



**ROOSEVELT RIDGE**

P R I V A T E R E S E R V E

# Cistern Update

March 16<sup>th</sup>, 2020

Roosevelt Ridge HOA



- “The Owners will construct two 30,000-gallon community water cisterns to be used for fire suppression. The first cistern shall be constructed prior to the completion of 25% of the homes on the Property and the second cistern shall be constructed upon completion of 50% of the homes on the Property. The location of the cisterns shall be pre-approved by the Fire Protection District.”
  - Order for Inclusion of Real Property in the Colorado Sierra Fire Protection District, January 29, 2006
  - Roosevelt Ridge has 7 completed homes, one unit is under construction
  - Final buildout is limited to 27 units (resolution 10-31), 25% is 6.75 units

**Roosevelt Ridge HOA is working to meet the initial cistern requirement by providing a project plan with milestones to allow owners to continue building while ensuring our obligations are being met.**

**RRHOA is not in the approval process for build permits**



# Cistern Liability Assessment

- Jessica Miller, HOA Counsel provided a letter detailing liability.
- The HOA is in agreement that the financial responsibility lies with the Owners and not just HOA Members
- The BOD will initiate an assessment vote and work towards funding and construction of the cistern

LAW FIRM  
OF  
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March 13, 2020

Roosevelt Ridge Homeowners Association  
1630A 30th Street #442  
Boulder, CO 80301

Re: Cistern

Dear Owners,

The Board of Directors for the Roosevelt Ridge Homeowners Association ("Association") has requested that I analyze a few issues related to the proposed construction of a water cistern for fire suppression. The following events are especially relevant to this issue:

1. On August 23, 2005, the Gilpin County Commissioners required Lone Pine Real Estate LLC "to petition for annexation into a fire protection district" and to "complete any code improvements required by the district" as a condition to approving its plat. Resolution, SBE 05-01. Recorded at Reception 127419 on September 15, 2005.
2. In late 2005, Lone Pine Real Estate LLC and the owners of lots 8, 9, 10, 11, 12, 14, 15 filed a Petition for Inclusion of Real Property with the Board of Directors of the Colorado Sierra Fire Protection District, which petitioned for the property's inclusion Colorado Sierra Fire Protection District ("Petition"). The Board of Directors of the Colorado Sierra Fire Protection District granted the Petition.
3. On February 8, 2006, Gilpin County Court ordered that the property described in the Order be included in the Sierra Fire Protection District ("Order"). This Order was recorded in the records of the Gilpin County Clerk and Recorder on February 21, 2006 at Reception No. 129088 and described the property subject to the terms of the Order ("Subject Property).

By recording the Order with the Gilpin County Clerk and Recorder, the Order binds the Subject Property and the owners of the Subject Property. The Order does not condition the application of its terms based upon whether the owners are members of the Association or whether these lots are annexed into the Association. The Order applies to the current owners of the property described in the Order by virtue of their ownership of a property included in the Order.

This Order requires the construction of a cistern "prior to the completion of 25% of the homes on the Property." The date that a Certificate of Occupancy was issued by the County is often cited as the date when a home is considered "complete." I am not aware of any circumstances that

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would make using the date that the Certificate of Occupancy issued as the date of completion unreasonable or inaccurate in this case. The Subject Property now includes a total of 25 lots, and it is reasonable to conclude that the Order requires the construction of a cistern after the construction of the 6th home and before the completion of construction of the 7th home, which occurred in 2018 based upon the dates Certificates of Occupancy were issued. As a result, Gilpin County and the Fire District have the ability to require the owners of the Subject Property to construct the cistern.

The Association is constructing the cistern to benefit its members, which is permitted under the Declaration. See Declaration, Section 7.16: "Power to Acquire Property and Construct Improvements. The Association may acquire property or interests in property for the common benefit of Owners, including improvements and personal property. The Association may construct improvements on the property and may demolish improvements owned by the Association."

The Order does not provide the Association with standing to enforce the Order against Lone Pine Real Estate, LLC—the Declarant—or previous owners of the properties. The Order does not name the Association nor grant the Association specific any rights against the owners or the declarant.

However, the Declaration includes a term relieving the Declarant from any obligation to construct additional improvements. Declaration, Section 3.3: "No Duty Created. Neither the Declarant nor the Association shall have any duty or obligation to build, create or establish any improvements on the Project Area, including but not limited to Trails and Recreational Areas contemplated by this Declaration."

