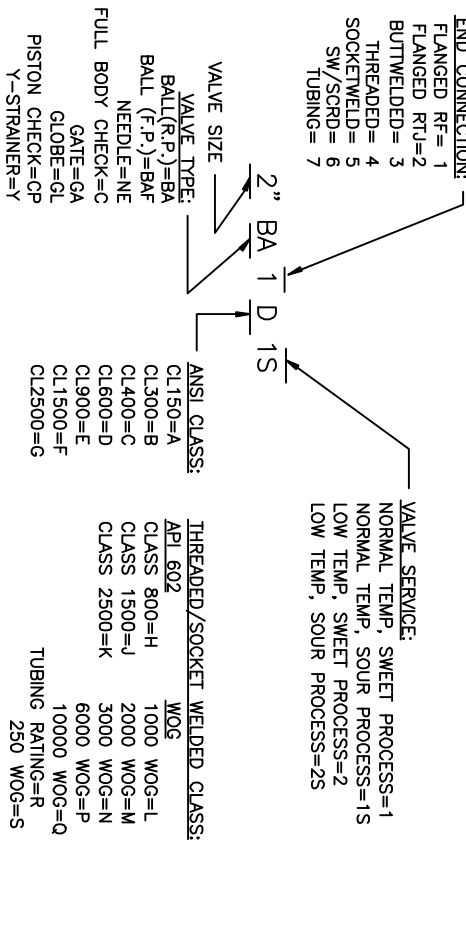


NOTES:

1. QUANTITIES IN B.O.M. ARE FOR ONE (1) UNIT.
2. ALL PIPING TO BE IN ACCORDANCE WITH THE LATEST EDITION OF ASME B31.3 PRESSURE PIPING CODE.
3. TUBING DETAILS: 3/8"(0.035"WT) 316 SS TUBING
c/w 316 SST SWAGelok FITTINGS AND FERRULES
4. PAINTING: SURFACE PREP: MECHANICALLY CLEANED TO SSPC-SP#3 SWEET PIPING
EXTERNAL PRIMER: ONE(1) COAT DEVOE GREY FAST DRY
PAINT: ONE(1) FINISH COAT DEVOE GREY ENAMEL
5. PIPING DETAILS: BUTT WELDED: SA-106B SMLS, Sch.80
THREADED: SA-106B SMLS, Sch.80 (LOW PRESSURE)
6. PIPE MAMP: 2" Sch. 80 BUTTWELED c/w CL150 FLANGES @ 100°F IS 285 Psig c/w 1/16" C.A.
2" Sch. 80 BUTTWELED c/w CL600 FLANGES @ 100°F IS 1480 Psig c/w 1/16" C.A.
6" Sch. 80 BUTTWELED c/w CL600 FLANGES @ 100°F IS 1480 Psig c/w 1/16" C.A.
6" Sch. 120 BUTTWELED c/w CL900 FLANGES @ 100°F IS 2220 Psig c/w 1/16" C.A.
12" Sch. 80 BUTTWELED c/w CL600 FLANGES @ 100°F IS 1480 Psig c/w 1/16" C.A.
7. FLANGE HOOK-UP: STUDS: SA-193-B7M
NUTS: SA-194-2HM
GASKETS: 316 S.S.T
8. HYDROTEST: 1.5x DESIGN PRESSURE, AS PER ASME B31.3
9. RADIOGRAPHY: 10% X-RAY, BUTT WELDED PIPING (SWEET)
10. BUILDING: SIZE: 12'-0" WIDE x 22'-0" LONG x 12'-9" LOW EAVE x 14'-3" HIGH EAVE.
STYLE: GABLE
WALLS: SELF FRAME
ROOF INSULATION: R-12
COLOR: 22 GAUGE PREPAINTED EXTERIOR, HARVEST GOLD c/w METRO BROWN TRIM.
VENTILATION: TWO (2) WHITE 12" x 18" ADJUSTABLE LOWERS c/w SCREEN (A)
DOOR(S): ONE (1) 3'-0" WIDE x 7'-0" STEEL c/w TWC WINDOW, CHECK CHAIN, PANIC-LOCK, WEATHER-STRIPPING
WINDOW(S): ONE (1) 36"X36" DOUBLE GLAZED SLIDING WINDOW c/w SCREEN.
EAVES & DOWNSPOUT: YES
ICE RAKES: YES
CUT OUT: NONE
HEATER: RUFNECK FX5 SERIES, 480V, 3PH, 60HZ C/W BUILT IN THERMOSTAT
RIDGE VENT: YES
OTHER: 2" HIGH CONTAMINANT FLASHING
CANOPY: YES
EXHAUST FAN: 12 ACPH (117-3) 110V 1 PH 60HZ
SIZE: 12'-0" WIDE x 24'-0" LONG
11. SKID: MAIN MEMBERS: W8" @ 31# / FT
CROSS MEMBERS: C4" @ 5.4# / FT
FOAM INSULATION: YES, 4" THICK
DRIIP LIP: YES
FLOOR DRAIN: YES
OTHER: CHECKER PLATE UNDER BUILDING ONLY.
12. ELECTRICAL: BY OTHERS
13. PROTECT ALL OPENINGS FOR SHIPMENT
15. INSTRUMENT VENTING: "V" DENOTES VENT TO O/S (OUTSIDE). / "H" DENOTES VENT TO HEADER, IF AVAILABLE.

