

Bill of Materials

	No.	Part Number	Qty.	Units	Description	Heat Number
Flanges	1	FLG-0181	1	EA	16" DIA., SCH STD, 150# RFWN, ANSI B16.5 SA 105N (N1- FLARE GAS INLET CONNECTION)	
	2	ORDER	4	EA	24" DIA., SCH STD, 150# RFWN, ANSI B16.5 SA 105N (FLUE BREAK FLANGES)	
	3					
	4					
	5					
	6					
	7					
Weld Fittings	No.	Part Number	Qty.	Units	Description	Heat Number
	8	ORDER	1	EA	24" DIA., SCH STD, 45 DEGREE, SA 234 WPB WELD ELBOW (N1 - WASTE GAS INLET CONNECTION ELBOW)	
	9					
	10					
	11					
	12					
	13					
Concentric Reducer	No.	Part Number	Qty.	Units	Description	Heat Number
	14	XXX-XXXX	1	EA	16" DIA X 304L S.S. WELD IN TYPE, ROLLED (VELOCITY ARRESTOR)	
	15	ORDER	2	EA	24" DIA. X 16" DIA., NPS, SCH STD, SA 234 WPB FORGED CONCENTRIC REDUCER	
Gaskets	No.	Part Number	Qty.	Units	Description	Heat Number
	17	SNG-0019	2	EA	24" DIA. X 1/8" THK, 150#, 316L S.S. FLEXI-CARB GASKET (FLUE BREAK FLANGE GASKET)	
	18					
	19					
Studs & Nuts	No.	Part Number	Qty.	Units	Description	Heat Number
	21	ORDER	40	EA	1-1/4" DIA. X 7" LONG SA193 B7M STUDS (FLUE BREAK FLANGE STUDS)	
	22	SNG-0085	80	EA	1-1/4" DIA. SA194 2HM NUTS (FLUE BREAK FLANGE NUTS)	
	23					
	24					
	25					
	26					
Pipe	No.	Part Number	Qty.	Units	Description	Heat Number
	27	PIPE-0037	1	EA	24" DIA., SCH STD, SMLS, SA 106B PIPE X 27' - 6 3/4" LONG (STUB LEG)	
	28	PIPE-0037	1	EA	24" DIA., SCH STD, SMLS, SA 106B PIPE X 1' - 8 5/8" LONG (N1 - FLARE GAS INLET EXTENSION)	
	29	PIPE-0037	1	EA	24" DIA., SCH STD, SMLS, SA 106B PIPE X 30' - 8 1/4" LONG (BOTTOM STACK FLUE)	
	30	PIPE-0037	1	EA	24" DIA., SCH STD, SMLS, SA 106B PIPE X 58' - 11 7/8" LONG (MIDDLE STACK FLUE)	
	31	PIPE-0037	1	EA	24" DIA., SCH STD, SMLS, SA 106B PIPE X 12' - 9 7/8" LONG (UPPER STACK FLUE)	
	32	PIPE-0024	1	EA	16" DIA., SCH STD, SMLS, SA 106B PIPE X 5'-0" LONG (LOWER TIP) PORTION	
	33	PIPE-0216	1	EA	16" DIA., SCH STD, SMLS, 316L S.S. PIPE X 5'-0" LONG (UPPER TIP PORTION)	
	34	PIPE-0060	4	EA	6" DIA., SCH 80, WELDED, SA 106B PIPE X 11 5/8" LONG (LIFTING TRUNNION EXTENSION)	
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
Plate	No.	Part Number	Qty.	Units	Description	Heat Number
	43	ORDER	1	EA	36" DIA. X 1 1/2" THK SA 36 CS PLATE (BASEPLATE)	
	44	ORDER	1	EA	36" DIA. X 1 1/2" THK SA 36 CS PLATE (MATING BASEPLATE)	
	45	ORDER	8	EA	9" X 5 3/4" X 3/4" THK SA 36 CS PLATE (BASEPLATE GUSSETS)	
	46	ORDER	6	EA	8" X 5" X 1" THK SA 36 CS PLATE, SEE DETAIL (GUYWIRE LUGS)	
	47	ORDER	2	EA	32" O.D. X 24 1/8" I.D. X 3/4" THK SA 36 CS PLATE, SEE DETAIL (GUYWIRE RING)	
	48	ORDER	4	EA	3/8" THK. SA 516-70N PLATE, SEE DETAIL (LIFTING TRUNNION REPADS)	
	49	ORDER	8	EA	3/4" THK. SA 516-70N PLATE, SEE DETAIL (LIFTING TRUNNION STOPS)	
	50	ORDER	4	EA	1" THK. SA 516-70N PLATE, SEE DETAIL (LIFTING TRUNNION EARS)	
	51	ORDER	4	EA	3/4" THK. SA 516-70N PLATE, SEE DETAIL (LIFTING TRUNNION ENDCAPS)	
	52	ORDER	8	EA	3/8" THK. SA 516-70N PLATE, SEE DETAIL (LIFTING TRUNNION EYE PADS)	