The question of whether owners can make a title insurance claim is ultimately between each owner and their title insurance company under the terms of each issued title insurance policy. Additionally, owners may have a claim against the individual that they purchased their property from based upon the terms of their purchase contract and the circumstances of their unique transaction (e.g. the extent of the disclosures required, the substance of the disclosures provided, terms of waivers of liability, etc...). The Association is not a party to either the title insurance policies or the purchase contracts and, therefore, it cannot make a claim on behalf of the owners on this basis.

The Board is scheduling a meeting to move this process forward. Thank you in advance for your attention to this matter.

Regards,

THE LAW FIRM OF JESSICA H. MILLER, LLC

  
Jessica H. Miller



- Requirements
  - ISO rating mandates 30,000 gallons minimum
  - 6 in NST attachment fitting
  - Freeze protection of tank and lines
  - Vehicle Access
  - County documents mandate a 30k gal cistern after 25% occupancy (6 units)
  - Additional 30k gal at 50% occupancy (13 units)
  - Buried below frost line or heated tank
  - Others?
- Desirements (RR or TFPD)
  - Below ground (RR)
  - Gravity assist flow (TFPD)
  - Others?
- Other Discussions
  - TFPD not party to sprinkler requirements
  - TFPD not interested in a fire structure at RR, not a good location and an existing structure exists just down the road
  - ~~TFPD is in the process of evaluating the need for a second 30K cistern~~

*The original inclusion agreement between Colorado Sierra and Roosevelt Ridge specified 2 30,000 Gallon Cisterns. Based on the following information it is the position of Timberline Fire that if an agreed upon construction plan can be developed Timberline is willing to reduce that requirement to one Cistern containing a minimum of 30,000 Usable gallons. Paul Ondr*



# HOA Balance Sheet

9:28 AM

02/24/20

Cash Basis

**Roosevelt Ridge Homeowners Association**  
**Balance Sheet**  
As of December 31, 2019

	<u>Dec 31, 19</u>
<b>ASSETS</b>	
<b>Current Assets</b>	
<b>Checking/Savings</b>	
1st Bank HOA Checking	5,542.46
1st Bank HOA Savings	6,545.04
	<hr/>
<b>Total Checking/Savings</b>	12,087.50
<b>Other Current Assets</b>	
Undeposited Funds	450.00
	<hr/>
<b>Total Other Current Assets</b>	450.00
	<hr/>
<b>Total Current Assets</b>	12,537.50
	<hr/>
<b>TOTAL ASSETS</b>	<b>12,537.50</b>
	<hr/> <hr/>
<b>LIABILITIES &amp; EQUITY</b>	
<b>Equity</b>	
Retained Earnings	11,577.05
Net Income	960.45
	<hr/>
<b>Total Equity</b>	12,537.50
	<hr/>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>12,537.50</b>
	<hr/> <hr/>

Q1 2020 will be available in April



# HOA Estimated Schedule

Task Description	2019								2020				2021			
	May	June	July	August	Sep	Oct	Nov	Dec	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Phase I - Definition</b>																
Notice	█															
Bidding	█	█	█							█						
Fire Chief Meeting		!														
Requirements Definition		█ !														
County Meeting			█ !													
<b>Phase II - Project Funding</b>																
Final Requirements					█	█ !										
Final Bids									█	█						
Selection									█							
Members Meeting (vote)									X							
Assessment Period										X			X			
Litigation & Collections						Liability Assessment !				█			█			
Percent Funded										70%	X		30%	X		
<b>Phase III - Execution</b>																
Engineering / Permits										█						
Site Surveys			█ !							█						
Excavation											█	Winter Season	Winter Season	█		
Concrete work														█	█	
Piping														█	█	
Inspection														█	█	
Filling														█	█	
Test														█	█	
Certification														█	█	

