



THE ACADEMY PROJECT-BOILER ROOM PACKAGE

CONTRACT# 17-353541A

ISSUED FOR TENDER

SEPTEMBER 25, 2017

INFORMATION

I-001 COVER SHEET
H353541-I-001 REV A

MECHANICAL

M-001 HEATING PLANS
H353541-M-001 REV A

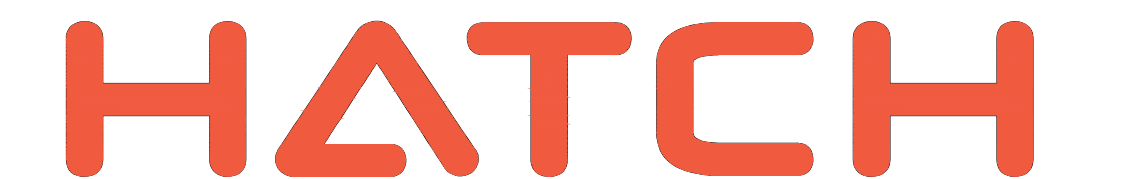
M-002 HEATING DETAILS, SCHEDULES & SCHEMATICS
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ELECTRICAL

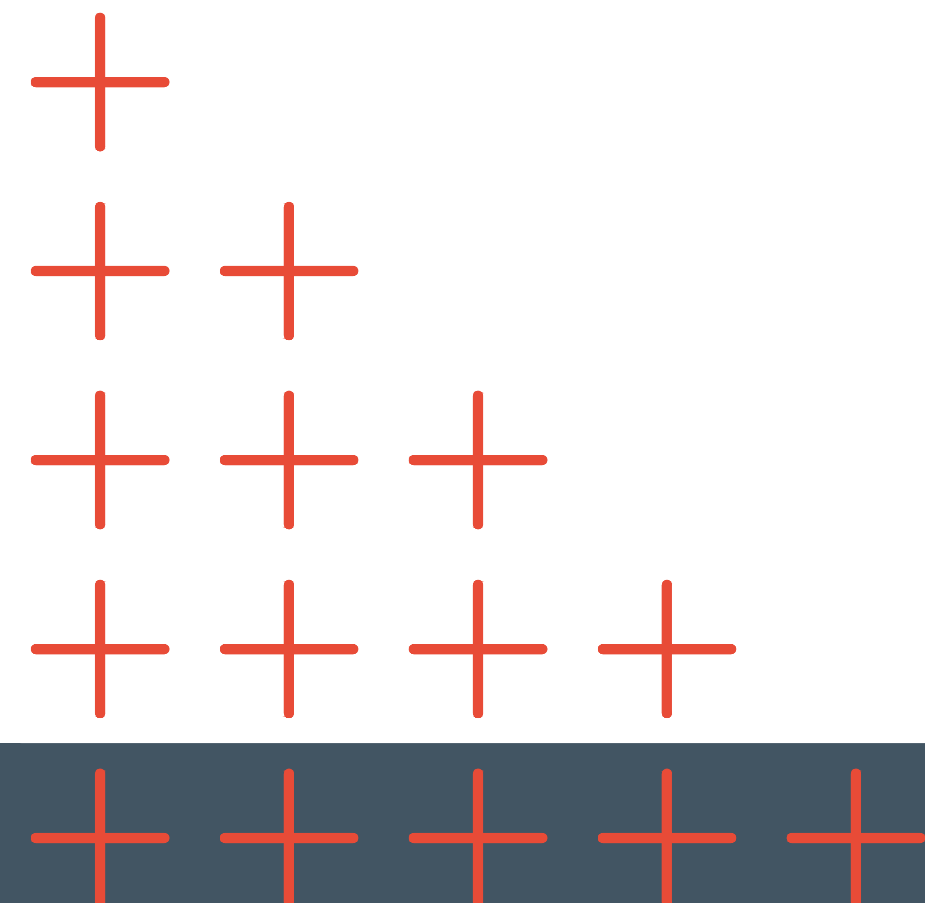
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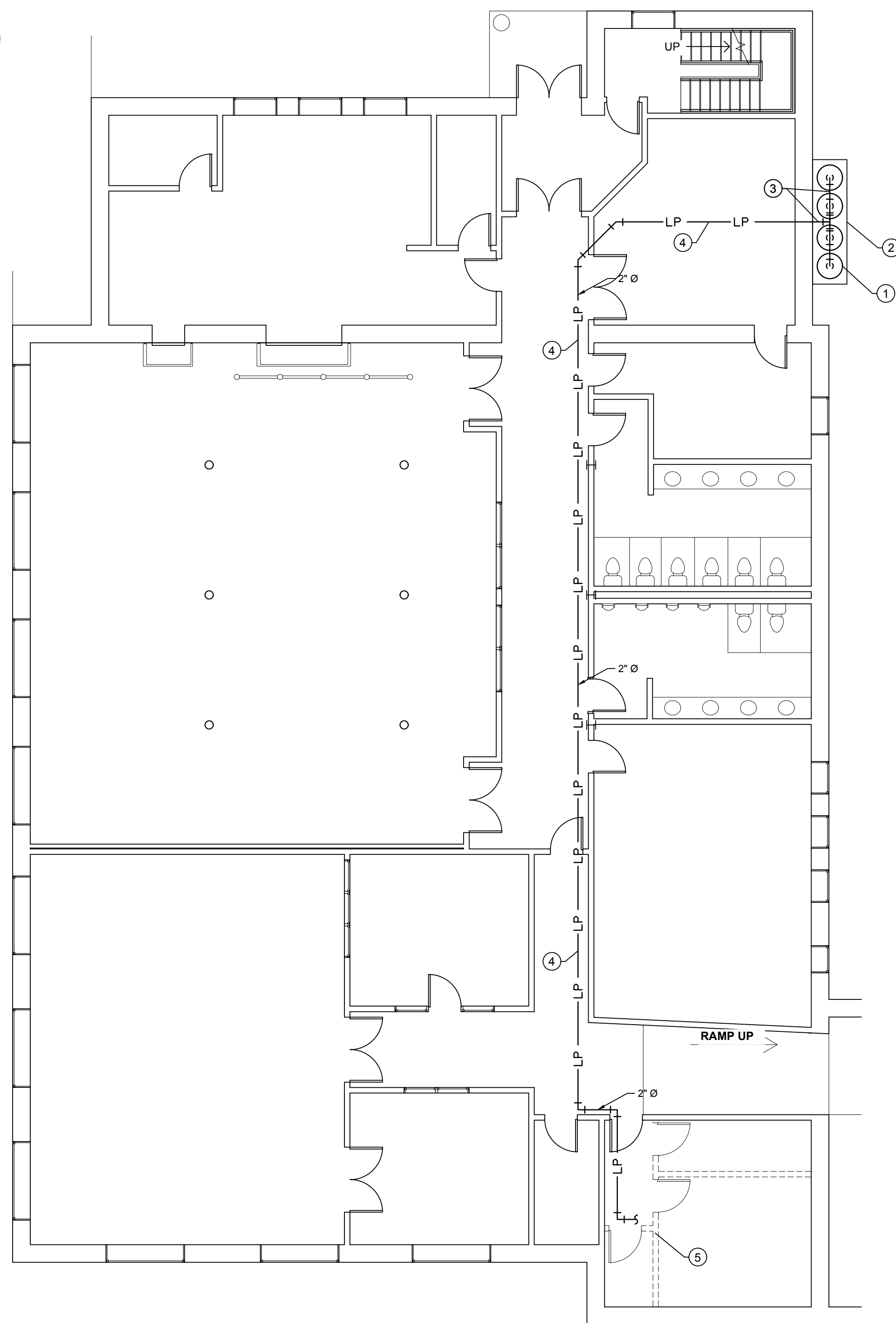
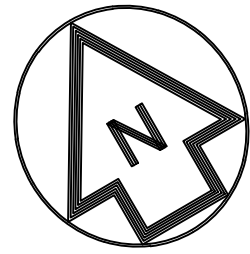
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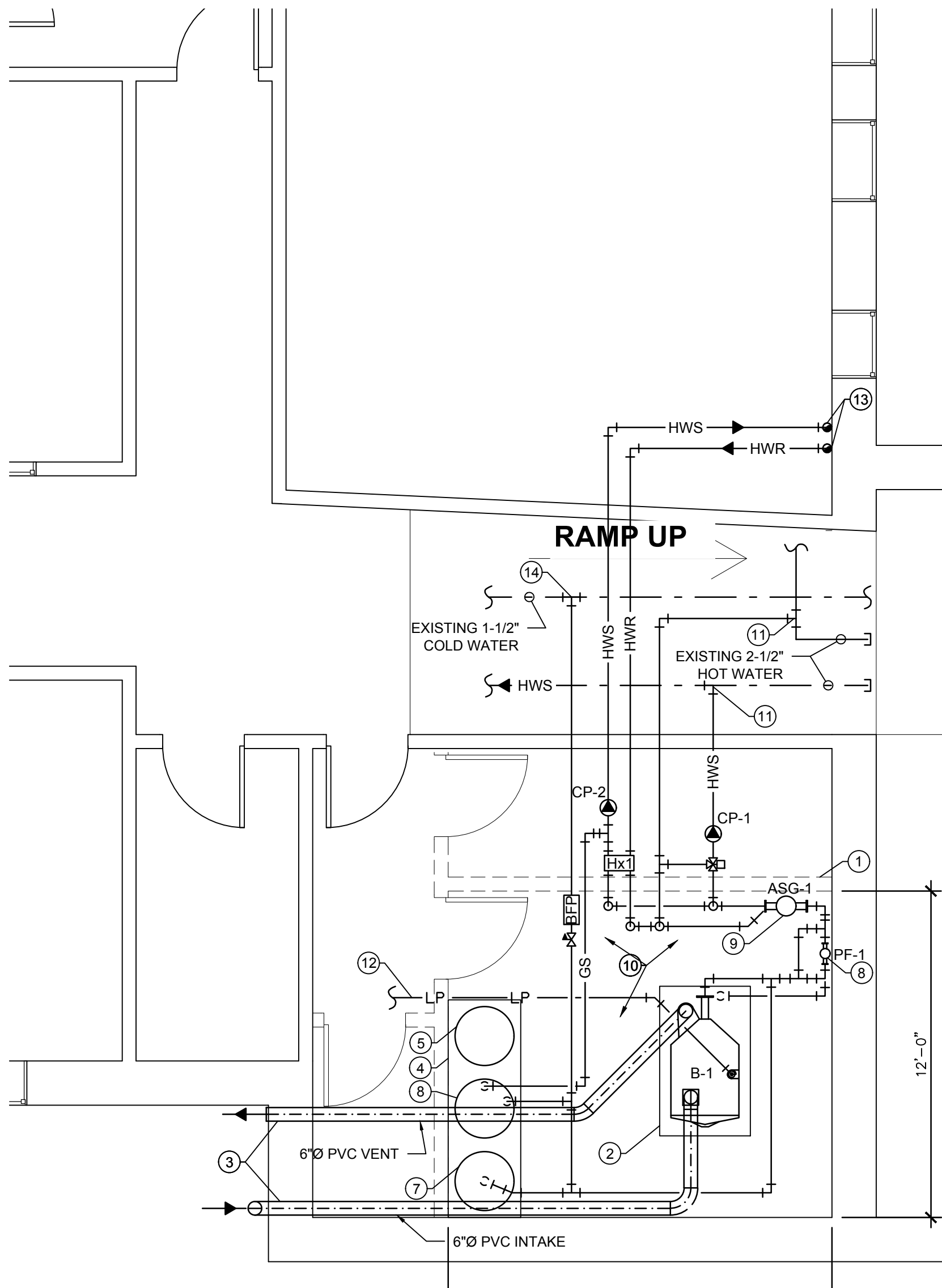


