

VALVES

VALVE SYMBOLS		CONTROL VALVE SYMBOLS	
	GATE		THREE-WAY
	BALL		FOUR-WAY
	GLOBE		PLUG
	NEEDLE		PLUG - HYPERSEAL
	BUTTERFLY		3-WAY PLUG
	SWING CHECK		4-WAY PLUG
	WAFER CHECK		ANGLE
	PISTON CHECK		ANGLE GLOBE
	STOP CHECK		CHOKE
	VELOCITY CHECK		PRESSURE RELIEF
	BALL CHECK		PRESSURE / VACUUM RELIEF
	PIGGING		

VALVE ANNOTATION

SIZE - RATING
 MAKE - MODEL
 MATERIAL - AS REQ'D

REFERENCE SYSTEMS

SPECIAL ITEM (TAG NO. FROM MATERIAL LIST)
 TIE-IN NUMBER (REF. TO TIE-IN LIST)
 TO / FROM Dwg. NUMBER FLOW CONTINUATION ARROW
 SPECIFICATION BREAK

INSTRUMENT SYMBOLS

	FIELD MOUNTED	CONTROL ROOM PANEL	LOCAL PANEL
DISCRETE INSTRUMENT			
SHARED DISPLAY CONTROL (eg. FLOW DISTRIBUTED CONTROL SYSTEM)			
COMPUTER FUNCTION (eg. FLOW COMPUTER)			
PLC (PROGRAMMABLE LOGIC CONTROL)			

FLOW INSTRUMENT SYMBOLS

ORIFICE FLANGE SET
 FLOW TOTALIZER POSITIVE DISPLACEMENT TYPE
 FLOW MONITOR SIGHT GLASS
 FLOW INDICATOR ROTOMETER TYPE
 TURBINE FLOWMETER PRIMARY ELEMENT
 ANNUBAR OR PITOT TUBE
 ORIFICE PLATE C/W QUICK CHANGE FITTING
 VENTURI TUBE OR FLOW NOZZLE
 FLOW RESTRICTION ORIFICE
 CALIBRATED METER RUN

DASHED LINE INDICATES INSTRUMENT MOUNTED BEHIND PANEL
 STATUS LIGHT INDICATE COLOUR INSIDE SYMBOL
 SYSTEM LOGIC
 MANUAL RESET
 EMERGENCY SHUTDOWN LOGIC
 PURGE OR FLUSH DEVICE
 CORROSION COUPON
 THERMOWELL

INSTRUMENTATION IDENTIFICATION

VARIABLE	PRIMARY ELEMENT	INDICATOR	RECORDER	CONTROLLER			TRANS-MITTER	ALARM-SWITCH	ALARM	CONTROL VALVE OR REGULATOR	SELF-ACTIVATED VALVE	RELAY OR CONVERTER
				BLIND	INDICATING	RECORDING						
ANALYSIS	AE	AI	AR	AC	AIC	ARC	AT	AS ()	AA ()	AV		AY
BURNER FLAME	BE	BI	BR	BC			BT	BS ()	BA ()	BV		BY
CONDUCTIVITY	CE	CI	CR		CIC	CRC	CT	CS ()	CA ()	CV		CY
DENSITY	DE	DI	DR		DIC	DRC	DT	DS ()	DA ()	DV		DY
VOLTAGE (EMF)	EE	EI	ER	EC	EIC	ERC	ET	ES ()	EA ()	EV		EY
FLOW	FE	FI	FR	FC	FIC	FRC	FT	FS ()	FA ()	FV	FCV	FY
FLOW RATIO		FFI	FFR	FFC	FFIC	FFRC		FFS ()	FFA ()	FFV		
GAUGING (DIMENSIONAL)	GE	GI	GR	GC	GIC	GRC	GT	GS ()	GA ()	GV		
HAND					HC	HIC		HS ()		HV	HCV	
CURRENT	IE	II	IR	IC	IIC	IRC	IT	IS ()	IA ()			IY
POWER	JE	JI	JR	JC	JIC	JRC	JT	JS ()	JA ()			JY
TIME		KI	KR	KC	KIC	KRC	KT	KS ()	KA ()			KY
LEVEL	LE	LI	LR	LC	LIC	LRC	LT	LS ()	LA ()	LV	LCV	LY
MOISTURE	ME	MI	MR	MC	MIC	MRC	MT	MS ()	MA ()	MV		MY
USER'S CHOICE	NE											
TORQUE	OE	OI	OR	OC	OIC	ORC	OT	OS ()	OA ()	OV		OY
PRESSURE	PE	PI	PR	PC	PIC	PRC	PDT	PS ()	PA ()	PV	PCV	PY
PRESSURE DIFFERENTIAL	PDE	PDI	PDR	PDC	PDIC	PDRC	PDT	PDS ()	PDA ()	PDV	PDCV	
QUANTITY OR EVENT		QI	QR	QC	QIC	QRC	QT	QS ()	QA ()	QV		QY
RADIATION	RE	RI	RR	RC	RIC	RRC	RT	RS ()	RA ()			RY
SPEED OR FREQUENCY		SI	SR	SC	SIC	SRC	ST	SS ()	SA ()			SY
TEMPERATURE	TE	TI	TR	TC	TIC	TRC	TT	TS ()	TA ()	TV	TCV	TY
TEMPERATURE DIFFERENTIAL		TDI	TDR	TDC	TDIC	TDRC	TDI	TDS ()	TDA ()	TDV	TDCV	
MULTI-VARIABLE		UI	UR	UC	UIC	URC				UV		UY
VISCOSITY OR VIBRATION	VE	VI	VR	VC	VIC	VRC	VT	VS ()	VA ()	VV		VY
WEIGHT	WE	WI	WR	WC	WIC	WRC	WT	WS ()	WA ()	WV		WY
UNCLASSIFIED	XE	XI	XR	XC	XIC	XRC	XT	XS ()	XA ()	XV		XY
USER'S CHOICE												YY
POSITION	ZE	ZI	ZR	ZC	ZIC	ZRC	ZT	ZS ()	ZA ()			ZY

