

EAST STORAGE TANK AND PUMP STATION


City of Fort Myers Public Works

Richard Moulton, Public Works Director


Nicole Monahan, City Engineer

December 3, 2019


Proposed Storage Tank and Pump Station Need

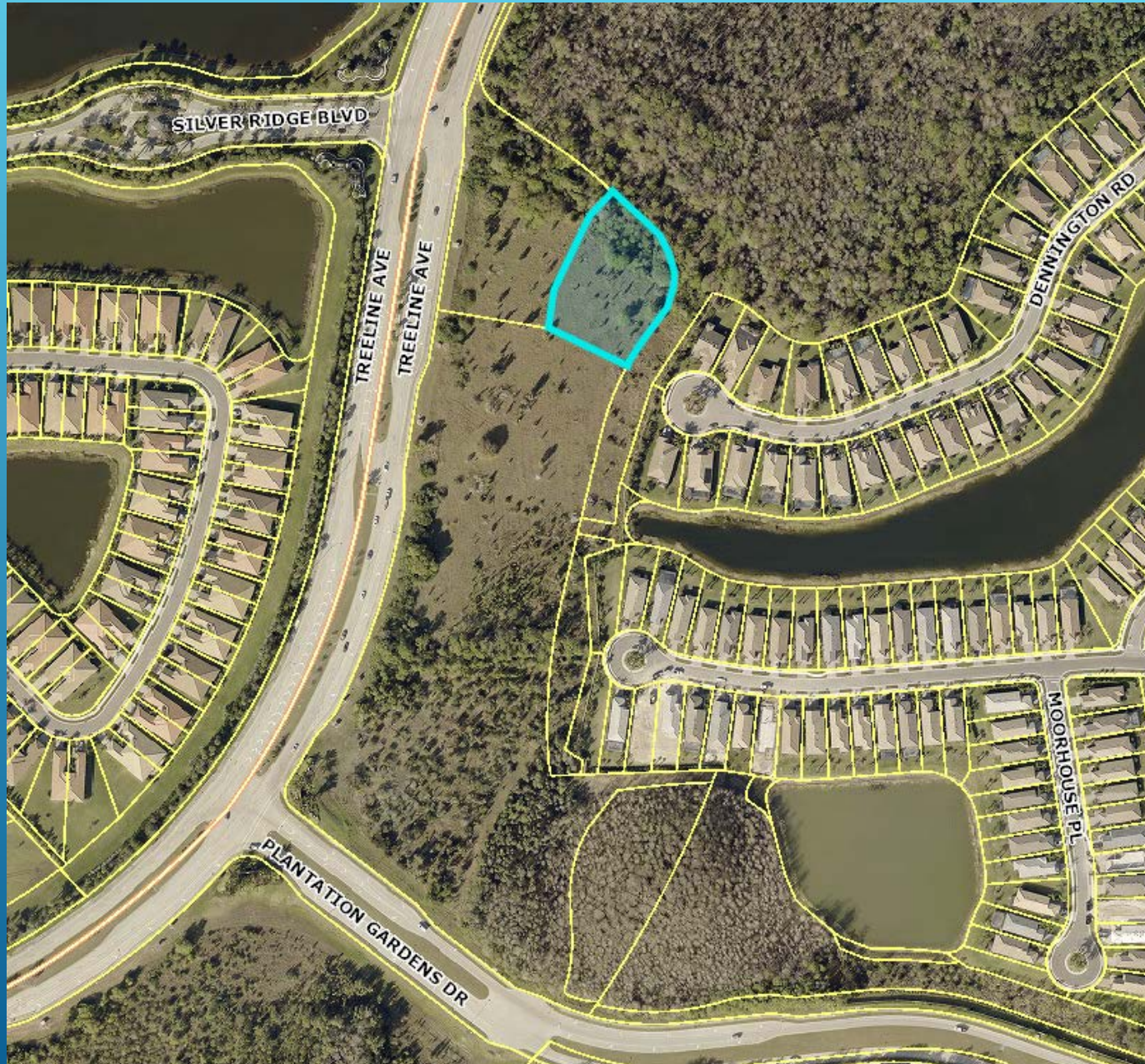
- ▶ Areas in the east portions of the City currently experience pressure fluctuations during peak hours and season
 - ▶ The City has identified projects to help stabilize pressure
 - ▶ East Storage Tank and Pump Station
 - ▶ Expansion of the current wellfield to provide additional capacity to the distribution system
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Proposed Storage Tank and Pump Station History