	No.	Part Number	Qty.	Units	Description	Heat Number
Plate	53	LZR-0239	1	EA	3" X 3" X 1/2" THK 304L S.S. PLATE (GROUNDING LUG)	
	54	FLS-0121	2	EA	2" WIDE X 6 1/2" LONG X 1/4" THK 304L S.S. PLATE (WASTE GAS STRIPPER)	
	55	FLS-0071	2	EA	12" X 9" X 3/8" THK 316L S.S. PLATE (PILOT WIND SHROUD)	
	56	FLS-0053	2	EA	3" X 6" X 3/16" THK SA 36 CS PLATE (GATE LOCK PLATE)	
	57	FLS-0064	4	EA	PILOT TRACKING JOINER, 2 1/2" X 1 5/8" X 5/8" THK SA 36 CS PLATE	
	58	BAR-0011	2	EA	3" WIDE X 2" LONG X 1/4" THK SA 36 CS FLATBAR (PULLEY EXTENSION)	
	59	FLS-0181	2	EA	14" LONG X 5 1/4" WIDE X 3/8" THK SA 36 CS PLATE (HIGH VOLUME WINCH MOUNT)	
	60					
	61					
	62					
Misc. Parts	No.	Part Number	Qty.	Units	Description	Heat Number
	64	FLS-0067	2	EA	PILOT RETRACTING ENCLOSED S.S. PULLEY	
	65	FLS-0063	1	EA	5" LONG X 3" C-CHANNEL (NAMEPLATE BRACKET)	
	66	CONSUMABLE	1	EA	24" DIA., 150#, PLASTIC FLANGE COVER	
	67	FLS-0054	2	EA	GATE LOCK ASSEMBLY, COMPLETE TRACK GATE & GATE LOCK	
	68	FLS-0050	12	EA	PILOT TRACKING, COMPLETE ASSEMBLIES X 24' LONG	
	69	STM-0039	4	EA	3" X 3" X 14" LONG X 1/4" THK ANGLE IRON, A36/44W (PILOT J.B./WARNING LIGHT J.B. BRACKETS)	
	70	ELC-0554	3	EA	1 5/8" X 6" LONG, GALVANIZED UNISTRUT (JUNCTION BOX CABLING)	
	71					
	72					
Ship Loose Parts	No.	Part Number	Qty.	Units	Description	Heat Number
	74	ORDER	1	EA	INCANDESCENT DUAL WARNING LIGHTS-RED 120 VAC, C/W BRACKET, PHOTOELECTRIC CONTROLLER & TRANSFER RELAY	
	75	PLT-0023	2	EA	RETRACTABLE FUEL GAS PILOT MODEL TSI#6 & TMR SYSTEM 24 V.D.C	
	76	FLS-0133	2	EA	1/4" DIA. STAINLESS STEEL PILOT RETRACTING PULLEY CABLE X 275'-0" LONG	
	77	CLA-0106	4	EA	1/4" G450 GALVANIZED CROSBY CLIPS (FOR 1/4" WINCH CABLE)	
	78	MM-0107	2	EA	5/16" G209 GALVANIZED SCREW PIN SAFETY SHACKLE (PULL DOWN SAFETY SHACKLE)(NOT DEPICTED)	
	79	CLA-0107	2	EA	1/8" GALVANIZED CROSBY CLIPS (PULL DOWN CABLE CLIP)(NOT DEPICTED)	
	80	FLS-0134	2	EA	1/8" DIA. GALVANIZED PILOT PULL DOWN CABLE X 145'-0" LONG (NOT DEPICTED)	
	81	FLS-0179	2	EA	SHELBY HIGH VOLUME PILOT RETRACTING WINCH, DRILL DRIVEN UNIT	
	82	CUSTOM	1	EA	10" X 8" HOFFMAN NEMA 4, A1008 CHNF ELECTRICAL JUNCTION BOX FOR (2) 24 VDC PILOTS	
	83	CUSTOM	1	EA	10" X 16" HOFFMAN NEMA 4, A1018 CHNF ELECTRICAL JUNCTION BOX FOR L-960 WARNING LIGHTS-120 VAC	
	84	CUSTOM	1	EA	18" X 16" X 10" CONTROL BOX FOR (2) 24 VDC PILOTS-CLASS 1 DIV. 2 (NOT DEPICTED)	
	85					
	86	ELC-0939	2	EA	#16-4 SOW ELECTRICAL CABLE X 145'-0" LONG (PILOTS)	
	87	REG-0020	2	EA	1/4" DIA. NPT BELLOFRAM T-50 REGULATOR	
	88	IND-0004	1	EA	1/4" DIA. NPT WESTERN GAUGE, 316 S.S. INTERNALS, MODEL #WJ7842P, 0-30 PSI, NACE	
	89	HYD-0193	2	EA	1/4" DIA. NPT TYPE 3 FLEXIBLE FUEL SUPPLY HOSE X 140'-0" LONG (PILOTS)	
	90	PLT-0047	30	EA	FUEL HOSE/CABLE GUIDES STAINLESS STEEL(NOT DEPICTED)	
	91	CLA-0114	64	EA	FUEL HOSE/CABLE CLAMPS(NOT DEPICTED)	
	92	HYD-0190	4	EA	1/4" FUEL HOSE ENDS (AEROQUIP #4411-4S)(NOT DEPICTED)	
	93	HYD-0016	4	EA	1/4" NPT FUEL HOSE ADAPTER (AEROQUIP #2021-4-4S)(NOT DEPICTED)	
	94	MM-0107	2	EA	5/16" G209 GALVANIZED SCREW PIN SAFETY SHACKLE FOR WINCH CABLE	
	95					
	96	CONSUMABLE	30	EA	PLASTIC ZIP TIES FOR FASTENING ELECTRICAL CABLE TO HOSE GUIDES	
	97	ORDER	3	EA	1/2" GALVANIZED 6X26 IRWC CABLE X 181'-0" LONG (UPPER GUYWIRES)(FLEMISHED ONE END)	
	98	ORDER	3	EA	1/2" GALVANIZED 6X26 IRWC CABLE X 146'-0" LONG (LOWER GUYWIRES)(FLEMISHED ONE END)	
	99	CLA-0105	18	EA	1/2" G450 GALVANIZED CROSBY CLIPS (UPPER & LOWER GUYWIRE CLIPS)	
	100	MM-0116	6	EA	1/2" G414 GALVANIZED HEAVY DUTY THIMBLESS (UPPER & LOWER GUYWIRE THIMBLES)	
	101	ORDER	6	EA	3/4" GALVANIZED SCREW PIN SAFETY SHACKLES, #G2130 (UPPER & LOWER GUYWIRE SHACKLES)	
	102	ORDER	6	EA	7/8" X 18" HG-228 JAW & JAW GALVANIZED (GUYWIRE TURNBUCKLES)	
	103	ELC-0939	1	EA	#16-4 SOW ELECTRICAL CABLE X 145'-0" LONG (WARNING LIGHTS)	
	104	ELC-1207	1	EA	PILOT MOUNTED WARNING LIGHTS BRACKET-COMPLETE	
	105	MM-0278	2	EA	1-1/2" SIZE SOCKET, DEEP TYPE(NOT SHOWN)	
	106	MM-0279	2	EA	3/4" DRVE, MACHINED SOCKET EXTENSION X 6" LONG(NOT SHOWN)	
	107	BAR-0076	2	EA	1-1/2" MACHINED HEX BAR NUT TO REPLACE WINCH HANDLE(NOT SHOWN)	
	108	CONSUMABLE	8	EA	1/2" DIA. X 1 1/2" LG. BOLTS, NUTS & LOCKWASHERS (MOUNTING WINCH TO MOUNT PLATE,NOT SHOWN)	

