

**GS JPD 10635 LLC
10635 SW 63 Ave
Miami, Florida 33133**

Drainage Report

May 2025



Prepared for:

**GIORGIO BALLI ARCHITECTS, LLC
1533 Sunset Drive, Suite 101
Coral Gables, Florida 33143**

Approved by:

**Raul Wainer, P.E.
Reg. Engineer No.: 54756
Tsur Consulting, Inc.
21011 NE 32nd Avenue
Aventura, FL 33180**

Date:

05-12-25

This project proposes the replacement of an existing 2-story residential building with pool, pool deck and pervious brick pavers driveway with a new 2-story house, pool, pool deck and pervious brick pavers driveway. Work to be analyzed in this report is limited to the parcel itself.

The purpose of this report is to provide drainage calculations in accordance with the SFWMD Volume II of the 2014 SFWMD ERP Applicant's Handbook, Rules 40E-4.091(1) and 62-330.010, F.A.C., to achieve the following 2 design criteria.

- 1- The new residence Post-Development runoff $\leq$ Pre-Development runoff
- 2- The Post-Development maximum stage $\leq$ the Pre-Development maximum stage or provide retaining wall or berm along the whole perimeter and trench drain to capture the runoff at the driveway gate.

This is not a phased project.

Given: Areas of proposed construction, pervious and impervious areas

Find: Runoffs for the 5-YR-1H HR event and 10 YR-24 HR event

Using: Criteria of SFWMD Volume IV

All Elevations are in feet and refer to N.G.V.D. 1929

POST-DEVELOPMENT DRAINAGE CALCULATIONS

ZONING INFORMATION		
	ALLOWED	PROVIDED
LOT SIZE		40,075 SF.
LOT COVERAGE 20%	8,015 SF.	8,011 SF.
SECOND FLOOR 10%	4,007 SF.	4,007 SF.
IMP. COVERAGE 45%	18,033 SF	12,144 SF.
SETBACKS:		
FRONT	50'	85'
SIDE (SOUTH)	20'	20'
SIDE (NORTH)	20'	20'
REAR	25'	112'-9"
<u>AREAS</u>		
FIRST FLOOR LIVING	5,972 SF	
SECOND FLOOR LIVING	3,428 SF	
TOTAL LIVING AREA	9,400 SF	
GARAGE	789 SF	
COVERED TERRACE	1,109 SF	
ENTRY PAVILLION	121 SF	
TOTAL UNDER ROOF	11,419 SF	

$$\text{Area}_{\text{drainage}} := 40075 \text{ ft}^2$$

$$\text{Area}_{\text{drainage}} = 0.92 \cdot \text{acre}$$

$$\text{Area}_{\text{impervious}} := 12144 \text{ ft}^2$$

$$\text{Area}_{\text{impervious}} = 0.279 \cdot \text{acre}$$

$$\text{Area}_{\text{septicys}} := 2074 \cdot \text{ft}^2$$

$$\text{Area}_{\text{septicys}} = 0.05 \cdot \text{acre}$$

$$\text{Area}_{\text{pervious}} := \text{Area}_{\text{drainage}} - \text{Area}_{\text{impervious}} - \text{Area}_{\text{septicys}}$$

$$\text{Area}_{\text{pervious}} = 25857 \text{ ft}^2$$

Define percent impervious, Percent_i

$$\text{Percent}_i := \frac{\text{Area}_{\text{impervious}} + \text{Area}_{\text{septicys}}}{\text{Area}_{\text{drainage}}} = 0.35$$

$$\text{Elev}_{\text{avg}} := 11\text{ft} \quad \text{Water_Table}_{\text{ELEV}} := 5.00\text{ft} \quad \text{Water_Table}_{\text{wet}} := (5.00 - 0)\text{ft}$$

$$\text{Depth}_{\text{wtable}} := \text{Elev}_{\text{avg}} - \text{Water_Table}_{\text{wet}} = 6\text{ft}$$

$$\text{DAS} := 10.9 \cdot \text{in}$$

Reduce DAS by 10% for compaction

$$\text{DAS}_r := \text{DAS} \cdot 0.75$$

Calculate soil storage, S

$$\text{DAS}_r = 8.18 \cdot \text{in} \quad (\text{pre development})$$

$$S := \text{DAS}_r \cdot (1 - \text{Percent}_I)$$

$$S = 5.27 \cdot \text{in} \quad (\text{post development})$$

Analyze Industrial Pre-treatment

This tract is not industrial. Pre-treatment is not required in accordance with Section 5.2.2 of the Basis of Review of the SFWMD Volume IV.

