XERXES® a zcs company

DEADMAN BURIAL WATER AT GRADE — Murphy USA — 04/27/16

TANK DATA		INSTALLATION	
NOM. CAP. (GAL.)	25000	TOTAL COVER INCLUDING SOIL & TOP SLAB (FT)	4.00
TYPE (SINGLE WALL=1/DW=2)	1	TOP SLAB THICKNESS (IN)	8.00
DRY=1/ WET=2	1	TOP SLAB LENGTH (FT)	53.00
NOM. TANK DIA. (FT.)	10	TOP SLAB WIDTH (FT)	13.33
PROD. STORED (GAL.)	0	DEADMAN LNG (FT)	46.00
SPEC GRAV. USED	1.00	DEADMAN WTH (IN)	18.00
		DEADMAN THK (IN)	8.75
SAFETY FACTOR		# OF 42" DIAMETER SUMPS	1
DOWN FORCE/UP FORCE =	**1.24 :1**		

TOTAL WEIGHTS

DOWN FORCES		
CONCRETE WEIGHT	50312.78 LBS.	
BACKFILL WEIGHT	213570.48 LBS.	
TANK WEIGHT	11800.00 LBS.	
PRODUCT WEIGHT	0.00 LBS.	
TOTAL DOWN FORCE=		275412.19 LBS.
UP FORCES		
TANK DISP. FORCE	221458.27 LBS.	
TOTAL UP FORCE=		221458.27 LBS.

WORKSHEET

TANK DATA

SHELL DIAMETER	10.00 FT.	ACTUAL CAP (GAL)	25432.00
SHELL LENGTH	37.56 FT.	TANK WT. (LBS.)	11800.00
DOME PROJECTION	5.00 FT.	O.A.L. (FT.)	47.56
MID POINT HEIGHT	8.33 FT.	NUMBER OF RIBS	24.00
COLUMN HEIGHT	12.33 FT.		
RIB VOLUME	2631.00 CU. IN.	DOME A. (SQ FT)	78.54
		DOME VOL. (CU FT)	523.60

REINFORCED CONCRETE VOLUMES (CU. FT.)

TOP SLAB	471.11	DEADMEN	100.63
FORCE = VOL. X 80 LBS/CF	41457.78	**FORCE (LBS) = VOL. X 80 LBS/CF**	8055.00

TOP SLAB & DEADMEN FORCE 50312.78 LBS.

BACKFILL VOLUMES (CU. FT.)

OVER TANK SHELL	1623.06	OVER DEADMEN	1238.73
OVER TANK DOMES	392.70	END WEDGE	296.00
TOTAL WET VOLUME	3550.49		
FORCE = VOL. X 60 LBS/CF			213029.41 LBS.

BUOYANCY

SHELL VOLUME	2982.23 CUBIC FT.
DOME VOLUME	523.60 CUBIC FT.
RIB VOLUME	44.15 CUBIC FT.
TOTAL VOLUME	3549.98 CUBIC FT.
VOL X 7.48 GAL/CU FT.	26553.87 GALLONS
FORCE = GAL X 8.34 (LBS./GAL.)	221458.27 LBS.

XERXES® a zcs company

DEADMAN BURIAL WATER AT GRADE — Murphy USA — 04/27/16

TANK DATA		INSTALLATION	
NOM. CAP. (GAL.)	2x8039 (8 X 16 X 8 X 5)	TOTAL COVER INCLUDING SOIL & TOP SLAB (FT)	4.00
TYPE (SINGLE WALL=1/DW=2)	1	TOP SLAB THICKNESS (IN)	8.00
DRY=1/ WET=2	1	TOP SLAB LENGTH (FT)	53.00
NOM. TANK DIA. (FT.)	10	TOP SLAB WIDTH (FT)	13.33
PROD. STORED (GAL.)	0	DEADMAN LNG (FT)	46.00
SPEC GRAV. USED	1.00	DEADMAN WTH (IN)	18.00
		DEADMAN THK (IN)	8.75
SAFETY FACTOR		# OF 42" DIAMETER SUMPS	3
DOWN FORCE/UP FORCE =	**1.20 :1**		

