

BILL OF MATERIAL

REFER TO DWGS. C1014859- 21&23

ITEM	QTY	DESCRIPTION
1	2	SULLAIR MODEL No. 4510 HEAVY-DUTY INDUSTRIAL ROTARY SCREW AIR COMPRESSORS, EACH RATED FOR 420 Am ³ /h AT 1034 kPa (247 ACFM AT 150 PSIG), c/w 45 kW (60 HP) AT 1770 RPM TOTALLY ENCLOSED FAN COOLED, 460 VOLT / 3 PH / 60 Hz PREMIUM EFFICIENT ELECTRIC MOTOR , SOUND ATTENUATING ENCLOSURE, 68 dBA @ 1 METER; NEMA 4; 8000 HOUR SULLUBLE 32 LUBRICANT; WS MICROPROCESSOR WITH: START/STOP LOAD/NO LOAD MODULATION, AUTOMATIC, STATUS TEMPERATURE, PRESSURE LOAD/UNLOAD SET POINTS. 316 SS TUBING WITH STAINLESS STEEL FITTINGS, CRN REGISTERED COOLERS, COMPRESSOR AUTOMATIC SOLENOID DRAIN (ZERO LOSS DRAIN)
2	4	DOMNICK HUNTER MODEL No. AQ-040HNF1, 2" NPT, 1 ST STAGE PREFILTER RATED AT 1.0 MICRON FILTRATION FOR 792 Sm ³ /h AT 703 kPa (466 SCFM AT 102 PSIG) AND RATED FOR A MAWP OF 1600 kPa (232 PSIG).
3	4	DOMNICK HUNTER MODEL No. AA-040HNF1, 2" NPT, 2 ND STAGE PREFILTER RATED AT 0.01 MICRON FILTRATION FOR 792 Sm ³ /h AT 703 kPa (466 SCFM AT 102 PSIG) AND RATED FOR A MAWP OF 1600 kPa (232 PSIG).
4	2	DOMNICK HUNTER No. MXS-103c-LDP/DDS TWIN TOWER DESICCANT AIR DRYER RATED FOR 510 Sm ³ /h AT 903 kPa (300 SCFM AT 131 PSIG) INLET PRESSURE FOR A -70°C PRESSURE DEWPOINT DRIES COMPRESSED AIR , ACTIVATED ALUMINA DESICCANT,NO PSV'S REQUIRED-CRN REGISTERED FITTING MAWP 1310 kPa (190 PSIG), ALUMINIUM EXTRUDED MODULAR DESIGN SMALL FOOT PRINT, DRY POWDER EPOXY PAINTED,PANEL DISPLAY WITH TWO PRESSURE GAUGES AND 5 STATUS LED'S AND EASY TO READ LCD DISPLAY,AUTO SWITCHING TIMER WITH REPRESSURISATION VALVE,120 VOLT POWER SUPPLY WITH FUSE,DDS DEW POINT CONTROL.
5	2	DOMNICK HUNTER MODEL No. AR-040HNMI, 2" NPT SINGLE STAGE AFTERFILTER RATED AT 1.0 MICRON FILTRATION FOR 792 Sm ³ /h AT 703 kPa (466 SCFM AT 102 PSIG) AND RATED FOR A MAWP OF 2000 kPa (290 PSIG).
6	1	SILVERADO AIR RECEIVER VESSEL, 4013 Lit. (1060 US GALLONS) VERTICAL DRY AIR RECEIVER, c/w SADDLE MOUNTING FEET, 1219 mm O.D. x 3658 mm Long (48" O D x 144" LONG) RATED FOR 1310 kPa MAWP AT 38°C (190 PSIG MAWP AT 100°F), ASME LABELLED, CRN REGISTERED.
7	14	VELAN MODEL No. S08-M1113-SSGA, 2" NPT FULL PORT BALL VALVES c/w STAINLESS STEEL BODY STAINLESS STEEL BALL TEFLON SEATS AND RATED FOR 13790 kPa (2000 PSI) W.O.G.
8	1	TAYLOR 1" SAFETY RELIEF VALVE, IN STEEL CONSTRUCTION, CRN REGISTRATION NUMBER FOR CANADA AND ASME "UV" STAMP, SET FOR 1034 kPa (150 PSIG).
9	2	CONBRACO MODEL No. 99-62-103-01 1/2" NPT BALL-CONE IN-LINE SPRING CHECK VALVE C/W STAINLESS STEEL BODY REINFORCED TFE BALL AND RATED FOR 2758 kPa (400 PSI) W.O.G.
10	3	VELAN MODEL No. S05-M1113-SSGA, 1" NPT FULL PORT BALL VALVES c/w STAINLESS STEEL BODY, STAINLESS STEEL BALL, TEFLON SEATS AND RATED FOR 13790 kPa (2000 PSI) W.O.G.
11	3	VELAN MODEL No. S03-M1113-SSGA, 1/2" NPT FULL PORT BALL VALVES c/w STAINLESS STEEL BODY STAINLESS STEEL BALL TEFLON SEATS AND RATED FOR 13790 kPa (2000 PSI) W.O.G.
12	10	DOMNICK HUNTER DPI, DIFFERENTIAL PRESSURE GAUGE FOR FILTER SERVICE INDICATOR AND RATED FOR MAWP OF 1380 kPa (200 PSIG).
14	2	WESTERN PRESSURE GAUGE MODEL No. WH10954P, PRESSURE GAUGE, c/w 1/2" NPT CONNECTION, 4" DIAMETER FACE, DUAL SCALE 0 TO 1380 kPa RANGE (200 PSIG), LIQUID FILLED, STAINLESS STEEL CONSTRUCTION, WITH BLOW-OUT BACK.
15	4	STAINLESS STEEL BRADED HOSE 2" NPT THREADED AT BOTH ENDS, 12" LENGTH, CRN APPROVED.
16	-	2" NPT PIPING, SCH. 80, ASTM A-106, GRADE B, SEAMLESS CARBON STEEL GALVANIZED THREADED PIPE c/w 3000#, ASTM A-105N, CARBON STEEL GALVANISED THREADED FITTINGS.
17	-	2" NPT PIPING, SCH 80 ASTM A312-TP316/316L SEAMLESS STAINLESS STEEL THREADED PIPE C/W 3000# ASTM A182-F316/316L THREADED FITTINGS.
18	-	1/2" O D. x 0.035" WALL, 316 SEAMLESS STAINLESS STEEL TUBING c/w SWAGelok STAINLESS STEEL TUBE FITTINGS WITH STAINLESS STEEL FERRULES.
19	-	1/2" NPT PIPING SCH. 80, ASTM A-106, GRADE B, SEAMLESS CARBON STEEL GALVANIZED THREADED PIPE, c/w 3000#, ASTM A-105N, CARBON STEEL GALVANISED THREADED FITTINGS.
20	-	1/4" O D. x 0.035" WALL 316 SEAMLESS STAINLESS STEEL TUBING c/w SWAGelok STAINLESS STEEL TUBE FITTINGS WITH STAINLESS STEEL FERRULES.
21	1	FABRICATED STRUCTURAL STEEL SKID ASSEMBLY, 3658 mm x 7620 mm (12' x 25'), ALL DECKING IS 3/16" CHECKER PLATE FULLY SEAL WELDED, LIFTING EYES SANDBLASTED OUTSIDE EDGE AND TOP DECK, ONE COAT OF INDUSTRIAL ENAMEL PRIMER AND TWO COATS OF INDUSTRIAL ENAMEL (WARM GREY) PAINT, R20 SPRAY FOAM FIRE RESISTANT INSULATION UNDER SKID.
22	1	PRE-ENGINEERED STEEL BUILDING 7620 mm x 3658 mm x 3658 mm (25'x12'x12') EAVE HEIGHT, SELF FRAMING SHED ROOF, 2:12 SLOPE, 3" @ 1240 INSULATION FOR ROOF AND WALLS, 22 GAUGE PRE-FINISHED METAL ROOF AND EXTERIOR WALL CLADDING 24 GAUGE WHITE FLUTED ALUMINUM LINING ON LOWER 3' WALLS, 20 GAUGE WHITE PERFORATED ACCOUSTIC INSULATED FLUTED ALUMINUM LINING ON REMAINDER OF WALLS & ROOF, ONE DOUBLE MAN DOOR CANOPIES OVER DOORS AND LOUVERS ALL CONSTR. TO NATIONAL BUILDING CODE.
23	1	2"x2" 150 RF NUTRON BALL VALVE MODEL T3-F20R01B, c/w ELOMATIC PNEUMATIC ACTUATOR MODEL ES0200.U2A04A.22K2.
24	1	BETTIS PAR2000-7 PRESSUREMATIC PILOT 2"NPT PROCESS CONNECTION, RATED FOR 3500 PSIG MAWP SET LOW AT 80 PSIG & NO HIGH.
25	1	PGI MODEL V506SCJ NEEDLE VALVE, 1/2" MNPT X 1/2" FNPT CONNECTIONS, 316 SST BODY.
26	1	WINTERS MODEL P664N-LS-STER PRESSURE GAUGE, 4" DIAL, 0-1000 PSIG.
27	1	BETTIS MODEL IB-5 ISO TEST VALVE, 3000 PSIG RATING, 2"FNPT X 2"MNPT BODY CONNECTIONS.
28	1	FISHER PRESSURE REGULATOR MODEL 627, 2"NPT, WCC STEEL BODY, ALUMINUM SPRING CASE, 3/8" ORIFICE, SST TRIM, 70-150 PSIG ADJUSTABLE OUTPUT RANGE, MAXIMUM INLET PRESSURE 1000 PSIG.

