



# BILTON

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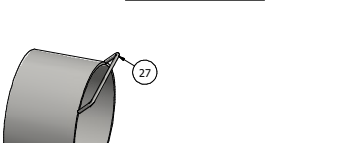
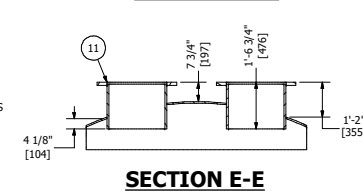
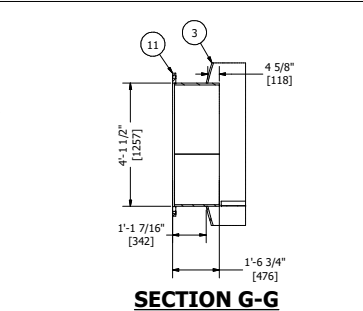
XTO ENERGY CANADA

HORIZONTAL HEATER TREATER  
FINAL ASSEMBLY 10'-0" OD x 30'-0" S/S

QUOTE NUMBER: 09733	SALE ORDER: 005211
PURCHASE ORDER: 737	JOB ORDER:
LOCATION: NEW MEXICO/ TEXAS	D4666
DATE: 6/21/2018	
SHEET: 1 OF 5	DRAWING NO.:
CRN DWG: BWM-715-18	D4666-101
CRN NUMBER: Y8134.2	

# GENERAL NOTES:

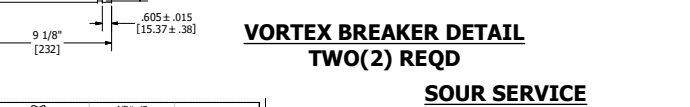
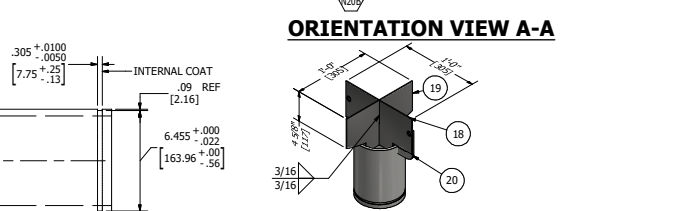
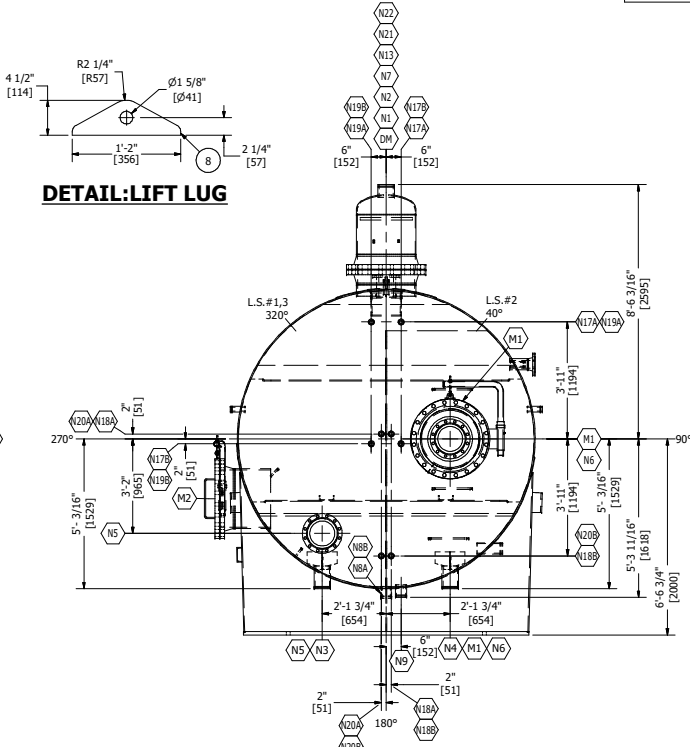
- QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
- WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
- HEAD, SHELL & REPAD MATERIAL: SA-516-70N - IMPACTS EXEMPT PER UG-20(f)(1-5)
- FLANGE MATERIAL: SA-105-N - IMPACTS EXEMPT PER UG-20(f)(1-5)
- PIPE MATERIAL: SA-516-70N - IMPACTS EXEMPT PER TAB. UCS-66
- PIPE MATERIAL: SA-106-B / SA-193-B7 / SA-194-2H & STAINLESS INTERNAL BOLTING - IMPACTS EXEMPT PER FIG. UCS-66 NOTE(c)
- PRODUCTION WELDS: IMPACTS EXEMPT PER UG-20(f)(1-5)
- SELECT CHEMISTRY: (PLATE MATERIAL ONLY)
  - PHOSPHOROUS = 0.015% MAX
  - SULFUR = 0.008% MAX
- CE = 0.420 MAX (MAX CARBON EQUIVALENT LONG FORM)
- CUSTOMER AML, XTO ENERGY - PRODUCTION VESSEL SPEC- PARAGRAPH 3.14
- ULTRASONIC TESTING: NIL
- MAGNETIC PARTICLE TESTING: LIFTING LUG WELDS, MPI BLIND FLANGES BEFORE & AFTER WELDING UG-93(d)(3)
- RADIOGRAPHY: RT-2 AS PER UW-11(a)(5)(b)
- LPI LEAK TEST OIL BOX (BILTON INTERNAL)
- AIR SOAP LEAK TEST: NIL
- PWHT: NONE, AS PER UCS-56
- HARDNESS TESTING: NIL
- HYDROTEST: 98 PSIG, 1 HOUR MINIMUM & CHART RECORDED.
- ALL WEAR PADS & REPADS TO HAVE 1/4" NPT WEEP HOLE LOCATED AT LOWEST ELEVATION
- EXTERNAL SANDBLAST: SSPC-SP06 (COMMERCIAL)
- EXTERNAL COATING: PRIMER: ONE (1) COAT SHERWIN WILLIAMS MACROPOXY 646 TOPCOAT: NIL
- COATING OF VICTAULIC ENDS - NO THICKER THAN 12 MIL DFT
- INTERNAL SANDBLAST: SSPC-SP05 (WHITE METAL)
- INTERNAL COATING: SHERWIN WILLIAMS NOVA-PLATE UHS AS PER MANUFACTURER'S SPECIFICATIONS
- INTERNAL COATING TO COVER FLANGE FACE TO OD OF RF AND ALSO OUTSIDE OF NOZZLE UP TO GROOVE FOR ALL PIPE NOZZLES
- COATING ON FLANGES - SAME OVERALL THICKNESS AS PER MAIN VESSEL
- INSULATION: NIL
- ALL BOLT HOLES TO STRADDLE CENTERLINE
- ALL OUTSIDE PROJECTIONS ARE TO BE MEASURED ALONG CENTERLINE OF NOZZLE
- ALL INSIDE PROJECTIONS ARE TO BE MEASURED ALONG THE SHORTSIDE OF THE NOZZLE
- FABRICATION TOLERANCES AS PER BWVIML DWG: TOL2002
- VESSEL REGISTRATION: NATIONAL BOARD
- VESSEL IS FOR EXPORT ONLY AND NOT INTENDED TO BE USED IN CANADA
- NATIONAL BOARD: # 47
- VESSEL SERIAL NUMBER: 17762
- S.G = 1
- C.A = 1/8" / ANODE NOZZLES (N10-N12) = 1/16"
- GROOVED CONNECTIONS DESIGNED FOR HP70-ES VICTAULIC CLAMPS
- NAMEPLATE: STRAMP "NACE"
- NAMEPLATE TO SHOW CA