X - Milestone  
! - Completed



# Pour in Place Concrete Cistern: \$100k

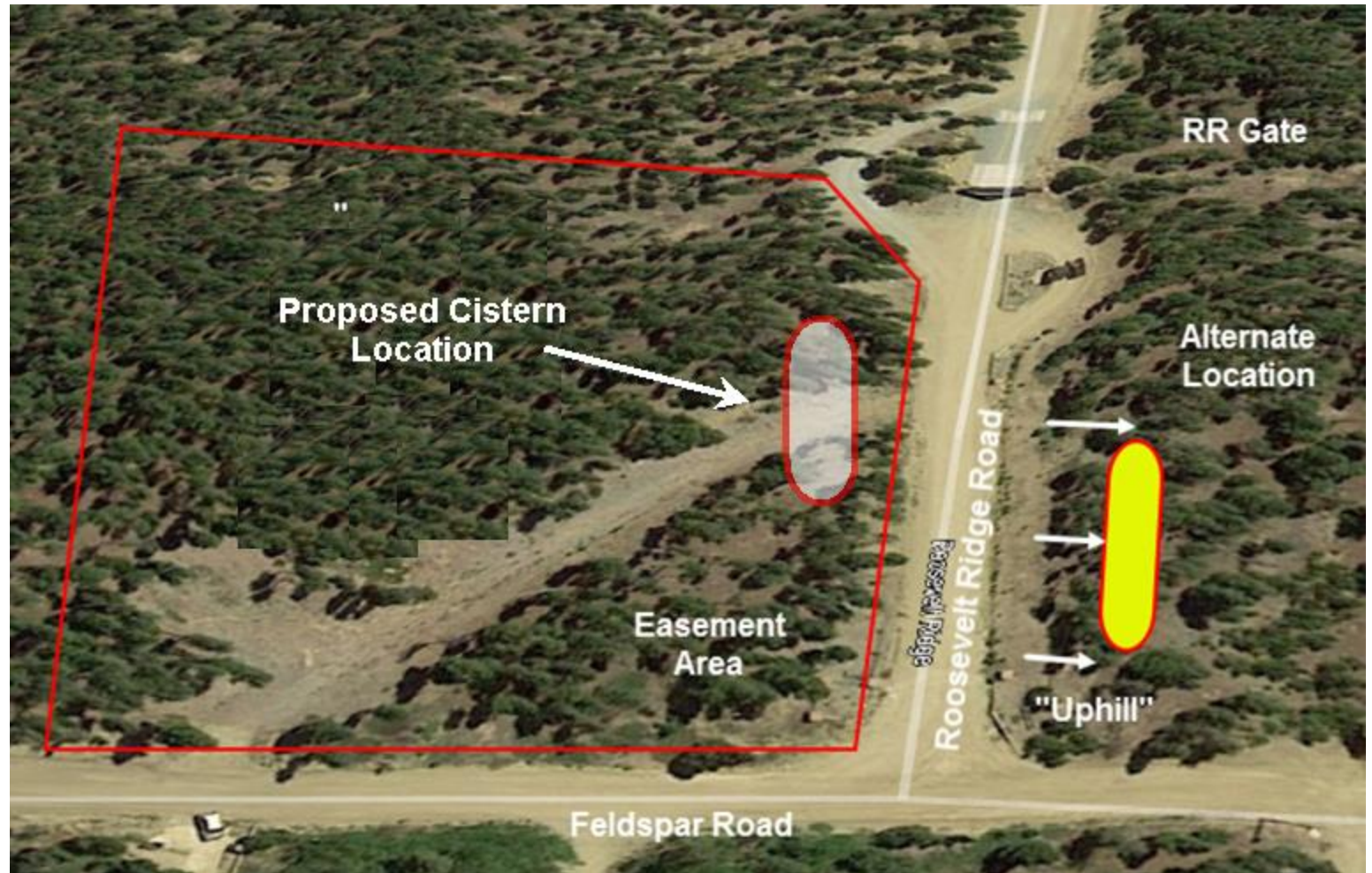
- Pat Thomas Tcs-Toma  
Construction Services Inc
  - \$40k for 30,000-gal tank (estimate)
  - Previous projects include
    - Sunshine Canyon Fire Station cistern
    - Coyote Hotel, Black Hawk
  - Concrete forms, 12 in tank walls and lid
- Connections included
- Additional Items
  - Plumbing / Fixtures (\$tbd)
  - Liner or coating (\$tbd)
- Tank interior is 8 x 35 x 15ft (est)
  - 4,200 cuft
  - 31,500 gal
  - Can modify depth / dimensions based on topography and difficulty in excavation (rock...)
- 70 yards of concrete, 8-10 truckloads (est)
- Rebar, wire mesh, ect
- Excavation \$45K
  - Identical to previous approach
  - More flexible, as the container can be modified to fit the topography