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- BASEMENT HEATING PLAN NOTES**
- (1) (4)-420 lb PROPANE CYLINDERS(SUPPLIED BY PROPANE VENDOR) INSTALLED BY HEATING CONTRACTOR IN ACCORDANCE WITH CSA.B149.2 AND THE SUPPLIERS REQUIREMENTS.
 - (2) SUPPLY & INSTALL 38" WIDE x 138" LONG x 6" THICK CONCRETE PAD ON 12" CRUSHED STONE(0.20) COMPACTED TO 95% PROCTOR. PAD SHALL BE COMPLETE WITH 6" x 6" x 1/8" WWM.
 - (3) SUPPLY & INSTALL NEW 2" PIPE HEADER ON EXTERIOR WALL WITH BALL VALVED CONNECTIONS FOR INDIVIDUAL TANKS. CORE DRILL EXTERIOR WALL (SEAL) AT CEILING SPACE OF BASEMENT LEVEL FOR INSTALL OF PIPING. SEAL OPENING UPON COMPLETION.
 - (4) REMOVE EXISTING CEILING IN AREA OF NEW PIPING TO PERMIT PIPE INSTALL. EXISTING LIGHTS ARE TO REMAIN. CEILING IS NOT REQUIRED TO BE REINSTATED.
 - (5) REFER TO BOILER ROOM ENLARGEMENT.



- BOILER ROOM ENLARGEMENT NOTES**
- (1) PHASE 2: CONSTRUCTION OF BOILER ROOM WALLS.
 - (2) HOUSEKEEPING PAD: 66" x 40" x 4" HIGH.
 - (3) CORE DRILL EXISTING CONCRETE WALL. INSTALL BOILER VENT KIT AND VENTS. SEAL PENETRATION.
 - (4) HOUSEKEEPING PAD: 96" x 32" x 4" HIGH.
 - (5) PHASE 2: DOMESTIC HOT WATER TANK.
 - (6) GLYCOL FILL MIX TANK GT-1.
 - (7) EXPANSION TANK EXP-1.
 - (8) POT FEEDER PF-1. SUSPENDED FROM STRUCTURE ABOVE.
 - (9) AIR/GRIT SEPARATOR ASG-1. SUSPENDED FROM STRUCTURE ABOVE.
 - (10) REFER TO HEATING SYSTEM SCHEMATIC FOR VALVING AND PIPING CONFIGURATION.
 - (11) CONNECT NEW TO EXISTING 2-1/2" MAIN IN CEILING OF CORRIDOR. CAP OR REMOVE SECTION OF PIPING RUN TO CONDO BUILDING.
 - (12) FOR CONTINUATION OF LP GAS REFER TO FLOOR PLAN.
 - (13) NEW HWS/HWR UP TO MAIN FLOOR. CONNECT TO EXISTING 2" HWS/HWR FEEDING AHU COILS.
 - (14) CONNECT NEW 3/4" COLD WATER TO EXISTING 1-1/2". INSTALL BACK FLOW PREVENTER & BOILER MAKE UP VALVE.

HEATING LEGEND

— HWS —	HEATING WATER SUPPLY
— HWR —	HEATING WATER RETURN
— LP —	PROPANE
⊘	BALL VALVE
⊘	EMERGENCY SHUT-OFF VALVE
⊘	BOILER MAKE-UP VALVE
⊘	IN-LINE STRAINER
⊘	THREE WAY VALVE
⊘	SAFETY RELIEF VALVE
⊘	AUTOMATIC AIR VENT
⊘	CHECK VALVE (SWING TYPE)
⊘	THERMO WELL
⊘	CIRCULATING PUMP
⊘	PRESSURE GAUGE
⊘	THERMOMETER
⊘	TEMPERATURE SENSOR (DIV 15900)
⊘	WALL MOUNTED TEMPERATURE SENSOR (DIV 15900)

