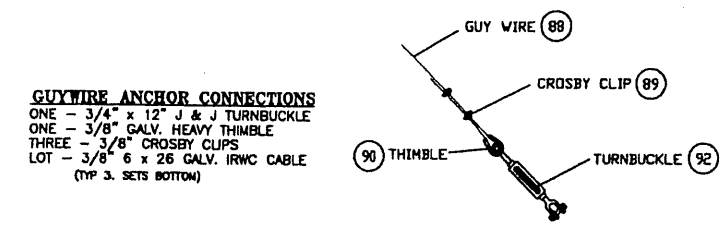


NOZZLE AND COUPLING SCHEDULE

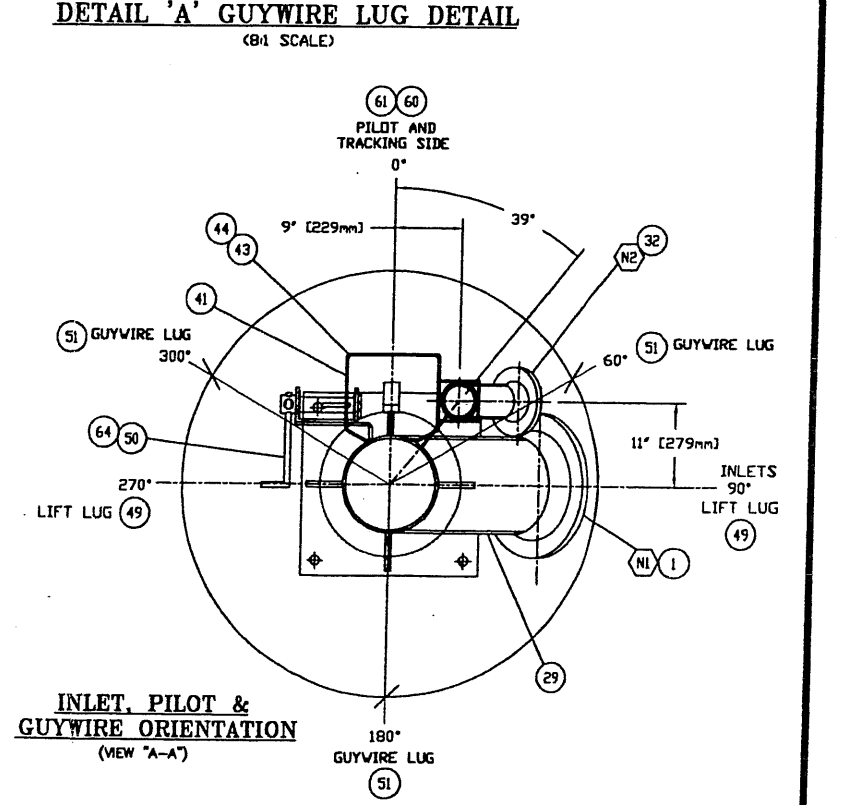
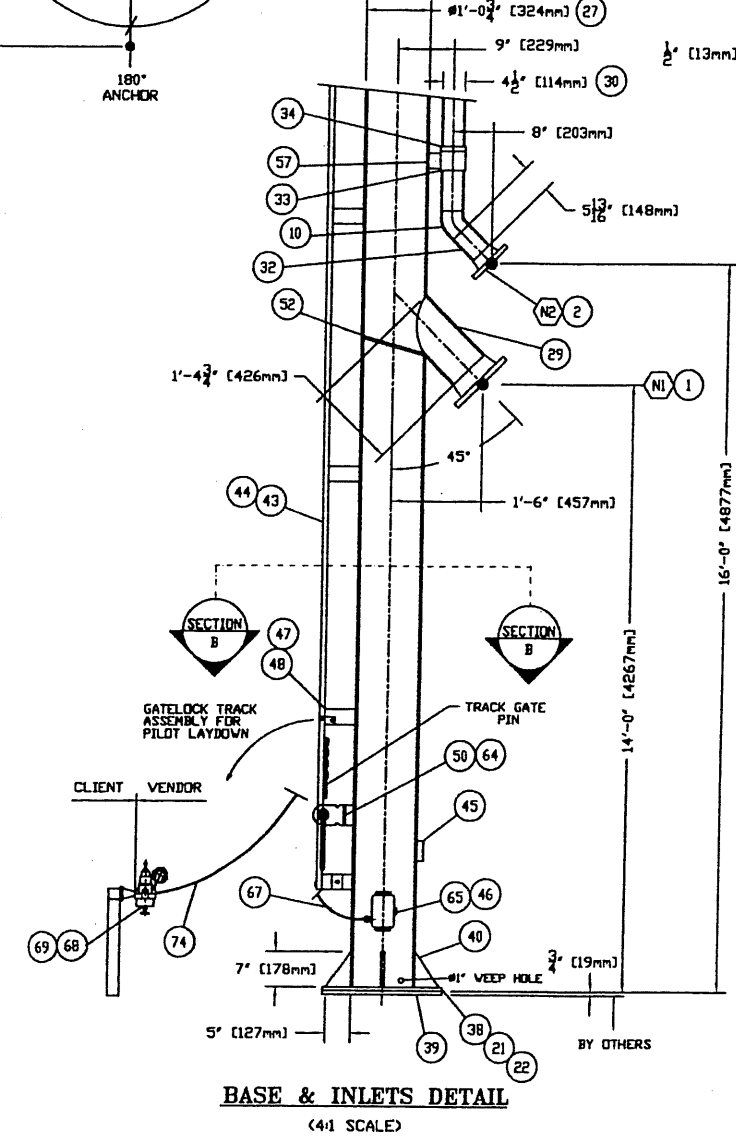
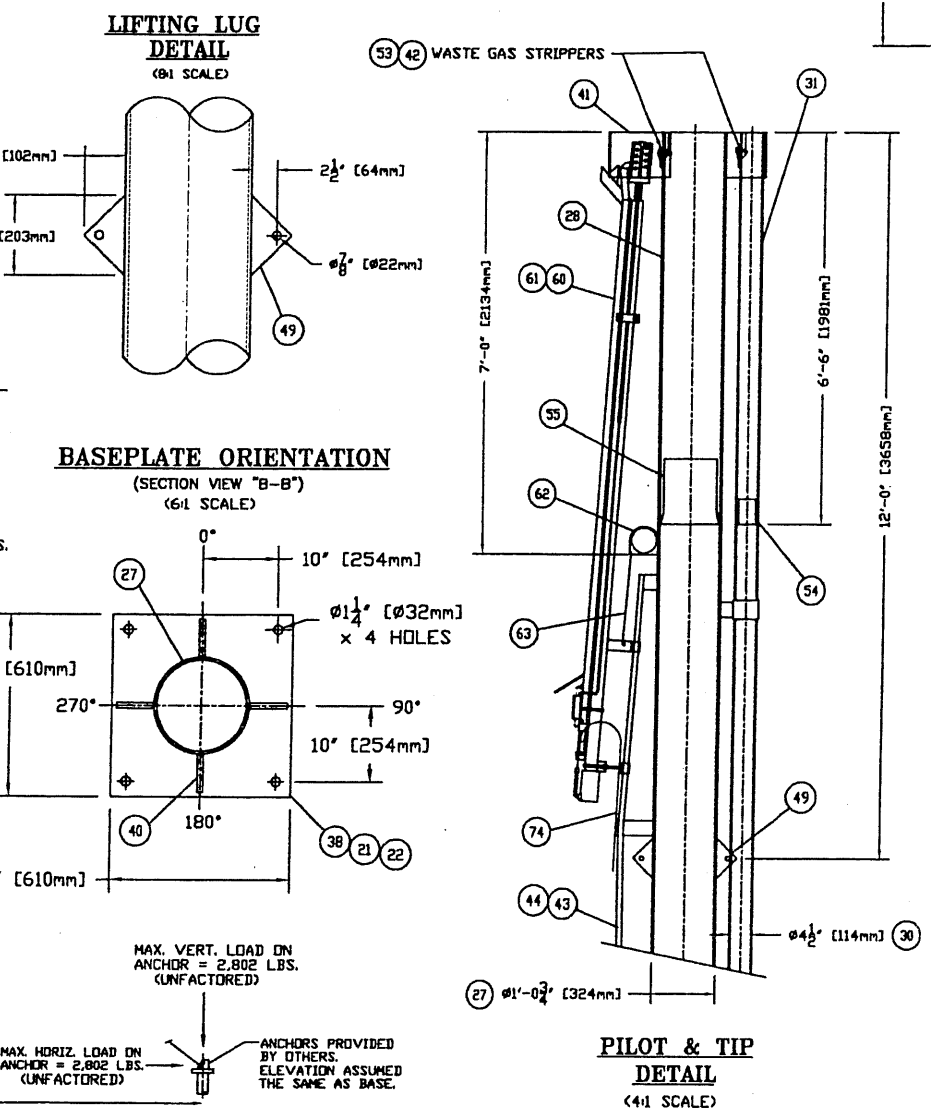
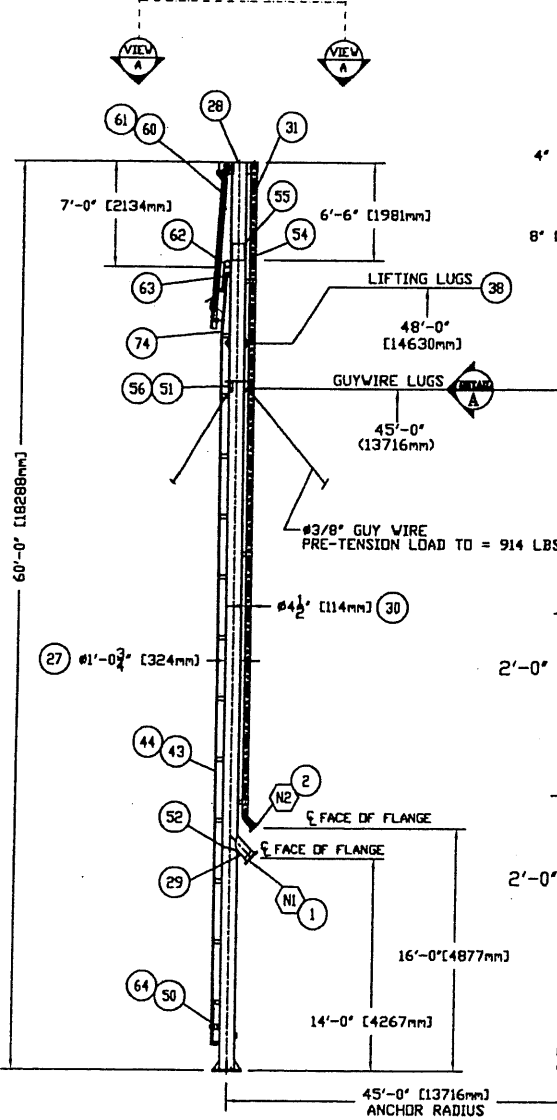
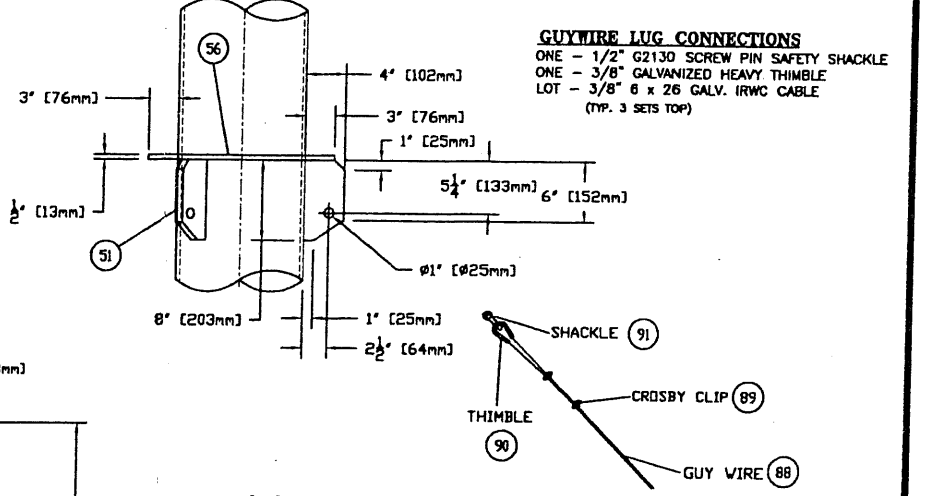
