

Replacing the Boiler

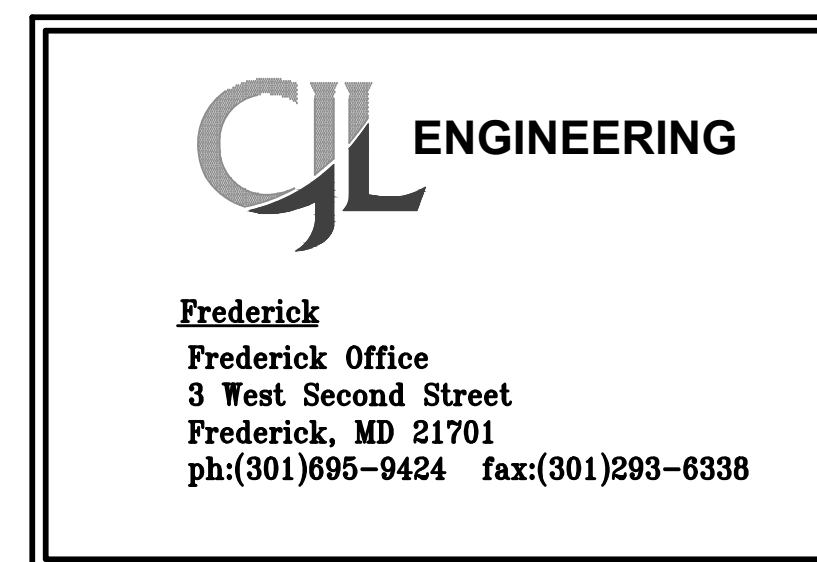
at

Grainger Mutual Insurance Company Building

31 W. Main Street
Middletown, MD 21769

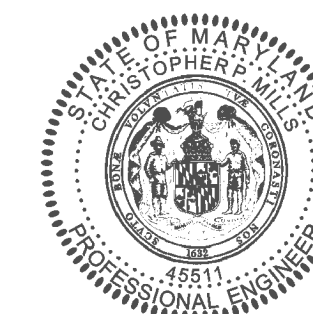
January 16, 2019

MECHANICAL / ELECTRICAL ENGINEERS:



DRAWING INDEX

CS-1	COVER SHEET
MP001	PLUMBING/HVAC NOTES/SYMBOLS AND ABBREVIATIONS
MP201	MECHANICAL FLOOR PLANS - DEMO/NEW WORK - PIPING/MECHANICAL
MP701	PLUMBING SCHEDULES/DETAILS AND SCHEMATICS
E201	FLOOR PLANS - DEMO/NEW WORK - ELECTRICAL



Professional Certification. I
hereby certify that these
documents were prepared or
approved by me, and that I
am a duly licensed
professional engineer under
the laws of the State of
Maryland. License No:45511
Expiration Date: 06/03/2020

