

Site Info – Madison House

70 Feris Avenue
White Plains, NY

Site Contact

Sean Pringle
Project Engineer
Aegis Energy Services Inc.
55 Jackson St Holyoke MA, 10603
413-536-1156
SPringle@aegisenergyservices.com

- CDH was on site July 23, 2015 to install a datalogger, terminate meter wiring, and setup communications. Data collection begins.

Issues / To Do:

- Need pulse output from Con Ed gas meter.

Summary

CDH provided the data logger and enclosure. Aegis provided and installed the gas, power, and BTU meters. Aegis installed the CDH enclosure and performed all of the necessary wire pulls while CDH terminated wiring to the data logger and sensors.

Monitored Data Points

Logger Channel	Data Point	Description	Eng Units	Instrument / Transducer	Output
MB-001	WT	Gross Generator Power Output	kWh	Veris H-8035-300	Modbus RS-485
MB-002	WF	Total Facility Power		Veris E50C2	Modbus RS-485
MB-003	WP	Parasitic Loads	kWh	Veris H-8035-100	Modbus RS-485
-	WG	Net Power Output	kWh	-	Calculated
1	FG	Cogen Gas Consumption	cf	ConEd Meter w/ Pulse	Pulse
MB-004	FHW	Recovered Heat loop Flow	gpm	Badger Series 380	Modbus RS-485
MB-004	THW1	Recovered Heat Loop - Supply Temp.	°F	Badger Series 380	Modbus RS-485
2	THW2	Recovered Heat Loop - Temp. After Useful HXs	°F	Badger Series 380	Modbus RS-485
MB-004	THW3	Recovered Heat Loop - Return Temp. (After Dump Radiator)	°F	Veris 10k Type 2 Thermistor	Resistance
-	QR	Rejected Heat Recovery	Mbtu/h		Calculated
-	QU	Total Useful Heat Recovery	Mbtu/h	-	Calculated

IP Info

External IP:	47.23.154.146:2222
Internal IP:	192.168.1.13
Netmask:	255.255.255.0
Gateway:	192.168.1.1
DNS #1:	8.8.8.8
DNS #2:	4.4.4.4

Site Photos

Aegen TP75-LE cogen unit located in basement mechanical room.



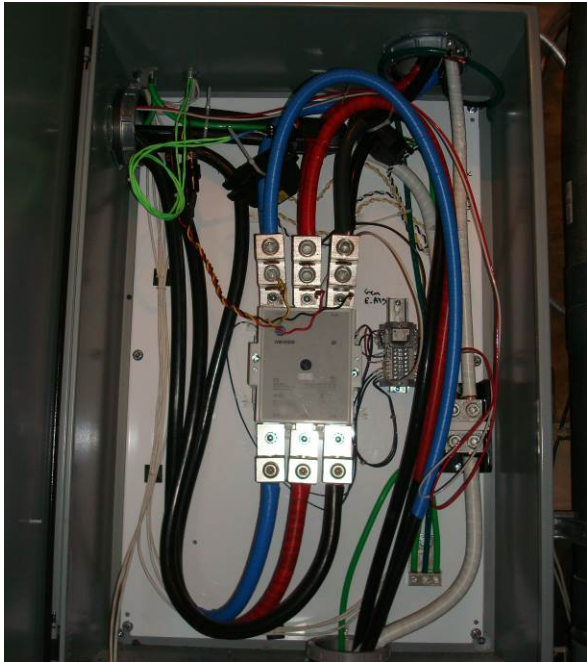
CDH panel containing data logger and CDH network switch.



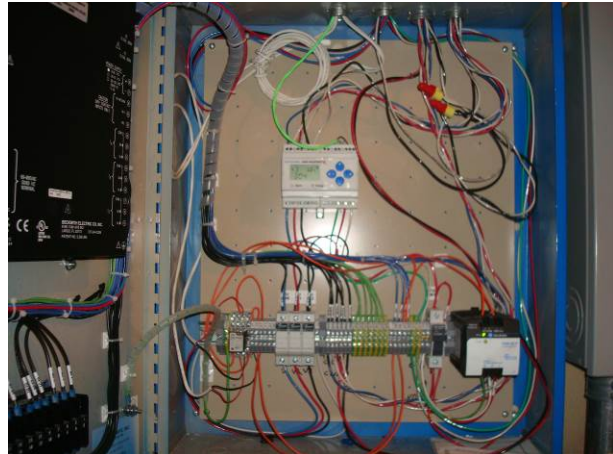
Badger 380 BTU meter (THW1, THW2, FHW).



