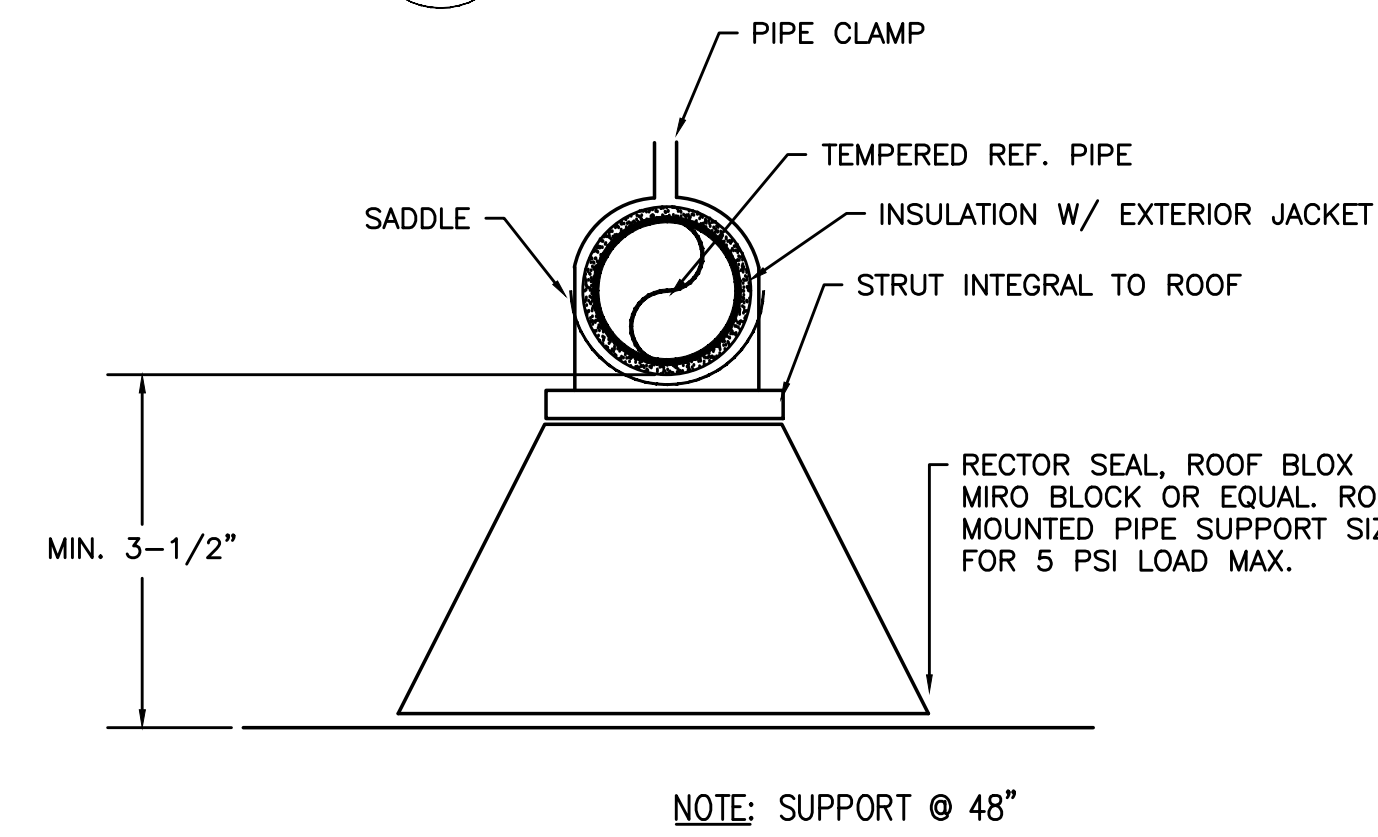
ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF FIXTURES (PLUMBING)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/P) OR(CFM/FIXT) *	OUTSIDE AIR REQUIREMENT (CFM/SQ FT.)	OUTSIDE AIR REQUIRED (CFM)	ZONE OSA (CFM)	SUPPLY AIR (CFM)	PRIMARY OSA FRACTION	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency	Corrected OSA CFM	AIR SYSTEMS	
	Az			Pz	Rp	Ra	Vbz	Ez	Vpz	Zp			Evz			
A104 PRINCIPAL	165	5		1	5	0.06	15	1.0	15	310	0.05	310	0	1.00	15.77	RTU-1
A103 CONFERENCE	230	50		12	5	0.06	74	1.0	74	450	0.16	450	0	1.07	78.10	RTU-1
A105 HEALTH	170	5		1	5	0.06	15	1.0	15	165	0.09	165	0	0.96	16.09	RTU-1
A107 WORK ROOM	350	5		2	5	0.06	31	1.0	31	250	0.12	250	0	0.97	32.81	RTU-1
A108 STAFF LOUNGE	340	50		17	5	0.06	105	1.0	105	275	0.38	275	0	0.94	111.54	RTU-1
A102 RECEPTION ADMIN (INT)	305	10		4	5	0.06	38	1.0	38	350	0.11	350	0	1.01	40.53	RTU-1
A102 RECEPTION ADMIN(EXT)	375	10		4	5	0.06	43	1.0	43	350	0.12	350	0	1.01	44.97	RTU-1
A106 TOILET	85	0	1	0	50		0		0	0	0	75				RTU-1, EF-1
TOTAL	2020			41			321		321	2150		2150	75	0.94	340	
CORRECTED TOTAL OUTDOOR AIR FLOW RATE															Zs =	0.16