CS-1

A

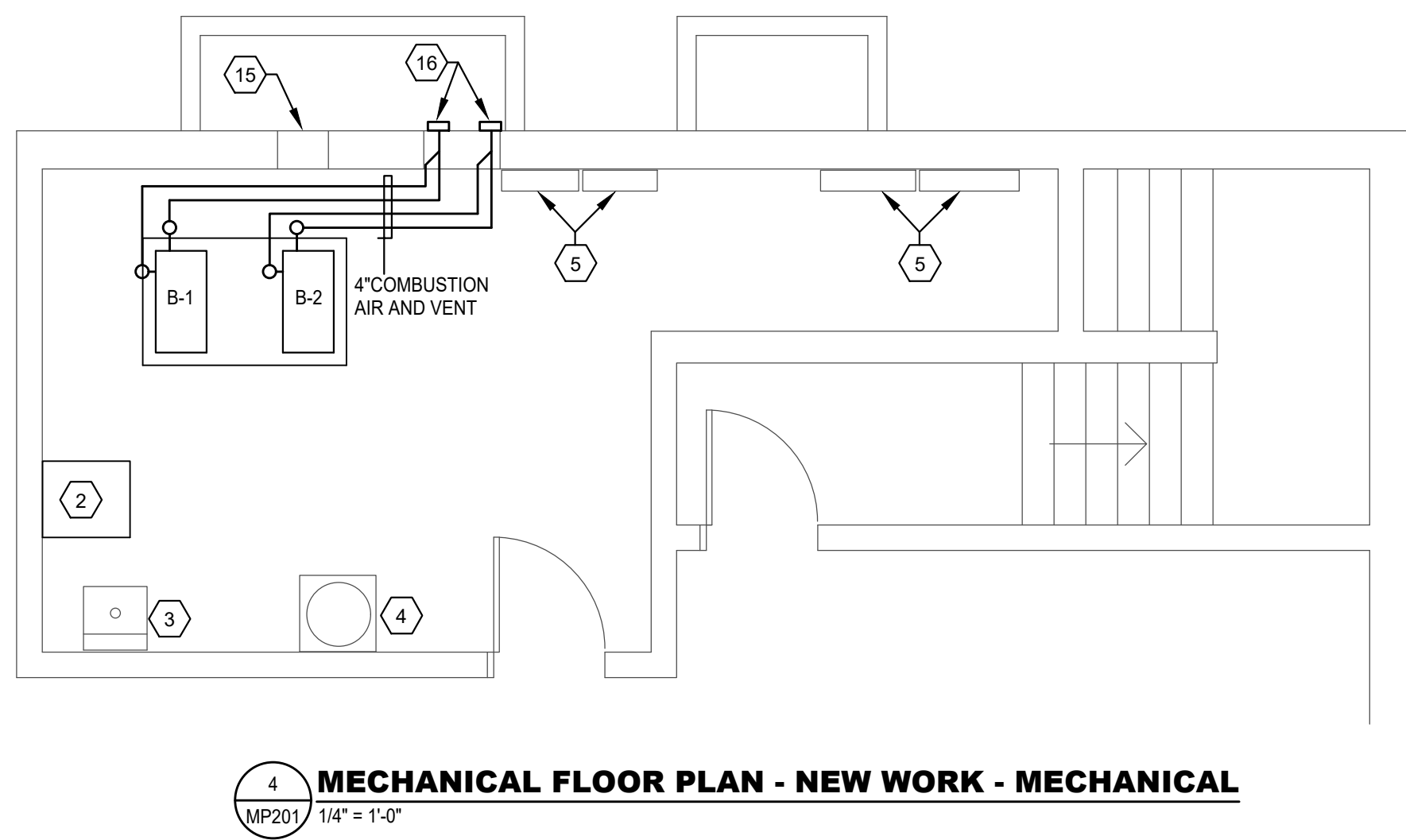
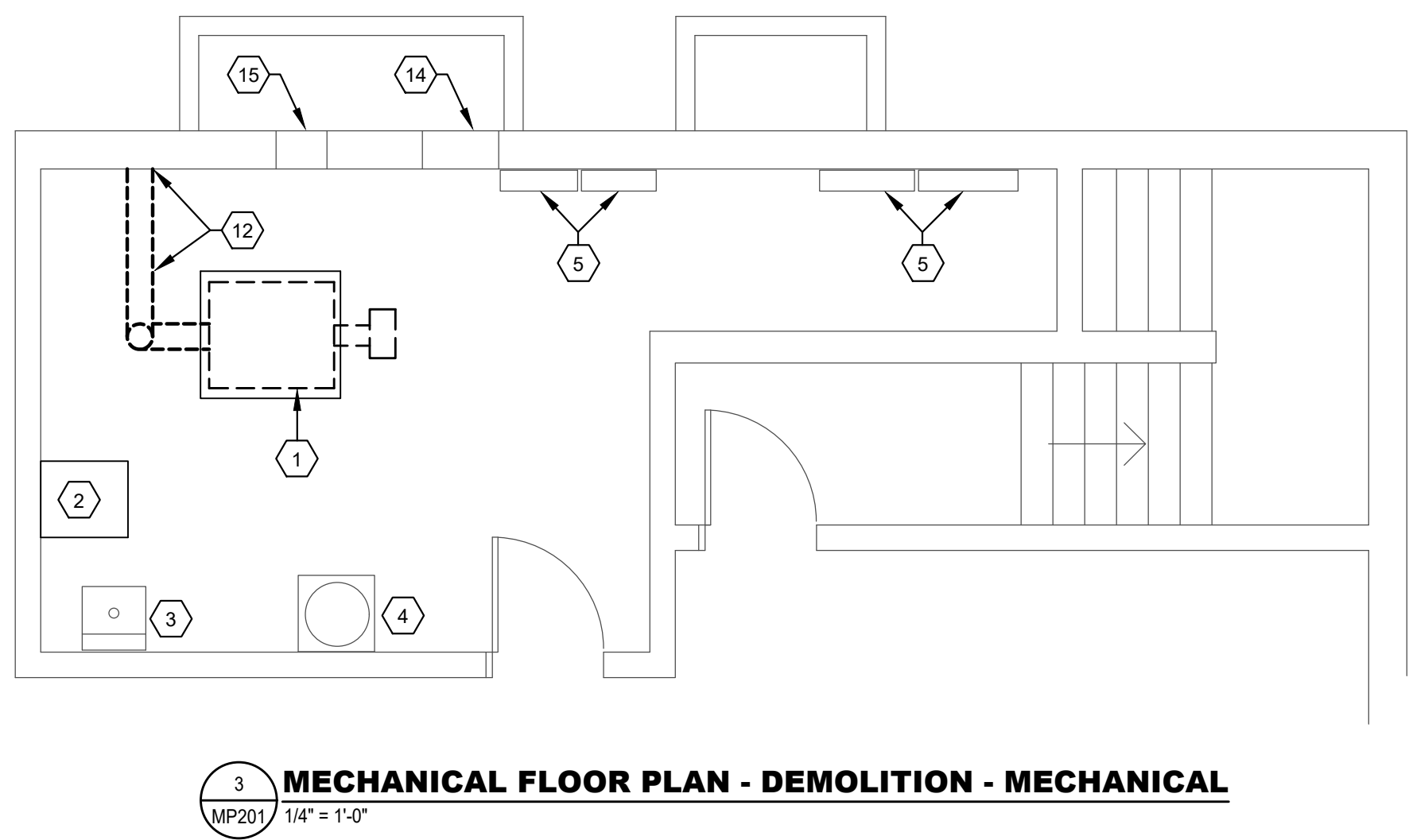