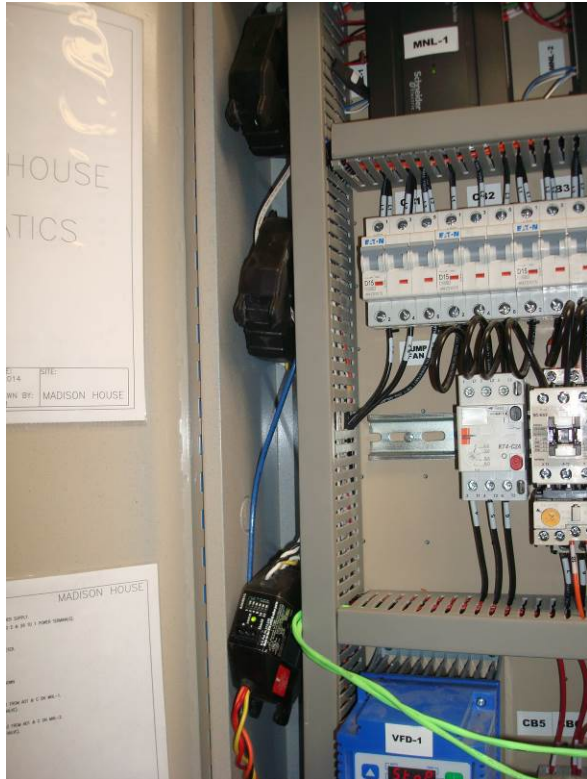
Con Edison cogen unit gas meter; awaiting pulse output.



Veris H8035 cogen unit power meter (WT), located in electrical room.



Veris E50 total facility power meter (WB) located in Aegis panel in electrical room.



Veris H8035 power meter for parasitic loads (WP) located in Aegis panel in mechanical room.



Mamac 10k Type 2 Thermistor (THW3), located in mechanical room.

PUMP SCHEDULE						
PUMP NO.	SERVICE	FLOW	HEAD	PUMP H.P.	PHASE	PUMP MODEL
P-1	COGEN LOOP	25 GPM	70 FT	3/4 HP	3 PH	BELL & GOSSETT SERIES 1535 353T
P-2	DOMESTIC HOT WATER	30 GPM	15 FT	1/6 HP	1 PH	BELL & GOSSETT SERIES PL-45B
P-3	BOILER LOOP HEATING	30 GPM	33 FT	3/4 HP	3 PH	BELL & GOSSETT SERIES 60-613T
P-4	DUMP RADIATOR LOOP	30 GPM	33 FT	3/4 HP	3 PH	BELL & GOSSETT SERIES 60-613T

