North Point Development

SR 707, Stuart FL 34994

Project No. 1767

Drainage Statement:

INTRODUCTION

The following drainage statement is for the proposed North Point Development, located in the City of Stuart within Martin County, Florida. The intent of the proposed project is to construct a three story office building, a restaurant, and associated parking, paving, drainage and utility infrastructure.

SITE LOCATION AND DESCRIPTION

The project site is approximately 2.90 acres and is located in Section 32, Township 37S, Range 41E in Stuart, Martin County, Florida. The project site is bordered by SR 707 (Dixie Highway) to the west, Florida East Coast (FEC) Railroad to the east, and the St. Lucie River to the south. See *Exhibit 1*.

The soil survey of Martin County, Florida states the only surface soil type on-site is 36 – Arents, 0 to 2 percent slopes. Enclosed is a copy of the USDA Soil Survey Map. See *Exhibit 2*.

DRAINAGE

Stormwater from the proposed site will drain into a system of storm drains and pipes equipped with an exfiltration system on-site, eventually flowing into the existing SR 707 retention area north of the project.

The required water quality treatment volume is 0.42 Ac-Ft, based on the South Florida Water Management District's required 2.5 inches over the percent net impervious. Approximately 695 linear feet of exfiltration system will be installed containing 0.47 Ac-Ft of storage.

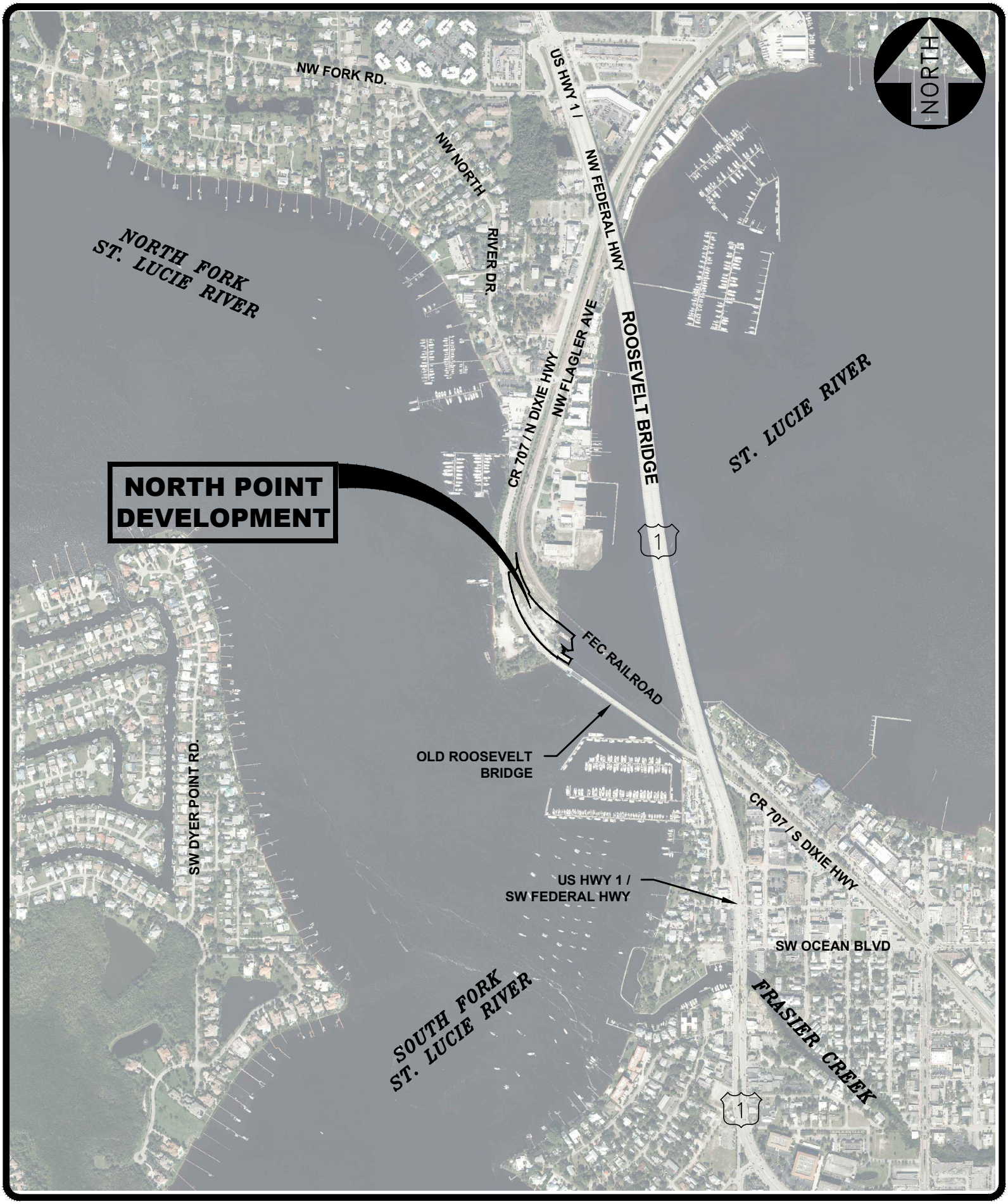
The 100-year 3-day zero discharge peak stage is 11.35 ft.-NAVD and the minimum proposed finished floor elevation is 17.00 ft.-NAVD.

