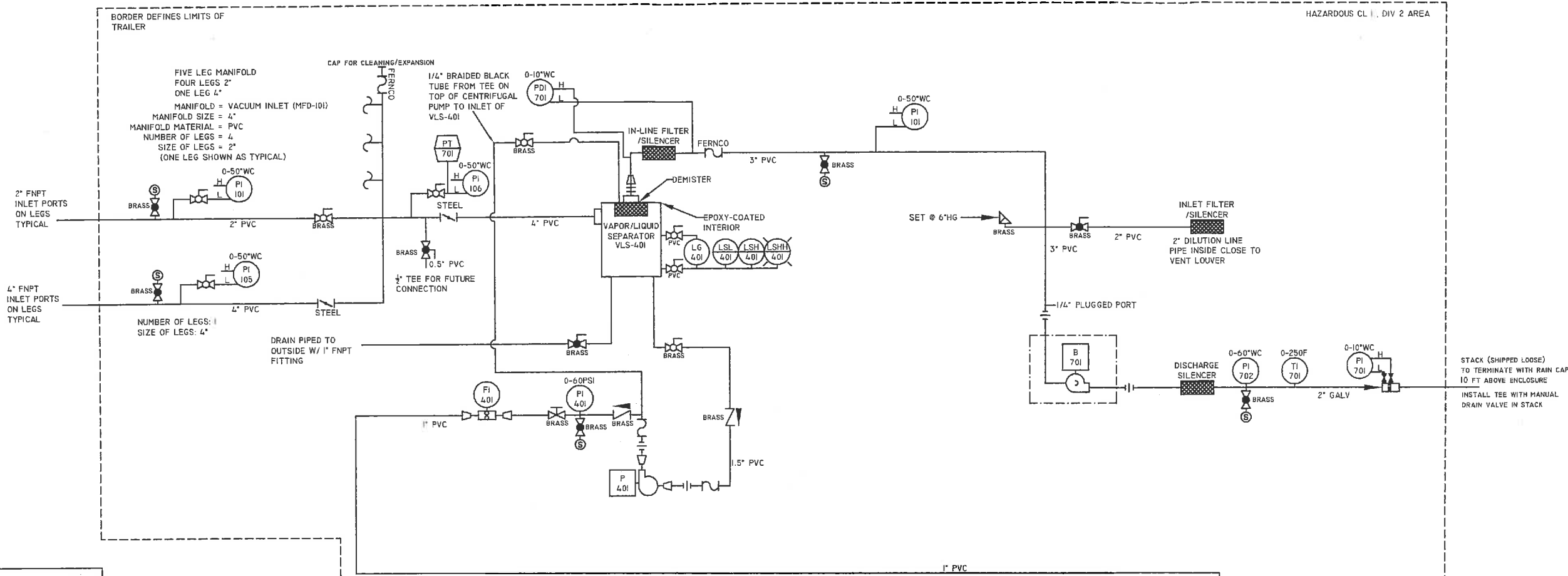


HEATER
TAG = H-7901
FLOWRATE & PRESSURE = N/A
HORSEPOWER = 3600 WATTS
VOLTAGE & PHASE = 240V, 1PH EXP
FULL-LOAD AMPS =

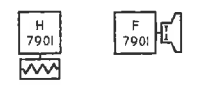
GOULDS ISTIC5F4W
TAG = P-401
FLOWRATE & PRESSURE = 5 GPM @ 55 TDH
HORSEPOWER = 0.5
VOLTAGE & PHASE = 240V, 3 PH, TEFC, CL 1 DIV 2
FULL-LOAD AMPS = 1.8 A

ROTRON EN656M72XL
TAG = B-701
FLOWRATE & PRESSURE = 160 scfm @ 32"WC
HORSEPOWER = 3 HP
VOLTAGE & PHASE = 240V, 3 PH, EXP
FULL-LOAD AMPS = 7.86 A



