

**Underground Storage Tank Buoyancy Calculations for Fiberglass Tanks**

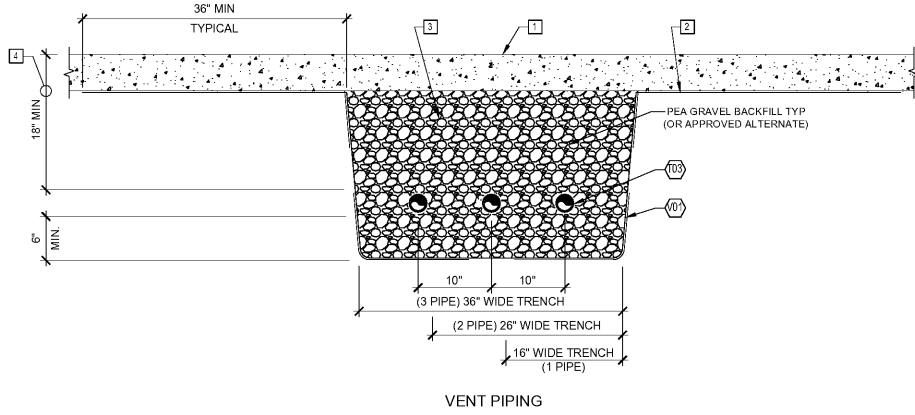
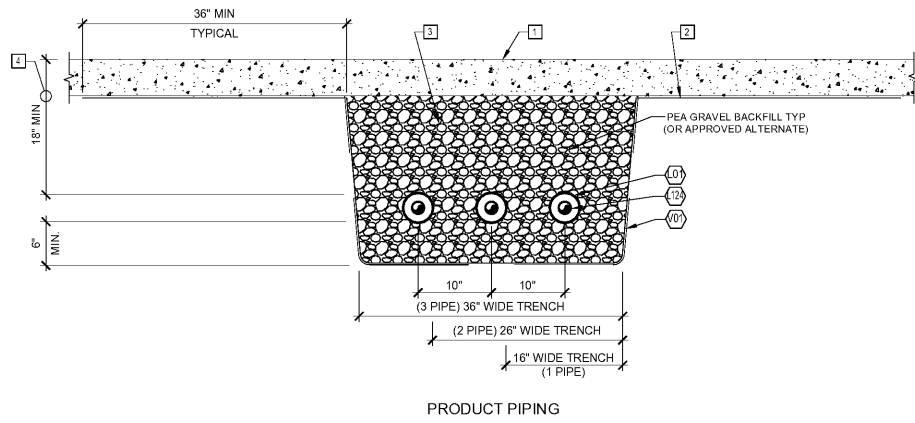
Project #:	182777	Rev. 01
Project Name:	36" DIA. TANKS	Rev. 01
Tank Manufacturer / Model:	Series 076 30' 208	Rev. 01
Number of Tanks:	2	
Tank Dry Weight:	20,000 lbs	
Tank Volume:	200.0 gal	
Tank Diameter (ø):	36" feet	
Tank Bury Depth:	3.17' feet	
Tank Length (L):	31.75' feet	
Number of Sumps:	4	
Sump Diameter:	42" inches	
Tank Slab Length:	32.37' feet	
Tank Slab Width:	36.17' feet	
Tank Slab Thickness:	6" inches	
Deadman Length (DL):	36" feet	
Deadman Width (DW):	36" inches	
Deadman Height:	8.75" inches	

Assumptions	
100% saturation to finished grade	62.4 lb/CF
water =	8.34 lb/CF
submerged concrete =	89.6 lb/CF
submerged aggregate =	57.6 lb/CF

Tank & Sumps Uplift	
Tank	U1 = 40,000 gal × 62.4 lb/CF = 333,246 lbs
Sumps	U2 = 120.3 CF × 62.4 lb/CF = 7,507 lbs
Total Uplift	U = U1 + U2 = 340,753 lbs UP