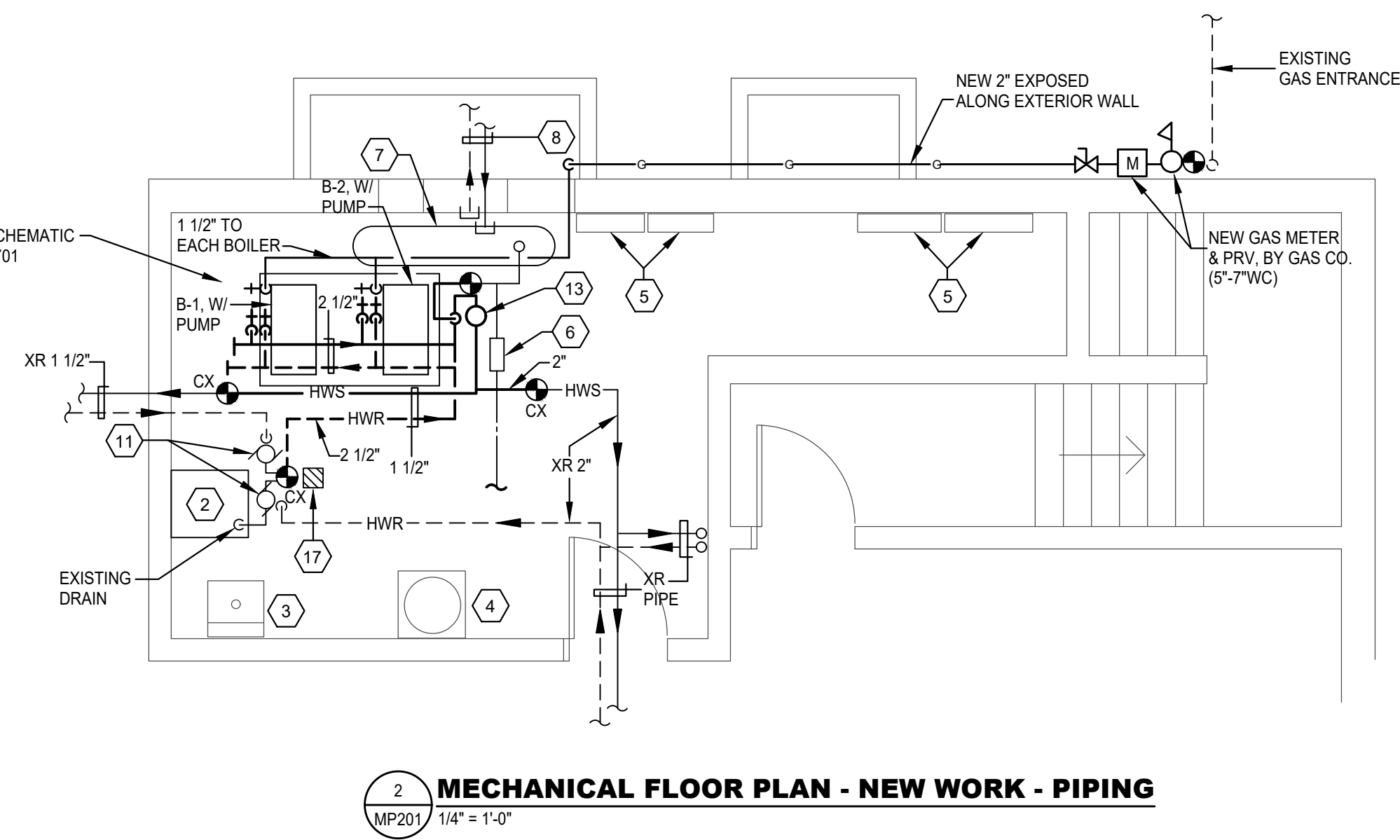
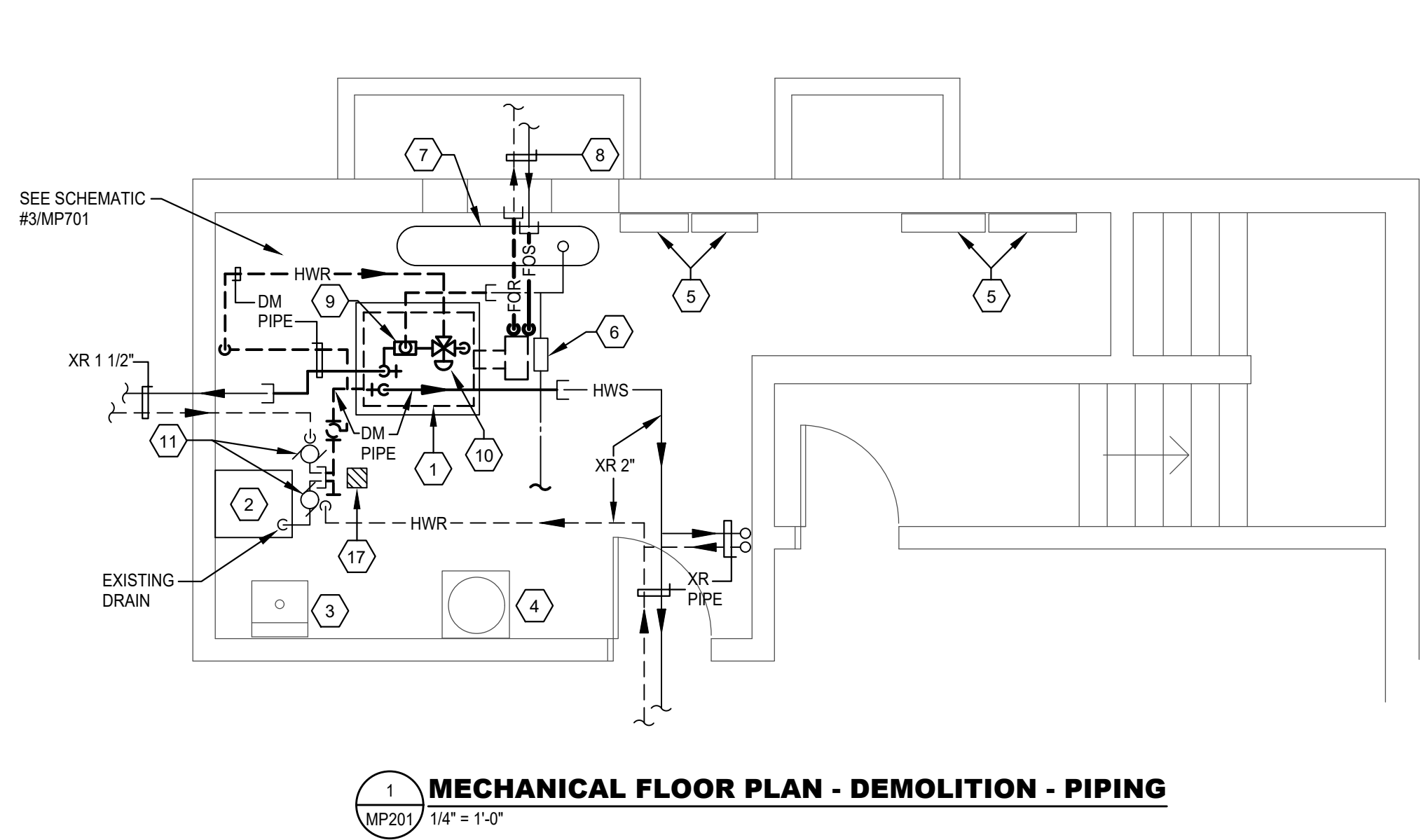
B