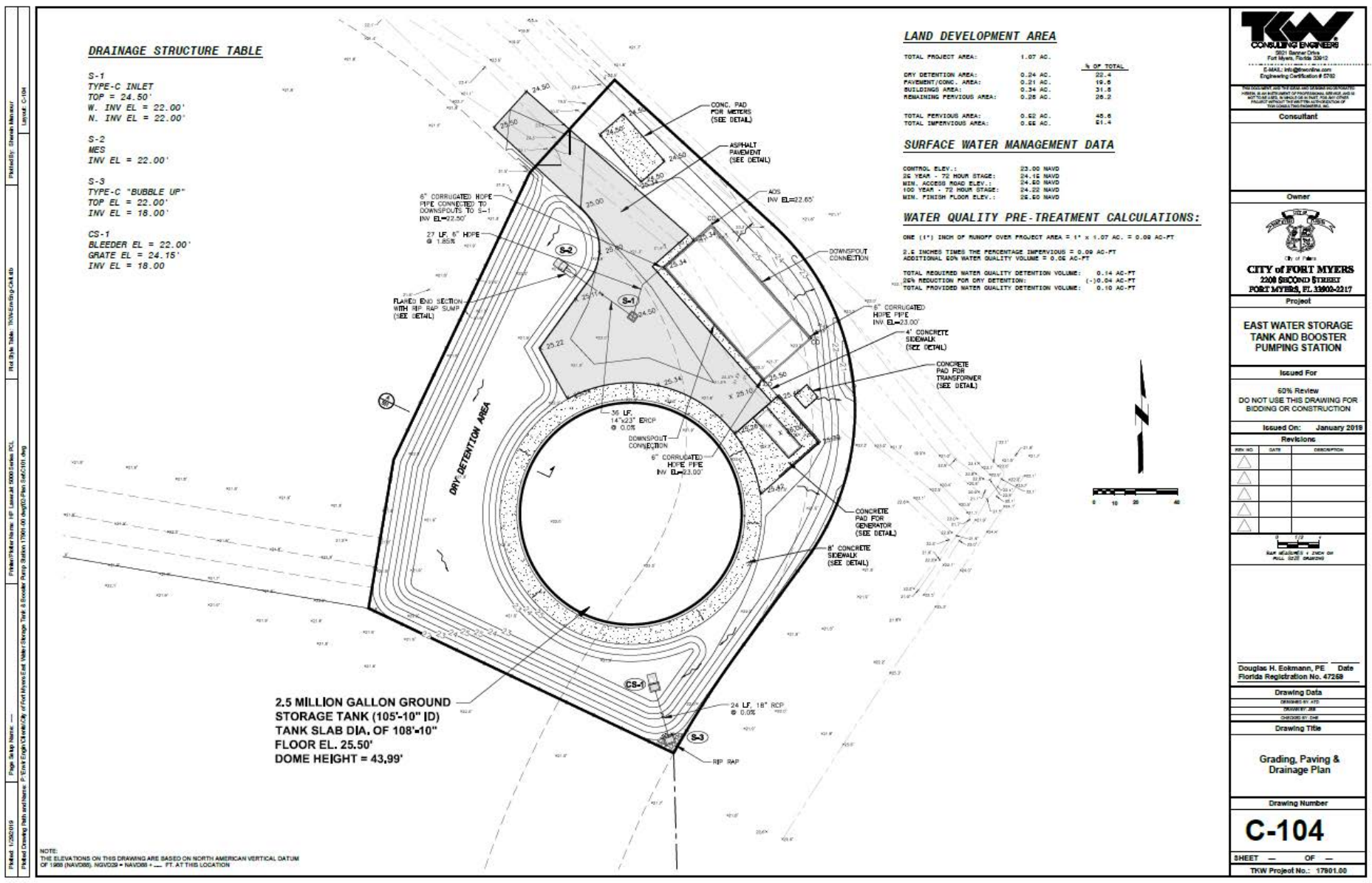
- ▶ Preliminary Design Report dated September 9, 2016
 - ▶ Design started August 11, 2017
 - ▶ Public Meeting to present proposed design – April 17th
 - ▶ Public Meeting at Bridgetown to present additional options – May 15th
 - ▶ Input taken during meetings and through emails
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Original Design included the following elements:


- ▶ 2.5 Million Gallon Prestressed Water Storage Tank – 44' tall to top of dome
 - ▶ Pump Station Building housing up to 4 pumps and Electrical Components – approximately 25' to roof ridge
 - ▶ Emergency Generator with Sound Dampening Wall
 - ▶ Site Lighting
 - ▶ Security Fencing
 - ▶ Landscaping consisting of trees and shrubs
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Aerial View Of
Original Proposed
Tank and Pump
Station Location




Plan Of Proposed Tank and Pump Station



TKW
CONSULTING ENGINEERS
2001 Imperial Office
Fort Myers, Florida 33912
E-MAIL: info@tkw-engineers.com
Engineering Certificate # 5750

REGISTERED PROFESSIONAL ENGINEER
AREA: 16 IN THE STATE OF FLORIDA LICENSE NO. 14
NOT TO BE USED IN ANY MANNER WITHOUT THE WRITTEN
CONSENT OF THE ENGINEER

Consultant



City of Fort Myers
CITY OF FORT MYERS
2208 SECOND STREET
FORT MYERS, FL 33902-2217

Project

EAST WATER STORAGE TANK AND BOOSTER PUMPING STATION

Issued For

50% REVIEW
DO NOT USE THIS DRAWING FOR BIDDING OR CONSTRUCTION

Issued On: January 2018

Revisions

REV. NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

Scale: 1" = 20' - 0"

Scale: 1" = 20' - 0"

Scale: 1" = 20' - 0"

Douglas H. Eckmann, PE Date
Florida Registration No. 47268

Drawing Data

DESIGNED BY: JHE
CHECKED BY: JHE
DRAWN BY: JHE
DRAWING TITLE

Grading, Paving & Drainage Plan

Drawing Number

C-104

SHEET — OF —

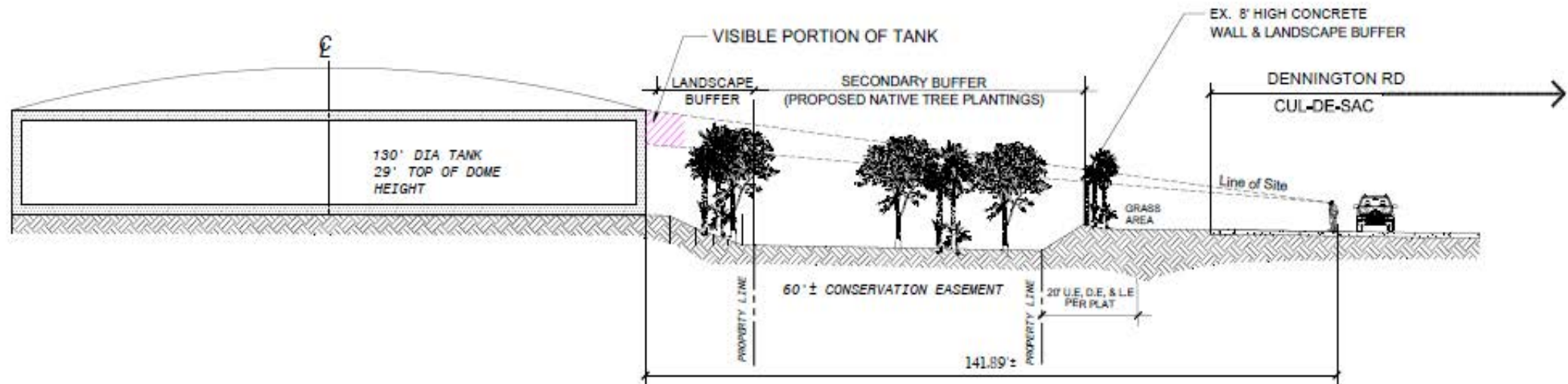
TKW Project No.: 17901.00



Proposed View Of
Tank From
Dennington Road


May 15th Meeting at Bridgetown presented the following options:

- ▶ No build option
- ▶ Reduction in volume of tank, therefore reducing height of tank
- ▶ Increase in tank diameter, therefore reducing height of tank
- ▶ Decorative enhancements to tank
- ▶ Planting of vegetative barrier within adjacent conservation area