Analyze Water Quality (exempt for residential)

The volume of the detention area is determined by taking the average of the top surface area and bottom surface area multiplied by the depth.

$$\text{Volume}_{\text{pond}} := \left[\left(\frac{1930 + 1300}{2} \cdot 0.92 \right) + 1 \cdot \left(\frac{1425 + 913}{2} \cdot 0.92 \right) \right] \cdot \text{ft}^3 = 2561.1 \quad \text{Volume}_{\text{pond}} = 0.71 \cdot \text{acre} \cdot \text{in}$$

$$\text{Volume}_{\text{swale}} := [(2372 + 714) + (173 + 49)] \cdot \frac{1}{2} \cdot 0.5\text{ft}^3 = 0.23 \cdot \text{acre} \cdot \text{in}$$

$$\text{Volume}_{\text{swale}} = 827 \cdot \text{ft}^3$$

$$\text{Vol}_{\text{DryDetention}} := \text{Volume}_{\text{swale}} + \text{Volume}_{\text{pond}} = 3388.28 \text{ft}^3 \quad \text{Vol}_{\text{DryDetention}} = 0.93 \cdot \text{acre} \cdot \text{in}$$

5 YR- 1 H RAIN Storm Calculation: $P5_1 := 3.3\text{in}$

$$Q5_1 := \frac{[(P5_1) - 0.2S]^2}{(P5_1 + 0.8S)} \quad Q5_1 = 0.67 \cdot \text{in}$$

Initial Runoff Volume generated: $V5_1 := Q5_1 \cdot \text{Area}_{\text{drainage}} \quad V5_1 = 0.05 \cdot \text{acre} \cdot \text{ft} \quad V5_1 = 0.62 \cdot \text{acre} \cdot \text{in}$

$$V_{\text{treat}} := V5_1 = 0.62 \cdot \text{acre} \cdot \text{in}$$

$$V_{\text{trench_required}} := V_{\text{treat}} - \text{Vol}_{\text{DryDetention}} = -1149.8 \text{ft}^3 \quad V_{\text{trench_required}} = -0.32 \cdot \text{acre} \cdot \text{in}$$

The negative value means that no trench is required

All Surface runoff for the 5 YR- 1H Rain event will be retained on site that will be provided with a perimeter berm along the property line, except at the driveway entrances that have a inward slope away from the property line.

VoP Storm Water Quality Calculation:

Calculate 1 inch over the entire site

$$V_1 := \text{Area}_{\text{drainage}} \cdot 1 \text{ in}$$

$$V_1 = 0.92 \cdot \text{acre} \cdot \text{in} \quad V_1 = 3339.58 \text{ ft}^3$$

Calculate 2.5 inches times percent impervious

$$V_{2.5} := \text{Area}_{\text{drainage}} \cdot 2.5 \text{ in} \cdot \text{Percent}_I$$

$$V_{2.5} = 0.82 \cdot \text{acre} \cdot \text{in} \quad V_{2.5} = 2962.08 \text{ ft}^3$$

$$V_{\text{criteria}} := \text{if}(V_1 \geq V_{2.5}, V_1, V_{2.5}) = 3339.58 \text{ ft}^3$$

25 YR- 24 H RAIN Storm Water Quantity Calculation:

Pre-Development Runoff (refer to the Survey and attached pre-development runoff calculation)

$$P_{25_{24}} := 9 \text{ in}$$

$$S := 5.684 \cdot \text{in}$$

$$Q_{25} := \frac{[(P_{25_{24}}) - 0.2S]^2}{(P_{25_{24}} + 0.8S)} = 4.56 \cdot \text{in}$$

$$V_{25,\text{pre}} := Q_{25} \cdot \text{Area}_{\text{drainage}} \quad V_{25,\text{pre}} = 15241.98 \text{ ft}^3 \quad V_{25,\text{pre}} = 4.2 \cdot \text{acre} \cdot \text{in}$$