TOTAL WEIGHTS

DOWN FORCES		
CONCRETE WEIGHT	50312.78 LBS.	
BACKFILL WEIGHT	213278.70 LBS.	
TANK WEIGHT	14200.00 LBS.	
PRODUCT WEIGHT	0.00 LBS.	
TOTAL DOWN FORCE=		277791.47 LBS.
UP FORCES		
TANK DISP. FORCE	232292.48 LBS.	
TOTAL UP FORCE=		232292.48 LBS.

WORKSHEET

TANK DATA

SHELL DIAMETER	10.00 FT.	ACTUAL CAP (GAL)	26223.00
SHELL LENGTH	38.94 FT.	TANK WT. (LBS.)	14200.00
DOME PROJECTION	5.00 FT.	O.A.L. (FT.)	48.94
MID POINT HEIGHT	8.33 FT.	NUMBER OF RIBS	30.00
COLUMN HEIGHT	12.33 FT.		
RIB VOLUME	2631.00 CU. IN.	DOME A. (SQ FT)	78.54
		DOME VOL. (CU FT)	523.60

REINFORCED CONCRETE VOLUMES (CU. FT.)

TOP SLAB	471.11	DEADMEN	100.63
FORCE = VOL. X 80 LBS/CF	41457.78	**FORCE (LBS) = VOL. X 80 LBS/CF**	8055.00

TOP SLAB & DEADMEN FORCE 50312.78 LBS.

BACKFILL VOLUMES (CU. FT.)

OVER TANK SHELL	1619.51	OVER DEADMEN	1346.44
OVER TANK DOMES	392.70	END WEDGE	296.00
TOTAL WET VOLUME	3554.61		
FORCE = VOL. X 60 LBS/CF			213278.70 LBS.

BUOYANCY

SHELL VOLUME	3154.36 CUBIC FT.
DOME VOLUME	523.60 CUBIC FT.
RIB VOLUME	45.88 CUBIC FT.
TOTAL VOLUME	3723.64 CUBIC FT.
VOL X 7.48 GAL/CU FT.	27852.52 GALLONS
FORCE = GAL X 8.34 (LBS./GAL.)	232292.48 LBS.

TANK ANCHORING NOTES

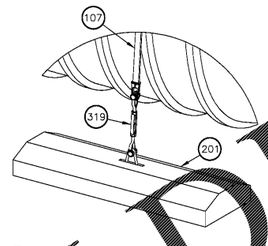
1. WHEN ANCHORING BELOW GRADE, EXTREME CARE MUST BE TAKEN TO ASSURE WORKMEN SAFETY. SLOPING AND SHORING SHALL COMPLY WITH OSHA CONSTRUCTION INDUSTRY STANDARDS 29 CRF PART 1926 SUBPART P, OHSA STANDARDS–EXCAVATIONS: FINAL RULE OCT. 1 89. HARD HATS SHALL BE WORN BY ALL WORKMEN OPERATING IN EXCAVATING OR WHERE OVERHEAD WORK IS IN PROGRESS.
2. TANK ANCHORING IS REQUIRED FOR ALL PROJECTS.
3. EACH TANK REQUIRES (3) MANUFACTURER SUPPLIED DEADMEN ON EACH SIDE. DEADMEN ARE NOT DIVIDED INTO SMALLER SECTIONS THAN SHOWN. ALL DEADMEN MUST BE INSTALLED PLUMB, LEVEL AND PARALLEL TO THEIR RESPECTIVE TANK.
4. STRAPS ARE TO BE LOCATED AS INDICATED ON THE DRAWINGS. EIGHT (8) HOLD DOWN STRAPS ARE REQUIRED FOR THE 25,000 GALLON TANK. TEN (10) HOLD DOWN STRAPS ARE REQUIRED FOR THE SPLIT 26,000 GALLON TANK. IF STRAP LOCATIONS ON ACTUAL TANKS VARY FROM THESE DETAILS, CONSULT WITH XERXES.
5. REFER TO TANK MANUFACTURER'S INSTALLATION MANUAL AND OPERATING GUIDELINES FOR THE CONNECTION OF MANUFACTURER SUPPLIED TURNBUCKLES TO DEADMEN ANCHOR POINTS AND MANUFACTURER SUPPLIED HOLD DOWN STRAPS.
6. BALLAST TANKS WITH CLEAN, POTABLE WATER TO CAPACITY. DO NOT LEAVE UNFILLED TANKS UNATTENDED DURING CONSTRUCTION.
7. USE ONLY MANUFACTURER SUPPLIED ANCHOR STRAPS.
8. ANCHORING DESIGN AS PER PEI RP–100 APPENDIX A.