**CERTIFIED
AS BUILT**
CHAMCO INDUSTRIES LTD.

3	09.07.07	A.L.	CERTIFIED AS BUILT.
2	19.06.07	A.L.	REVISED ITEM 8, CHANGED QUANTITIES ITEMS 11&14, ADDED ITEM 28, CERT. FOR CONST.
1	05.06.07	A.L.	REMOVED ITEM 13, ADDED ITEMS 23-27, CERTIFIED FOR CONSTRUCTION
REV.	DATE	BY	DESCRIPTION
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 CHAMCO INDUSTRIES LTD. VANCOUVER - CALGARY - EDMONTON - PRINCE GEORGE			

HUSKY OIL OPERATIONS LTD. C/O IMV PROJECTS INC. LOCATION: 07-27-51-19 W5M P.O. No. AB0439-002-MAT1790-001		DESIGNED BY Z.Z.
AIR COMPRESSOR PACKAGE SULLAIR 4510 AIR COMPRESSORS DOMNICK HUNTER MXS-103c-LDP/DDS AIR DRYERS BILL OF MATERIAL		DRAWN BY CR
DATE APRIL 11, 2007		CHECKED BY 
SCALE N.T.S.		JOB No 1014859ABS
DWG No. C1014859-20		REV. 3

AIR COMPRESSORS
SULLAIR MODEL No. 4510
RATED FOR 420 Sm³/h AT 1034 kPa
(247 ACFM AT 150 PSIG)
460 VOLT/3 PHASE/60 HERTZ

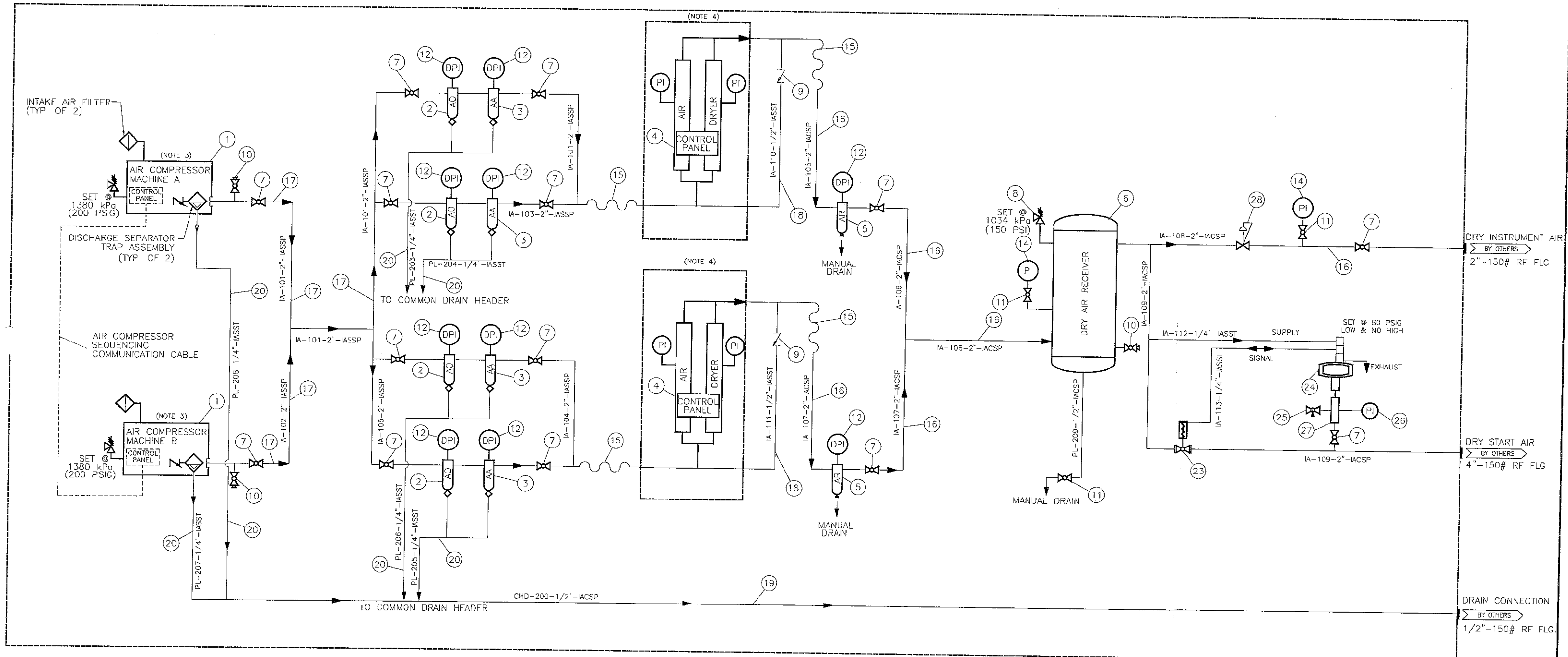
FIRST STAGE PREFILTERS
DOMNICK HUNTER MODEL No. AO-040HNF1
AO-RATED FOR 792 Sm³/h AT 703 kPa & 1.0 MICRON
(466 SCFM AT 102 PSIG)
WITH A MAWP OF 1600 kPa (232 PSIG)

SECOND STAGE PREFILTERS
DOMNICK HUNTER MODEL No. AA-040HNF1
AA-RATED FOR 792 Sm³/h AT 703 kPa & 1.0 MICRON
(466 SCFM AT 102 PSIG)
WITH A MAWP OF 1600 kPa (232 PSIG)

AIR DRYER
DOMNICK HUNTER MODEL No. MXS 103c
RATED FOR 510 Sm³/h AT 903 kPa
(300 SCFM AT 131 PSIG)
AND A -70 C PRESSURE DEWPOINT
WITH A MAWP OF 1310 kPa (190 PSIG)

AFTER FILTERS
DOMNICK HUNTER MODEL No. AR-040HNF1
RATED FOR 792 Sm³/h AT 703 kPa & 1.0 MICRON
(466 SCFM AT 102 PSIG)
WITH A MAWP OF 2000 kPa (290 PSIG)

DRY AIR RECEIVER
RATED FOR 1310 kPa MAWP AT 38 C
(190 PSIG MAWP AT 100 F)
WITH A CAPACITY OF 4013 Litres (1060 US GALLONS)



GENERAL NOTES:

- 1 REFER TO CORRESPONDING ITEM NUMBER ON THE ATTACHED LIST OF MATERIAL FOR A COMPLETE DESCRIPTION OF THE TAGGED ITEMS (SEE DWG C1014859-20).
- 2 FOR A COMPLETE DESCRIPTION OF THE TAGGED LINES REFER TO CORRESPONDING LINE NUMBER ON THE ATTACHED LINE LIST (DWG C1014859-22)
- 3 FOR A COMPRESSOR DETAILS SEE DRAWING C1014859-40 (AIR COMPRESSOR P&ID)
- 4 FOR A DRYER DETAILS SEE DRAWING C1014859-41 (DRYER P&ID)

INSTRUMENT LEGEND

PI - PRESSURE INDICATOR (GAUGE)
DPI - PRESSURE DIFFERENTIAL INDICATOR
PSV - PRESSURE RELIEF VALVE

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3	09.07.07	A.L.	CERTIFIED AS BUILT
2	19.06.07	A.L.	ADDED ITEMS 11,14&28, CERTIFIED FOR CONSTRUCTION
1	05.06.07	A.L.	ADDED ITEMS 23 TO 27 AND REVISED LINE TAGS, CERTIFIED FOR CONSTRUCTION
REV.	DATE	BY	DESCRIPTION
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CHAMCO INDUSTRIES LTD.
VANCOUVER - CALGARY - EDMONTON - PRINCE GEORGE