NOZZLE SCHEDULE														
MARK	QTY	DESCRIPTION	NPS	CLASS	TYPE	IS PROJ	OS PROJ	DETAIL	WELD A	WELD B	REPAD C	REPAD D	BOM ITEM	
N1	1	INLET #	6	150	RFLWN	0" <sup>4</sup>	6"	3	9/16" <sup>4</sup>	-	-	-	12,13,14,15,16	
N2	1	GAS OUTLET **	6	-	PIPE	0"	4"	9	1/4"	-	-	-	11	
N3	1	WATER OUTLET	6	-	PIPE	3/8"	6"	3	15/32"	-	-	-	17,18,19,20	
N4	1	OIL OUTLET	6	-	PIPE	3/8"	6"	3	15/32"	-	-	-	17,18,19,20	
N5	1	WATER LLC	10	150	RFLWN	5/16"	4-5/8"	3	3/8"	-	-	-	21	
N6	1	OIL LLC **	10	150	RFLWN	5/16"	4-5/8"	3	3/8"	-	-	-	21	
N7	1	PSV (RELIEF) #	6	150	RFLWN	3/8"	6"	3	1/4"	-	-	3/16"	11	
N8A/B	2	DRAIN	4	-	PIPE	1/4"	4"	3	7/16"	-	-	-	22	
N9	1	OIL DRAIN	4	-	PIPE	3/8"	4"	3	1/4"	-	-	-	23	
N10	1	ANODE	4	-	PIPE	1/4"	6"	4	1/4"	-	-	3/16"	25,35	
N11	1	ANODE	4	-	PIPE	1/4"	6"	4	1/4"	-	-	3/16"	25,35	
N12	1	ANODE	4	-	PIPE	1/4"	6"	4	1/4"	-	-	3/16"	25,35	
N13	1	PRESSURE INDICATOR	2	-	PIPE	0"	4"	9	1/4"	-	-	-	26	
N14A/B	2	THERMOSTAT	2	-	PIPE	1/4"	4"	3	1/4"	-	-	-	26	
N15	1	THERMOMETER	2	-	PIPE	1/4"	4"	3	1/4"	-	-	-	26	
N16	1	LLSD	2	-	PIPE	1/4"	4"	3	1/4"	-	-	-	26	
N17 A	1	GAUGE GLASS	2	-	PIPE	0"	4"	9	5/16"	-	-	-	26	
N17 B	1	GAUGE GLASS	2	-	PIPE	0"	4"	9	5/16"	-	-	-	26	
N18 A	1	GAUGE GLASS	2	-	PIPE	0"	4"	9	5/16"	-	-	-	26	
N18 B	1	GAUGE GLASS	2	-	PIPE	0"	4"	9	5/16"	-	-	-	26	
N19 A	1	GAUGE GLASS	2	-	PIPE	0"	4"	9	5/16"	-	-	-	26	
N19 B	1	GAUGE GLASS	2	-	PIPE	0"	4"	9	5/16"	-	-	-	26	
N20 A	1	GAUGE GLASS	2	-	PIPE	0"	4"	9	5/16"	-	-	-	26	
N20 B	1	GAUGE GLASS	2	-	PIPE	0"	4"	9	5/16"	-	-	-	26	
N22	1	HLSD	2	-	PIPE	0"	4"	9	1/4"	-	-	-	26	
N23	1	T-12 TEMP	2	-	PIPE	1/4"	4"	3	1/4"	-	-	-	26	
N24	1	SPARE	4	150	RFLWN	3/8"	8"	3	1/4"	-	-	-	11	
M1	1	MANWAY	24	150	RFLWN	3/4"	10"	4	3/8"	-	-	5/16"	27,29	
M2	1	MANWAY	24	150	RFLWN	0"	12"	4	1/4"	-	-	3/16"	27,30	
FB/A/B	2	FIREBOX **	-	-	FAB	SHOWN	SHOWN	3	3/8"	-	-	-	11	
DM	1	DOME	24	150	RFLWN	0"	8"	4	1/4"	-	-	3/16"	11,31	