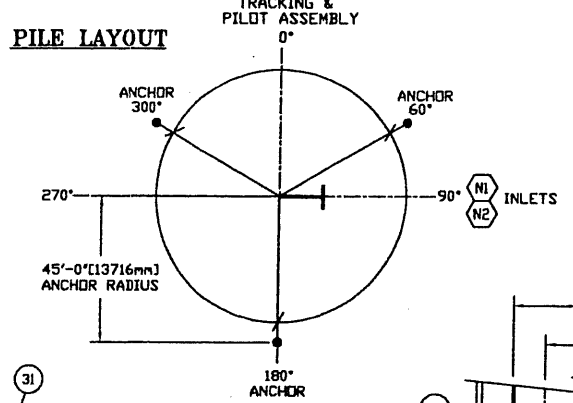
Mark No.	Qty.	Size	ANSI Rating And Facing	Service	O.D. of Nozzle Neck	Projection		Welding Detail Number	Fillet Weld Size				Bill of Mat'l Item No.	Remarks	Elevation	Orientation Angle
						Inside	Outside		A	B	C	D				
N1	1	Ø8" [219mm]	SA 105 150# R.F.	H.P. WASTE GAS INLET NOZZLE	8 5/8" [324]	0"	18"	2,3	3/8"				1,29	WELD NECK	14'-0" [4268mm]	90°
N2	1	Ø4" [114mm]	SA 105 150# R.F.	L.P. WASTE GAS INLET NOZZLE	4 1/2" [114]	0"	8"	2,3	3/8"				2,32	WELD NECK	16'-0" [4880mm]	90°