NOTES



ISSUE AUTHORIZATION

REV	ISSUE FOR	AUTH. BY	DATE

REVISIONS

A	ISSUED FOR TENDER	MB	AS	17/09/25
REV	DESCRIPTION	CHK	APP	DATE



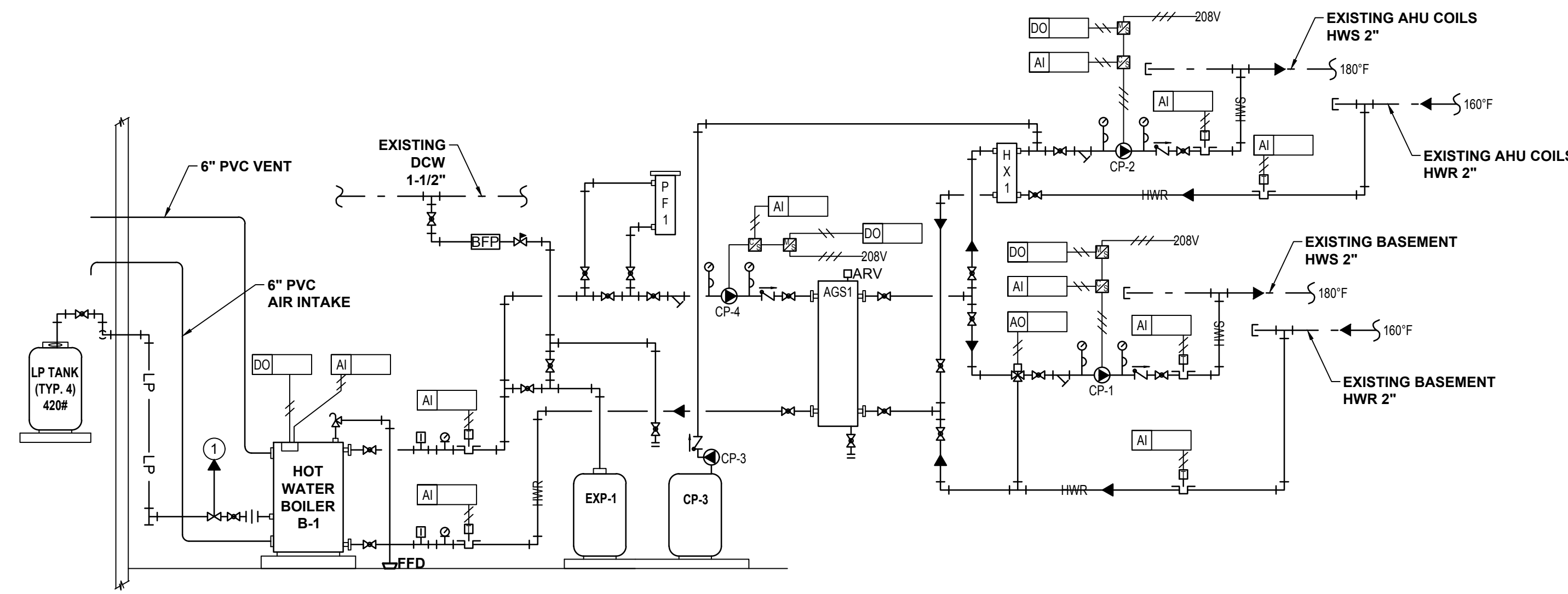
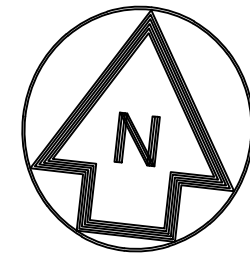
THE ACADEMY PROJECT
BOILER ROOM PACKAGE

MECHANICAL
HEATING AND BOILER
ROOM LAYOUTS

DESIGNED BY: M. BROWN	DRAWN BY: D. COCHRANE	CHECKED BY: A. SRIVASTAVA
DATE: 17/09/12	DATE: 17/09/12	DATE: 17/09/12
DRAWING SCALE: AS NOTED	HATCH PROJECT No: H353541	PROJECT MANAGER: M. BROWN
DWG No: H353541-M-001	DATE: 17/09/12	DATE: 17/09/12
	SHEET No: M-001	REV No: A

1 BASEMENT HEATING PLAN
SCALE: 1/8"=1'-0"

2 BOILER ROOM ENLARGEMENT
SCALE: 1/4"=1'-0"



- CONTROLS LEGEND**
- WIRING BY CONTROLS CONTRACTOR
 - WIRING BY ELECTRICAL CONTRACTOR
 - ☑ CURRENT SENSING RELAY
 - ☑ MOTOR STARTER BY ELECTRICAL CONTRACTOR
 - DO DIGITAL OUTPUT
 - DI DIGITAL INPUT
 - AO ANALOG OUTPUT
 - AI ANALOG INPUT

- CONTROLS NOTES:**
- 1 EMERGENCY SHUT OFF VALVE WIRED TO ON/OFF SWITCH AT DOOR BY ELECTRICAL CONTRACTOR.