HUSKY OIL OPERATIONS LTD.
C/O IMV PROJECTS INC
LOCATION: 07-27-51-19 W5M
P.O. No. AB0439-002-MAT1790-001

AIR COMPRESSOR PACKAGE
SULLAIR 4510 AIR COMPRESSORS
DOMNICK HUNTER MXS-103c-LDP/DDS AIR DRYERS
PACKAGE FLOW DIAGRAM

DATE APRIL 11, 2007 SCALE N.T.S. DWG No C1014859-21 REV 3

DESIGNED BY Z.Z.
DRAWN BY CR
CHECKED BY [Signature]
JOB No 1014859ABS

LINE LIST

LINE NUMBER	LINE CLASS	SIZE	FROM	TO	SCH	OPER. TEMP. °C	DESIGN TEMP. °C	OPER. PRESS. kPa(g)	DESIGN PRESS. kPa(g)	TESTING	REMARKS
IA-101-2"-IASSP	IASSP	2"	COMPRESSOR (ITEM 1)	AIR DRYER HOSE (ITEM 15)	80	40	-20 TO 130	930	1034	SERVICE	
IA-102-2"-IASSP	IASSP	2"	COMPRESSOR (ITEM 1)	IA-101-2"-IASSP	80	40	-20 TO 130	930	1034	SERVICE	
IA-103-2"-IASSP	IASSP	2"	IA-101-2"-IASSP	IA-101-2"-IASSP	80	40	-20 TO 130	930	1034	SERVICE	
IA-104-2"-IASSP	IASSP	2"	IA-105-2"-IASSP	IA-105-2"-IASSP	80	40	-20 TO 130	930	1034	SERVICE	
IA-105-2"-IASSP	IASSP	2"	IA-101-2"-IASSP	AIR DRYER HOSE (ITEM 15)	80	40	-20 TO 130	930	1034	SERVICE	
IA-106-2"-IACSP	IACSP	2"	AIR DRYER HOSE (ITEM 15)	DRY AIR RECEIVER (ITEM 6)	80	40	-20 TO 130	930	1034	SERVICE	
IA-107-2"-IACSP	IACSP	2"	AIR DRYER HOSE (ITEM 15)	IA-106-2"-IACSP	80	40	-20 TO 130	930	1034	SERVICE	
IA-108-2"-IACSP	IACSP	2"	DRY AIR RECEIVER (ITEM 6)	TO OUTLET 2"-150# RF FLANGE	80	40	-20 TO 130	930	1034	SERVICE	
IA-109-2"-IACSP	IACSP	2"	IA-108-2"-IACSP	TO OUTLET 4"-150# RF FLANGE	80	40	-20 TO 130	930	1034	SERVICE	
IA-110-1/2"-IASST	IASST	1/2"	AIR DRYER INLET (ITEM 4)	AIR DRYER OUTLET (ITEM 4)	0.035"	40	-20 TO 130	930	1034	SERVICE	
IA-111-1/2"-IASST	IASST	1/2"	AIR DRYER INLET (ITEM 4)	AIR DRYER OUTLET (ITEM 4)	0.035"	40	-20 TO 130	930	1034	SERVICE	
IA-112-1/4"-IASST	IASST	1/4"	IA-109-2"-IACSP	PRESSUREMATIC PILOT (ITEM 24)	0.035"	40	-20 TO 130	930	1034	SERVICE	
IA-113-1/4"-IASST	IASST	1/4"	PRESSUREMATIC PILOT (ITEM 24)	BALL VALVE (ITEM 23)	0.035"	40	-20 TO 130	930	1034	SERVICE	
CHD-200-1/2"-IACSP	IACSP	1/2"	PL-207-1/4"-IASST	DRAIN CONNECTION 1/2"-150# RF FLG.	80	40	-20 TO 130	0	1034	SERVICE	
PL-203-1/4"-IASST	IASST	1/4"	FILTER (ITEM 2 & 3)	CHD-200-1/2"-IACSP	0.035"	40	-20 TO 130	0	1034	SERVICE	
PL-204-1/4"-IASST	IASST	1/4"	FILTER (ITEM 2 & 3)	CHD-200-1/2"-IACSP	0.035"	40	-20 TO 130	0	1034	SERVICE	
PL-205-1/4"-IASST	IASST	1/4"	FILTER (ITEM 2 & 3)	CHD-200-1/2"-IACSP	0.035"	40	-20 TO 130	0	1034	SERVICE	
PL-206-1/4"-IASST	IASST	1/4"	FILTER (ITEM 2 & 3)	CHD-200-1/2"-IACSP	0.035"	40	-20 TO 130	0	1034	SERVICE	
PL-207-1/4"-IASST	IASST	1/4"	COMPRESSOR (ITEM 1)	CHD-200-1/2"-IACSP	0.035"	40	-20 TO 130	0	1034	SERVICE	
PL-208-1/4"-IASST	IASST	1/4"	COMPRESSOR (ITEM 1)	CHD-200-1/2"-IACSP	0.035"	40	-20 TO 130	0	1034	SERVICE	
PL-209-1/2"-IACSP	IACSP	1/2"	DRY AIR RECEIVER (ITEM 6)	BALL VALVE (ITEM 11)	80	40	-20 TO 130	930	1034	SERVICE	

NOTES:

- 1 PLEASE REFER TO DRAWING NO : C1014859-04 FOR LINE LIST CLASSIFICATION
- 2 CHAMCO PIPING TO ASME B31.3

CERTIFIED
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CHAMCO INDUSTRIES LTD.

309.07.07A.L.CERTIFIED AS BUILT

226.06.07A.L.REVISED OPERATING AND DESIGN PRESSURE, CERTIFIED FOR CONSTRUCTION

105.06.07A.L.REVISED LINE TABLE, ADDED NOTES, CERTIFIED FOR CONSTRUCTION

REV. DATE BY DESCRIPTION

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VANCOUVER - CALGARY - EDMONTON - PRINCE GEORGE

HUSKY OIL OPERATIONS LTD.
C/O IMV PROJECTS INC.
LOCATION: 07-27-51-19 W5M
P.O. No. AB0439-002-MAT1790-001

AIR COMPRESSOR PACKAGE
SULLAIR 4510 AIR COMPRESSORS
DOMNICK HUNTER MXS-103c-LDP/DDS AIR DRYERS
LINE LIST

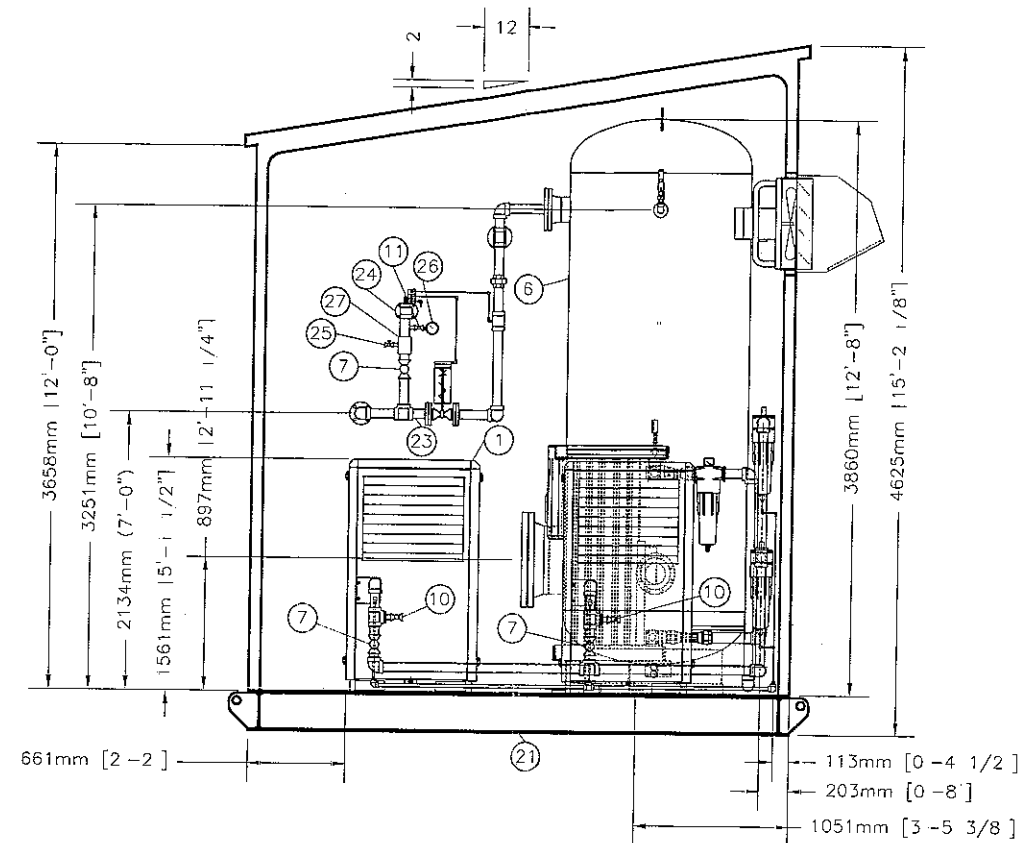
DATE APRIL 19, 2007SCALE N.T.S.DWG No. C1014859-22REV 3

DESIGNED BY Z.Z.