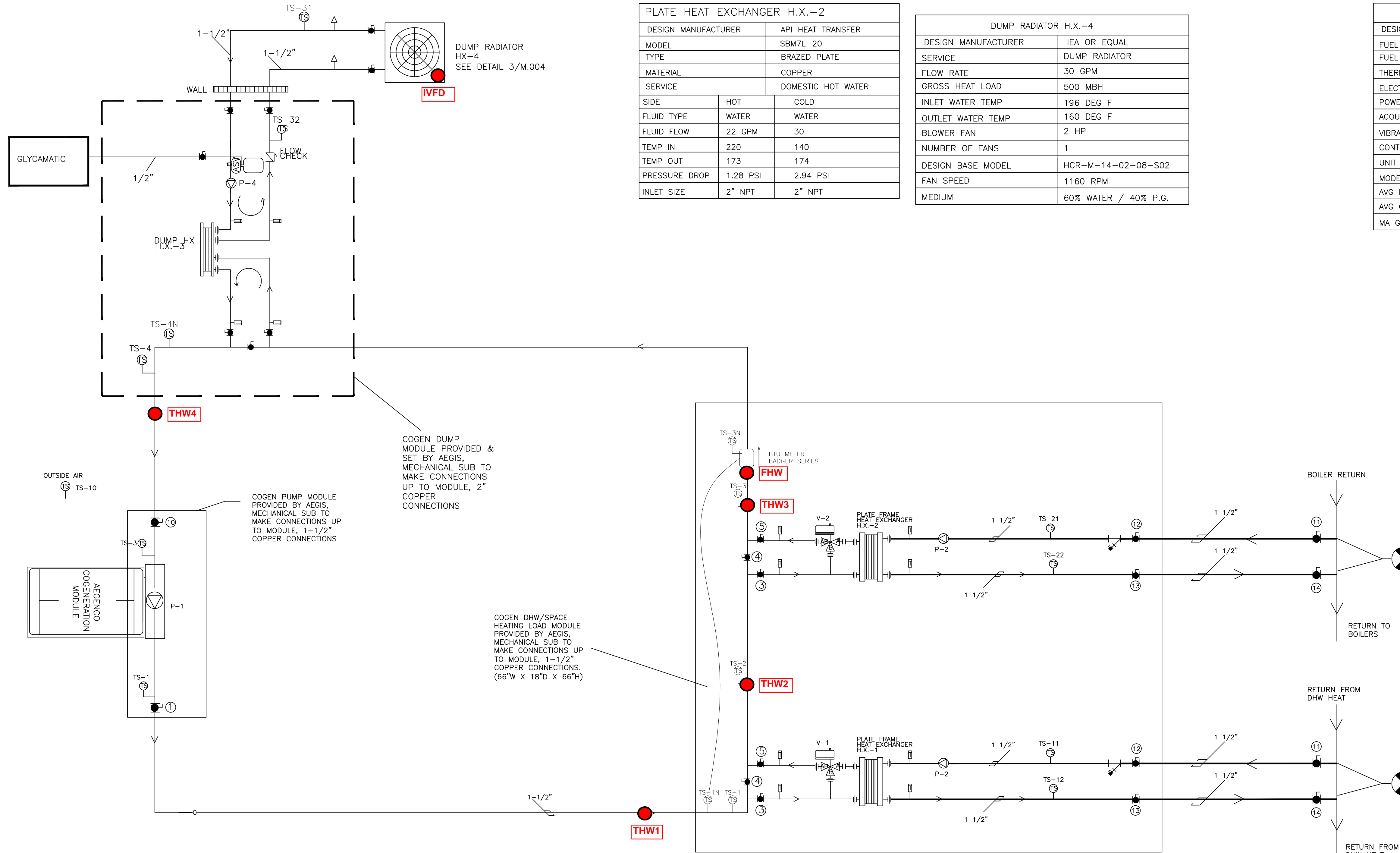
CONTROL VALVE SCHEDULE						
VALVE NO.	SERVICE	FLOW TYPE	SIZE	VOLTAGE	VALVE MODEL	ACTUATOR
V-1	DHW LOOP	MIXING	1-1/2"	24 V	BARBER COLMAN VS2313-526-9-54	MS40-7043M MODULATING
V-2	BUILDING BOILER LOOP	MIXING	1-1/2"	24 V	BARBER COLMAN VS2313-526-9-54	MS40-7043M MODULATING

PLATE HEAT EXCHANGER H.X.-1		
DESIGN MANUFACTURER	API HEAT TRANSFER	
MODEL	SBM7M-40	
TYPE	BRAZED PLATE	
MATERIAL	COPPER	
SERVICE	BOILER HEAT	
SIDE	HOT	COLD
FLUID TYPE	WATER	WATER
FLUID FLOW	20 GPM	40 GPM
TEMP IN	225	165
TEMP OUT	176	189.3
PRESSURE DROP	0.77 PSI	2.71 PSI
INLET SIZE	2" NPT	2" NPT

PLATE HEAT EXCHANGER H.X.-3		
DESIGN MANUFACTURER	API HEAT TRANSFER	
MODEL	SBM7M-40	
TYPE	BRAZED PLATE	
MATERIAL	COPPER	
SERVICE	DUMP HX	
SIDE	HOT	COLD
FLUID TYPE	WATER	40% PROP. GLYCOL
FLUID FLOW	30 GPM	30 GPM
TEMP IN	210 F	160 F
TEMP OUT	170 F	200 F
PRESSURE DROP	0.77 PSI	1.73 PSI
INLET SIZE	2" NPT	2" NPT

