

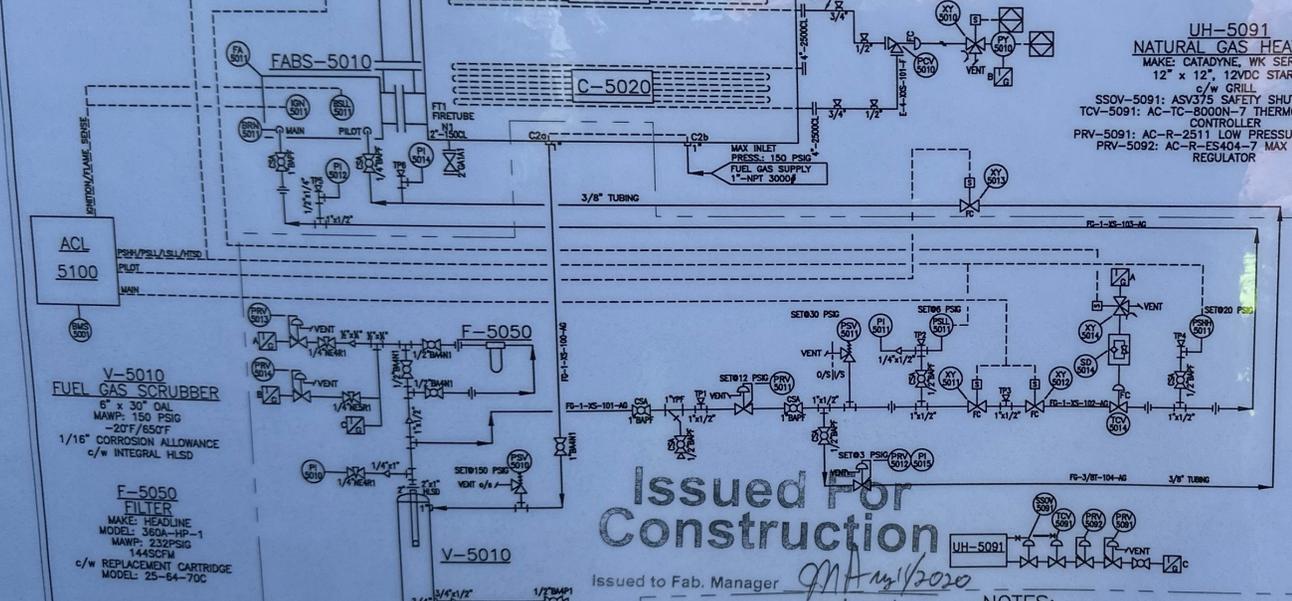
**U-5000**  
72" LINE HEATER SHELL  
72" OD x 24'-0" s/s  
-20F/200F  
c/w 36" OD x 5'-7" EXPANSION TANK,  
20" OD x 46'-0" TOTAL LENGTH FIRETUBE,  
RATED FOR 2,500,000 BTU/Hr

**FABS-5010**  
BURNER/FIRED HEATER  
TYPE: SINGLE BURNER  
RATING: 2,500,000 BTU/Hr  
BMS-5001: ACL 5100

**C-5020**  
REHEAT COIL  
(8) PASSES OF 4"-2500CL  
MAMP: 5020 PSIG  
-20F/200F  
0.076" CORROSION ALLOWANCE  
REGISTERED IN AB

**C-5010**  
PREHEAT COIL  
(8) PASSES OF 4"-2500CL  
MAMP: 5020 PSIG  
-20F/200F  
0.076" CORROSION ALLOWANCE  
REGISTERED IN AB

