

BOILER UPGRADES

MIDWAY ES, DINWIDDIE ES & DINWIDDIE MS

DINWIDDIE COUNTY PUBLIC SCHOOLS

DINWIDDIE COUNTY, VIRGINIA

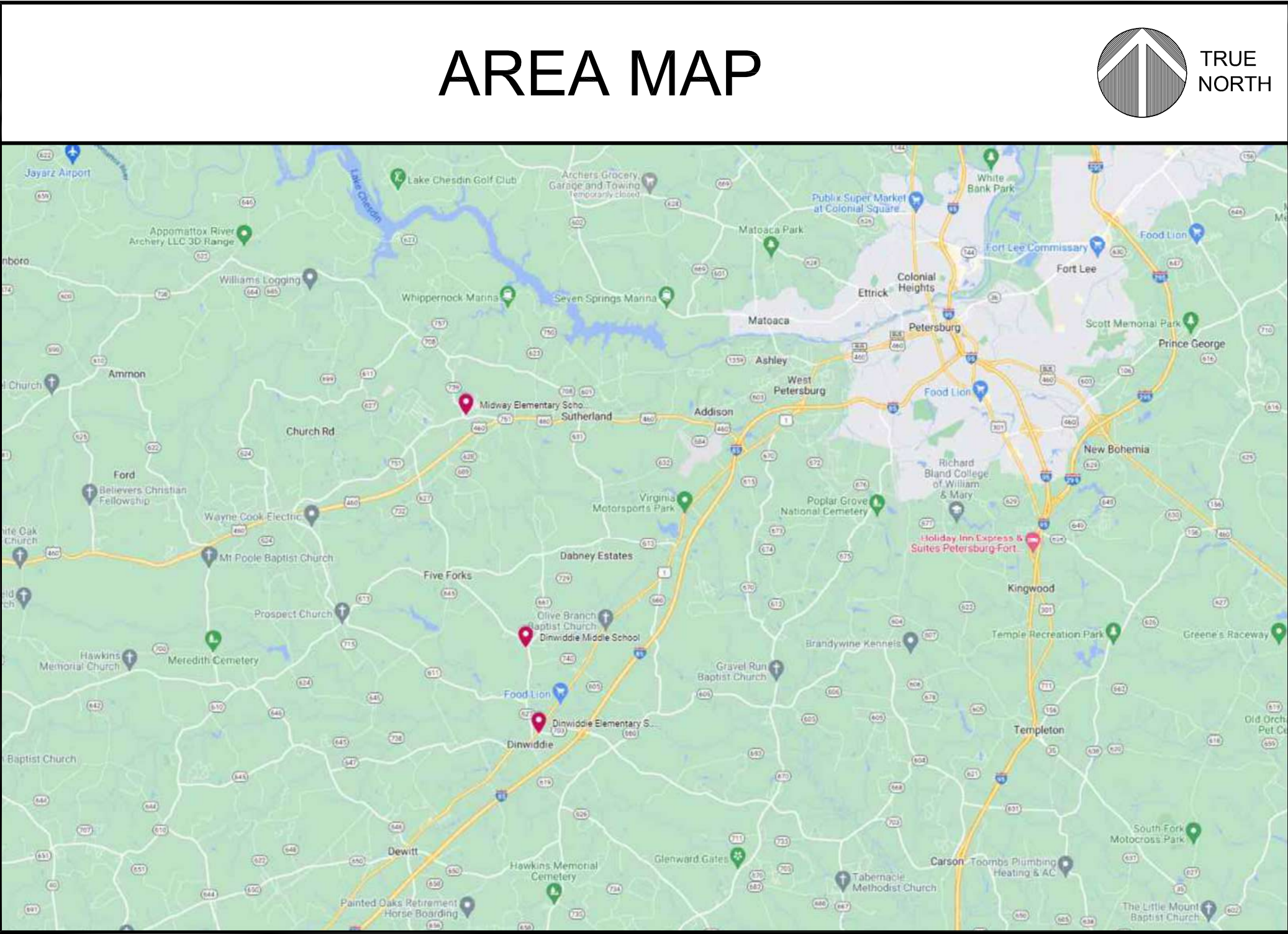
NOVEMBER 21, 2024
RRMM PROJECT NO. 21215-02
MJT PROJECT NO. 22-011.1



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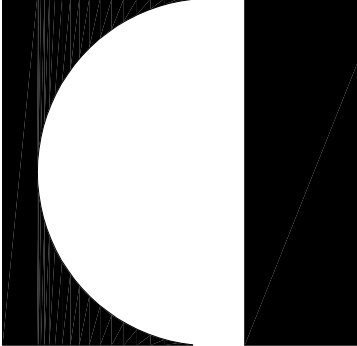
DRAWING TITLES

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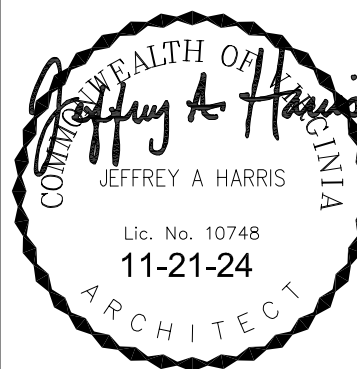


DESCRIPTION
BY
MARK
DATE
REVISIONS

DATE	04-04-23
PROJECT	21215-02
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PROJECT
DINWIDDIE COUNTY PUBLIC SCHOOLS
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - BOILER UPGRADES

DRAWING
TITLE SHEET

SHEET
T-001

GENERAL DEMOLITION NOTES

1. WHERE EQUIPMENT IS INDICATED TO BE REMOVED, IT SHALL MEAN COMPLETE REMOVAL OF EQUIPMENT, INCLUDING SUPPORTS, GUYS, ANCHORS, BRACKETS, CONTROLS AND INCIDENTAL ITEMS CONNECTED OR FASTENED TO EQUIPMENT. OWNER MAINTAINS THE OWNERSHIP OF ALL ITEMS TAGGED OR IDENTIFIED.
2. WHERE PIPING IS INDICATED TO BE REMOVED, IT SHALL MEAN COMPLETE REMOVAL OF PIPING, INCLUDING VALVES, FITTINGS, INSULATION, SUPPORTS, HANGERS, BRACKETS, CONTROLS AND INCIDENTAL ITEMS CONNECTED OR FASTENED TO THE PIPING. PIPING IS DIAGRAMMATIC AND INDICATES THE GENERAL EXTENT OF WORK. NO ATTEMPT IS MADE TO SHOW EVERY ELL, TEE, OFFSET, FITTING AND VALVE. REMOVE PIPING AS INDICATED AND SPECIFIED.

GENERAL NOTES

1. CONTRACTOR SHALL VISIT JOB SITE TO DETERMINE EXTENT OF WORK INVOLVED PRIOR TO BIDDING THE PROJECT.
2. THE MECHANICAL SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2021 VIRGINIA UNIFORM STATEWIDE BUILDING CODE.
3. PIPING ARRANGEMENTS ARE DIAGRAMMATIC.
4. PIPING PASSING THROUGH WATERPROOF MEMBRANES SHALL BE MADE WATERTIGHT.
5. SEAL AROUND AND MAKE AIRTIGHT ALL DUCTS AND PIPES PENETRATING INSULATED CEILINGS AND WALLS.
6. MAINTAIN PROPER CLEARANCES PER ELECTRICAL CODE ON ALL EQUIPMENT. COORDINATE WITH ALL TRADES TO ENSURE CLEARANCES ARE NOT OBSTRUCTED.
7. INSTALL ALL WALL MOUNTED NON-ADJUSTABLE SENSORS AT 5'-0" FROM FINISHED FLOOR TO TOP OF SENSOR. ADJUSTABLE DEVICE SHALL BE INSTALLED 4'-0" ABOVE FINISHED FLOOR.

ABBREVIATIONS

ø	DIAMETER	H	HEIGHT
AAV	AUTOMATIC AIR VENT	HP	HORSEPOWER
ADS	AIR/DIRT SEPARATOR	HWR	HOT WATER RETURN
AFF	ABOVE FINISHED FLOOR	HWS	HOT WATER SUPPLY
APPROX	APPROXIMATE	IN	INCH/INCHES
B-x	BOILER DESIGNATION	KW	KILOWATTS
BAS	BUILDING AUTOMATION SYSTEM	LAT	LEAVING AIR TEMPERATURE
BV	BALANCING VALVE	LBS	POUNDS
C-X	(EXISTING) CHILLER DESIGNATION	LF	LINEAR FOOT
CF	CHEMICAL FEEDER	LWT	LEAVING WATER TEMPERATURE
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM
CHWR	CHILLED WATER RETURN	MBH	1000 BRITISH THERMAL UNITS PER HOUR
CHWS	CHILLED WATER SUPPLY	MIN	MINIMUM
CO	CARBON MONOXIDE	NO	NUMBER
CW	DOMESTIC COLD WATER	ODP	OPEN DRIP-PROOF
DDC	DIRECT DIGITAL CONTROL	P-x	PUMP DESIGNATION
DP	DIFFERENTIAL PRESSURE	PH	PHASE
EAT	ENTERING AIR TEMPERATURE	PT	PRESSURE TEST PORT
EC	ELECTRONICALLY COMMUTATED	RC-x	(EXISTING) REHEAT COIL DESIGNATION
EF-x	EXHAUST FAN DESIGNATION	RPM	REVOLUTIONS PER MINUTE
ESP	EXTERNAL STATIC PRESSURE	SF-x	SUPPLY FAN DESIGNATION
ET	EXPANSION TANK	TYP	TYPICAL
EWT	ENTERING WATER TEMPERATURE	UH-x	UNIT HEATER DESIGNATION
°F	DEGREES FAHRENHEIT	UL	UNDERWRITERS LABORATORIES
FD	FLOOR DRAIN	V	VOLTS
FBM	FEET PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
FT	FEET	W	WATTS
GPH	GALLONS PER HOUR	W	WIDTH
GPM	GALLONS PER MINUTE	WC	WATER COLUMN

LEGEND

	CONTROL DAMPER		THREADED UNION
	CARBON MONOXIDE DETECTOR		DIRECTION OF FLOW IN PIPE
	EXISTING DOOR LOUVER, FREE AREA AS INDICATED		HEAT TRACE TAPE
	THERMOSTAT OR TEMPERATURE SENSOR, CONTROLLING UNIT AS INDICATED		PIPE DOWN
	90° DUCT ELBOW - TURNED UP		PIPE TEE DOWN
	90° DUCT ELBOW - TURNED DOWN		PIPE UP
	ROOF MOUNTED EXHAUST FAN		PIPE BELOW GRADE OR HIDDEN
	ROOF MOUNTED INTAKE HOOD		CHILLED WATER RETURN PIPING
	ROOF MOUNTED EXHAUST OR RELIEF HOOD		CHILLED WATER SUPPLY PIPING
	VARIABLE FREQUENCY DRIVE PANEL		DOMESTIC WATER PIPING (CW)
	ROUND DUCT		EXISTING PIPING TO REMAIN
	DIRECTION OF AIRFLOW		EXISTING PIPING BELOW OR HIDDEN
	POINT OF CONNECTION FOR NEW WORK		HOT WATER RETURN PIPING
	REMOVE EXISTING TO THIS POINT		HOT WATER SUPPLY PIPING
	DEMOLITION NOTE		PIPING TO BE REMOVED
	EXISTING SIZES AS INDICATED		THREE-WAY CONTROL VALVE
	NEW WORK NOTE		AUTOMATIC AIR VENT
	EXISTING TO REMAIN		BALL VALVE
	NEW WORK		BACKFLOW PREVENTER
	EXISTING TO BE REMOVED		DIFFERENTIAL PRESSURE SENSOR
	FLANGE CONNECTION		BUTTERFLY VALVE
	INLINE PUMP		BALANCING VALVE
	LUBRICATOR		CHECK VALVE
	OIL FILTER		EXISTING GATE VALVE
	ORIFICE		GATE VALVE
	PRESSURE GAUGE		PRESSURE RELIEF AND PRESSURE REDUCING VALVE
	PRESSURE/TEMPERATURE TEST PORT		SAFETY RELIEF VALVE
	STRAINER, Y-TYPE, WITH BLOWDOWN VALVE		VENTURI BALANCING VALVE
	THERMOMETER		VENTURI FLOWSTATION

EXHAUST/SUPPLY FAN SCHEDULE

BUILDING SERVED	UNIT NO.	TYPE	ARRANGEMENT	WHEEL	DRIVE	CFM	ESP (IN. WC)	FAN (RPM)	MAX. TIP SPEED	OUTLET VELOCITY FPM	MOTOR DATA			CONTROL METHOD	MAX. SONES	SELECTION BASED ON "GREENHECK"	REMARKS
											W	V	PH				
MIDWAY ES	SF-6	INLINE	HORIZONTAL	FORWARD CURVED CENTRIFUGAL	DIRECT	1550	0.5	705	1708	508	160	115	1	③	2.2	CSP-A3300-VG	①②
DINWIDDIE ES	EF-14	POWER ROOF VENTILATOR	DOWNBLAST	BACKWARD INCLINED CENTRIFUGAL	DIRECT	4000	0.25	812	4556	1674	1	460	3	③	12.0	G-200-VG	①②
DINWIDDIE MS	SF-2	ROOF MOUNTED SUPPLY	HOODED INTAKE	PROPELLER	DIRECT	3000	0.25	1125	5890	1376	1	115	1	③	12.5	RCS3-20-624-VG	①②
REMARKS: ① PROVIDE WITH DISCONNECT SWITCH. ② PROVIDE WITH EC MOTOR. ③ INTERLOCK FAN WITH BOILER OPERATION, INTAKE CONTROL DAMPER, AND WALL MOUNTED THERMOSTAT FOR SUMMER VENTILATION. FAN SHALL NOT OPERATE WHEN BOILERS ARE ENABLED.																	

UNIT HEATER SCHEDULE

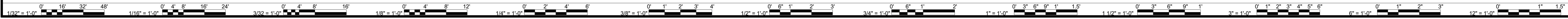
BUILDING SERVED	UNIT NO.	STYLE	CFM	HOT WATER HEATING COIL PERFORMANCE							FAN MOTOR (HP)	V	PH	SELECTION BASED ON "TRANE"	REMARKS
				CAPACITY (MBH)	EAT DB(°F)	LAT DB(°F)	GPM	EWT (°F)	WPD (FT.)						
MIDWAY ES	UH-1	HORIZONTAL DISCHARGE	750	29.8	60.0	96.6	3.0	180	0.1	1/20	115	1	UHSB048	①②	
DINWIDDIE ES	UH-1	HORIZONTAL DISCHARGE	2900	126.9	60.0	107.5	15.0	180	1.0	1/3	208	1	UHSB204	①②	
DINWIDDIE MS	UH-1	HORIZONTAL DISCHARGE	750	29.8	60.0	96.6	3.0	180	0.1	1/20	115	1	UHSB048	①②	
REMARKS: ① CAPACITY BASED ON MANUFACTURER'S DERATING FACTORS OF 0.857 DUE TO 180° EWT AND .98 DUE TO 3.0 GPM FLOW. ② PROVIDE WITH HANGER BRACKETS, DISCONNECT SWITCH, AND LINE VOLTAGE THERMOSTAT.															

BOILER SCHEDULE

BUILDING SERVED	UNIT NO.	DESCRIPTION	INPUT (MBH)	OUTPUT (MBH)	FUEL TYPE	FUEL FLOW RATE (GPH)	GPM	LWT (°F)	INTAKE SIZE (INCHES)	EXHAUST SIZE (INCHES)	ELECTRICAL			SELECTION BASED ON "BRYAN"	REMARKS
											BURNER HP	V	PH		
MIDWAY ES	B-1	FORCED DRAFT FLEXIBLE WATER TUBE	2500	2000	#2 HEATING OIL	17.8	126	180	8	12	1-1/2	208	3	AB-250	①②③④⑤
MIDWAY ES	B-2	FORCED DRAFT FLEXIBLE WATER TUBE	2500	2000	#2 HEATING OIL	17.8	126	180	8	12	1-1/2	208	3	AB-250	①②③④⑤
DINWIDDIE ES	B-1	FORCED DRAFT FLEXIBLE WATER TUBE	3000	2400	#2 HEATING OIL	21.4	157.5	180	12	12	2	460	3	AB-300	①②③④
DINWIDDIE ES	B-2	FORCED DRAFT FLEXIBLE WATER TUBE	3000	2400	#2 HEATING OIL	21.4	157.5	180	12	12	2	460	3	AB-300	①②③④
DINWIDDIE MS	B-1	FORCED DRAFT FLEXIBLE WATER TUBE	4500	3600	#2 HEATING OIL	28.5	248.5	180	12	16	2.5	460	3	RV-450	①②③④
DINWIDDIE MS	B-2	FORCED DRAFT FLEXIBLE WATER TUBE	4500	3600	#2 HEATING OIL	28.5	248.5	180	12	16	2.5	460	3	RV-450	①②③④
REMARKS: ① BOILER BURNER ASSEMBLY SHALL BE PROVIDED WITH BURNER-MOUNTED OIL PUMP. PROVIDE WITH MODULATING CSD-1 BURNER. ② PROVIDE WITH COMBUSTION AIR INTAKE ADAPTER ON BURNER. ③ PROVIDE WITH INTEGRAL STEPDOWN TRANSFORMER FOR BOILER CONTROLS. ④ PROVIDE EACH BOILER WITH CATEGORY III VENT AND BAROMETRIC DAMPER LOCATED NO CLOSER THAN 3'-0" FROM THE TOP OF EACH BOILER. ⑤ BOILER SHALL BE PROVIDED WITH FULL KNOCKDOWN CAPABILITY AND ASSEMBLED INSIDE MECHANICAL ROOM.															

PUMP SCHEDULE

BUILDING SERVED	UNIT NO.	TYPE	SYSTEM	GPM	HEAD (FT.)	EFFICIENCY	MOTOR DATA					SELECTION BASED ON "BELL AND GOSSETT"	REMARKS
							HP	RPM	V	PH	ENCLOSURE TYPE		
MIDWAY ES	P-1	BASE MOUNTED END SUCTION	HOT WATER (LEAD)	252	80	76.9%	7.5	1800	460	3	ODP	E-1510 2.5BB	①②③④
MIDWAY ES	P-2	BASE MOUNTED END SUCTION	HOT WATER (STAND-BY)	252	80	76.9%	7.5	1800	460	3	ODP	E-1510 2.5BB	①②③④
DINWIDDIE ES	P-1	BASE MOUNTED END SUCTION	HOT WATER (LEAD)	315	95	72.2%	15	1800	460	3	ODP	E-1510 2EB	①②③④
DINWIDDIE ES	P-2	BASE MOUNTED END SUCTION	HOT WATER (STAND-BY)	315	95	72.2%	15	1800	460	3	ODP	E-1510 2EB	①②③④
DINWIDDIE MS	P-1	BASE MOUNTED END SUCTION	HOT WATER (LEAD)	497	60	76.0%	15	1800	460	3	ODP	E-1510 3EB	①②③
DINWIDDIE MS	P-2	BASE MOUNTED END SUCTION	HOT WATER (STAND-BY)	497	60	76.0%	15	1800	460	3	ODP	E-1510 3EB	①②③
REMARKS: ① PROVIDE WITH PREMIUM EFFICIENCY INVERTER DUTY MOTOR WITH AEGIS GROUNDING RING. ② PROVIDE MATCHED SUCTION DIFFUSER BY PUMP MANUFACTURER. ③ REFER TO SPECIFICATION SECTION 230500 2.8 FOR VFD REQUIREMENTS. ④ PROVIDE WITH FULL SIZE IMPELLER.													



THOMPSON
Consulting Engineers

11-22-24
PROJECT
DESIGNED
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DATE
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DESIGNED
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DESCRIPTION
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DINWIDDIE COUNTY PUBLIC SCHOOLS
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES

GENERAL NOTES, LEGEND, ABBREVIATIONS AND SCHEDULES

SHEET
M-001

DEMOLITION NOTES	
NO.	DESCRIPTION
D1	DISCONNECT AND REMOVE AIR SEPARATOR COMPLETE.
D2	DISCONNECT AND REMOVE EXPANSION TANK COMPLETE.
D3	DISCONNECT AND REMOVE CHEMICAL SHOT FEEDER AND ASSOCIATED PIPING COMPLETE.
D4	DISCONNECT AND REMOVE BOILER COMPLETE INCLUDING CONTROLS AND ACCESSORIES.
D5	DISCONNECT AND REMOVE GROUTED BASE MOUNTED HOT WATER PUMP COMPLETE INCLUDING MOTOR STARTER.
D6	EXISTING 4" CONCRETE PAD TO REMAIN.

DEMOLITION NOTES	
NO.	DESCRIPTION
D7	DISCONNECT AND REMOVE HOT WATER PIPING COMPLETE TO POINT INDICATED.
D8	DISCONNECT AND REMOVE HOT WATER UNIT HEATER COMPLETE.
D9	DISCONNECT AND REMOVE DOMESTIC COLD WATER PIPING TO POINT INDICATED.
D10	DISCONNECT AND REMOVE SUPPLY DUCTWORK COMPLETE.
D11	DISCONNECT AND REMOVE BOILER BREECHING PIPING COMPLETE TO POINT INDICATED.

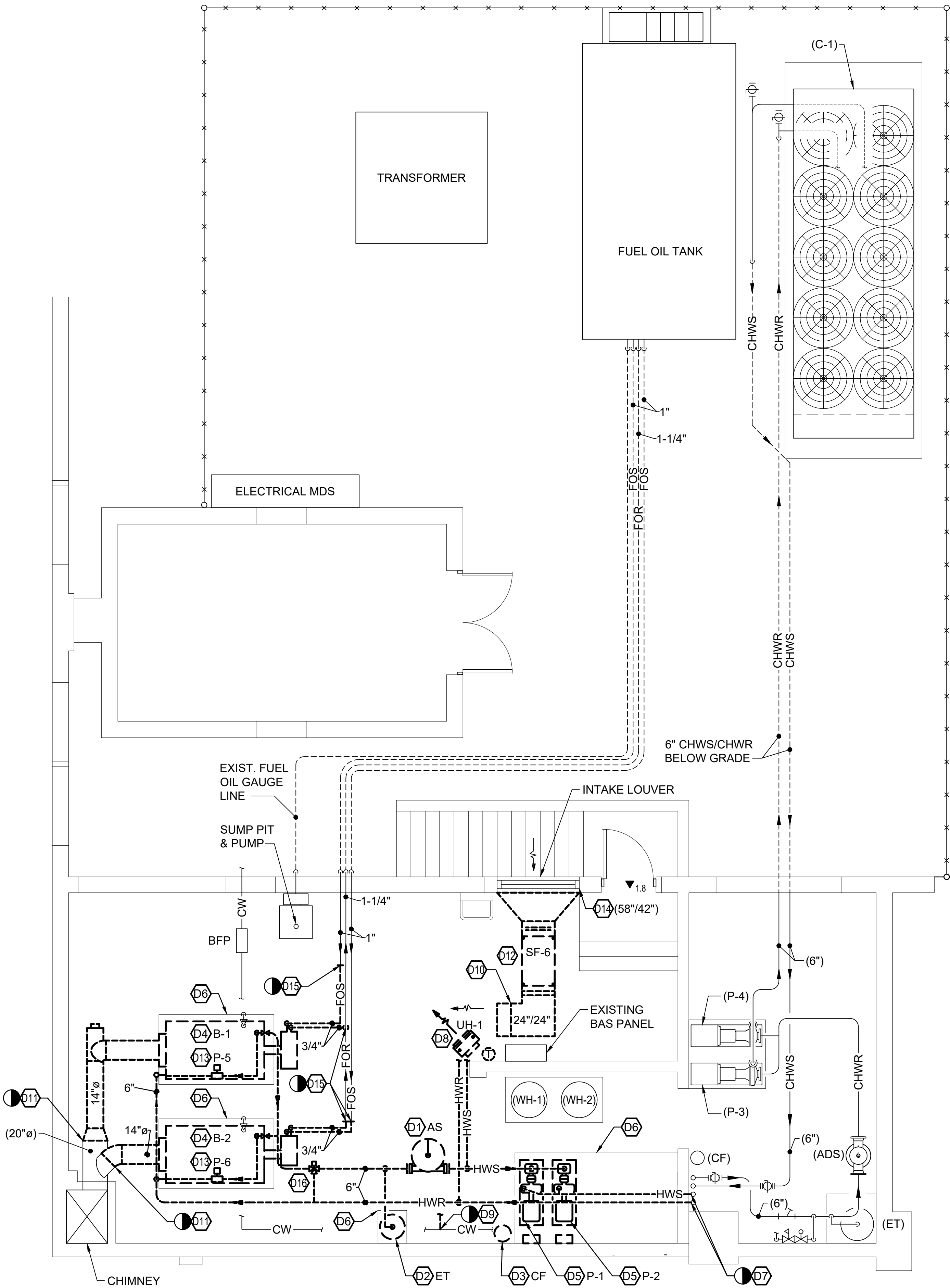
NOTE: NEW BOILERS WILL REQUIRE FULL KNOCKDOWN AND REASSEMBLY TO FACILITATE INSTALLATION THROUGH SINGLE MECHANICAL ROOM DOOR.