TEMPERATURE SENSOR SCHEDULE			
TS NO.	SERVICE	SENSOR MODEL NO.	WELL TYPE
TS-1	COGEN SUPPLY TO BUILDING PLATE H.X.	MAMAC TE-703-C-5A	AT-225
TS-2	BUILDING PLATE HX TO DHW HX.	MAMAC TE-703-C-5A	AT-225
TS-3	DHW HX TO DUMP RAD HX	MAMAC TE-703-C-5A	AT-225
TS-4	COGEN RETURN	MAMAC TE-703-C-5A	AT-225
TS-11	BOILER LOOP TO HX	MAMAC TE-703-C-5A	AT-225
TS-12	HX TO BOILER LOOP	MAMAC TE-703-C-5A	AT-225
TS-21	DHW TO HX	MAMAC TE-703-C-5A	AT-225
TS-22	HX TO DHW	MAMAC TE-703-C-5A	AT-225
TS-31	COOLING TOWER SUPPLY LINE TO HX	MAMAC TE-703-C-5A	AT-225
TS-32	HX TO COOLING TOWER SUPPLY LINE	MAMAC TE-703-C-5A	AT-225
TS-10	OUTSIDE AIR	MAMAC	

COGENERATION SCHEDULE	
DESIGN MANUFACTURER	AEGENCO
FUEL	NATURAL GAS
FUEL INPUT	930 SCFH
THERMAL OUTPUT	523 MBH
ELECTRICAL OUTPUT	75 KW
POWER GENERATOR	SYNCHRONOUS
ACOUSTIC LEVEL	70dba @ 20ft
VIBRATION ISOLATION	YES
CONTROLS	MICROPROCESSOR BASED
UNIT WEIGHT	3050 LBS
MODEL	TP-75LE
AVG INLET TEMP	170 DEG F
AVG OUTLET TEMP	220 DEG F
MA GAS BOARD APPROVAL #	G1-04-06-12



- NOTES:
- 1) ALL PIPE TO BE COPPER "L" UNLESS OTHERWISE NOTED
 - 2) CONTRACTOR SHALL PROTECT FROM HARM AND MAINTAIN ALL EXISTING EQUIPMENT, PLANT, FACILITY, ETC. TO REMAIN.