VENTILATION AIR SCHEDULE - EXISTING UNIT

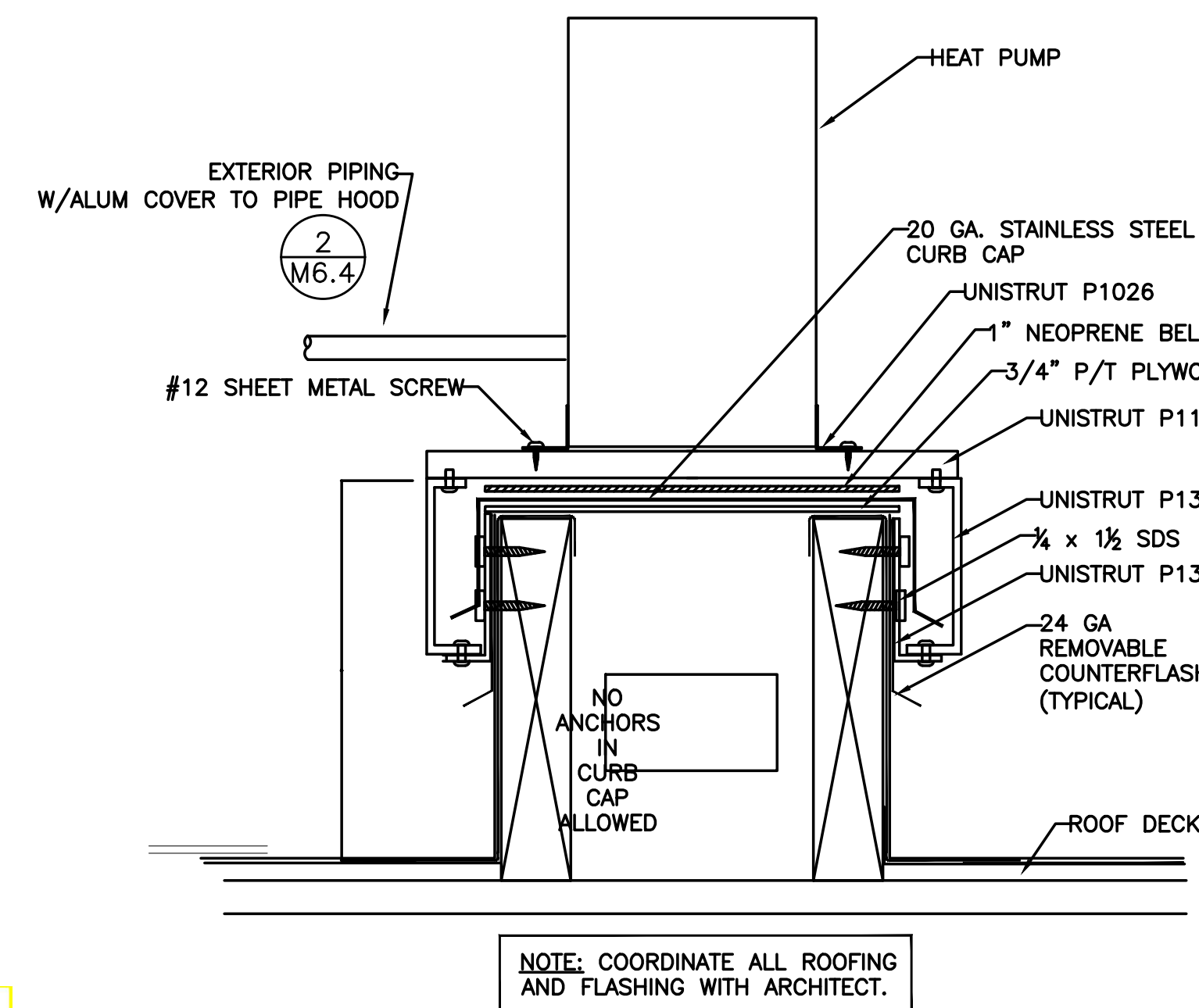
ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF FIXTURES (PLUMBING)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/P) OR(CFM/FIXT) *	OUTSIDE AIR REQUIREMENT (CFM/SQ FT.)	OUTSIDE AIR REQUIRED (CFM)	ZONE OSA (CFM)	SUPPLY AIR (CFM)	PRIMARY OSA FRACTION	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency	Corrected OSA CFM	AIR SYSTEMS	
	Az			Pz	Rp	Ra	Vbz	Ez	Vpz	Zp			Evz			
A100 VESIBULE	200	0		0	0	0.06	12	1.0	12	300	0.04	0	0	0.98	13.44	EXIST.
A 101 LOBBY	450	30		14	5	0.06	97	1.0	97	500	0.19	500	0	0.98	108.63	EXIST.
A111 COUNSELING	135	5		1	5	0.06	13	1.0	13	100	0.13	100	0	0.89	14.67	EXIST.
A112 OFFICE	105	5		1	5	0.06	11	1.0	11	100	0.11	0	100	0.91	12.65	EXIST.
A 109 CLASSROOM	1115	25		28	10	0.12	414	1.0	414	1050	0.39	1050	0	1.36	463.41	EXIST.
TOTAL	2005			44			547		547	2050		1150	100	0.89	491	
									Vou	Vps			Ev			
CORRECTED TOTAL OUTDOOR AIR FLOW RATE											491	CFM	Corrected OSA Fraction	Zs =	0.24	