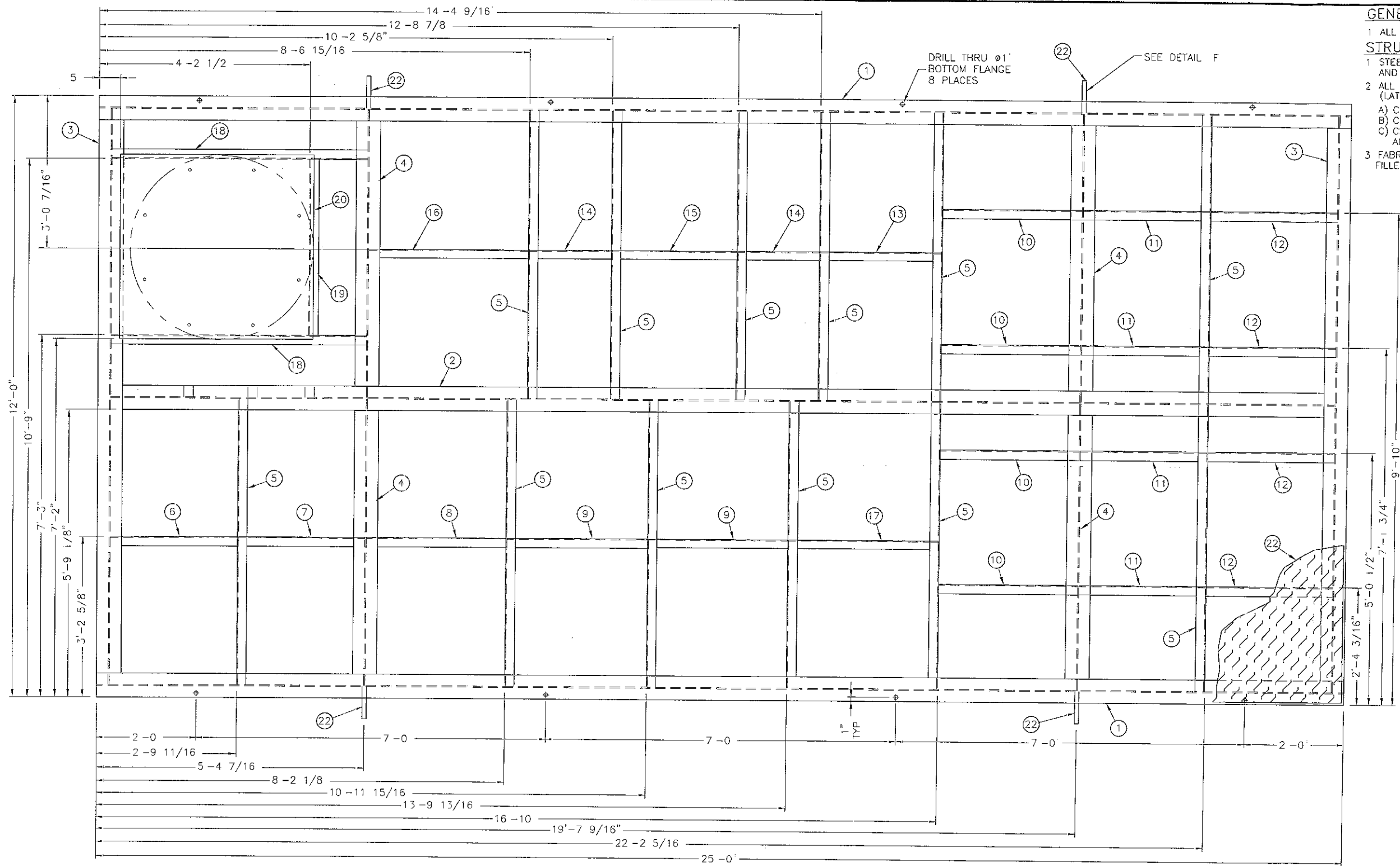
DRAWN BY CR

CHECKED BY 

JOB No. 1014859ABS



DESIGNED BY	Z.Z.
DRAWN BY	CR
CHECKED BY	
JOB No	



GENERAL NOTES

1 ALL DIMENSIONS ARE $\pm 3/16$

STRUCTURAL STEEL NOTES

1 STEEL FABRICATOR TO CONFIRM EXISTING STEELWORK SIZES DIMENSIONS AND T.O.S. PRIOR TO FABRICATION OF NEW STEELWORKS

2 ALL STEEL AND FABRICATION/ERECTION SHALL CONFORM TO (LATEST EDITION)

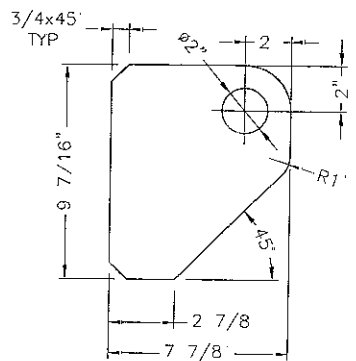
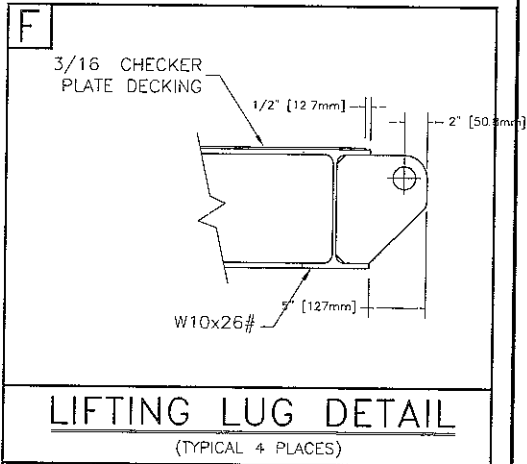
A) CSA STANDARD S16.1 LIMIT STATES DESIGN OF STEEL STRUCTURES

B) CISC HANDBOOK OF STEEL CONSTRUCTION

C) CSA - G40.21 STRUCTURAL QUALITY STEELS

AND SHALL INCLUDE ALL REFERENCES INCLUDED IN THE ABOVE.

3 FABRICATION SHALL BE OF SOLID WELDED CONSTRUCTION. MINIMUM FILLET WELD SIZE SHALL BE $1/4$ (6.4 mm) UNLESS NOTED OTHERWISE



DETAIL ITEM 23

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CHAMCO INDUSTRIES LTD.

LIST OF MATERIALS

ITEM	QTY	DESCRIPTION	SIZE	TYPE	REMARKS	UN WGT	TL WGT
1	2	W10x26#	25'-0"	44W		650.00	1300.00
2	1	W10x26#	24'-5 7/8"	44W	COPE BOTH ENDS TO FIT	637.00	637.00
3	2	W10x26#	11'-5 7/8"	44W	COPE BOTH ENDS TO FIT	299.00	598.00
4	4	W10x26#	5'-8 3/4"	44W	COPE BOTH SIDES TO FIT	148.96	595.83
5	12	C6x8.2#	5'-8 3/4"	44W	COPE BOTH SIDES TO FIT	46.98	583.75
6	1	L3x2x1/4	2'-6 5/8"	A36	COPE ONE END TO FIT	10.46	10.46
7	7	L3x2x1/4	2'-6 1/4"	A36	COPE BOTH ENDS TO FIT	10.25	71.75
8	1	L3x2x1/4	2'-9 7/16"	A36	COPE ONE END TO FIT	11.48	11.48
9	3	L3x2x1/4	2'-9 1/2"	A36	COPE ONE END TO FIT	11.45	34.34
10	4	C6x8.2#	2'-9 1/2"	44W	COPE ONE END TO FIT	22.89	91.52
11	4	C6x8.2#	2'-6 3/16"	44W	COPE BOTH ENDS TO FIT	20.62	82.49

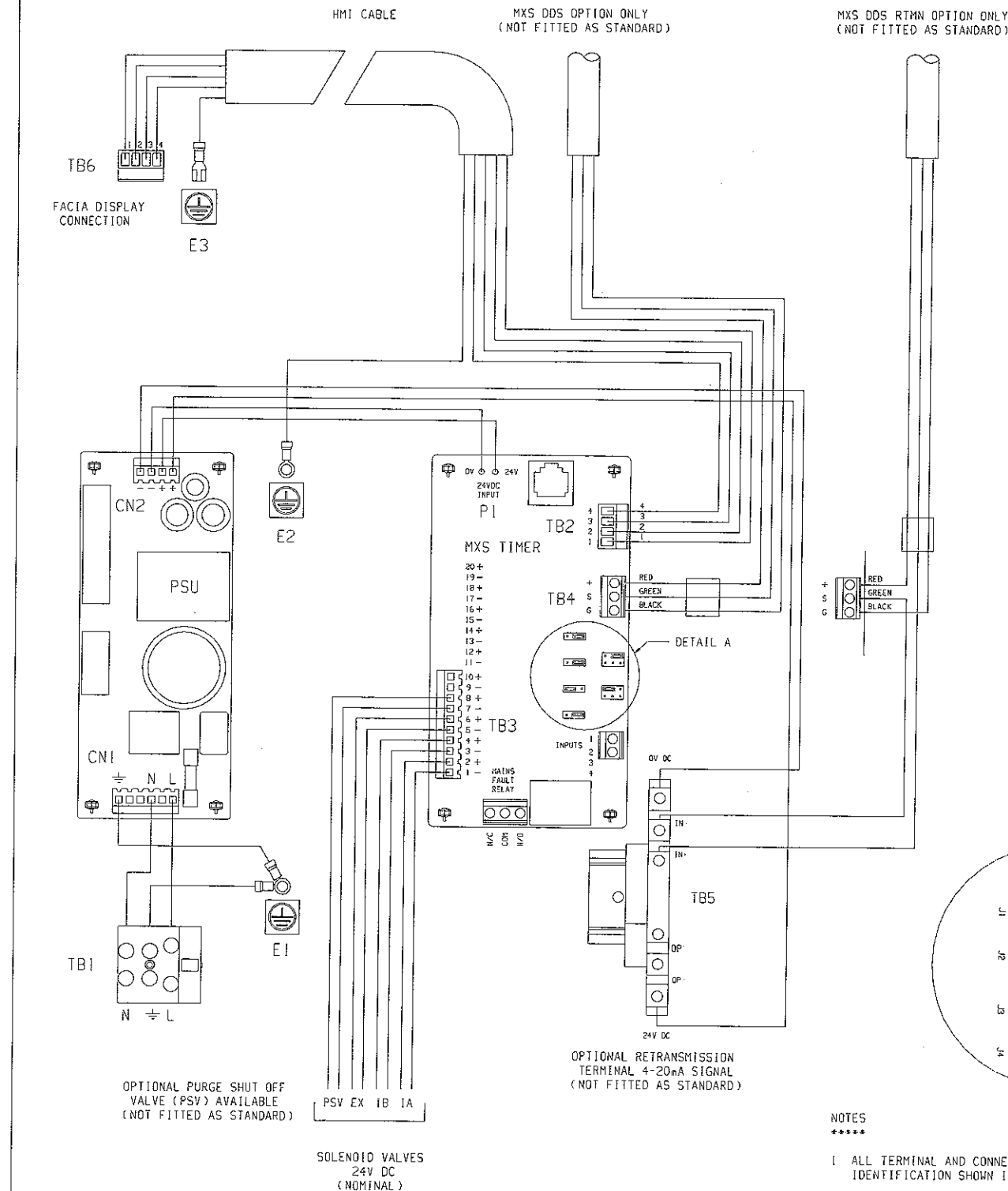
12	4	C6x8.2#	2'-6 5/8"	44W	COPE ONE END TO FIT	20.93	83.71
13	1	L3x2x1/4	2'-5"	A36	COPE BOTH ENDS TO FIT	9.91	9.91
14	2	L3x2x1/4	1'-7 3/8"	A36	COPE ONE END TO FIT	6.62	13.24
15	1	L3x2x1/4	2'-6"	A36	COPE ONE END TO FIT	10.25	10.25
16	1	L3x2x1/4	3'-2 5/16"	A36	COPE ONE END TO FIT	13.09	13.09
17	1	L3x2x1/4	2'-11 3/4"	44W	COPE BOTH ENDS TO FIT	12.21	12.21
18	2	C6x8.2#	5'-1 1/4"	44W	COPE BOTH ENDS TO FIT	41.85	83.71
19	1	C6x8.2#	3'-6"	44W		26.70	26.70
20	1	1/2" PLATE	3'-10 1/2"x3'-8"	A36	TANK BASE	289.96	289.96
21	1	3/16" CHECKER PLATE	24'-11"x11'-11"	A36	DECKING	2583.90	2583.90
22	4	1" PLATE	0'-9 7/16"x0'-7 3/4"	A36	LIFTING LUGS, SEE DETAIL	20.76	83.04
						TOTAL	7208.40