- NOTE:
- \*\* SEE DRAWING -202 FOR WELDING DETAILS
  - PIPE NOZZLES ARE GROOVED / DESIGNED FOR HP70-ES VICTAULIC CLAMPS
  - # TRIM NOZZLES FOR INTERNAL/OUTSIDE PROJECTIONS
  - INSIDE PROJECTIONS ARE MINIMUM LENGTH, MAY BE LONGER
  - ALL REPADS ARE SEAMLESS

BILL OF MATERIALS							
	PART No.	DESCRIPTION	LENGTH	MATERIAL	WEIGHT (lbs)		
	1-001667	1/2" THK x 120" OD 2:1 S.E. HEAD (0.4375" MIN)		SA-516-70N	2336.48		
	1-001668	3/8" THK x 120" W, ROLLED TO 120" OD		SA-516-70N	14388.26		
	1-023652	5/8" THK x 120" OD 2:1 S.E. HEAD (0.5625" MIN)		SA-516-70N	2913.57		
	2-013514	1/2" THK x 63 1/8" W x 103" LG		SA-516-70N	853.16		
	2-013515	1/2" THK x 59 3/8" W x 103 1/8" LG		SA-516-70N	725.99		
	2-013516	1/2" THK x 119 1/4" OD x 84" HIGH		SA-516-70N	1252.89		
	2-013517	1" THK x 4 1/2" W x 14" LG		SA-516-70N	21.76		
	D4666-202	SADDLE ASSEMBLIES (SEE DWG -203 FOR DETAILS)			3467.96		
		NOZZLE ASSEMBLIES (SEE DWG -202 FOR DETAILS)			3931.44		
	1-018998	6" x CLASS 150 RFLWN FLG	1'-0"	SA-350-LF2,CL1	121.53		
OR	2-013518	3/8" THK x 2" W x 8 9/16" LG		SA-240-316/L	3.39		
	2-013519	3/8" THK x 2" W x 3" LG		SA-516-70N	1.20		
	2-013520	INLET DEFLECTOR: 3/8" THK x 2-8" NPS (PART 2)		SA-240-316/L	19.49		
OR	2-001810	INLET DEFLECTOR: 3/8" THK x 2-8" NPS (PART 1)		SA-516-70N	3.51		
	1-003378	6" PIPE SCH XXH (ROE, GROOVE ONE END)	9 1/8"	SA-106-B	43.34		
	2-013522	116GA x 6" VORTEX BREAKER BOTTOM		SA-240-316/L	5.23		
	2-013521	116GA x 6" VORTEX BREAKER TOP		SA-240-316/L	5.09		
	2-013523	1/4" THK x 6" VORTEX BREAKER CLIP		SA-516-70N	1.67		
	1-019012	10" x CLASS 150 RFLWN FLG	1'-4"	SA-350-LF2,CL1	184.03		
	1-003372	4" PIPE SCH XXH (ROE, GROOVE ONE END)	4 13/16"	SA-106-B	21.88		
	1-003372	4" PIPE SCH XXH (ROE, GROOVE ONE END)	5"	SA-106-B	6.80		
	1-003369	4" PIPE SCH XXH (ROE, GROOVE ONE END)	10 3/16"	SA-106-B	37.83		
	1-003360	2" PIPE SCH XXH (ROE, GROOVE ONE END)	6"	SA-106-B	67.47		
A/B,N18A/B, N2,N23	1-016257	5/8" GRAB RUNG	1'-10"	SA-36	10.02		
	1-024203	REPAD: 3/8" THK x 32" OD		SA-516-70N	36.94		
	2-013526	REPAD: 1/4" THK x 45 1/2" OD		SA-516-70N	79.82		
	2-013527	REPAD: 1/4" THK x 41" OD		SA-516-70N	61.38		
PORT	2-013531	FORMED ANGLE 3/8" THK x 3" W x 6" H x 107 5/8" LG		SA-516-70N	196.65		
PIPE	1-000399	C608.2	13'-2"	G40.21-44W	216.71		
REPORT	2-013529	FORMED ANGLE 3/8" THK x 3" W x 6" H x 108 7/8" LG		SA-516-70N	99.68		
	2-013532	REPAD: 1/4" THK x 9" OD		SA-516-70N	8.07		
	2-013533	REPAD-LIFT LUG 1/2" THK x 15" W x 15" LG		SA-516-70N	64.00		
			0"		31187.24		



										REGISTRARIAL 1488 27-7423									
U W RT-2										DESIGN & FABRICATE TO: 2017 ASME BOILER & PRESSURE VESSEL CODE SECTION VIII, DIVISION 1									
M.A.W.P. 150 PSI S.D. 120 PSI M.D. 100 PSI SERIAL NO. 17752										150 PSI 120 PSI 100 PSI 2018									
A.R.N.										YEAR BUILT 2018									
C.R.N. YB134.2										17752									
DESC. 120" OD x 30' HEAD TREATER										120" OD x 30' HEAD TREATER									
SHELK THK 0.375" MIN. HD THK 0.4375" MIN.										0.375" MIN. HD THK 0.4375" MIN.									
CORR ALLOW 0.125"										NACE									

## DESIGN SPECIFICATIONS

DESIGN & FABRICATE TO: 2017 ASME BOILER & PRESSURE VESSEL CODE  
SECTION VIII, DIVISION 1

DESIGN PRESSURE & TEMPERATURE: 75 PSIG @ 150°F

DESIGN EXTERNAL PRESSURE: NIL

MINIMUM DESIGN METAL TEMP: -20°F @ 75 PSIG

IMPACT TESTS: EXEMPT, SEE NOTES 3-7

RADIOGRAPHY: RT-2 AS PER UW-11(a)(5)(b)

