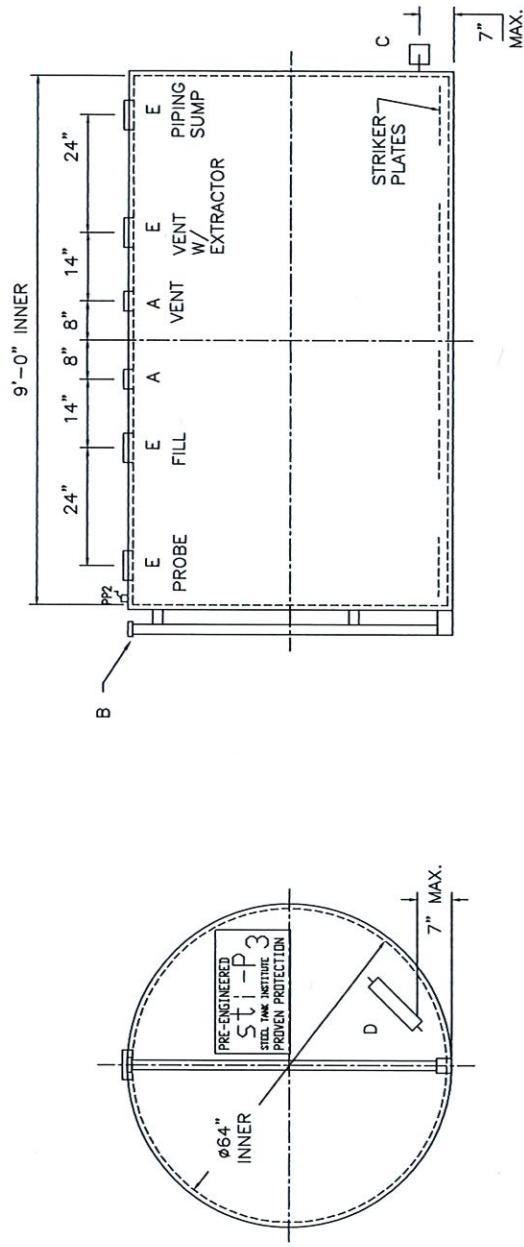



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DESIGN DATA	
CAPACITY	1500 GALLONS
TYPE	DOUBLE WALL TYPE I, sti-P3®, UNDERGROUND
NO. REQ.	1
TANK MATERIAL	MILD CARBON STEEL
OPERATING PRESSURE	ATMOSPHERIC
THICKNESS INNER	HEADS - 7 GA; SHELL - 7 GA
THICKNESS OUTER	HEADS - 10 GA; SHELL - 10 GA
*GA THK.	BASED ON 60" MAX. BURIAL DEPTH
CONSTRUCTION	INNER TANK LAP WELD OUTSIDE ONLY OUTER TANK LAP WELD OUTSIDE ONLY
TANK TEST	INNER - 5 PSIG OUTER - 2 PSIG AND FULL VACUUM
INT. FINISH	NONE
EXT. FINISH	SP6 BLAST, 15 MILS GREEN POLYURETHANE PER P3 SPECIFICATION
LABEL	UL-58, UL-1746 PART I, STICKER
IS A REGISTERED TRADEMARK OF THE STEEL TANK INSTITUTE	

LEGEND	
A	3" FITTING WITH 3" X 2" DIELECTRIC BUSHING
B	3" FITTING WITH 3" X 2" DIELECTRIC BUSHING AND EXTERNAL INTERSTITIAL MONITOR PIPE
C	9 LBS MAGNESIUM ANODE PER sti-P3 SPEC (MOUNT HORIZONTAL)
D	10 LBS ZINC ANODE PER sti-P3 SPEC
E	5" FITTING WITH 5" X 4" DIELECTRIC BUSHING
F	-

NOTES:
SHOP TO INSTALL 1/4" X 1/2" X 12" STRIKER PLATES, ROLLED AND SOL WELD TO THE TANK



Highland Tank

UNLESS NOTED, TOLERANCES ARE +/- .1"

1500 GAL 64" Ø DOUBLE WALL sti-P3®

CUSTOMER: WILCOO

PROJECT: AMERICAN DISTILLING
EAST HAMPTON CT

QUOTE NO: 462251

DATE: 06/05/19

CHK'D BY: JWG, RJD

1 10677



Highland Tank

Over 50 Years Experience

One Highland Road 8 14-893-5701
Stoystown, PA 15563 FAX 893-6126

Buoyancy Calculations

(Underground Tank Installations Per PEI/RP100-2005 Appendix A Guidelines)