## Baseline Approach



# Proposed Cistern Locations

- Easements in place to support fire fighting equipment at this location
- Good access that includes a turn around
- Tank placed into the hill providing gravity assist flow to a hydrant further below
- Alternate location on the West side of RR Rd





- Owners to vote to approve an assessment
  - Report results to TFPD
  - Ask TFPD to recommend that permits be released at certain milestones (no commitment from Gilpin Co)
- Fund the assessment
  - Recommend an approximate 70% initial contribution of the \$100k cost (~\$70,000)
  - Depending on contract and actual costs, fund the remaining on a second assessment
  - \$4,000 total (\$2,800 initial/\$1,200 second) per lot (as required)
- Finalize quotes
  - Updated Baseline quote
  - Review alternatives
  - FFP / T&M contract



**ROOSEVELT RIDGE**

P R I V A T E R E S E R V E

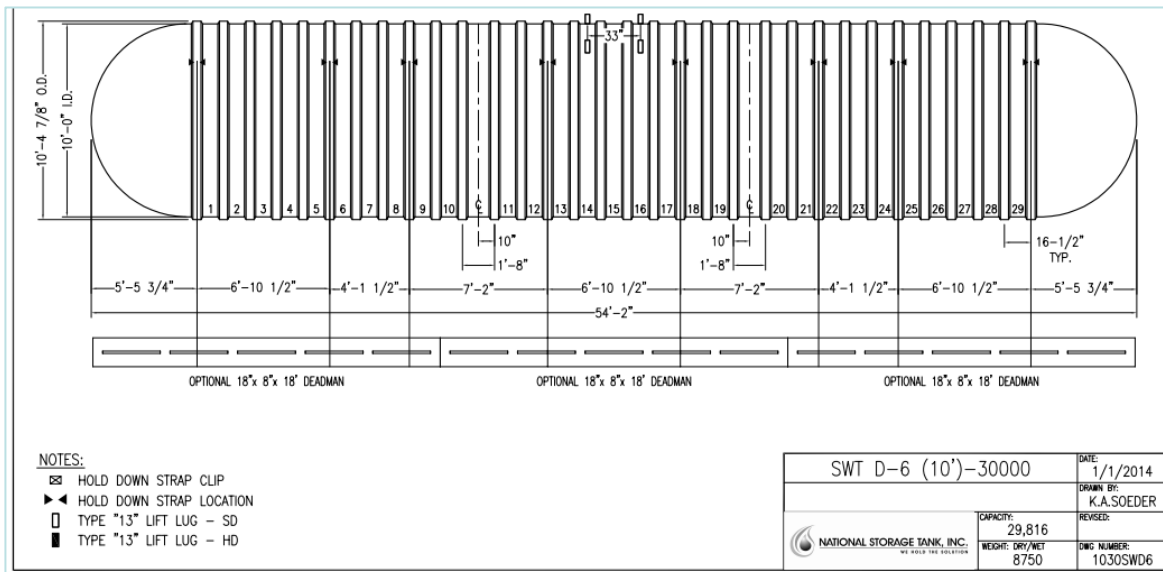
# Backup Slides



# Buried Tank: \$126k

- Tank Supplier – National Storage Tank, Inc.
  - 10' 30,000 gallon tank
  - Fire set up with dry hydrant assembly and vent - \$48k to \$52k
  - Anchoring - \$13,500
  - Shipping (2 trucks) - \$8,400
  - Delivery est, 10 weeks ARO (EOM August)
  - Subtotal: \$71,900

- Installation estimate via Black Diamond
  - Excavation (12w x 14D x 48L / 300 yds) \$24K
  - Blasting or rock breaking \$10k (+/- \$5k)
  - 70+ yards of sand or other material sourced and delivered \$8k
  - Excavated Material Hauling (250 yds) \$6k
  - Road work to access site \$4k
  - Subtotal: \$52k



Water delivery 0.085 / gallon = \$2,550





- Fire Protection Cistern Primer
  - Tanks are typically Steel or Fiberglass / Plastic, concrete can be used as well.
  - Buried below the frost line or above ground and insulated with an immersion heater
  - May or may not require a manhole, will require access / inspection port
  - 6 in NST dry hydrant, gravity feed preferred
  - Not required to have a pump
  - Vented
  - 30K gal tank is 12 ft diameter x 40 ft
  - Smaller tanks chained together can be more economical (3x 10k gal)