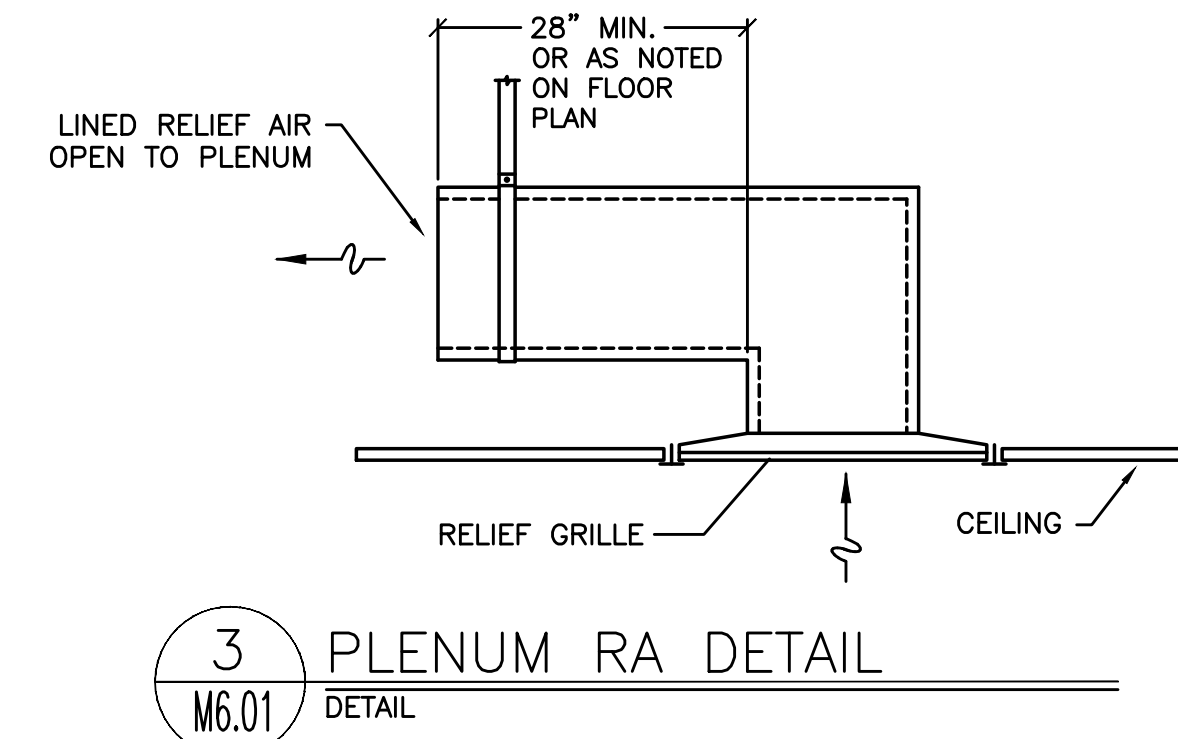
2 DUCT SUPPORT
SCALE: DETAIL



5 ROOF MOUNTED REFRIGERANT PIPE
SCALE: DETAIL



6 SMALL CONDENSING UNIT CURB DETAIL
SCALE: DETAIL



3 PLENUM RA DETAIL
SCALE: DETAIL

MARK DATE DESCRIPTION

Issued: 03/06/2018

Scale: As Indicated

Drawn By: TB

Reviewed By: ---

File:

Copyright 16015

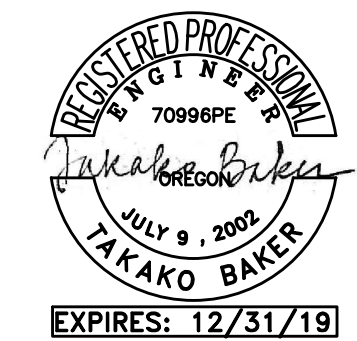
PERMIT SET

MECHANICAL LEGENDS AND SCHEDULES

M601

Tigard Tualatin School District
Bridgeport Elementary School

Bridgeport Elementary School
5606 SW Bolland Road
Tualatin, Oregon 97062

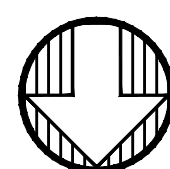
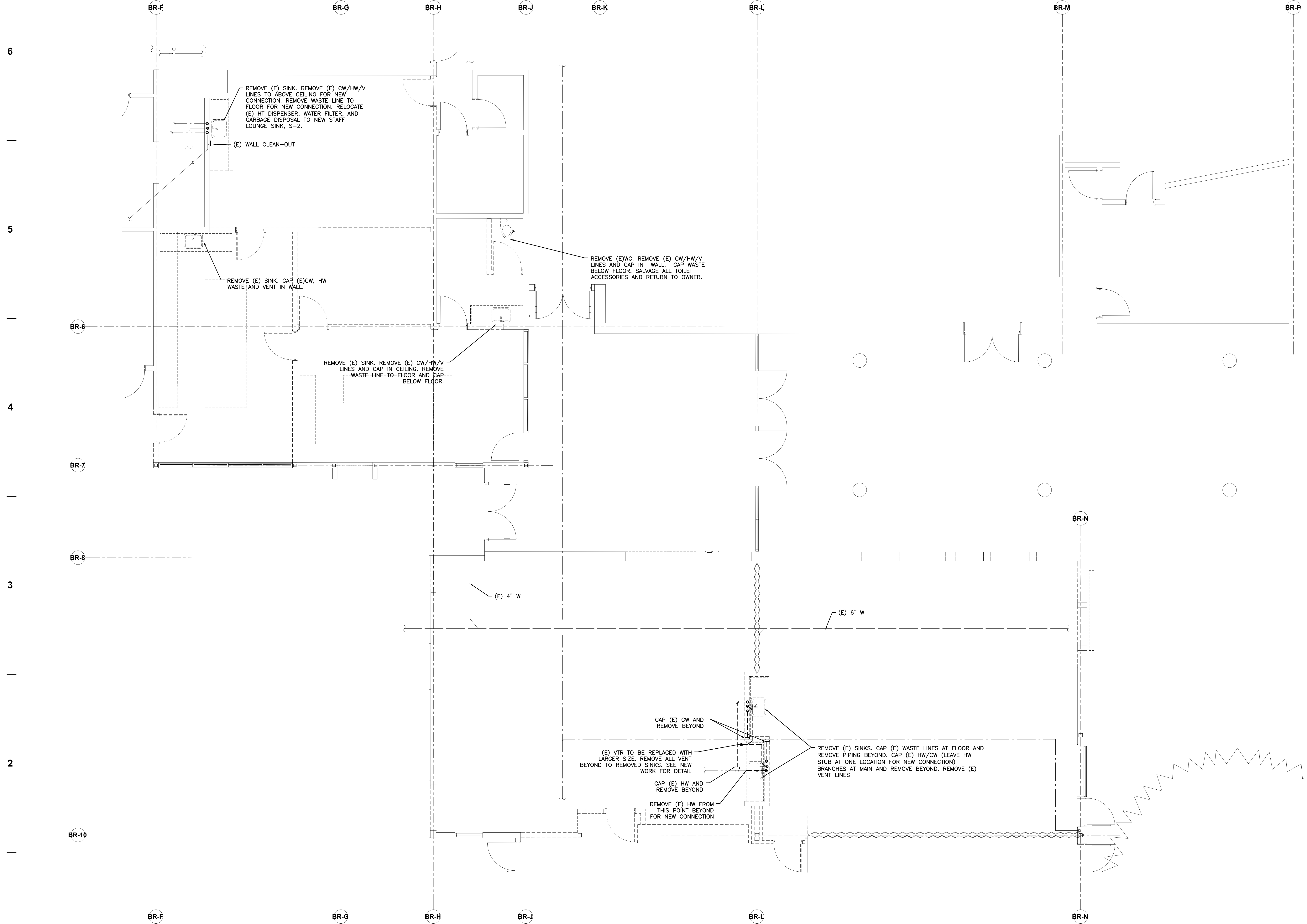


BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575

www.bora.co

10/16/2001 2:09:45: 54
AM



1
P111

PLUMBING DEMO PLAN - BRIDGEPORT
SCALE: 1/4" = 1'-0"

BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575
www.bora.co



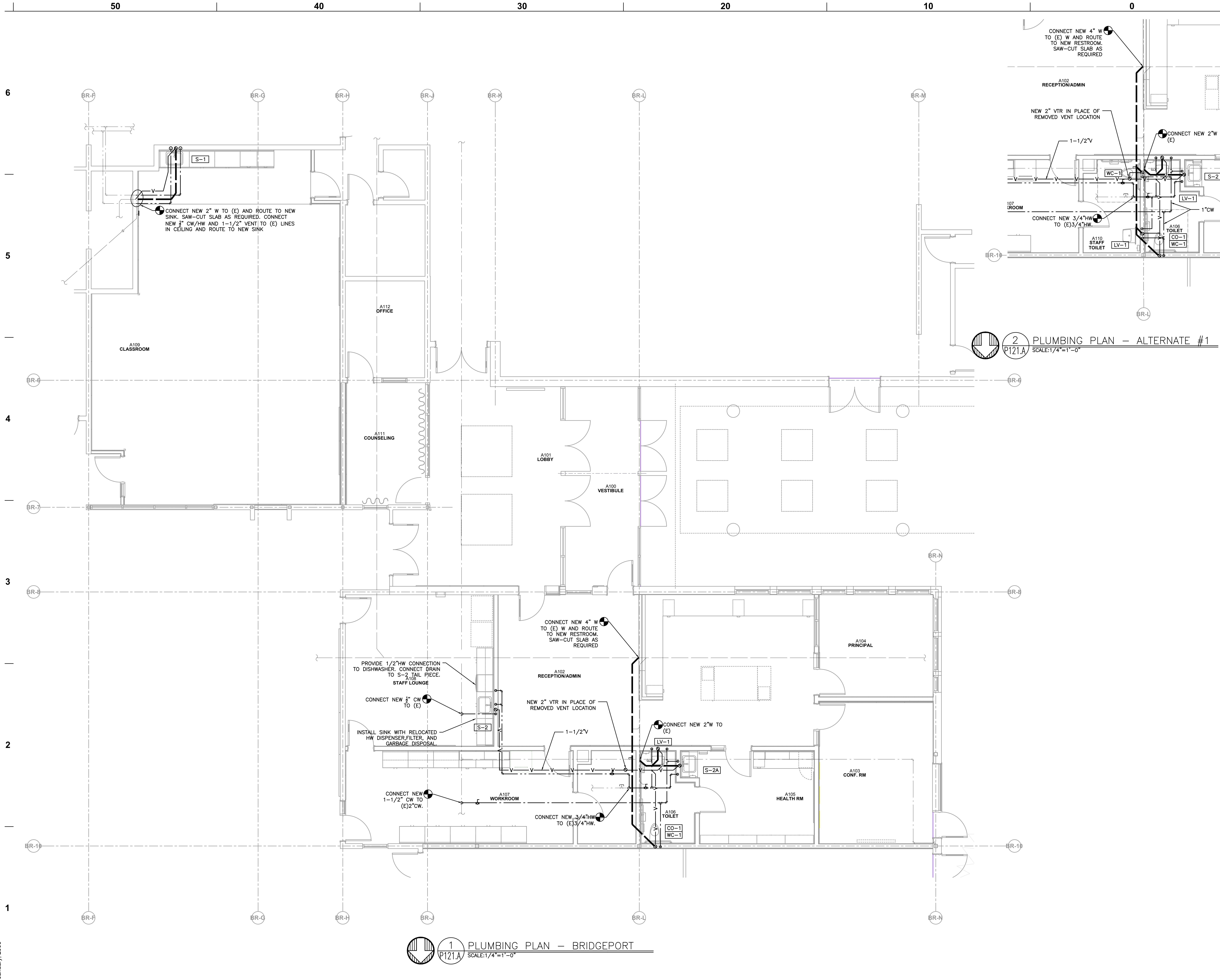
Tigard Tualatin School District
Bridgeport Elementary School
Bridgeport Elementary School
5505 SW Bondard Road
Tualatin, Oregon 97062

MARK	DATE	DESCRIPTION
Issued:	03/06/2018	
Scale:	As Indicated	
Drawn By:	TB	
Reviewed By:	---	
File:		

Copyright 16015
PERMIT SET

PLUMBING DEMO PLAN
BRIDGEPORT

P111

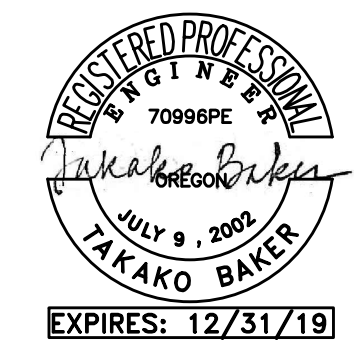


2 PLUMBING PLAN – ALTERNATE #1
SCALE: 1/4" = 1'-0"

1 PLUMBING PLAN – BRIDGEPORT
SCALE: 1/4" = 1'-0"

BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575
www.bora.co



Tigard Tualatin School District
Bridgeport Elementary School
Bridgeport Elementary School
5505 SW Burling Road
Tualatin, Oregon 97062

MARK	DATE	DESCRIPTION
Issued:	03/06/2018	
Scale:	As Indicated	
Drawn By:	TB	
Reviewed By:	---	
File:		
Copyright	16015	
1	PERMIT SET	

PLUMBING PLAN
BRIDGEPORT

P121

PLUMBING CONNECTION SCHEDULE						
MARK	FIXTURE	W	V	CW	HW	REMARKS
S-1	SINK - CLASSROOM	2"	1-1/2"	1/2"	1/2"	1-COMP, W/ BUBBLER SEE NOTE 1
S-2	SINK - ADMIN	2"	1-1/2"	1/2"	1/2"	1-COMP, SEE NOTES 1 & 2
S-2 A	SINK - HEALTH	2"	1-1/2"	1/2"	1/2"	1-COMP, SEE NOTES 1
WC-1	WATER CLOSET	4"	2"	1"		FLOOR MOUNT, FLUSH VALVE
LV-1	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	WALL MOUNT

NOTES:
1: PROVIDE FAUCET RE-INFORCEMENT PER DETAIL 4/P6.01.
2: INSTALL SINK WITH RELOCATED HW DISPENSER, FILTER, AND GARBAGE DISPOSAL.

