

DESIGN BASIS	
DESIGNED TO MEET	CAN/CSA B149.3-05
FUEL GAS TRAIN DESIGN PRESSURE: FROM FIRST MANUAL SHUTOFF VALVE TO PRESSURE REGULATORS FROM FIRST PRESSURE REGULATORS TO BURNER ASSEMBLY	120 PSIG (827 KPAG) 40 PSIG (275.8 KPAG)
FUEL GAS TRAIN DESIGN TEMPERATURE:	-20° F TO 150° F (-29° C TO 65° C) (SEE NOTE #1)
FUEL GAS TRAIN LOCATION:	INDOOR OR OUTDOOR
FUEL GAS TRAIN CSA ELECTRICAL AREA:	ZONE 1 OR ZONE 2 SUITABLE
CONTROL POWER:	12 VDC, 24 VDC, 120 VAC, 240 VAC
BURNER CAPACITY:	25,000 TO 6MM BTU/HR (NET)

CERTIFICATE OF COMPLIANCE:
THE FUEL GAS TRAIN SHOWN ON THIS DRAWING IS ACCEPTABLE FOR USE IN THE PROVINCE OF ALBERTA, SASKATCHEWAN AND BRITISH COLUMBIA PROVIDED THAT:

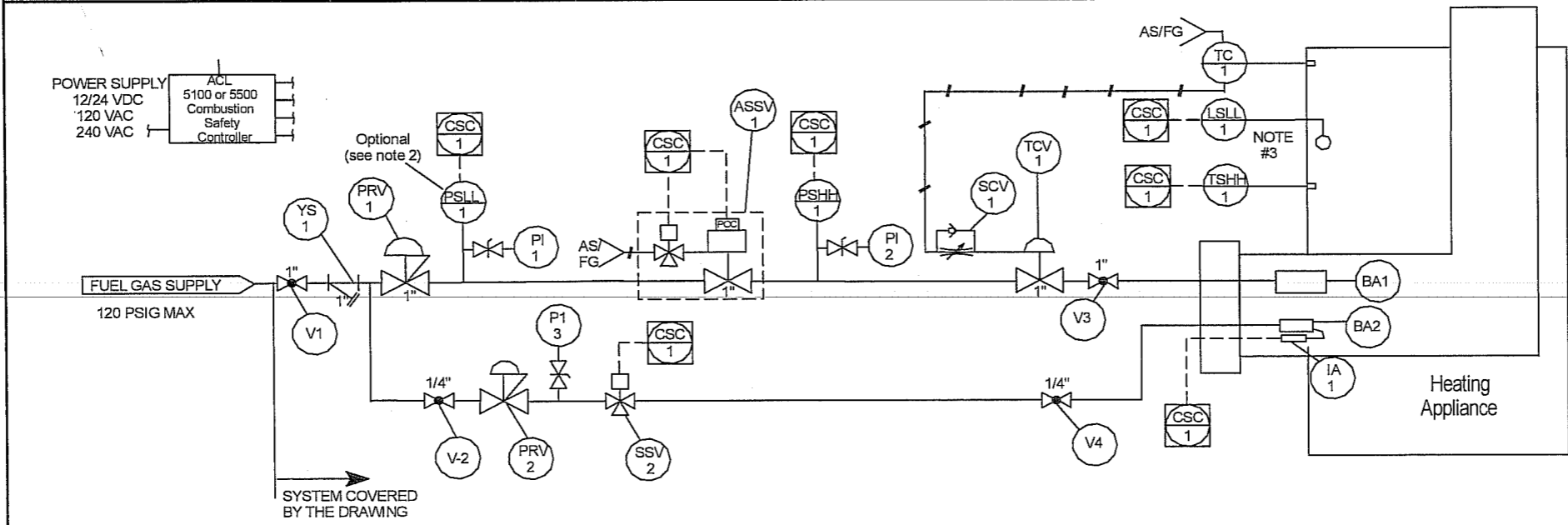
- 1.0 ALL APPLICABLE PROVINCIAL CODES, STANDARDS, AND REGULATIONS ARE COMPLIED WITH. VARIANCES AND SPECIAL INSPECTIONS ARE ACCEPTABLE.
- 2.0 THE FUEL GAS TRAIN IS FABRICATED AS DETAILED ON THE DRAWINGS. FIELD SELECTION OF SUITABLE LEVEL AND TEMPERATURE SWITCHES IS ALLOWED. FUEL GAS CONTROLS AND INSTRUMENTS MUST BE INSTALLED IN LOCATIONS INDICATED BY THE SCHEMATICS BELOW. NO ALTERNATE CONTROL SCHEMES OR LAYOUTS ARE ALLOWED.
- 3.0 THE APPLIANCE IS EQUIPPED WITH A PROPER FLAME ARRESTOR.
- 4.0 PIPING DESIGN CONFORMS TO CURRENT ASME/ANSI SPECIFICATIONS.
- 5.0 PIPE AND FITTING MATERIALS ARE SUITABLE FOR DESIGN PRESSURE AND TEMPERATURE SPECIFIED.
- 6.0 THREADED PIPING SCH 80 MINIMUM.
- 7.0 FOR LARGER BTU RATINGS CONTACT FACTORY

NOTES:
1.0 ALL ACL EQUIPMENT IS DESIGNED FOR -40°C/F OPERATION. PROPER SELECTION OF PIPING MATERIALS AND REMAINING CONTROLS CAN ALLOW FOR THE FUEL GAS SYSTEM TO HAVE A MINIMUM DESIGN TEMPERATURE OF -40°C/F, WITH THE EXCEPTION OF THE FISHER REGULATORS WHICH ARE RATED TO -29°C.
2.0 LOW FUEL PRESSURE SWITCH OPTIONAL WHEN USING ACL BURNER EQUIPMENT.

BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION
CSC	1	ACL-5100 or ACL-5500 COMBUSTION SAFETY CONTROLLER CSA C22.2 No. 199-M89 APPROVED CLASS1 DIV2
V-1	1	1" NPT MANUAL SHUTOFF VALVE, SOFT SEAT EMICO 720 SERIES UL/ULC OR EQUIVALENT
V-3	1	1" NPT MANUAL SHUTOFF VALVE, SOFT SEAT EMICO 720 SERIES UL/ULC OR EQUIVALENT
V-2/V4	2	1/4" NPT MANUAL SHUT OFF VALVE SOFT SEAT EMICO 720 SERIES UL/ULC OR EQUIVALENT
YS-1	1	1" Y STRAINER
TC-1	1	FIELD SELECTION OF SUITABLE TEMPERATURE CONTROL ALLOWED.
TSHH-1	1	FIELD SELECTION OF SUITABLE HIGH TEMPERATURE SWITCH IS ALLOWED. NOTE 3
PSHH-1	1	HIGH FUEL GAS SHUT DOWN SWITCH, ELECTRIC, DRY CON- TACTS, CONTACTS TO OPEN ON PRESSURE RISING, SWITCH TO BE CERTIFIED FOR APPROPRIATE ELECTRICAL AREA CLASSIFICATION
PSLL-1 Optional (see note 2)	1	LOW FUEL GAS SHUT DOWN SWITCH, ELECTRIC, DRY CON- TACTS, CONTACTS TO OPEN ON PRESSURE FALLING, SWITCH TO BE CERTIFIED FOR APPROPRIATE ELECTRICAL AREA CLASSIFICATION

NOTES:
3.0 IF ELECTRIC SWITCHES ARE USED, THEY MUST BE CERTIFIED FOR THE ELECTRICAL CLASSIFICATION OF THE AREA
4.0 ALL VENTS MUST BE PIPED TO A SAFE AREA.

BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION
PI1/PI2/PI3	3	WIKA 0-30 1/4" BM 2 1/2" LIQUID FILLED GAUGE OR EQUAL
PRV-1	1	1" PRESSURE REGULATOR, SELF OPERATED, POSITIVE SHUTOFF FISHER 627 OR EQUAL. ORIFICE MUST BE SIZED TO MEET APPLIANCE CAPACITY
PRV-2	1	1/4" PILOT GAS REGULATOR FISHER 87C OR EQUAL
ASSV-1	1	1" CERTIFIED AUTOMATIC SAFETY SHUTOFF VALVE WITH PROOF OF CLOSURE ACL-ASSV- 1P CSA CLASS 1 DIV1 6.5-2005 C/I . MINIMUM ACTUATOR OPERATING PRESSURE 60 PSIG
SSV-2	1	ACL-SV-SSO-1 1/8" NPT CERTIFIED PILOT GAS SAFETY SHUT OFF VALVE, CSA 6.5-2005, CSA C22.2, C/I
TCV-1	1	TEMP CONTROL VALVE FISHER 119 OR 128 OR EQUIVALENT
BA-1	1	ACL-HE-ON SERIES HIGH EFFICIENCY BURNER ASSEMBLY
BA-2	1	ACL-M50 PILOT ASSEMBLY
LSLL-1	1	FIELD SELECTION OF SUITABLE LOW LEVEL SWITCH IS ALLOWED NOTE 3
SCV-1	1	SPEED CONTROL VALVE
IA-1	1	ACL-IGNITOR ASSEMBLY



	DRAWING # ACL-1-P-XX-MDY Rev. 2	June 26, 2008		
	Proj 145			
	ZIRCO			
	ACL-1-P-24-120408-LR-03	Dec. 05/08	JS	
NO.	DESCRIPTION	DATE	BY	CK

ACL
Manufacturing Inc.

805 Main Ave West
Box 2002
Sundre, Alberta, CANADA
PHONE: (403) 638-5234
FAX: (403) 638-4973

COMPANY: *Murphy Oil*
LOCATION/JOB # *NWP-1563 LSD: D-11-B*

1" FUEL GAS VALVE TRAIN
USING ONE PNEUMATIC SAFETY SHUTOFF
VALVE (CERTIFIED) WITH PROOF OF CLOSURE

DRAWN NS	APPROVED	DATE	SCALE NONE	REVISION
S.O. NO.	UNIT NO.	NO. REQ'D	DRAWING NO. STD-003	SHEET 1 OF 1

ENGINEERING STAMP

