

The Westmont

730 Columbus Ave.
New York, NY 10025

Site Contact

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- CDH was on site October 20, 2016 to install a datalogger, terminate meter wiring, setup communications, and verify sensor readings. Data collection begins.

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-004	WT	Gross Power Output	kWh	Veris H8035-300	Modbus RS-485
MB-001	WP	Parasitic Loads	kWh	Veris H8035-100	Modbus RS-485
-	WG	Net Power Output	kWh	-	Calculated
MB-002	WB	Total Facility Power	kWh	Veris E51C2A	Pulse
1	FG	Cogen Gas Consumption	cf	Romet Rotary Meter w/ Pulse	Pulse
MB-003	FHW	Recovered Heat loop Flow	gpm	Badger Series 380	Modbus RS-485
MB-003	THW1	Recovered Heat Loop - Supply Temp.	°F	Badger Series 380	Modbus RS-485
2	THW2	Recovered Heat Loop - Temp. After HX1 (DHW1)	°F	Veris 10k Type 2 Thermistor (surface)	Resistance
MB-003	THW3	Recovered Heat Loop - Temp After HX3 (Space Heating)	°F	Badger Series 380	Modbus RS-485
4	THW4	Recovered Heat Loop - Temp After Cooling Tower HX	°F	Veris 10k Type 2 Thermistor (surface)	Resistance
5	IVFD	Dump Radiator Current	Amps	Veris H921	4-20 mA
-	QDHW	Useful Heat Recovery - DHW	Mbtu/h	-	Calculated
-	QSH	Useful Heat Recovery - Space Heating	Mbtu/h	-	Calculated
-	QR	Rejected Heat Recovery	Mbtu/h	-	Calculated
-	QU	Total Useful Heat Recovery	Mbtu/h	-	Calculated

IT Information

External IP:	50.74.119.204:4081
CDH Energy Meter :	10.0.12.141
Netmask:	255.255.255.0
Gateway IP Address:	10.0.12.1
DNS #1:	24.29.99.35
DNS #2:	24.29.99.36

Procedure

- Hot water loop flow was verified by comparing the Badger 380 flow reading on the Obvius to measurements taken using a portable Portaflow ultrasonic flowmeter.
- Generator power output was verified by comparing the engine controller power to the Obvius data logger power reading (measured by the Veris power meter).

Verification Data

Gross Generator Power

WT	Cogen Display (kW)	Obvius (kW)
	39.7	38.0
	39.1	38.1

Avg: 39.4 38.1

Recovered Heat Loop Flow

FHW	Portaflow (gpm)	Obvius (gpm)
	19.1	19.8
	19.1	19.9
	19.1	19.9

Avg: 19.1 19.9

Site Photos



Aegen Powerverter cogen unit located adjacent to sub-basement boiler room.



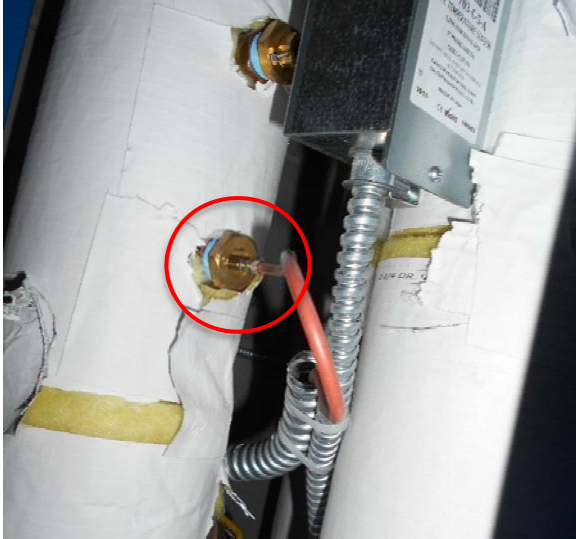
Aegis cogen unit inverter.



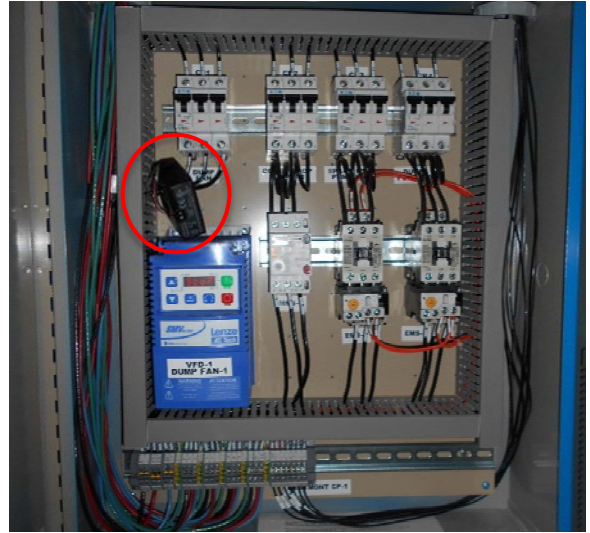
Aegis control panel (left), cogen UPS (center), and CDH panel (right).