See *Exhibits 3-5 for drainage calculations.*



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April 10, 2019

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APR 10 2019

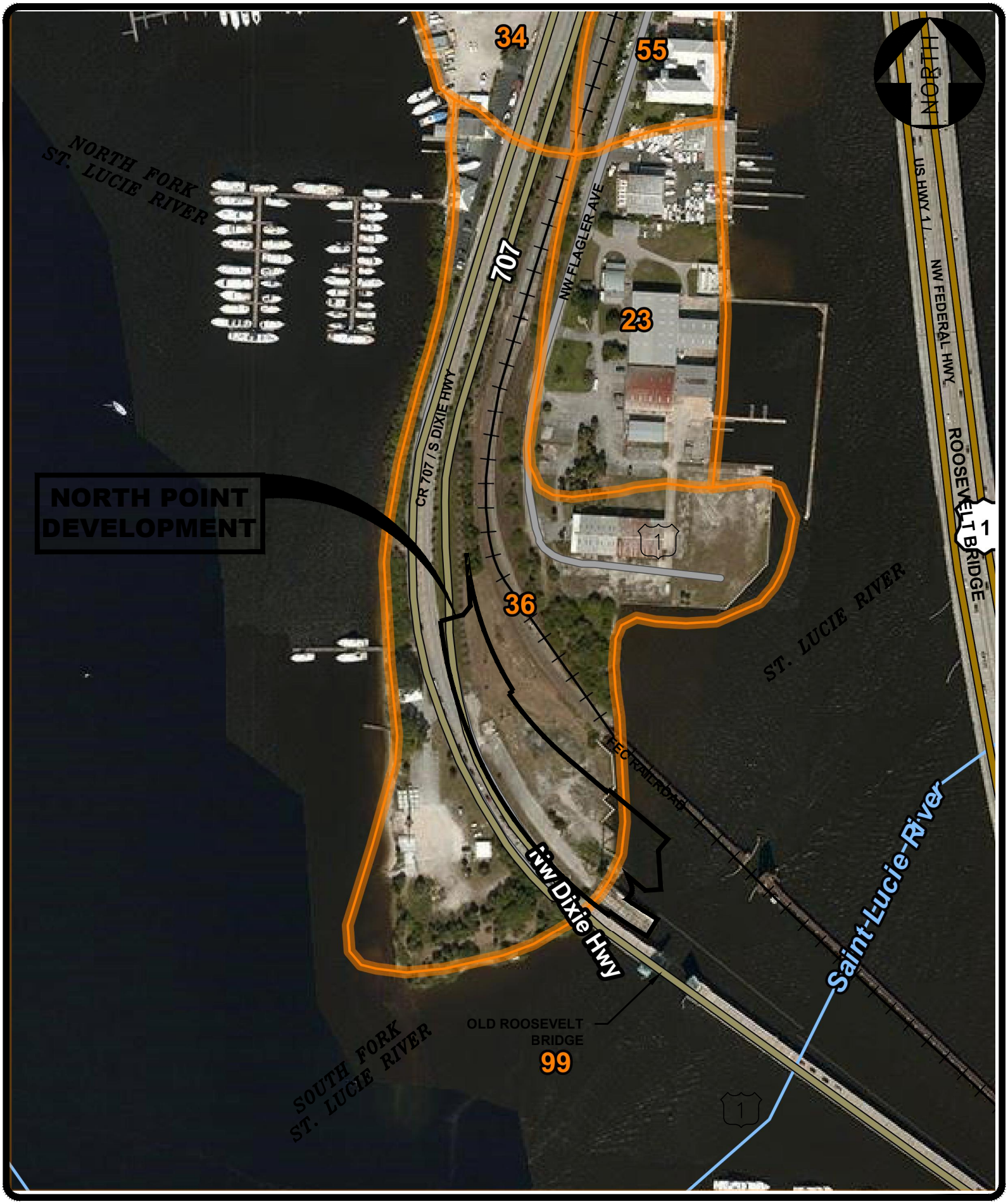


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EXHIBIT 1 - LOCATION MAP
1767 - North Point Development



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EXHIBIT 2 - SOILS MAP
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EXHIBIT 3