H:HIGH, HH:EXTRA HIGH, L:LOW, LL:EXTRA LOW, HL:HIGH & LOW, C:CLOSED, O:OPENED

MISCELLANEOUS SYMBOLS

	INSULATING KIT
	FLANGED CONNECTION
	BLIND FLANGE
	BLEED RING TAP SIZE AS INDICATED
	SPECTACLE BLIND LINE CLOSED
	SPECTACLE BLIND LINE OPEN
	BLIND 'PANCAKE'
	SPACER
	QUICK CONNECTION
	SCREWED OR SOCKET WELDED CAP
	SCREWED PLUG
	WELD CAP
	FLEXIBLE COUPLING
	EXPANSION JOINT
	REDUCER
	EJECTOR
	CONICAL STRAINER (START-UP / TEMP)
	BASKET STRAINER IN-LINE
	Y STRAINER
	STRAIGHTENING VANES
	STEAM TRAP
	FLAME ARRESTER
	IN-LINE MIXER
	FLEXIBLE HOSE
	VENT TO ATMOS.
	OPEN DRAIN
	CLOSED DRAIN
	RUPTURE DISC PRESSURE
	RUPTURE DISC VACUUM

EQUIPMENT DRIVER CODES

M - ELECTRIC MOTOR
 ST - STEAM TURBINE
 GT - GAS TURBINE
 G - GENERATOR
 E - ENGINE
 EX - EXPANDER

PUMPS

INJECTION PUMP PLUNGER, AIR DRIVE
 DIAPHRAGM PUMP
 CENTRIFUGAL PUMP
 IN-LINE PUMP
 SCREW PUMP
 AGITATOR

LINE NUMBERS

LINE IDENTIFICATION

LINE SIZE (O.D. mm) 168-PG-A-101-38H-ET
 COMMODITY CODE (SEE CHART)
 SPECIFICATION CODE (SEE LINE LIST)
 HEAT TRACING (SEE INSULATION CODE)
 INSULATION (SEE INSULATION CODE)
 LINE NUMBER