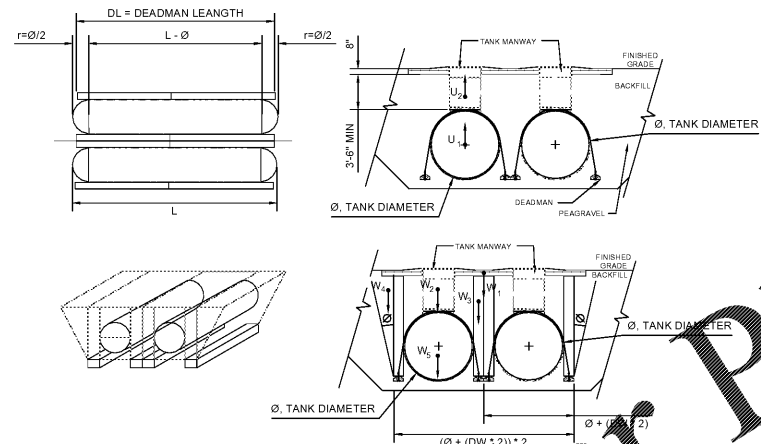
Dead Weights for Hold Down	
Concrete Slab	W1 = 1258.0 CF × 87.6 lb/CF = 110,200 lbs
Backfill Above Tank	W2 = 3,384 CF × 57.6 lb/CF = 194,927 lbs
Gravel Columns Above Deadman (2 deadman per tank)	W3 = 2916.72 CF × 57.6 lb/CF = 168,003 lbs
Soil Wedge Above Deadman (2 total)	W4 = 315.1812 CF × 57.6 lb/CF = 18,154 lbs
Concrete Deadman (2 deadman per tank)	W5 = 157.5 CF × 87.6 lb/CF = 13,797 lbs
Dry Weight of Tank	W6 = 20,000 lbs
Total Weight	W = W1 + W2 + W3 + W4 + W5 + W6 = 523,081 lbs DOWN