Post-Development Runoff

$$S := 5.14 \cdot \text{in} \quad Q_{25} := \frac{[(P_{25_{24}}) - 0.2S]^2}{(P_{25_{24}} + 0.8S)} = 4.85 \cdot \text{in}$$

$$V_{25,\text{post}} := Q_{25} \cdot \text{Area}_{\text{drainage}} \quad V_{25,\text{post}} = 16186.69 \text{ ft}^3 \quad V_{25,\text{post}} = 4.46 \cdot \text{acre} \cdot \text{in}$$

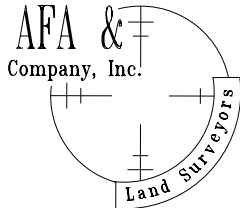
Difference between pre and post runoff volumes

$$\text{Delta}V_{\text{post.minus.pre}} := V_{25,\text{post}} - V_{25,\text{pre}} = 944.71 \text{ ft}^3$$

$$\text{Delta}V_{\text{post.minus.pre}} = 0.26 \cdot \text{acre} \cdot \text{in}$$

$$V_{\text{criteria}} := \text{if}(V_1 \geq \text{Delta}V_{\text{post.minus.pre}}, V_1, \text{Delta}V_{\text{post.minus.pre}}) = 3339.58 \text{ ft}^3$$

$$V_1 = 3339.58 \text{ ft}^3 \quad V_1 = 0.92 \cdot \text{acre} \cdot \text{in} < \text{Vol}_{\text{DryDetention}} = 0.93 \cdot \text{acre} \cdot \text{in} \quad \text{OK}$$



Prepared By:
AFA & COMPANY, INC.
PROFESSIONAL LAND SURVEYORS AND MAPPERS
FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 7498
13050 SW 133RD COURT,
MIAMI, FLORIDA 33186
E-MAIL: AFACO@BELLSOUTH.NET
PH: 305-234-0588
FX: 206-495-0778

Property Information

CERTIFIED ONLY TO:

GS JPD 10635 LLC, a Florida limited liability company
Old Republic National Title Insurance Company
Jeffrey E. Levey, P.A.

PROPERTY ADDRESS:

10635 Southwest 63rd Avenue
Pinecrest, Florida 33156

LEGAL DESCRIPTION:

Lot 2, Block 6, of: " HELMS COUNTRY ESTATES
ADDITION ", according to the Plat Thereof as
Recorded in Plat Book 51, Page 64, of the Public
Records of Miami-Dade County, Florida.

ELEVATION INFORMATION

National Flood Insurance Program
FEMA Elev. Reference to NGVD 1929

Comm Panel 120425
Panel # 0466
Firm Zone: "X"
Date of Firm: 09-11-2009
Base Flood Elev. N/A
F.Floor Elev. 12.20'
Garage Elev. N/A
Suffix: "L"
Elev. Reference to NGVD 1929

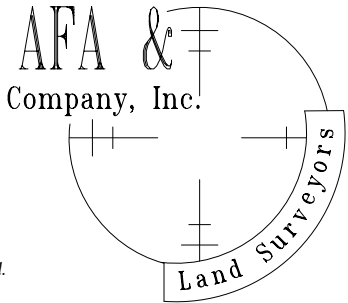
JOB #	24-640
DATE	06-26-2024
PB	51-64

Surveyors Notes:

- #1 Land Shown Hereon were not abstracted for Easement and /or Right of Way Records. The Easement / Right of Way Show on Survey are as per plat of record unless otherwise noted.
#2 Benchmark: Miami-Dade County Public Works Dep. BM Name T-615, BM Locator 5011, Elevation 10.90'
#3 Bearings as Shown hereon are Based upon Southwest 106th Street, N76°13'25"W (Chord)
#4 Please See Abbreviations
#5 Drawn By: YASH
#6 Date: 06-26-2024
#7 Completed Survey Field Date: 06-20-2024
#8 Disc No 2024, Station Surveying Scion
#9 Last Revised:
#10 Zoned Building setback line not determined