****BUILDING EQUIPMENT AND CONTROL PANEL****

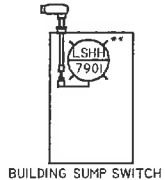
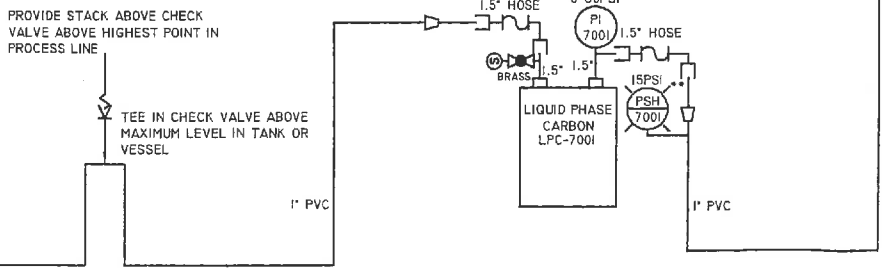
CONTROL PANEL
TO BE LOCATED ON TRAILER. PANEL TO BE A MINIMUM OF 36" FROM ANY HAZARDOUS PROCESS EQUIPMENT, AND A MINIMUM OF 36" ABOVE GRADE.



****WIRING AND SPECIAL PROJECT NOTES****

IS INPUT WIRING TO BE WIRED FOR INDOORS, ACCORDING NEC FOR HAZARDOUS LOCATIONS.
WIRING TO BE CLASS 1 DIVISION 2, AS PER THE NEC.

NOTES FOR GREEN DRUMS:
- ENSURE HOSES ARE LONG ENOUGH TO AVOID PUTTING TOO MUCH STRESS ON THE FITTINGS IN THE TOP OF THE DRUMS



PIPING DETAILS:
- WATER FLOW METERS: PROVIDE 10 DIA. OF STRAIGHT PIPE BEFORE AND 5 DIA. OF STRAIGHT PIPE AFTER METERS. ENSURE THAT THROTTLING VALVES ARE NOT DIRECTLY IN LINE WITH METERS.
- AIR FLOW METERS: PROVIDE 8 DIA. OF STRAIGHT PIPE BEFORE AND 3 DIA. OF STRAIGHT PIPE AFTER METERS, IF POSSIBLE. AVOID TEES AND ELBOWS BEFORE AND AFTER METERS.
- MATERIALS OF VALVES AND FITTINGS TO BE THE SAME AS THE DESCRIPTION AT THE LINE. IF THERE IS A TRANSITION FROM PVC TO STEEL, THE VALVE SHOULD BE BRASS.
- THERE ARE NO SPECIAL PIPING REQUIREMENTS OTHER THAN WHAT IS EXPLAINED ON THE DIAGRAM.
- WHEN PVC HOSE IS SPECIFIED, ALWAYS USE VACUUM HOSE; USE GREEN HOSE FOR PRESSURES LESS THAN 60PSI; USE TANK TRUCK HOSE FOR PRESSURES BETWEEN 60PSI AND 150PSI.
- PVC PIPE MAY BE SUBSTITUTED WITH EQUAL SIZED PVC HOSE WHERE A FLEXIBLE CONNECTION IS DESIRED.