DEMOLITION NOTES	
NO.	DESCRIPTION
D12	DISCONNECT AND REMOVE INLINE MECHANICAL ROOM SUPPLY FAN COMPLETE.
D13	DISCONNECT AND REMOVE INLINE BOILER CIRCULATOR PUMP COMPLETE.
D14	EXISTING WALL LOUVER TO REMAIN.
D15	DISCONNECT AND REMOVE FUEL OIL PIPING COMPLETE TO POINT INDICATED ON FLOOR PLAN, APPROXIMATELY 10 LINEAR FEET FROM BOILER.
D16	REMOVE EXISTING 3-WAY HOT WATER RESET VALVE COMPLETE.

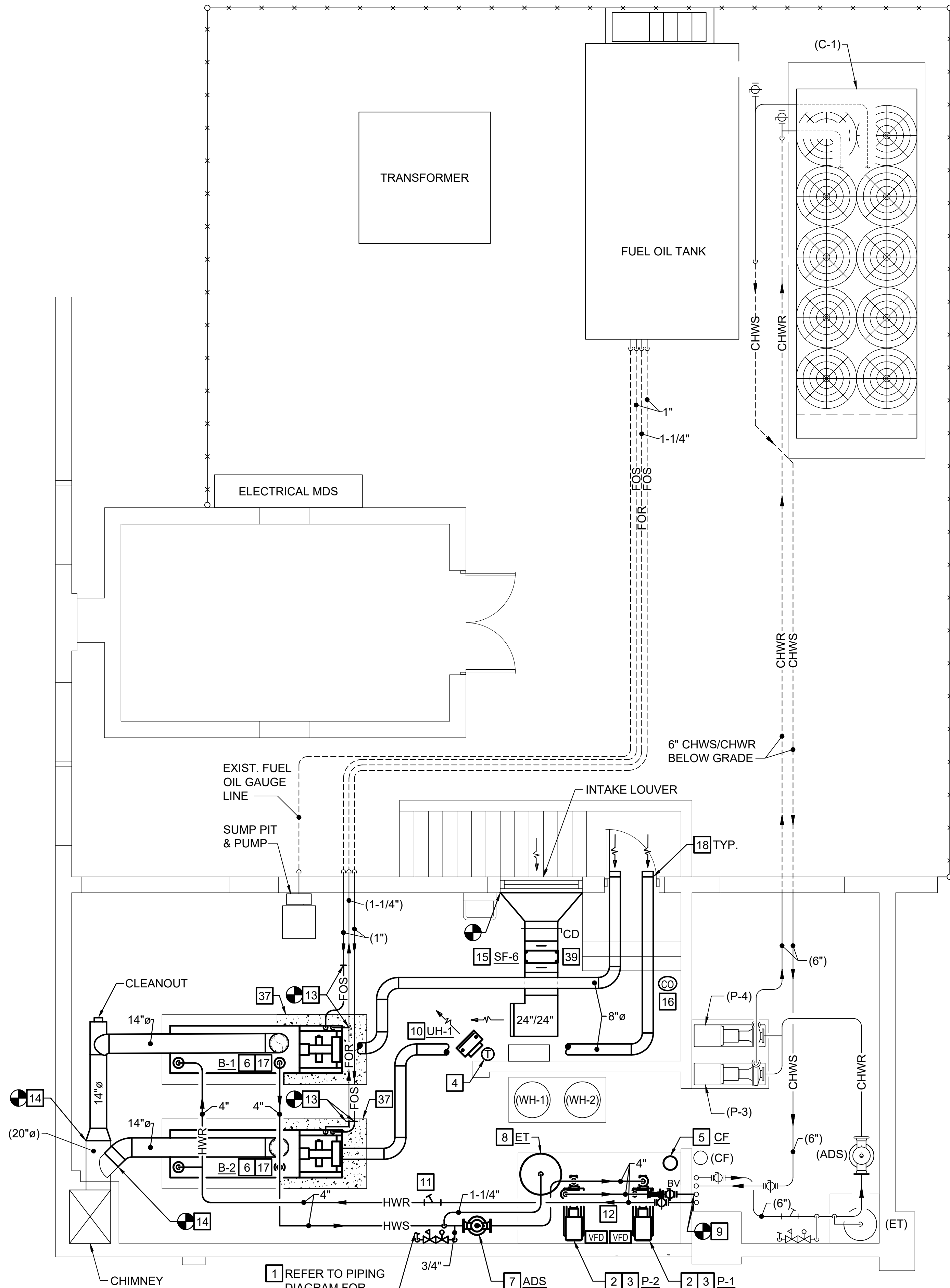
NOTE: EXISTING CONDITIONS ILLUSTRATED HAVE BEEN DETERMINED FROM ORIGINAL CONSTRUCTION DOCUMENTS AND LIMITED NON-INVASIVE FIELD INVESTIGATION. THE CONTRACTOR SHALL INVESTIGATE FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK. COORDINATE AND MAKE ADJUSTMENTS AS NECESSARY.

NEW WORK NOTES	
NO.	DESCRIPTION
1	PROVIDE DOMESTIC COLD WATER MAKEUP PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
2	PROVIDE VFD FOR PUMP MOTOR. REFER TO SPECIFICATION SECTION 230500 AND 230900 FOR ADDITIONAL INFORMATION. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS AND SUPPORT DETAILS.
3	PROVIDE BASE-MOUNTED PUMP, CONTROLS, SUCTION DIFFUSER, AND ACCESSORIES COMPLETE. MOUNT ON EXISTING CONCRETE PAD. ALIGN AND GROUT PUMP BASE. REFER TO "BASE MOUNTED PUMP PIPING DETAIL" ON M-301 FOR ADDITIONAL INFORMATION.
4	PROVIDE LINE-VOLTAGE THERMOSTAT AND RACEWAY COMPLETE.
5	PROVIDE 5-GALLON CHEMICAL SHOT FEEDER WITH FUNNEL AND SUPPORT LEGS. MOUNT ON EXISTING CONCRETE PAD.
6	PROVIDE BOILER, BURNER ASSEMBLY, AND CONTROLS COMPLETE. MOUNT ON CONCRETE PAD.
7	PROVIDE AIR-DIRT SEPARATOR, SPIROTHERM MODEL "VDN400" OR EQUAL.
8	PROVIDE BLADDER-TYPE FULL ACCEPTANCE EXPANSION TANK WITH AT LEAST 158 GALLON ACCEPTANCE VOLUME, BELL AND GOSSET MODEL "B-600" OR EQUAL.
9	PROVIDE HOT WATER PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
10	PROVIDE HOT WATER UNIT HEATER. REFER TO "UNIT HEATER PIPING DIAGRAM" ON DRAWING M-301 FOR ADDITIONAL INFORMATION.
11	PROVIDE 4" SYSTEM STRAINER WITH 30 MESH SCREEN AND BLOW DOWN.
12	MAINTAIN AT LEAST 36" OF CLEARANCE ON AT LEAST ONE SIDE OF EACH PUMP AS SHOWN.
13	PROVIDE #2 FUEL OIL PIPING, FILTER, CHECK VALVE, AND ISOLATION VALVES COMPLETE. CONNECT TO BURNER-MOUNTED OIL PUMP PROVIDED BY BURNER MANUFACTURER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
14	PROVIDE DOUBLE-WALL CATEGORY III BOILER FLUE VENT IN ACCORDANCE WITH BOILER MANUFACTURER'S RECOMMENDATIONS. RECONNECT TO EXISTING 20" VENT JUST OUTSIDE OF CHIMNEY. PROVIDE BAROMETRIC DAMPER AT EACH BOILER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AT LEAST 3'-0" FROM CONNECTION TO BOILER.
15	PROVIDE INLINE SUPPLY FAN, HANGERS, AND FLEXIBLE DUCT CONNECTIONS, AND SUSPEND AS CLOSE TO CEILING AS POSSIBLE. TRANSITION 24"/24" DUCT AT FAN INLET TO DIMENSIONS OF EXISTING LOUVER. PROVIDE 1" X 1" WIRE MESH SCREEN OVER OPEN END OF OUTLET DUCTWORK.
16	PROVIDE WALL-MOUNTED BAS NETWORKABLE GAS DETECTOR FOR MONITORING CARBON MONOXIDE CONCENTRATION, HONEYWELL MODEL "E3SBSCO" OR EQUAL. PROVIDE GAS DETECTION CONTROLLER WITH BACNET/IP OUTPUT CAPABILITY, HONEYWELL MODEL "VA301C-DLC-BIP" OR EQUAL, AND PROVIDE ANNUNCIATOR PANEL, HONEYWELL "VA301AP" OR EQUAL.
17	BOILER SHALL BE PROVIDED IN FULL KNOCK-DOWN CONFIGURATION BY MANUFACTURER FOR EASE OF TRANSPORT INTO MECHANICAL ROOM. CONTRACTOR SHALL RECONSTRUCT BOILER PER MANUFACTURER'S INSTRUCTIONS ONCE LOCATED INSIDE MECHANICAL ROOM.
18	ROUTE 8" PVC BOILER COMBUSTION AIR INTAKE THROUGH EXTERIOR WALL. REFER TO "COMBUSTION AIR INTAKE DETAIL" ON M301 FOR ADDITIONAL INFORMATION.
37	EXTEND EXISTING 4" CONCRETE PAD AS INDICATED. REFER TO "CONCRETE HOUSEKEEPING PAD EXTENSION DETAIL" ON DRAWING M-301 FOR ADDITIONAL INFORMATION.
39	PROVIDE CONTROL DAMPER IN SUPPLY FAN DUCTWORK AND INTERLOCK DAMPER WITH SUPPLY FAN OPERATION AND BOILER OPERATION.

NOTE: NEW BOILERS WILL REQUIRE FULL KNOCKDOWN AND REASSEMBLY TO FACILITATE INSTALLATION THROUGH SINGLE MECHANICAL ROOM DOOR.



MIDWAY ELEMENTARY SCHOOL - DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



MIDWAY ELEMENTARY SCHOOL - NEW WORK PLAN
SCALE: 1/4" = 1'-0"

E

F

D

C

B

A

F

E

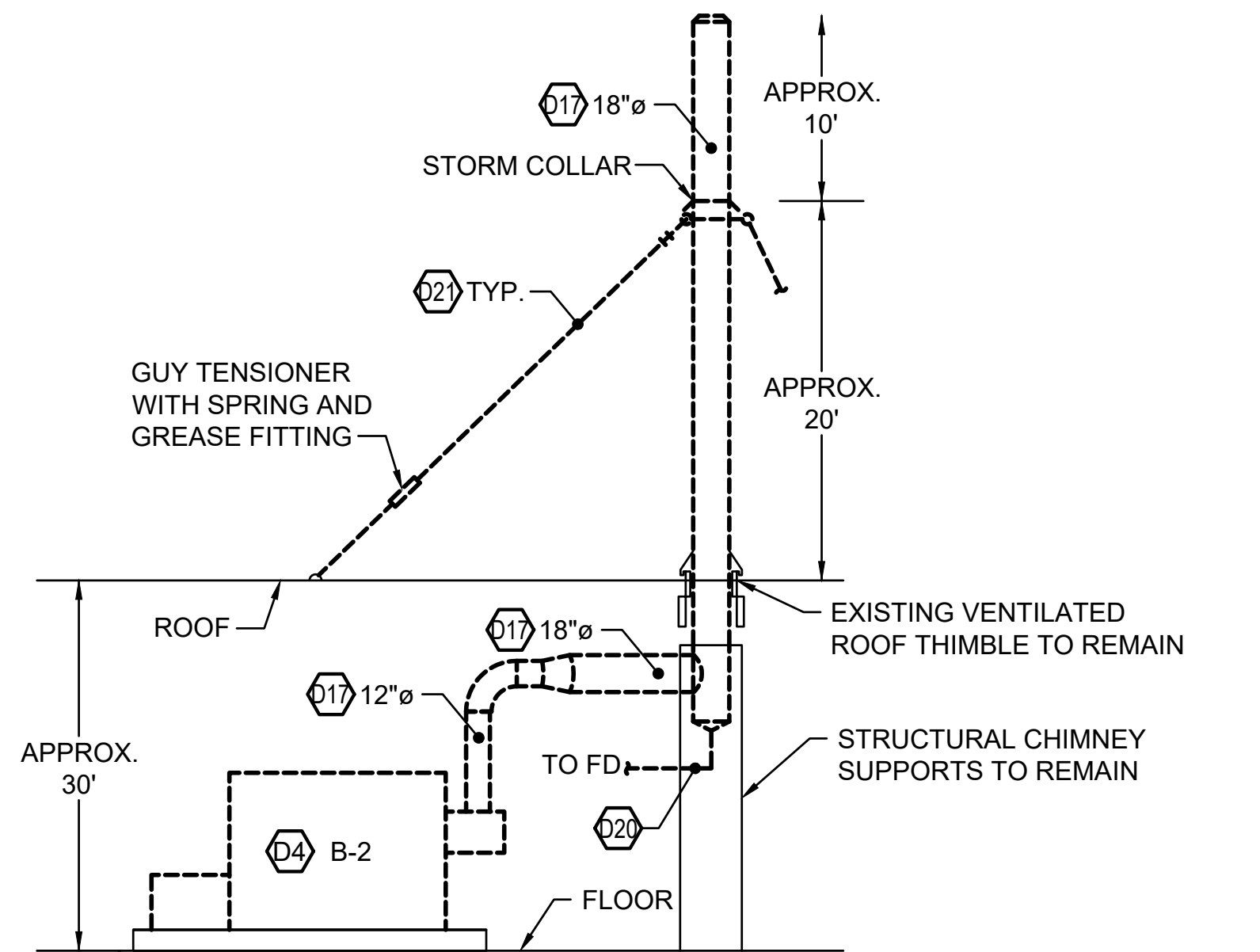
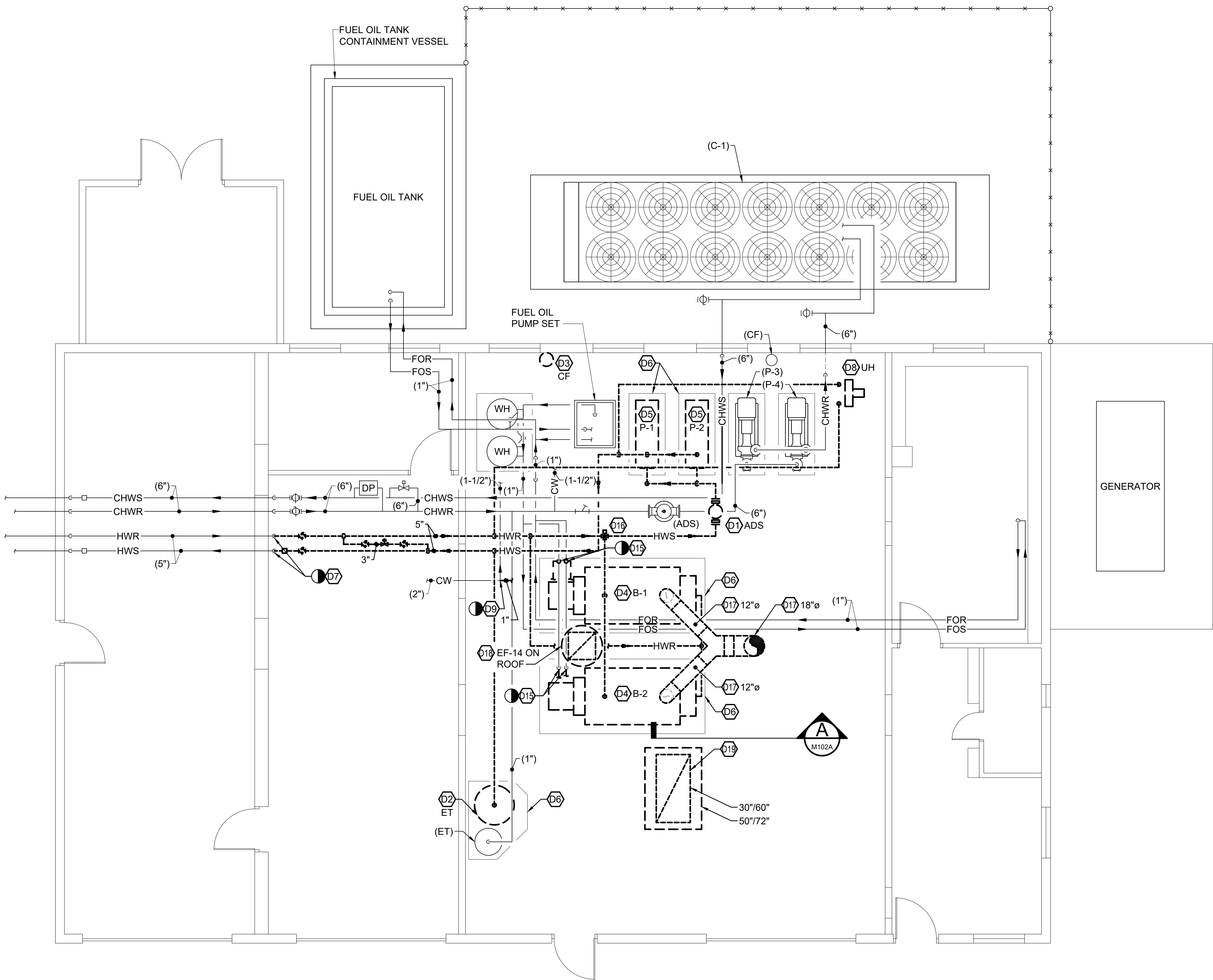
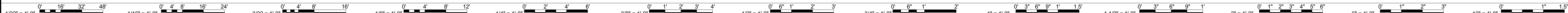
D

C

B

DINWIDDIE ELEMENTARY SCHOOL - CENTRAL HEATING AND COOLING PLANT - DEMOLITION

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



BOILER VENTING SECTION

NOT TO SCALE

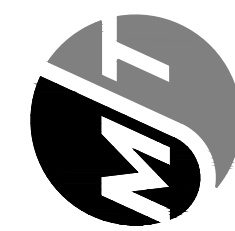
(SHOWN FOR B-2, B-1 SIMILAR)

DEMOLITION NOTES

NO.	DESCRIPTION
D1	DISCONNECT AND REMOVE AIR SEPARATOR COMPLETE.
D2	DISCONNECT AND REMOVE EXPANSION TANK COMPLETE.
D3	DISCONNECT AND REMOVE CHEMICAL SHOT FEEDER AND ASSOCIATED PIPING COMPLETE.
D4	DISCONNECT AND REMOVE BOILER COMPLETE INCLUDING CONTROLS AND ACCESSORIES.
D5	DISCONNECT AND REMOVE GROUTED BASE MOUNTED HOT WATER PUMP COMPLETE INCLUDING MOTOR STARTER.
D6	EXISTING 4" CONCRETE PAD TO REMAIN.
D7	DISCONNECT AND REMOVE HOT WATER PIPING COMPLETE TO POINT INDICATED.
D8	DISCONNECT AND REMOVE HOT WATER UNIT HEATER COMPLETE.
D9	DISCONNECT AND REMOVE DOMESTIC COLD WATER PIPING TO POINT INDICATED.
D15	DISCONNECT AND REMOVE FUEL OIL PIPING COMPLETE TO POINT INDICATED ON FLOOR PLAN, APPROXIMATELY 10 LINEAR FEET FROM BOILER.
D16	REMOVE EXISTING 3-WAY HOT WATER RESET VALVE COMPLETE.
D17	DISCONNECT AND REMOVE BOILER FLUE PIPING COMPLETE. TEMPORARILY PATCH OPENING IN ROOF UNTIL NEW FLUE PIPING HAS BEEN INSTALLED.
D18	DISCONNECT AND REMOVE ROOF MOUNTED EXHAUST FAN COMPLETE. ROOF CURB TO REMAIN.
D19	DISCONNECT AND REMOVE ROOF MOUNTED INTAKE HOOD COMPLETE AND CAP ROOF CURB. REFER TO "ROOF CURB CAPPING DETAIL ON DRAWING M301 FOR ADDITIONAL INFORMATION.
D20	DISCONNECT AND REMOVE EXISTING BOILER STACK CONDENSATE DRAIN COMPLETE.
D21	DISCONNECT AND REMOVE THREE EXISTING 1/4" STAINLESS STEEL STRANDED GUY WIRES COMPLETE. MAINTAIN ROOF CONNECTION POINT FOR NEW GUY WIRES.

NOTE: EXISTING CONDITIONS ILLUSTRATED HAVE BEEN DETERMINED FROM ORIGINAL CONSTRUCTION DOCUMENTS AND LIMITED NON-INVASIVE FIELD INVESTIGATION. THE CONTRACTOR SHALL INVESTIGATE FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK, COORDINATE AND MAKE ADJUSTMENTS AS NECESSARY.

THOMPSON
Consulting Engineers



2215 HENRIE PARKWAY
SUITE 200
DURHAM, NC 27704
TEL: 919.286.1111
FAX: 919.286.1112
PROJECT NUMBER: 2006-001

DESCRIPTION

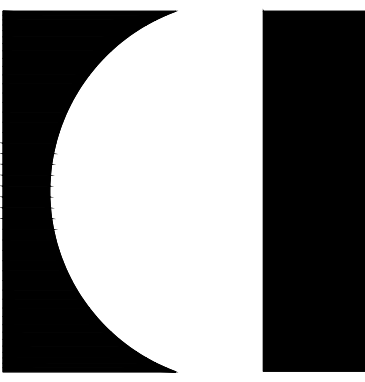
BY

MARK

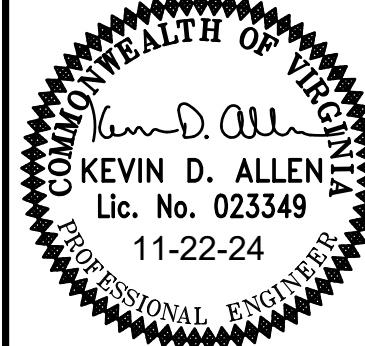
DATE

REVISIONS

DATE	PROJECT	DESIGNED	DRAWN	CHECKED
11-22-24	21215-02	BDC	JAR	KDA



RRMM
ARCHITECTS, P.C.
115 South 15th Street, Suite 202
Richmond, Virginia 23219
(804)277-8987



DINWIDDIE COUNTY PUBLIC SCHOOLS
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES
DINWIDDIE ELEMENTARY SCHOOL - CENTRAL HEATING
AND COOLING PLANT - DEMOLITION