C

D

E

F



- NUMBERED NOTES**
- 1 REMOVE EXISTING FUEL OIL BOILER, CONCRETE PAD AND FLUE.
 - 2 EXISTING SUMP PIT.
 - 3 EXISTING LAUNDRY TUB.
 - 4 EXISTING ELECTRIC WATER HEATER.
 - 5 EXISTING ELECTRICAL PANELS.
 - 6 EXISTING RPZ BFP MAKEUP.
 - 7 EXISTING HOT WATER EXPANSION TANK.
 - 8 EXISTING FUEL OIL SUPPLY AND RETURN PIPING TO BE ABANDONED.
 - 9 REMOVE EXISTING AIR SCOOP.
 - 10 REMOVE EXISTING 3-WAY VALVE.
 - 11 EXISTING IN-LINE HEATING WATER PUMPS.
 - 12 REMOVE EXISTING FLUE DUCT. PATCH AND SEAL EXISTING CHIMNEY AS REQUIRED.
 - 13 NEW AIR/DIRT SEPARATOR.
 - 14 REMOVE EXISTING LOUVER. SEAL OPENING AS REQUIRED.
 - 15 EXISTING EXHAUST FAN.
 - 16 (2) CONCENTRIC SIDEWALL VENT AND COMBUSTION AIR TERMINATION IN EXISTING WINDOW WELL. INSTALL AS REQUIRED PER MANUFACTURER. MINIMUM 12" SEPARATION.
 - 17 EXISTING FLOOR DRAIN.

GENERAL NOTES

G1. SEE SCHEMATIC #3 & 4/MP701 FOR DEMOLITION AND NEW PIPE ADDITIONAL INFORMATION.



Frederick
3 West Second Street
Frederick, MD 21701
P. 301.695.9424

Seal / Signature:

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No:45511 Expiration Date: 06/03/2020



**GRAINGERS
MUTUAL
INSURANCE
COMPANY
BUILDING**
MIDDLETOWN, MD

**BOILER
REPLACEMENT**

100% CD'S

NOTES
NOTES

Rev	Description	Date

Date Issued: 01-16-2019

Sheet Description:

**MECHANICAL
FLOOR PLANS -
DEMO/NEW WORK -
PIPING/MECHANICAL**

Sheet Number:

MP201

Project Number: 18-0401

Professional Certification. I
hereby certify that these
documents were prepared or
approved by me, and that I
am a duly licensed
professional engineer under
the laws of the State of
Maryland. License No:45511
Expiration Date: 06/03/2020