COMMODITY CODES

PROCESS	DRAINS	STEAM
AL - AMINE LEAN	DR - DRAIN	LS - LOW PRESSURE
AR - AMINE RICH	HDR - HIGH PRESSURE DRAIN	MS - MEDIUM PRESSURE
GL - GLYCOL LEAN	LDR - LOW PRESSURE DRAIN	HS - HIGH PRESSURE
GR - GLYCOL RICH		
LPG - LIQUID PETROLEUM GAS		
P - INCOMING STREAM	FUEL	STEAM CONDENSATE
PC - PROCESS HYDROCARBON GAS	FG - FUEL GAS	CL - LOW PRESSURE
PO - PROCESS HYDROCARBON OIL	FD - FUEL OIL	CM - MEDIUM PRESSURE
PW - PROCESS WATER	PFG - PROPANE FUEL GAS	CH - HIGH PRESSURE
R - REFRIGERANT (PROPANE, ECT.)	PU - PURGE GAS	
SU - SULPHUR	SG - START GAS	MISCELLANEOUS
		BC - BLANKET GAS
WATER	RELIEF	EX - EXHAUST GAS
BFW - BOILER FEED WATER	HF - HIGH PRESSURE FLARE	H - HYDROGEN
CW - COOLING WATER	LF - LOW PRESSURE FLARE	HMS - HEAT MEDIUM SUPPLY
DW - DRINKING WATER	RF - RELIEF FLARE	HMR - HEAT MEDIUM RETURN
FW - FIRE WATER	V - VENT	LO - LUBE OIL
JW - JACKET WATER		N - NITROGEN
RW - RAW WATER (WELL WATER)	AIR	Y - USER DEFINED
TW - TREATED WATER	CA - COMBUSTION AIR	
	IA - INSTRUMENT AIR	
	UA - UTILITY AIR	
	SA - START AIR	

SPECIFICATION CODE

A - 150# ANSI, SWEET	D - 900# ANSI, SWEET
AS - 150# ANSI, SOUR	DS - 900# ANSI, SOUR
AC - 150# ANSI, SWEET, LOW TEMP.	DC - 900# ANSI, SWEET, LOW TEMP.
ASC - 150# ANSI, SOUR, LOW TEMP.	DSC - 900# ANSI, SOUR, LOW TEMP.
B - 300# ANSI, SWEET	E - 1500# ANSI, SWEET
BS - 300# ANSI, SOUR	ES - 1500# ANSI, SOUR
BC - 300# ANSI, SWEET, LOW TEMP.	EC - 1500# ANSI, SWEET, LOW TEMP.
BSC - 300# ANSI, SOUR, LOW TEMP.	ESC - 1500# ANSI, SOUR, LOW TEMP.
C - 600# ANSI, SWEET	F - 2500# ANSI, SWEET
CS - 600# ANSI, SOUR	FS - 2500# ANSI, SOUR
CC - 600# ANSI, SWEET, LOW TEMP.	FC - 2500# ANSI, SWEET, LOW TEMP.
CSC - 600# ANSI, SOUR, LOW TEMP.	FSC - 2500# ANSI, SOUR, LOW TEMP.

LINE SYMBOLS

LINE CODE

PRIMARY PROCESS
 SECONDARY PROCESS
 UTILITY PIPING
 FUTURE PIPING / EQUIPMENT
 EXISTING PIPING / EQUIPMENT
 SKID BOUNDARY

INSULATION CODE

INSULATION THICKNESS (mm)
 38H - PIPE INSULATION
 H - INSULATE HOT (HEAT CONSERVATION)
 C - INSULATE COLD (COLD CONSERVATION)
 PP - PERSONNEL PROTECTION

TRACING CODE

38H-ET - PIPE INSULATION AND HEAT TRACING
 ET - ELECTRIC TRACE
 GT - GLYCOL TRACE
 ST - STEAM TRACE
 SU - STEAM JACKET

ANNOTATION

ABBREVIATIONS

AC - AIR CLOSE
 AO - AIR OPEN
 AS - AIR SUPPLY
 BD - BLOWDOWN
 CC - CORROSION COUPON
 CP - CATHODIC PROTECTION
 CSC - CAR SEAL CLOSED
 CSO - CAR SEAL OPEN
 CHO - CHAIN OPERATED
 CO - CLEAN OUT
 DC - DRAIN CONNECTION
 ESD - EMERGENCY SHUTDOWN
 ESDV - EMERGENCY SHUTDOWN VALVE
 FA - FLAME ARRESTOR
 FC - FAIL CLOSE
 FO - FAIL OPEN
 FP - FULL PORT
 FOT - FLAT ON TOP
 FOB - FLAT ON BOTTOM
 GO - GEAR OPERATED
 I/A - INSTRUMENT AIR
 I/G - INSTRUMENT GAS
 LEL - LOWER EXPLOSIVE LIMIT
 NC - NORMALLY CLOSED
 NO - NORMALLY OPEN
 O/S - OUTSIDE
 PC - PURGE CONNECTION
 PO - PUMP OUT
 PSIG - POUNDS PER SQUARE INCH GAUGE
 SC - SAMPLE CONNECTION
 SD - SHUTDOWN (INDIVIDUAL EQUIPMENT)
 SP - SET POINT
 S/S - SEAM TO SEAM
 S - STRAIGHT THROUGH
 TL - TANGENT LINE
 T/T - TANGENT TO TANGENT
 W - WEIR