GENERAL NOTES:

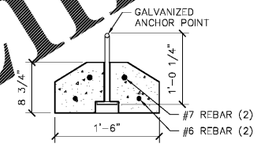
1. GAUGE (STRIKER) PLATES ARE LOCATED UNDER ALL OPENINGS PER TANK MANUFACTURER.
2. SUPPLY AND INSTALL SUMPTITE SEALANT ON ALL TANK AND DISPENSER SUMPS. ALL SEAMS, SUPPLY LINES, AND CONDUIT PENETRATIONS ARE TO BE COATED. ALL APPLICATORS MUST BE TRAINED AND CERTIFIED BY THE SUPPLIER.
3. ALL SUMP PENETRATIONS NEED TO BE AT RIGHT ANGLES TO THE SUMP.

LEGEND:

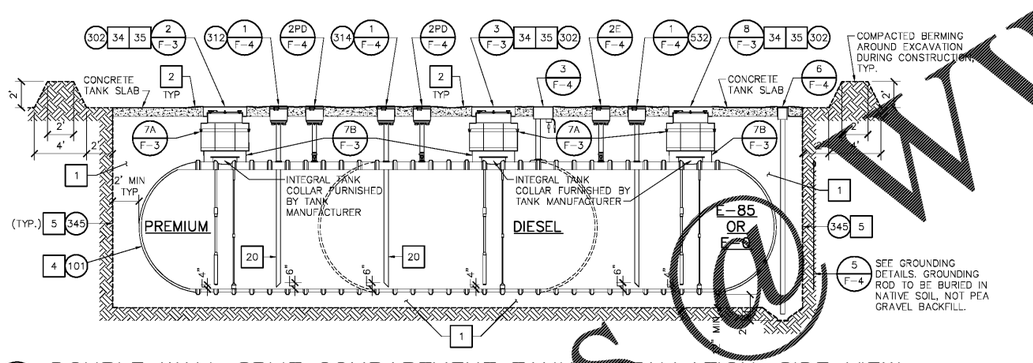
- (#) = PART NUMBER; SEE SHEET F–1
- [#] = KEYNOTE; SEE SHEET F–1
- <#> = CONDUIT; SEE SHEET FE–1
- #/X–# = DETAIL CALLOUT
- #/X–# = ELEVATION CALLOUT
- #/X–# = SECTION CALLOUT



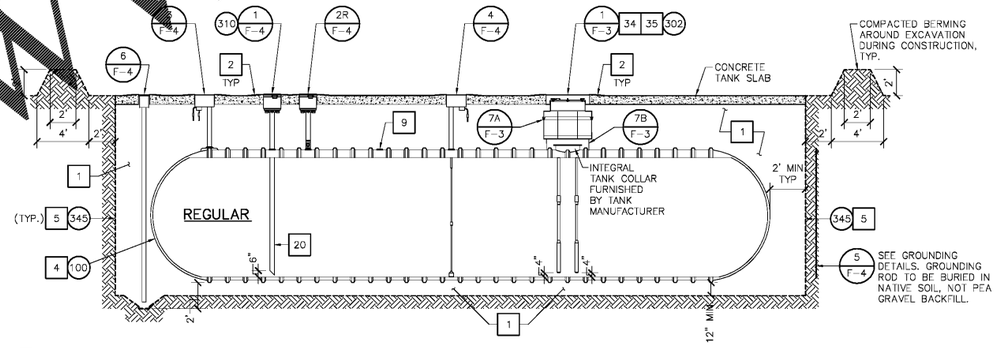
7 ASSEMBLY VIEW
SCALE: 1/2"=1'–0"