SHEET

M-102A

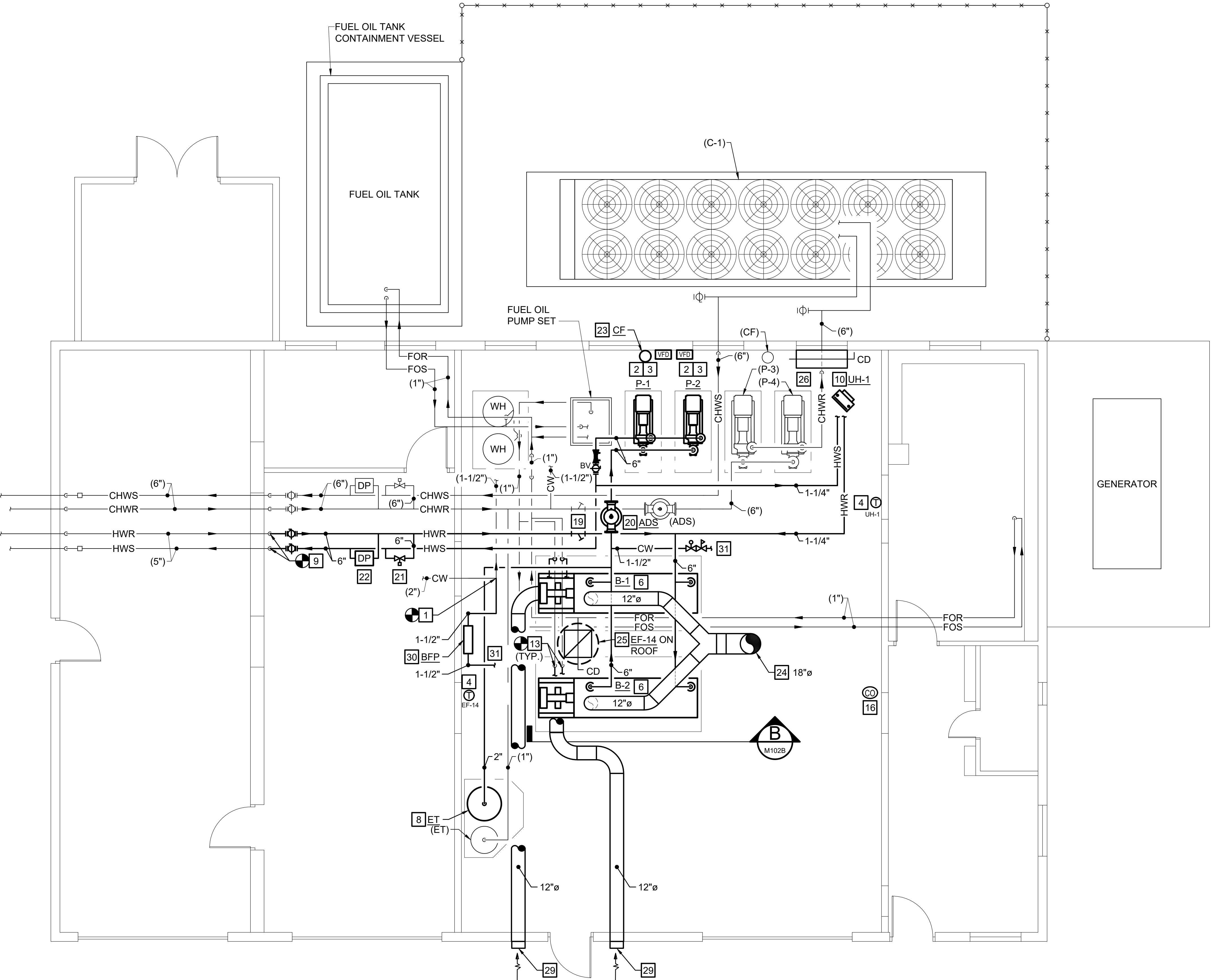
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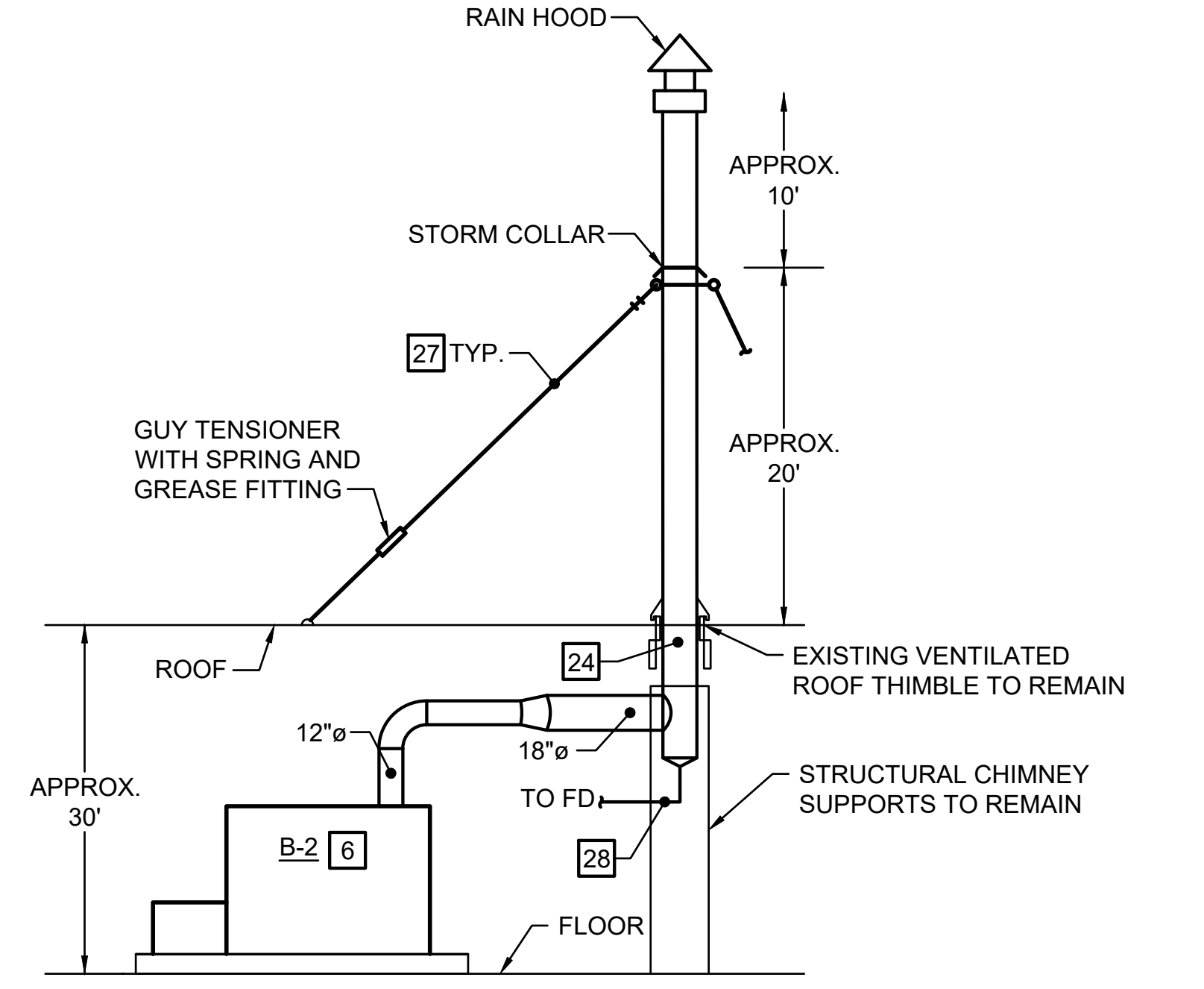
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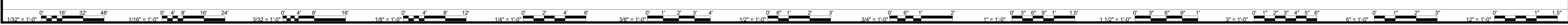
NEW WORK NOTES ☐	
NO.	DESCRIPTION
1	PROVIDE DOMESTIC COLD WATER MAKEUP PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
2	PROVIDE VFD FOR PUMP MOTOR. REFER TO SPECIFICATION SECTION 230500 AND 230900 FOR ADDITIONAL INFORMATION. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS AND SUPPORT DETAILS.
3	PROVIDE BASE-MOUNTED PUMP, CONTROLS, SUCTION DIFFUSER, AND ACCESSORIES COMPLETE. MOUNT ON EXISTING CONCRETE PAD. ALIGN AND GROUT PUMP BASE. REFER TO "BASE MOUNTED PUMP PIPING DETAIL" ON M-301 FOR ADDITIONAL INFORMATION.
4	PROVIDE LINE-VOLTAGE THERMOSTAT AND RACEWAY COMPLETE.
6	PROVIDE BOILER, BURNER ASSEMBLY, AND CONTROLS COMPLETE. MOUNT ON CONCRETE PAD.
8	PROVIDE BLADDER-TYPE FULL ACCEPTANCE EXPANSION TANK WITH AT LEAST 158 GALLON ACCEPTANCE VOLUME, BELL AND GOSSET MODEL "B-600" OR EQUAL.
9	PROVIDE HOT WATER PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
10	PROVIDE HORIZONTAL HOT WATER UNIT HEATER. REFER TO "UNIT HEATER PIPING DIAGRAM" ON DRAWING M-301 FOR ADDITIONAL INFORMATION.
13	PROVIDE #2 FUEL OIL PIPING, FILTER, CHECK VALVE, AND ISOLATION VALVES COMPLETE. CONNECT TO BURNER-MOUNTED OIL PUMP PROVIDED BY BURNER MANUFACTURER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
16	PROVIDE WALL-MOUNTED BAS NETWORKABLE GAS DETECTOR FOR MONITORING CARBON MONOXIDE CONCENTRATION, HONEYWELL MODEL "E3SBSCO" OR EQUAL. PROVIDE GAS DETECTION CONTROLLER WITH BACNET/IP OUTPUT CAPABILITY, HONEYWELL MODEL "VA301C-DLC-BIP" OR EQUAL, AND PROVIDE ANNUNCIATOR PANEL, HONEYWELL "VA301AP" OR EQUAL.
19	PROVIDE 6" SYSTEM STRAINER WITH 30 MESH SCREEN AND BLOW DOWN.
20	PROVIDE AIR-DIRT SEPARATOR, SPIROTHERM MODEL "VDN600" OR EQUAL.

NEW WORK NOTES ☐	
NO.	DESCRIPTION
21	PROVIDE TWO-WAY CONTROL VALVE SIZED FOR APPROXIMATELY 247 GPM.
22	PROVIDE DIFFERENTIAL PRESSURE SENSOR ACROSS SUPPLY AND RETURN PIPING. PROVIDE WITH ISOLATION BALL VALVES AND SIZE PIPING IN ACCORDANCE WITH SENSOR MANUFACTURER'S RECOMMENDATIONS.
23	PROVIDE 5-GALLON CHEMICAL SHOT FEEDER WITH FUNNEL AND SUPPORT LEGS. MOUNT TO EXTERIOR CMU WALL WITH 12" STEEL BRACKETS CAPABLE OF SUPPORTING FULL WEIGHT OF UNIT.
24	PROVIDE 18" DOUBLE-WALL CATEGORY III COMMON VENT AND ROUTE THROUGH EXISTING ROOF OPENING. REUSE EXISTING STRUCTURAL VENT SUPPORT AND REFER TO BOILER VENTING SECTION ON THIS DRAWING FOR ADDITIONAL INFORMATION. PROVIDE BAROMETRIC DAMPER AT EACH BOILER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AT LEAST 3'-0" FROM CONNECTION TO BOILER.
25	PROVIDE ROOF-MOUNTED EXHAUST FAN AND MOUNT ON EXISTING ROOF CURB. REFER TO "ROOF MOUNTED EXHAUST FAN DETAIL" ON DRAWING M-301 FOR ADDITIONAL INFORMATION. INTERLOCK ADJACENT CONTROL DAMPER WITH FAN OPERATION.
26	PROVIDE 2'-0" DEEP PLENUM TO MATCH SIZE OF EXISTING LOUVER (APPROXIMATELY 128"H X 16"W) AND MOUNT CONTROL DAMPER IN PLENUM. INTERLOCK CONTROL DAMPER WITH EF-14 AND EF-14 THERMOSTAT FOR SUMMER VENTILATION.
27	PROVIDE 1/4" DIAMETER STRANDED STAINLESS STEEL GUY WIRES SPACE AT 120" INTERVALS AROUND COMMON BOILER VENT. PROVIDE 2 CABLE CLAMPS PER GUY WIRE AND SECURE CABLE TO ROOF STRUCTURE USING EXISTING HARDWARE.
28	PROVIDE 1" DRAIN PIPING AT BOTTOM OF VENT STACK AND ROUTE TO NEAREST FLOOR DRAIN.
29	ROUTE 12" PVC BOILER COMBUSTION AIR INTAKE THROUGH EXTERIOR WALL. REFER TO "COMBUSTION AIR INTAKE DETAIL" ON M301 FOR ADDITIONAL INFORMATION.
30	PROVIDE BACKFLOW PREVENTER, WILKINS MODEL "975XL2" OR EQUAL. PROVIDE WITH AIR GAP AND PIPE TO NEAREST FLOOR DRAIN.
31	REFER TO PIPING DIAGRAM FOR CONTINUATION OF COLD WATER MAKEUP CONNECTION.



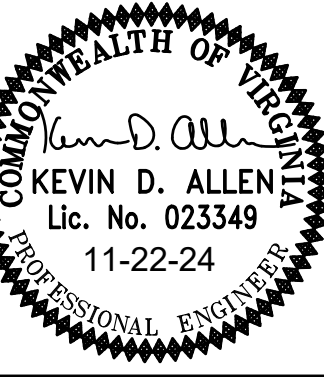
B BOILER VENTING SECTION
NOT TO SCALE (SHOWN FOR B-2, B-1 SIMILAR)

DINWIDDIE ELEMENTARY SCHOOL - CENTRAL HEATING AND COOLING PLANT - NEW WORK
SCALE: 1/4" = 1'-0"



DESCRIPTION	
BY	DATE
MARK	REVISIONS

DATE	11-22-24
PROJECT	21215-02
DESIGNED	BDC
DRAWN	JAR
CHECKED	KDA



PROJECT
DINWIDDIE COUNTY PUBLIC SCHOOLS
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES
DRAWING
**DINWIDDIE ELEMENTARY SCHOOL - CENTRAL HEATING
AND COOLING PLANT - NEW WORK**

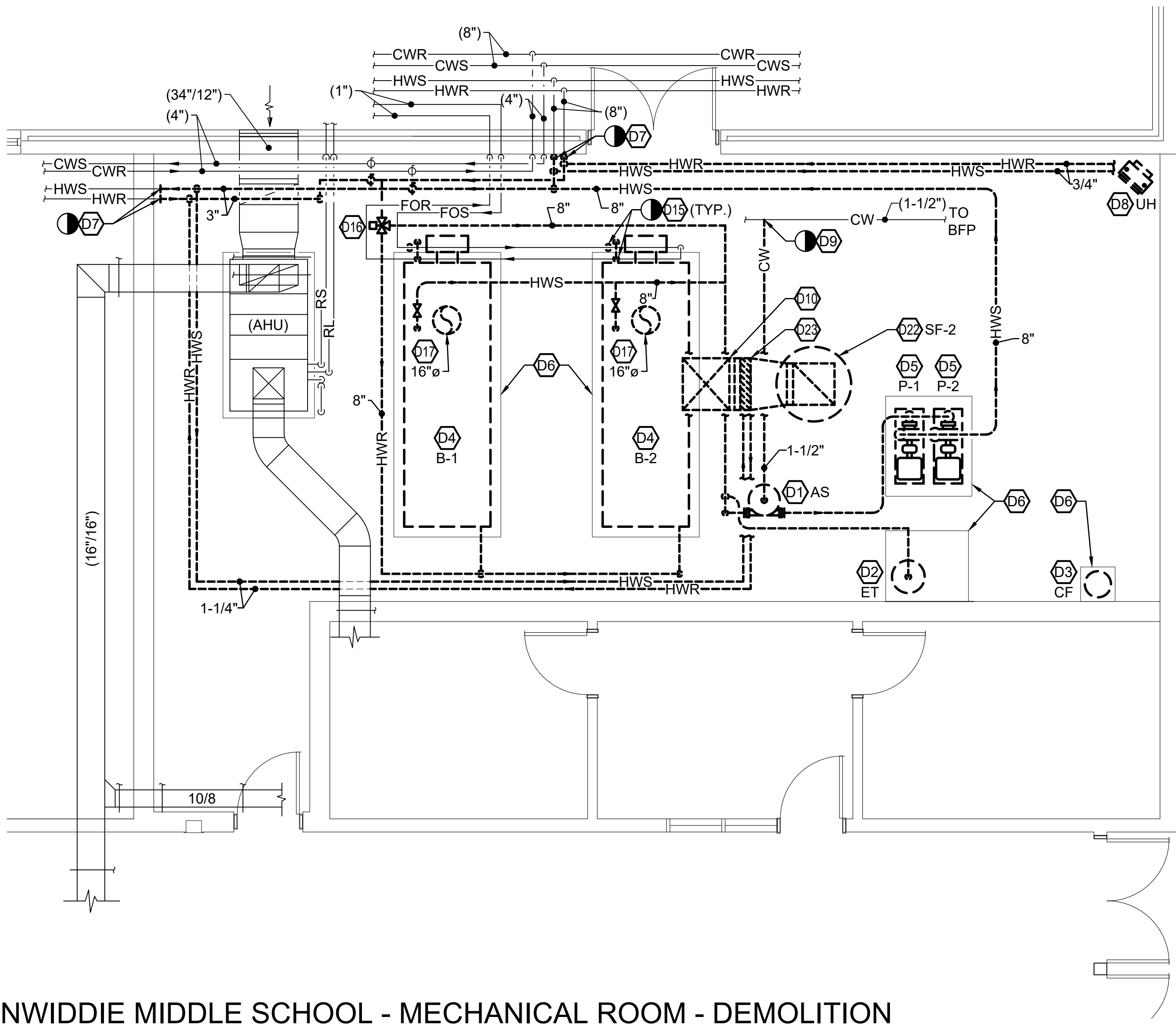
SHEET
M-102B

DEMOLITION NOTES	
NO.	DESCRIPTION
D1	DISCONNECT AND REMOVE AIR SEPARATOR COMPLETE.
D2	DISCONNECT AND REMOVE EXPANSION TANK COMPLETE.
D3	DISCONNECT AND REMOVE CHEMICAL SHOT FEEDER AND ASSOCIATED PIPING COMPLETE.
D4	DISCONNECT AND REMOVE BOILER COMPLETE INCLUDING CONTROLS AND ACCESSORIES.
D5	DISCONNECT AND REMOVE GROUTED BASE MOUNTED HOT WATER PUMP COMPLETE INCLUDING MOTOR STARTER.
D6	EXISTING 4" CONCRETE PAD TO REMAIN.
D7	DISCONNECT AND REMOVE HOT WATER PIPING COMPLETE TO POINT INDICATED.
D8	DISCONNECT AND REMOVE HOT WATER UNIT HEATER COMPLETE.
D9	DISCONNECT AND REMOVE DOMESTIC COLD WATER PIPING TO POINT INDICATED.
D10	DISCONNECT AND REMOVE SUPPLY DUCTWORK COMPLETE.
D15	DISCONNECT AND REMOVE FUEL OIL PIPING COMPLETE TO POINT INDICATED ON FLOOR PLAN, APPROXIMATELY 10 LINEAR FEET FROM BOILER.
D16	REMOVE EXISTING 3-WAY HOT WATER RESET VALVE COMPLETE.
D17	DISCONNECT AND REMOVE BOILER FLUE PIPING COMPLETE. TEMPORARILY PATCH OPENING IN ROOF UNTIL NEW FLUE PIPING HAS BEEN INSTALLED.
D22	DISCONNECT AND REMOVE ROOF MOUNTED SUPPLY FAN COMPLETE.
D23	DISCONNECT AND REMOVE DUCT HEATING COIL COMPLETE.

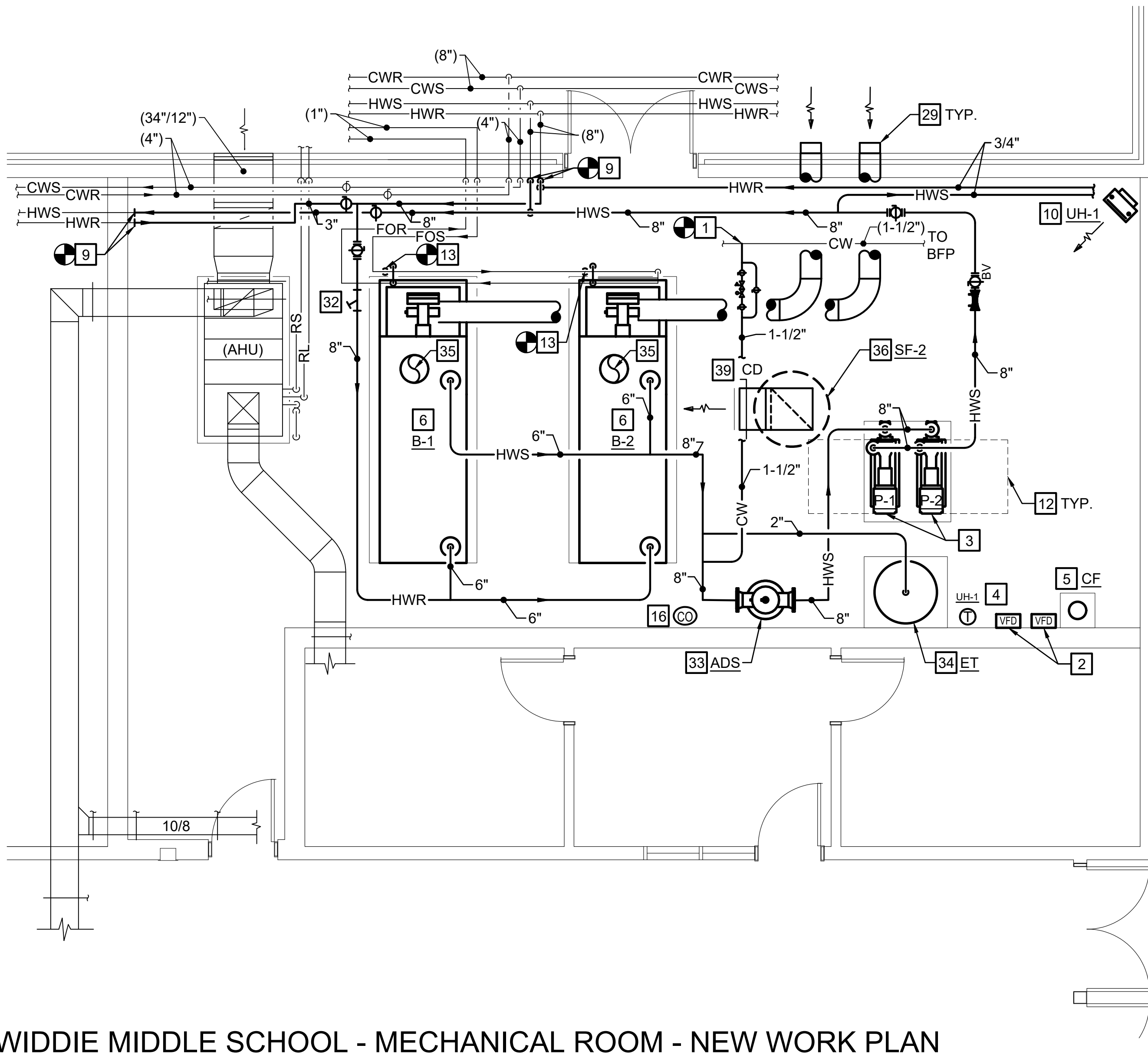
NOTE: EXISTING CONDITIONS ILLUSTRATED HAVE BEEN DETERMINED FROM ORIGINAL CONSTRUCTION DOCUMENTS AND LIMITED NON-INVASIVE FIELD INVESTIGATION. THE CONTRACTOR SHALL INVESTIGATE FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK, COORDINATE AND MAKE ADJUSTMENTS AS NECESSARY.

NEW WORK NOTES	
NO.	DESCRIPTION
1	PROVIDE DOMESTIC COLD WATER MAKEUP PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
2	PROVIDE VFD FOR PUMP MOTOR. REFER TO SPECIFICATION SECTION 230500 AND 230900 FOR ADDITIONAL INFORMATION. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS AND SUPPORT DETAILS.
3	PROVIDE BASE-MOUNTED PUMP, CONTROLS, SUCTION DIFFUSER, AND ACCESSORIES COMPLETE. MOUNT ON EXISTING CONCRETE PAD. ALIGN AND GROUT PUMP BASE. REFER TO "BASE MOUNTED PUMP PIPING DETAIL" ON M-301 FOR ADDITIONAL INFORMATION.
4	PROVIDE LINE VOLTAGE THERMOSTAT AND RACEWAY COMPLETE.
5	PROVIDE 5-GALLON CHEMICAL SHOT FEEDER WITH FUNNEL AND SUPPORT LEGS. MOUNT ON EXISTING CONCRETE PAD.
6	PROVIDE BOILER, BURNER ASSEMBLY, AND CONTROLS COMPLETE. MOUNT ON CONCRETE PAD.
9	PROVIDE HOT WATER PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
10	PROVIDE HORIZONTAL HOT WATER UNIT HEATER. REFER TO "UNIT HEATER PIPING DIAGRAM" ON DRAWING M301 FOR ADDITIONAL INFORMATION.
12	MAINTAIN AT LEAST 36" OF CLEARANCE ON AT LEAST ONE SIDE OF EACH PUMP AS SHOWN.
13	PROVIDE NEW #2 FUEL OIL PIPING, FILTER, CHECK VALVE, AND ISOLATION VALVES COMPLETE. CONNECT TO BURNER-MOUNTED OIL PUMP PROVIDED BY BURNER MANUFACTURER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

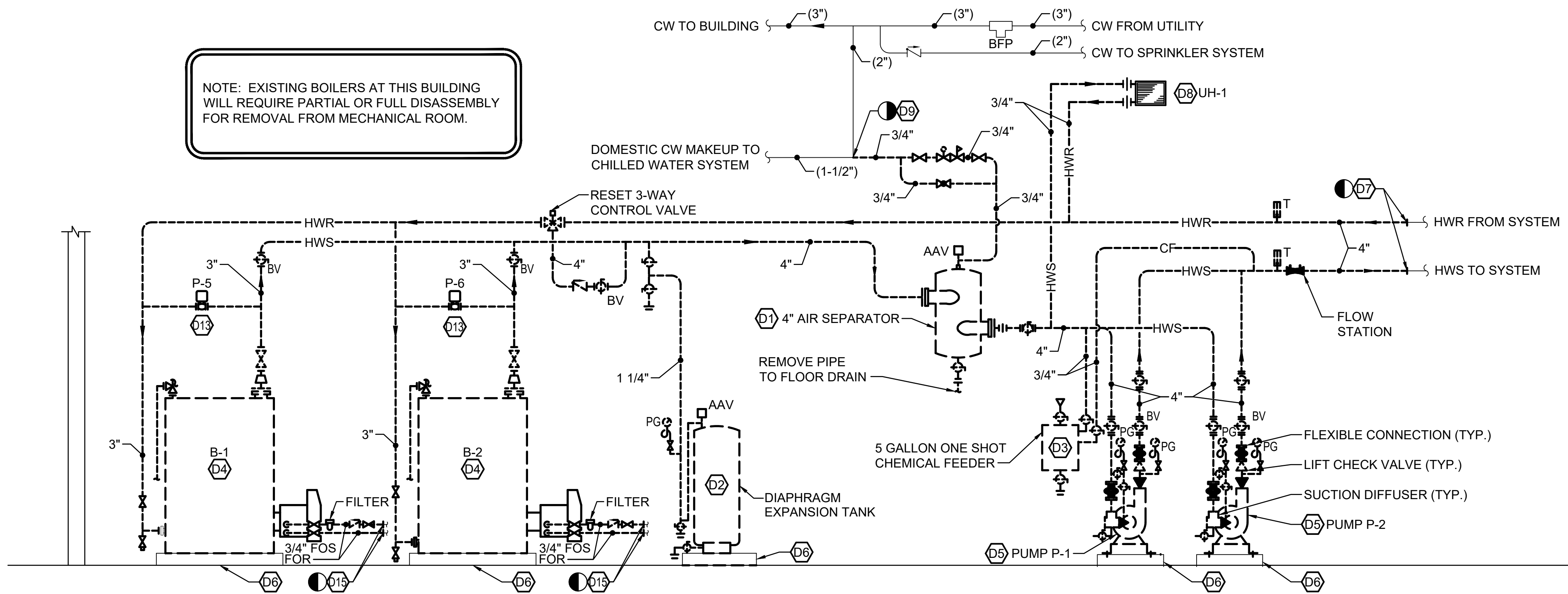
NEW WORK NOTES	
NO.	DESCRIPTION
16	PROVIDE WALL-MOUNTED BAS NETWORKABLE GAS DETECTOR FOR MONITORING CARBON MONOXIDE CONCENTRATION, HONEYWELL MODEL "E3SBSCO" OR EQUAL. PROVIDE GAS DETECTION CONTROLLER WITH BACKTIP OUTPUT CAPABILITY, HONEYWELL MODEL "VA301C-DLC-BIP" OR EQUAL, AND PROVIDE ANNUNCIATOR PANEL, HONEYWELL "VA301AP" OR EQUAL.
29	ROUTE 12"Ø PVC BOILER COMBUSTION AIR INTAKE THROUGH EXTERIOR WALL. REFER TO "COMBUSTION AIR INTAKE DETAIL" ON M301 FOR ADDITIONAL INFORMATION.
32	PROVIDE 8" SYSTEM STRAINER WITH 30 MESH SCREEN AND BLOW DOWN.
33	PROVIDE AIR-DIRT SEPARATOR, SPIROTHERM MODEL "VDN800" OR EQUAL.
34	PROVIDE BLADDER-TYPE FULL ACCEPTANCE EXPANSION TANK WITH AT LEAST 264 GALLON ACCEPTANCE VOLUME, BELL AND GOSSET MODEL "B-1000" OR EQUAL.
35	PROVIDE NEW 16"Ø DOUBLE-WALL CATEGORY III FLUE VENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ROUTE THROUGH EXISTING ROOF OPENING. REFER TO "BOILER VENTING DETAIL" ON DRAWING M301 FOR ADDITIONAL INFORMATION. PROVIDE BAROMETRIC DAMPER AT EACH BOILER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AT LEAST 3'-0" FROM CONNECTION TO BOILER.
36	PROVIDE NEW MOUNTED SUPPLY FAN AND MOUNT ON EXISTING ROOF CURB. REFER TO "ROOF MOUNTED EXHAUST FAN DETAIL" ON DRAWING M301. PROVIDE 24"24" SUPPLY DUCTWORK DOWN THROUGH ROOF AND ROUTE AS SHOWN. PROVIDE 1" X 1" WIRE MESH OVER OPEN END OF DUCTWORK.
39	PROVIDE CONTROL DAMPER IN SUPPLY FAN DUCTWORK AND INTERLOCK DAMPER WITH SUPPLY FAN OPERATION AND BOILER OPERATION.