POST WELD HEAT TREATMENT: NONE AS PER UCS-56

HYDROSTATIC TEST PRESSURE: 98 PSIG (NOTE 16) PREHEAT: 50°F

CORROSION ALLOWANCE: SEE NOTE # 33. WAMP: 75 PSIG @ 150°F

HEAD THK. MIN.: 0.5625" 0.4375"

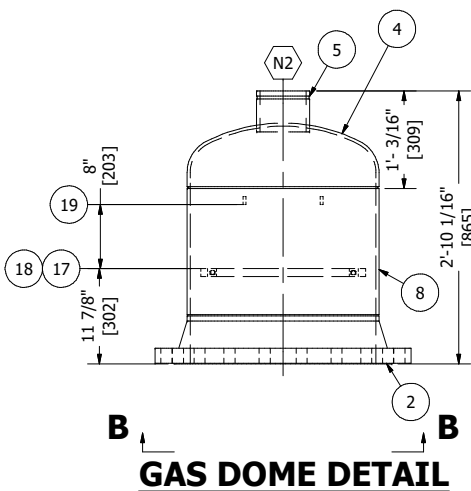
WEIGHT EMPTY: 31,000 LBS

VOLUME: 2610 FT<sup>3</sup>

WEIGHT FULL: 194000 LBS




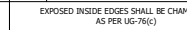


BILL OF MATERIALS							
ITEM	QTY	REF.	PART No.	DESCRIPTION	LENGTH	MATERIAL	WEIGHT (lbs)
1	3	M1,M2,DM	1-000970	24" x CLASS 150 RFWN FLG SCH XH		SA-105-N	831.52
2	1	GAS DOME	1-000965	24" x CLASS 150 RFWN FLG SCH STD		SA-105-N	261.68
3	2	M1, M2	1-000966	24" x CLASS 150 RF BLIND FLG		SA-105-N	817.10
4	1	GAS DOME	1-001375	3/8" THK x 24" OD 2:1 S.E. HEAD (0.313" MIN)		SA-516-70N	80.91
5	1	N2	1-003375	6" PIPE SCH XH/80 (ROE, GROOVE ONE END)	5 1/16"	SA-106-B	11.95
7	1	M2	1-003406	24" PIPE SCH XH (BOE,COE)	1'-2 5/16"	SA-106-B	150.46
8	1	GAS DOME	1-003402	24" PIPE SCH STD/20 (BBE)	1'-3 3/4"	SA-106-B	124.64
9	1	DM	1-003406	24" PIPE SCH XH (BOE,COE)	4 1/2"	SA-106-B	46.91
10	1	M1	1-003406	24" PIPE SCH XH (BOE,COE)	9 1/8"	SA-106-B	95.74
12	1	N6	1-019000	10" x CLASS 150 RFLWN FLG	9"	SA-350-LF2	115.25
13	2	M1, M2	1-004062	24" x CLASS 150 DAVIT ARM ASSEMBLY		-	67.04
14	2	M2	1-000077	1/2" MANWAY HANDLE ASSEMBLY		SA-36	2.54
15	2	FIREBOX	2-013542	1 1/4" THK x 32" W x 57 1/2" LG		SA-516-70N	366.04
16	4	FIREBOX	2-013524	3/4" THK J-SECTION x 24" OD x 16 1/2" LG & 9" LG TANGENT x 18" W		SA-516-70N	945.58
17	4	DEMISTER	2-002382	MISTEX: 3/8" THK x 1" W x 2" LG		SA-516-70N	0.77
18	2	DEMISTER	2-013545	3/8" THK x 1" W x 18 7/8" LG		SA-276-316/L	3.96
19	2	DEMISTER	2-013546	3/8" THK x 1" W x 21" LG		SA-516-70N	4.48
20	1	M1/N6	2-013740	REPAD: 1/4" THK x 18" OD		SA-516-70N	9.88
21	1	N24	1-003372	4" PIPE SCH XXH (BOE,COE)	7 1/16"	SA-106-B	16.34
22	1	N24	1-000987	4" x CLASS 150 RFWN FLG SCH XXH		SA-350-LF2	20.40
							3973.20



NOTE:  
\* BWM-7 SHALL BE USED FOR POSITION WELDING IF REQUIRED  
\* BWM-44: ER-70S-3 CONSUMABLE REQUIRED

REGISTERED WELDING PROCEDURE NUMBER				
WELD DETAIL	ROOT	HOT PASS	FILL AND CAP	GOUGE/BACKWELD
1,2,3,4,8	BWM-44	BWM-44	BWM-44	N/A

1	WELD NECK FLANGE	2	EXT. ATTACHMENTS	3	SEAMS	4	NOZZLE NECK
 <p><math>\alpha=75^{\circ}(+15^{\circ})</math> <math>G=3/32^{\circ}(+1/16^{\circ})</math></p>		 <p>VESSEL WALL</p> <p><math>\alpha=60^{\circ}(+15^{\circ})</math> <math>G=1/8^{\circ}(+1/16^{\circ})</math> <math>h=3/32^{\circ}</math></p>		 <p>WITHOUT BACKING <math>\alpha=60^{\circ}(+15^{\circ})</math> <math>G=1/8^{\circ}(+1/16^{\circ})</math> <math>h=3/32^{\circ}</math></p>		<p>EXPOSED INSIDE EDGES SHALL BE CHAMFERED 45° PER 1/16" (1/16")</p>  <p>SEAL</p> <p><math>\alpha=40^{\circ}(+15^{\circ})</math> <math>G=1/8^{\circ}(+1/16^{\circ})</math> <math>h=1/16^{\circ}(+1/16^{\circ})</math></p>	