Net Force	Fnet = W - U = 182,330 DOWN
Factor of Safety	F.S. = W / U = 1.54



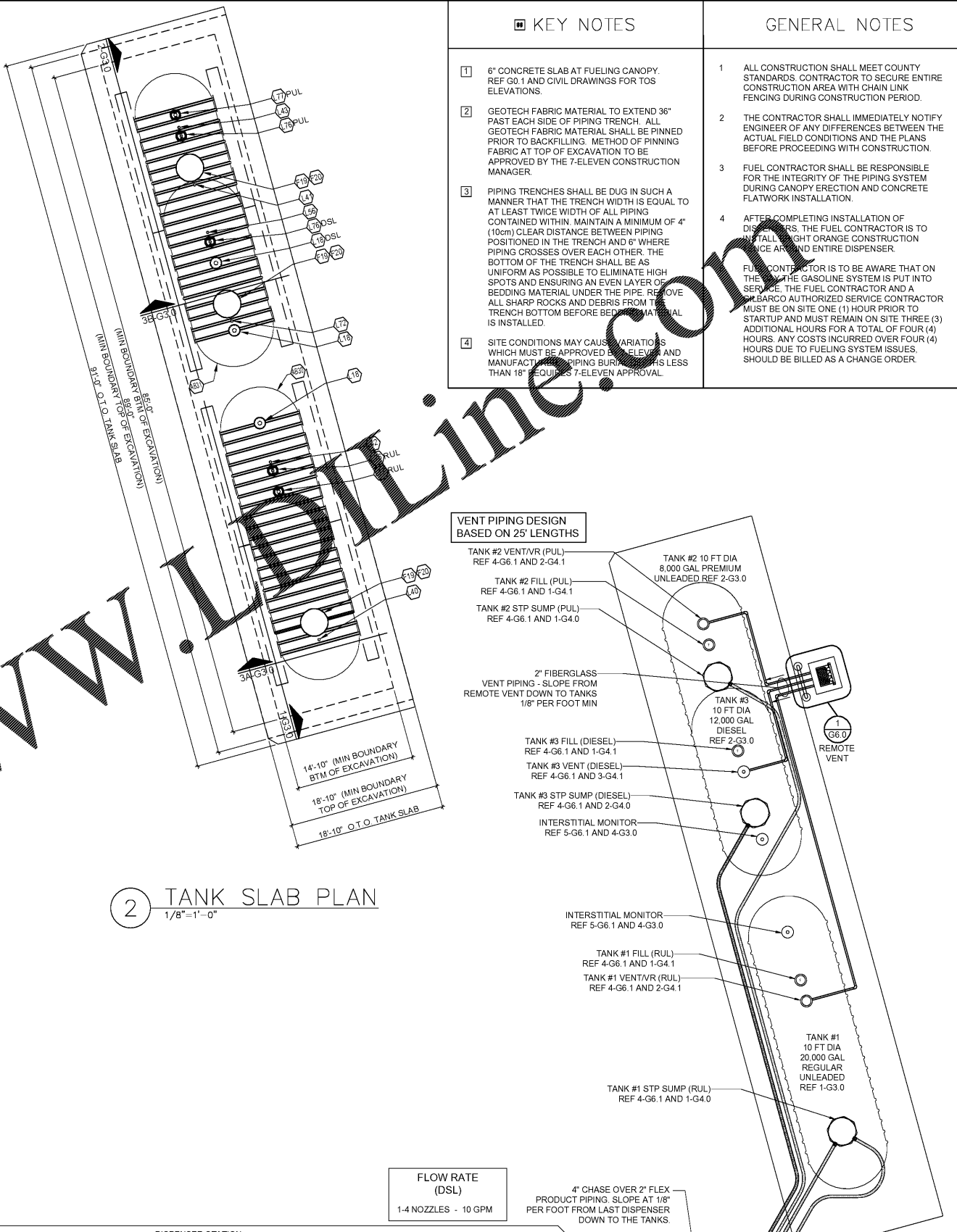
3 PIPING TRENCH SECTION  
1"=1'-0"