COGENERATION MECHANICAL FLOW DIAGRAM

MADISON HOUSE
COGENERATION PROJECT
70 FERIS AVENUE
WHITE PLAINS, NY

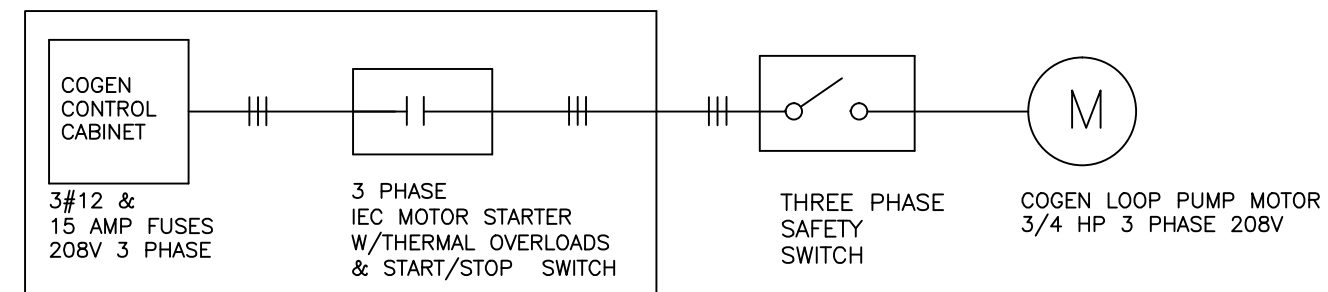
REV 0
CONSTRUCTION
DRAWN: SJP

AEGIS ENERGY SERVICES, INC
55 JACKSON STREET
HOLYOKE, MA 01040
PH: 413-536-1156