MIDDLETOWN, MD

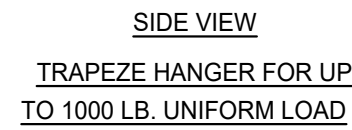
100% CD'S

NOTES
NOTES[illegible]

Sheet Description:

Sheet Number:

Project Number: 18-0401



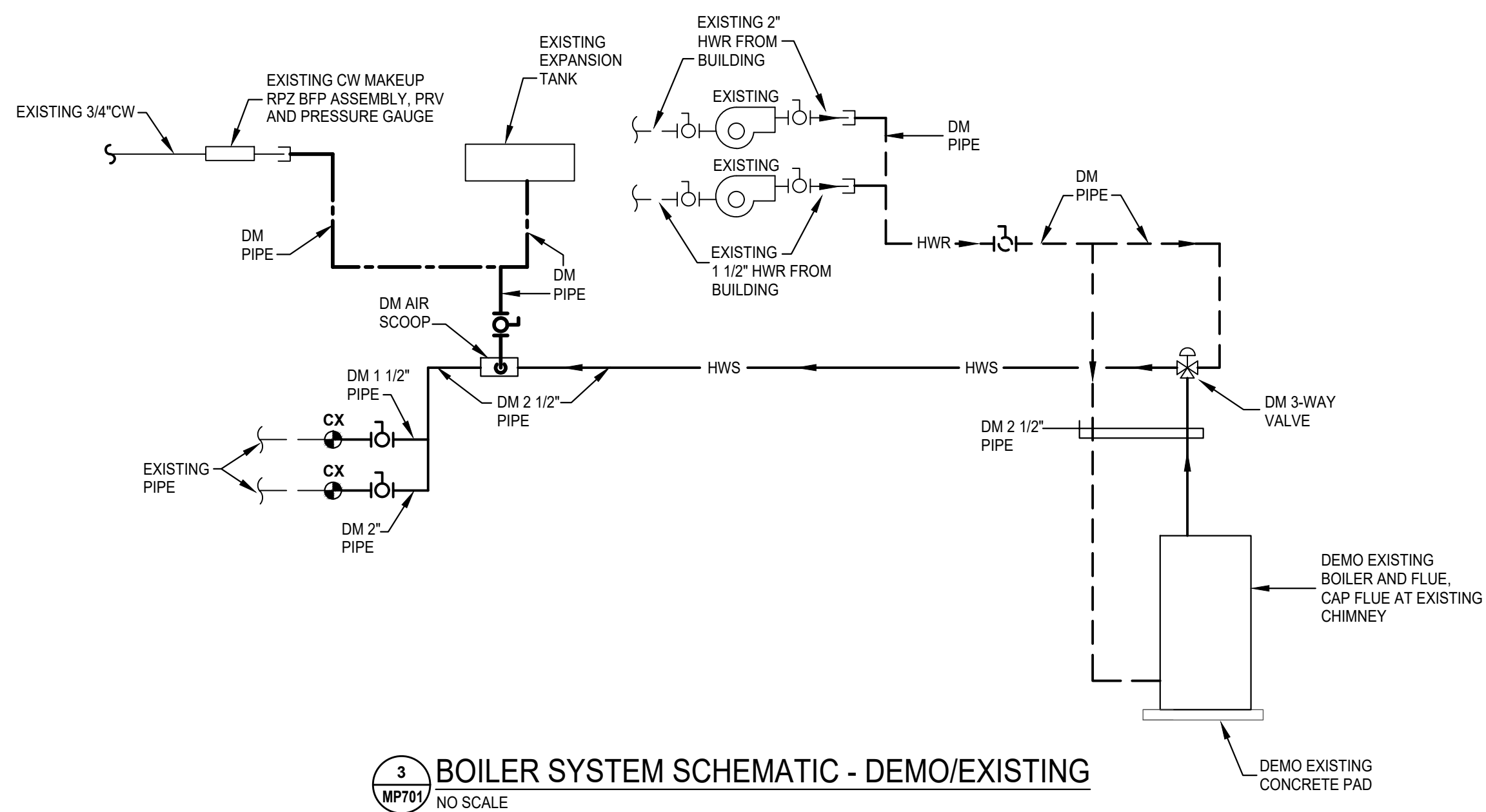
MAXIMUM PIPE/TUBING SUPPORT SPACING, FEET												
NOM. SIZE	THRU 3/4"	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
PIPE	7 FT	7	7	9	10	11	12	14	16	17	19	22
TUBING	5 FT	6	7	8	8	9	10	12	13	14	16	—