Surveyor's Notes:

- #11 The herein captioned Property was surveyed and described based on the Legal Description Provided by Client.
#12 This Certification is Only for the lands as Described, it is not a certification of Title, Zoning, Easements, or Freedom of encumbrances. ABSTRACT NOT REVIEWED.
#13 There may be additional Restrictions not Shown on this survey that may be found in the Public Records of Said County Examination of ABSTRACT OF TITLE will have to be made to determine recorded instruments, if any affecting this property.
#14 Accuracy:
The expected use of land, as classified in the Standards of Practice (5J-17.052), is residential. The minimum relative distance accuracy for this type of boundary survey is 1.0 foot in 10,000.00' feet. the accuracy obtained by measurement and calculation of a closed geometric figure was found to exceed this requirement.
#15 Foundation and / or footing that may cross beyond the boundary lines of the parcel herein described are not shown hereon.
#16 Not valid without the signature and original seal of a Florida Licensed Surveyor and Mapper. additions or deletions to survey maps or reports by other than the signing party or parties.
#17 Contact the appropriate authority prior to any design work on the herein described parcel for building and zoning information.
#18 Underground Utilities are not depicted hereon, contact the appropriate authority prior to any design work or construction on the property herein described. Surveyor shall be notified as to any deviation from utilities shown hereon.
#19 Ownership subject to Opinion of Title.