**ACL TC200**  
TEMP. INPUT  
TEMP. CONTROL



BILL OF MATERIALS				BILL OF MATERIALS			
TAG	QTY	MAKE	DESCRIPTION	TAG	QTY	MAKE	DESCRIPTION
PSV-5010	1	MERCER	PRESSURE SAFETY VALVE, MODEL: 9100 1"-MNPT x 1"-NPT, WCB BODY, SET@150 PSIG, "D" ORIFICE	BMS-5001	1	(CUSTOMER SUPPLIED)	COMBUSTION SAFETY CONTROLLER, MODEL: ACL 5100
PSV-5011	1	MERCER	PRESSURE SAFETY VALVE, MODEL: 9100 1"-MNPT x 1"-NPT, WCB BODY, SET@30 PSIG, "D" ORIFICE	PI-5014 PI-5015	2	(CUSTOMER SUPPLIED)	PRESSURE GAUGE, LIQUID FILLED, SS 2 1/2" FACE x 1/4"-NPT, 0-30 PSIG
THF-5011	1	(CUSTOMER SUPPLIED)	THIEF HATCH, 16oz PRESSURE RELIEF, 0.4oz VACUUM	PI-5011	1	(CUSTOMER SUPPLIED)	PRESSURE GAUGE, LIQUID FILLED, SS 2 1/2" FACE x 1/4"-NPT, 0-60 PSIG
PI-5012	1	WGI	PRESSURE GAUGE, LIQUID FILLED, SS 2 1/2" FACE x 1/4"-NPT, 0-30 PSIG	PRV-5011	1	FISHER (CUSTOMER SUPPLIED)	PRESSURE REGULATOR, 627, 250 PSIG MAMP 1"-NPT, 5-20 PSIG RANGE, 1/4" ORIFICE, NYLON DISC
TC-5001	1	ACL	TEMPERATURE CONTROLLER, MODEL: TC200	PRV-5012-14	3	FISHER (CUSTOMER SUPPLIED)	PRESSURE REGULATOR 67CFR-362TB 1/4"-NPT, 0-35 PSIG RANGE, 250 PSIG MAMP
XY-5011-12	2	ASCO	2 WAY SOLENOID VALVE, 1"-NPT, 24VDC, 30 PSIG MAMP	PSHH-5011	1	(CUSTOMER SUPPLIED)	HIGH PRESSURE SWITCH, 1/2"-NPT, SET@ 20 PSIG MODEL: 12SH5H9B
XY-5013	1	(CUSTOMER SUPPLIED)	2 WAY SOLENOID VALVE, 1/2"-NPT, 24VDC	PSLL-5011	1	(CUSTOMER SUPPLIED)	LOW PRESSURE SWITCH, 1/2"-NPT, SET@ 5 PSIG MODEL: 12SH5H9A
XY-5010/14	2	ASCO	3 WAY SOLENOID VALVE, 1/2"-NPT, 24VDC	TE-5011 TW-5011	1	WIKAY	DUAL TYPE-K THERMOCOUPLE, 12" LG STEM, 304SS c/w 1/2"-FNPT x 3/4"-MNPT x 12" 316 SST THERMOWELL

**UH-5091**  
NATURAL GAS HEATER  
MAKE: CATADYNE, WK SERIES  
12" x 12", 12VDC START  
c/w GRILL  
SSOV-5091: ASV375 SAFETY SHUTOFF VALVE  
TCV-5091: AC-TC-8000N-7 THERMOSTATIC TEMP. CONTROLLER  
PRV-5091: AC-R-2511 LOW PRESSURE REGULATOR  
PRV-5092: AC-R-ES404-7 MAX APPLIANCE REGULATOR

TAG	QTY	MAKE	DESCRIPTION
TCV-5014	1	KIMRAY	MOTOR CONTROL VALVE, 1400SMT 1"-NPT, 1/2" ORIFICE w/ TRAVEL STOP
FA-5011	1	WENCO	FLAME ARRESTOR, RATED FOR 2.5MM, TO FIT 20" FIRETUBE
BRN-5011	1	(CUSTOMER SUPPLIED)	#1 EUPHIE BURNER NOZZLE w/ PLOT & AIR PLATE w/ 5/16" ORIFICE
LG-5011	1	(CUSTOMER SUPPLIED)	5/8" TUBULAR LEVEL GLASS, 1/2"-NPT-5/8" GLASS, 1TC GAUGE COOKS
LSL-5011	1	KIMRAY	ELECTRIC LEVEL SWITCH, 2"-NPT, MODEL: CEC2
PCV-5010	1	MASTER FLO (CUSTOMER SUPPLIED)	P3E ANGLE CHOKE VALVE, 4"-2500CL RTJ, FC NACE SERVICE, c/w PDA 100 ACTUATOR
PY-5010	1	(CUSTOMER SUPPLIED)	MODEL: DVC8200HC DIGITAL FIELD-VUE POSITIONER
SD-5014	1	SMC	MS-2000-N02 SPEED CONTROL VALVE

**VALVE LIST**

TAG	QTY	MAKE	DESCRIPTION
1/2"BA4P1	5	(CUSTOMER SUPPLIED)	1/2"-NPT 3000 WOG RP BALL VALVE
1"BA4P1	1	(CUSTOMER SUPPLIED)	1"-NPT 3000 WOG RP BALL VALVE
2"GA1A1	1	(CUSTOMER SUPPLIED)	2"-150CL RF GATE VALVE
1/2"NE5R1	4	(CUSTOMER SUPPLIED)	1/2"-NPT Mx F 10,000 PSIG NEEDLE VALVE, SS

**VALVE LIST CSA APPROVAL**

TAG	QTY	MAKE	DESCRIPTION
1/2"BAFF	1	NEO	1/2"-NPT 2500 SERIES BALL VALVE, SS
1/2"BAFF	4	NEO	1/2"-NPT 2500 SERIES BALL VALVE, SS
1"BAFF	3	NEO	1"-NPT 2500 SERIES BALL VALVE, SS
1"YPF	1	ACL	1"-NPT T-STRAINER, SS, MODEL: 176YS