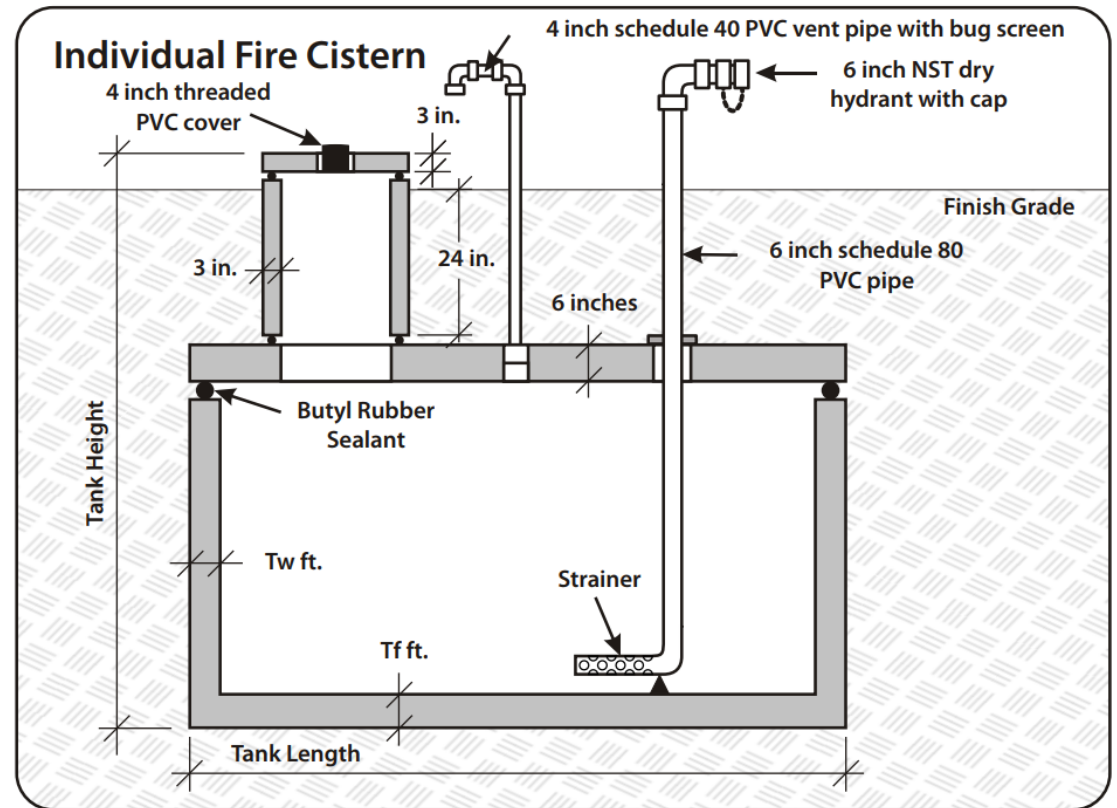


Figure 3: Individual Fire Cistern Elevation Drawing.

This is more applicable to a single home cistern consisting of a tank and lid, but close enough