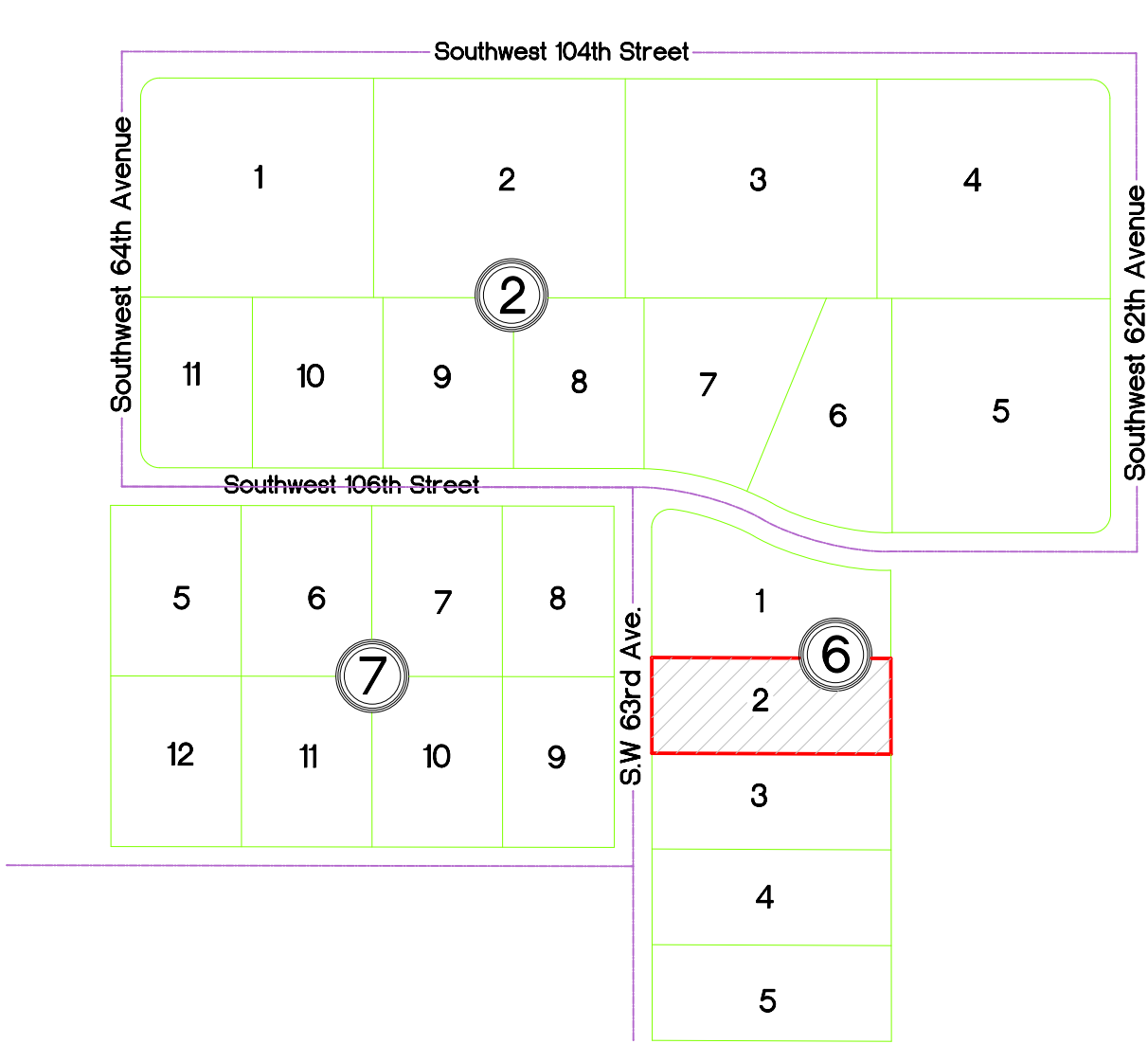


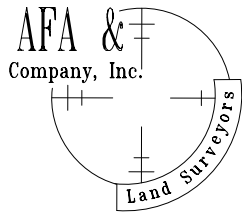
Professional
Surveyors & Mappers LB 7498
13050 S.W. 133rd Court
Miami Florida, 33186
E-mail: afaco@bellsouth.net
Ph: (305) 234-0588
Fax: (206) 495-0778

This certifies that the survey of the property described hereon was made under my supervision & that the survey meets the Standards of Practice set forth by the Florida Board of Professional Land Surveyors & Mappers in Chapter 5J-17.052 of Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.
& That the Sketch hereon is a true and accurate representation thereof to the best of my knowledge and Belief, subject to notes and notations shown hereon.

Armando F. Alvarez
Professional Surveyor & Mapper #5526
State of Florida
Not Valid unless Signed & Stamped with Embossed Seal

Location Sketch N.T.S.





Prepared By:
AFA & COMPANY, INC.
PROFESSIONAL LAND SURVEYORS AND MAPPERS
FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 7498
13050 SW 133RD COURT, MIAMI, FLORIDA 33186
E-MAIL: AFACO@BELLSOUTH.NET
PH: 305-234-0588, FX: 206-495-0778