PLUMBING LEGEND			
AFF	 ABOVE FINISHED FLOOR	— — — — — (CW) COLD WATER	
ARCH	 ARCHITECTURAL	— — — — — (NPW) NON-POTABLE COLD WATER	
B.G.	 BELOW GRADE	— — — — — (HW) HOT WATER	
BTU	 BRITISH THERMAL UNIT	— — — — — (HWR) HOT WATER RECIRC	
CAP.	 CAPACITY	— — — — — (W) ABOVE GRADE WASTE	
C.I.	 CAST IRON	— — — — — (W) BELOW GRADE WASTE	
COMP.	 COMPARTMENT	— V — V (V) VENT	
CONT.	 CONTINUATION	— RD — (RD) RAIN DRAIN	
CU.	 CUBIC	— — — — —RD (UG RD) UNDERGROUND RAIN DRAIN	
DF	 DRINKING FOUNTAIN	— OD — (OD) OVERFLOW RAIN DRAIN	
DI	 DEIONIZED (WATER)	— — — — — NEW WORK ENTITY	
DIA.	 DIAMETER	— — — — — (D) DEMOLISH, (R) RELOCATE	
ELEV.	 ELEVATION	— — — — — (E) EXISTING ENTITY	
EW	 ELECTRIC WATER COOLER	— — — — — (CW) EXISTING COLD WATER	
FD	 FLOOR DRAIN	— — — — — (HW) EXISTING HOT WATER	
FDC	 FIRE DEPARTMENT CONNECTION	— — — — — (HWR) EXISTING HOT WATER RECIRC	
FHC	 FIRE HOSE CABINET	— — — — — (W) EXISTING WASTE BELOW GRADE	
F.F.	 FINISH FLOOR	— V — V (V) EXISTING VENT	
FLG.	 FLANGE	— RD — (RD) EXISTING RAIN DRAIN	
FT	 FOOT / FEET	— — — — — BACKGROUND	
G	 GAS		
GA.	 GAUGE	⚠..... PRESSURE/TEMP RELIEF VALVE	
GALV.	 GALVANIZED	⚡..... BUTTERFLY VALVE	
GPM	 GALLONS PER MINUTE	⚙..... GAS PRESSURE REGULATING VALVE	
G.V.	 GATE VALVE	⬆OR ⬇..... TOP CONNECTION	
HP	 HORSEPOWER	⬇..... BOTTOM CONNECTION	
HR.	 HOUR	⬆..... PIPE TURNED UP, PIPE TURNED DOWN	
I.E.	 INVERT ELEVATION	⬆..... GATE VALVE	
KW	 KILOWATT	⬆..... BALL VALVE	
LAV	 LAVATORY	⬆..... BALANCING VALVE	
LBS	 POUNDS	⬆..... CHECK VALVE	
MAX.	 MAXIMUM	⬆..... UNION	
MBH	 THOUSANDS OF BTUs PER HOUR	⬆..... DOUBLE CHECK ASSEMBLY	
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		