2	07.09.07	A.L.	CERTIFIED AS BUILT
1	05.24.07	ZZ	CHANGED SKID MATERIAL, CERTIFIED FOR CONSTRUCTION
REV	DATE	BY	DESCRIPTION
HUSKY OIL OPERATIONS LTD.			
C/O IMV PROJECTS INC.			
LOCATION: 07-27-51-19 W5M			
P.O. No. AB0439-002-MAT1790-001			
AIR COMPRESSOR PACKAGE			
SULLAIR 4510 AIR COMPRESSORS			
DOMNICK HUNTER MXS-103c AIR DRYER			
SKID FRAME FABRICATION			
DATE: APRIL 24, 2007			SCALE: N.T.S.
DWG No: C1014859-24			REV: 2

BASED ON B.S. 8888

DO NOT SCALE IF IN DOUBT ASK

DIMENSIONS IN MILLIMETRES



MXS NON DDS CONTROL BOX CONNECTIONS (REAR PLATE ASSEMBLY 458621230)							
TERMINAL	WIRE LENGTH	WIRE END TERMINATION	TERMINAL	WIRE LENGTH	WIRE END TERMINATION	COLOUR	CABLE TYPE
CN1 - L	-	MOLEX TERMINAL	TB1 - L	-	BARE	BROWN	SEE MOLEX CRIMP SET DRAWING NO. 278620662
CN1 - N	-	MOLEX TERMINAL	TB1 - N	-	BARE	BLUE	
CN1 - G	-	MOLEX TERMINAL	E1	-	M4 RED RING	GREEN/YELLOW	
TB1 - G	80 mm	BARE	E1	N/A	M4 RED RING	GREEN/YELLOW	1.0mm TRI-RATED
P1 - 0V	-	FITTED TO TIMER	CN2 -	-	MOLEX CRIMP	BLACK	SEE MXS TIMER DRAWING NO. 278620510
P1 - 24V	-	FITTED TO TIMER	CN2 -	-	MOLEX CRIMP	RED	
TB2 - 1	90 mm	BOOTLACE	TB6 - 1	90 mm	BOOTLACE	BLACK	SEE HMI CABLE DRAWING NO. 278620664
TB2 - 2	90 mm	BOOTLACE	TB6 - 2	90 mm	BOOTLACE	BLACK	
TB2 - 3	90 mm	BOOTLACE	TB6 - 3	90 mm	BOOTLACE	BLACK	
TB2 - 4	90 mm	BOOTLACE	TB6 - 4	90 mm	BOOTLACE	BLACK	
E2	90 mm	M4 RED RING	E3	90 mm	RED FEMALE CRIMP	GREEN/YELLOW	SEE MX VALVE CONNECTOR SET DRAWING NO. 278620480
TB3 - 1	-	MOLEX CRIMP	INLET A	-	PLUG	BLUE	
TB3 - 2	-	MOLEX CRIMP	-	-	-	BROWN	
TB3 - 3	-	MOLEX CRIMP	-	-	-	BLUE	
TB3 - 4	-	MOLEX CRIMP	INLET B	-	PLUG	BROWN	
TB3 - 5	-	MOLEX CRIMP	-	-	-	BLUE	
TB3 - 6	-	MOLEX CRIMP	EXHAUST	-	PLUG	BROWN	

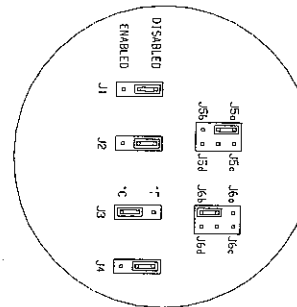
MXS DDS CONTROL BOX CONNECTIONS (REAR PLATE ASSEMBLY 458621231)							
TERMINAL	WIRE LENGTH	WIRE END TERMINATION	TERMINAL	WIRE LENGTH	WIRE END TERMINATION	COLOUR	CABLE TYPE
TB4 -	-	BOOTLACE	HYGROMETER	-	PLUG	RED	SEE MX HYG SENSOR CABLE DRAWING NO. 278620662
TB4 - S	-	BOOTLACE		-		GREEN	
TB4 - G	-	BOOTLACE		-		BLACK	

MXS DDS RETRANSMISSION CONTROL BOX CONNECTIONS (REAR PLATE ASSEMBLY 458621232)							
TERMINAL	WIRE LENGTH	WIRE END TERMINATION	TERMINAL	WIRE LENGTH	WIRE END TERMINATION	COLOUR	CABLE TYPE
TB4 -	-	BOOTLACE	HYGROMETER	-	PLUG	RED	SEE MX HYG RTMN SENSOR CABLE DRAWING NO. 278620721
TB4 - G	-	BOOTLACE		-		BLACK	
TB5 - IN	-	BOOTLACE	TB4 - S	-	BOOTLACE	GREEN	
TB5 - IN	-	BOOTLACE	HYGROMETER	-	PLUG	GREEN	0.5mm TRI-RATED
TB5 - 24V	400 mm	BOOTLACE	CN2 -	-	MOLEX CRIMP	RED	
TB5 - 0V	300 mm	BOOTLACE	CN2 -	-	MOLEX CRIMP	BLACK	0.5mm TRI-RATED

MXS PSV CONTROL BOX CONNECTIONS							
TERMINAL	WIRE LENGTH	WIRE END TERMINATION	TERMINAL	WIRE LENGTH	WIRE END TERMINATION	COLOUR	CABLE TYPE
TB3 - 7	-	MOLEX CRIMP	PSV	-	PLUG	BLUE	SEE MX PSV CABLE PLUG ASSY DRAWING NO. 308620005
TB3 - 8	-	MOLEX CRIMP		-		BROWN	

MXS TIMER JUMPER POSITIONS	MXS CONTROLLER OPTION		
	MXS	MXS DDS	MXS DDS RTMN
J1 - HYGROMETER	DISABLED	ENABLED	ENABLED
J2 - MOISTURE OVER-RIDE	DISABLED	DISABLED	DISABLED
J3 - DISPLAY UNITS - °C	ENABLED	ENABLED	ENABLED
J4 - SERVICE CHANGE TIMER	DISABLED	DISABLED	DISABLED
J5 - CYCLE OPTIONS			
J5a - CYCLE MODE 1	FITTED	FITTED	FITTED
J5b - CYCLE MODE 2	-----	-----	-----
J5c - CYCLE MODE 3	-----	-----	-----
J5d - CUSTOM CYCLE	-----	-----	-----
J6 - DEWPOINT SETPOINT			
J6a - -20°C	-----	-----	-----
J6b - -40°C	FITTED	FITTED	FITTED
J6c - -70°C	-----	-----	-----
J6d - CUSTOM VALUE	-----	-----	-----

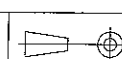
- NOTES
- *****
- 1 ALL TERMINAL AND CONNECTOR NUMBER IDENTIFICATION SHOWN IS FOR REFERENCE ONLY
- 2 NOTE ORIENTATION OF CONNECTORS WHEN WIRING



DETAIL A

MATERIAL
GEN ARRGT

SCALE
1 : 1



NAME	DRAWN	CHECKED	APPROVED	TITLE
AC	PH	TK		MXS WIRING SCHEMATIC
DATE	20Feb2004	13Apr2004	4May2004	

0	46334	20Feb2004	AC
REV	DCO No.	DATE	NAME
DOMNICK HUNTER LIMITED DUKESWAY TEAM VALLEY, GATESHEAD, TYNE & WEAR NE11 0PZ, ENGLAND. Tel: 0191 402 9000 Telex: 537282 Telefax: 0191 482 6296			
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DRG No.	008620001		
SHEET	1 of 1		

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STANDARD DRAWING
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CHAMCO
CHAMCO INDUSTRIES LTD.
VANCOUVER - CALGARY - EDMONTON - PRINCE GEORGE