Table A: Tank Dimensions / Installation Data		
Tank (model:gallons) =	1500 DW P3	
Tank Volume =	1336.8 gal.	
	ft.	in.
Tank Diameter =	5 ft.	4 in.
Tank Length =	8 ft.	
Tank Weight =	2780.0 lbs.	
	ft.	in.
Burial Depth (to top of the tank) =	36.0 in.	
Grade Pad Width (Tank Dia. + 2' Recommended) =	7.0 ft.	4.0 in.
Grade Pad Length (Tank Length +4' Recommended) =	12.0 ft.	
Grade-Level Pad Thickness (8" min.) =	8.0 in.	
Hold-Down Pad Width (Tank Dia. + 3' min) =		
Hold-Down Pad Length (Tank Length + 2' min) =		
Hold-Down Pad Thickness (8" min) =		
Dead-Man Anchor Width (12" min) =		
Dead-Man Anchor Height =		
Dead-Man Anchor Length (per side) =		
Anchor Burial Depth (See Note #2) =	8.3 ft.	

Customer Information:	
Company:	Wilco
Quote:	462251
Job:	East Hampton, CT No Drawing (Based on Verbal)

Table B: Manway Data		
	A	B
Cylindrical or Rectangular :	C	
Number of Manways :	1	
Diameter or Width (in) :	30.0 in.	
Length (if rectangular) (in) :		
Length Above Grade (in) :		

Table C: Misc. Tank Accessory Weights		
Submersible Pumps =		lbs.
Bulkheads/Baffles =		lbs.
Straps (Safety/HD) =		lbs.
Reinforcing Rings =		lbs.

Total Tank Buoyancy Force * =	12,429 lbs.
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* Assumes empty tank with water table at grade

Table E: Floatout and Anchorage Calculations		
B1 = Reflected Area of concrete pad =	88.0	sq. ft.
B2 = Reflected Tank Area =	42.7	sq. ft.
d = Depth of Overburden =	2.3	ft.
D = Diameter of Tank =	5.3	ft.
h = (D/2) + d =	5.0	ft.
V = Tank Displacement =	178.7	cu. ft.
M = Void in Overburden =	14.7	cu. ft.
Submerged Weight:		
Tank Weight =	2,426	lbs.
Grade-Level Pad Weight =	4,853	lbs.
Hold-Down Pad Weight =	0	lbs.
Anchor Weight =	0	lbs.
Overburden Volume:		
Tank ONLY =	112.5	cu. ft.
With Only Grade-Level Pad =	215.8	cu. ft.
		cu. ft.

Table D: Restraining Accessories Used:	
Top Grade Level Pad:	Yes
Hold-Down Pad:	None
Dead-Man Anchors:	None

Comments:

Overburden Weight:	
Tank ONLY =	6,751 lbs.
With Only Grade-Level Pad =	12,949.0 lbs.
	lbs.
TOTAL Overburden Weight =	12,949.0 lbs.

Type of Restraint	Total Restraining Force	Safety Factor	DISCLAIMER
Tank (Submerged) Weight ONLY	2,426 lbs.	0.20	The calculations contained herein are based on the <i>opinion</i> of Highland Tank & Mfg. Co, which assumes no responsibility for their validity in application.
With Tank Overburden	9,177 lbs.	0.74	
With Grade-Level Pad and Overburden	20,227 lbs.	1.63	
TOTAL Restraint Weight	20,227 lbs.	1.63	

NOTES AND ASSUMPTIONS:

- HIGHLAND RECOMMENDS 1.50 MINIMUM SAFETY FACTOR
- CALCULATIONS ASSUME AN EMPTY TANK, COMPLETELY SUBMERGED, BACKFILLED PER PEI/RP100-2000, BURIAL DEPTH INDICATED, AND RESTRAINT METHOD. IF ACTUAL CONDITIONS ARE DIFFERENT THAN WHAT IS SHOWN, THIS CALCULATION IS VOID.
- FOR DEAD-MAN ANCHORS, TOP OF DEAD-MAN IS ASSUMED TO BE EVEN WITH THE TANK BOTTOM.
- THIS CALCULATION ASSUMES TANK IS MADE ENTIRELY OF CARBON STEEL.