FX: 413-536-1104

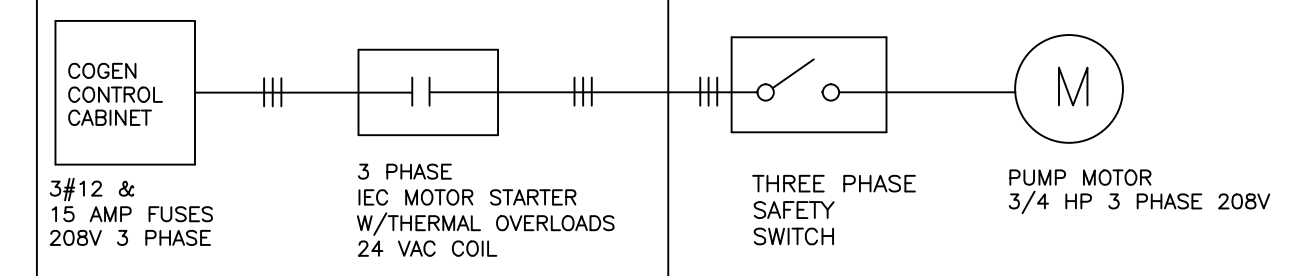
DATE:
OCT 27 2014

TITLE:
FLOW DIAGRAM

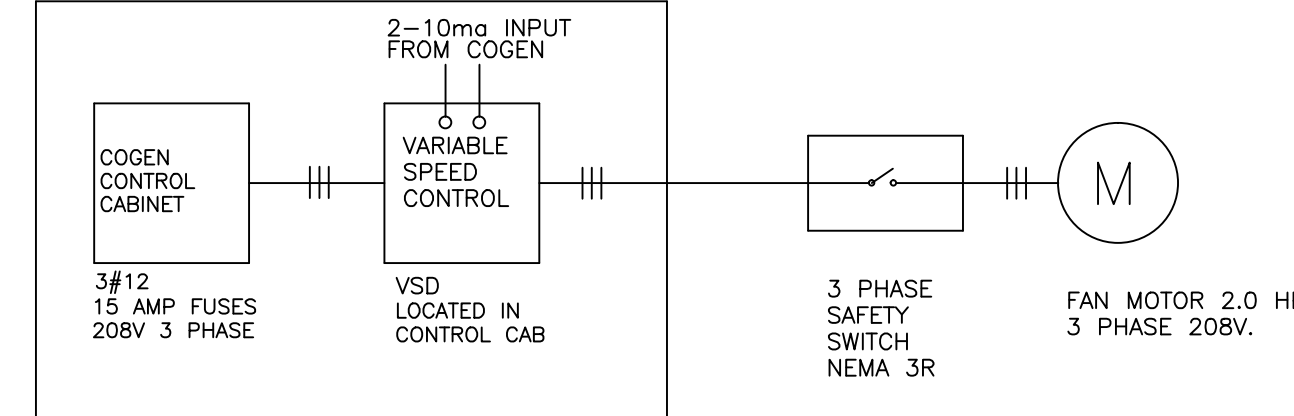
FIGURE
M-1



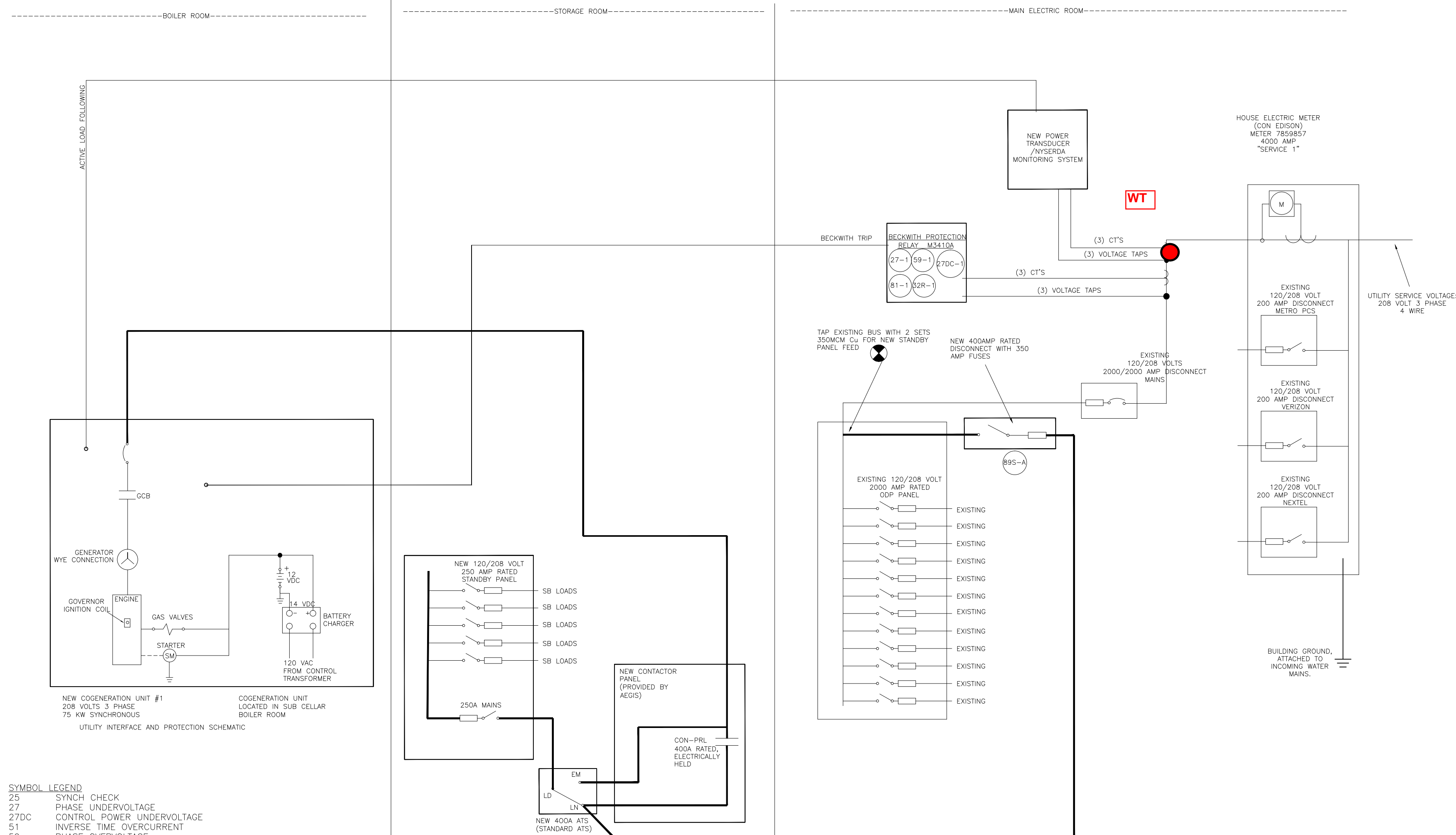
COGEN CIRCULATOR PUMP WIRING DIAGRAM
FOR PUMP P-1