DINWIDDIE MIDDLE SCHOOL - MECHANICAL ROOM - DEMOLITION
SCALE: 1/4" = 1'-0"



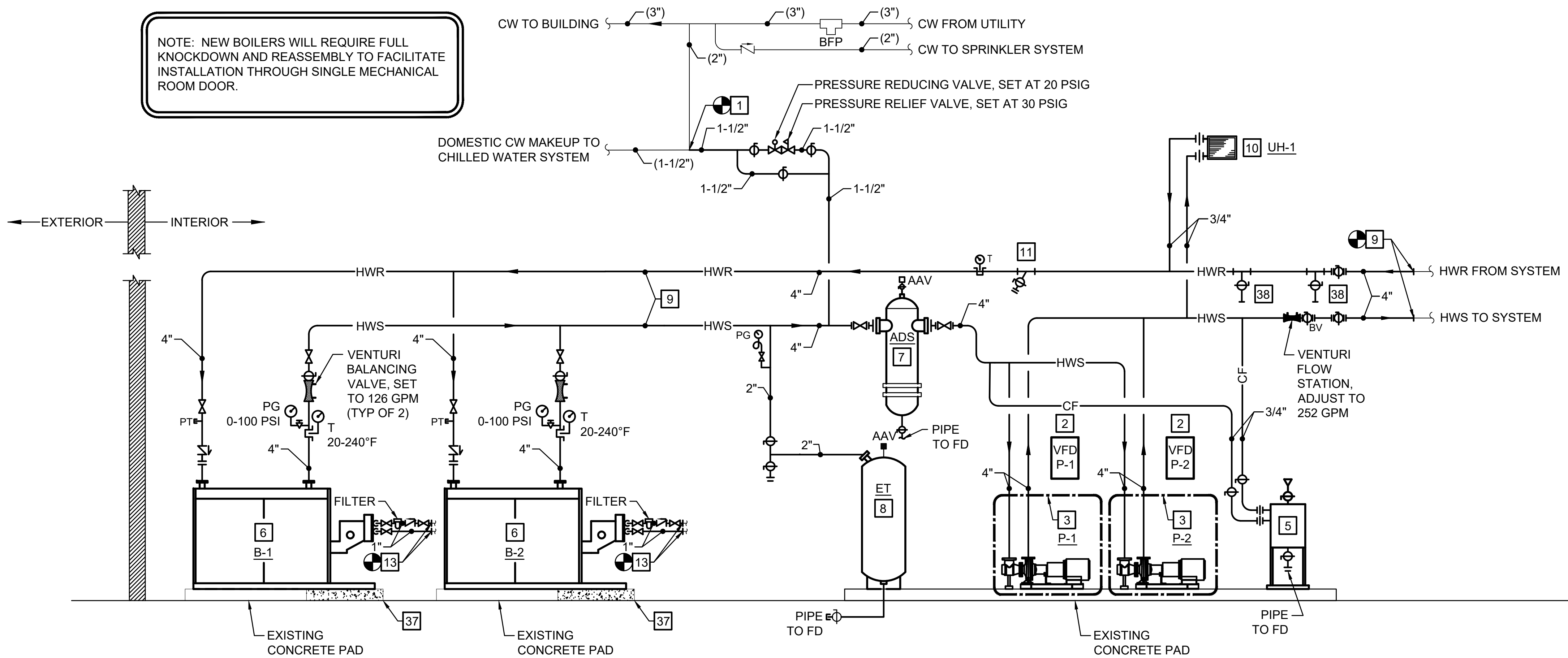
DINWIDDIE MIDDLE SCHOOL - MECHANICAL ROOM - NEW WORK PLAN
SCALE: 1/4" = 1'-0"



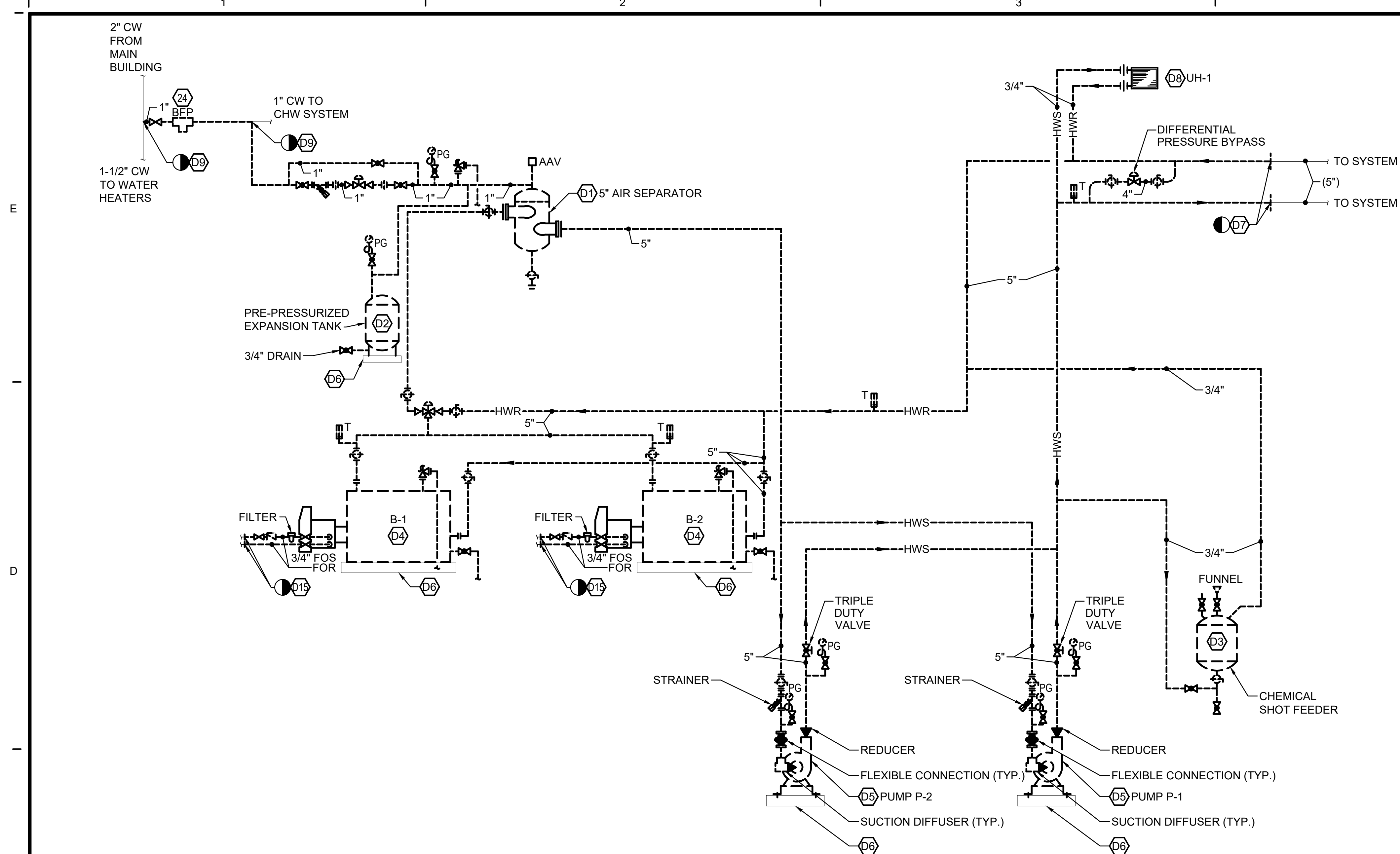
MIDWAY ELEMENTARY SCHOOL - HOT WATER PIPING DIAGRAM - DEMOLITION
NOT TO SCALE

DEMOLITION NOTES	
NO.	DESCRIPTION
D1	DISCONNECT AND REMOVE AIR SEPARATOR COMPLETE.
D2	DISCONNECT AND REMOVE EXPANSION TANK COMPLETE.
D3	DISCONNECT AND REMOVE CHEMICAL SHOT FEEDER AND ASSOCIATED PIPING COMPLETE.
D4	DISCONNECT AND REMOVE BOILER COMPLETE INCLUDING CONTROLS AND ACCESSORIES.
D5	DISCONNECT AND REMOVE BASE MOUNTED HOT WATER PUMP COMPLETE INCLUDING MOTOR STARTER.
D6	EXISTING 4" CONCRETE PAD TO REMAIN.
D7	DISCONNECT AND REMOVE HOT WATER PIPING COMPLETE TO POINT INDICATED.
D8	DISCONNECT AND REMOVE HOT WATER UNIT HEATER COMPLETE.
D9	DISCONNECT AND REMOVE DOMESTIC COLD WATER PIPING TO POINT INDICATED.
D13	DISCONNECT AND REMOVE INLINE BOILER CIRCULATOR PUMP COMPLETE.
D15	DISCONNECT AND REMOVE FUEL OIL PIPING COMPLETE TO POINT INDICATED ON FLOOR PLAN, APPROXIMATELY 10 LINEAR FEET FROM BOILER.

NEW WORK NOTES	
NO.	DESCRIPTION
1	PROVIDE DOMESTIC COLD WATER MAKEUP PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
2	PROVIDE VFD FOR PUMP MOTOR. REFER TO SPECIFICATION SECTION 230500 AND 230900 FOR ADDITIONAL INFORMATION. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS AND SUPPORT DETAILS.
3	PROVIDE BASE-MOUNTED PUMP, CONTROLS, SUCTION DIFFUSER, AND ACCESSORIES COMPLETE. MOUNT ON NEW CONCRETE PAD. REFER TO "BASE MOUNTED END SUCTION PUMP PIPING DETAIL" ON DRAWING M-301.
5	PROVIDE 5-GALLON CHEMICAL SHOT FEEDER WITH FUNNEL AND SUPPORT LEGS. MOUNT ON EXISTING CONCRETE PAD.
6	PROVIDE BOILER, BURNER ASSEMBLY, AND CONTROLS COMPLETE. MOUNT ON EXISTING CONCRETE PAD.
7	PROVIDE AIR-DIRT SEPARATOR, SPIROTHERM MODEL "VDN400" OR EQUAL.
8	PROVIDE BLADDER-TYPE FULL ACCEPTANCE EXPANSION TANK WITH AT LEAST 158 GALLON ACCEPTANCE VOLUME, BELL AND GOSSET MODEL "B-600" OR EQUAL.
9	PROVIDE HOT WATER PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
10	PROVIDE HORIZONTAL HOT WATER UNIT HEATER. REFER TO "UNIT HEATER PIPING DIAGRAM" ON DRAWING M-301 FOR ADDITIONAL INFORMATION.
11	PROVIDE 4" SYSTEM STRAINER WITH 30 MESH SCREEN AND BLOW DOWN.
13	PROVIDE #2 FUEL OIL PIPING, FILTER, CHECK VALVE, AND ISOLATION VALVES COMPLETE. CONNECT TO BURNER-MOUNTED OIL PUMP PROVIDED BY BURNER MANUFACTURER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
37	EXTEND EXISTING 4" CONCRETE PAD AS INDICATED. REFER TO "CONCRETE HOUSEKEEPING PAD EXTENSION DETAIL" ON DRAWING M-301 FOR ADDITIONAL INFORMATION.
38	PROVIDE 1-1/2" TAPS WITH 1-1/2" BALL VALVES FOR TEMPORARY FILTRATION SYSTEM. TAPS SHALL BE LOCATED AT EITHER 3:00 OR 9:00 ON THE SUPPLY PIPING HEADER AND SPACED A MINIMUM OF 6'-0" APART. REFER TO SPECIFICATION SECTION 232533 FOR ADDITIONAL REQUIREMENTS. COORDINATE TAP LOCATIONS WITH WATER FILTRATION SPECIALIST.



MIDWAY ELEMENTARY SCHOOL - HOT WATER PIPING DIAGRAM - NEW WORK
NOT TO SCALE

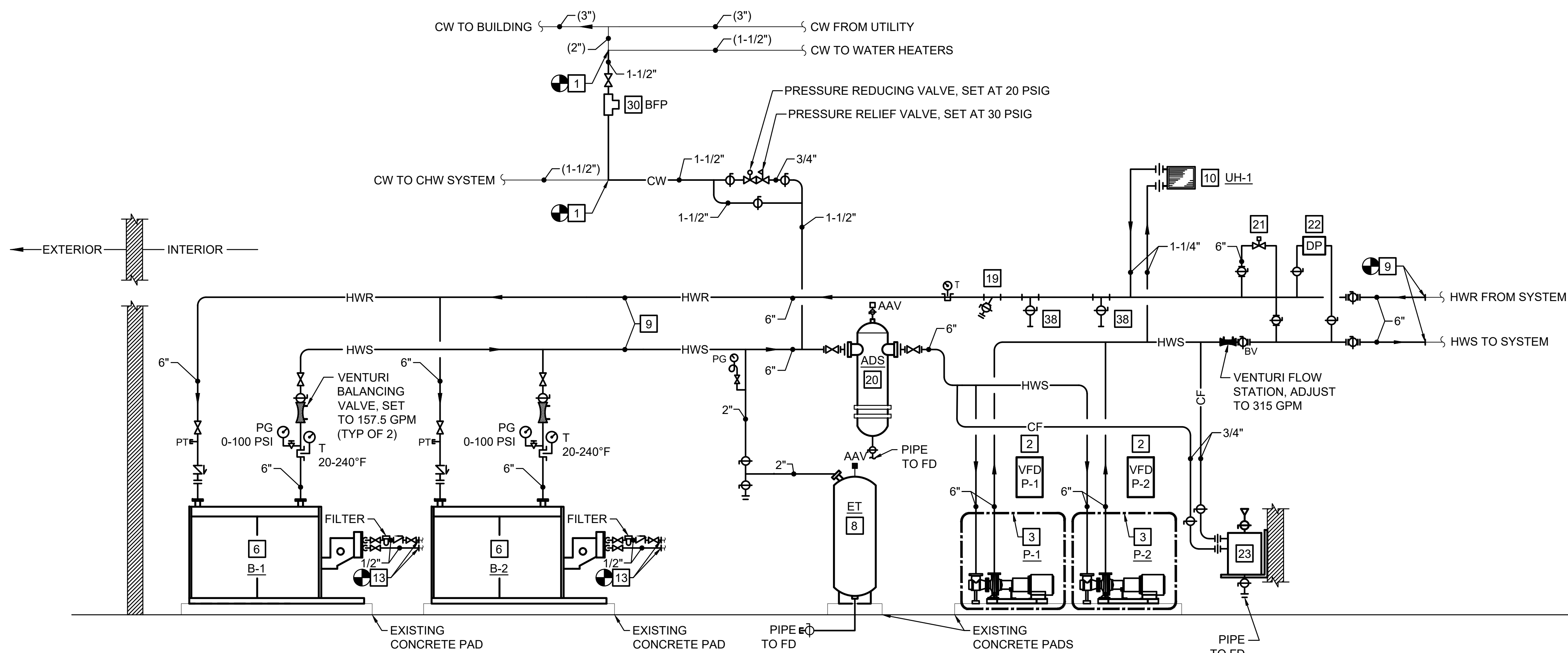


DEMOLITION NOTES	
NO.	DESCRIPTION
D1	DISCONNECT AND REMOVE AIR SEPARATOR COMPLETE.
D2	DISCONNECT AND REMOVE EXPANSION TANK COMPLETE.
D3	DISCONNECT AND REMOVE CHEMICAL SHOT FEEDER AND ASSOCIATED PIPING COMPLETE.
D4	DISCONNECT AND REMOVE BOILER COMPLETE INCLUDING CONTROLS AND ACCESSORIES.
D5	DISCONNECT AND REMOVE BASE MOUNTED HOT WATER PUMP COMPLETE INCLUDING MOTOR STARTER.
D6	EXISTING 4" CONCRETE PAD TO REMAIN.
D7	DISCONNECT AND REMOVE HOT WATER PIPING COMPLETE TO POINT INDICATED.
D8	DISCONNECT AND REMOVE HOT WATER UNIT HEATER COMPLETE.
D9	DISCONNECT AND REMOVE DOMESTIC COLD WATER PIPING TO POINT INDICATED.
D15	DISCONNECT AND REMOVE FUEL OIL PIPING COMPLETE TO POINT INDICATED ON FLOOR PLAN, APPROXIMATELY 10 LINEAR FEET FROM BOILER.
D24	DISCONNECT AND REMOVE BACKFLOW PREVENTER COMPLETE INCLUDING HANGERS AND DRAIN PIPING.

NEW WORK NOTES	
NO.	DESCRIPTION
1	PROVIDE DOMESTIC COLD WATER MAKEUP PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
2	PROVIDE VFD FOR PUMP MOTOR. REFER TO SPECIFICATION SECTION 230500 AND 230900 FOR ADDITIONAL INFORMATION. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS AND SUPPORT DETAILS.
3	PROVIDE BASE-MOUNTED PUMP, CONTROLS, SUCTION DIFFUSER, AND ACCESSORIES COMPLETE. MOUNT ON EXISTING CONCRETE PAD.
6	PROVIDE BOILER, BURNER ASSEMBLY, AND CONTROLS COMPLETE. MOUNT ON CONCRETE PAD.
8	PROVIDE BLADDER-TYPE FULL ACCEPTANCE EXPANSION TANK WITH AT LEAST 158 GALLON ACCEPTANCE VOLUME, BELL AND GOSSET MODEL "B-600" OR EQUAL.
9	PROVIDE HOT WATER PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
10	PROVIDE HORIZONTAL HOT WATER UNIT HEATER. REFER TO "UNIT HEATER PIPING DIAGRAM" ON DRAWING M-301 FOR ADDITIONAL INFORMATION.
13	PROVIDE #2 FUEL OIL PIPING, FILTER, CHECK VALVE, AND ISOLATION VALVES COMPLETE. CONNECT TO BURNER-MOUNTED OIL PUMP PROVIDED BY BURNER MANUFACTURER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
19	PROVIDE 6" SYSTEM STRAINER WITH 30 MESH SCREEN AND BLOW DOWN.
20	PROVIDE AIR-DIRT SEPARATOR, SPIROTERM MODEL "VDN600" OR EQUAL.
21	PROVIDE TWO-WAY CONTROL VALVE SIZED FOR APPROXIMATELY 247 GPM.
22	PROVIDE DIFFERENTIAL PRESSURE SENSOR ACROSS SUPPLY AND RETURN PIPING. PROVIDE WITH ISOLATION BALL VALVES AND SIZE PIPING IN ACCORDANCE WITH SENSOR MANUFACTURER'S RECOMMENDATIONS.
23	PROVIDE 5-GALLON CHEMICAL SHOT FEEDER WITH FUNNEL AND SUPPORT LEGS. MOUNT TO EXTERIOR CMU WALL WITH 12" STEEL BRACKETS CAPABLE OF SUPPORTING FULL WEIGHT OF UNIT.
30	PROVIDE BACKFLOW PREVENTER, WILKINS MODEL "975XL2" OR EQUAL. PROVIDE WITH AIR GAP AND PIPE TO NEAREST FLOOR DRAIN.
38	PROVIDE 1-1/2" TAPS WITH 1-1/2" BALL VALVES FOR TEMPORARY FILTRATION SYSTEM. TAPS SHALL BE LOCATED AT EITHER 3:00 OR 9:00 ON THE SUPPLY PIPING HEADER AND SPACED A MINIMUM OF 6'-0" APART. REFER TO SPECIFICATION SECTION 232533 FOR ADDITIONAL REQUIREMENTS. COORDINATE TAP LOCATIONS WITH WATER FILTRATION SPECIALIST.