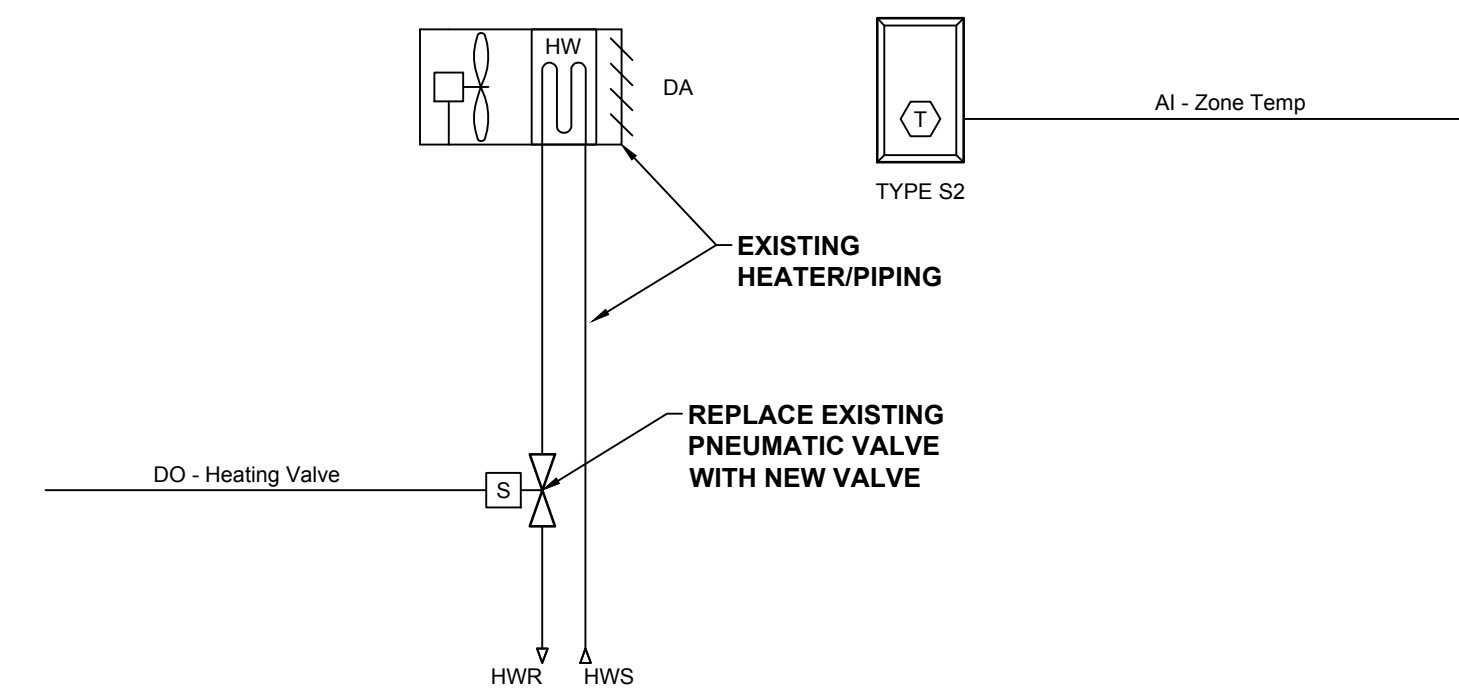
1 HEATING SYSTEM SCHEMATIC
M-002 N.T.S.

BOILER SCHEDULE									
TAG	MANUFACTURER/MODEL	TYPE	CAPACITY(MBH)	TEMP (F)		ELECTRICS			REMARKS
				MIN	MAX	VOLTS	PHASE	HERTZ	
B-1	LOCHINVAR / FRL1001	HOT WATER	1000	50	180	120	1	60	

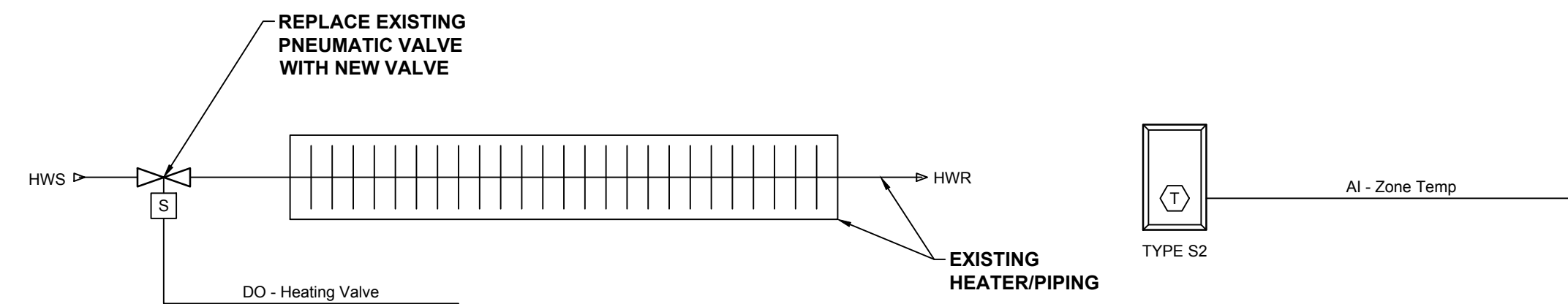
EXPANSION TANK SCHEDULE										
TAG	MANUFACTURER/MODEL	SIZE (INCHES)	VOLUME (GAL.)			TEMP (F)		PRESSURE (PSI)		REMARKS
			SYST.	TANK	EXP.	MIN	MAX	MIN	MAX	
EXP-1	TACO / CBX300	24"Ø x 55"	80	-	43	55	180	25	28	

CIRCULATING PUMP SCHEDULE										
TAG	MANUFACTURER/MODEL	APPLICATION	FLOW RATE (GPM)	HEAD (FT)	MOTOR (HP)	RPM	ELECTRICS			REMARKS
							VOLTS	PHASE	HERTZ	
CP-1	TACO / MODEL 1919	HEATING LOOP	54	30	1 HP	1750	208	3	60	
CP-2	TACO / MODEL 1935	HEATING COILS	34	25	1/2 HP	1750	208	3	60	
CP-3	AXIOM / MODEL SF100	GLYCOL FEEDER	-	-	-	-	120	1	60	PLUG-IN
CP-4	TACO / MODEL 1935	BOILER LOOP	88	15	3/4 HP	1750	208	3	60	