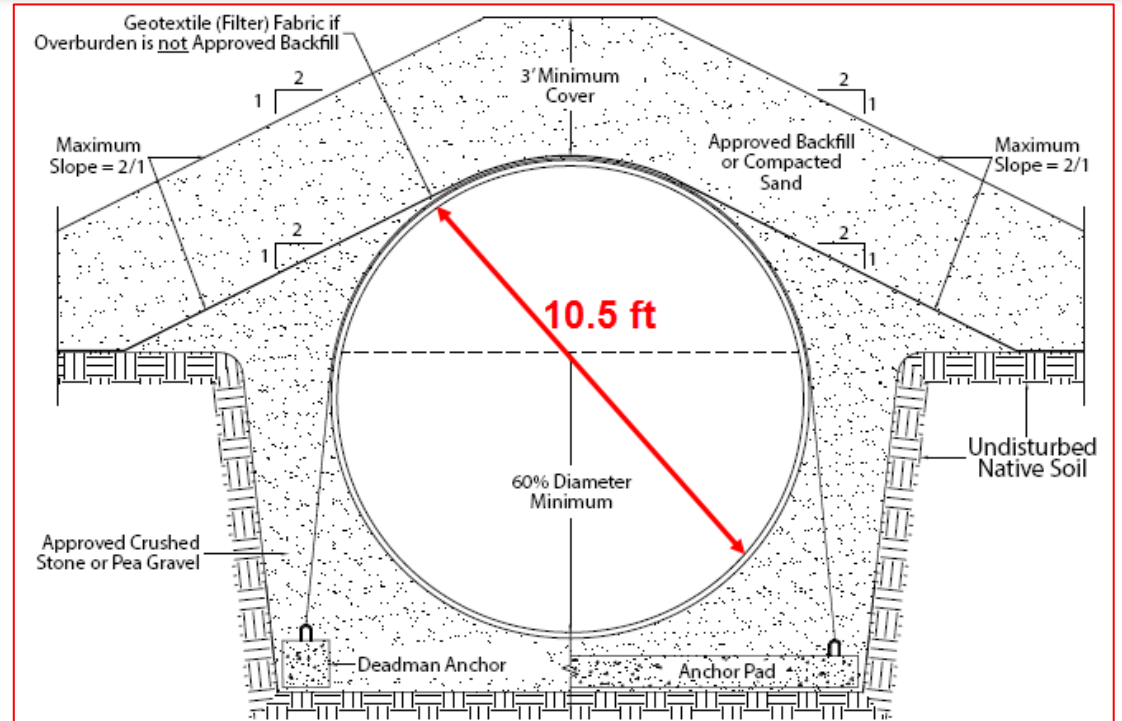
# Typical Tank Installation



Gravel / Sand,  
typically 1 ft  
buffer around



Desert / warm  
climate install,  
frost line  
requirements not  
identical



## National Storage Tank Recommendations

### 1. NOTES

- 1.1. The tank must be buried a minimum of 60% of the tank diameter.
- 1.2. There can be no traffic loads over the tank.
- 1.3. Anchoring requirements are the same as gravel installation. Water to grade, 3' of cover, and mechanical anchoring, the factor of safety is over 1.2.
- 1.4. Approved backfill must be used to at least the top of the tank and then the slope a maximum 2:1 grade from the tank top.
- 1.5. There must be a minimum of 3' of cover over the tank.
- 1.6. If the overburden over the tank is not approved backfill, a geotextile (filter) fabric separator must be placed over the backfill.



## Used Tank Options

- Used frack water tank (22k gal) \$10-22K
  - Weldments and modifications (\$4,000)
  - Transport (\$2,000)
  - Need two to meet capacity requirements
- Used underground fuel tanks
  - Up to 30k gal
  - \$8-12K plus transport
  - Generally fiberglass / plastic
  - Harder to install than steel tanks, difficult to



- 50,000 gal used JetA tank, \$32k
- Details pending



# Precast Concrete Cisterns

Oldcastle Precast tanks \$15k / 10k gal tank plus transport and crane

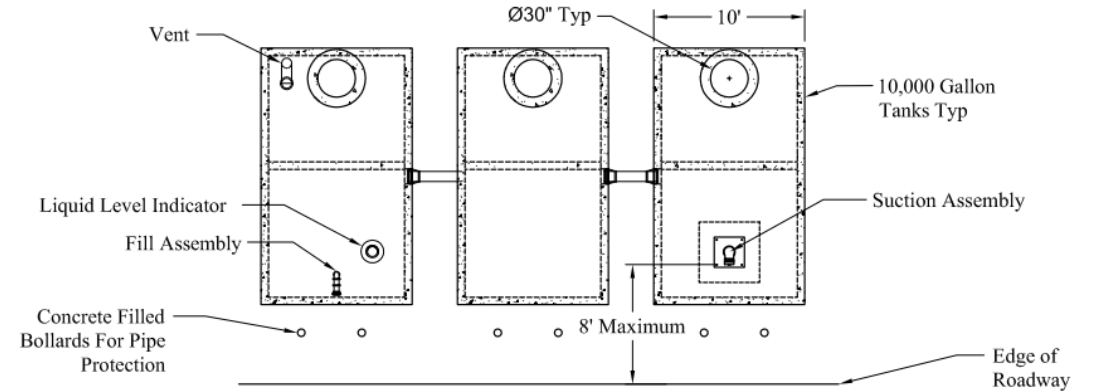


**General Notes:**

1. Concrete:  $f_c = 5,000$  psi @ 28 Days Minimum Type III Cement
2. Reinforcing Steel: ASTM-A615 Grade 60 Black Deformed Bars
3. Design Loading: AASHTO-HS20-44, ASTM C-890-06  
Design Specified As: ASTM C-1227-08, ASTM C-913-08
4. Butyl Rubber Joint Sealant Provided
5. Includes Exterior Dampproofing
6. Detail Drawings Provided Upon Request

