PRE-POST ANALYSIS

For:

Eva Vaccaro Residence @ 12940 SW 63 Aveune

Pinecrest, Florida

Prepared By:

CHEROKEE CONSULTING, INC.

5821 SW 51st TERRACE

Miami, FL 33155

305.205.2361

kwgroce@att.net

Ken W Groce

Digital Signature Authorized By Ken W. Groce P.E. FL P.E. # 35944 2023.05.20 20:08:52-04'00'

5.20.2023

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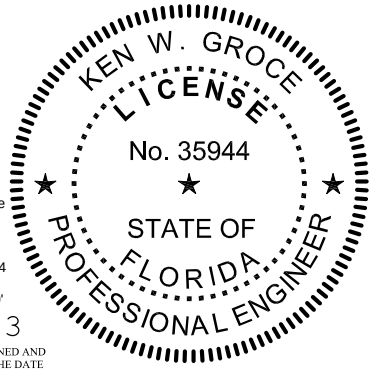


PRE-DEVELOPMENT ANALYSIS
Eva Vaccaro Residence @ 12940 SW 63 Aveune

SITE DATA	Acres
Total Project Area	0.891 Ac
Building Area (Roof Area, Covered Walkways)	0.175 Ac
Impervious Areas	0.216 Ac
Pervious Areas	0.500 Ac

SITE ELEVATIONS	Elevation
October Water Level	(+) 3.50
Average Existing Grade	(+) 15.50

CALCULATE SOIL STORAGE

Area	% of Total
Building Area	19.6%
Impervious	24.2%
Pervious	56.1%

Impervious =	43.9%
Pervious =	56.1%

Δ = Depth to Water Table (ft.)

Δ = Average Pervious Grade (Landscaping Areas only) - Water Control Elevation

Δ = (+) 15.50 - (+) 3.50

Δ = 12.00

S-Value = 8.18 in. *Interpolating Table shown above (SFWMD Vol. IV pg. C-III-I):*

Depth to Water Table (in.)	Soil Storage (in.)
1	0.45
2	1.88
3	4.95
4	8.18

Weighted S-Value:

S = S-Value x % Pervious

S = (8.18*0.561) =

S = 4.59 in.

CALCULATE RUN-OFF QUANTITY

$R= ((P-0.2)*S)^2)/((P+0.8)*S)$

P = Rainfall in inches for 25 Year 1 Day **9 Inches**

R = Site Runoff Depth, Inches

R= 5.15 Inches **R= 0.43 Ft**

V = A*(R/12)

V= Volume of stormwater for a 25 Year 1 Hour Storm Event

A= Area of site

R = Site runoff depth in inches

V= 0.38 AcFt

Pre Development Run-Off = 0.38 AcFt

POST-DEVELOPMENT ANALYSIS
Eva Vaccaro Residence @ 12940 SW 63 Aveune

SITE DATA	Acres
Total Project Area	0.891 Ac
Building Area (Roof Area, Covered Walkways)	0.208 Ac
Impervious Areas	0.185 Ac
Pervious Areas	0.498 Ac

SITE ELEVATIONS	Elevation
October Water Level	(+) 3.50
Average Proposed Grade	(+) 15.50

CALCULATE SOIL STORAGE

Area	% of Total
Building Area	23.3%
Impervious	20.8%
Pervious	55.9%

Impervious =	44.1%
Pervious =	55.9%

Δ = Depth to Water Table (ft.)

Δ = Average Pervious Grade (Landscaping Areas only) - Water Control Elevation

Δ = (+) 15.50 - (+) 3.50

Δ = 12.00

S-Value = 8.18 in. *Interpolating Table shown above (SFWMD Vol. IV pg. C-III-I):*

Depth to Water Table (in.)	Soil Storage (in.)
1	0.45
2	1.88
3	4.95
4	8.18

Weighted S-Value:

S = S-Value x % Pervious

S = (8.18*0.559) =

S = 4.57 in.

CALCULATE RUN-OFF QUANTITY

$R= ((P-0.2)*S)^2)/((P+0.8)*S)$

P = Rainfall in inches for 25 Year 1 Day **9 Inches**

R = Site Runoff Depth, Inches

R= 5.17 Inches **R= 0.43 Ft**

V = A*(R/12)

V= Volume of stormwater for a 25 Year 1 Hour Storm Event

A= Area of site

R = Site runoff depth in inches

V= 0.38 AcFt

Post Development Run-Off = 0.38 AcFt

Pre Vs Post = 0.38 AcFt Vs 0.38 AcFt

The Post Development condition is less than the Pre Development condition by 0.01 Ac-Ft. The site has retention areas through out the site with 0.075± Ac-Ft of storage (smaller areas not included in Net Storage Area). The site will have a 6"± to 8"± berm along the south, west and south-east sides of the lot and will use the exist landscape area along the north and north-east sides of the lot as "berms". Thererfore the site is in substantial complince with the Village's Stormwater Management Oridnace retention requirements.

CHEROKEE CONSULTING, INC.
5821 SW 51 Terrace
Miami, FL 33155
Tel: 305.205.2361
E Mail kwgroce@att.net

DATE: 5.16.2023
PROJECT: Eva Vaccaro Residence @ 12940 SW 63 Avenue
DESCRIPTION: Water Quality Calculations

I. Project Land-Use

Total Site Area =	0.891	Ac
Impervious		
a. Roof Area =	0.208	Ac
b. Walkways and Parking Areas =	0.185	Ac
Retention Area =	0.000	Ac
Pervious Areas =	0.498	Ac

II. Other Information

October Water Elevation =	+3.50	NGVD
Provided LF of French Drain =	0	LF

III. Computations

1. Compute first inch of runoff from developed project =

0.89 Ac. * 1 Inch * 1 Foot / 12 Inch = 0.074 Ac-Ft

2. 2.5" x % Impervious =

a. Site area for water quality pervious/impervious calculations =
Total project area - (Roof + Retention Area) = (0.891 Ac - 0.208 Ac) = 0.683 Ac

b. Impervious area for water quality pervious/impervious calculations =
Site area for water quality - pervious = (0.683 Ac - 0.498 Ac) = 0.185 Ac

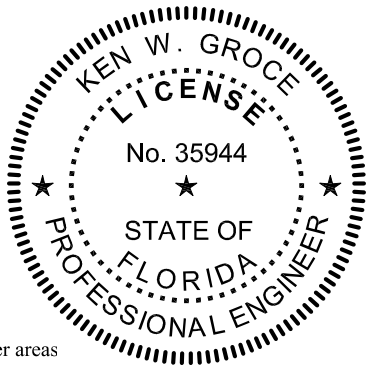
c. Percentage of imperviousness for water quality =
Impervious area for water quality / Site area for water quality = 0.271 %

d. 2.5 in. x % Impervious = (2.5 Inch * 0.27) = 0.677 In

e. Required Treatment Volume = (0.675 Inch * 0.891 Ac * 1 Ft / 12 Inch) = 0.050 Ac-Ft

The 0.050 Ac-Ft, computed for the 2.5 inch x % impervious first inch of runoff, is less than the 0.074 Ac-Ft for the first inch of runoff

Since the water quality area required is only 0.074± Ac-Ft and the various dry retenton areas can retain 0.075± Ac-Ft (smaller areas not inlcuded in Net Storage Area) therefore the water quality critiera is in substantial compliance with the Village's Stormwater Mangaement Ordinace requirements. The freneh drians shown are not requried to satisfy the water quality for this site.



Ken W Groce
Digital Signature
Authorized By
Ken W. Groce
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