VALVE LEGEND



STAMPS & APPROVALS

SHIP LOOSE ITEMS:

1. PT-1002 – ROSEMOUNT 2088 (TWO IN PACKAGE, ONE SHIPPED LOOSE)
2. ONE(1) TUBE OF CAULKING
3. ONE(1) METER RUN HANDLE
4. ONE(1) PARTS MANUAL

PCV-001 -002/003 -004/006	5	FISHER	MODEL 627 PRESSURE REDUCING REGULATOR, 1" FNPT END CONNECTIONS, 2000 # STEEL BODY CONSTRUCTION, 70 TO 150 PSIG SPRING RANGE, 1/2" ORIFICE.
PCV-005	1	FISHER	D BODY 657-45, 45 ACTUATOR CONTROL VALVE, 2" NPT, 1 1/4" TRIM, FAIL OPEN

PSV-001	1	MERCER	MODEL 9100, RELIEF VALVE, 2" NPT INLET X 2" NPT OUTLET, SET @ 1215 KPa#g, 1" H" ORIFICE
PY-005	1	FISHER	MODEL i2P TRANSducers, 4-20ma INPUT, 6-30psiG OUTPUT EXPLOSION PROOF, CSA APPROVED
PI-005	1	WIKA	PRESSURE GAUGES, 2 1/2" DIA FACE X 1/4" NPT BOTTOM MOUNT END CONNECTION, SS CASE AND INTERNALS, 0 TO 200 PSIG, DUAL SCALE
PDV-005	1	REKROTH	QUICK RELEASE VALVE P52935-2 1/4"X3/8"

VALVE LISTING

TAG	QTY	MAKE	DESCRIPTION
1/4"NE4P1	10	CENTURY	1/4" NPT 6000 PSIG CWP NEEDLE VALVE C.A. 8TD. SERVICE
1/2"BAF4M1S	2	MAS	1/2" NPT 2000 PSIG CWP F.P. BALL VALVE S.A. 8TD. SERVICE
1/2"BAF4NIS	2	MAS	1/2" NPT 3000 PSIG CWP F.P. BALL VALVE S.A. 8TD. SERVICE
1/2"NE4P1	1	CENTURY	1/2" NPT 6000 PSIG CWP NEEDLE VALVE C.A. 8TD. SERVICE
1/2"C4N1	1	WHEATLEY	1/2" NPT 3000 PSIG CWP CHECK VALVE SWEET SERVICE
3/4"NE4P1	8	AGCO	3/4" NPT 8000 PSIG CWP NEEDLE VALVE C.A. CWP 1/2 BLEED
1"BA4N1	24	NUTRON	1" NPT 3000 PSIG CWP R.P. BALL VALVE SWEET SERVICE
1"GL4H1	6	NUTRON	1" NPT GL600 GLOBE VALVE SWEET SERVICE
1"C4M1	1	WHEATLEY	1" NPT 2000 PSIG CWP CHECK VALVE SWEET SERVICE
2"BA1D1	3	WKM	2" RF CL600 R.P. BALL VALVE SWEET SERVICE
2"BA1E1	2	WKM	2" RF CL900 R.P. BALL VALVE SWEET SERVICE
2"GL1D1	2	NUTRON	2" RF CL600 GLOBE VALVE SWEET SERVICE
2"GL1E1	2	NUTRON	2" RF CL900 GLOBE VALVE SWEET SERVICE
2"BAF1D1	2	NUTRON	2" RF CL600 F.P. BALL VALVE SWEET SERVICE
2"BA4N1	2	NUTRON	2" NPT 3000 PSIG CWP BALL VALVE SWEET SERVICE
2"C1D1	1	WHEATLEY	2" RF CL600 CHECK VALVE SWEET SERVICE
3"C1A1	1	WHEATLEY	3" RF CL180 CHECK VALVE SWEET SERVICE