REV	DATE	DESCRIPTION	BY	ENG	PM	APP
A	07/09/2018	ISSUED FOR APPROVAL	BK	NH	ME	
0	08/01/2018	ISSUED FOR FABRICATION	BK	NH	ME	
1	9/5/2018	REV.M1/N6 DETAIL, UPDATED MATERIALS, REISSUED FOR FABRICATION	BK	YZ	ME	
2	12/19/2018	REV. N16, ADED N24. ISSUED FOR FABRICATION	BK	YZ	ME	
3	2/28/2019	ASBUILT	BK	YZ	ME	

**BILTON**

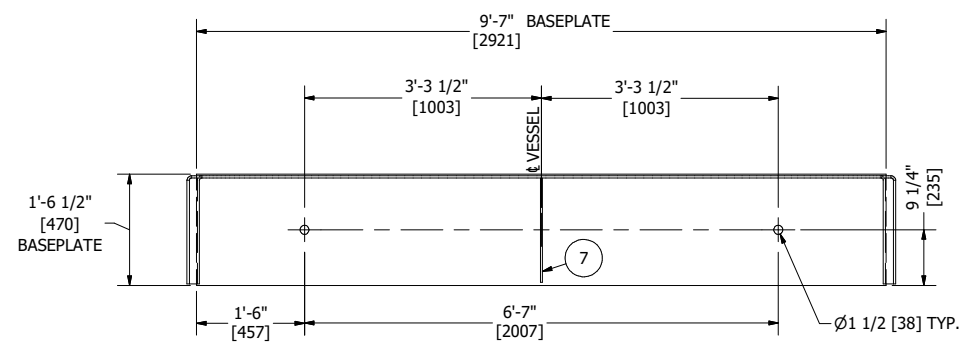
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**Welding and Manufacturing Ltd.**

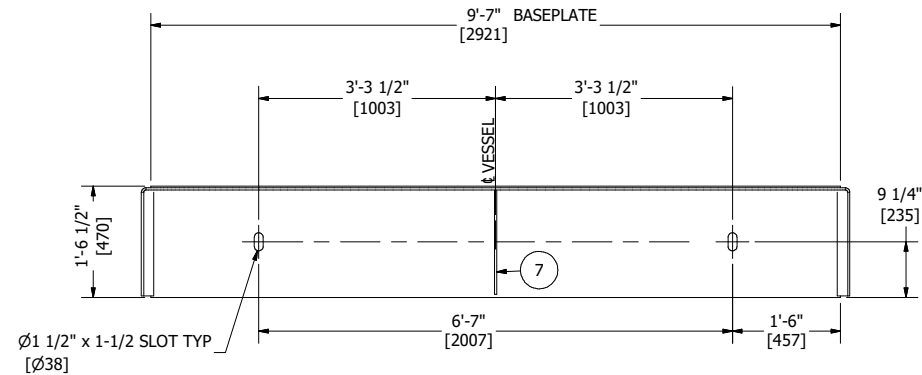
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<h1 style="text-align: center;">XTO ENERGY CANADA</h1>		
<h2 style="text-align: center;">HORIZONTAL HEATER TREATER NOZZLE DETAILS</h2>		
QUOTE NUMBER: 09733	SALE ORDER: 005211	
PURCHASE ORDER: 737	JOB ORDER:	SIZE
LOCATION: NEW MEXICO/ TEXAS	D4666	D
DATE: 6/21/2018		
SHEET: 3 OF 5	DRAWING NO.:	REV.
CRN DWG: BWM-715-18	D4666-202	3
CRN NUMBER: Y8134.2		

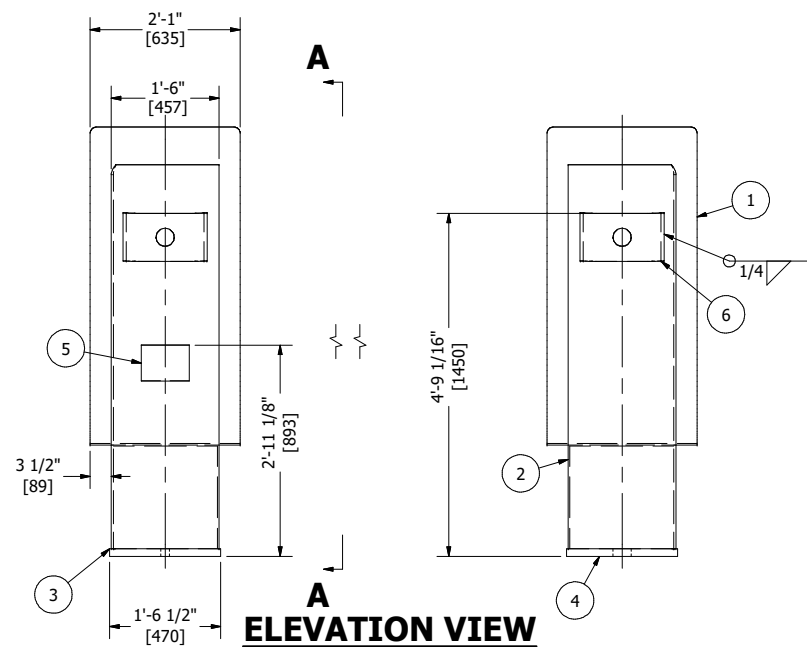
BILL OF MATERIALS							
ITEM	QTY	REF.	PART No.	DESCRIPTION	LENGTH	MATERIAL	WEIGHT (lbs)
1	2	WEAR PAD	2-013551	1/4" THK x 25" W x 174 9/16" LG, ROLLED TO 120" ID		SA-516-70N	618.98
2	2	SADDLE	2-013556	3/8" THK x 114 3/4"-118 1/8" TAPER W x 64" H c/w 18" RIB		SA-516-70N	1191.46
3	1	BASEPLATE	2-013557	1 1/4" THK x 18 1/2" W x 115" LG		SA-516-70N	754.86
4	1	BASEPLATE	2-013558	1 1/4" THK x 18 1/2" W x 115" LG		SA-516-70N	753.26
5	1	-	-	6" CHANNEL NAMEPLATE BRACKET	8"	G40.21-44W	5.49
6	4	TIE DOWN	2-006799	TIE DOWN: 1/2" THK x 8" W x 6" HIGH		SA-516-70N	80.46
7	2	SADDLE RIB	2-013934	SADDLE RIB 3/8" THK x 17 1/8" W x 17 3/8" LG		SA-516-70N	63.45
							3467.96