Cross section of perspective from Dennington Road

Comments and Concerns from Residents at May 15th Meeting

- ▶ Incompatibility with surrounding neighborhood; tank looks out of place and should be moved to a vacant or preserve area
 - ▶ Height of tank, should be shorter and/or hidden from view
 - ▶ Fear of flooding should there be catastrophic failure of tank
 - ▶ Plant appropriately sized trees to hide the tank
 - ▶ Security and site lighting concerns
- 
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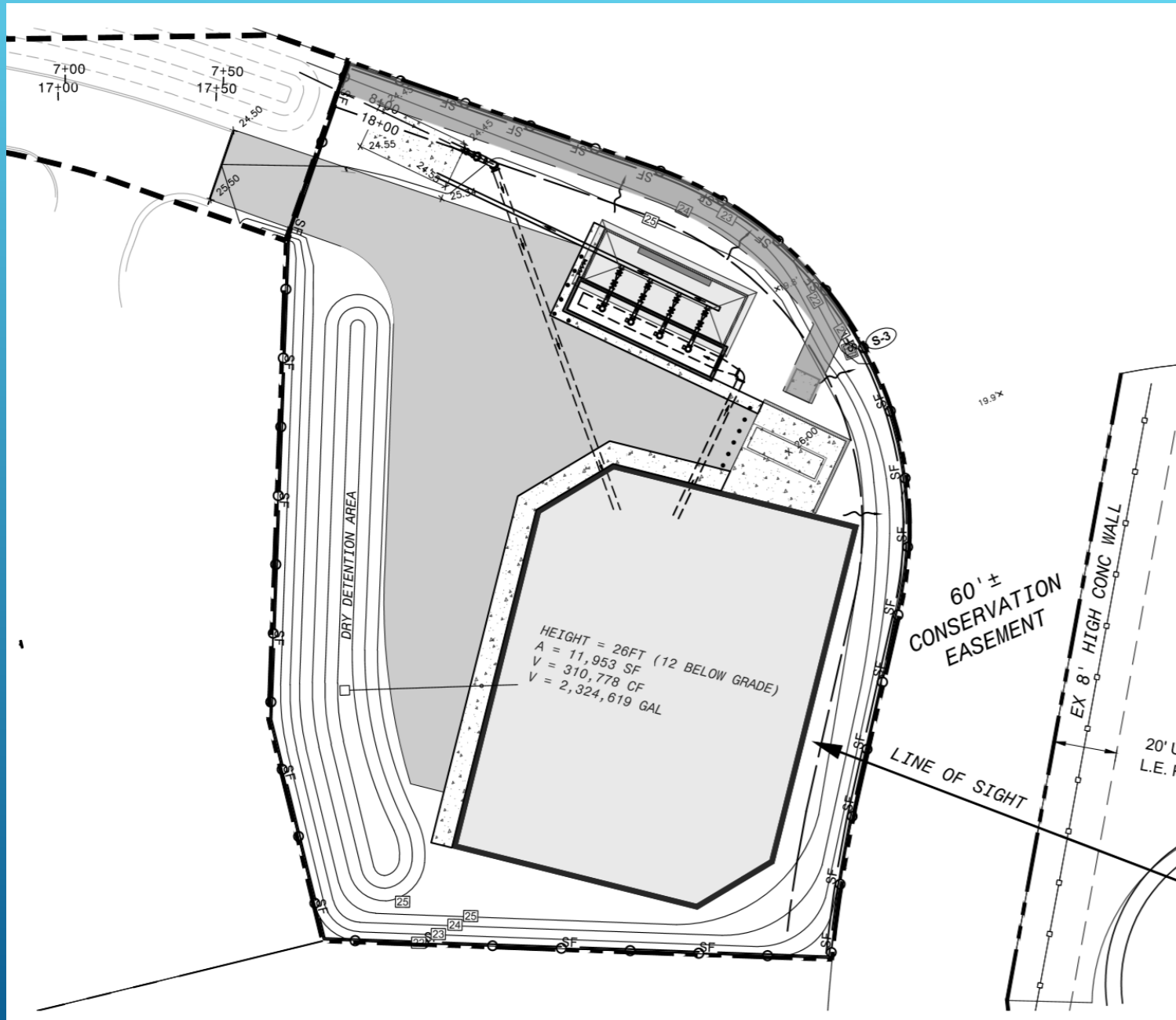
The City looked at four (4) additional sites as well as a partially buried tank option for the current site

- ▶ Site A: 9921 Bavaria Road in Airport Woods Commerce Park
 - ▶ Site B: 12690 Treeline Avenue
 - ▶ Site C: Tract F (future development) of Reflection Isles Master Association
 - ▶ Site D: Parcel directly north of Site C
- 
- A series of three parallel white diagonal lines extending from the bottom right corner towards the center of the slide.