WELD DETAILS			
WELD DETAIL 1	WELD DETAIL 2	WELD DETAIL 3	WELD DETAIL 4
Weld Procedure TFS-4	Weld Procedure TFS-4, TFS-18N	Weld Procedure TFS-4, TFS-18N	Weld Procedure TFS-4, TFS-18N



NOTE: ONE(1) PILOT AND FUEL GAS CONNECTION PROVIDED TO IGNITE BOTH FLARE STACKS

NOTE: SEE ORIENTATION VIEW FOR TRUE ORIENTATION OF COMPONENTS



Rev.	Description	By	Y	M	D
3	PILOT NOTE ADDED, NOZZLE CHART ITEM# N1 CHANGED FROM Ø12" PER CLIENT REQUEST	RAZ	08	11	12
2	ISSUED FOR CONSTRUCTION	RAZ	08	10	21
1	L.P. & H.P. INLET HEIGHTS CHANGED AS PER CUSTOMER	RAZ	08	10	20
0	ISSUED FOR APPROVAL PURPOSES	EW	08	09	23

General Notes:
 Tag #: 5-7300/5-7400

Max. Horiz. Load At Base: 933 LBS.
Max. Vertical Load At Base: 8,145 LBS.

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Paint:
 SANDBLAST SSPC-SP6
 RUST INHIBITIVE PRIMER
 HIGH TEMP. ALUMINUM FINISH

Ignition System:
 TORNADO RETRACTABLE FUEL GAS
 PILOT MOD. TSI#6 c/w AUTO RELIEF
 SYSTEM TPRM-A 24 V.D.C.

Approx. Weight: 4,055 LBS.
Mag Particle Procedure: NONE
Radiography / Xray: NONE
Coolant Tracing: NONE
Aluminum Cladding: NONE
Corrosion Allowance: .0625"
Weld Procedure #: #1323.2
Q.C. Program #: AQP-1266

Dwg. By: EMW
DWG#: SWAN-005084a
Date: 2008 09 23
Y M D

JOB#: 005084
QUOTE#: DPHF1709
Salesperson: STEVE CAISSIE
Sales Order#: 3805
Sheet 1 of 2

TORNADO Technologies Inc.