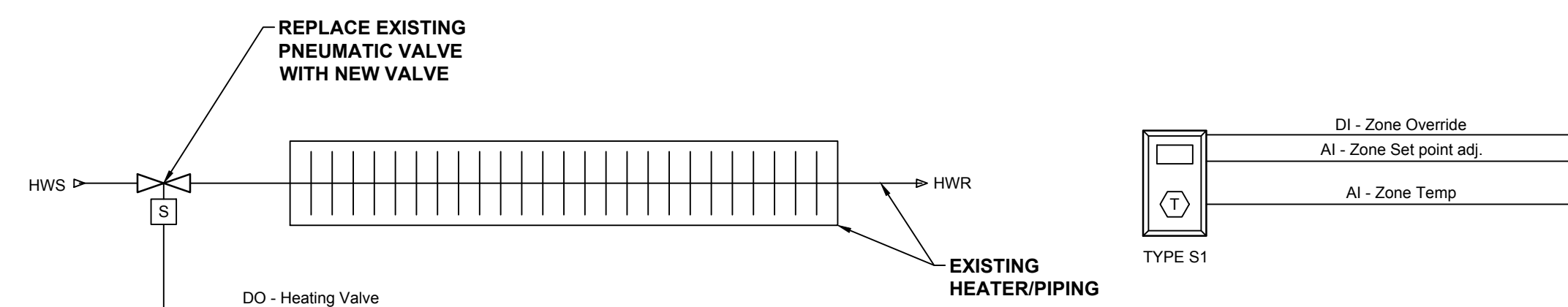
HEAT EXCHANGER SCHEDULE										
TAG	MANUFACTURER/MODEL	COLD SIDE		HOT SIDE		PRESSURE DROP		FLOW RATE		HEAT EXCHANGED
		TEMP. IN	TEMP. OUT	TEMP. IN	TEMP. OUT	COLD SIDE	HOT SIDE	COLD SIDE	HOT SIDE	
HX-1	ARMSTRONG/ABX095	160°F	180°F	190°F	170°F	4.6 PSI	4.1 PSI	35.4 GPM	35.0 GPM	339mbh