Badger 380 BTU meter (FHW, THW3).



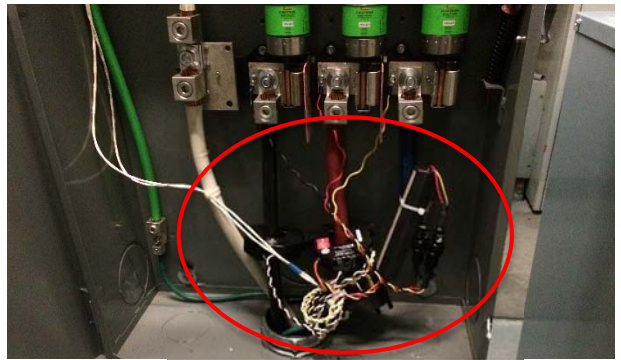
Badger 380 remote probe (THW1).



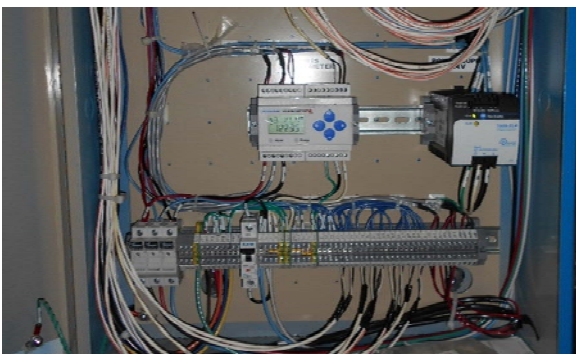
Veris H921 dump radiator VFD current sensor (IVFD).



Veris 10k Type 2 surface mount thermistor - typ. (THW2, THW4).



Veris H8035-300 gross generator power meter (WT) located in cogen disconnect in electric room in parking garage.



Veris E51C2A total facility power meter (WB) located in Beckwith panel in parking garage electric room.

PUMP SCHEDULE						
PUMP NO.	SERVICE	FLOW	HEAD	H.P.	PHASE	MODEL
P-1	COGEN MODULE	22 GPM	70 FT	3/4	3	BELL & GOSSETT SERIES 1535 343T
P-2	DHW LZ LOOP	30 GPM	15 FT	1/8	1	BELL & GOSSETT PL-45B
P-3	DHW HZ LOOP	30 GPM	15 FT	1/8	1	BELL & GOSSETT PL-45B
P-4	SPACE HEATING LOOP	30 GPM	33 FT	3/4	3	BELL & GOSSETT SERIES 60 613T
P-5	HEAT DISSIPATION LOOP	30 GPM	33 FT	3/4 HP	3	BELL & GOSSETT SERIES 60 613T

CONTROL VALVE SCHEDULE						
VALVE NO.	SERVICE	FLOW TYPE	SIZE	VOLTAGE	VALVE MODEL	ACTUATOR
V-1	DHW HEATING LOOP	PROPORTIONAL	1 1/2"	24 V	SCHNEIDER VS2313-526-9-54	MS40-7043M MODULATING
V-2	COGEN LZ BOILER SELECTOR	ON/OFF	2"	24 V	SCHNEIDER VS2313-526-9-63	MA40-7043M ON/OFF
V-3	SPACE HEATING	PROPORTIONAL	1 1/2"	24 V	SCHNEIDER VS2313-526-9-54	MS40-7043M MODULATING
V-4	COGEN HZ BOILER SELECTOR	PROPORTIONAL	2"	24 V	SCHNEIDER VS2313-526-9-63	MA40-7043M ON/OFF
V-5	SPACE HEATING	PROPORTIONAL	1 1/2"	24 V	SCHNEIDER VS2313-526-9-54	MS40-7043M MODULATING