Coating & Preparation: 1.) STACK EXTERIOR: SANDBLAST: SSPC-SP6 (1.5 - 2.5 mils) PRIMER: CLOVERDALE PRIMER, (2-2.5 mils DFT) TOPCOAT: CLOVERDALE 200C, (2-2.5 mils DFT) D.O.T ORANGE & WHITE FINISH.		Ignition System: TORNADO RETRACTABLE FUEL GAS PILOT MODEL TSI#6 c/w AUTO RELITE SYSTEM TMR 24 V.D.C. (TWI)		Name of Plant: PIPESTONE COMPRESSOR STATION Lease: 13-34-70-09 W6M Approx. Weight: 17,232 LBS. Max. Horiz. Load At Base: 3,600 LBS. Max. Vert. Load At Base: 27,200 LBS. Net Overturning Moment: 106,000 FT.-LBS. Design Wind Pressure: 0.43 kPa Design Wind Velocity: 95.8 mph Gust Factor: 2.6 Weld Procedure: #1323.2 APEGGA Permit To Practice: #P10806 CWB Registration Number: TDRNG1		Drawing Number: Encana-12511-BOM (1) Drawn By: AMG Checked By: EW Date Drawn: JUNE 6, 2012 Job Number: 12511 Quote Number: GEM0312 Tag Number: S-560 Design Code: NBC 2010 Exposure Factor: 1.52 Anchor Diameter (Base): Ø 1 1/4" Corrosion Allowance: 1/8"		Title: Ø16" x 145'-0" TALL GUYWIRE SUPPORTED FLARE STACK c/w Ø16" INLET CONNECTION Customer: ENCANA CORPORATION c/o GEMINI ENGINEERED SOLUTIONS LP P.O.#: G11124.100-1011 Salesperson: STEVE CAISSIE		Sheet 1 of 1  TORNADO COMBUSTION TECHNOLOGIES INC. 1-888-882-3882 Any Technical Data and the Designs Disclosed Herein are the Exclusive Property of Tornado Technologies Inc. and/or Contained the Proprietary Rights of Others and are not to be used or disclosed to Others without the Written Consent of Tornado Technologies Inc.	
General Notes: 1.) MTRS PROVIDED ON REQUEST AND RECEIPT OF ORDER. 2.) TORNADO STANDARD FOR PLUMBNESS TOLERANCE IS 1 INCH PER 100 FEET OF VERTICAL HEIGHT. 3.) BASE PLATE ANCHORS TO BE DOUBLE NUTTED. 4.) FOUNDATION TO BE DESIGNED BY A QUALIFIED ENGINEER.		Fabrication Tolerances * Fractional: Ø0" to Ø24" ±1/8" Greater than Ø24" ±1/4" Decimal: Ø0" to Ø24" ±1/8" Greater than Ø24" ±1/4" Angular: All ±2° *Unless otherwise stated									
2	CHANGE PART ON LINES 1,88 UPDATED LINES 27,28,29,82,83,86,103 ADD LINE 15	KW	12	06	20						
1	ADD LINES 59,105,106,107,108 CHANGE PART NO. AND DESCRIPTION ON LINE 81	KW	12	06	12						
0	ISSUED FOR APPROVAL PURPOSES	AMG	12	06	06						
Rev.	Description	By	Y	M	D						