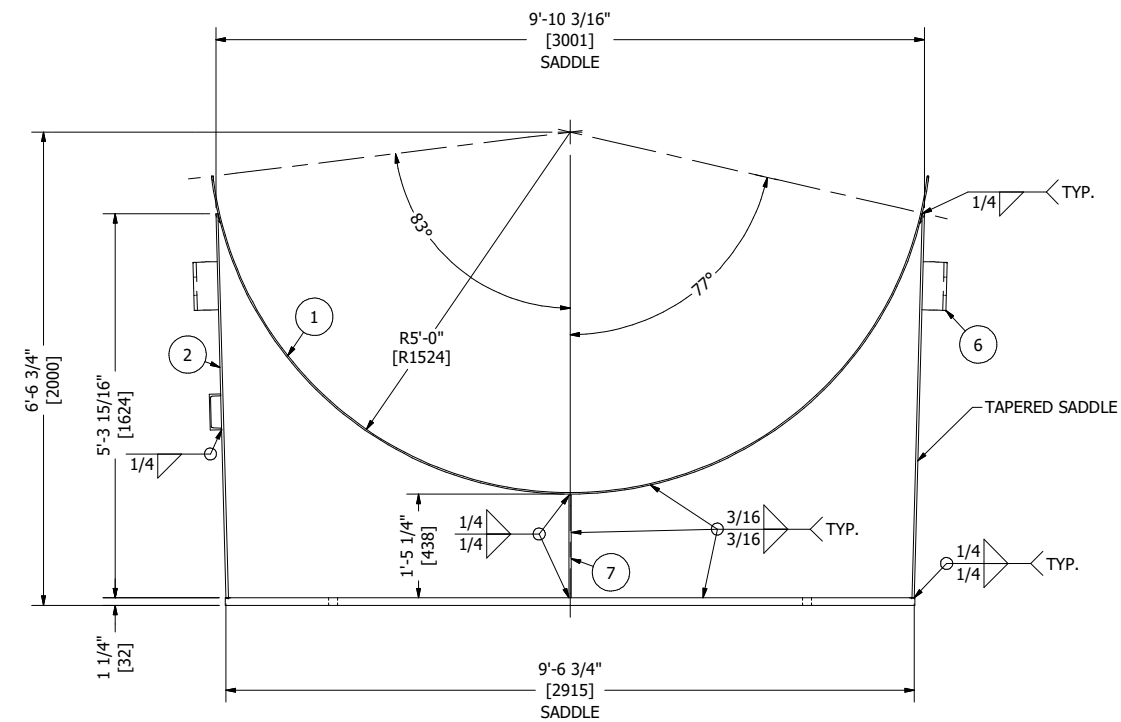
### FIXED BASEPLATE DETAIL



### SLIDING BASE PLATE DETAIL



### ELEVATION VIEW



## **SECTION A-A**

GENERAL NOTES:

1. WELD PROCEDURE: GM-1, SM-1, MC-1  
WELDERS AND WELD PROCEDURES QUALIFIED AS PER CSA W59

REV	DATE	DESCRIPTION	BY	ENG	PM	APP
A	07/09/2018	ISSUED FOR APPROVAL	BK	NH	ME	
0	08/01/2018	ISSUED FOR FABRICATION	BK	NH	ME	
1	10/23/2018	ADDED SADDLE RIB, ISSUED FOR FABRICATION	BK	JAM	ME	
2	2/28/2019	ASBUILT	BK	YZ	ME	



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## XTO ENERGY CANADA

### HORIZONTAL HEATER TREATER SADDLE DETAILS

9	QUOTE NUMBER: 09733
23	PURCHASE ORDER: 737
5	LOCATION: NEW MEXICO

DATE: 6/21/2018
SHEET: 4 OF 5
CRN DWG: BWM-715-18
CRN NUMBER: Y8134.2

SALE ORDER: 005211

JOB ORDER:

D4666

D4000
DRAWING NO.

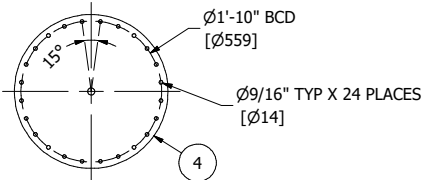
DRAWING NO.:  
D-1111-000

D4666-203

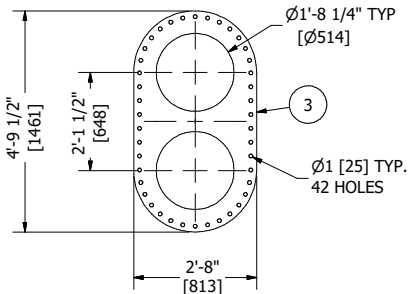


GENERAL NOTES:

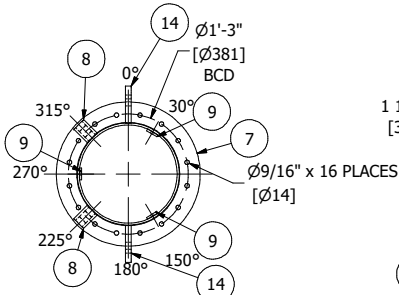
1. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)  
2. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2  
4. FLANGE MATERIAL: SA-516-70N - IMPACTS EXEMPT PER TABLE UCS-66  
8. SELECT CHEMISTRY: (PLATE MATERIAL ONLY)  
-PHOSPHOROUS = 0.015% MAX  
-SULFUR = 0.008% MAX  
-CE = 0.420 MAX (MAX CARBON EQUIVALENT LONG FORM)  
9. CUSTOMER AML: XTO ENERGY - PRODUCTION VESSEL SPEC: PARAGRAPH 3.14  
10. ULTRASONIC TESTING: NIL  
11. MAGNETIC PARTICLE TESTING: NIL  
12. RADIOGRAPHY: NONE AS PER UG-11(c)  
13. AIR TEST: 1-3 PSI  
14. PWHT: NONE, AS PER UCS-56  
15. HARDNESS TESTING: NIL  
16. HYDROTEST: NIL  
18. EXTERNAL SANDBLAST: SSPC-SP06 (COMMERCIAL)  
19. EXTERNAL COATING:  
PRIMER: CORCHEM 239 AS PER MANUFACTURER'S SPECIFICATIONS  
-INDICATED AREA ON FIRETUBE, STACK, BIRD GUARD TO BE COATED  
TOPCOAT: NIL  
20. INTERNAL SANDBLAST: NIL  
21. INTERNAL COATING: NIL  
22. INSULATION: NIL  
23. ALL BOLT HOLES TO STRADDLE CENTERLINE  
26. FABRICATION TOLERANCES AS PER BW&ML DWG: TOL2002  
27. STACK DRAFT REQUIRES 0.15" H<sub>2</sub>O & 30% EXCESS AIR TO BURNER