1 PIPE HANGERS
MP701 NO SCALE

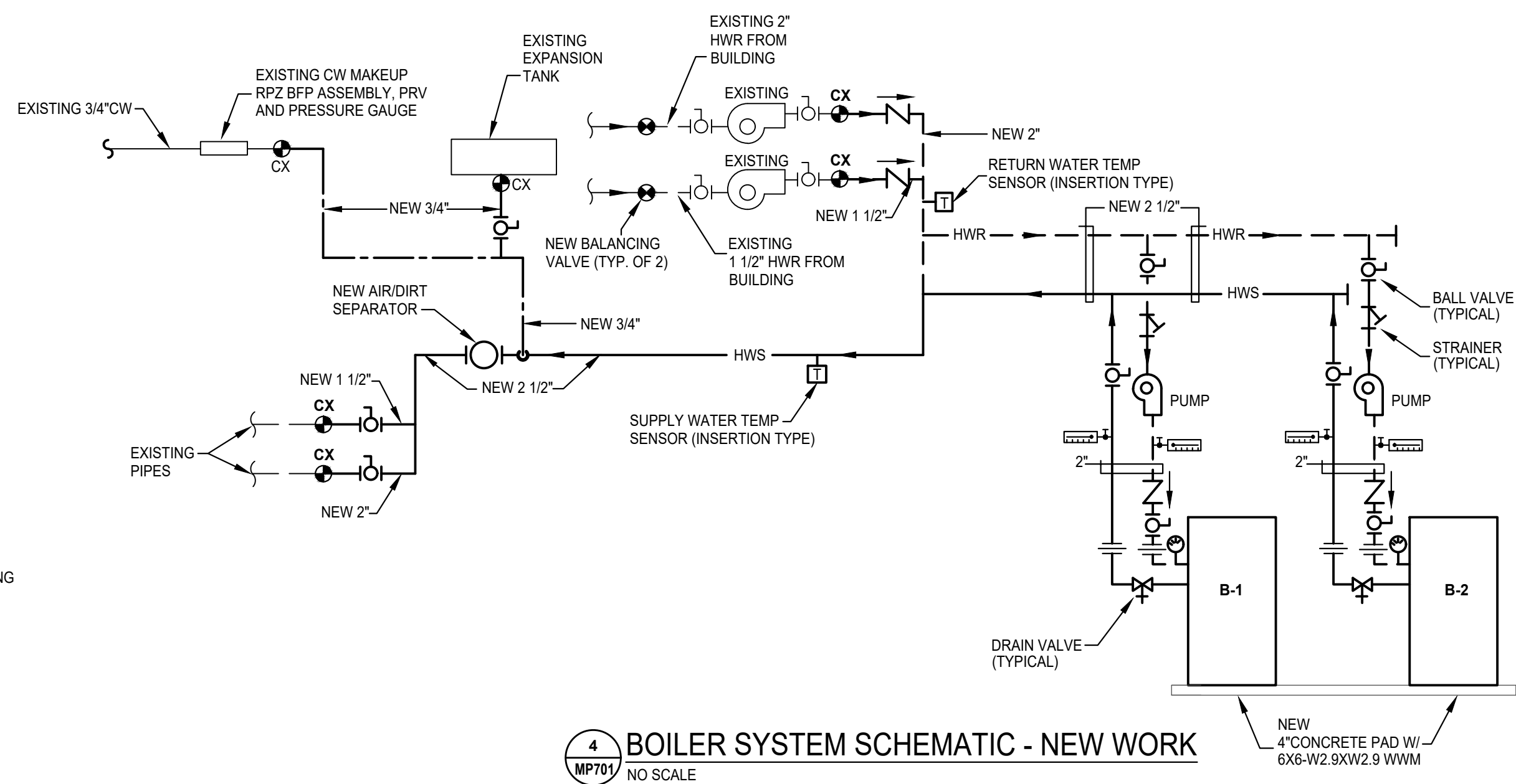


GAS BOILER SCHEDULE							
MARK	INPUT MBH	NET AHRI RATING MBH	OUTPUT MBH	VOLTAGE	MANUF	NOTES	MODEL
B-1	80-399	327	376	120V/1Ø	LOCHINVAR	1, 2, 3, 4, 5	KBN400
B-2	80-399	327	376	120V/1Ø	LOCHINVAR	1, 2, 3, 4, 5	KBN400

NOTE 1: PROVIDE CONDENSATE NEUTRALIZATION KIT. PIPE TO EXISTING SUMP PIT.
NOTE 2: CSD-1, LOW WATER CUTOFF.
NOTE 3: 94% EFFICIENCY
NOTE 4: PROVIDE BOILER PUMP OPTION.
NOTE 5: PROVIDE BMS GATEWAY TO BACNET.