**SKID & HUTCH DESCRIPTION**

TAG	QTY	DESCRIPTION
HUTCH		2'-0" WIDE x 6'-0" LONG FOAM PANEL
HEIGHT		6'-0"
INSULATION		R12 IN ROOF & WALLS
EXTERIOR/INTERIOR		1 1/2" GALVALUME FOAM PANEL
DOOR	1	5' x 5' FOAM PANEL DOUBLE
VENT	1	9" x 7" ADJUSTABLE LOUVER c/w SCREEN
HARDWARE		CHECK CHAINS & SWEEP, BARREL BOLT, CHAIN BOLT, WEATHER STRIPPING
SHELL INSULATION		1 1/2" INSULATION ON LINE HEATER SHELL NOT COVERED BY HUTCH c/w 0.02" STUCCO EMBOSSED ALUMINUM CLADDING
SKID		11'-0" WIDE x 29'-5" LONG
SKID PREP & PAINT		SSPC-SP3, 1 COAT CLOVERDALE PRIMER, 1 COAT CLOVERDALE GREY ENAMEL
PIPE EXTERIOR		SSPC-SP3, 1 COAT CLOVERDALE PRIMER, 1 COAT CLOVERDALE GREY ENAMEL
FIRETUBE & STACK		SSPC-SP3, 1 COAT CLOVERDALE HIGH TEMP FLAT BLACK

**CAPE MANUFACTURING LTD.**  
PO BOX 218 HALKIRK AB T0C 1M0  
TELEPHONE: (403) 684-2442

CLIENT: BIRCHILL CANADA LTD. PARTNERSHIP  
e/o:  
LSD: 18-20-43-13 WSM  
DATE: 20-08-10  
JOB NO.: CML-170683  
SCALE: N.T.S.  
DRAWN BY: KG  
CHECKED BY: [Signature]  
SHEET 1 OF 1

**2.5MM RTU LINE HEATER**  
72" OD x 24'-0" F/F  
16 PASSES OF 4"-2500CL RTJ  
DWG NO.: CML-170683PID  
REV. 0

**Issued For Construction**

Issued to Fab. Manager *GM Aug 11/2020*

Released for Fabrication *DA Aug 11/2020*

**NOTES:**

- QUANTITIES B.O.M. ARE FOR ONE (1) UNIT.
- ALL PIPING TO BE IN ACCORDANCE WITH THE LATEST EDITION OF ASME B31.3 PRESSURE PIPING CODE.
- WELDED PIPING TO BE: SA-106B SMLS (SA-333 GR.6 OUTSIDE BLDG);  
• SPEC F/FL - 1" THRU 6"; SCH. XXS
- THREADED PIPING TO BE: SA-106B SMLS (SA-333 GR.6 OUTSIDE BLDG);  
• SPEC AG/AA - 1/2" THRU 1 1/2"; SCH. XS
- WELDED FITTINGS TO BE: SA-234-WPB (SA-420-WPL6 OUTSIDE BLDG).
- FORGED STEEL FITTINGS TO BE: SA-105N (SA-350 LF2 CL1 OUTSIDE BLDG), CL3000 (min.) RATING.
- TUBING DETAILS:  
• INSTRUMENT: 3/8"(0.035"WT) 316SS TUBING  
• PROCESS: 1/2"(0.049"WT) 316SS TUBING  
• c/w HY-LOK 316SS FITTINGS & FERRULES.
- PROTECT ALL OPENINGS OFF SKID (c/s).
- VENT ALL INSTRUMENTS SECURELY SUPPORTED.
- PIPING & INSTRUMENTS EQUIPMENT INSTALLED BY OTHERS.
- ELECTRICAL SUPPLIES & EQUIPMENT INSTALLED BY OTHERS.
- 100% X-RAY OF ALL WELDED PIPING.
- NO PWHT ON ALL WELDED PIPING.
- PENG STAMPED P&ID & LINE LIST ON IFC DWG'S.
- BURNER FUEL GAS TRAIN TO BE CSA B149.3-15 COMPLIANT & APPROVED BY A CSA B149.3 CERTIFIED INSPECTOR.

**VALVE LEGEND**

- END CONNECTION:**  
FLANGED RTJ=1  
FLANGED RTJ=2  
BUTTWELDED=3  
THREADED F-F=4  
THREADED M-F=5  
SOCKETWELD=6  
SW/THRD=7  
TUBING=8
- VALVE SERVICE:**  
NORMAL TEMP, SWEET PROCESS=1  
NORMAL TEMP, SOUR PROCESS=15  
LOW TEMP, SWEET PROCESS=2  
LOW TEMP, SOUR PROCESS=2S
- VALVE SIZE:**  
VALVE TYPE:  
BALL (R.P.)=BA  
BALL (F.P.)=BAF  
NEEDLE=NE  
FULL BODY CHECK=C  
GATE=GA  
GLOBE=GL  
PISTON CHECK=CP  
Y-STRAINER=Y
- ANSI CLASS:**  
CL150=A  
CL300=B  
CL400=C  
CL600=D  
CL900=E  
CL1500=F  
CL2500=G
- THREADED/SOCKET WELDED CLASS:**  
ANSI 502  
CLASS 800=H 250 WOG=L  
CLASS 1500=J 1000 WOG=M  
CLASS 2000=K 2000 WOG=N  
CLASS 2160=O 2160 WOG=O  
CLASS 3000=P 3000 WOG=P  
CLASS 3600=Q 3600 WOG=Q  
CLASS 6000=R 6000 WOG=R  
CLASS 10000=S 10000 WOG=S  
TUBING RATING=T