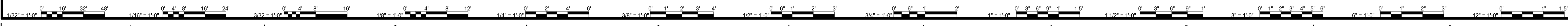
DINWIDDIE ELEMENTARY SCHOOL - HOT WATER PIPING DIAGRAM - DEMOLITION

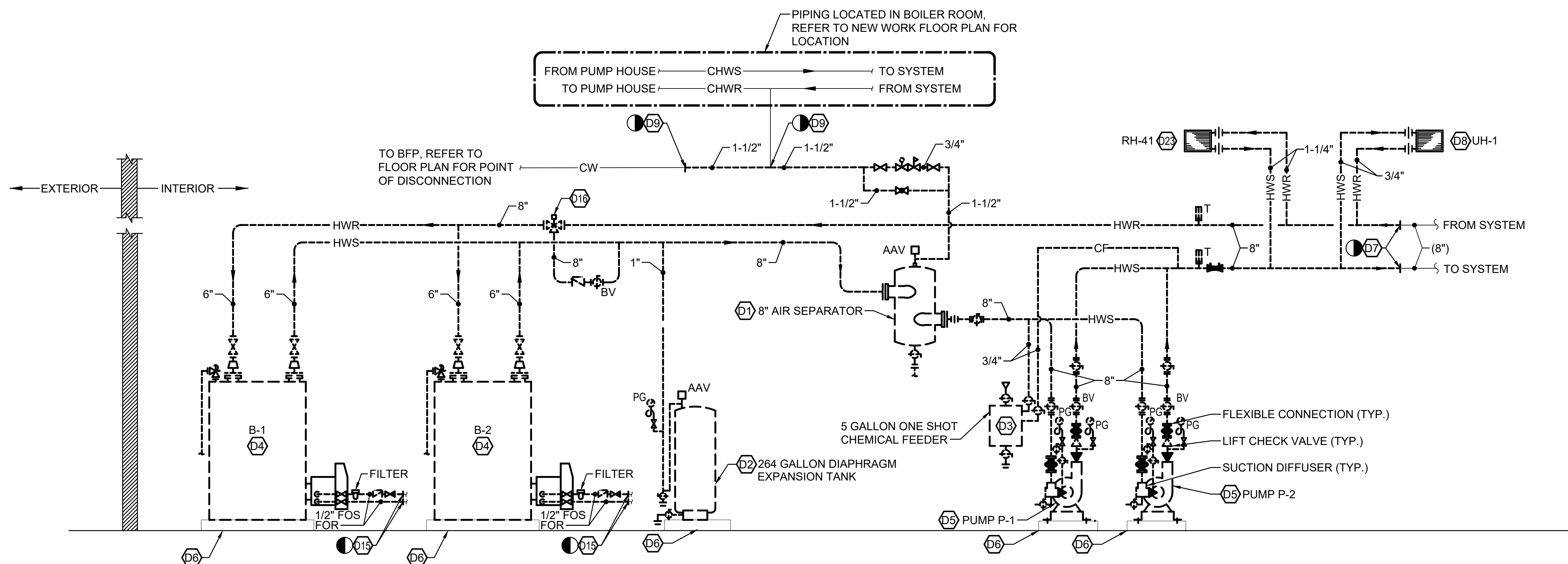
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DINWIDDIE ELEMENTARY SCHOOL - HOT WATER PIPING DIAGRAM - NEW WORK

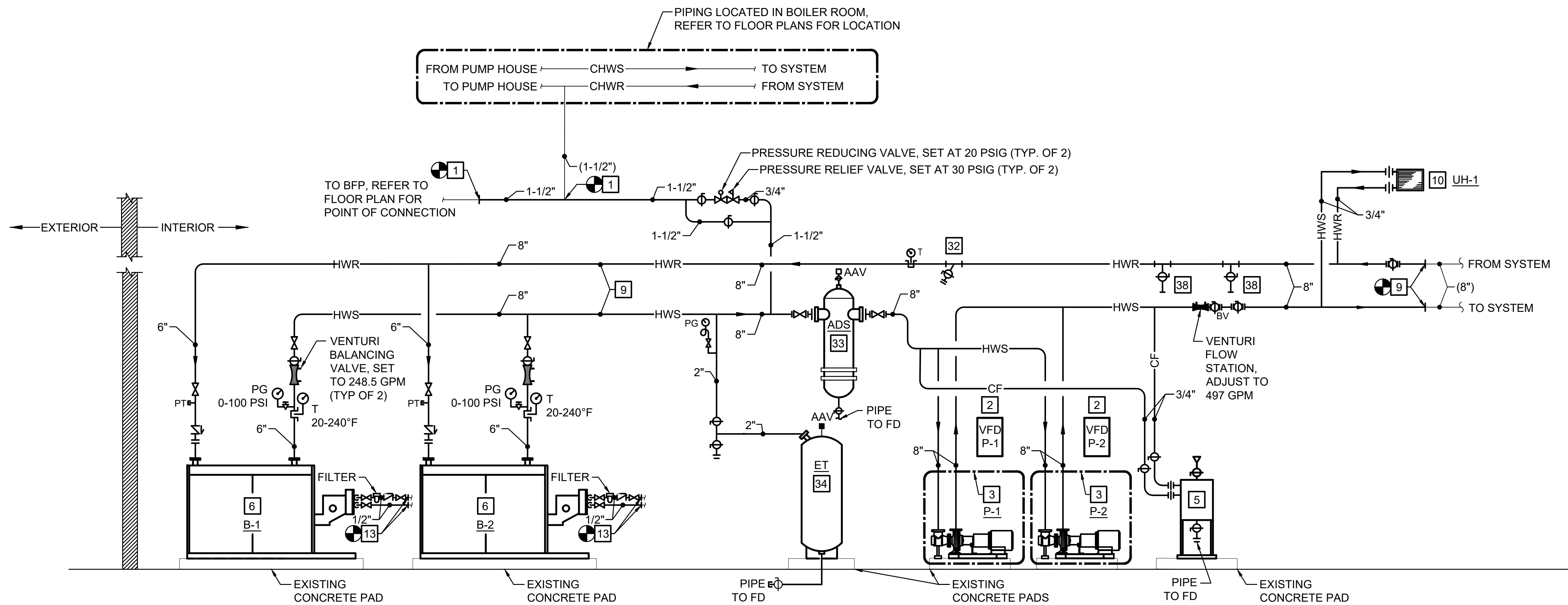
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DINWIDDIE MIDDLE SCHOOL - HOT WATER PIPING DIAGRAM - DEMOLITION

NOT TO SCALE



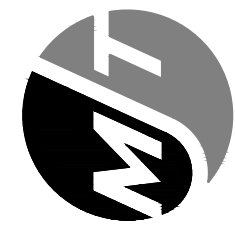
DINWIDDIE MIDDLE SCHOOL - HOT WATER PIPING DIAGRAM - NEW WORK

NOT TO SCALE

DEMOLITION NOTES	
NO.	DESCRIPTION
D1	DISCONNECT AND REMOVE AIR SEPARATOR COMPLETE.
D2	DISCONNECT AND REMOVE EXPANSION TANK COMPLETE.
D3	DISCONNECT AND REMOVE CHEMICAL SHOT FEEDER AND ASSOCIATED PIPING COMPLETE.
D4	DISCONNECT AND REMOVE BOILER COMPLETE INCLUDING CONTROLS AND ACCESSORIES.
D5	DISCONNECT AND REMOVE BASE MOUNTED HOT WATER PUMP COMPLETE INCLUDING MOTOR STARTER.
D6	EXISTING 4" CONCRETE PAD TO REMAIN.
D7	DISCONNECT AND REMOVE HOT WATER PIPING COMPLETE TO POINT INDICATED.
D8	DISCONNECT AND REMOVE HOT WATER UNIT HEATER COMPLETE.
D9	DISCONNECT AND REMOVE DOMESTIC COLD WATER PIPING TO POINT INDICATED.
D15	DISCONNECT AND REMOVE FUEL OIL PIPING COMPLETE TO POINT INDICATED ON FLOOR PLAN, APPROXIMATELY 10 LINEAR FEET FROM BOILER.
D16	REMOVE EXISTING 3-WAY HOT WATER RESET VALVE COMPLETE.
D23	DISCONNECT AND REMOVE DUCT HEATING COIL COMPLETE.

NEW WORK NOTES	
NO.	DESCRIPTION
1	PROVIDE DOMESTIC COLD WATER MAKEUP PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
2	PROVIDE VFD FOR PUMP MOTOR. REFER TO SPECIFICATION SECTION 230500 AND 230900 FOR ADDITIONAL INFORMATION. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS AND SUPPORT DETAILS.
3	PROVIDE BASE-MOUNTED PUMP, CONTROLS, SUCTION DIFFUSER, AND ACCESSORIES COMPLETE. MOUNT ON EXISTING CONCRETE PAD.
5	PROVIDE 5-GALLON CHEMICAL SHOT FEEDER WITH FUNNEL AND SUPPORT LEGS. MOUNT ON EXISTING CONCRETE PAD.
6	PROVIDE BOILER, BURNER ASSEMBLY, AND CONTROLS COMPLETE. MOUNT ON CONCRETE PAD.
9	PROVIDE HOT WATER PIPING, INSULATION, AND HANGERS TO POINT INDICATED.
10	PROVIDE HORIZONTAL HOT WATER UNIT HEATER. REFER TO "UNIT HEATER PIPING DIAGRAM" ON DRAWING M301 FOR ADDITIONAL INFORMATION.
13	PROVIDE #2 FUEL OIL PIPING, FILTER, CHECK VALVE, AND ISOLATION VALVES COMPLETE. CONNECT TO BURNER-MOUNTED OIL PUMP PROVIDED BY BURNER MANUFACTURER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
32	PROVIDE 8" SYSTEM STRAINER WITH 30 MESH SCREEN AND BLOW DOWN.
33	PROVIDE AIR-DIRT SEPARATOR, SPIROTHERM MODEL "VDN800" OR EQUAL.
34	PROVIDE BLADDER-TYPE FULL ACCEPTANCE EXPANSION TANK WITH AT LEAST 264 GALLON ACCEPTANCE VOLUME, BELL AND GOSSET MODEL "B-1000" OR EQUAL.
38	PROVIDE 1-1/2" TAPS WITH 1-1/2" BALL VALVES FOR TEMPORARY FILTRATION SYSTEM. TAPS SHALL BE LOCATED AT EITHER 3:00 OR 9:00 ON THE SUPPLY PIPING HEADER AND SPACED A MINIMUM OF 6'-0" APART. REFER TO SPECIFICATION SECTION 232533 FOR ADDITIONAL REQUIREMENTS. COORDINATE TAP LOCATIONS WITH WATER FILTRATION SPECIALIST.

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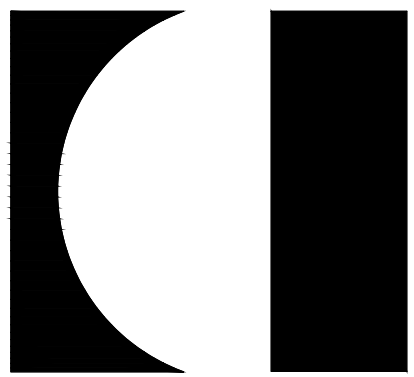


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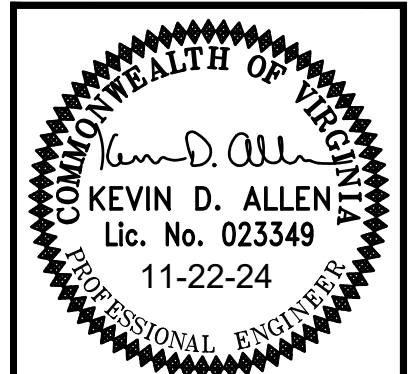
BY

MARK DATE
REVISIONS

DATE	11-22-24	PROJECT	21215-02	DESIGNED	BDC	DRAWN	JAR	CHECKED	KDA
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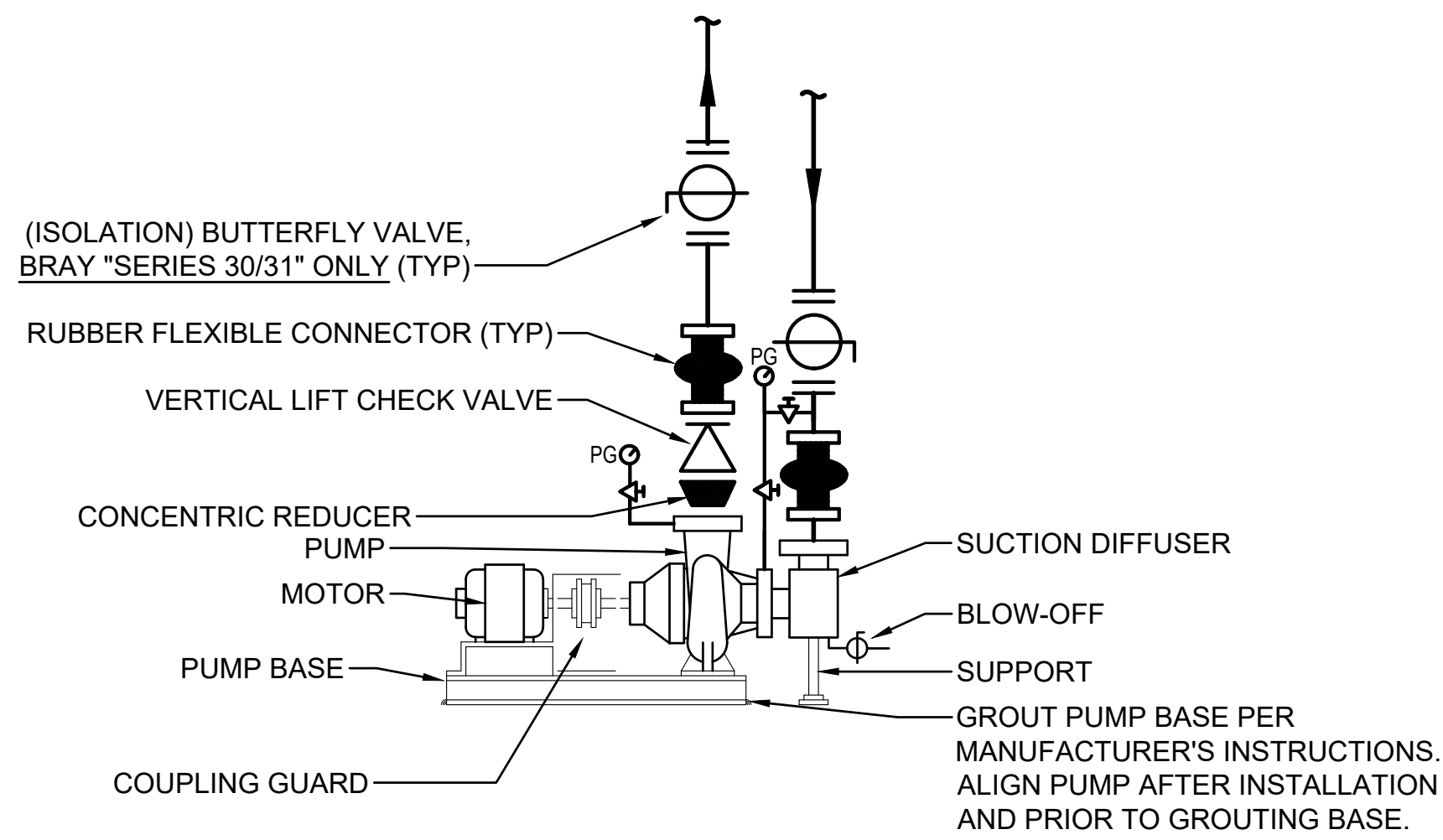


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(804)277-8987

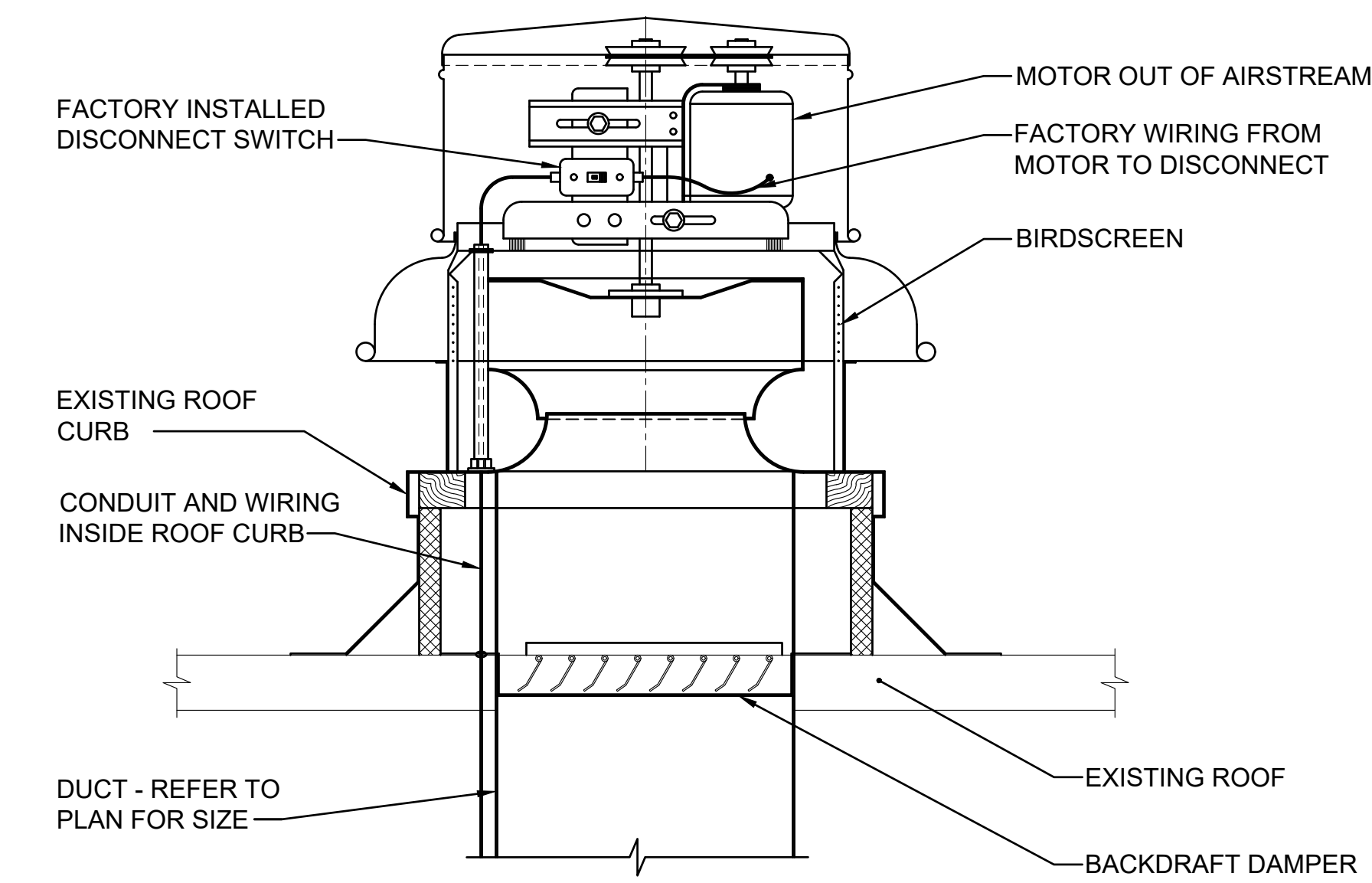


DINWIDDIE COUNTY PUBLIC SCHOOLS
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES
DINWIDDIE MIDDLE SCHOOL - HOT WATER PIPING
DIAGRAMS - DEMOLITION AND NEW WORK

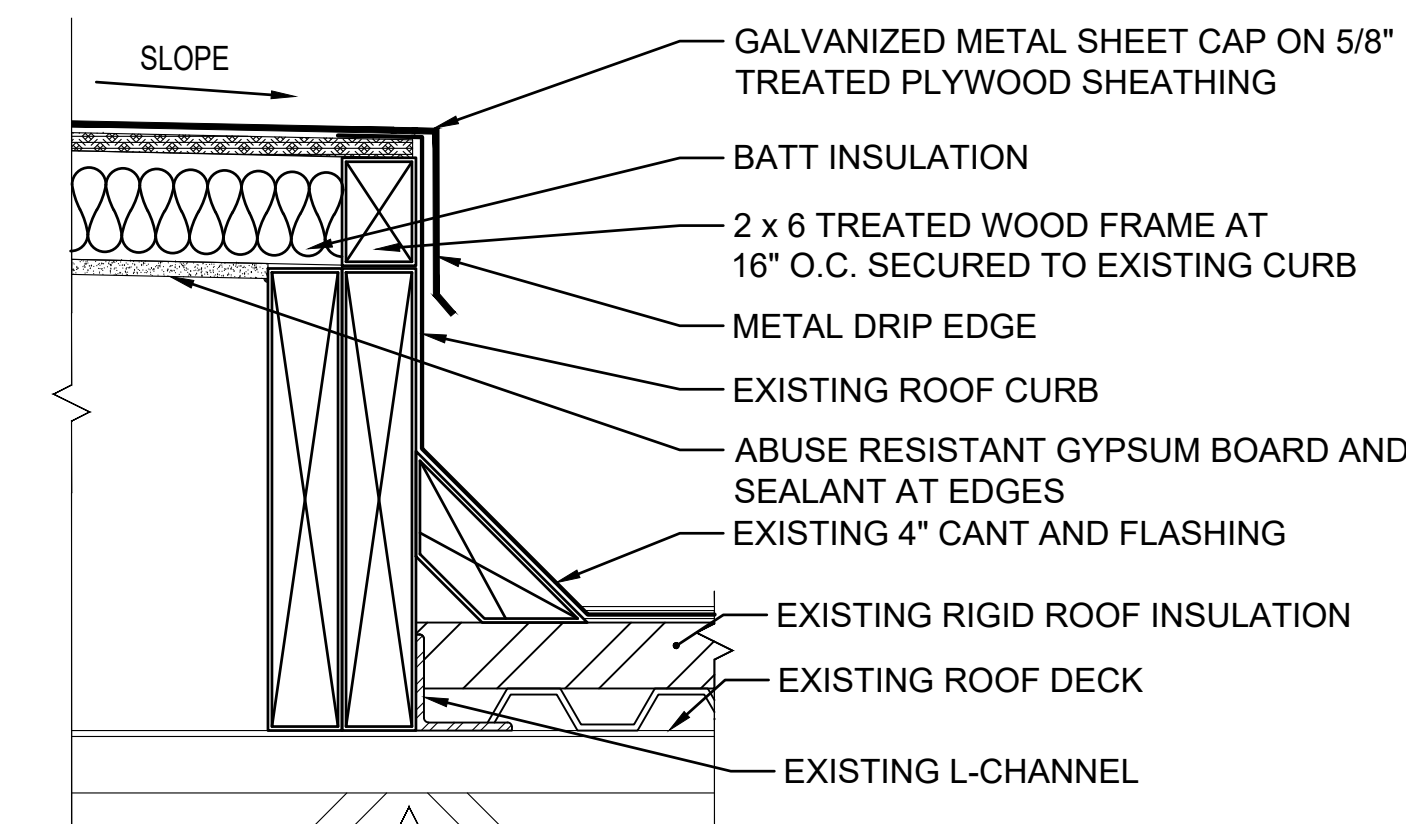
SHEET
M-203



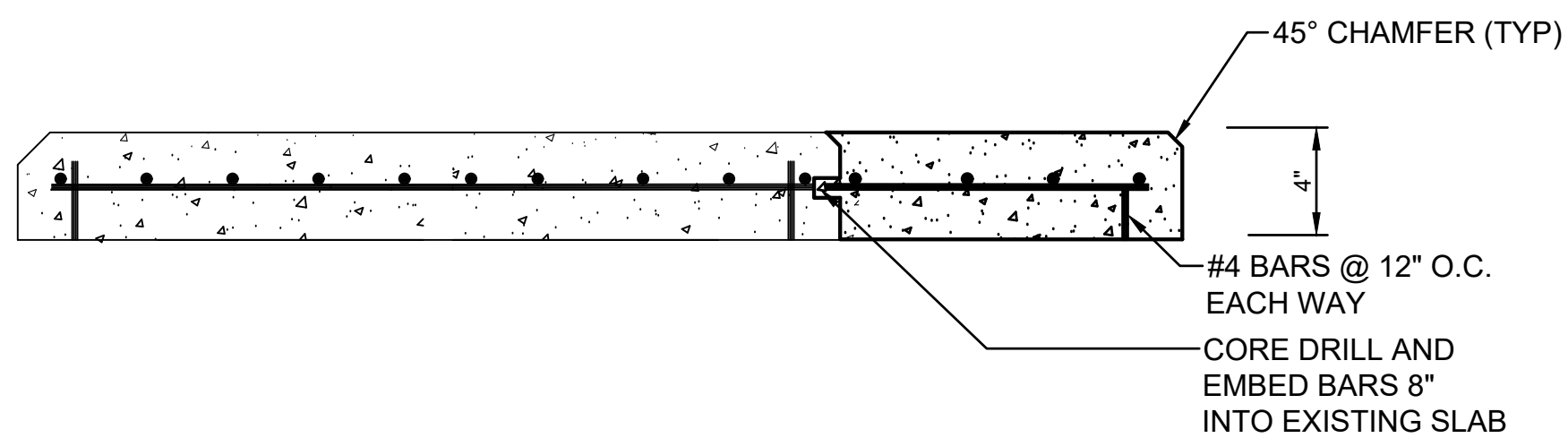
BASE MOUNTED END SUCTION PUMP PIPING DETAIL
NOT TO SCALE (P-1 AND P-2, ALL SCHOOLS)