SWAN HILLS SYNFUELS
 c/o DPE FOCUS CORP.
 P.O.# 9703-F001A

PHONE# (403)883-2400
FAX# (403)883-2550
TOLL FREE# 1-800-661-4128
WEB SITE: WWW.TORNADOTECH.NET

Bill of Materials

No	Vantage #	Qty	Size	Sch.	Rating	Face	Type	Material Specification	Remarks	Heat#
FLANGES										
1	FLG-0136	1	ø8[219]	STD.	150#	R.F.	W.N.	ANSI SA 105	N1 - H.P. WASTE GAS INLET CONN.	
2	FLG-0118	1	ø4[114]	STD.	150#	R.F.	W.N.	ANSI SA 105	N2 - L.P. RISER PIPE CONNECTION	
WELD FITTINGS										
10	PFB-0172	1	ø4[114]	STD.	45	WELD ELBOW		SA 234 WPB	L.P. INLET CONN. WELD ELBOW	
COUPLINGS										
GASKETS										
STUDS, BOLTS AND NUTS										
21	XXX-XXX	4	1 1/8"	1	4	1/2"	SA193 B7M		BASEPLATE STUDS	
22	SNG-0089	8	1 1/8"	1				SA194 2HM	BASEPLATE NUTS	
PIPE										
27	PIPE-0080	1	ø12[324]	SMLS	STD.			SA 1068 x 53'-5 1/4"[1628mm] LG.	H.P. STACK FLUE	
28	SSM-0223	1	ø12[324]	SMLS	STD.			310L S.S. x 6'-6" [1981mm] LG.	H.P. STACK FLUE TIP	
29	PIPE-0062	1	ø8[219]	SMLS	STD.			SA 1068 x 1'-4 3/4"[426mm] LG.	N1 - H.P. FLARE GAS INLET EXT.	
30	PIPE-0052	1	ø4[114]	SMLS	STD.			SA 1068 x 36'-7 1/2"[11162mm] LG.	L.P. RISER PIPE	
31	PIPE-XXX	1	ø4[114]	SMLS	STD.			310L S.S. x 6'-6"[1981mm] LG.	L.P. RISER PIPE TIP	
32	PIPE-0052	1	ø4[114]	SMLS	STD.			SA 1068 x 5 13/16"[148mm] LG.	L.P. RISER PIPE INLET PUP	
33	FLS-0114	3	ø5" O.D.	SMLS	STD.			SA 1068 x 3 3/4"[95mm] LG.	L.P. RISER PIPE COLLARS	
34	FLS-0118	1	ø5" O.D.	SMLS	STD.			SA 1068 x 1"[25mm] LG.	L.P. RISER LOCK COLLAR	
PLATE										
38	STM-0021	1	24"[610mm] x 24"[610mm]					3/4" THK. SA 36 CS PLATE	BASEPLATE	
39	STM-0021	1	24"[610mm] x 24"[610mm]					3/4" THK. SA 36 CS PLATE	MATING BASEPLATE	
40	STM-0053	4	5"[127mm] x 7"[178mm]					1/2" THK. SA 36 CS PLATE	BASEPLATE GUSSETS	
41	SSP-0035	1	12" x 9" [305mm x 229mm]					3/8" THK. 310L S.S. PLATE	PILOT DUAL WIND SHROUD	
42	SSP-0030	1	2" WIDE x 6 1/2" LG.					1/4" THK. 310L S.S. PLATE	H.P. WASTE GAS STRIPPER	
43	FLS-0050	?	24 FEET LONG					COMPLETE ASSEMBLIES	PILOT TRACKING	
44	FLS-0051	?	2" x 1"[51 x 25], 48" LONG					1/8" THK. WALL HSS TUBING	PILOT TRACKING PIECES	
45	FLS-0063	1	4" LONG					3" C-CHANNEL	NAMEPLATE BRACKET	
46	FLS-0126	1	7 3/4" LG. x 3" WIDE x 2 1/4" TALL					1/4" THK. SA 36 CS PLATES	JUNCTION BOX BRACKET	
47	FLS-0054	1	GATE LOCK ASSEMBLY - COMPLETE						TRACK GATE & GATE LOCK	
48	FLS-0053	1	3"[76mm] x 6"[152mm]					3/16" THK. SA 36 CS PLATE	GATE LOCK PLATE	
49	FLS-0147	2	8" x 4" [203mm x 102mm]					3/4" THK. SA 36 CS PLATE	LIFTING LUG	
50	FLS-0066	1	10" LG. x 4" WIDE x 2" TALL					3/8" THK. SA 36 CS PLATE	WINCH MOUNT PLATE	
51	STM-0053	3	8" x 4" [203mm x 102mm]					1/2" THK. SA 36 CS PLATE	GUYWIRE LUGS	
52	FLS-0026	1	1'-0" [305mm] O.D.					1/2" THK. SA 36 CS PLATE	SEAL PLATE	
53	SSP-0030	1	1" WIDE x 5" LG.					1/4" THK. 310L S.S. PLATE	L.P. WASTE GAS STRIPPER	
54	FLS-0005	1	ø4[114] x 304L S.S.					PURGE GAS SEAL (WELD-IN) TYPE	L.P. VELOCITY AIRRESTOR	
55	XXX-XXX	1	ø12[324mm] x 304L S.S.					PURGE GAS SEAL (WELD-IN) TYPE	H.P. VELOCITY AIRRESTOR	
56	STM-0053	1	19"[483mm] O.D. x 13"[330mm] I.D.					1/2" THK. SA 36 CS PLATE	GUYWIRE SUPPORT RING	
57	BAR-0011	3	5 3/8"[137mm] LG. x 3"[76mm] WIDE					1/4" THK. SA 36 CS PLATES	L.P. RISER STANDOFFS	
58										
IGNITION SYSTEM PARTS										
60	PLT-0023	1	TORNADO RETRACTABLE FUEL GAS PILOT MODEL TSI#6						PILOT ASSEMBLY	
61	PLT-0023	1	TORNADO PILOT MONITORING & AUTO RELITE SYSTEM TPMR 24 V.D.C.						RELITE SYSTEM	
62	FLS-0067	1	PILOT RETRACTING ENCLOSED S.S. PULLEY						PILOT PULLEY	
63	FLS-0135	107	ø3/16" S.S. PILOT RETRACTING PULLEY CABLE						PULLEY CABLE	
64	FLS-0141	1	PILOT RETRACTING WINCH (MANUAL)						PILOT WINCH	
65	ELC-0786	1	NEMA 4 STEEL ELECTRICAL JUNCTION BOX						JUNCTION BOX	
66	ELC-0948	2	STAINLESS STEEL CONTROL BOX BRACKETS						CONTROL BOX	
67	ELC-0939	55'	#16-4 SOW ELECTRICAL CABLE						ELECTRICAL CABLE	
68	REG-0035	1	ø1/4" NPT BELLOFRAM T-50 REGULATOR						REGULATOR	
69	IND-0072	1	ø1/4" NPT. 2" DIAL FACE. 0-30 PSI CS DRY GAUGE						GAUGE	
70	HYD-0190	2	FUEL HOSE ENDS						HOSE ENDS	
71	HYD-0016	2	FUEL HOSE ENDS						HOSE ENDS	
72	PLT-0047	6	FUEL HOSE GUIDES						HOSE GUIDES	
73	CLA-0114	14	FUEL HOSE CLAMPS						HOSE CLAMPS	
MISCELLANEOUS PARTS										
74	HYD-0193	55'	ø1/4" NPT TYPE 3 FLEXIBLE FUEL SUPPLY HOSE						FUEL HOSE	
75	ELC-0083	1	NEMA 4X FIBERGLASS C/W SPRING LOADED 3 POSITION SWITCH						24 V CONTROL PANEL	
GUYWIRE PACKAGE PARTS										
88	FLS-0136	3	3/8" GALVANIZED 6x26 IRWC CABLE						GUYWIRES	
89	CLA-0110	12	3/8" GALVANIZED CROSBY CLIPS						GUYWIRE CLIPS	
90	MIM-0114	6	3/8" GALVANIZED HEAVY DUTY GUYWIRE THIMBLES						THIMBLE	
91	MIM-0108	3	1/2" G2130 GALVANIZED SCREW PIN SAFETY SHACKLES						SHACKLES	
92	MIM-0227	3	5/8" x 12 JAW & JAW GALVANIZED GUYWIRE TURNBUCKLES						TURNBUCKLE	