BILL OF MATERIALS

TAG	QTY.	MAKE	DESCRIPTION
FE-002	1	CANALTA	DUAL CHAMBER METER RUN, 6"-900#, SCH.80, SWEET SERVICE TRIM, FLANGED OUTER ENDS, 127" OAL, BUILT TO 2000 SPEC, ONE (1) - 1"-3000# T.O.L. AND ONE (1) 3/4"-3000# T.O.L. DOWNSTREAM, C/W CPA FLOW CONDITIONER.
PRV-001	1	FISHER	SENIOR METER RUN, 2"-600#, SCH.80, SWEET SERVICE TRIM, FLANGED UPSTREAM AND DOWNSTREAM, 57" OAL, BUILT TO 2000 SPEC, ONE (1) - 1"-3000# T.O.L. AND ONE (1) 3/4"-5000# T.O.L. DOWNSTREAM, C/W TBR FLOW CONDITIONER.
PRV-002/ 003/004	3	FISHER	MODEL 67 CFR 601TB INSTRUMENT GAS REGULATORS, 1/4" FNPT CONNECTIONS, SWEET SERVICE TRIM, 0 TO 125 PSIG SPRING RANGE, 250 PSIG MAMP.
PRV-005/ 006/007/008 009/010	6	FISHER	MODEL 67 CFR 362TB INSTRUMENT GAS REGULATORS, 1/4" FNPT CONNECTIONS, SWEET SERVICE TRIM, 0 TO 35 PSIG SPRING RANGE, 250 PSIG MAMP.
ESDV-001 ZSC-001 ZSO-001 SAV-001 SV-001	1	JAG	12"x10"-CL600 TRUNNION BALL VALVE, DBB, LT, NACE, C/W LEEDEN PNEUMATIC ACTUATOR FC, ASCO SOLENOID, AMOT, LIMIT SWITCH
ESDV-002 ZSC-002 ZSO-002 SAV-002	1	JAG	6"x4" CL900 TRUNNION BALL VALVE, DBB, LT, NACE, C/W LEEDEN PNEUMATIC ACTUATOR FC, ASCO SOLENOID, LIMIT SWITCH AMOT
ESDV-004 ZSC-004 ZSO-004 SAV-004 SV-004	1	JAG	6"x4" CL600 TRUNNION BALL VALVE, DBB, LT, NACE, C/W LEEDEN PNEUMATIC ACTUATOR FC, ASCO SOLENOID, AMOT, LIMIT SWITCH
ESDV-003 ZSC-003 ZSO-003 SAV-003 SV-003	1	JAG	2"x2" CL600 TRUNNION BALL VALVE, DBB, LT, NACE, C/W LEEDEN PNEUMATIC ACTUATOR FC, ASCO SOLENOID, AMOT, LIMIT SWITCH
BDV-001- 005	5	ASCO	MODEL-EF-83146301-24, SOLENOID VALVES, 1/4" NPT, 303 SST BODY, CSA APPROVED, LOW POWER (1.4 WATT) CONSUMPTION, 24 VDC COIL, EXPLOSION PROOF / UNIVERSAL OPERATION, MAXIMUM OPERATION PRESSURE IS 150 PSIG (TDB)
BDV-001- 004	4	FISHER	D2 CONTROL VALVE, 1" NPT END CONNECTIONS, SWEET SERVICE TRIM, 0 TO 30 PSIG INPUT SIGNAL, ADJUSTABLE ORIFICE, AIR TO CLOSE/FAIL OPEN
PI-001/ 003/004	3	WIKA	PRESSURE GAUGES, 4" DIA FACE X 1/2" NPT BOTTOM MOUNT END CONNECTION, SS CASE AND INTERNALS, 0 TO 1,500 PSIG, DUAL SCALE
PI-002	1	WIKA	PRESSURE GAUGES, 4" DIA FACE X 1/2" NPT BOTTOM MOUNT END CONNECTION, SS CASE AND INTERNALS, 0 TO 500 PSIG, DUAL SCALE
PII-001 -002 -003 -004	4	ROSEMOUNT	PRESSURE TRANSMITTERS MODEL 3051S216, 0 TO44000 PSIG PRESSURE RANGE, 1/2" NPT CONNECTIONS, SWEET SERVICE, CSA APPROVED (ELECTRICAL HOOK-UP BY OTHERS)
FOI-001	1	ROOTS	4" FLOW METER c/w RA-100 PULSER MAMP 135 PSIG
FI-002	1	DWYER	1" FLOW INDICATOR DRYER ROTOMETER OR EQUAL

HUSKY OIL OPERATION LIMITED

DATE: 08/02/19

DESIGNED BY: PES

DRAWN BY: PL

CHECKED BY: DC

APPROVED BY: 1899562

SCALE: .

N.T.S.

CLIENT: LUSD: 03-06-049-18 WSM

TITLE: BILL OF MATERIAL FOR

SWEET SERVICES ESDV AND METERING PACKAGED TAG: (PKG-001)

PROJECT NO.: 1899562

DRAWING NO.: PES-1809053504

REFERENCE NO.

REV. NO.



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