Original Site with Tank Modifications

- ▶ Partially buried, cast in place, rectangular tank with thickened slab to prevent flotation
- ▶ 2.3 million gallon tank
- ▶ Architectural enhancements including roof to appear as a residential structure
- ▶ Due to lowered tank, change in pump style which results in smaller and shorter pump building
- ▶ Additional costs over original design of \$1,835,000

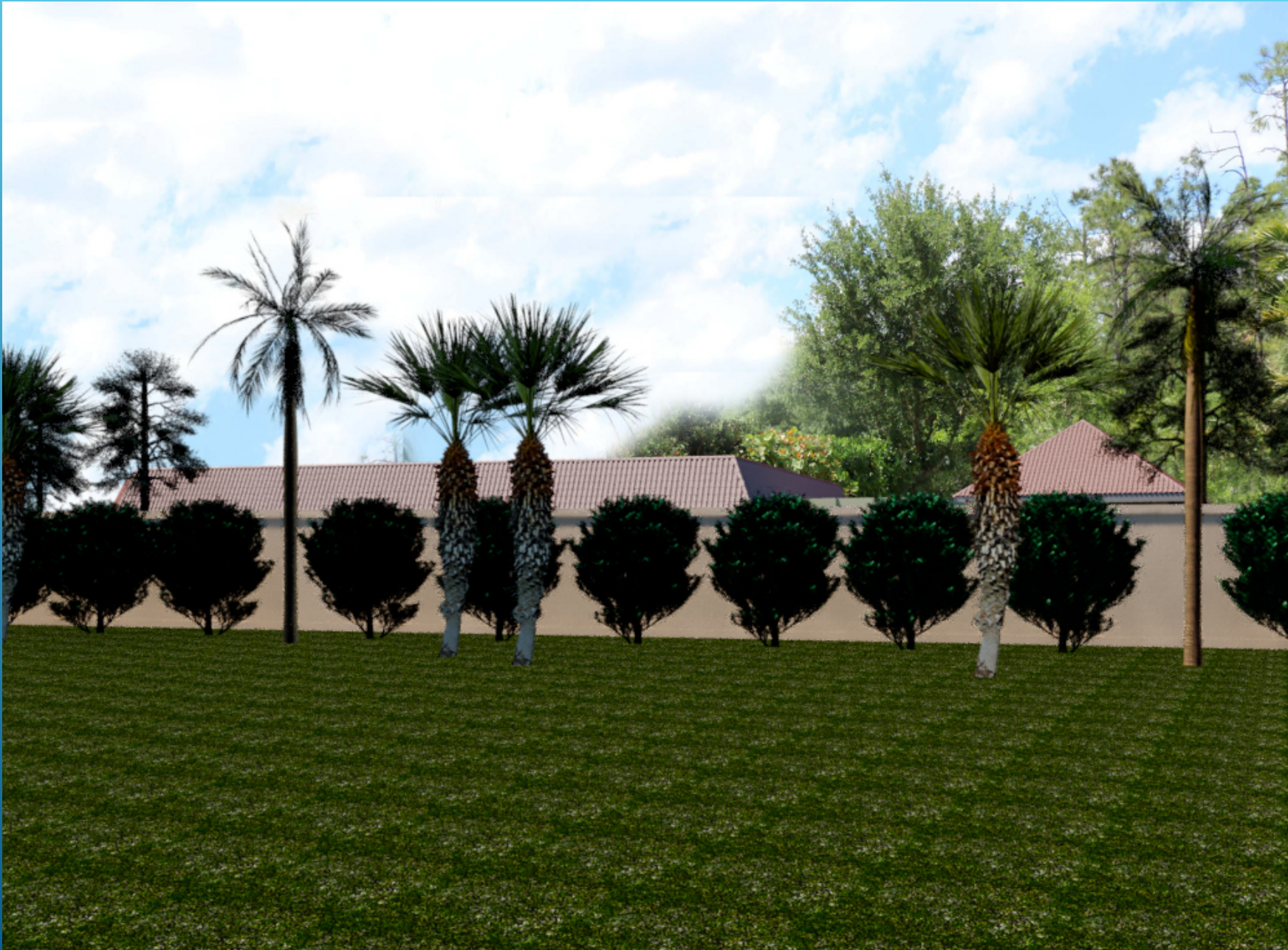
❖ **Option deemed feasible**



Plan View of Storage Tank with Modifications



View from
Dennington
Road of
Storage Tank
with
Modifications



View from
Dennington
Road of
Storage Tank
with
Modifications

Site A – 9921 Bavaria Road

- ▶ 1.12 acres zoned IPD – Lee County
- ▶ No rezoning necessary
- ▶ Original tank design and size