4	ITEM # 31 MATERIAL DESC. CHANGED FROM SA 1068	RAZ	08	10	28
3	UPDATED VANTAGE NUMBERS FOR PART ITEMS #40 & #51 PER TORNADO	EW	08	10	27
2	ISSUED FOR CONSTRUCTION	RAZ	08	10	21
1	L.P. RISER PIPE LENGTH CHANGED.	RAZ	08	10	20
0	ISSUED FOR APPROVAL PURPOSES	EW	08	09	23
Rev.	Description	By	Y	M	D

General Notes:
 Tag #: 5-7300/5-7400
 SANDBLAST SSPC-SP6
 RUST INHIBITIVE PRIMER
 HIGH TEMP. ALUMINUM FINISH
 Max. Horiz. Load At Base: 933 LBS.
 Max. Vertical Load At Base: 8,145 LBS.
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Paint:
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Ignition System
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 PILOT MOD. TSI#6 c/w AUTO RELITE
 SYSTEM TPMR-A 24 V.D.C.
Approx. Weight: 4,055 LBS.
Mag Particle Procedure: NONE
Radiography / Xray: NONE
Coolant Tracing: NONE
Aluminum Cladding: NONE
Corrosion Allowance: .0625"
Weld Procedure #: #1323.2
Q.C. Program #: AQP-1266

Dwg. By: EMW
DWG#: SWAN-005084b
Date: 2008 09 23
Y M D
JOB#: 005084
QUOTE#: DPHF1709
Salesperson: STEVE CAISSIE
Sales Order#: 3805
Sheet 2 **of** 2

Title: ø12" & ø4" x 60'-0" TALL
 GUYWIRE SUPPORTED FLARE STACK
 c/w ø4" RISER PIPE
Customer: SWAN HILLS SYNFUELS
 c/o DPH FOCUS CORP.
P.O. #: 9703-F001A
REV. IN-SITU, ALBERTA
 16-09-65-011 W5M

TORNADO Technologies Inc.



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