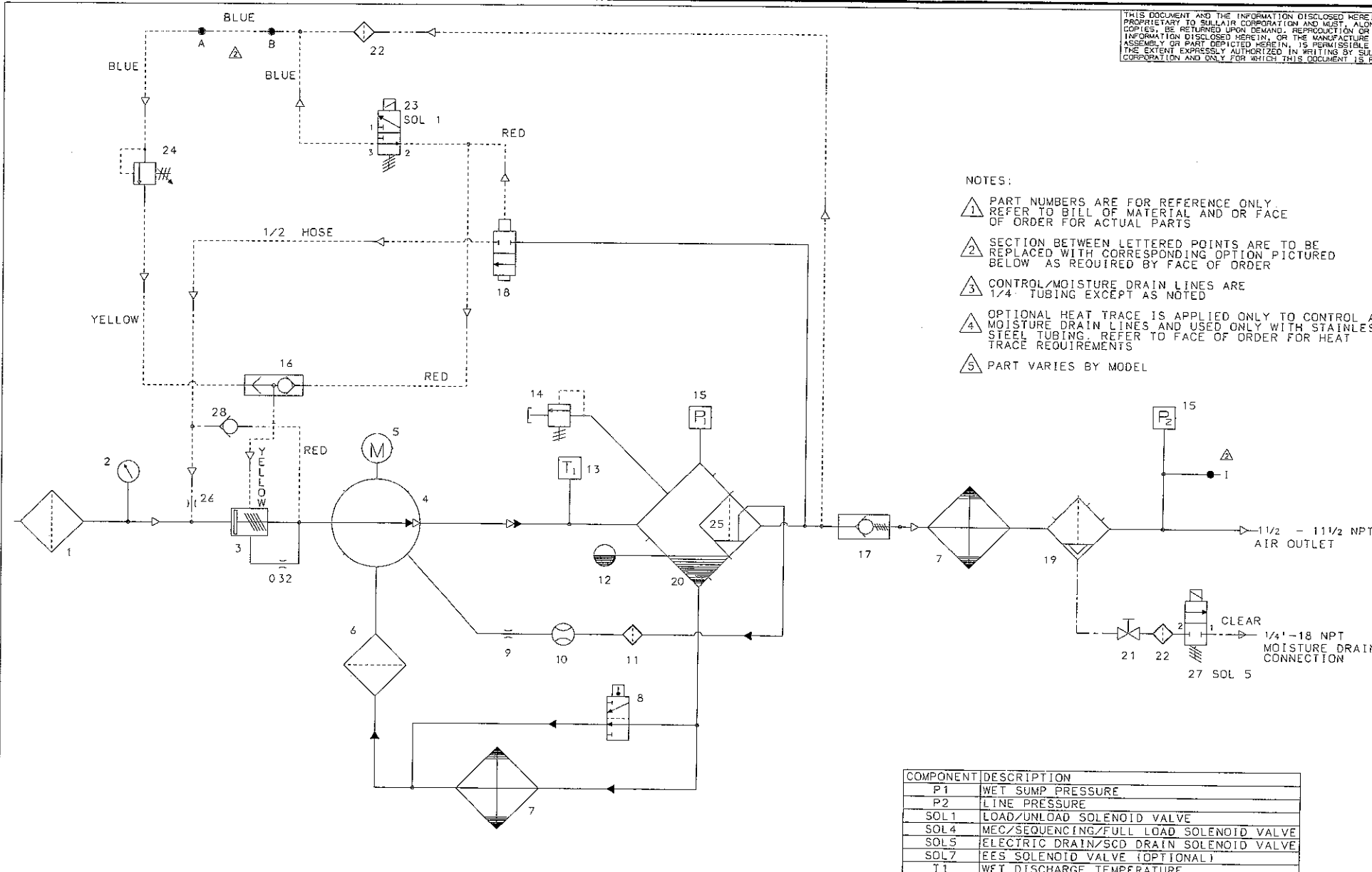
HUSKY OIL OPERATIONS LTD.
C/O IMV PROJECTS INC.
LOCATION: 07-27-51-19 W5M
P.O. No. AB0439-002-MAT1790-001
AIR COMPRESSOR PACKAGE
DOMNICK HUNTER MXS-103c AIR DRYER
MXS WIRING SCHEMATIC

DATE APRIL 25, 2007 SCALE N.T.S. DWG No. C1014859-31 REV. 0

DESIGNED BY Z.Z.
DRAWN BY CR
CHECKED BY
JOB No. 1014859ABS

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REVISIONS				
REV	ECO NO.	DESCRIPTION	DATE	REVISED
05	84877	REVISED INLET CONNECTIONS: ADDED .032 ORIFICE 02250161-433 & 02250115-272. REMOVED TUBE FROM MPV. (1) 408893 WAS (2)	03-24-06	VLS
06	86278	ADDED '3000P' TO TITLEBLOCK	08-18-06	JMN

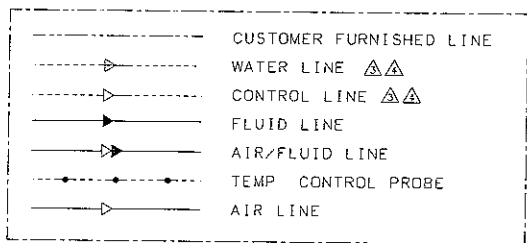


- NOTES:
- 1 PART NUMBERS ARE FOR REFERENCE ONLY. REFER TO BILL OF MATERIAL AND OR FACE OF ORDER FOR ACTUAL PARTS
 - 2 SECTION BETWEEN LETTERED POINTS ARE TO BE REPLACED WITH CORRESPONDING OPTION PICTURED BELOW AS REQUIRED BY FACE OF ORDER
 - 3 CONTROL/MOISTURE DRAIN LINES ARE 1/4" TUBING EXCEPT AS NOTED
 - 4 OPTIONAL HEAT TRACE IS APPLIED ONLY TO CONTROL AND MOISTURE DRAIN LINES AND USED ONLY WITH STAINLESS STEEL TUBING. REFER TO FACE OF ORDER FOR HEAT TRACE REQUIREMENTS
 - 5 PART VARIES BY MODEL

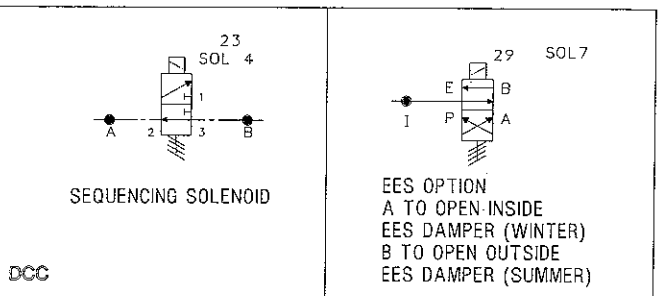
EES OPTION		
29	02250125-673	VALVE, SOLENOID EES
SEQUENCING OPTION		
23	02250155-714	VLV, SOL 3WNO 1/4 250# 24VDC

COMPONENT	DESCRIPTION
P1	WET SUMP PRESSURE
P2	LINE PRESSURE
SOL1	LOAD/UNLOAD SOLENOID VALVE
SOL4	MCC/SEQUENCING/FULL LOAD SOLENOID VALVE
SOL5	ELECTRIC DRAIN/SCD DRAIN SOLENOID VALVE
SOL7	EES SOLENOID VALVE (OPTIONAL)
T1	WET DISCHARGE TEMPERATURE

TUBING COLOR	PURPOSE
BLUE	TANK PRESSURE
YELLOW	REG PRESSURE
RED	UNLOAD PRESS
CLEAR	WATER DRAIN



ITEM NO.	PART NO.	DESCRIPTION	REV	QTY
28	02250115-272	VLV, CHK 1/4" NPTF BRASS VITON		1
27	02250155-715	VLV, SOL 2WNO 1/4 200# 24VDC		1
26	02250161-433	ORIFICE, .140 X 1/4M X 1/4F		1
25	02250149-624	TANK, SEPARATOR		1
24	250017-280	VALVE, PRESSURE REG		1
23	02250155-714	VLV, SOL 3WNO 1/4 250# 24VDC		1
22	241771	STRAINER, V-TYPE 300PSI X 1/4		2
21	047115	VALVE, BALL 1/4"		1
20	02250160-774	ELEM, SEP ROUND 5.5D X 14.3LNG		1
19	02250144-635	SEP, WATER D-H 1-1/2" FNPT 1/4" DRN		1
18	02250100-042	VALVE, BLOWDOWN 1/2" 1.8:1		1
17	02250097-598	VLV, MIN PRESSURE 1-7/8 SAE		1
16	408893	VALVE, SHUTTLE 1/4" DOUBLE CHK		1
15	02250155-174	XDUCR, 1-250# RADIOMETRIC		2
14	250006-938	VALVE, RELIEF 1/2"		1
13	02250155-173	PROBE, THERMISTOR 3000 OHM		1
12	02250097-610	PLUG, SIGHTGLASS 1-5/16" SAE		1
11	02250117-782	FILTER, ASSY GENESIS		1
10	02250126-129	GLS, SIGHT/ORF SAE		1
9	02250125-774	ORIFICE, 1/8 X 1/32		1
8	02250148-794	VALVE, THERMAL 210DEG 1-1/2"-18		1
8	02250092-081	VALVE, THERMAL 195DEG 1-1/2"-18		1
7	02250152-862	COOLER, AIR/OIL 60HP		1
7	02250151-493	COOLER, AIR/OIL 50HP		1
6	02250155-708	FILTER, CORELESS 1-1/16 SAE		1
5	-	MOTOR		1
4	-	COMPRESSOR UNIT		1
3	-	INLET		1
2	250003-869	INDICATOR, RESTRICTION		1
1	02250127-683	FILTER, AIR 9" PLASTIC		1