SPACE HEAT LOOP PUMP WIRING DIAGRAM
FOR PUMP P-2



RADIATOR WIRING DIAGRAM
FOR FAN F-1



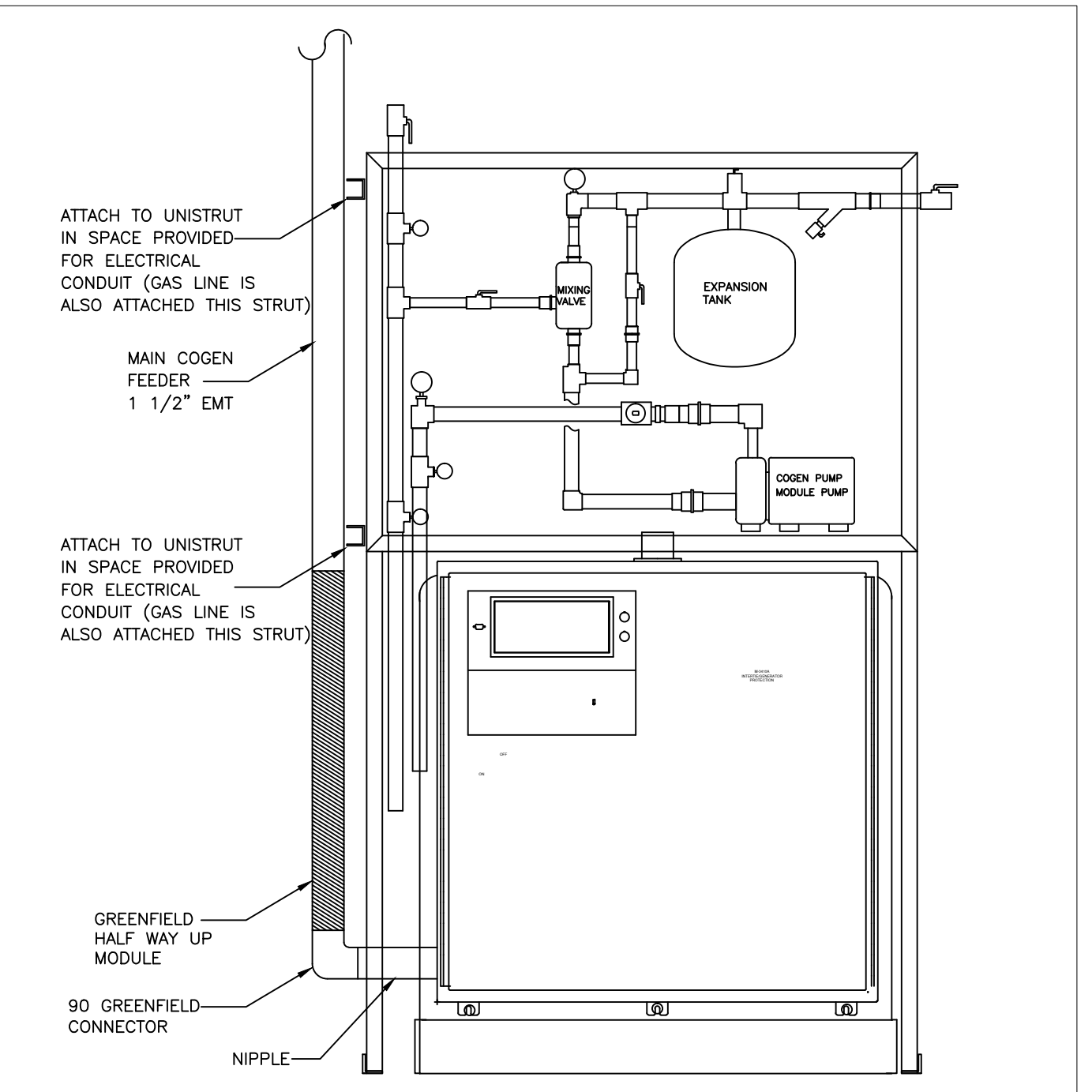
SYMBOL LEGEND

- 25 SYNCH CHECK
- 27 PHASE UNDERVOLTAGE
- 27DC CONTROL POWER UNDERVOLTAGE
- 51 INVERSE TIME OVERCURRENT
- 59 PHASE OVERVOLTAGE
- 81 OVER/UNDER FREQUENCY
- 32R REVERSE POWER
- 52IT INTERTIE BREAKER
- 89L COGEN DISCONNECT