INSTRUMENTATION SYMBOLS

PNEUMATIC SIGNAL
 ELECTRIC SIGNAL
 CAPILLARY TUBING
 HYDRAULIC SIGNAL
 ANALOG SIGNAL
 RADIO SIGNAL
 INSTRUMENT PROCESS LINES
 LOGIC SIGNAL

NOTES:

- ALL TEMPERATURE INSTRUMENTS TO BE PROVIDED WITH A THERMOWELL.
- ALL PRESSURE INSTRUMENTS TO BE PROVIDED WITH BLOCK AND BLEED VALVES.
- ALL CONTROLLERS TO BE PROVIDED WITH INDIVIDUAL SUPPLY GAS/AIR REGULATORS COMPLETE WITH ISOLATION VALVES.

GREAT PLAINS ENGINEERING LTD.
 AIRDRIE, ALBERTA

REV	REVISION	DATE	BY	CHK	APP
A	ISSUED FOR APPROVAL	11-12-12	VRDC		
1	ISSUED FOR CONSTRUCTION - HP SEP INSTALL	12-01-25	VRDC	VRDC	JP

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 Signature: *[Signature]*
 Date: *12/02/2012*
PERMIT NUMBER: P 7480
 The Association of Professional Engineers, Geologists and Geophysicists of Alberta

NUVISTA ENERGY LTD.

SUNCHILD

COMPRESSOR STATION
 PIPING & INSTRUMENTATION DIAGRAM
 SYMBOLOLOGY CHART
 LSD. 11-28-03-11 WSM

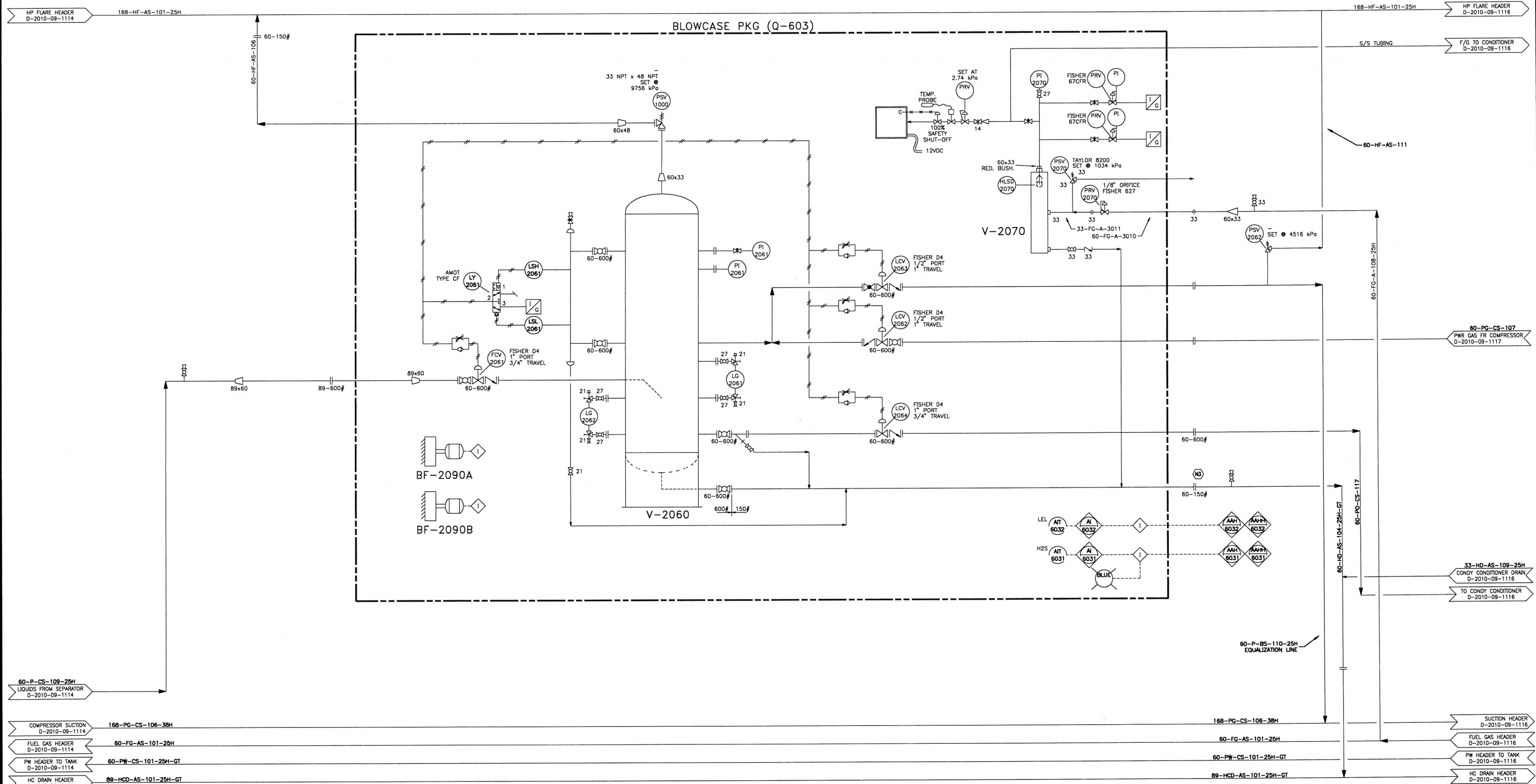
JOB NUMBER: 2010-09	DRAWN: VRDC	SCALE: NONE	DRAWING NUMBER: D-2010-09-1100	REV: 1
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BF-2090A/B
EXHAUST FAN