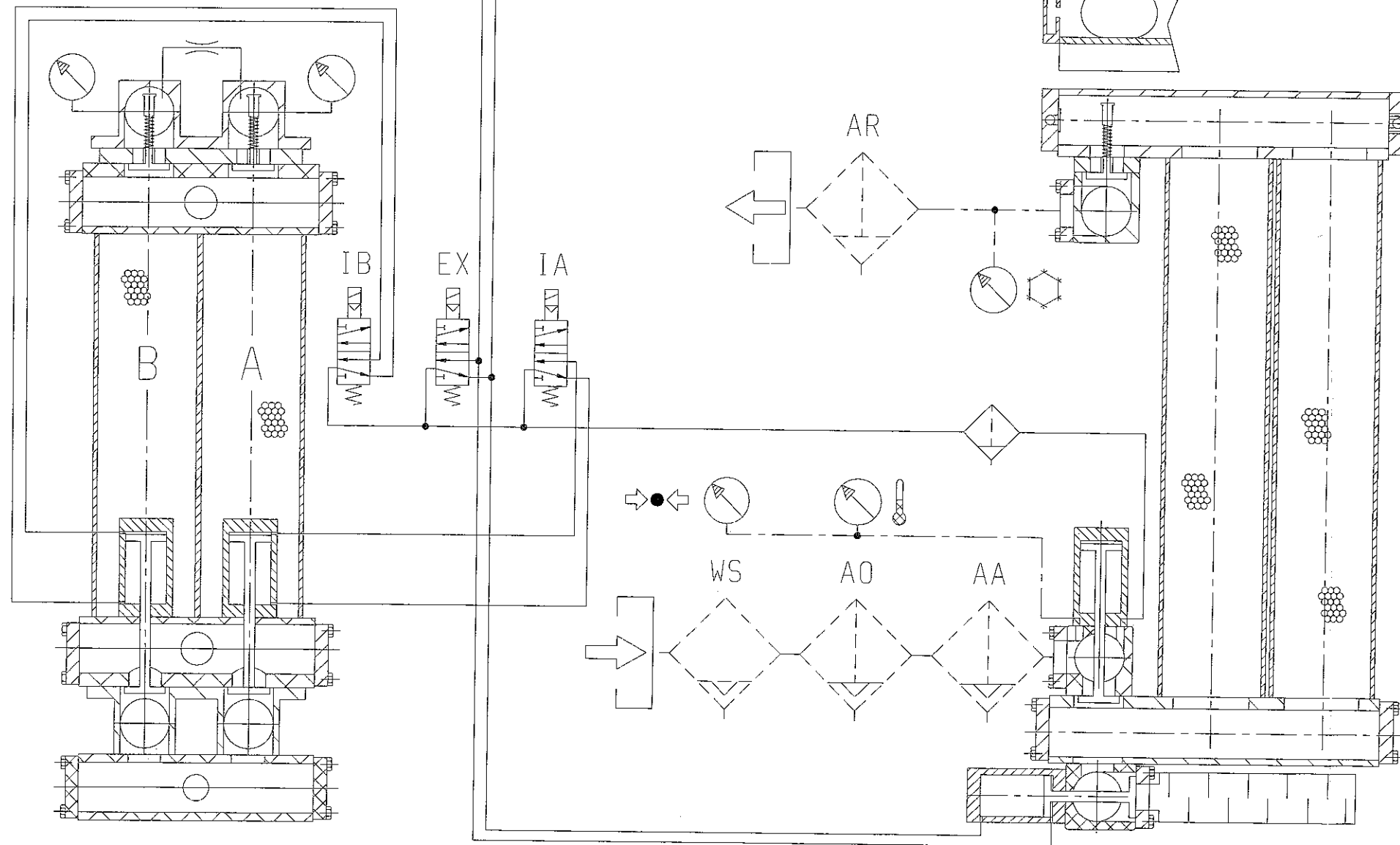
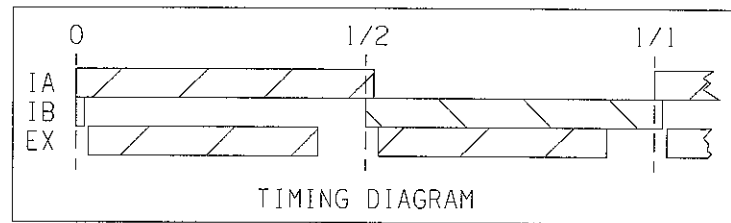
MATERIAL ☐ SPEC ☐ WEIGHT	THIS PRINT IS THE PROPERTY OF SULLAIR CORPORATION AND MAY NOT BE COPIED OR GIVEN TO ANY OTHER CONCERN WITHOUT THE CONSENT OF SULLAIR CORPORATION	SULLAIR CORPORATION MICHIGAN CITY INDIANA	
FINISH ☐ 1237 UNLESS NOTED ☐ AS CAST UNLESS NOTED	PRO CODE X01B BY DATE	DWG, P&I AC W/EES & SEQ.OPT 3000/3000P/3700/4500	
☐ HEAT TREAT ☐ HARDNESS		SIZE 31654	DWG NO 02250156-203106
☐ PAINT PER SULLAIR SPEC. NO.		SCALE NTS	REV 1
☐ OTHER (SPEC.)		WEIGHT	

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CHAMCO
CHAMCO INDUSTRIES LTD.
VANCOUVER - CALGARY - EDMONTON - PRINCE GEORGE

HUSKY OIL OPERATIONS LTD. C/O IMV PROJECTS INC LOCATION: 07-27-51-19 W5M P.O. No. AB0439-002-MAT1790-001		DESIGNED BY Z.Z.
AIR COMPRESSOR PACKAGE SULLAIR 4510 AIR COMPRESSORS		DRAWN BY CR
COMPRESSOR P & ID		CHECKED BY
DATE: APRIL 25, 2007		JOB No. 1014859ABS
SCALE N.T.S.	DWG No C1014859-40	REV 0



GENERAL TOLERANCES UNLESS OTHERWISE STATED

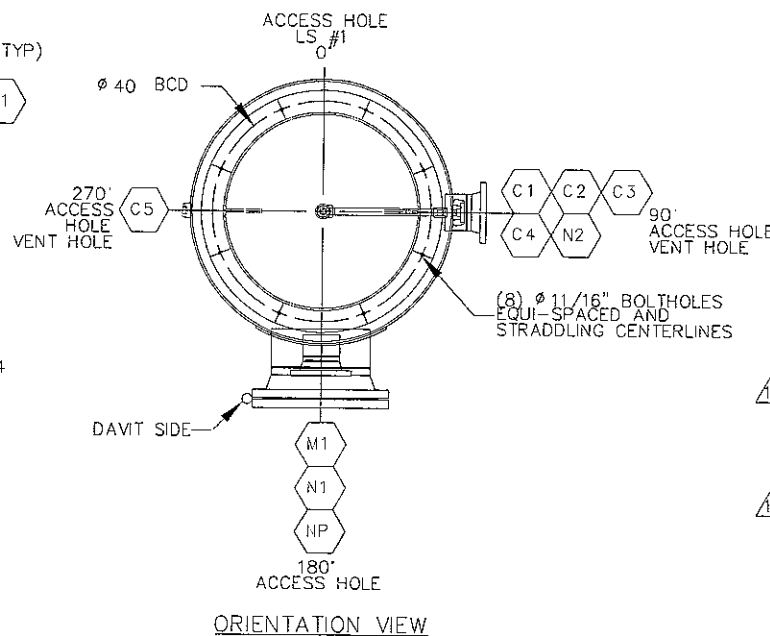
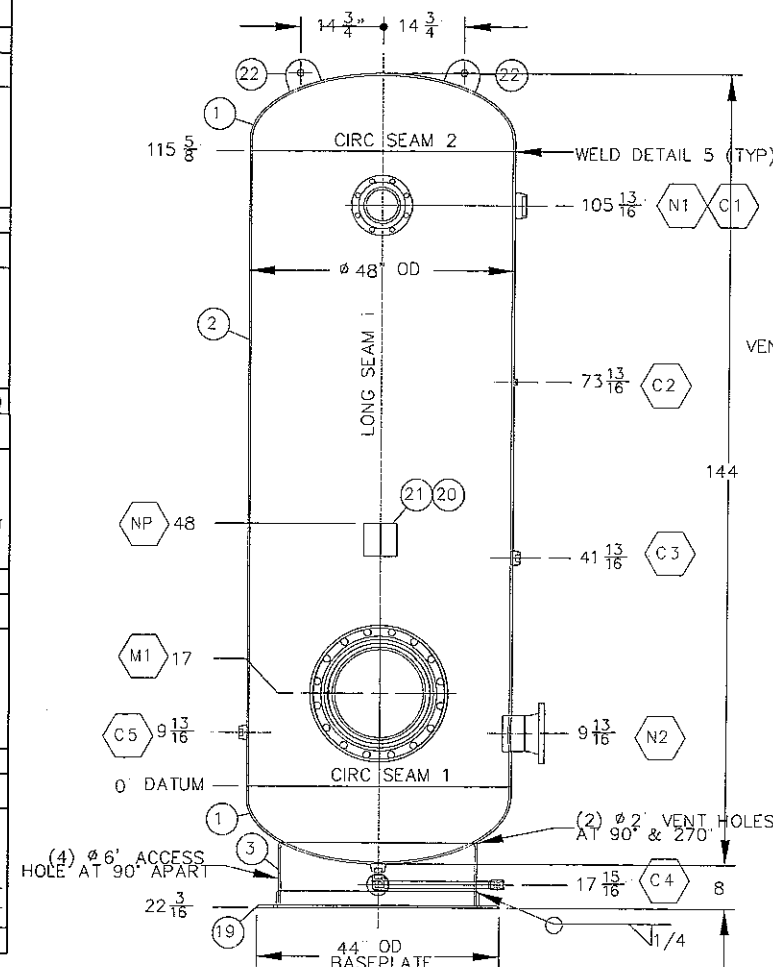
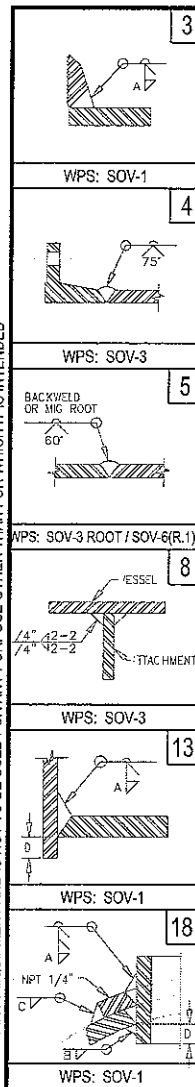
MACHINED SURFACES	UP TO 250	+0.2
PLAIN HOLES	UP TO 250	+0.2
PLAIN HOLES	250 TO 600	+0.3
PLAIN HOLES	600 TO 1000	+0.4
PLAIN HOLES	1000 TO 1500	+0.5
PLAIN HOLES	1500 TO 2000	+0.6
PLAIN HOLES	2000 TO 2500	+0.7
PLAIN HOLES	2500 TO 3000	+0.8
PLAIN HOLES	3000 TO 3500	+0.9
PLAIN HOLES	3500 TO 4000	+1.0
PLAIN HOLES	4000 TO 4500	+1.1
PLAIN HOLES	4500 TO 5000	+1.2
PLAIN HOLES	5000 TO 5500	+1.3
PLAIN HOLES	5500 TO 6000	+1.4
PLAIN HOLES	6000 TO 6500	+1.5
PLAIN HOLES	6500 TO 7000	+1.6
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PLAIN HOLES	7500 TO 8000	+1.8
PLAIN HOLES	8000 TO 8500	+1.9
PLAIN HOLES	8500 TO 9000	+2.0
PLAIN HOLES	9000 TO 9500	+2.1
PLAIN HOLES	9500 TO 10000	+2.2
PLAIN HOLES	10000 TO 10500	+2.3
PLAIN HOLES	10500 TO 11000	+2.4
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PLAIN HOLES	98000 TO 98500	+19.9
PLAIN HOLES	98500 TO 99000	+20.0
PLAIN HOLES	99000 TO 99500	+20.1
PLAIN HOLES	99500 TO 100000	+20.2