Abbreviations
of Legend

- AVE. = AVENUE
- ASPH = ASPHALT
- A/W = ANCHORD WIRE
- A/C = AIR CONDITIONER
- BLDG = BUILDING
- B. COR. = BLOCK CORNER
- CAL = CALCULATED
- C.B. = CATCH BASIN
- CLF = CHAIN LINK FENCE
- CONC. = CONCRETE
- COL. = COLUMN
- C.U.P. = CONCRETE UTILITY POLE
- C.L.P. = CONCRETE LIGHT POLE
- CBS = CONCRETE BLOCK STRUCTURE
- C.M.E. = CANAL MAINTENANCE EASEMENT
- D = DELTA
- D/W = DRIVEWAY
- D.M.E. = DRAINAGE & MAINTENANCE EASEMENT
- ENC. = ENCROACHMENT
- E.T.P. = ELECTRIC TRANSFORMER PAD
- F.P.L. = FLORIDA POWER AND LIGHT
- F.H. = FIRE HYDRANT
- F.I.P. = FOUND IRON PIPE
- F.F. = FINISH FLOOR
- DH/F = FOUND DRILL HOLE
- F.R. = FOUND REBAR
- F.D. = FOUND DISC
- F/N = FOUND NAIL
- I/F = IRON FENCE
- L = LENGHT
- L.M.E. = LAKE MAINTENANCE EASEMENT
- L.F.E. = LOWEST FLOOR ELEVATION
- L.P. = LIGHT POLE
- MEAS. = MEASURED
- M.H. = MAN HOLE
- M/L = MONUMENT LINE
- N.G.V.D. = NATIONAL GEODETIC VERTICAL DATUM
- N.T.S. = NOT TO SCALE
- O.E. = OVERHEAD ELECTRIC LINE
- O.L. = ON LINE
- P.C.P. = PERMANENT CONTROL POINT
- P.M. = PARKING METER
- P.C. = POINT OF CURVATURE
- P/W = PARKWAY
- PL. = PLANTER
- P.O.C. = POINT OF COMMENCEMENT
- P.O.B. = POINT OF BEGINNING
- R = RADIUS
- RES = RESIDENCE
- R/W = RIGHT OF WAY
- S.D.H. = SET DRILL HOLE
- S/N = SET NAIL
- S.I.P. = SET IRON PIPE
- SDWLK = SIDEWALK
- ST = STREET
- T = TANGENT
- U.E. = UTILITY EASEMENT
- W/F = WOOD FENCE
- W.V. = WATER VALVE
- W.U.P. = WOOD UTILITY POLE
- = WOOD FENCE
- = IRON FENCE
- = CBS WALL
- = CHAIN LINK FENCE
- = OVERHEAD ELEC.
- = CENTER LINE
- = EASEMENT
- = DENOTES ELEVATIONS
- = BUILDING
- = DISTANCE
- = CATCH BASIN
- = WATER METER
- = W.U.P.
- = STATE ROAD
- = US HIGHWAY
- = INTERSTATE
- = MONITORY WELL