⬡..... EQUIPMENT MARK NUMBER

⬡..... FIXTURE MARK

(E)..... EXISTING

⬡..... NOTE

⬡..... CONNECT TO EXISTING

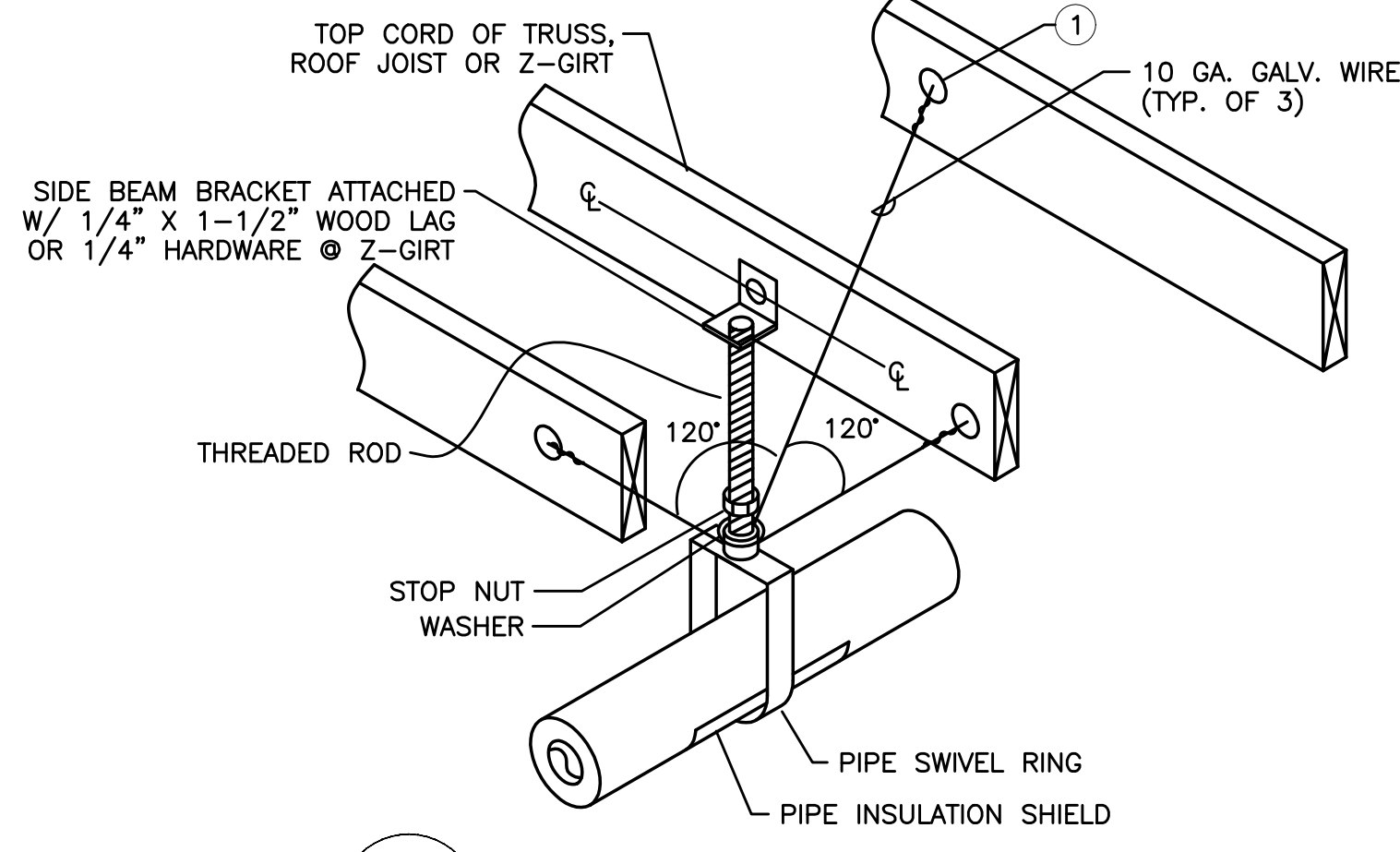
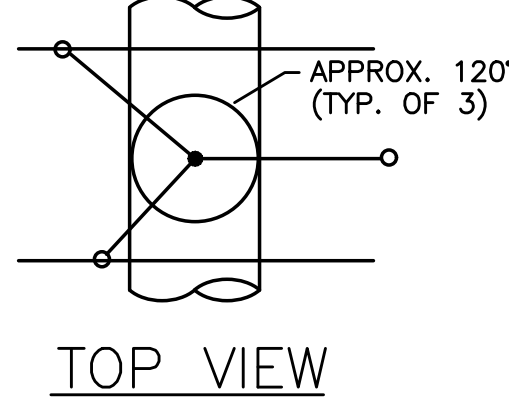
⬡..... CAP