V-2060
BLOWCASE
914 I.D. x 3048 S/S
D.P.: 9929 kPa @ -46/52°C
G.A.: 3.2 mm
S/N: BC-1346
CRN: P-9738.21
ARN: AS60371
BUILT: LARSON & D'AMICO, 2006

UH-7602
BUILDING HEATER
SCOTTAN THERMAT 2000
24x24 - 24000 BTU/Hr
c/w 12VDC, GRILL, HOOD, VENT

V-2070
FUEL GAS SCRUBBER
219 O.D. x 914mm Lg.
MAMP: 1034 kPa @ 38°C



- 60-P-CS-109-25H LIQUIDS FROM SEPARATOR D-2010-09-1114
- COMPRESSOR SUCTION 168-PG-CS-106-38H D-2010-09-1114
- FUEL GAS HEADER 60-FG-AS-101-25H D-2010-09-1114
- PW HEADER TO TANK 60-PW-CS-101-25H-GT D-2010-09-1114
- HC DRAIN HEADER 89-HCD-AS-101-25H-GT D-2010-09-1114

- 60-P-B5-110-25H EQUALIZATION LINE
- 60-HD-AS-104-25H-GT
- 60-PO-CS-117
- 60-FG-A-108-25H
- 60-PG-CS-107 PWR GAS FR COMPRESSOR D-2010-09-1117
- 33-HD-AS-109-25H CONDY CONDITIONER DRAIN D-2010-09-1116
- TO CONDY CONDITIONER D-2010-09-1116
- 60-HD-AS-101-25H-GT
- 168-PG-CS-106-38H SUCTION HEADER D-2010-09-1116
- 60-FG-AS-101-25H FUEL GAS HEADER D-2010-09-1116
- 60-PW-CS-101-25H-GT PW HEADER TO TANK D-2010-09-1116
- 89-HCD-AS-101-25H-GT HC DRAIN HEADER D-2010-09-1116

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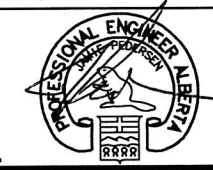
GREAT PLAINS ENGINEERING LTD.
AIRDRIE, ALBERTA

REV	REVISION	DATE	BY	CHK	APP
0	REDRAWN FROM EXISTING DWG. 012.02 REV 2	11-12-12	VRDC		
1	AS-BUILT	11-12-12	VRDC	VRDC	

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SUNCHILD
COMPRESSION STATION
PIPING & INSTRUMENTATION DIAGRAM
LIQUIDS BLOWCASE
LSD. 11-29-43-11 WSM

JOB NUMBER: 2010-09	DRAWN: VRDC	SCALE: NONE	DRAWING NUMBER: D-2010-09-1116	REV: 1
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