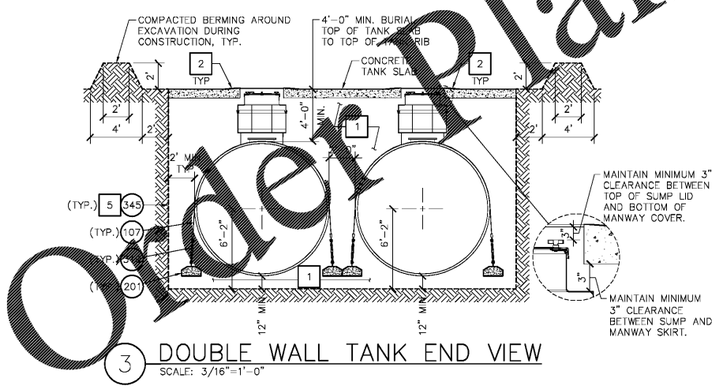
6 DEADMAN CROSS SECTION
SCALE: 1"=1'–0"



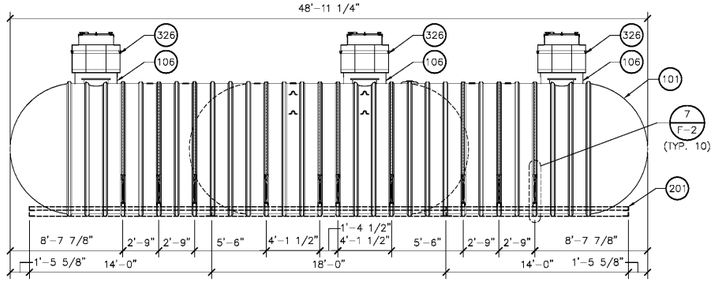
5 DOUBLE WALL SPLIT COMPARTMENT TANK INSTALLATION–SIDE VIEW
SCALE: 3/16"=1'–0"



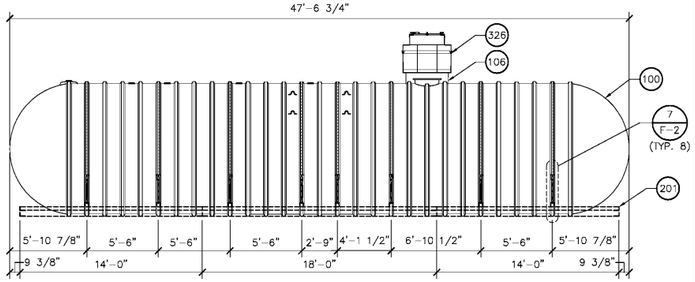
4 DOUBLE WALL SINGLE COMPARTMENT TANK INSTALLATION–SIDE VIEW
SCALE: 3/16"=1'–0"



3 DOUBLE WALL TANK END VIEW
SCALE: 3/16"=1'–0"



XERXES 8,000 GAL/10,000 GAL/8,000 GAL
DOUBLE WALL SPLIT COMPARTMENT TANK
SCALE: 3/16"=1'–0"



XERXES 25,000 GAL
DOUBLE WALL SINGLE COMPARTMENT TANK
SCALE: 3/16"=1'–0"

STANDARD

WAYNE
OCTOBER 2017 STANDARDS
F-2

SOUTH CAROLINA PROFESSIONAL ENGINEER 30551 04/02/2018 DAVID A. GUESS

TANK INSTALLATION AND ANCHORING DETAILS

DATE: MARCH, 2018 | SCALE: AS NOTED | FILE NAME: 07–Moc8000616_F–2

No. | REVISION | DATE

508 SC - 72
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1 Inch
Index