⬡..... TEE

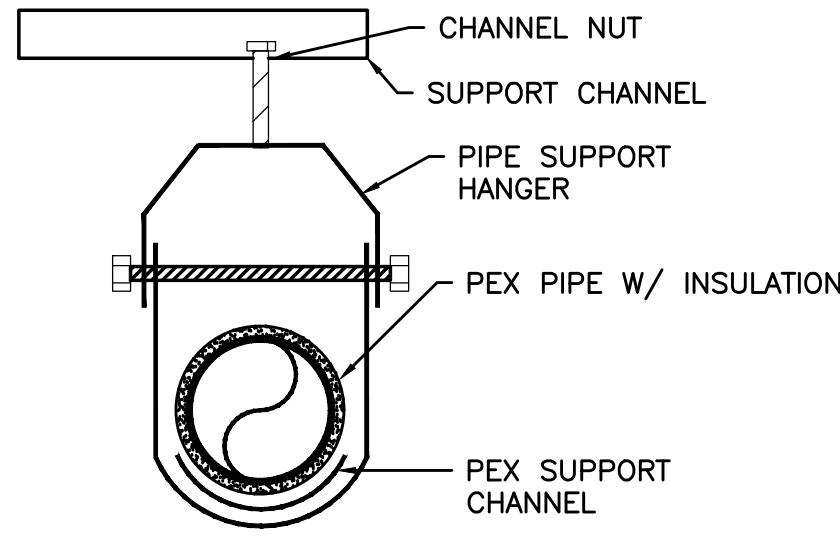
⬡..... ELBOW

⬡..... CLEANOUT

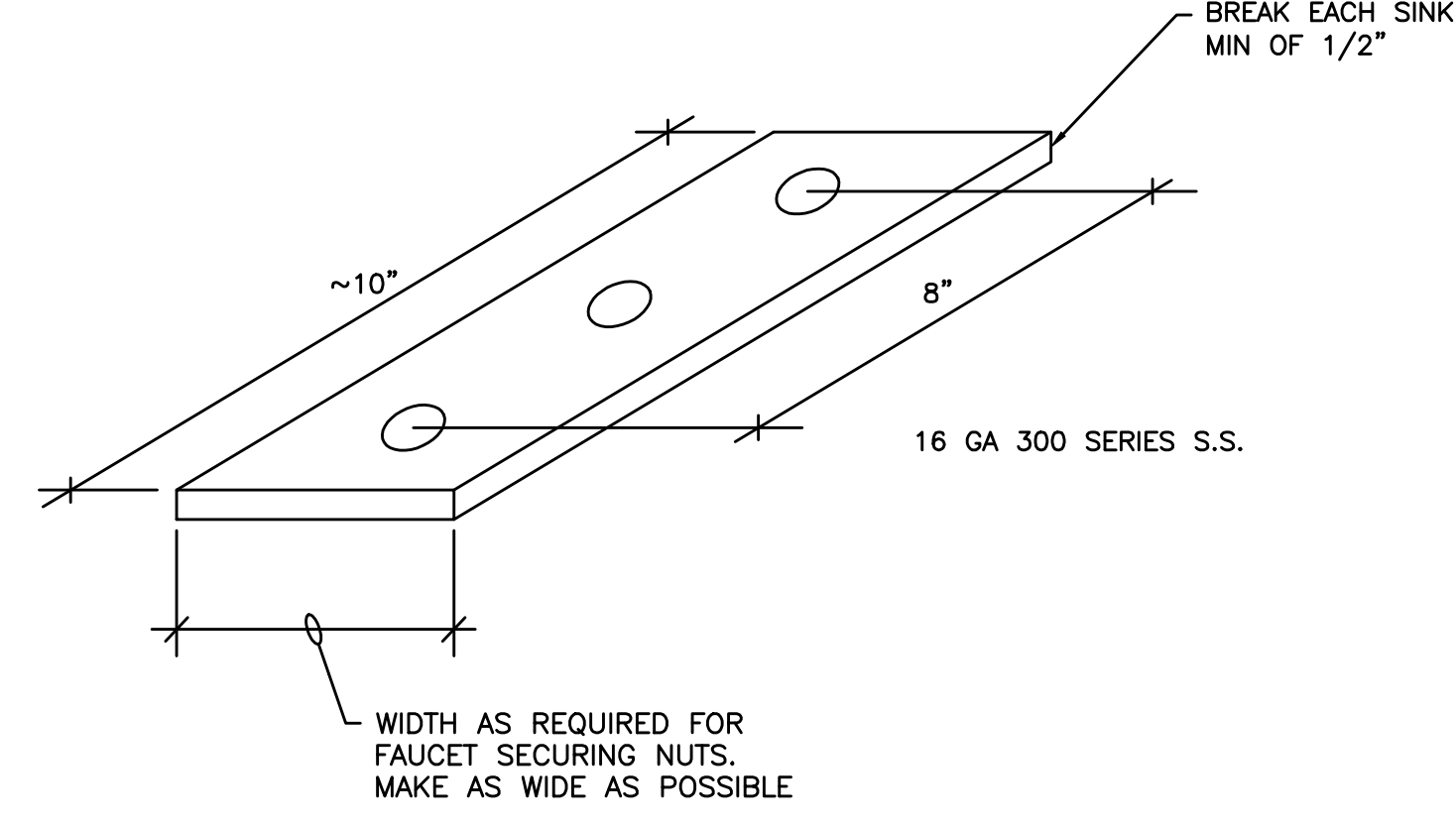
3/P601 NOTES
① — 1/4" GALV. THREADED EYE BOLT @ CENTER OF WOOD MEMBER (TYP. OF 3). FOR Z-GIRT USE MACHINE THREAD EYE BOLT W/ JAMB NUT & 1/4" WASHER @ EACH SIDE OF GIRT
* — MAXIMUM HANGER SPACING SHALL BE AS FOLLOWS:
1-1/4" AND SMALLER PIPE 7' SPAN
1-1/2" PIPE 9' SPAN



1 NON-SEISMIC PIPE SUPPORT
SCALE: DETAIL



3 PEX SUPPORT
SCALE: DETAIL



2 SINK REINFORCEMENT
SCALE: DETAIL

MARK DATE DESCRIPTION

Issued: 03/06/2018

Scale: As Indicated

Drawn By: TB

Reviewed By: ---
File:

Copyright 16015

PERMIT SET

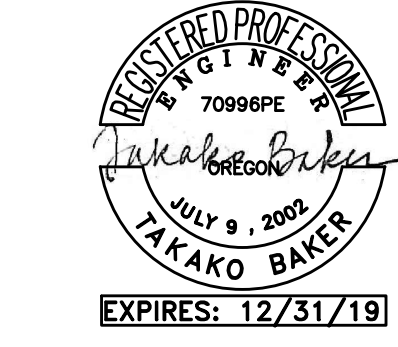
PLUMBING LEGENDS AND SCHEDULES

P600

BORA

Bora Architects, Inc.
720 SW Washington, Suite 800
Portland, Oregon 97205
503.226.1575

www.bora.co



Tigard Tualatin School District
Bridgeport Elementary School

Bridgeport Elementary School
5605 SW Boiland Road
Tualatin, Oregon 97062