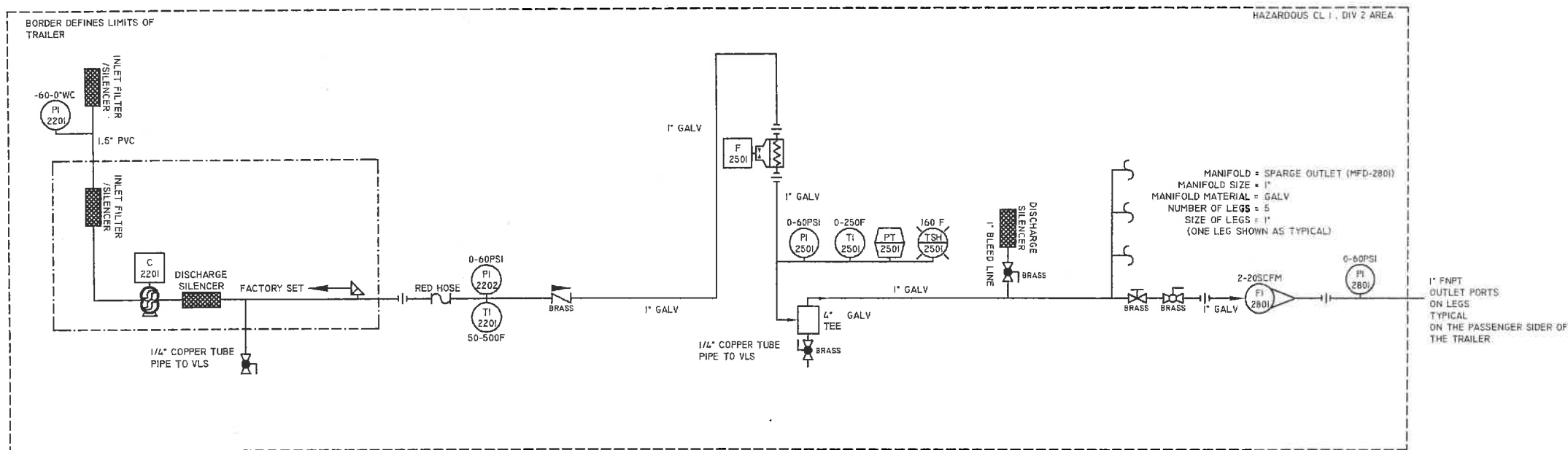
MLE EQUIPMENT
THIS INFORMATION IS THE PROPERTY OF MLEE INC. AND CANNOT BE REUSED OR REPRODUCED WITHOUT THE WRITTEN

C	06-24-11	MH	AS BUILT
B	MAY 26, 11	MS	FOR PRODUCTION
A-1	APRIL 18, 2011	MH	UPDATES FROM SUBMITTAL
A	APR 12, 11	MH	FOR APPROVAL

DWG. NO 200534A-01 (PAGE 1 OF 3)
TITLE: PROCESS & INSTRUMENTATION DRAWING
CUSTOMER: ROCK OIL- EAST SYSTEM TERRACON CONSULTANTS
MLE EQUIPMENT INC.

BUSCH MINK 1144 BP
 TAG = C-2201
 FLOWRATE & PRESSURE = 50 SCFM @ 16.5 PSI
 HORSEPOWER = 7.5 HP
 VOLTAGE & PHASE = 240V, 3 PH, TEFC, CL 1 DIV 2
 FULL-LOAD AMPS = 18.5

AMERICAN INDUSTRIAL ACA-3182-3EXP
 TAG = F-2501
 FLOWRATE & PRESSURE = N/A
 HORSEPOWER = 0.25HP
 VOLTAGE & PHASE = 240, 3 PH, EXP
 FULL-LOAD AMPS = 0.3 A



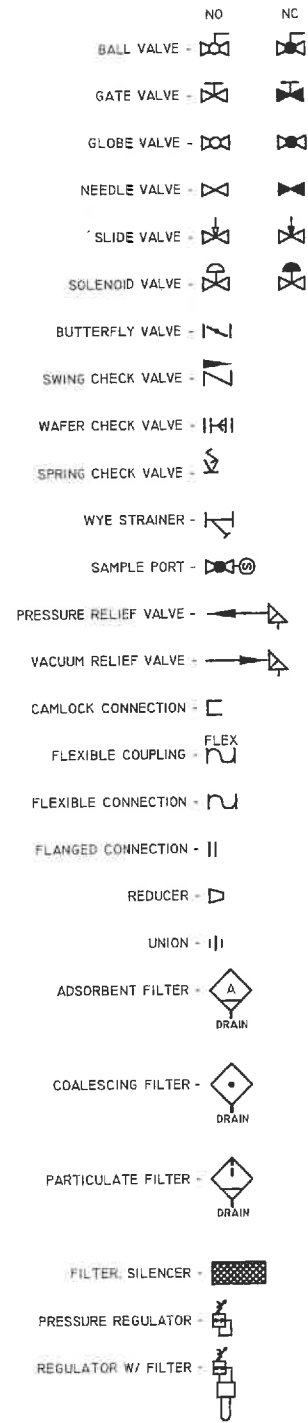
PIPING DETAILS
 - WATER FLOW METERS. PROVIDE 10 DIA. OF STRAIGHT PIPE BEFORE AND 5 DIA. OF STRAIGHT PIPE AFTER METERS. ENSURE THAT THROTTLING VALVES ARE NOT DIRECTLY IN LINE WITH METERS.
 - AIR FLOW METERS. PROVIDE 8 DIA. OF STRAIGHT PIPE BEFORE AND 3 DIA. OF STRAIGHT PIPE AFTER METERS. IF POSSIBLE. AVOID TEES AND ELBOWS BEFORE AND AFTER METERS.
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 - PVC PIPE MAY BE SUBSTITUTED WITH EQUAL-SIZED PVC HOSE WHERE A FLEXIBLE CONNECTION IS PREFERRED.