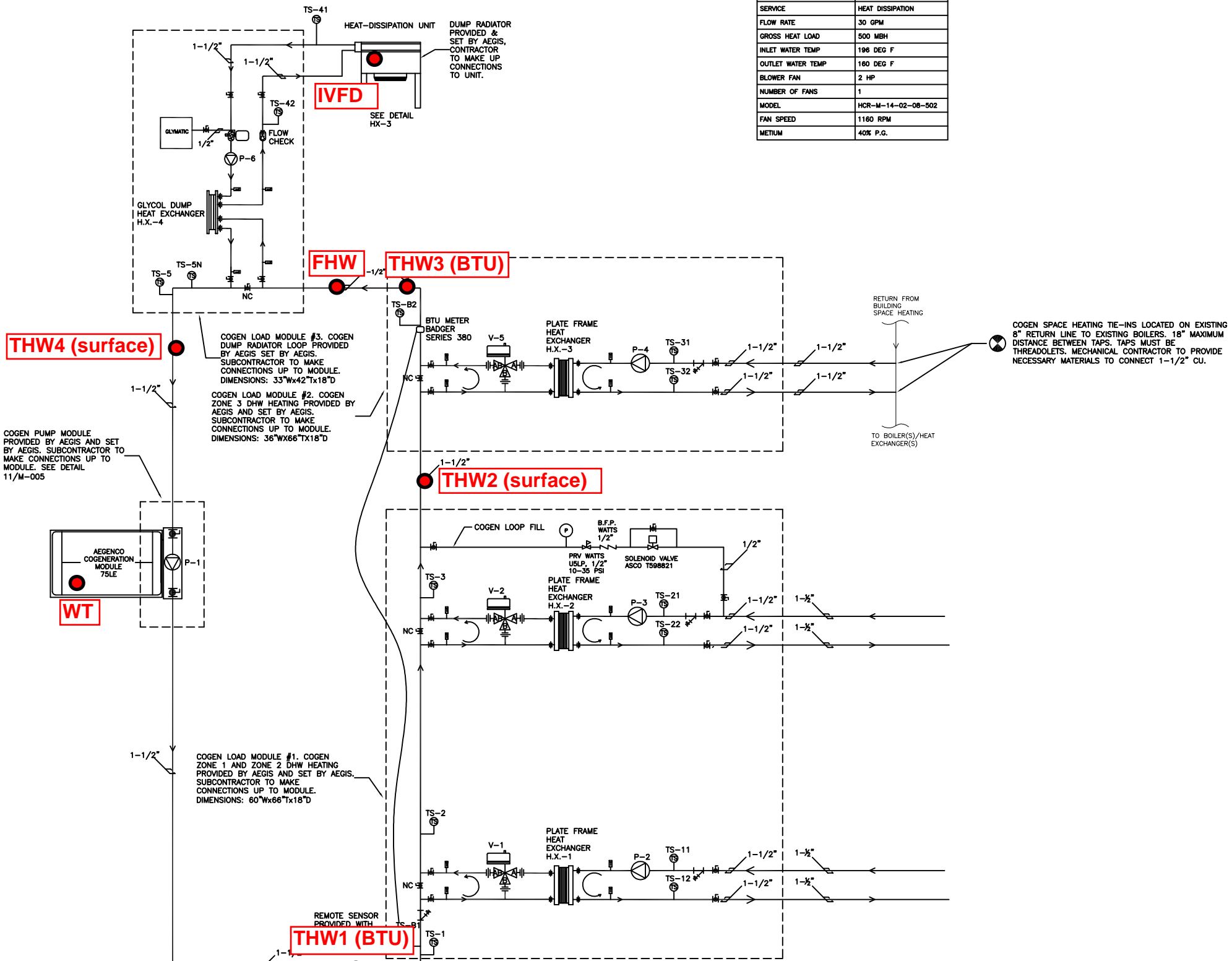
HEAT EXCHANGERS HX-1,2,3		
DESIGN MANUFACTURER	API HEAT TRANSFER	
MODEL	SBM7M-40	
TYPE	BRAZED PLATE	
MATERIAL	COPPER	
SERVICE	DHW	
SIDE	HOT	COLD
FLUID TYPE	WATER	WATER
FLUID FLOW	22 GPM	30 GPM
TEMPERATURE IN	225 DEG F	172 DEG F
TEMPERATURE OUT	176 DEG F	207 DEG F
PRESSURE DROP	0.91 PSI	1.55 PSI
INLET SIZE	2" NPT	2" NPT

HEAT EXCHANGER HX-4		
DESIGN MANUFACTURER	API HEAT TRANSFER	
MODEL	SBM7M-40	
TYPE	BRAZED PLATE	
MATERIAL	COPPER	
SERVICE	GLYCOL DUMP LOOP	
SIDE	HOT	COLD
FLUID TYPE	WATER	40% P.G.
FLUID FLOW	22 GPM	30 GPM
TEMPERATURE IN	225 DEG F	160 DEG F
TEMPERATURE OUT	176 DEG F	194 DEG F
PRESSURE DROP	0.77 PSI	1.73 PSI
INLET SIZE	2" NPT	2" NPT