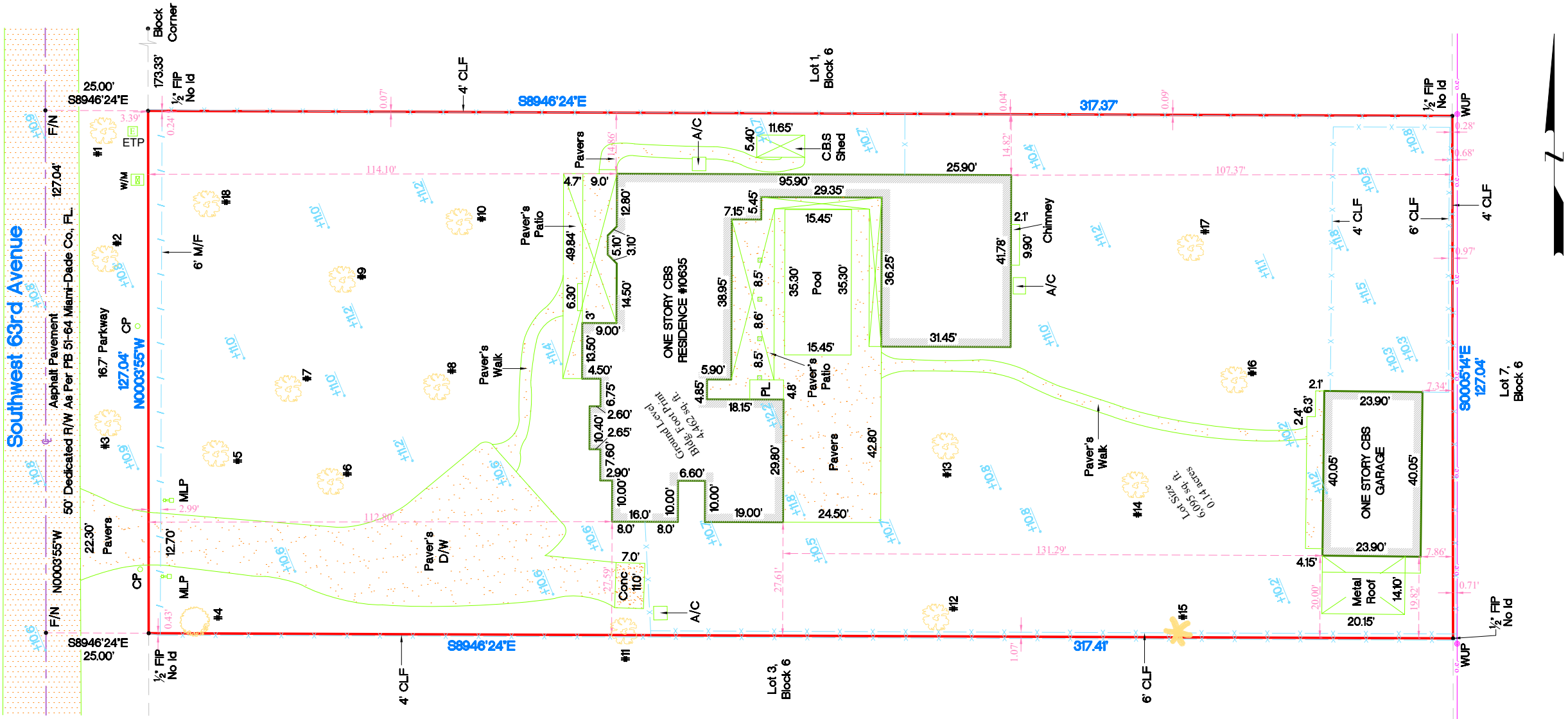
Tree Legend

#	Name	Height	Spread	Dia.
1	Oak	30'	30'	1'
2	Oak	30'	30'	1'
3	Oak	30'	30'	1'
4	Gumbo Limbo	25'	18'	1'
5	Oak	30'	30'	1'
6	Oak	30'	30'	1'
7	Oak	30'	30'	1'
8	Oak	30'	30'	1'
9	Oak	30'	35'	1.5'
10	Oak	35'	30'	1'
11	Oak	40'	30'	1'
12	Oak	30'	30'	1.5'
13	Oak	30'	30'	1'
14	Oak	30'	30'	1'
15	Palm	30'	10'	0.70'
16	Oak	35'	20'	1'
17	Oak	30'	30'	1'
18	Oak	30'	30'	1'

JOB #	24-640
DATE	06-26-2024
PB	51-64

The sketch hereon is a true and Accurate representation thereof to the best of my knowledge and belief, Subject to notes and Notations shown hereon.

Armando F. Alvarez
Professional Surveyor & Mapper #5526
State of Florida
Not Valid unless Signed & Stamped with Embossed Seal



This project proposes the replacement of an existing 2-story residential building with pool, pool deck and pervious brick pavers driveway with a new 2-story house, pool, pool deck and pervious brick pavers driveway. Work to be analyzed in this report is limited to the parcel itself.

The purpose of this report is to provide drainage calculations in accordance with the SFWMD Volume II of the 2014 SFWMD ERP Applicant's Handbook, Rules 40E-4.091(1) and 62-330.010, F.A.C., to achieve the following 2 design criteria.

- 1- The new residence Post-Development runoff $\leq$ Pre-Development runoff
- 2- The Post-Development maximum stage $\leq$ the Pre-Development maximum stage or provide retaining wall or berm along the whole perimeter and trench drain to capture the runoff at the driveway gate.

This is not a phased project.

Given: Areas of proposed construction, pervious and impervious areas

Find: Runoff from the 25 YR-24 HR event.

Using: Criteria of SFWMD Volume IV

All Elevations are in feet and refer to N.G.V.D. 1929

PRE-DEVELOPMENT DRAINAGE CALCULATIONS

Description	Area (SF)	% of Lot	ELEVATIONS	
			From	To
Lot Area	40,075.00	100%		
Green Area	27,758.00	69%	10.2	11
Impervious Area	12,317.00	31%	10.5	12.2
Building	4,462.00		12.2	

$$\text{Area}_{\text{drainage}} := 40075 \text{ ft}^2$$

$$\text{Area}_{\text{drainage}} = 0.92 \cdot \text{acre}$$

$$\text{Area}_{\text{impervious}} := 12211 \text{ ft}^2$$

$$\text{Area}_{\text{impervious}} = 0.28 \cdot \text{acre}$$

$$\text{Area}_{\text{pervious}} := \text{Area}_{\text{drainage}} - \text{Area}_{\text{impervious}}$$

$$\text{Area}_{\text{pervious}} = 0.64 \cdot \text{acre}$$

$$\text{Area}_{\text{Bldg}} = 0.08 \cdot \text{acre}$$

$$\text{Area}_{\text{other_impe}} = 0.2 \cdot \text{acre}$$

Define percent impervious, Percent_i

$$\text{Percent}_i := \frac{\text{Area}_{\text{impervious}}}{\text{Area}_{\text{drainage}}} = 0.3$$