3 BOILER SYSTEM SCHEMATIC - DEMO/EXISTING



4 BOILER SYSTEM SCHEMATIC - NEW WORK
 MP701 NO SCALE

A

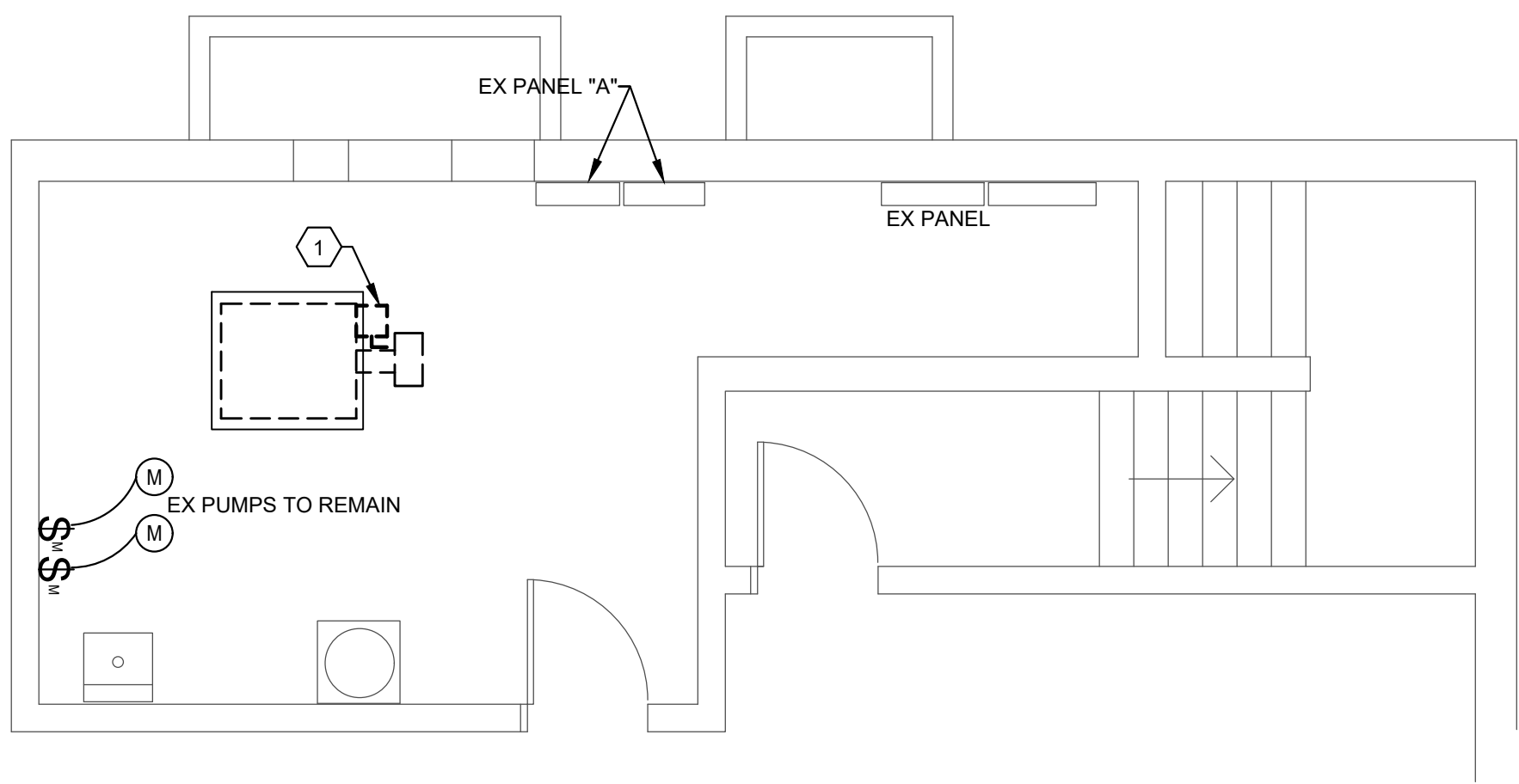
B

C

D

E

F

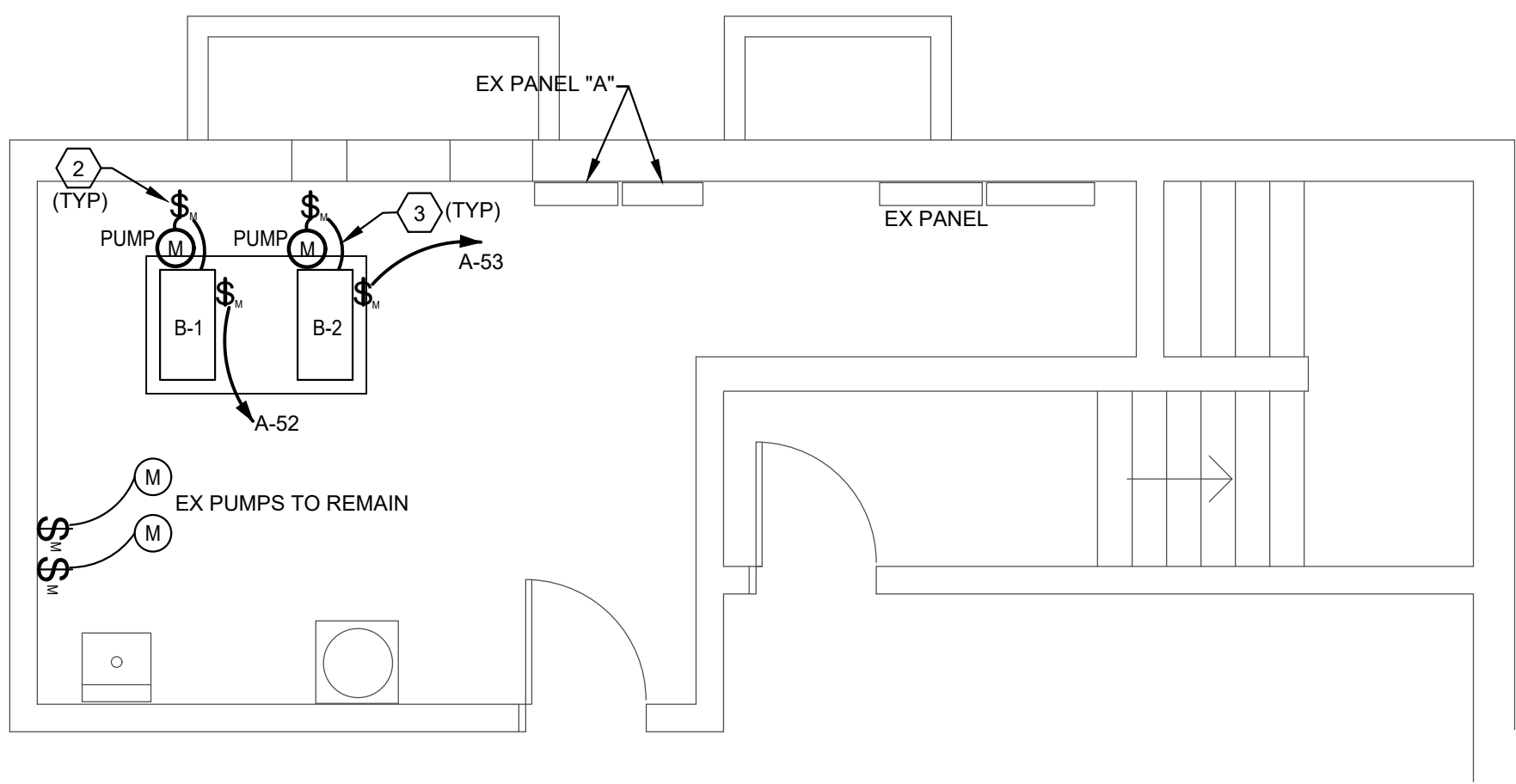


1
E201
1/4" = 1'-0"

FLOOR PLAN - DEMOLITION - ELECTRICAL

NUMBERED NOTES

- 1 EXISTING FUEL OIL BOILER TO BE REMOVED. DISCONNECT EXISTING CIRCUIT AND REMOVE SAFETY SWITCH. TURN OVER TO OWNER. IN THE EVENT THE OWNER REFUSES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING PROPERLY.
- 2 PROVIDE 20A/1P MOTOR STARTER SWITCH, BY SQUARE D OR APPROVED EQUAL.
- 3 PUMPS SHALL BE CONNECTED TO BOILER TERMINAL. COORDINATE WITH BOILER MANUFACTURE'S FIELD WIRING DIAGRAM IN THE INSTALLATION AND OPERATION MANUAL.



2
E201
1/4" = 1'-0"

FLOOR PLAN - NEW WORK - ELECTRICAL

PANELBOARD DESIGNATION : EX A									
LOCATION : MECH EQUIP RM 10					MOUNTING : SURFACE				
VOLTAGE : 120/208V-3Ø-4W					PANEL TYPE : SQUARE D				
DWG. CCT. NO.	LOAD KVA	TRIP POLE	CIRCUIT DESCRIPTION	PANELBOARD DIRECTORY		CIRCUIT DESCRIPTION	TRIP POLE	LOAD KVA	DWG. CCT. NO.
				NO.	NO.				
43		20/1	EX LOAD	43	44	EX LOAD	20/1		44
45		20/1	EX LOAD	45	46	EX LOAD	20/1		46
47		20/1	EX LOAD	47	48	EX LOAD	20/1		48