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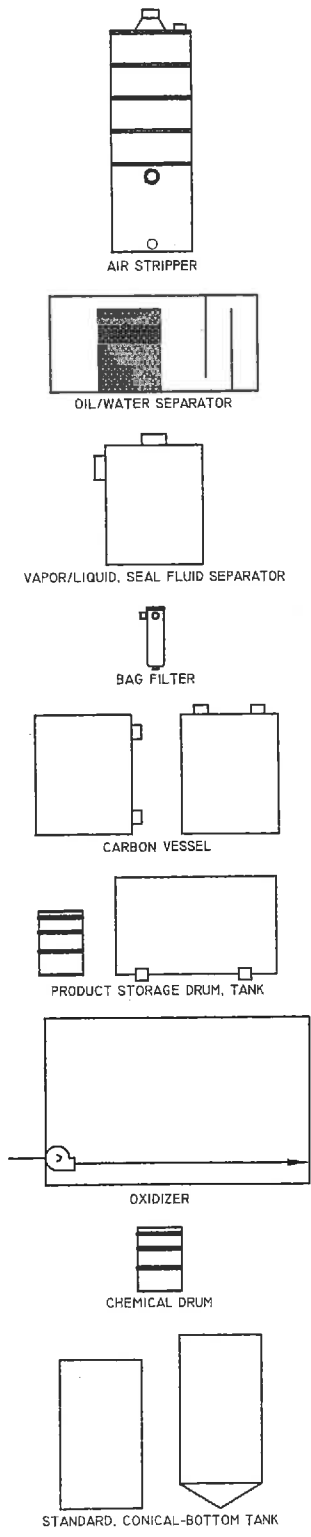
LEVEL	DATE	BY	REVISION
C	06-24-11	MH	AS BUILT
B	MAY 26, 11	MS	FOR PRODUCTION
A-1	APRIL 18, 2011	MH	UPDATES FROM SUBMITTAL
A	APR 12, 11	MH	FOR APPROVAL

DWG. NO:	200534A-01 (PAGE 2 OF 3)
TITLE:	PROCESS & INSTRUMENTATION DRAWING
CUSTOMER:	ROCK OIL- EAST SYSTEM TERACON CONSULTANTS
	MLE EQUIPMENT INC.

