

PRE-POST ANALYSIS

For:

5900 LLC Residence @ 5900 SW 114 Terrace

Pinecrest, Florida

Prepared By:

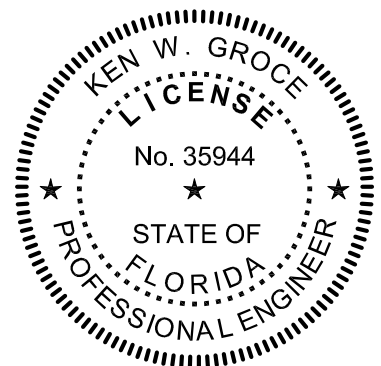
CHEROKEE CONSULTING, INC.

5821 SW 51st TERRACE

Miami, FL 33155

305.205.2361

kwgroce@att.net



7.1.2023

THIS ITEM HAS BEEN DIGITALLY SIGNED AND
SEALED BY KEN W. GROCE P.E. ON THE DATE
ADJACENT TO THE SEAL. PRINTED COPIES OF THIS
DOCUMENT ARE NOT CONSIDERED SIGNED AND
SEALED AND THE SIGNATURE MUST BE VERIFIED
ON ANY ELECTRONIC COPIES

PRE-DEVELOPMENT ANALYSIS
5900 LLC Residence @ 5900 SW 114 Terrace

SITE DATA	Acres
Total Project Area	0.929 Ac
Building Area (Roof Area, Covered Walkways)	0.000 Ac
Impervious Areas	0.000 Ac
Pervious Areas	0.929 Ac

SITE ELEVATIONS	Elevation
October Water Level	(+) 3.50
Average Existing Grade	(+) 9.50

CALCULATE SOIL STORAGE	
Area	% of Total
Building Area	0.0%
Impervious	0.0%
Pervious	100.0%

Impervious =	0.0%
Pervious =	100.0%

Δ = Depth to Water Table (ft.)

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

Δ = (+) 9.50 - (+) 3.50

Δ = 6.00

S-Value = 8.18 in. Interpolating Table shown above (SFWMMD 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*1.000) =

S = 8.18 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 = 3.49 Inches

R = 0.29 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 = 0.27 AcFt

Pre Development Run-Off = 0.27 AcFt

POST-DEVELOPMENT ANALYSIS
5900 LLC Residence @ 5900 SW 114 Terrace

SITE DATA	Acres
Total Project Area	0.929 Ac
Building Area (Roof Area, Covered Walkways)	0.195 Ac
Impervious Areas	0.124 Ac
Pervious Areas	0.610 Ac

SITE ELEVATIONS	Elevation
October Water Level	(+) 3.50
Average Proposed Grade	(+) 9.50

CALCULATE SOIL STORAGE	
Area	% of Total
Building Area	21.0%
Impervious	13.3%
Pervious	65.7%

Impervious =	34.3%
Pervious =	65.7%

Δ = Depth to Water Table (ft.)
 Δ = Average Pervious Grade (Landscaping Areas only) - Water Control Elevation
 Δ = (+) 9.50 - (+) 3.50
 Δ = 6.00
 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*0.657) =

S = 5.37 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= 4.72 Inches

R= 0.39 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= 0.37 AcFt

Post Development Run-Off = 0.37 AcFt

Pre Vs Post = 0.27 AcFt Vs 0.37 AcFt

The Post Development condition is equal to the Pre Development condition by 0.100 Ac-Ft. The site has retention areas through out the site with 0.169± 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". Therefore the site is in substantial compliance with the Village's Stormwater Management Ordinance retention requirements.

CHEROKEE CONSULTING, INC.

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

DATE: 7.1.2023
PROJECT: 5900 LLC Residence @ 5900 SW 114 Terrace
DESCRIPTION: Water Quality Calculations

I. Project Land-Use

Total Site Area = 0.929 Ac
Impervious
a. Roof Area = 0.195 Ac
b. Walkways and Parking Areas = 0.124 Ac
Retention Area = 0.000 Ac
Pervious Areas = 0.610 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 =

0.93 Ac. * 1 Inch * 1 Foot / 12 Inch = 0.077 Ac-Ft

2. 2.5" x % Impervious =

a. Site area for water quality pervious/impervious calculations =
Total project area - (Roof + Retention Area) = (0.929 Ac - 0.195 Ac) = 0.734 Ac
b. Impervious area for water quality pervious/impervious calculations =
Site area for water quality - pervious = (0.734 Ac - 0.61 Ac) = 0.124 Ac
c. Percentage of imperviousness for water quality =
Impervious area for water quality / Site area for water quality = 0.169 %
d. 2.5 in. x % Impervious = (2.5 Inch * 0.17) = 0.422 In
e. Required Treatment Volume = (0.425 Inch * 0.929 Ac * 1 Ft / 12 Inch) = 0.033 Ac-Ft

The 0.033 Ac-Ft, computed for the 2.5 inch x % impervious first inch of runoff, is less than the 0.077 Ac-Ft for the first inch of runoff

Since the water quality area required is only 0.077± Ac-Ft and the various dry retention areas can retain 0.169± Ac-Ft (smaller areas not included in Net Storage Area) therefore the water quality criteria is in substantial compliance with the Village's Stormwater Management Ordinance requirements. The french drains shown are not required to satisfy the water quality for this site.



7.1.2023

THIS ITEM HAS BEEN DIGITALLY SIGNED AND
SEALED BY KEN W. GROCE P.E. ON THE DATE
ADJACENT TO THE SEAL. PRINTED COPIES OF THIS
DOCUMENT ARE NOT CONSIDERED SIGNED AND
SEALED AND THE SIGNATURE MUST BE VERIFIED
ON ANY ELECTRONIC COPIES