2 EXISTING UNIT HEATER-MECHANICAL ROOM
M-002 N.T.S.



3 EXISTING SPACE HEATING - TYPE 2 SENSOR
M-002 N.T.S.



4 EXISTING SPACE HEATING - TYPE 1 SENSOR
M-002 N.T.S.

NOTES



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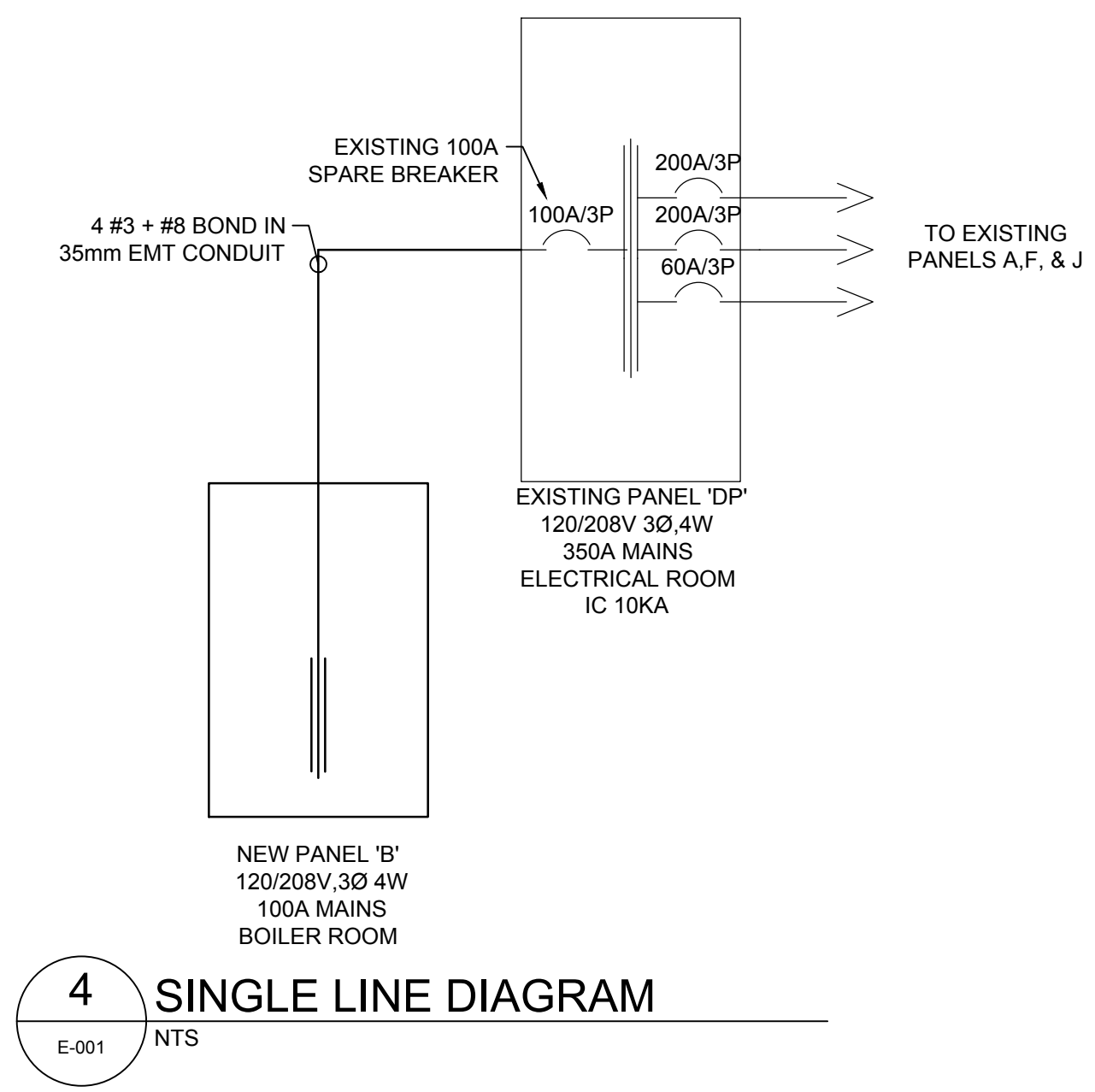
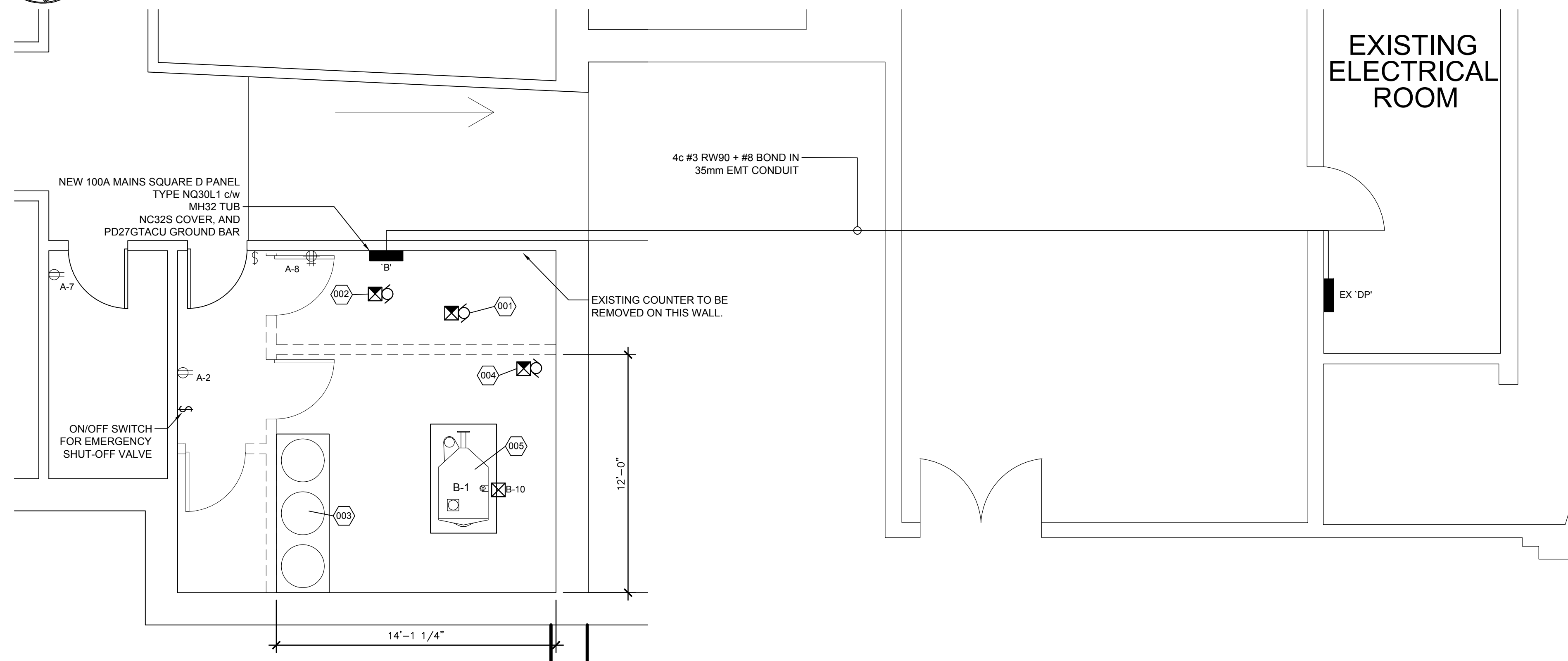
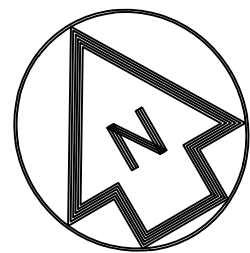
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THE ACADEMY PROJECT
BOILER ROOM PACKAGE

MECHANICAL
SCHEDULES AND
SCHEMATICS

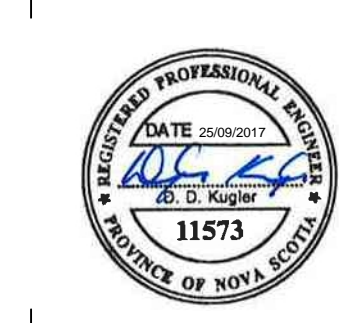
DESIGNED BY: M. BROWN	DRAWN BY: D. COCHRANE	CHECKED BY: A. SRIVASTAVA
DATE: 17/09/12	DATE: 17/09/12	DATE: 17/09/12
DRAWING SCALE: AS NOTED	HATCH PROJECT No: H353541	PROJECT MANAGER: M. BROWN
DWG No: H353541-M-002	DATE: 17/09/12	DATE: 17/09/12
	SHEET No: M-002	REV No: A



EXISTING ELECTRICAL ROOM

4 SINGLE LINE DIAGRAM
E-001 NTS

NOTES
1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE.