**Foundation And Backfill Notes:**

1. Foundation Material Shall Be  $\frac{3}{4}$ " Crushed stone, Minimum 12" Thick, Compacted.
2.  $1\frac{1}{2}$ " Bank Run Gravel Shall Be Used For Backfill Operations Surrounding Tank. Backfill Shall Be Placed in Loose Lifts. All Compaction Shall Be Done With Hand Operated Equipment.
3. Tank Excavation Shall Be Kept Dewatered Throughout Installation and Backfill Operations.
4. All Area Between Tanks Shall Be Filled To A Minimum Of 12" Above Crown Of Interconnection Pipe With  $\frac{3}{4}$ " Crushed Stone.  $1\frac{1}{2}$ " Bank Run Gravel May Be Used Above This Elevation.



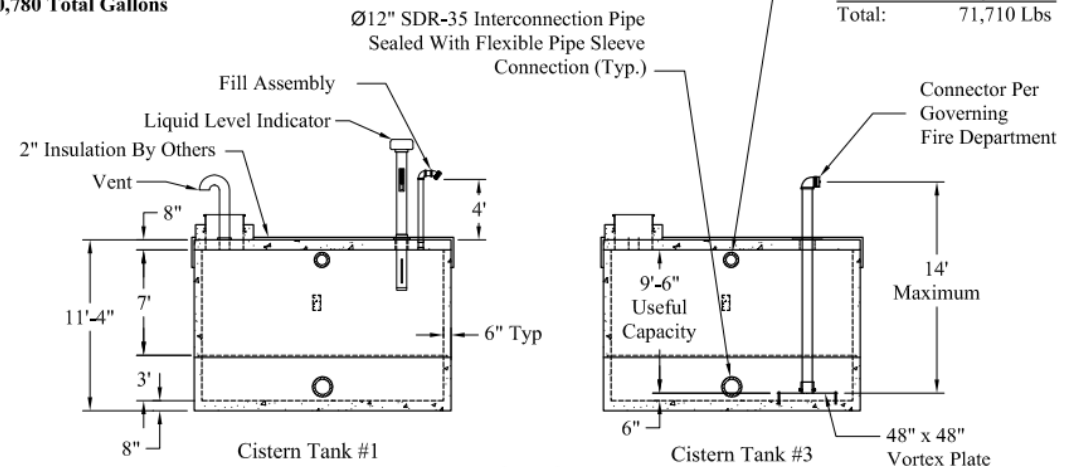
**Liquid Level:**  
9' x 16' = 1,080 Gals/VF  
9.5' = 10,260 Gallons Per Tank

**30,780 Total Gallons**

Ø8" SDR-35 Vent Sealed With Flexible Pipe Sleeve Connection (Typ.)

**Est Weights: (Each Tank)**

Top Slab:	16,400 Lbs
7' Riser:	26,960 Lbs
Base:	28,350 Lbs
<b>Total:</b>	<b>71,710 Lbs</b>



Note: Dimensions Typical For All Tanks



# Estimated maximum draft (head)

- Suction Lift with no losses

Elevation (ft)	Atmospheric pressure (PSI)
0	14.696
500	14.43
1000	14.16
1500	13.91
2000	13.66
2500	13.41
3000	13.17
3500	12.93
4000	12.69
4500	12.46
5000	12.23
6000	11.78
7000	11.34
8000	10.91
9000	10.5
10,000	10.1

- Taking into consideration the surrounding atmospheric pressure and friction loss in the intake hose, every fire pump in good repair should be able to lift water at least 15 feet (at sea level).
- Ratio  $10.5/14.7 = .71$
- $15 \times .71 = 10.7$  ft (estimate for RR)

Suction Lift at Various Elevations

Altitude:	Suction Lift In Feet
Sea Level	25.0
2,000 ft.	22.0
4,000 ft.	19.5
6,000 ft.	17.3
8,000 ft.	15.5
10,000 ft.	14.3