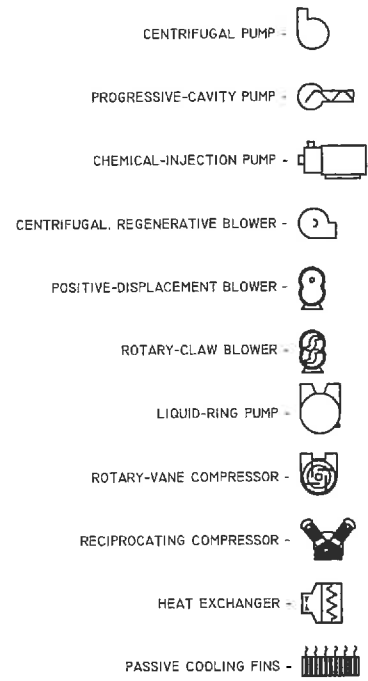
VALVES AND PIPING



EQUIPMENT



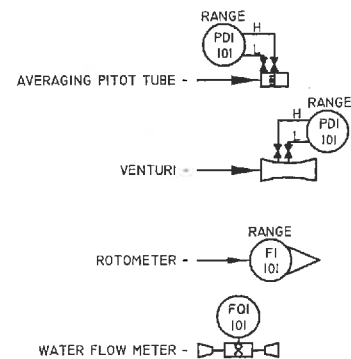
EQUIPMENT



EQUIPMENT

AS - AIR STRIPPER
 BLD - BUILDING, TRAILER OR SKID
 FLT - FILTER VESSEL
 LPC - LIQUID-PHASE CARBON VESSEL
 MFD - MANIFOLD
 OWS - OIL/WATER SEPARATOR
 OX - OXIDIZER
 PST - PRODUCT STORAGE TANK
 SOS - SEAL OIL SEPARATOR
 SWS - SEAL WATER SEPARATOR
 TNK - TANK
 VLS - VAPOR/LIQUID SEPARATOR
 VPC - VAPOR-PHASE CARBON VESSEL

FLOW MEASUREMENT



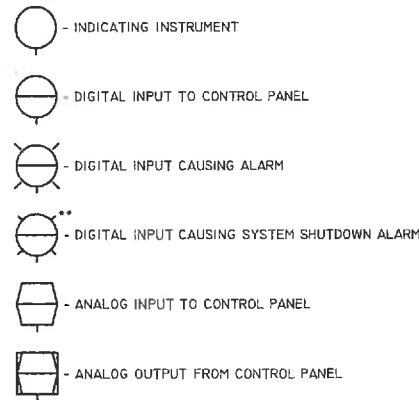
INSTRUMENT DESIGNATION

	INPUT	1ST MODIFIER	2ND MODIFIER	3RD MODIFIER	OUTPUT	1ST MODIFIER	
A			ALARM				A
B						BLOWER	B
C	CYCLE					COMPRESSOR	C
D		DIFFERENTIAL				AIR DRYER	D
E							E
F	FLOW					FAN	F
G	GAS (LEL)		GAUGE				G
H				HIGH	HAND	HEATER	H
I	CURRENT		INDICATOR				I
J							J
K							K
L	LEVEL			LOW			L
M					MOTORIZED		M
N							N
O							O
P	PRESSURE				PNEUMATIC	PUMP	P
Q		QUANTITY					Q
R							R
S	SPEED		SWITCH		SOLENOID		S
T	TEMPERATURE		TRANSMITTER				T
U							U
V						VALVE	V
W							W
X							X
Y							Y
Z	POSITION						Z

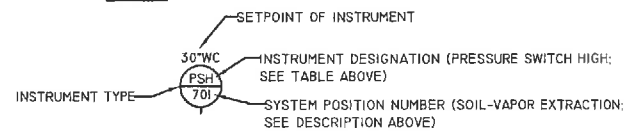
SYSTEM POSITION DESIGNATION

- 100 - VACUUM INLET MANIFOLD
- 300 - INLET HEAT EXCHANGER
- 400 - VAPOR/LIQUID SEPARATOR
- 500 - VAPOR/LIQUID SEPARATOR - 2
- 700 - SOIL-VAPOR EXTRACTION
- 1000 - LIQUID-RING PUMP
- 1300 - SVE HEAT EXCHANGER
- 1600 - VAPOR-PHASE CARBON
- 1900 - OXIDIZER
- 2200 - AIR SPARGE
- 2500 - SPARGE HEAT EXCHANGER
- 2800 - SPARGE OUTLET MANIFOLD
- 3100 - AIR COMPRESSOR
- 3400 - COMPRESSED-AIR OUTLET MANIFOLD
- 3700 - PNEUMATIC WELL PUMPS
- 4000 - SUBMERSIBLE WELL PUMPS
- 4300 - SURFACE-MOUNT WELL PUMPS
- 4600 - GROUNDWATER INLET MANIFOLD
- 4900 - OIL/WATER SEPARATOR
- 5200 - PRODUCT STORAGE TANK
- 5500 - INLET TANK
- 5800 - UPSTREAM BAG FILTER
- 6100 - CHEMICAL INJECTION
- 6400 - AIR STRIPPER
- 6700 - PRE-CARBON BAG FILTER
- 7000 - LIQUID-PHASE CARBON
- 7100 - PRE-MEDIA BAG FILTER
- 7200 - ACTIVATED ALUMINA
- 7300 - DISCHARGE TANK
- 7400 - POST-TREATMENT BAG FILTER
- 7600 - REINJECTION
- 7900 - BUILDING, TRAILER OR SKID
- 8200 - CONTROL PANEL
- 8500 - ELECTRICAL PARTS
- 9900 - EXTRAS