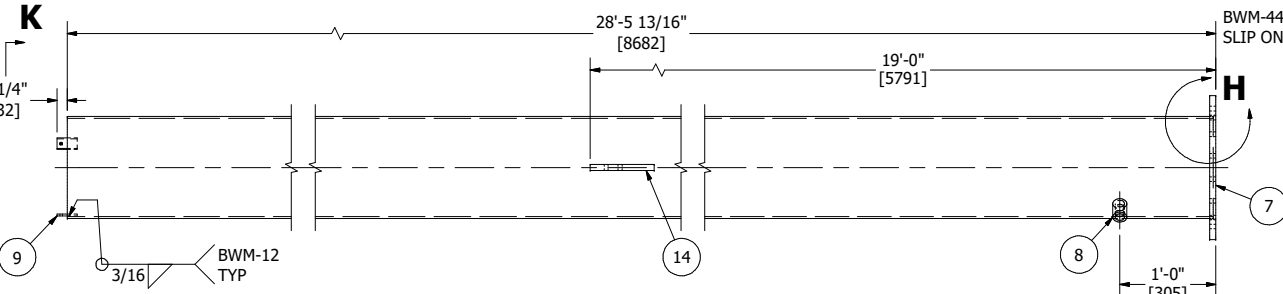
DETAIL: FLANGE  
FLAME ARRESTER



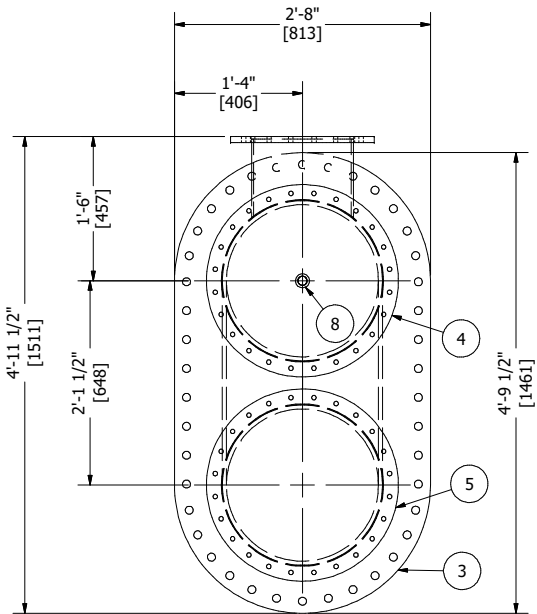
FLANGE: DETAIL



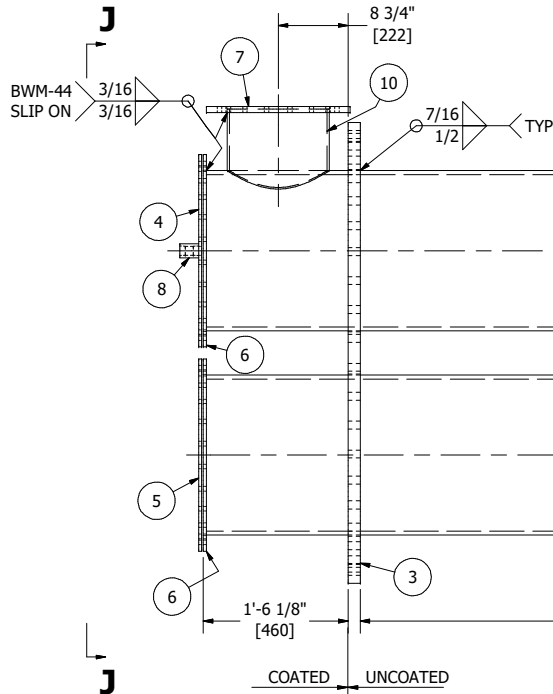
VIEW K-K



STACK DETAILS  
NON-CODE

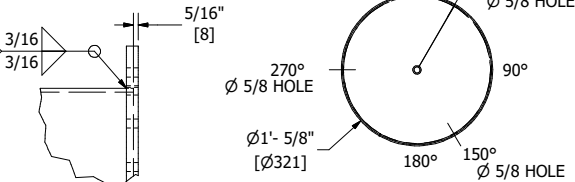


VIEW J-J

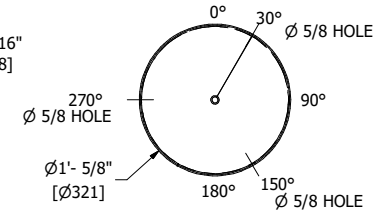


FIRETUBE DETAILS

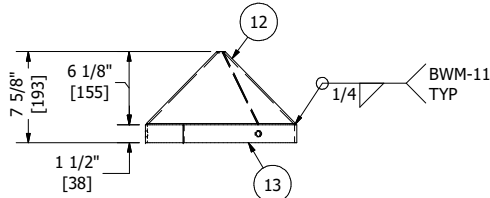
BILL OF MATERIALS -TWO (2) SETS REQD							
ITEM	QTY	REF.	PART No.	DESCRIPTION	LENGTH	MATERIAL	WEIGHT (lbs)
1	2		1-007439	20" PIPE SCH XH/30 (MOE,POE)	16'-7 1/4"	SA-53-B	3296.33
2	1		1-008557	12" PIPE SCH 20 (PBE)	28'-5 1/2"	SA-53-B	953.24
3	1	FIRETUBE FLANGE	2-013559	1 1/2" THK x 32" W x 57 1/2" LG		SA-516-70N	402.23
4	1	BLIND	2-013560	3/8" THK x 24" OD		SA-36	47.49
5	1	BLIND	2-013561	3/8" THK x 24" OD		SA-36	47.60
6	2	FLANGE	2-013562	3/8" THK x 24" OD x 20 1/8" ID		SA-36	27.36
7	2	FLANGE-STACK	2-013563	3/4" THK x 18" OD x 12 7/8" ID		G40.21-44W	51.31
8	3		1-000527	1" x CL3000 THRD FULL COUPLING		SA-105-N	2.82
9	3	BIRD SCREEN	2-013565	CLIP 1/4" THK x 1 1/2" W x 2 1/2" LG -TAP FOR 3/8 BOLT		304SS	0.80
10	1	STACK	1-008557	12" PIPE SCH 20 (POE, COPE ONE END)	10"	SA-53-B	24.43
11	1	FIRE TUBE	1-007439	20" PIPE SCH XH/30 (MBE)	3'-9 1/2"	SA-53-B	222.08
12	1	BIRD SCREEN	1-009426	EXPANDED STEEL 3/4-13; 12 1/4" OD x 6" HIGH		316SS	6.72
13	1	BIRD SCREEN	1-002555	12" PIPE SCH 10 WELDED (BBE)	1 1/2"	304SS	3.18
14	2		2-014038	LIFT LUG: 3/4" THK x 4 5/8" W x 8" H		SA-36	11.65
							5097.24



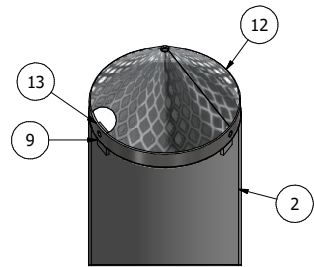
DETAIL H



PLAN VIEW



BIRD GUARD DETAIL



ISOMETRIC VIEW

DESIGN SPECIFICATIONS

DESIGN & FABRICATE TO: 2017 ASME BOILER & PRESSURE VESSEL CODE SECTION VIII, DIVISION 1		
DESIGN PRESSURE & TEMPERATURE: NIL		
DESIGN EXTERNAL PRESSURE: 75 PSIG @ 150°F		
MINIMUM DESIGN METAL TEMP: -20°F @ 75 PSIG		
IMPACT TESTS: NONE AS PER UG-20(f)(1-5)		
RADIOGRAPHY: NONE AS PER UG-11(c)		
POST WELD HEAT TREATMENT: NONE AS PER UCS-56		
HYDROSTATIC TEST PRESSURE: SEE -201 DWG PREHEAT: 50°F		
CORROSION ALLOWANCE: 1/8" EXTERNAL MAWP: 75 PSIG @ 150°F (EXT)		
HEAD THK. MIN.: - VOLUME: 150 GAL (1700L)		
WEIGHT EMPTY: 5080 LBS WEIGHT FULL: 5080 LBS		

XTO ENERGY CANADA

HORIZONTAL HEATER TREATER  
FIRETUBE DETAILS

QUOTE NUMBER: 09733	SALE ORDER: 005211	SIZE
PURCHASE ORDER: 737	JOB ORDER:	D
LOCATION: NEW MEXICO/ TEXAS	D4666	
DATE: 6/21/2018	DRAWING NO.:	REV.
SHEET: 5 OF 5	D4666-211	2
CRN DWG: BWM-715-18		
CRN NUMBER: Y8134.2		

REV	DATE	DESCRIPTION	BY	ENG	PM	APP
A	07/09/2018	ISSUED FOR APPROVAL	BK	NH	ME	
0	08/01/2018	ISSUED FOR FABRICATION	BK	NH	ME	
1	9/5/2018	REVISED ITEMS #3,#13. REISSUED FOR FABRICATION	BK	YZ	ME	
2	2/28/2019	ASBUILT	BK	YZ	ME	



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REGISTERED WELDING PROCEDURE NUMBER				
WELD DETAIL	ROOT	HOT PASS	FILL AND CAP	GOUGE/BACKWELD
1,2,3	BWM-44	BWM-44	BWM-44	N/A
1	PIPE WELDS	2	ATTACHMENTS	3
COUPLER DETAIL-SET ON				

NOTE:  
\* BWM-7 SHALL BE USED FOR POSITION WELDING IF REQUIRED  
\* BWM-44: ER-70S-3 CONSUMABLE REQUIRED