2 TANK SLAB PLAN  
1/8"=1'-0"



1 FUEL PIPING PLAN  
1/8"=1'-0"

- | KEY NOTES  | GENERAL NOTES  |
|--|--|
| <p>1 6" CONCRETE SLAB AT FUELING CANOPY. REF G0.1 AND CIVIL DRAWINGS FOR TOS ELEVATIONS.</p> <p>2 GEOTECH FABRIC MATERIAL TO EXTEND 36" PAST EACH SIDE OF PIPING TRENCH. ALL GEOTECH FABRIC MATERIAL SHALL BE PINNED PRIOR TO BACKFILLING. METHOD OF PINNING FABRIC AT TOP OF EXCAVATION TO BE APPROVED BY THE 7-ELEVEN CONSTRUCTION MANAGER.</p> <p>3 PIPING TRENCHES SHALL BE DUG IN SUCH A MANNER THAT THE TRENCH WIDTH IS EQUAL TO AT LEAST TWICE WIDTH OF ALL PIPING CONTAINED WITHIN. MAINTAIN A MINIMUM OF 4" (10cm) CLEAR DISTANCE BETWEEN PIPING POSITIONED IN THE TRENCH AND 6" WHERE PIPING CROSSES OVER EACH OTHER. THE BOTTOM OF THE TRENCH SHALL BE AS UNIFORM AS POSSIBLE TO ELIMINATE HIGH SPOTS AND ENSURING AN EVEN LAYER OF BEDDING MATERIAL UNDER THE PIPE. REMOVE ALL SHARP ROCKS AND DEBRIS FROM TRENCH BOTTOM BEFORE BEDDING MATERIAL IS INSTALLED.</p> <p>4 SITE CONDITIONS MAY CAUSE VARIATIONS WHICH MUST BE APPROVED BY ELEVEN AND MANUFACTURER. PIPING BURIAL DEPTHS LESS THAN 18" REQUIRES 7-ELEVEN APPROVAL.</p> | <p>1 ALL CONSTRUCTION SHALL MEET COUNTY STANDARDS. CONTRACTOR TO SECURE ENTIRE CONSTRUCTION AREA WITH CHAIN LINK FENCING DURING CONSTRUCTION PERIOD.</p> <p>2 THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DIFFERENCES BETWEEN THE ACTUAL FIELD CONDITIONS AND THE PLANS BEFORE PROCEEDING WITH CONSTRUCTION.</p> <p>3 FUEL CONTRACTOR SHALL BE RESPONSIBLE FOR THE INTEGRITY OF THE PIPING SYSTEM DURING CANOPY ERECTION AND CONCRETE FLATWORK INSTALLATION.</p> <p>4 AFTER COMPLETING INSTALLATION OF DISPENSERS, THE FUEL CONTRACTOR IS TO INSTALL BRIGHT ORANGE CONSTRUCTION TAPE AROUND ENTIRE DISPENSER. FUEL CONTRACTOR IS TO BE AWARE THAT ON THE DAY THE GASOLINE SYSTEM IS PUT INTO SERVICE, THE FUEL CONTRACTOR AND A 7-ELEVEN AUTHORIZED SERVICE CONTRACTOR MUST BE ON SITE ONE (1) HOUR PRIOR TO STARTUP AND MUST REMAIN ON SITE THREE (3) ADDITIONAL HOURS FOR A TOTAL OF FOUR (4) HOURS. ANY COSTS INCURRED OVER FOUR (4) HOURS DUE TO FUELING SYSTEM ISSUES SHOULD BE BILLED AS A CHANGE ORDER.</p> |



FLOW RATE (DSL)  
1-4 NOZZLES - 10 GPM

4" CHASE OVER 2" FLEX PRODUCT PIPING. SLOPE AT 1/8" PER FOOT FROM LAST DISPENSER DOWN TO THE TANKS.

FLOW RATE (RUL AND PUL)  
1-6 NOZZLES - 10 GPM  
8 NOZZLES - 9.8 GPM  
10 NOZZLES - 8.5 GPM  
12 NOZZLES - 7.5 GPM

PRINTED BY: RIKENTZ  
DRAWING NAME: 30177 - G1.0 FUELING PIPING AND TANK PLAN  
PRINT DATE: Jun 04, 2019 - 5:40pm

Order Plans @

WWW.LOLLINE.COM

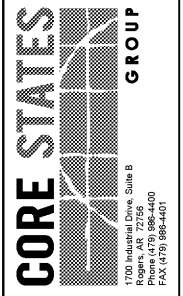
Job#:	SEI26848
Scale:	AS NOTED
Date:	05/06/19
Drawn By:	RMK
Checked By:	KMS

States Group are to be used only for the specific project and not for any other project. Any extension of use to other projects, by owner or any other party, without the written consent of Core States Group is done at the user's own risk. If used in a project where the user's intent is to harm, Core States Group will hold Core States Group harmless from all claims and losses.

PRELIMINARY DRAWINGS  
FOR YOUR CONSTRUCTION

SHEET:  
**G1.0**  
FUELING - USA

7-ELEVEN, INC.  
3200 HACKBERRY ROAD, IRVING, TEXAS 75063  
7-ELEVEN #38777  
US 301 & FORT HAMER ROAD  
PARRISH, FL 34219  
FUELING PIPING AND TANK PLAN  
Proto 11-05-18



Documents prepared by Core States Group are to be used only for the specific project and not for any other project. Any extension of use to other projects, by owner or any other party, without the written consent of Core States Group is done at the user's own risk. If used in a project where the user's intent is to harm, Core States Group will hold Core States Group harmless from all claims and losses.