INSTRUMENT IDENTIFICATION



EXAMPLE



MLE
 EQUIPMENT
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 REPRODUCED WITHOUT THE WRITTEN

REV	DATE	BY	DESCRIPTION
C	06-24-11	MH	AS BUILT
B	MAY 26, 11	MS	FOR PRODUCTION
A1	APRIL 16, 2011	MH	UPDATES FROM SUBMITTAL
A	APR 12, 11	MH	FOR APPROVAL

DWG. NO.	200534A-01 (PAGE 3 OF 3)
TITLE	P&ID LEGEND
CUSTOMER	ROCK OIL- EAST SYSTEM TERRACON CONSULTANTS
	MLE EQUIPMENT INC.

SCALE BAR, EACH BLOCK IS 12" LONG

**** CIVIL CONSTRUCTION NOTES ****

- INSTALL GRATING BETWEEN BUILDING FANS AND OUTSIDE LOUVERS.
- THERMAL INSULATION ON WALLS AND CEILING
- HEAT EXCHANGER DIMENSION IS 23.0"Wx19.4"H
- PROVIDE WOOD LIP AROUND PERIMETER TO ALLOW SUMP SWITCH TO TRIP.
- PLUG AND SEAL (WITH WASHERS) ANY HOLES IN THE FLOOR TO CONTAIN WATER SPILLS.