CAPTEC Engineering, Inc.
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Project No. 1767

Drainage Calculations

Site Data

Calculate Basin Area

Total Site Area	=	*2.90 Ac.*
River Area	=	*0.17 Ac.*
Total Proposed Developed Basin Area	=	*2.73 Ac.*
Calculate Impervious Area		
Buildings	=	*0.39 Ac.*
Pavement/Curb/Sidewalks	=	*1.78 Ac.*
Total Impervious Area	=	*2.17 Ac.*
Total Pervious Area	=	*0.56 Ac.*

Calculate CN

Land Type	Hydrologic Soil Group	Area	CN
Pervious	A	*0.56 Ac.*	39
DCIA Area		*2.17 Ac.*	98
NonDCIA Impervious Area	*0%*	*0.00 Ac.*	
Total Composite CN			*85*

EXHIBIT 4

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Project No. 1767

Drainage Calculations

Water Quality Storage

South Florida Water Management District

1.) Required Water Quality Treatment Volume

a) First inch of runoff

Va = 2.73 * 1 In. * (1 Ft./12 In.) = ***0.23 Ac.-Ft.***

b) Runoff from 2.5 * % net impervious

Runoff = 2.5 * (Impervious Area)/(Basin-Bldg. Area-Lake Area)

= 2.5 * (1.67 / (2.73 - 0.46 - 0)) = ***1.84 In.***

Vb (sfwmd) = (2.73) * 1.84 * (1 Ft./12 In.) = ***0.42 Ac.-Ft.***

c) Since Vb (sfwmd) > Va the water quality volume required = ***0.42 Ac.-Ft.***

2.) Provided Water Quality Treatment Volume

Wet Retention (Exfiltration) *	=	***0.47 Ac.-Ft.***	100% Required	=	***0.47 Ac.-Ft.***
			Total		***0.47 Ac.-Ft.***

	Elevation (NGVD)	
	Required	**Provided**
Finished Floor (100 yr. 3 day zero discharge)	***11.35***	***17.00***

EXHIBIT 5

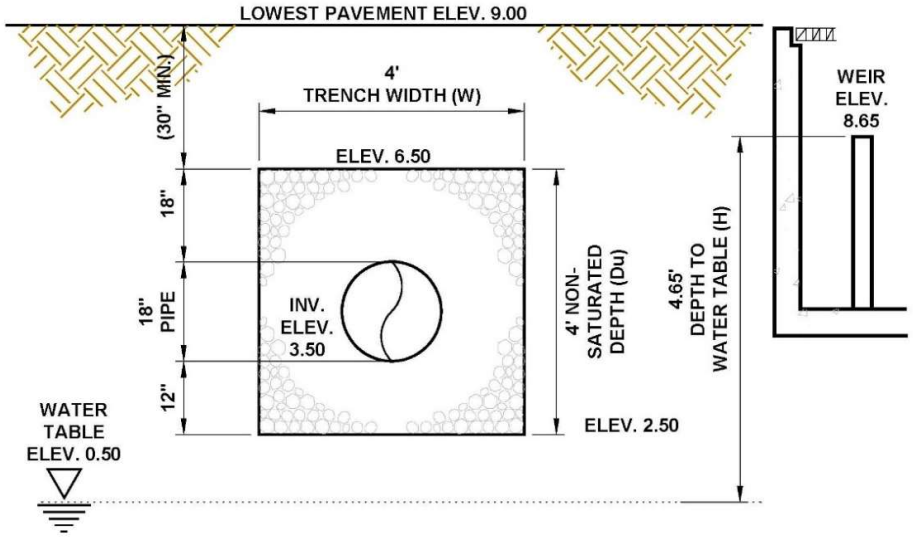
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Exfiltration Design

a) ** $V = L * (k * (H*W + 2*H*D_U - D_U*D_U + 2*H*D_S) + (0.000139*W*D_U))$



Where:

V = Volume (Ac.-In.)		
L = Length of Exfiltration (FT.)	=	***695.00 Ft.***
k = Hydraulic Conductivity (cfs/Ft^2-Ft-Hd) *	=	***4.24E-05***
H = Water Table Depth	=	***6.00 Ft.***
W = Width of Trench	=	***6.00 Ft.***
D_U = Unsaturated Depth	=	***6.00 Ft.***
D_S = Saturated Depth	=	***0.00 Ft.***

V = 695 * (0.000042 * (6*6 + 2*6*6
- 6^2 + 2*6*0) + (0.000139*6*6)) = ***5.60 Ac.-In.***

Exfiltration Trench Volume Provided:	=	***5.60 Ac.-In.***
	=	***0.47 Ac.-Ft.***
Required Exfiltration	=	***0.42 Ac.-Ft.***