ROOF EXHAUST FAN DETAIL
NOT TO SCALE NOTE: DIRECT DRIVE SIMILAR

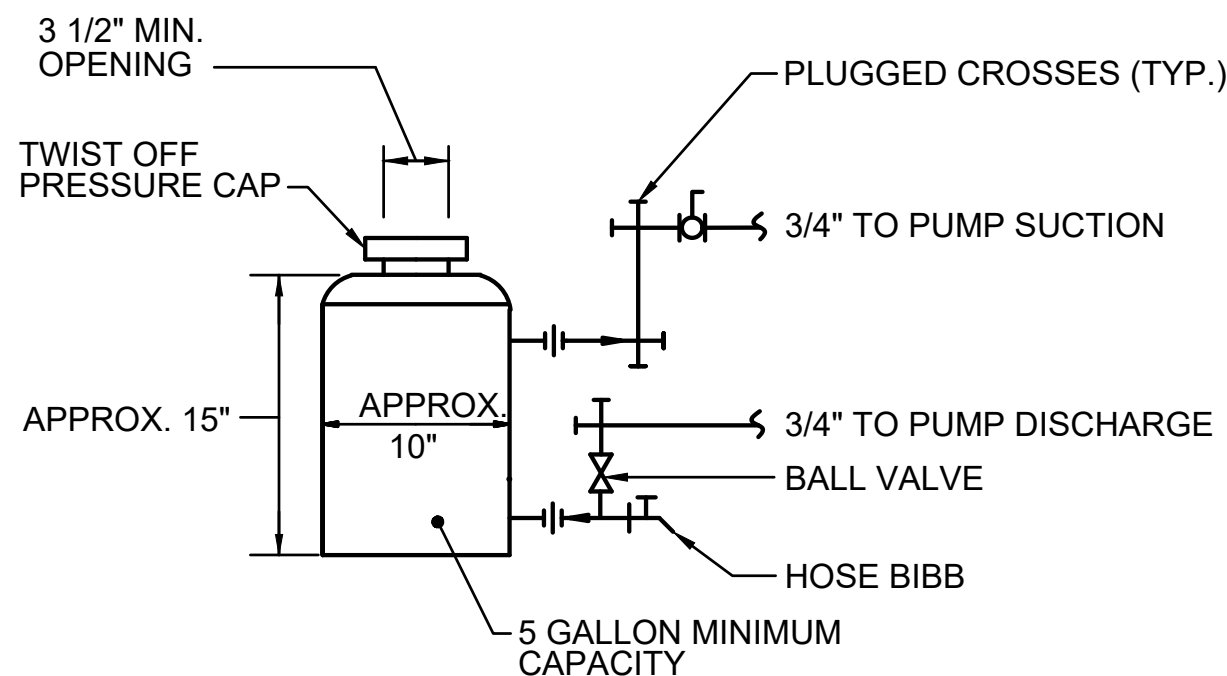


ROOF CURB CAPPING DETAIL
NOT TO SCALE



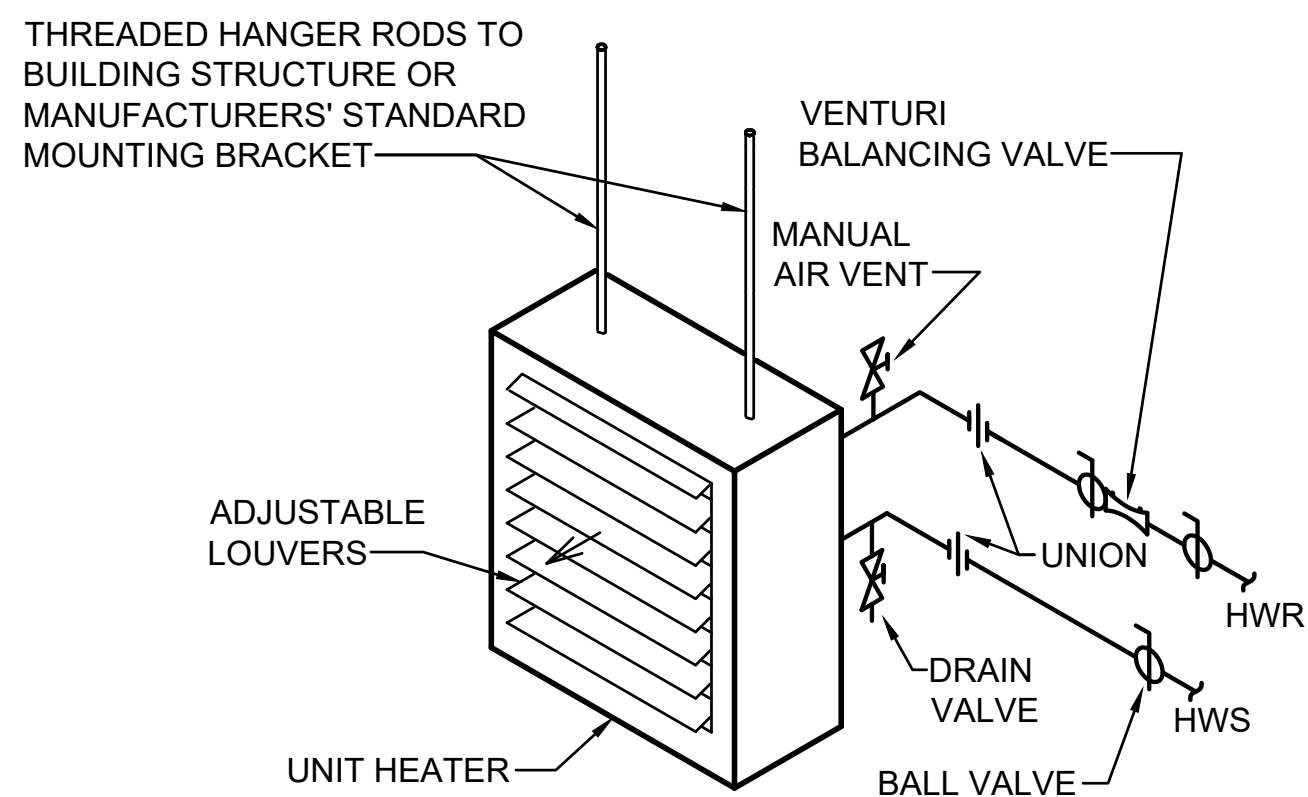
CONCRETE HOUSEKEEPING PAD EXTENSION DETAIL 1 2 3
NOT TO SCALE

- 1 DOWEL PAD INTO EXISTING FLOOR IN FOUR CORNERS.
- 2 3000# CONCRETE WITH #4 REBAR 12" x 12". FRAME CORNERS WITH 1-1/2" ANGLE TO MATCH EXISTING HOUSE KEEPING PADS. BROOM FINISH.
- 3 REMOVE FORMING, GROUT VOIDS.

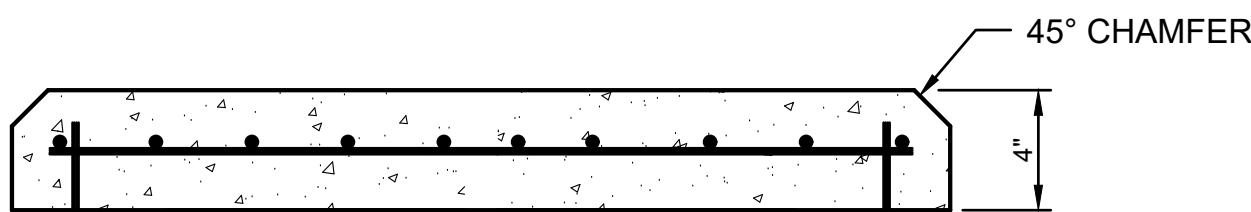


5 GALLON CHEMICAL FEED TANK DETAIL
NOT TO SCALE

NOTE: INSTALL IN ACCORDANCE WITH MANUFACTUER RECOMMENDATIONS.

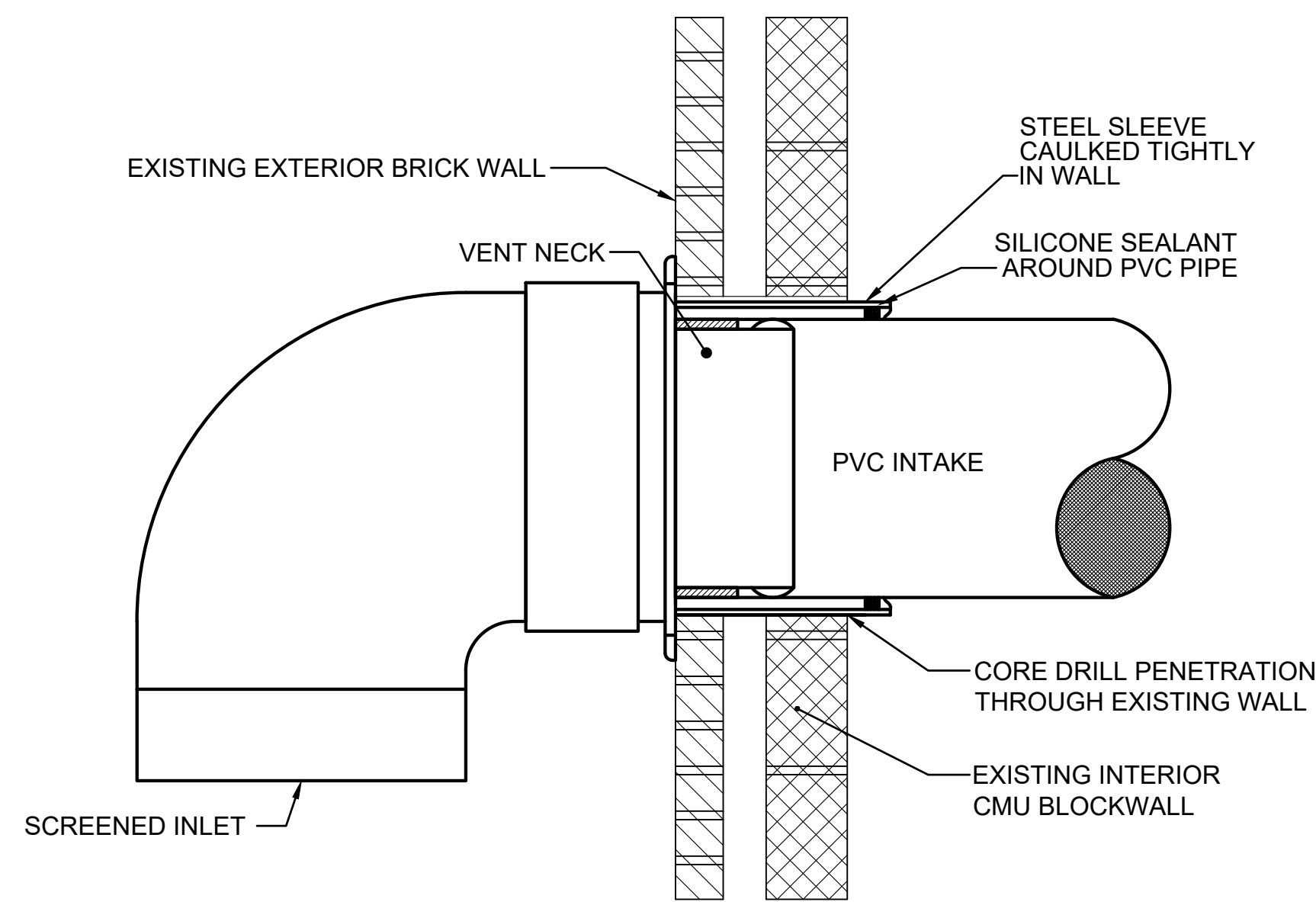


HORIZONTAL UNIT HEATER PIPING DIAGRAM
NOT TO SCALE

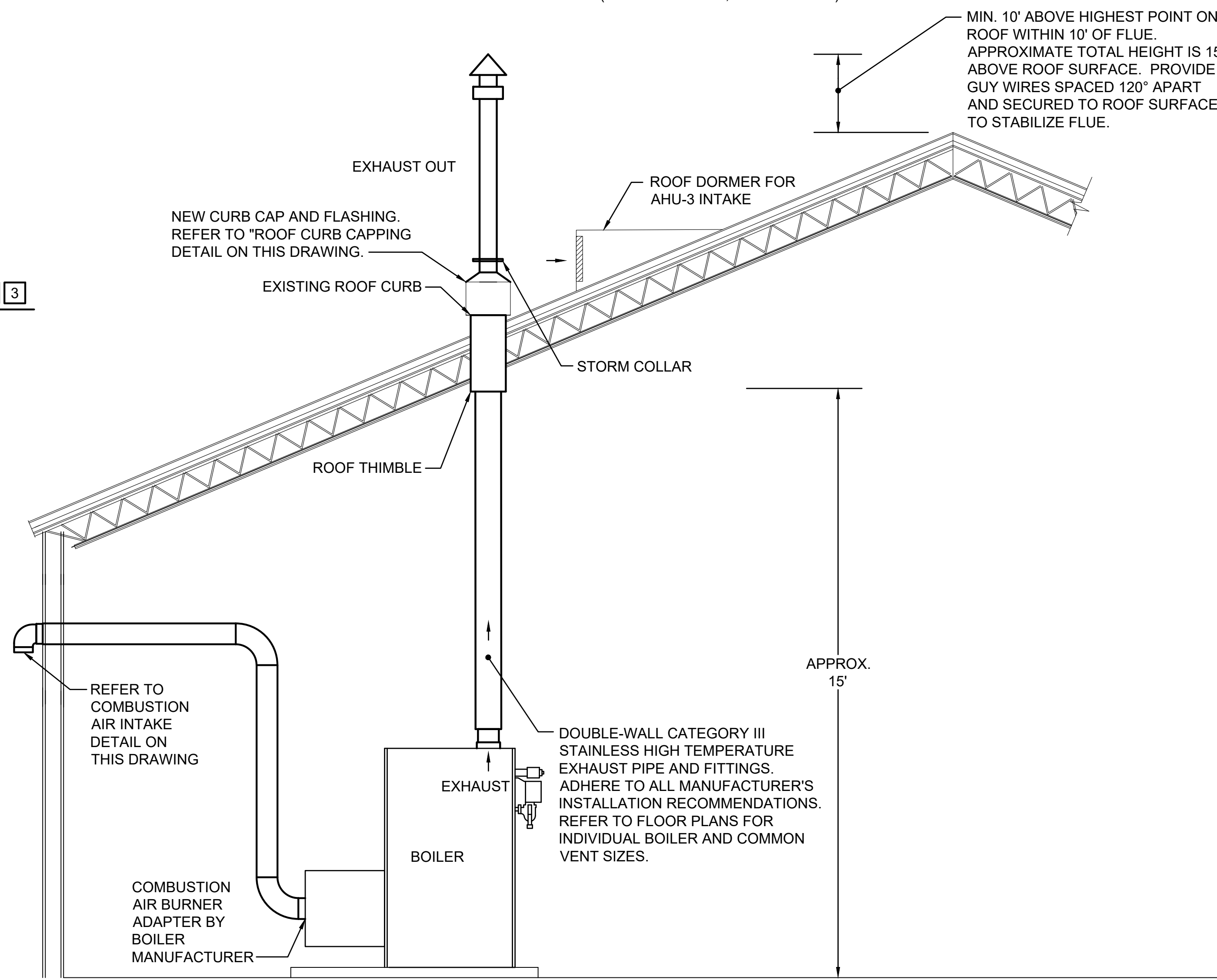


CONCRETE HOUSE KEEPING PAD DETAIL 1 2 3
NOT TO SCALE

- 1 DOWEL PAD INTO EXISTING FLOOR IN FOUR CORNERS.
- 2 3000# CONCRETE WITH #4 REBAR 12" x 12". FRAME CORNERS WITH 1-1/2" ANGLE TO MATCH EXISTING HOUSE KEEPING PADS. BROOM FINISH.
- 3 REMOVE FORMING, GROUT VOIDS.



COMBUSTION AIR INTAKE DETAIL
NOT TO SCALE (TYP. B-1 AND B-2, ALL SCHOOLS)



BOILER FLUE VENTING DETAIL (DINWIDDIE MS)
NOT TO SCALE (TYP. B-1 AND B-2)

MIDWAY ELEMENTARY SCHOOL - HOT WATER SYSTEM SEQUENCE OF OPERATION

1.

THE BOILERS SHALL STAGE BASED ON HOT WATER SUPPLY TEMPERATURE TO MAINTAIN 180°F. UPON A CALL FOR HEATING (ANY OF THE SYSTEM HW VALVES OPENING TO ITS COIL), THE BAS SHALL ENABLE THE LEAD PRIMARY HOT WATER PUMP (P-1 LEAD, P-2 STAND-BY), ENABLE THE BOILERS THROUGH THE BOILER MANUFACTURER'S CONTROL PANEL, AND PROVIDE A SIGNAL TO THE MANUFACTURER'S CONTROL PANEL TO CONTROL THE HEATING WATER SUPPLY TEMPERATURE TO THE BUILDING.
2.

UPON PROOF OF FLOW AS MEASURED BY INTERNAL BOILER FLOW SWITCH, BOILERS SHALL STAGE IN SEQUENCE AND MAINTAIN THE HOT WATER SUPPLY TEMPERATURE SETPOINT OF 180°F. IF THE SYSTEM LOAD SHOULD BEGIN TO FALL BELOW THE LOAD CAPACITY OF THE BOILERS, THE BAS SHALL SEQUENCE OFF THE BOILERS SO THAT NO MORE BOILERS ARE IN OPERATION THAN IS REQUIRED TO MEET THE REDUCED LOAD. THE BAS SHALL ALTERNATE LEAD AND LAG BOILERS ON A WEEKLY BASIS.
3.

THE BAS SHALL ENABLE AND DISABLE THE BOILER CONTROL PANEL, MONITOR HEATING WATER SUPPLY AND RETURN TEMPERATURE, AND MONITOR BOILER STATUS.
4.

THE HOT WATER PUMP (P-1 LEAD, P-2 STAND-BY) SHALL BE ENABLED UPON SYSTEM DEMANDS. THE PUMP SHALL RUN AT 100% SPEED CONTINUOUSLY ON A CALL FOR HEAT. THE BAS SHALL ALTERNATE LEAD AND STAND-BY PUMPS ON A WEEKLY BASIS.
5.

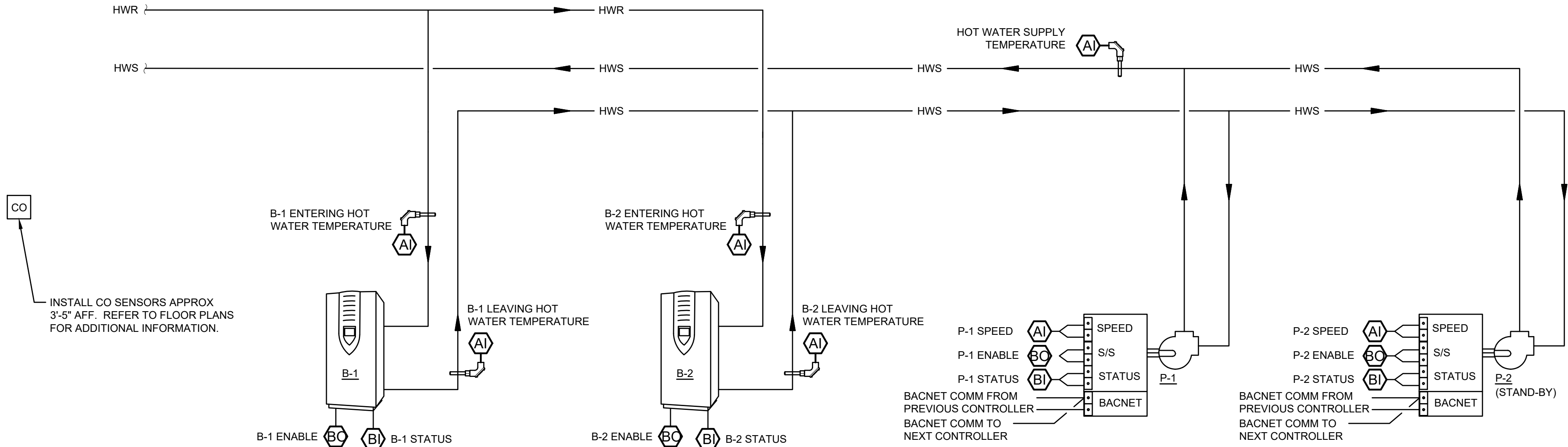
THE BOILER POWER SUPPLY SHALL BE HARD WIRED TO AN EMERGENCY STOP BUTTON. WHEN THE BUTTON IS ENABLED, ALL BOILERS SHALL BE DISABLED.
6.

UPON DETECTION OF CARBON MONOXIDE CONCENTRATION OVER THE ACCEPTABLE LIMIT (10 PPM), BAS SHALL DISABLE THE BOILERS. AUDIBLE ALARM SHALL BE GENERATED FROM ANNUNCIATOR PANELS LOCATED IN MECHANICAL ROOM AND AN ALARM SHALL BE GENERATED AT THE OWNER'S WORKSTATION.

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS		TREND	ALARM	SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV			
HW SUPPLY TEMP	X						X	X	X
B-1/B-2 ENABLE COMMAND				X					X
B-1/B-2 STATUS			X				X		X
B-1 ENTERING WATER TEMP.	X						X	X	X
B-1 LEAVING WATER TEMP.	X						X	X	X
B-2 ENTERING WATER TEMP.	X						X	X	X
B-2 LEAVING WATER TEMP.	X						X	X	X
P-1 ENABLE				X					X
P-1 STATUS			X				X	X	X
P-1 SPEED			X					X	X
P-2 ENABLE				X					X
P-2 STATUS				X			X	X	X
P-2 SPEED			X				X	X	X
CARBON MONOXIDE	X				X		X	X	X

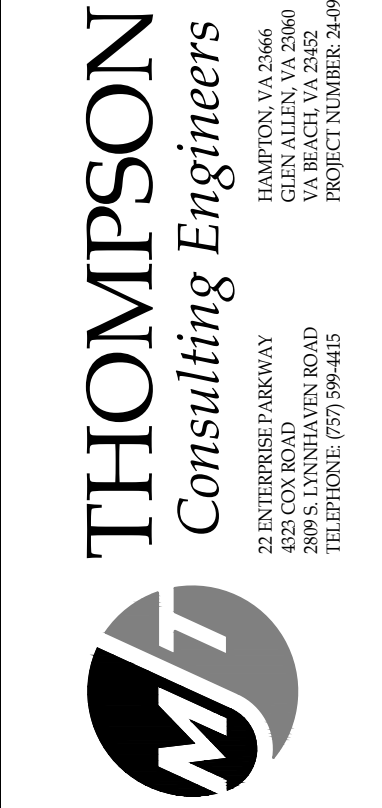
NOTE: THE GRAPHICS SHALL INCLUDE THE SETPOINT DISPLAY FOR EACH CONTROLLED OR MONITORED VARIABLE. ALL POINTS INCLUDED IN THE BOILER MANUFACTURER'S CONTROL PANEL SHALL BE ACCESSIBLE FROM THE OWNER'S GRAPHICAL WORKSTATION.

MIDWAY ELEMENTARY SCHOOL - HOT WATER SYSTEM POINTS LIST



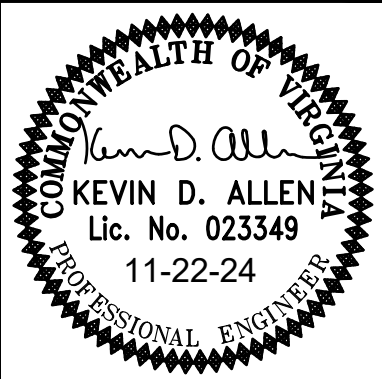
MIDWAY ELEMENTARY SCHOOL - HOT WATER SYSTEM CONTROL DIAGRAM

NOT TO SCALE



DESCRIPTION	
BY	
MARK	DATE
REVISIONS	

DATE	11-22-24
PROJECT	21215-02
DESIGNED	BDC
DRAWN	JAR
CHECKED	KDA



PROJECT
DINWIDDIE COUNTY PUBLIC SCHOOLS
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES
DRAWING
MIDWAY ELEMENTARY SCHOOL - AUTOMATIC
TEMPERATURE CONTROLS

SHEET
M-401

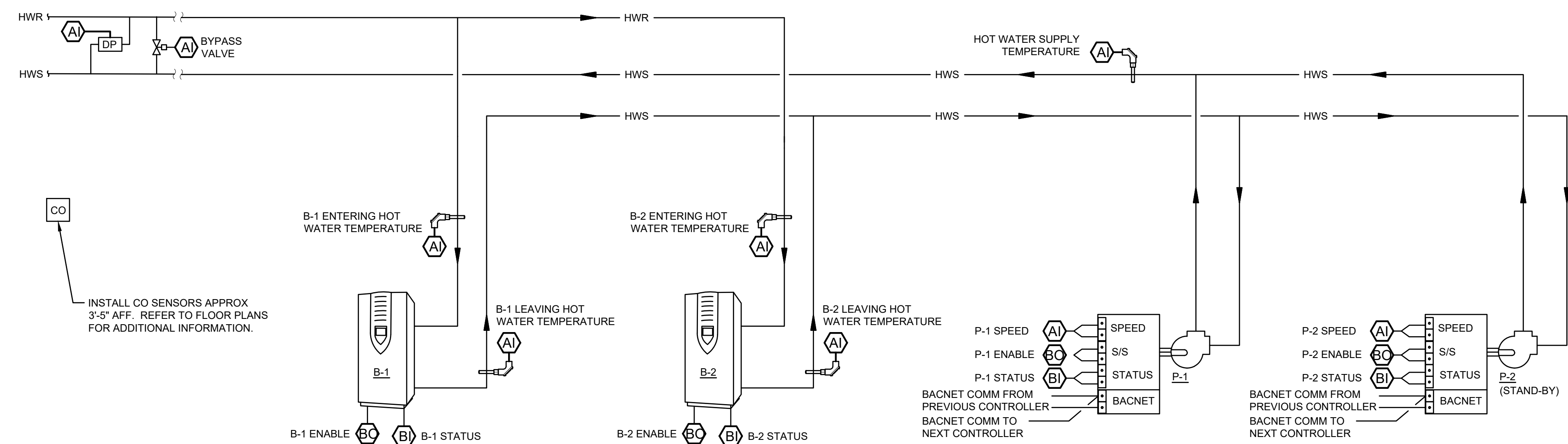
DINWIDDIE ELEMENTARY SCHOOL - HOT WATER SYSTEM SEQUENCE OF OPERATION

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2. UPON PROOF OF FLOW AS MEASURED BY INTERNAL BOILER FLOW SWITCH, BOILERS SHALL STAGE IN SEQUENCE AND MAINTAIN THE HOT WATER SUPPLY TEMPERATURE SETPOINT OF 180°F. IF THE SYSTEM LOAD SHOULD BEGIN TO FALL BELOW THE LOAD CAPACITY OF THE BOILERS, THE BAS SHALL SEQUENCE OFF THE BOILERS SO THAT NO MORE BOILERS ARE IN OPERATION THAN IS REQUIRED TO MEET THE REDUCED LOAD. THE BAS SHALL ALTERNATE LEAD AND LAG BOILERS ON A WEEKLY BASIS.
3. THE BAS SHALL ENABLE AND DISABLE THE BOILER CONTROL PANEL, MONITOR HEATING WATER SUPPLY AND RETURN TEMPERATURE, AND MONITOR BOILER STATUS.
4. THE HOT WATER PUMP (P-1 LEAD, P-2 STAND-BY) SHALL BE ENABLED UPON SYSTEM DEMANDS. THE PUMP SHALL RUN AT 100% SPEED CONTINUOUSLY ON A CALL FOR HEAT. THE BAS SHALL ALTERNATE LEAD AND STAND-BY PUMPS ON A WEEKLY BASIS.
 - A. ON A RISE IN SYSTEM DIFFERENTIAL PRESSURE, THE BYPASS VALVE SHALL MODULATE OPEN WHILE THE PUMP REMAINS AT 100% SPEED. ON A FALL IN SYSTEM DIFFERENTIAL PRESSURE, THE BYPASS VALVE SHALL MODULATE CLOSED.
5. THE BOILER POWER SUPPLY SHALL BE HARD WIRED TO AN EMERGENCY STOP BUTTON, WHEN THE BUTTON IS ENABLED, ALL BOILERS SHALL BE DISABLED.
6. UPON DETECTION OF CARBON MONOXIDE CONCENTRATION OVER THE ACCEPTABLE LIMIT (10 PPM), BAS SHALL DISABLE THE BOILERS. AUDIBLE ALARM SHALL BE GENERATED FROM ANNUNCIATOR PANELS LOCATED IN MECHANICAL ROOM AND AN ALARM SHALL BE GENERATED AT THE OWNER'S WORKSTATION.