****MECH./ELECT. ASS'Y NOTES ****

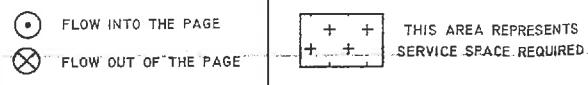
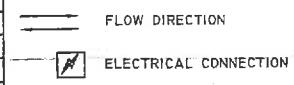
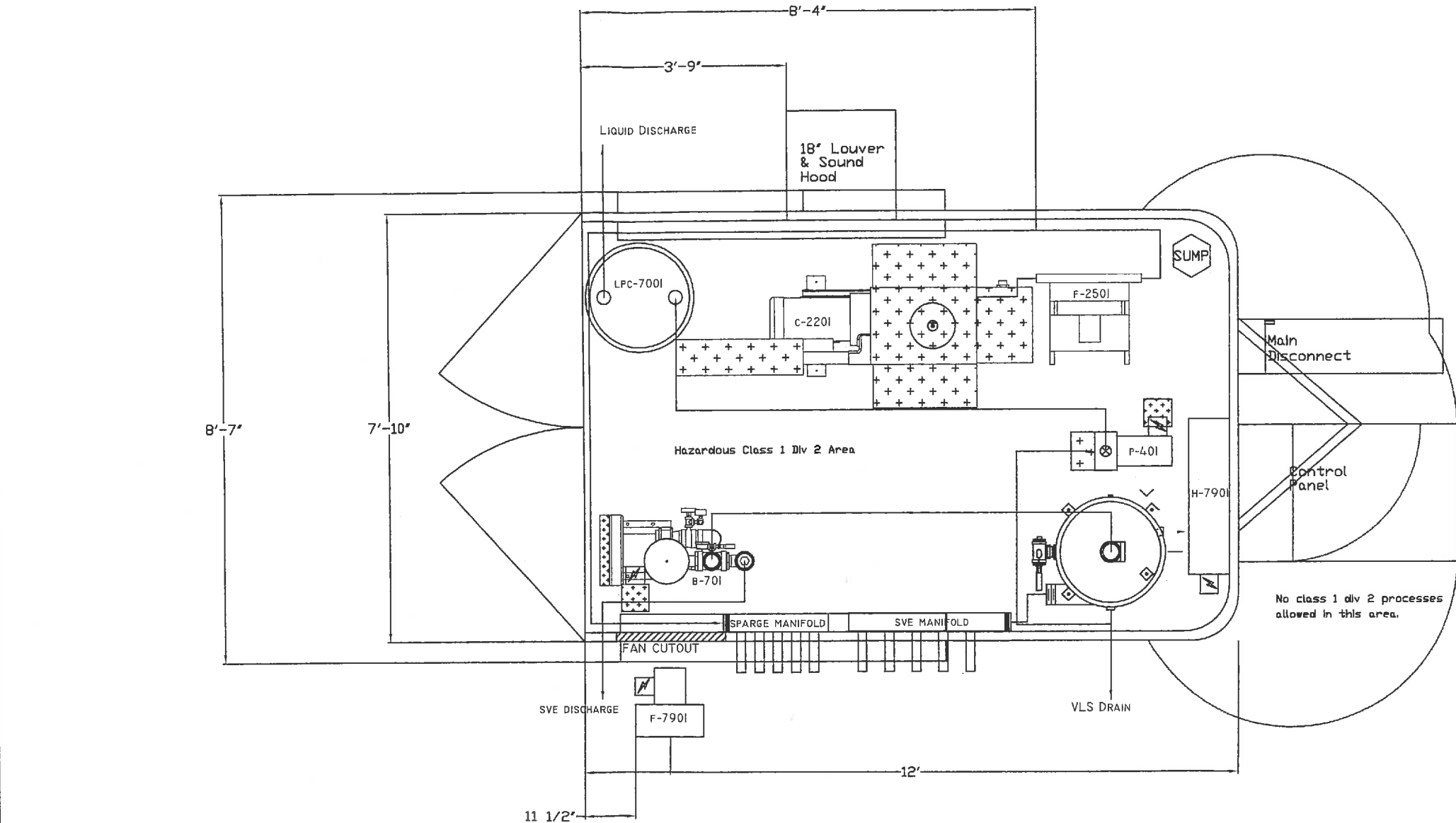
- LOCATE COOLING THERMOSTAT IN THE WARMEST LOCATION AT CEILING LEVEL.
- LOCATE HEATING THERMOSTAT AT FLOOR LEVEL.
- LIQUID PHASE CARBON VESSELS (GREEN DRUMS) NEED INTERNAL SLOTTED PIPE BEFORE FILLING WITH CARBON.
- PLUG AND SEAL (WITH WASHERS) ANY HOLES IN THE FLOOR TO CONTAIN WATER SPILLS.
- VIBRATION ISOLATORS UNDER EQUIPMENT.
- NOISE LIMIT: 70 DBA MAX AT 10 FT
- MAXIMUM WIDTH FOR SHIPPING IS 102". THIS INCLUDES ALL CONNECTIONS THAT PROTRUDE THROUGH THE SIDES OF THE ENCLOSURE.
- DO NOT USE GREEN HOSE ON SPARGE LINES

***** COMMISSIONING NOTES *****

- FAN AND LOUVER HOODS NEED TO BE INSTALLED ON SITE. CANNOT SHIP WITH HOODS ATTACHED.
- FOR BUILDINGS IN COLD WEATHER CLIMATES, WHERE THE BUILDING IS ELEVATED, A SKIRT MUST BE BUILT AROUND THE BASE TO PREVENT THE FLOOR FROM FREEZING.
- MLEE RECOMMENDS PAD BE AT LEAST 12" LARGER THAN ENCLOSURE IN ALL DIRECTIONS. LOCAL CODES MAY REQUIRE ALTERNATE DIMENSIONS.

***** DIMENSION INFORMATION *****

DESCRIPTION	DIM (L x W x H)	WEIGHT
TRAILER	12'x8'x6.5'	<7000LB



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LEVEL	DATE	BY	REVISION
C	JUNE 28, 11	MH	AS BUILT
B	MAY 26, 11	MS	FOR PRODUCTION
A-1	APR 18, 11	MH	UPDATES FROM SUBMITTAL
A	APR 12, 11	MS	FOR APPROVAL

DWG NO:	200534A - 02
TITLE:	SYSTEM LAYOUT
CUSTOMER:	ROCK OIL - EAST SYSTEM
	TERRACON
	MLEE EQUIPMENT INC.