1	47758	5May2004	AC
0	47144	8Mar2004	MG
REV	DCO No.	DATE	NAME
DOMNICK HUNTER LIMITED			
DUKESWAY, TEAM VALLEY, GATESHEAD TINE & WEAR, NE11 0PZ, ENGLAND. Tel: 0191 402 9000 Telex: 537282 Telefax: 0191 482 6296			
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DRG No.	008620005	SHEET	1 of 1

MATERIAL	GEN. ARRGT	SCALE	1 3	NAME	MG	CHECKED	KRS	APPROVED	JK	TITLE	MX PNEUMATIC SCHEMATIC
DATE	8Mar2004	DATE	8Mar2004	DATE	8Mar2004	DATE	8Mar2004	DATE	8Mar2004	DATE	8Mar2004

						HUSKY OIL OPERATIONS		
						C/O IMV PROJECTS INC.		
						LOCATION: 07-27-51-		
						P.O. No. AB0439-002		
						AIR COMPRESSOR PACK		
						DOMNICK HUNTER MXS		
						MX PNEUMATIC SCHEM		
REV.			DATE			DATE		
BY						APR 25 2007		
DESCRIPTION								
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BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	SERVICE	MATERIAL	PART NO	HEAT NO
1	2	48" OD, 2.1 SE HEAD c/w 2" SF x 3/8" THK (1125" MIN)	HEADS	SA-516-70N	HD48X.375	
2	1	3/8" X 115 5/8" LG PLATE, ROLL TO 48" OD	SHELL	SA-516-70N	RSH48X.375X120	
3	1	3/8" X 36 OD X 11 3/8" LG	SKIRT	SA-36	RSH36X.375X24	
4	2	6" 150# XH RFWN FLG	N1 N2	SA-105N	FL6-150RFXNH	
5	1	18" 150# XH RFWN FLG	M1	SA-105N	FL18-150RFXNH	
6	1	18" 150# RF BLIND FLG	M1	SA-105N	FL18-150RFB	
7	2	6" XH SMLS PIPE X 3 15/16" LG	N1 N2	SA-106B	PI6A106XH	
8	1	18" XH SMLS PIPE X 6 15/16" LG	M1	SA-106B	PI18A106XH	
9	1	1/4" 6M THREDOLET ON 48"	C2	SA-105N	TOL.25-6M	
10	3	1" 6M THREDOLET ON 48"	C3-C5	SA-105N	TOL1-6M	
11	1	3" 3M THREDOLET ON 48"	C1	SA-105N	TOL3-3M	
12	16	1 1/8" X 6" STUDS	M1	SA-193-B7	B7ST1.125X6	
13	32	1 1/8" NUT	M1	SA-194-2H	NUT1.125-2H	
14	1	18" 150# FLEX GASKET	M1	304SS	GAS18-150304	
15	1	1" NPT 3M 90° ELBOW	C4	SA-105N	TEL1-3M90	
16	1	1" NPT 3M FULL CPLG	C4	SA-105N	TCP1-3M	
17	1	1" S/160 CLOSED NIPPLE X 2" LG TBE	C4	SA-106B	NI1X2S160	
18	1	1" S/160 SMLS PIPE X 20" LG, TBE	C4	SA-106B	PI1A106S160	
19	1	3/8" X 3" X 4" X 138 1/8" LG, ROLL HARD WAY TO 36" OD	BASEPLATE	44W/SA-36	STA.375X3X4	
20	1	3/16" X 3" X 6" LG PLATE	NP SUPT	SA-36	10000002	
21	1	3/16" X 6" X 6" LG PLATE	NP FACE	SA-36	10000004	
22	2	5/8" X 5" X 6" LG PLATE	LIFT LUG	SA-36	10000357	
23	1	3/8" X 24" OD PLATE ROLL TO 48" ID	M1 REPA	SA-516-70N		

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN IMPERIAL UNITS UNLESS OTHERWISE NOTED
2. ALL DIMENSIONS ARE REFERENCED FROM DATUM.
3. INTERNALS ADDED TO BE OF WELDABLE QUALITY TO SECTION IX AND USE WPS SOV-1/3
4. TRACKING NUMBER/HEAT NUMBER MUST BE STAMPED ON ALL WELD PIPE AND FITTINGS
5. FOR ALL ATTACHMENT WELDS, SEE WELD DETAIL 8
6. FOR ALL TACK WELDS, USE WPS: SOV-1/3
7. EXPOSED INSIDE EDGES OF NOZZLES OR OPENINGS SHALL BE ROUNDED (UG-76(c))
8. VESSEL SHALL BE REGISTERED IN THE PROVINCE OF ALBERTA.
9. CLEAN AND COVER ALL OPENINGS FOR SHIPMENT
10. MAXIMUM CIRCULAR CUT-OUT DIAMETERS: 1/4" TOL: 0.540; 1/2" TOL: 0.840; 3/4" TOL: 1.05; 1" TOL: 1.315; 2" TOL: 2.25; 3" TOL: 3.500
11. ALL BOLTHOLES STRADDLE NATURAL CENTERLINES UNLESS OTHERWISE NOTED
12. CRN DWG #: SOV-0002 R 2

STANDARD TOLERANCES

FABRICATION:

GENERAL DEVIATION: ±1/8"
OVERALL LENGTH: ±1/4"
ANGULAR: ±5°

WELD PREPARATION:

LAND (ROOT FACE): 1/16" ±1/32"
ROOT GAP: ±1/8" ±1/16"
ANGULAR: ±5°

NOZZLE SCHEDULE

TAG	QTY	SIZE	RATING	TYPE	SERVICE	WELD NO.	WELD SIZE			REPAID THK	PROJECTION		BOM ITEM
							A	B	C		I/S(D)	O/S	
M1	1	18"	150#	RFWN	MANWAY/INSPECTION	4.18	3/8"		5/16"	3/8"	1/2"	10"	5,6 8,12-14,23
N1	1	6"	150#	RFWN	OUTLET	4.13	3/8"				1"	6"	4,7
N2	1	6"	150#	RFWN	INLET	4.13	3/8"				1"	6"	4,7
C1	1	3"	3000#	TOL	OUTLET	3	5/8"						11
C2	1	1/4"	6000#	TOL	OUTLET	3	3/8"						9
C3	1	1"	6000#	TOL	OUTLET	3	3/8"						10
C4	1	1"	6000#	TOL	DRAIN	3	3/8"						10,15-18
C5	1	1"	6000#	TOL	OUTLET	3	3/8"						10

1	REVISE BOM 19.23	DJG	04.30.07	BY	DATE
0	ISSUED FOR CONSTRUCTION	DJG	04.27.07	DWN	DJG 03.27.07
REV	DESCRIPTION	DWN BY	DATE	CHK	
				ENG APP	
				QC APP	

VESSEL DESIGN DATA

CONSTRUCTION AS PER: ASME SECTION VIII DIV.1 2004 ED, 2006 ADD	
SERIAL NUMBER: S-2436	MAWP: 190 psig
CRN: T9389.2	HYDROSTATIC TEST: 247 psig
DESIGN TEMP: 100°F	CORROSION ALLOWANCE: 1/16"
MDMT: -20°F @ 190 psig	APPROX. WEIGHT (EMPTY): 4000 lbs
YEAR BUILT: 2007	CAPACITY: 142 ft³
RADIOGRAPHY: PER UW-11(a)5(b)	
PWHT PER UCS-56: NOT REQUIRED	
IMPACT TEST: EXEMPT PER UCS-66(a), UG-20(f) 1-5	
QUALITY CONTROL PROGRAM: AQP-1376	
WELD PROCEDURE REGISTRATION NO: WP-2265.2	
INTERNAL SANDBLAST (SSPC-SP5) & COATING: NOT REQUIRED	
EXTERNAL SANDBLAST (SSPC-SP6) & PAINT: NOT REQUIRED	



48" OD X 9'-7 5/8" S/S
AIR RECEIVER VESSEL
(190 PSIG AT 100°F)

Customer: HUSKY ENERGY/ CHAMCO INDUSTRIES LTD.	Shop Order No: 1839
DWG NO: 998F07	REV 1 SHT 1/1

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REFERENCE ONLY
SILVERADO STANDARD DWG
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CHAMCO INDUSTRIES LTD.
VANCOUVER - CALGARY - EDMONTON - PRINCE GEORGE

HUSKY OIL OPERATIONS LTD.
C/O IMV PROJECTS INC.
LOCATION: 07-27-51-19 W5M
P.O. No. AB0439-002-MAT1790-001

AIR COMPRESSOR PACKAGE
SILVERADO AIR RECEIVER

RECEIVER FABRICATION DRAWING

DATE: JUNE 07, 2007 SCALE: N.T.S. DWG No: C1014859-50

DESIGNED BY: Z.Z.
DRAWN BY: AL
CHECKED BY: .
JOB No: 1014859ABS
REV 0