MASTER VENDOR PRINT

4/28/14

☐ APPROVED FOR CONSTRUCTION
☐ APPROVED AS NOTED. MAKE CHANGES NOTED AND ISSUE FOR CONSTRUCTION
☒ NOT APPROVED. MAKE CHANGES NOTED AND RESUBMIT FOR APPROVAL

BY: *Brent Robinson*
 DATE: *28 JUNE 2012*
GEMINI

GEMINI				
Order	Discipline	To	Date	Initials
	Project Engineer		<i>June 28/12</i>	<i>BT</i>
	Mech Piping/Eng		<i>26 June 12</i>	<i>B.S.</i>
	Mech Piping/Design			
	Civil Eng	<i>T. Stein</i>	<i>21 June 12</i>	<i>TS</i>
	Civil Design	<i>G. BUTT</i>	<i>27 Jan 12</i>	<i>GB</i>
	Process	<i>SN-A</i>	<i>26/6/12</i>	<i>SN</i>
	Instru-mentation			
	Electrical			
	Controls			
	Inspection / QA			
	Project Manager		<i>28 Jun 12</i>	<i>BR</i>

☒ FOR APPROVAL ☐ FOR INFORMATION
 RETURN TO _____ DATE REQUIRED: **JUN 27 2012**
☒ VENDOR
☐ FILE _____
☐ _____

INTERDISCIPLINARY REVIEW

VENDOR DWG. CONTROL		
GEMINI CALGARY, ALBERTA		DATE JUN 20 2012
JOB No.	P.O. #	SUB #
G 11124 . 100		2