49		20/1	EX LOAD	49	50	EX LOAD	20/1		50
51		20/1	EX LOAD	51	52	BOILER #1	20/1		52
53		20/1	BOILER #2	53	54	EX LOAD	20/1		54
55		20/1	EX LOAD	55	56	EX LOAD	20/1		56
57		20/1	EX LOAD	57	58	EX LOAD	20/1		58
59		20/1	EX LOAD	59	60	EX LOAD	20/1		60
61		20/1	EX LOAD	61	62	EX LOAD	20/1		62
63		20/1	EX LOAD	63	64	EX LOAD	20/1		64
65		20/1	EX LOAD	65	66	EX LOAD	20/1		66
67		20/1	EX LOAD	67	68	EX LOAD	20/1		68
69		20/1	EX LOAD	69	70	EX LOAD	20/1		70
71		20/1	EX LOAD	71	72	EX LOAD	20/1		72
73		20/1	EX LOAD	73	74	EX LOAD	50/2		74
75		20/1	EX LOAD	75	76				76
77			EX SPACE	77	78	EX SPACE			78
79			EX SPACE	79	80	EX SPACE			80
81			EX SPACE	81	82	EX SPACE			82
83			EX SPACE	83	84	EX SPACE			84
	X		:TOTAL			:TOTAL		X	



Frederick
3 West Second Street
Frederick, MD 21701
P. 301.695.9424

Seal / Signature:

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No:45511 Expiration Date: 06/03/2020



GRAINGERS
MUTUAL
INSURANCE
COMPANY
BUILDING

MIDDLETOWN, MD

BOILER
REPLACEMENT

100% CD'S

NOTES
NOTES

Rev	Description	Date

Date Issued: 01-16-2019

Sheet Description:

FLOOR PLANS -
DEMO/NEW WORK -
ELECTRICAL

Sheet Number:

E201

Project Number: 18-0401