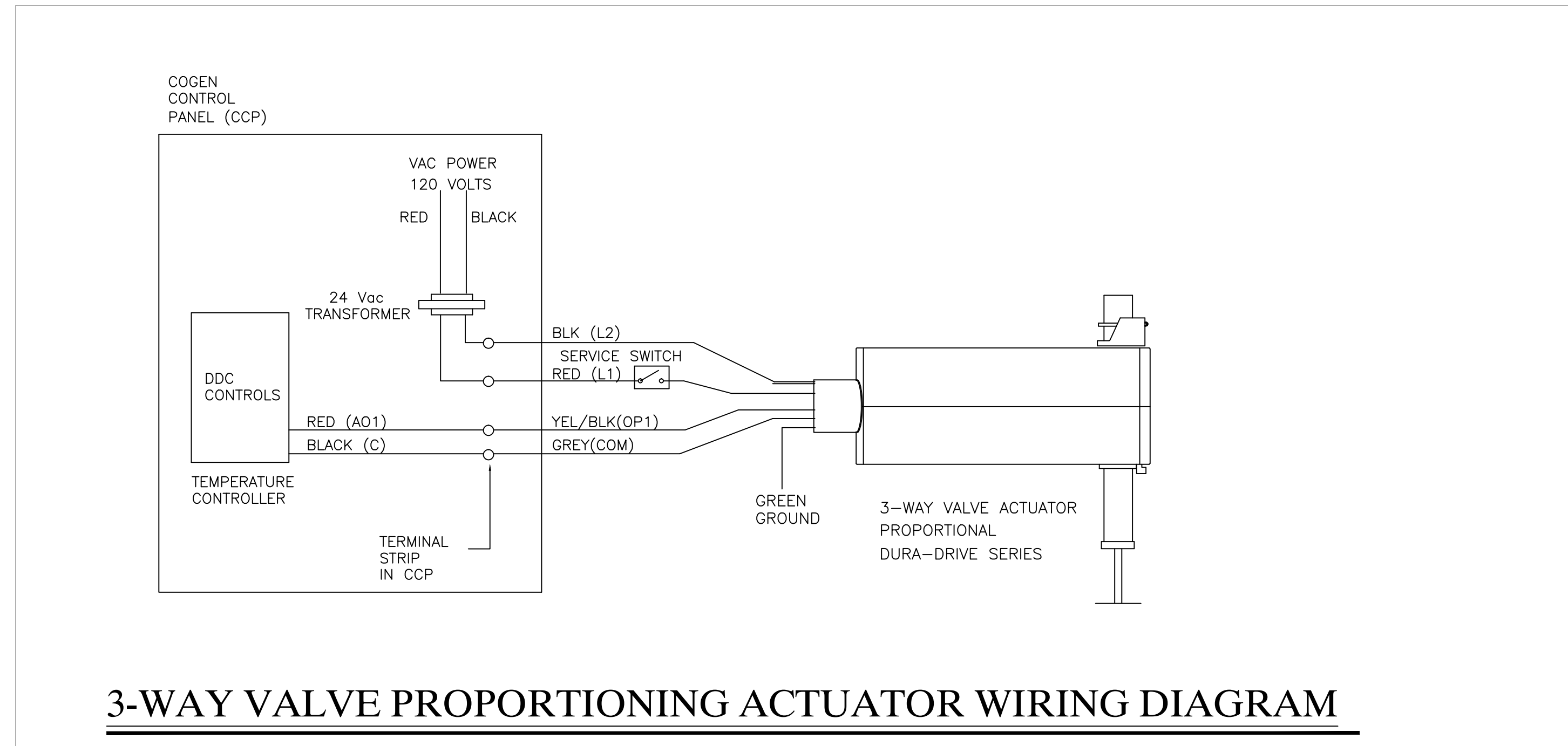
PROTECTIVE RELAY SETPOINTS

- 27DC/1,2 (9V DC) NO DELAY
- 27-1/1,2 (-50 TO -88%) 2 SEC (120 CYCLE) DELAY
- 27-2/1,2 (-50%) 0.16 SEC (9 CYCLE) DELAY
- 59-1/1,2 (+110 TO 120%) 1 SEC (60 CYCLE) DELAY
- 59-2/1,2 (+120%) 0.16 SEC (9 CYCLE) DELAY
- 81U/1,2 (<59.3 Hz) 0.16 SEC (9 CYCLE) DELAY
- 81O/1,2 (>60.5 Hz) 0.16 SEC (9 CYCLE) DELAY
- 32R/1,2 (+0.02 PU) (MPORT) 0.16 SEC (9.6 CYCLE) DELAY

SITE ELECTRICAL ONELINE DIAGRAM
SCALE: NTS



COGENERATION PUMP MODULE DETAIL
SCALE: NTS



3-WAY VALVE PROPORTIONING ACTUATOR WIRING DIAGRAM
TYPICAL FOR: VALVE V-1 AND V-2

MADISON HOUSE
COGENERATION PROJECT
70 FERIS AVENUE
WHITE PLAINS, NY

REV 0
CONSTRUCTION
DRAWN: SJP

AEGIS ENERGY SERVICES, INC
55 JACKSON STREET
HOLYOKE, MA 01040
PH: 413-536-1156
FX: 413-536-1104

DATE:
OCT 27 2014
TITLE:
ELECTRICAL
DETAILS

FIGURE
E-2