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS		TREND	ALARM	SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV			
HW SUPPLY TEMP	X						X	X	X
B-1/B-2 ENABLE COMMAND				X					X
B-1/B-2 STATUS			X				X		X
B-1 ENTERING WATER TEMP.	X						X	X	X
B-1 LEAVING WATER TEMP.	X						X	X	X
B-2 ENTERING WATER TEMP.	X						X	X	X
B-2 LEAVING WATER TEMP.	X						X	X	X
P-1 ENABLE				X					X
P-1 STATUS			X				X	X	X
P-1 SPEED			X					X	X
P-2 ENABLE				X					X
P-2 STATUS				X			X	X	X
P-2 SPEED			X				X	X	X
CARBON MONOXIDE	X					X	X	X	X
SYSTEM DIFFERENTIAL PRESSURE	X						X		X
BYPASS VALVE POSITION	X					X	X	X	X

NOTE: THE GRAPHICS SHALL INCLUDE THE SETPOINT DISPLAY FOR EACH CONTROLLED OR MONITORED VARIABLE. ALL POINTS INCLUDED IN THE BOILER MANUFACTURER'S CONTROL PANEL SHALL BE ACCESSIBLE FROM THE OWNER'S GRAPHICAL WORKSTATION.

DINWIDDIE ELEMENTARY SCHOOL - HOT WATER SYSTEM POINTS LIST



DINWIDDIE ELEMENTARY SCHOOL - HOT WATER SYSTEM CONTROL DIAGRAM

NOT TO SCALE



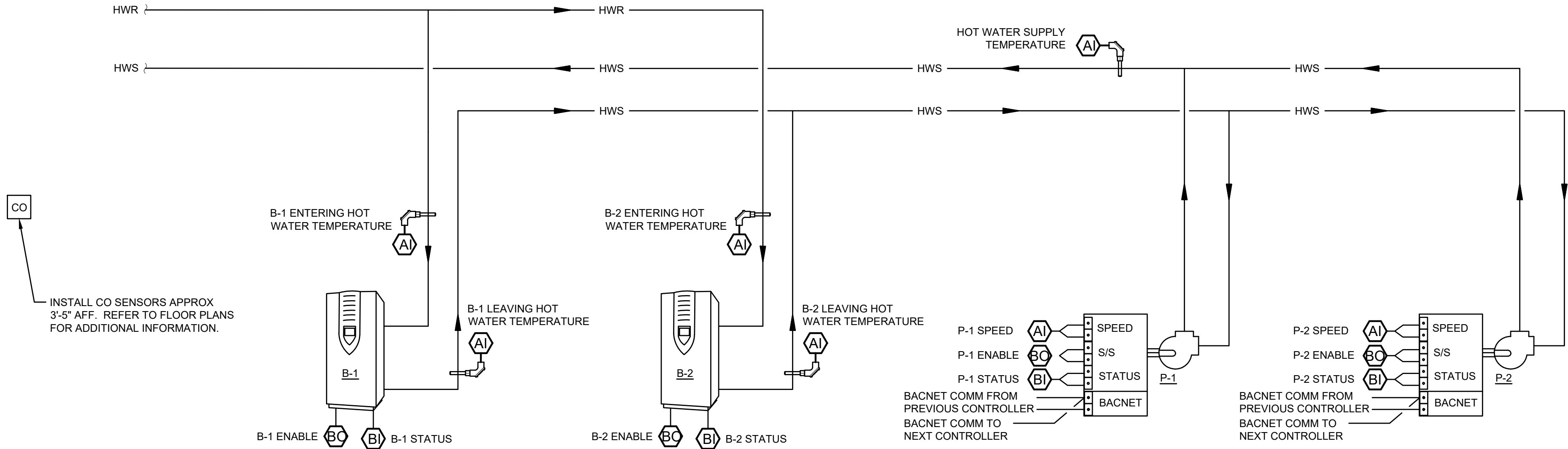
DINWIDDIE MIDDLE SCHOOL - HOT WATER SYSTEM SEQUENCE OF OPERATION

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	AI	AO	BI	BO	AV	BV			
HW SUPPLY TEMP	X						X	X	X
B-1/B-2 ENABLE COMMAND				X					X
B-1/B-2 STATUS			X				X		X
B-1 ENTERING WATER TEMP.	X						X	X	X
B-1 LEAVING WATER TEMP.	X						X	X	X
B-2 ENTERING WATER TEMP.	X						X	X	X
B-2 LEAVING WATER TEMP.	X						X	X	X
P-1 ENABLE				X					X
P-1 STATUS			X				X	X	X
P-1 SPEED			X					X	X
P-2 ENABLE				X					X
P-2 STATUS				X			X	X	X
P-2 SPEED			X				X	X	X
CARBON MONOXIDE	X				X		X	X	X

NOTE: THE GRAPHICS SHALL INCLUDE THE SETPOINT DISPLAY FOR EACH CONTROLLED OR MONITORED VARIABLE. ALL POINTS INCLUDED IN THE BOILER MANUFACTURER'S CONTROL PANEL SHALL BE ACCESSIBLE FROM THE OWNER'S GRAPHICAL WORKSTATION.

DINWIDDIE MIDDLE SCHOOL - HOT WATER SYSTEM POINTS LIST

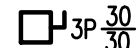


DINWIDDIE MIDDLE SCHOOL - HOT WATER SYSTEM CONTROL DIAGRAM

NOT TO SCALE

ELECTRICAL LEGEND

POWER:

- | | |
|---|--|
|  | EQUIPMENT CONNECTION TO EQUIPMENT. |
|  | JUNCTION BOX, SIZE AS REQUIRED. |
|  | PANELBOARD, 480Y/277 VOLT. |
|  | PANELBOARD, 208Y/120 VOLT. |
|  | EXISTING BOILER EMERGENCY SHUT DOWN SWITCH. |
|  | EXISTING MOTOR STARTER. |
|  | CONDUIT RUN EXPOSED IN MECHANICAL ROOM. |
|  | HOMERUNS TO PANEL. PANEL & CIRCUIT DESIGNATIONS AS INDICATED. |
|  | BRANCH CIRCUIT OR FEEDER WIRING IN CONDUIT. NO TICK MARKS INDICATES 2 #12 CONDUCTORS & 1 #12 GND IN 1/2" CONDUIT U.O.N. TICK MARKS, WHEN SHOWN, INDICATE NUMBER OF CONDUCTORS IF OTHER THAN THREE: () INDICATES GROUNDING CONDUCTOR. SEE NOTES ON DRAWINGS FOR CONDUCTOR SIZES LARGER THAN #12. |
|  | DISCONNECT SWITCH, 600V, U.O.N.: 3P = NUMBER OF POLES, 30 = SWITCH RATING, 30 = FUSE RATING. |
|  | EMERGENCY BOILER STOP STATION. PROVIDE MOMENTARY START/STOP RED MUSHROOM HEAD CONTROL STATION. ENGRAVE "EMERGENCY SHUT-OFF" ON COVERPLATE. INSTALL +48" A.F.F. |
|  | NEW WORK NOTE INDICATOR. |
|  | DEMOLITION NOTE INDICATOR. |
|  | VARIABLE FREQUENCY DRIVE. |

ABBREVIATIONS

A	AMP
AC	ALTERNATING CURRENT
A.F.F.	ABOVE FINISHED FLOOR
B	BOILER
CIRC. OR CKT.	CIRCUIT
GND	GROUND
KAIC	KILO-AMPERE INTERRUPTING CAPACITY
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MTD.	MOUNTED
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NO.	NUMBER
P	POLE OR PUMP
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLT
VFD	VARIABLE FREQUENCY DEVICE
W	WIRE
Y	WYE

GENERAL DEMOLITION NOTES:

3. PERFORM ALL REQUIRED DEMOLITION TO COMPLY WITH THE SCOPE AND INTENT OF THE PROJECT. REMOVE ALL WIRING ASSOCIATED WITH THE REQUIRED DEMOLITION BACK TO POINT OF ORIGIN OR LAST SERVICE TO REMAIN
2. VERIFY ALL CIRCUITS SAVED DURING DEMOLITION FOR REUSE AS TO WIRE SIZE AND POINT OF ORIGIN.
3. EXERCISE CARE IN REMOVING MATERIAL AND EQUIPMENT DURING DEMOLITION. REPAIR ALL DAMAGE TO EXISTING SURFACES OR EXISTING EQUIPMENT TO REMAIN TO THE SATISFACTION OF THE ARCHITECT AND OWNER AT NO ADDITIONAL COST TO THE OWNER.
4. PROVIDE THE OWNER WITH FIRST RIGHT OF REFUSAL FOR ALL ELECTRICAL EQUIPMENT BEING REMOVED AS A PART OF THIS CONTRACT AND AS REQUIRED FOR REINSTALLATION. ALL ELECTRICAL EQUIPMENT NOT TURNED OVER TO THE OWNER SHALL BECOME THE PROPERTY OF THE ELECTRICAL CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
5. PROVIDE ALL ELECTRICAL DEMOLITION WORK NECESSARY TO INSTALL NEW WORK. REROUTE AND RECONNECT ALL CIRCUIT THAT IS REQUIRED TO REMAIN IN USE BUT INTERFERES WITH NEW CONSTRUCTION.
6. CONDUITS MAY BE ABANDONED IN WALLS AND BELOW FIRST FLOOR SLABS ONLY. REMOVE ALL WIRING FROM ABANDONED CONDUITS. DISCONNECT CONDUCTORS FROM ALL POWER SOURCES AND PROVIDE BLANK COVER PLATES ON ALL ABANDONED OUTLET BOXES.
7. WHERE THE TERM "BRANCH CIRCUITRY" IS USED ON THESE DRAWINGS, IT IS TO BE CONSTRUED TO MEAN CONDUIT AND CONDUCTORS.
8. PROVIDE NEW TYPED PANEL INDEX CARDS IN EXISTING PANELBOARDS WHERE CIRCUITS HAVE BEEN MODIFIED BY THIS PROJECT. PROVIDE COPIES OF MODIFIED PANEL INDEX CARDS ON AS BUILT DRAWINGS AND INCLUDED IN OPERATION AND MAINTENANCE MANUAL. PROVIDE CIRCUIT BREAKER FILLER PLATES FOR ALL CIRCUIT BREAKERS REMOVED FROM EXISTING PANELBOARDS DURING DEMOLITION WORK.
9. EXISTING CONDITIONS ILLUSTRATED HAVE BEEN DETERMINED FROM ORIGINAL CONSTRUCTION DOCUMENTS AND LIMITED, NON-INVASIVE FIELD INVESTIGATION. CONTRACTOR SHALL INVESTIGATE FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK, COORDINATE AND MAKE ADJUSTMENTS AS NECESSARY.

GENERAL NEW WORK NOTES:

1. WHERE INDIVIDUAL 120V HOMERUN CIRCUITS ARE SHOWN ON THE DRAWINGS THEY MAY BE COMBINED AS FOLLOWS:
 - NO MORE THAN THREE (3) PHASE CONDUCTOR PLUS THREE NEUTRALS AND ONE (1) GROUND PER CONDUIT, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
 - NO TWO OF THE SAME PHASE CONDUCTORS PER CONDUIT.
 - PROVIDE 120V CIRCUIT WITH INDIVIDUAL NEUTRALS PER CIRCUIT. NEUTRALS MAY NOT BE SHARED BETWEEN PHASES.
2. PAINT ALL EXPOSED CONDUIT TO MATCH THE SURFACE TO WHICH ATTACHED IF THE SURFACE IS PAINTED.
3. COORDINATE WITH MECHANICAL AND DRAWINGS FOR EXACT LOCATION OF EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS INCLUDING EXACT POINT OF ELECTRICAL CONNECTION. MAKE ADJUSTMENTS TO CONDUIT ROUTING, PLACEMENT OF DISCONNECTS AND STARTERS AS REQUIRED.
4. WHERE THE TERM "BRANCH CIRCUITRY" IS USED ON THESE DRAWINGS, IT IS TO BE CONSTRUED TO MEAN CONDUIT AND CONDUCTORS.
5. CIRCUIT BREAKERS REQUIRED TO SERVE TEMPERATURE CONTROL LOADS SHALL BE FURNISHED UNDER DIVISION 23 AND INSTALLED IN THE PANELBOARDS UNDER DIVISION 26.
6. ALL CIRCUIT BREAKERS SERVING PERMANENTLY CONNECTED LOADS OVER 300 VOLT-AMPERES SHALL BE CAPABLE OF BEING LOCKED IN THE (OFF) POSITION.
7. THE CONTRACTOR SHALL ONLY USE DESIGNATED AREAS WITHIN THE HVAC EQUIPMENT FOR PENETRATIONS OF ELECTRICAL CONDUITS AND CONTROL CONDUITS. THESE PENETRATIONS MUST BE WEATERTIGHT. IF A CONTRACTOR PENETRATES ANY AREAS IN THE EQUIPMENT THAT IS NOT DESIGNATED FOR PENETRATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS TO THE EQUIPMENT, TO INSURE IT IS WEATERTIGHT. IF EQUIPMENT CANNOT BE MADE WEATERTIGHT, THE CONTRACTOR SHALL BE REQUIRED TO REPLACE THE EQUIPMENT AT HIS/HER OWN EXPENSE.
8. PROVIDE A TYPED CIRCUIT INDEX CARD FOR EACH PANELBOARD UPON COMPLETION OF INSTALLATION WORK. INDICATE LOAD SERVED AND ROOM NUMBER(S). USE FINAL ROOM NUMBERS OBTAINED FROM THE OWNER.

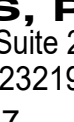
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PROJECT NUMBER: 24-096

 M/T

MARK	DATE	BY	DESCRIPTION

DATE	11-22-24
PROJECT	21215-02
DESIGNED	DAW
DRAWN	RAB
CHECKED	KC



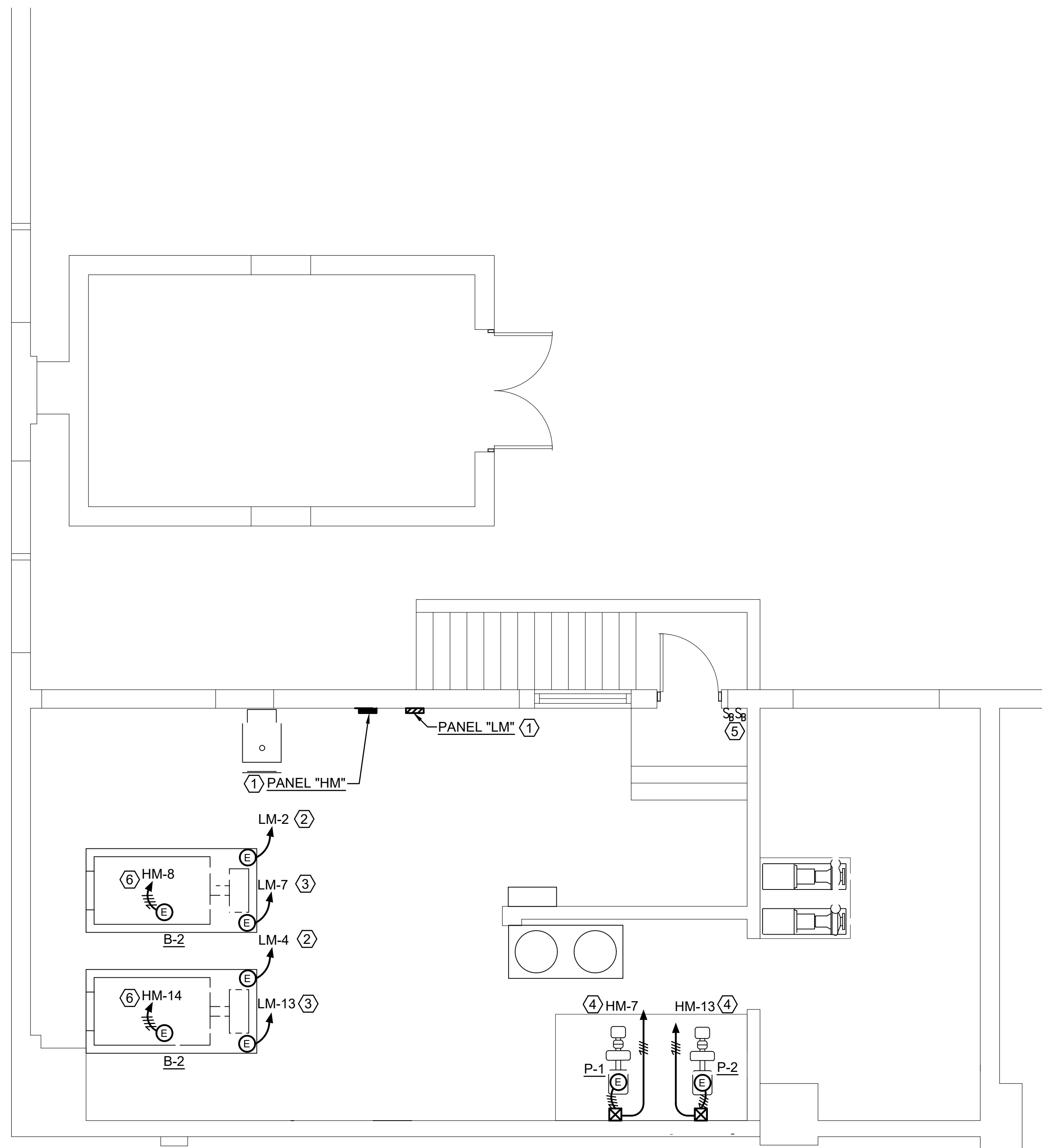
RRMM
ARCHITECTS, PC
15 South 15th Street, Suite 201
Richmond, Virginia 23219
(804)277-8987



PROJECT
DINWIDDIE COUNTY PUBLIC SCHOOLS
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES
DRAWING
ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES

SHEET

E-001



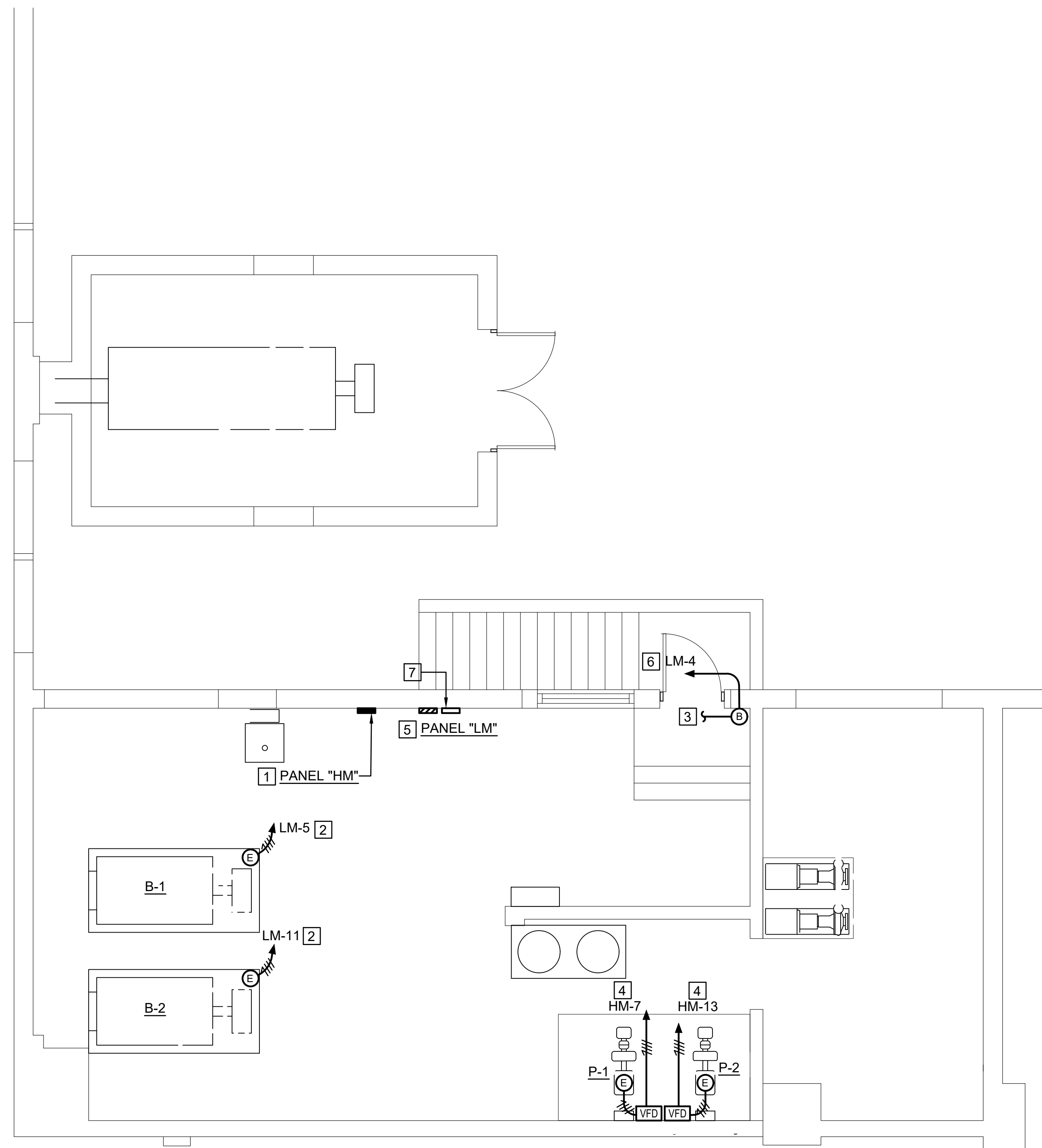
MIDWAY ELEMENTARY SCHOOL - ELECTRICAL DEMOLITION PLAN

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

DEMOLITION NOTES:

(THIS DRAWING ONLY)

- ① EXISTING TO REMAIN.
- ② DISCONNECT ELECTRICAL CONNECTION TO BOILER EMERGENCY SHUT DOWN SYSTEM. REMOVE HOMERUN BRANCH CIRCUITRY BACK TO ITS ORIGIN.
- ③ DISCONNECT ELECTRICAL CONNECTION TO BOILER. REMOVE HOMERUN BRANCH CIRCUITRY BACK TO ITS ORIGIN.
- ④ DISCONNECT ELECTRICAL CONNECTION TO PUMPS P1 AND P-2. REMOVE BRANCH CIRCUITRY BETWEEN PUMP AND MOTOR STARTER. REMOVE MOTOR STARTER. SAVE HOMERUN BRANCH CIRCUITRY AND EXISTING 20A-3P CIRCUIT BREAKER IN PANEL "HM" FOR REUSE.
- ⑤ REMOVE EMERGENCY SHUTDOWN SWITCHES AND BRANCH CIRCUITRY BACK TO THE BOILERS.
- ⑥ DISCONNECT ELECTRICAL CONNECTION TO BOILER RECIRCULATION PUMP. REMOVE HOMERUN BRANCH CIRCUITRY BACK TO ITS ORIGIN.



MIDWAY ELEMENTARY SCHOOL - ELECTRICAL NEW WORK PLAN

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

NEW WORK NOTES:

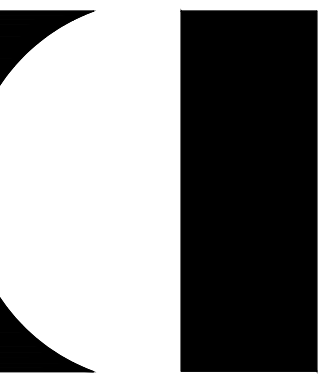
(THIS DRAWING ONLY)

- 1 PANEL "HM" IS A GE SERIES A PANELBOARD, 400A, 480Y/277V, 3 PHASE, 4 WIRE, 14KAIC.
- 2 PROVIDE ELECTRICAL CONNECTION TO NEW BOILER. PROVIDE 3 #12, AND 1 #12 GND IN 1/2" CONDUIT. TERMINATE AT NEW 20A-3P CIRCUIT BREAKERS VIA POWER CONTACTOR PROVIDED BY NEW WORK NOTE 7.
- 3 TO 120V OPERATING COIL IN POWER CONTACTOR PROVIDED BY NEW WORK NOTE 7.
- 4 REUSED AND EXTEND EXISTING HOMERUN BRANCH CIRCUITRY SAVED DURING DEMOTON WITH 3 #12, AND 1 #12 GND IN 1/2" CONDUIT TO NEW VFD (FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 26) AND FROM NEW VFD TO NEW MOTOR CONNECTION.
- 5 EXISTING PANEL "LM" IS GE, A-SERIES, 208Y/120V, 3 PHASE, 4 WIRE, WITH 100A MCB. MOVE EXISTING 20A-1P CIRCUIT BREAKER NUMBER 5 AND 11 TO SPACE 15 AND 29. EXTEND BRANCH CIRCUITS TO NEW BREAKERS LOCATIONS. PROVIDE 20A-3P, CIRCUIT BREAKERS IN 3P SPACES 5 AND 11 TO SERVE NEW BOILERS.
- 6 PROVIDE 2 #12 AND 1 #12 GND IN 1/2" CONDUIT. TERMINATE IN SPARE 20A-1P CIRCUIT BREAKER.
- 7 PROVIDE 30A, 6 POLE POWER CONTACTOR WITH 120V OPERATING COIL AND NEMA 1 ENCLOSURE.