- ▶ Additional offsite work to include pipe network from site to Treeline Avenue and upsizing of existing water main along Treeline Avenue
- ▶ 1,054' to nearest residence in Marina Bay
- ▶ Additional costs over original design of \$1,976,900



❖ **Option eliminated due to additional offsite piping needed**

Site B – 12690 Treeline Avenue

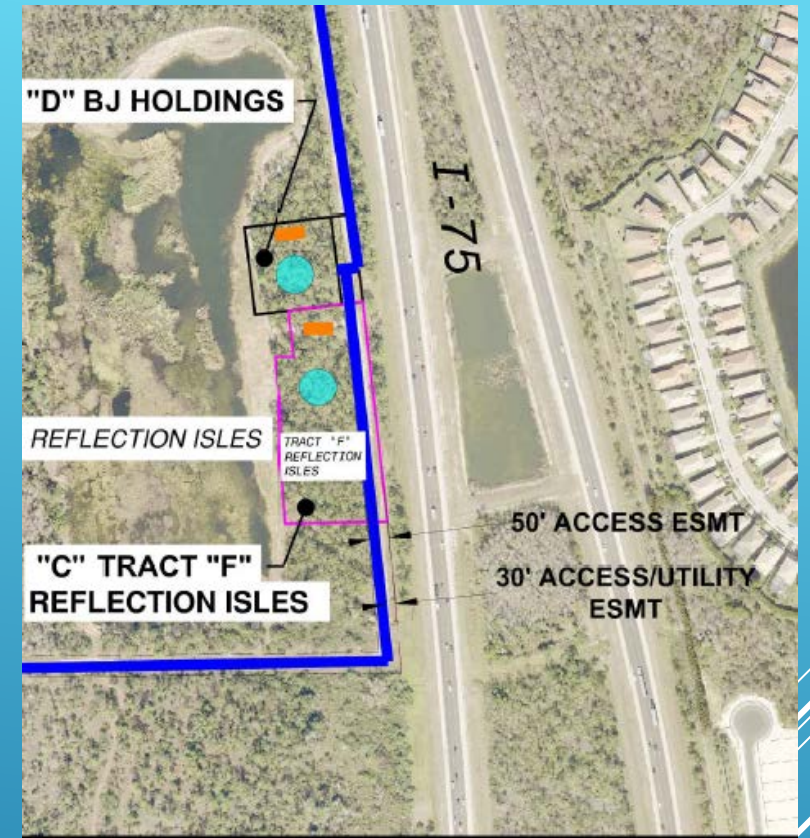
- ▶ 24.22 acres zoned AG & IPD – Lee County
- ▶ Rezoning necessary
- ▶ Original tank design and size
- ▶ Additional offsite work to include pipe network from site to Treeline Avenue and upsizing of existing water main along Treeline Avenue
- ▶ Land to the south is currently vacant but proposed for residential
- ▶ Additional costs over original design of \$1,591,000



❖ **Option eliminated due to potential adjacent residential development and additional offsite piping needed. Property owned by Lee County School Board.**