1 BASEMENT ELECTRICAL PLAN
E-001 SCALE: 1/4"=1'-0"

PANEL VOLTAGE: 120/208V		PANEL TYPE: SQUARE D		PROJECT		PANEL								
PANEL LOCATION: BOILER ROOM		PANEL MAINS: 100A				B								
PANEL SOURCE: PANEL 'DP'		PANEL I/C: 10 KA												
PANEL MOUNTING: SURFACE		PANEL FEEDER: SEE RISER												
CCT	DESCRIPTION	WATTAGE			BRKR	Ø	BRKR	WATTAGE			DESCRIPTION	CCT		
		A	B	C				A	B	C				
1	CP-1 (HEATING LOOP)	250			3	15	A	190			CP-4 (BOILER LOOP)	2		
3			250					B	15	3		190		4
5				250					C				190	
7	CP-2 (HEATING COILS)	125			3	15	A	500			B-1 (HOT WATER) EMERGENCY SHUT-OFF VALVE	8		
9			125					B	15	1		200		10
11				125					C	15		1		
13	SPARE				1	20	A	15	1		SPARE	14		
15	SPARE				1	20	B	15	1		SPARE	16		
17	SPARE				1	20	C	15	1		SPARE	18		
19	-						A				-	20		
21	-						B				-	22		
23	-						C				-	24		
25	-						A				-	26		
27	-						B				-	28		
29	-						C				-	30		
PHASE LOADS		375	375	375						690	390	190		
TOTAL PHASE LOADS		1065							765	565				
TOTAL LOAD		2395												
TOTAL AMPERAGE		7 A												

2 PANEL SCHEDULE
E-001 NTS

MECHANICAL SCHEDULE

ITEM	DESCRIPTION	LOAD	VOLTS	Ø	BRKR	FEEDER	CONNECTION	PANEL/CIRCUIT	NOTES
001	CP-1	1 HP	208	3	15A-3P	3C#12 + #12 BOND IN 16MM EMT	MAG STARTER	B-1,3,5	1,2
002	CP-2	1/2 HP	208	3	15A-3P	3C#12 + #12 BOND IN 16MM EMT	MAG STARTER	B-7,9,11	1,2
003	CP-3	0.7 A	120	1	15A-1P	-	PLUG-IN	A-2 (EXISTING)	4
004	CP-4	3/4 HP	208	3	15A-3P	3C#12 + #12 BOND IN 16MM EMT	MAG STARTER	B-2,4,6	1,2
005	B-1	500W	120	1	15A-1P	2C#12 + #12 BOND IN 16MM EMT	DIRECT	B-8	3

NOTES:
1. MAGNETIC STARTER SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR. RELAY BY CONTROLS CONTRACTOR
2. WIRE RELAY BACK TO BMS CONTROL PANEL BY CONTROLS CONTRACTOR
3. DIRECT CONNECTION TO EQUIPMENT. INSTALL CONDUIT IN LOCATION FREE FROM MECHANICAL DAMAGE.
4. PROVIDE TEMPORARY EXTENSION CORD FOR EQUIPMENT PLUG UNTIL BOILER ROOM WALLS ARE CONSTRUCTED WITH PERMANENT POWER RECEPTACLES.(PHASE 2)

3 MECHANICAL SCHEDULE
E-001 NTS

- § 15A, 120V SINGLE POLE ON/OFF SWITCH FOR EMERGENCY SHUT-OFF VALVE.
- ⊗ 208V 3Ø, MOTOR c/w MAGNETIC STARTER AND CONTROL RELAY, SIZED AS REQUIRED. CONTROL RELAY BY CONTROLS CONTRACTOR TIED INTO BUILDING BMS.
- xxx NEW ELECTRICAL POWER PANEL
- § EXISTING 15A, 120V SINGLE POLE TOGGLE SWITCH.
- EX 'xxx' EXISTING ELECTRICAL POWER PANEL
- ⊕ EXISTING 120V, 15A DUPLEX RECEPTACLE, MTD. 6" ABOVE FINISHED COUNTER. TO REMAIN UNLESS NOTED OTHERWISE.
- ⊕ EXISTING 120V, 15A RECEPTACLE TO REMAIN UNLESS NOTED OTHERWISE
- ⊕ MECHANICAL EQUIPMENT TAG. SEE MECHANICAL SCHEDULE FOR DETAILS
- ⊗ EMERGENCY PROPANE SHUT-OFF VALVE. EXACT LOCATION TO BE COORDINATED WITH MECHANICAL.

5 ELECTRICAL LEGEND
E-001 NTS

ISSUE AUTHORIZATION

REV	ISSUE FOR	AUTH. BY	DATE

REVISIONS

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A	ISSUED FOR TENDER	SD	SD	17/09/25
REV				



THE ACADEMY PROJECT
BOILER ROOM PACKAGE

ELECTRICAL
BOILER ROOM LAYOUTS,
SINGLE LINE DIAGRAM,
AND SCHEDULES

DESIGNED BY: D. KUGLER DATE: 17/09/22 DRAWING SCALE: AS NOTED DWG No:	DRAWN BY: D. KUGLER DATE: 17/09/22 HATCH PROJECT No: H353541	CHECKED BY: S. DOUCET DATE: 17/09/22 PROJECT MANAGER: M. BROWN DATE: 17/09/22 SHEET No: E-001 REV No: A
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