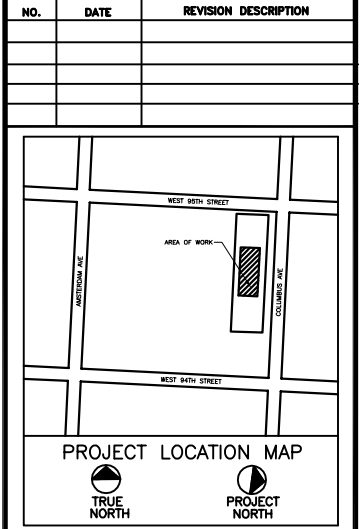
COGENERATION SCHEDULE	
DESIGN MANUFACTURER	AEGENCO
FUEL	NATURAL GAS
FUEL INPUT	930 SCFH
THERMAL OUTPUT	523 MBTU/H
ELECTRICAL OUTPUT	75 KW
GENERATION TYPE	INVERTER
ACOUSTIC LEVEL	70 dba @ 20 FT
VIBRATION ISOLATION	YES
CONTROLS	MICROPROCESSOR BASED
UNIT WEIGHT	3050
MODEL	POWERVERTER
AVG INLET TEMP	170 DEG F
AVG OUTLET TEMP	220 DEG F
MA GAS BOARD APPROVAL #	G1-04-06-12
DIMENSIONS	51" W X 101" L X 51" H

TEMPERATURE SENSOR SCHEDULE			
TS NO.	SERVICE	MODEL	WELL TYPE
TS-1	COGEN SUPPLY	MAMAC TE-703-C-5A	AT-225
TS-2	COGEN LOOP LEAVING H.X.-1	MAMAC TE-703-C-5A	AT-225
TS-3	COGEN LOOP LEAVING H.X.-2	MAMAC TE-703-C-5A	AT-225
TS-4	COGEN RETURN	MAMAC TE-703-C-5A	AT-225
TS-11	DHW ENTERING H.X.-1	MAMAC TE-703-C-5A	AT-225
TS-12	DHW LEAVING H.X.-1	MAMAC TE-703-C-5A	AT-225
TS-21	DHW ENTERING H.X.-2	MAMAC TE-703-C-5A	AT-225
TS-22	DHW LEAVING H.X.-2	MAMAC TE-703-C-5A	AT-225
TS-31	SPACE HEATING ENTERING H.X.-2	MAMAC TE-703-C-5A	AT-225
TS-32	SPACE HEAT LEAVING H.X.-2	MAMAC TE-703-C-5A	AT-225
TS-41	DUMP LOOP ENTERING DUMP RADIATOR	MAMAC TE-703-C-5A	AT-225
TS-42	DUMP LOOP LEAVING DUMP RADIATOR	MAMAC TE-703-C-5A	AT-225
TS-10	OUTSIDE AIR	MAMAC TE-205-F-5	AT-225
TS-B1	COGEN SUPPLY BTU	BADGER 380	AT-225
TS-B2	COGEN USEFUL BTU	BADGER 380	N/A
TS-4N	CDH	VERIS TDB100	AT-225

DUMP RADIATOR HX-5	
DESIGN MANUFACTURER	IEA OR EQUAL
SERVICE	HEAT DISSIPATION
FLOW RATE	30 GPM
GROSS HEAT LOAD	500 MBH
INLET WATER TEMP	196 DEG F
OUTLET WATER TEMP	160 DEG F
BLOWER FAN	2 HP
NUMBER OF FANS	1
MODEL	HCR-M-14-02-08-502
FAN SPEED	1160 RPM
METHUM	40% P.G.



- NOTES:
1. ALL PIPE TO BE COPPER "L" UNLESS OTHERWISE NOTED
 2. COGEN HEAT DISSIPATION LOOP TO BE 40% PROP. GLYCOL. ALL FILLING OF GLYCOL LOOP BY AEGIS.
 3. CONTRACTOR SHALL PROTECT FROM HARM AND MAINTAIN ALL EXISTING EQUIPMENT, PLANT, FACILITY, ETC. TO REMAIN.



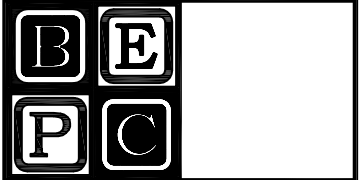
CLIENT:
AEGIS ENERGY SERVICES, INC.
 55 JACKSON STREET
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 TEL: 413-536-1156
 FAX: 413-536-1104
 ATTN: KEVIN MAY

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PROJECT
**WESTMONT APARTMENTS
 COGENERATION PROJECT**
 730 COLUMBUS AVE
 NEW YORK, NY 10025

DRAWING TITLE:
**MECHANICAL
 FLOW DIAGRAM**

DESIGN BY:	KM	DATE:	10/15/14
DRN BY:	KM	DATE:	10/15/14
CKD BY:	-	DATE:	-
FINAL CKD BY:	-	DATE:	-
SCALE:	AS NOTED	DATE:	-
DWG No.	PAGE 3 OF 12		

M-001.00
 PROJECT NO.
X
 B-SCAN:

1
 W-001
COGENERATION MECHANICAL FLOW DIAGRAM
 SCALE: NTS