Site C – Tract F of Reflection Isles Master Association

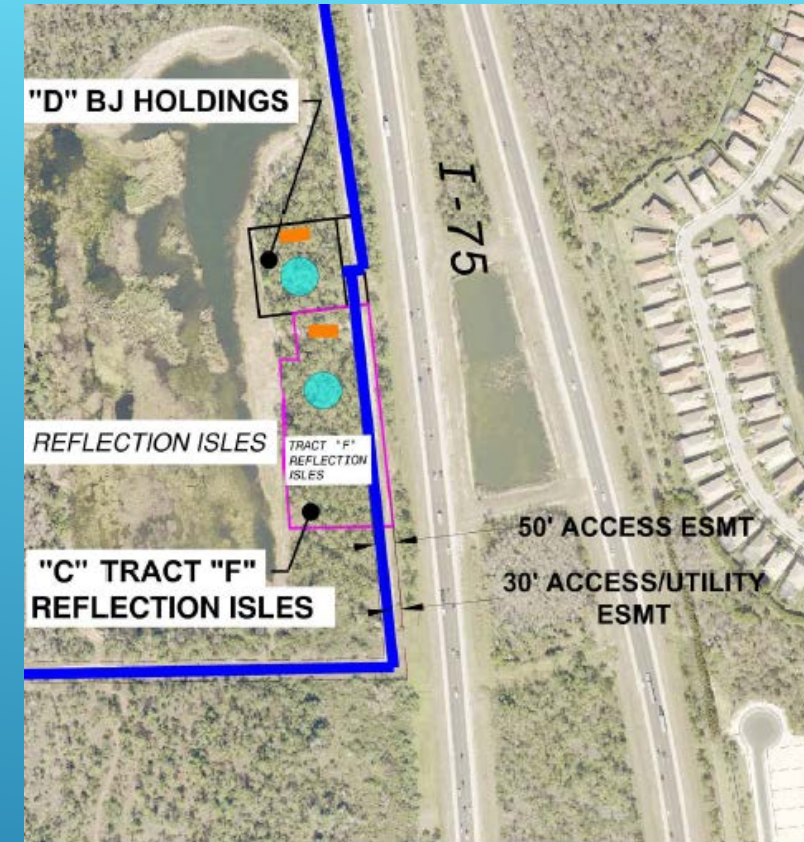
- ▶ 2.65 acres zoned PUD – within City limits
- ▶ Borders I-75 right-of-way
- ▶ Original tank design and size
- ▶ Additional offsite work to include construction of access road from Palomino Lane to site
- ▶ Requires larger pump size due to distance from areas experiencing the lowest water pressure
- ▶ 1,143' to nearest residence (to the west) and well buffered by existing conservation easement/vegetation
- ▶ Additional costs over original design of \$930,000



❖ **Option eliminated due to property acquisition issues**

Site D – Parcel immediately north of Tract F of Reflection Isles Master Association

- ▶ 1.25 acres zoned PUD – within City limits
- ▶ Borders I-75 right-of-way
- ▶ Original tank design and size
- ▶ Additional offsite work to include construction of access road from Palomino Lane to site
- ▶ Requires larger pump size due to distance from areas experiencing the lowest water pressure
- ▶ 975' to nearest residence (to the west) and well buffered by existing conservation easement/vegetation
- ▶ Additional costs over original design of \$950,000



❖ **Option deemed feasible**

Estimated Cost Matrix

Site	Original Tank Cost	Additional Design Costs	Additional Land Costs	Additional Construction Costs	Total Estimated Costs
Original Site with tank modifications	\$4,900,000	\$135,000	\$0	\$1,700,000	\$6,735,000
Site A	\$4,900,000	\$125,000	\$145,900	\$1,706,000	\$6,876,900
Site B	\$4,900,000	\$100,000	\$135,000	\$1,356,250	\$6,491,250
Site C	\$4,900,000	\$80,000	\$150,000	\$700,000	\$5,830,000
Site D	\$4,900,000	\$85,000	\$75,000	\$725,000	\$5,785,000

Property acquisition, rezoning, geotechnical investigations and permitting will add additional time to the project.

Recommendations of Most Feasible Sites

- ▶ Original site with modified tank design
 - ▶ Tank and site needs to be redesigned
 - ▶ Geotechnical investigation is complete
- ▶ Site D
 - ▶ Need to negotiate property acquisition and conduct geotechnical investigations
 - ▶ No compatibility issues with residential
 - ▶ Original tank design with minor redesign of selected site

Site	Original Tank Cost	Additional Design Costs	Additional Land Costs	Additional Const. Costs	Total Estimated Costs
Original site with tank mods	\$4,900,000	\$135,000	\$0	\$1,700,000	\$6,735,000
Site A	\$4,900,000	\$125,000	\$145,900	\$1,706,000	\$6,876,900
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