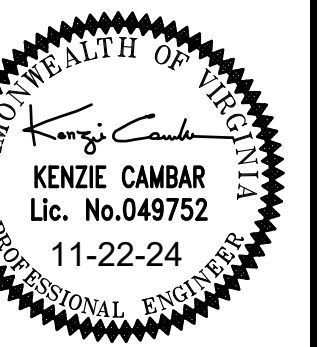
NOTE: EXISTING CONDITIONS ILLUSTRATED HAVE BEEN DETERMINED WITHOUT EXISTING ORIGINAL CONSTRUCTION DOCUMENTS AND LIMITED NON-INVASIVE FIELD INVESTIGATION. THE CONTRACTOR SHALL INVESTIGATE FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK, COORDINATE AND MAKE ADJUSTMENTS AS NECESSARY.

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PROJECT	21215-02
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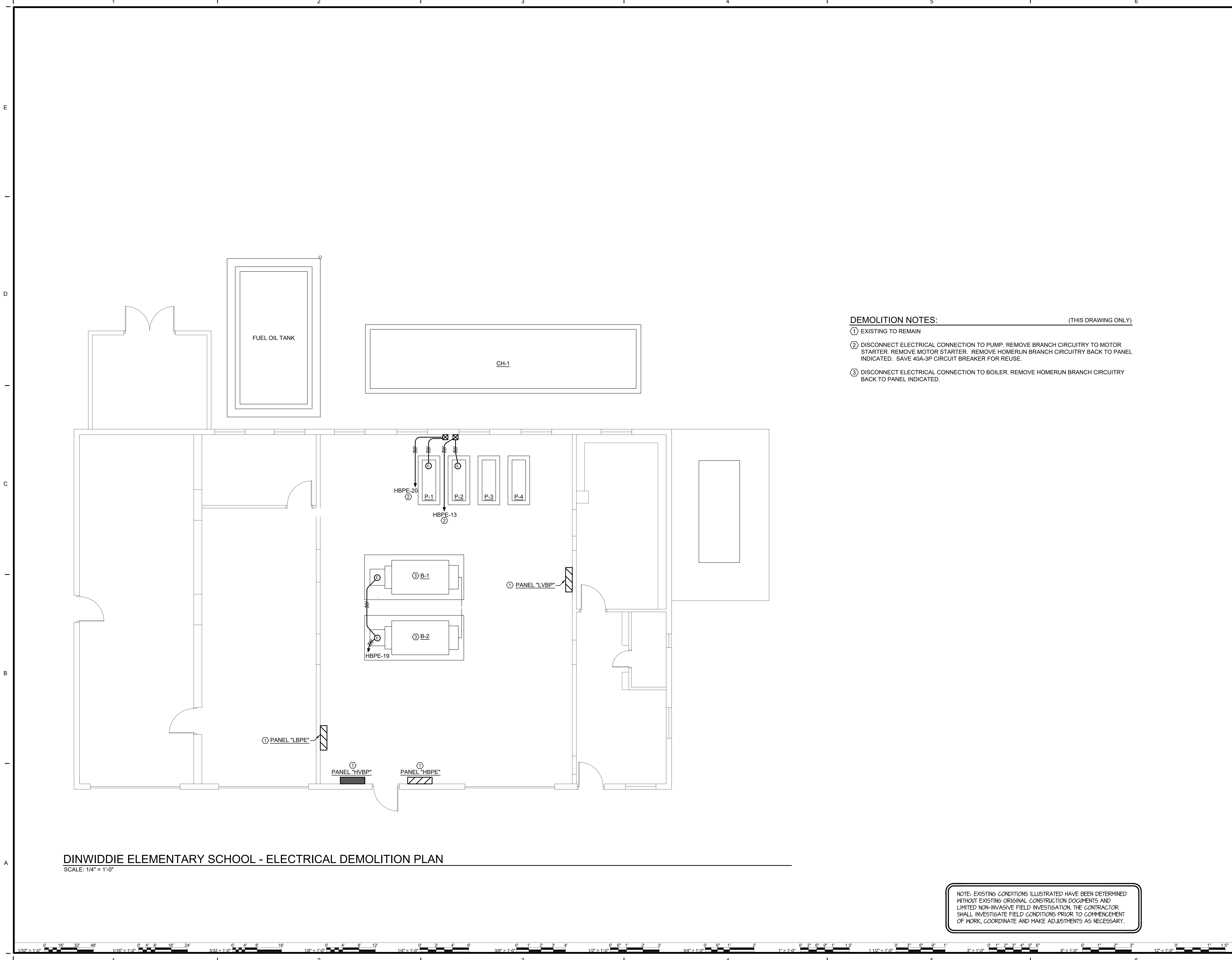


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MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES
MIDWAY ELEMENTARY SCHOOL - ELECTRICAL -
DEMOLITION AND NEW WORK PLAN

EET
E-101



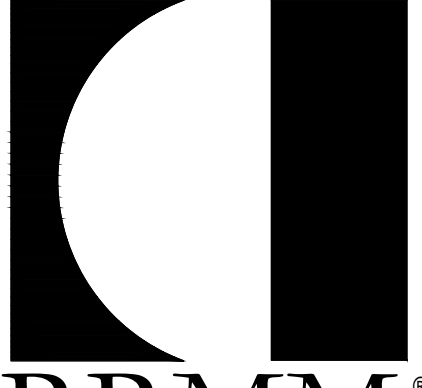
- DEMOLITION NOTES:** (THIS DRAWING ONLY)
- ① EXISTING TO REMAIN
 - ② DISCONNECT ELECTRICAL CONNECTION TO PUMP. REMOVE BRANCH CIRCUITRY TO MOTOR STARTER. REMOVE MOTOR STARTER. REMOVE HOMERUN BRANCH CIRCUITRY BACK TO PANEL INDICATED. SAVE 40A-3P CIRCUIT BREAKER FOR REUSE.
 - ③ DISCONNECT ELECTRICAL CONNECTION TO BOILER. REMOVE HOMERUN BRANCH CIRCUITRY BACK TO PANEL INDICATED.



THOMPSON
Consulting Engineers

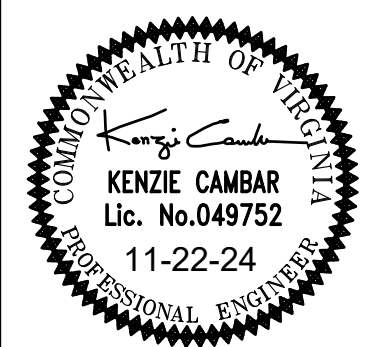
215 WESTERN PARKWAY
SUITE 200
DANVILLE, VA 24040
TELEPHONE: (703) 994-4433
PROJECT NUMBER: 24-06

DATE	PROJECT	DESIGNED	DRAWN	CHECKED	DATE	BY	DESCRIPTION
11-22-24	21215-02	DAW	RAB	KC			



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KENZIE CAMBAR
Lic. No. 049752
11-22-24
PROFESSIONAL ENGINEER

PROJECT
DINWIDDIE COUNTY PUBLIC SCHOOLS
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES

DRAWING
DINWIDDIE ELEMENTARY SCHOOL - ELECTRICAL
DEMOLITION PLAN

SHEET
E-102A

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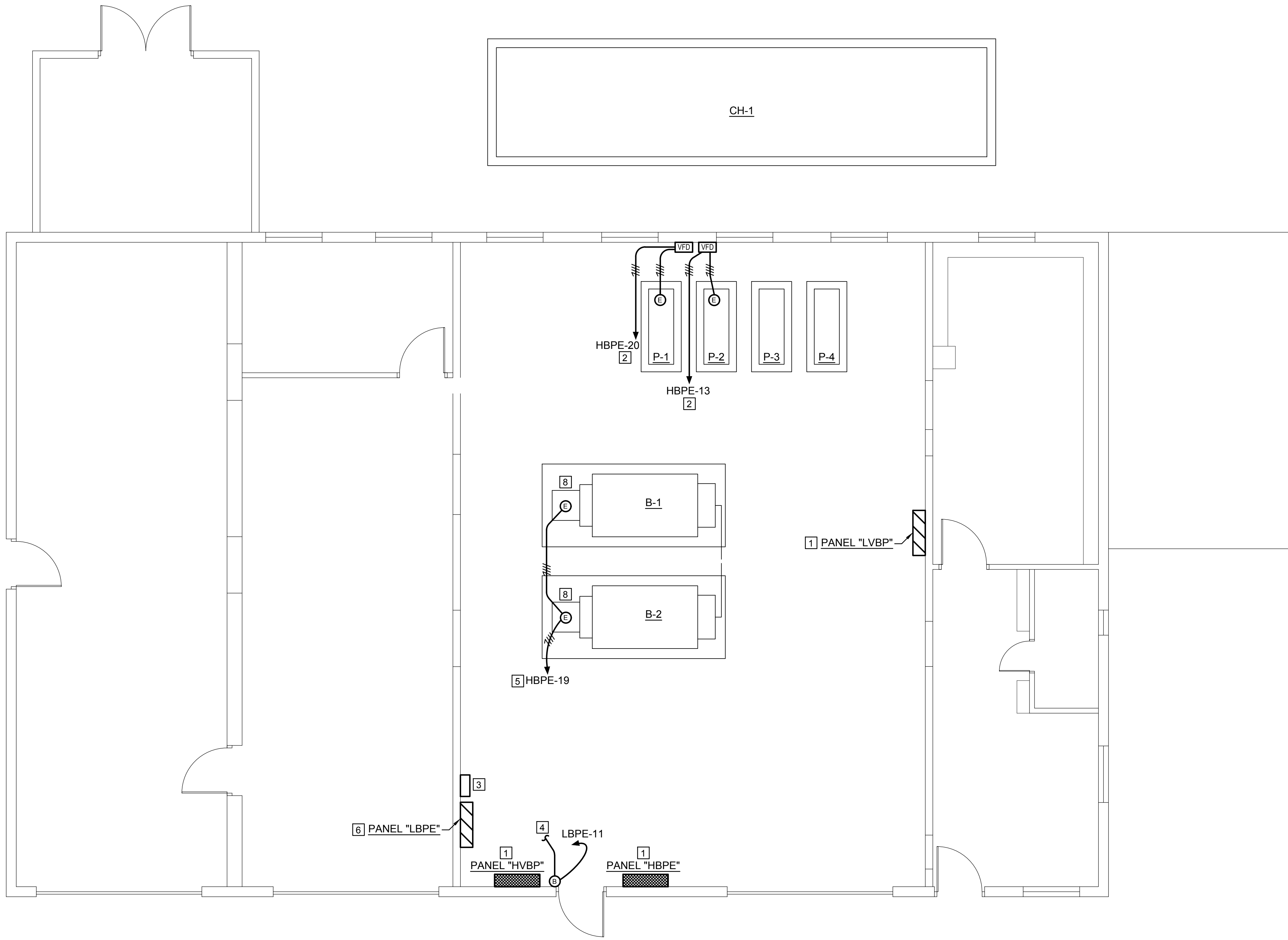
C

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DINWIDDIE ELEMENTARY SCHOOL - ELECTRICAL NEW WORK PLAN

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

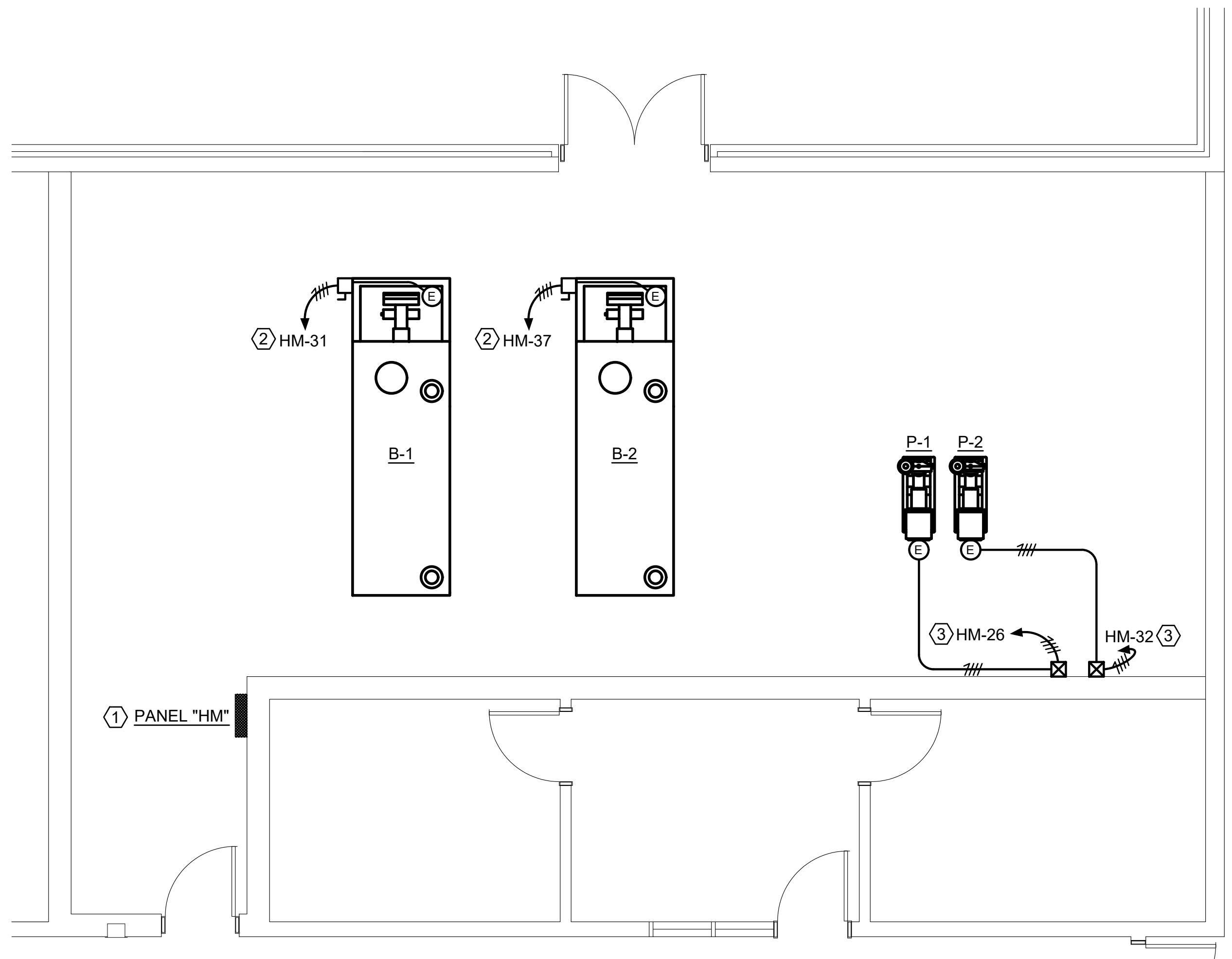
NEW WORK NOTES: (THIS DRAWING ONLY)

- [1] EXISTING TO REMAIN.
- [2] PROVIDE 3 #8, 1 #10 GND IN 3/4" CONDUIT HOMERUN BRANCH CIRCUITRY TO VFD (FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 26) AND FROM VFD TO MOTOR CONNECTION. TERMINATE HOMERUN ON EXISTING 40A-3P CIRCUIT BREAKER IN PANEL INDICATED.
- [3] PROVIDE 600V, 30A, 4-POLE POWER CONTACTOR WITH 120V OPERATING COIL AND NEMA 1 ENCLOSURE.
- [4] TO OPERATING COIL OF POWER CONTACTOR PROVIDED BY NEW WORK NOTE 3.
- [5] TERMINATE HOMERUN TO INDICATED PANEL, EXISTING 20A-3P CIRCUIT BREAKER VIA NEW POWER CONTACTOR PROVIDED BY NEW WORK NOTE 3.
- [6] EXISTING PANEL "LBPE" IS GE, A-SERIES 208Y/120V, 3Ø, 4W. PROVIDE ONE (1) 20A-1P CIRCUIT BREAKER IN SPACE 11.

NOTE: EXISTING CONDITIONS ILLUSTRATED HAVE BEEN DETERMINED WITHOUT EXISTING ORIGINAL CONSTRUCTION DOCUMENTS AND LIMITED NON-INVASIVE FIELD INVESTIGATION. THE CONTRACTOR SHALL INVESTIGATE FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK, COORDINATE AND MAKE ADJUSTMENTS AS NECESSARY.

MARK	DATE	BY	DESCRIPTION

DATE	PROJECT	DESIGNED	DRAWN	CHECKED
11-22-24	21215-02	DAW	RAB	KC



DINWIDDIE MIDDLE SCHOOL - ELECTRICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

DEMOLITION NOTES: (THIS DRAWING ONLY)

- ① EXISTING TO REMAIN.
- ② DISCONNECT ELECTRICAL CONNECTION TO BOILER. REMOVE DISCONNECT SWITCH. REMOVE HOMERUN BRANCH CIRCUITRY BACK TO PANEL "HM".
- ③ DISCONNECT ELECTRICAL CONNECTION TO PUMP. REMOVE BRANCH CIRCUITRY AND STARTER. SAVE HOMERUN BRANCH CIRCUITRY FOR REUSE.

NOTE: EXISTING CONDITIONS ILLUSTRATED HAVE BEEN DETERMINED WITHOUT EXISTING ORIGINAL CONSTRUCTION DOCUMENTS AND LIMITED NON-INVASIVE FIELD INVESTIGATION. THE CONTRACTOR SHALL INVESTIGATE FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK, COORDINATE AND MAKE ADJUSTMENTS AS NECESSARY.

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PROJECT NUMBER: 24-06

MARK	DATE	DESCRIPTION
BY		
REVISIONS		

DATE	11-22-24	PROJECT	21215-02	DESIGNED	DAW	DRAWN	RAB	CHECKED	KC
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Lic. No. 049752

11-22-24

PROFESSIONAL ENGINEER

DINWIDDIE COUNTY PUBLIC SCHOOLS

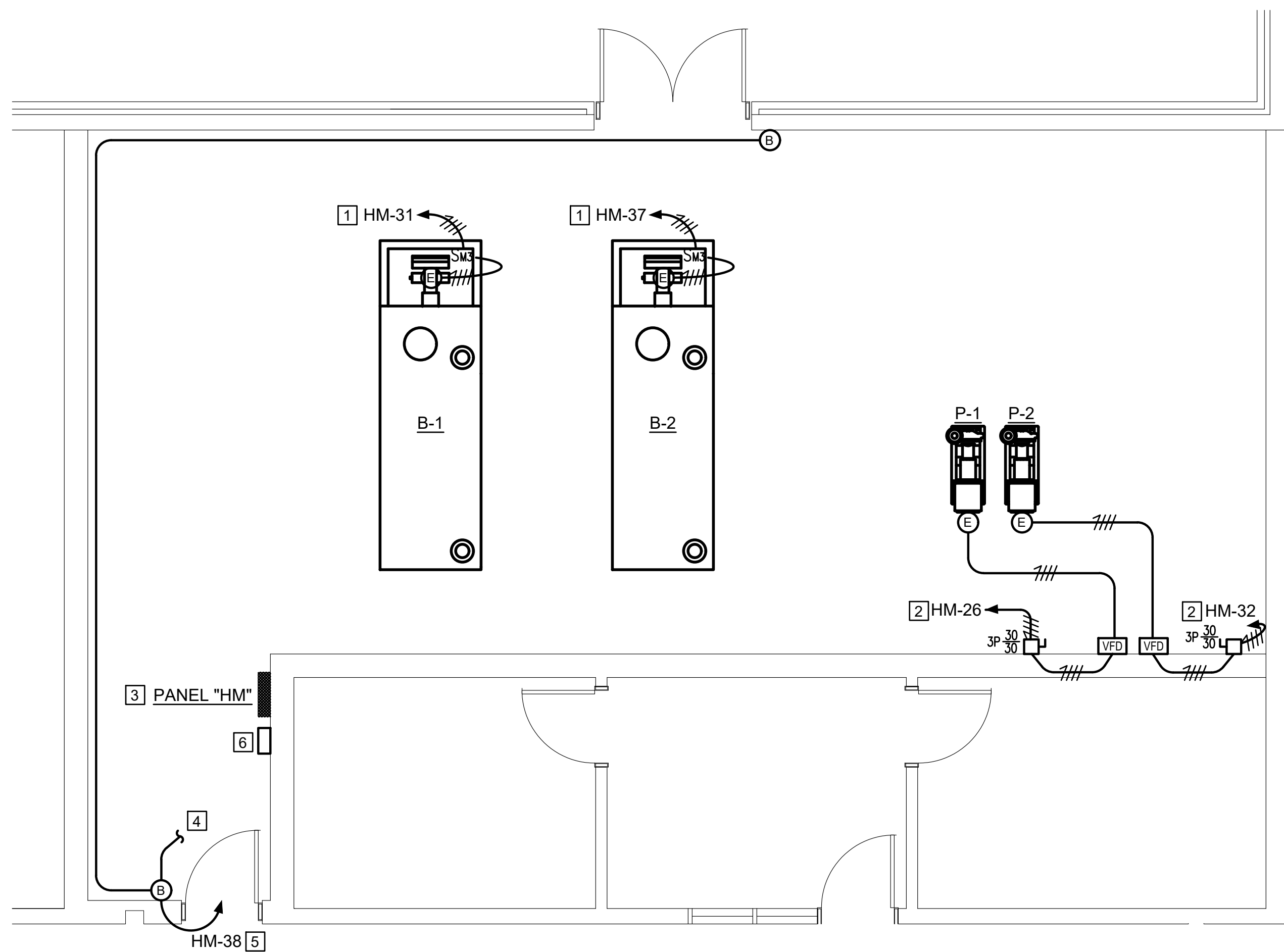
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES

DRAWING

DINWIDDIE MIDDLE SCHOOL - ELECTRICAL -
DEMOLITION PLAN

SHEET

E-103A



DINWIDDIE MIDDLE SCHOOL - ELECTRICAL NEW WORK PLAN
SCALE: 1/4" = 1'-0"

NEW WORK NOTES: (THIS DRAWING ONLY)

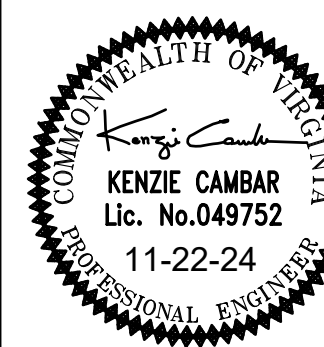
- 1] PROVIDE 3 #12, 1 #12 GND IN 1/2" CONDUIT. TERMINATE IN EXISTING 15A-3P CIRCUIT BREAKER IN EXISTING PANEL "HM" VIA NEW POWER CONTACTOR PROVIDED BY NEW WORK NOTE 6.
- 2] REUSE AND EXTEND EXISTING HOMERUN BRANCH CIRCUITRY SAVED DURING DEMOLITION TO NEW VFD AND PUMP FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 26 WITH 3 #8, 1 #10 GND IN 3/4" CONDUIT.
- 3] PROVIDE ONE (1) 20A-1P CIRCUIT BREAKER IN SPACE NUMBER 38. EXISTING PANEL "HM" IS GE, A-SERIES, 480Y/277V, 3 PHASE, 4 WIRE WITH 125A M.C.B.
- 4] TO 277V OPERATING COIL IN NEW POWER CONTACTOR PROVIDED BY NEW WORK NOTE 6.
- 5] TERMINATE HOMERUN IN NEW 20A-1P CIRCUIT BREAKER PROVIDED BY NEW WORK NOTE 3.
- 6] PROVIDE 600V, 30A, 6 POLE POWER CONTACTOR WITH 277 VOLT OPERATING COIL AND NEMA 1 ENCLOSURE.

NOTE: EXISTING CONDITIONS ILLUSTRATED HAVE BEEN DETERMINED WITHOUT EXISTING ORIGINAL CONSTRUCTION DOCUMENTS AND LIMITED NON-INVASIVE FIELD INVESTIGATION. THE CONTRACTOR SHALL INVESTIGATE FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK, COORDINATE AND MAKE ADJUSTMENTS AS NECESSARY.



DATE	BY	DESCRIPTION
11-22-24	DAW	DAW
21215-02	RAB	RAB
11-22-24	KC	KC

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DINWIDDIE COUNTY PUBLIC SCHOOLS
MIDWAY ELEMENTARY SCHOOL, DINWIDDIE ELEMENTARY SCHOOL
AND DINWIDDIE MIDDLE SCHOOL - CHILLER/BOILER UPGRADES
DINWIDDIE ELEMENTARY SCHOOL - ELECTRICAL -
NEW WORK PLANS

PROJECT
DRAWING
SHEET
E-103B