Analyze Industrial Pre-treatment

This tract is not industrial. Pre-treatment is not required in accordance with Section 5.2.2 of the Basis of Review of the SFWMD Volume IV.

Analyze Water Quality (exempt for residential)

Note: No pre-development swale and no detention pond provided

Analyze Provided Storage

$$\text{Elev}_{\text{avg}} := 11\text{ft}$$

$$\text{Water_Table}_{\text{wet}} := (7.00 - 0)\text{ft}$$

$$\text{Water_Table}_{\text{ELEV}} := 7.00\text{ft}$$

$$\text{Depth}_{\text{wtable}} := \text{Elev}_{\text{avg}} - \text{Water_Table}_{\text{wet}} = 4\text{ft}$$

$$\text{DAS} := 10.9 \cdot \text{in}$$

Reduce DAS by 25% for compaction

$$\text{DAS}_r := \text{DAS} \cdot 0.75$$

Calculate soil storage, S

$$\text{DAS}_r = 8.18 \cdot \text{in}$$

$$S := \text{DAS}_r \cdot (1 - \text{Percent}_I)$$

$$S = 5.684 \cdot \text{in}$$

$$\text{P25}_{24} := 9\text{in}$$

$$Q_{25} := \frac{[(\text{P25}_{24}) - 0.2S]^2}{(\text{P25}_{24} + 0.8S)} = 4.56 \cdot \text{in}$$

Pre-Development Runoff

$$V_{25,\text{pre}} := Q_{25} \cdot \text{Area}_{\text{drainage}}$$

$$V_{25,\text{pre}} = 15241.9 \text{ft}^3$$

$$V_{25,\text{pre}} = 4.2 \cdot \text{acre} \cdot \text{in}$$



All State Engineering & Testing Consultants, Inc.

SERVICES TESTING LABORATORIES-ENGINEERS-INSPECTION SERVICES-CHEMISTS-DRILLING-ENVIRONMENTAL
12949 W Okeechobee Rd, Unit 4, Hialeah Gardens, FL 33018 Office: 305-888-3373 Fax: 305-888-7443 info@allstateengineering.com

PERCOLATION TEST USUAL OPEN HOLE - CONSTANT HEAD

DATE:	August 01, 2024	Test Number:	P-1
CLIENT:	Balli- Trautman Architects		
CLIENT ADDRESS:	1533 Sunset Drive, Miami, FL 33143 Suite # 101		
PROJECT:	SFR 11,419 Sqft		
PROJECT ADDRESS:	10635 SW 63 rd Avenue, Pinecrest, FL 33156		
LOCATION OF TEST:	West Side		

INTERVAL	ELAPSED TIME (MINUTES)	GPM
1	1:00	5
2	1:00	5
3	1:00	5
4	1:00	5
5	1:00	5
6	1:00	5
7	1:00	5
8	1:00	5
9	1:00	5
10	1:00	5

DEPTH OF HOLE: 5 feet DIA. OF HOLE: 0.5 feet PERC. RATE: 5.0 GPM
DEPTH OF WATER TABLE BELOW GROUND SURFACE: 4 feet
SATURATED HOLE DEPTH: 1 feet STABILIZED FLOW RATE: 0.011140
k-VALUE: 5.79E-04

SUBSURFACE INVESTIGATION

Depth Below Ground Surface	Soil Description
0'-0" to 3'-0"	Dark Grey Sand with Rocks Pieces
3'-0" to 6'-0"	Tan Sand with Lime Sand Fragments

Field Technician: TH
Typed by: AS

Respectfully Submitted
John Buscher
John Buscher PE # 41844
All State Engineering & Testing
Consultants, Inc.

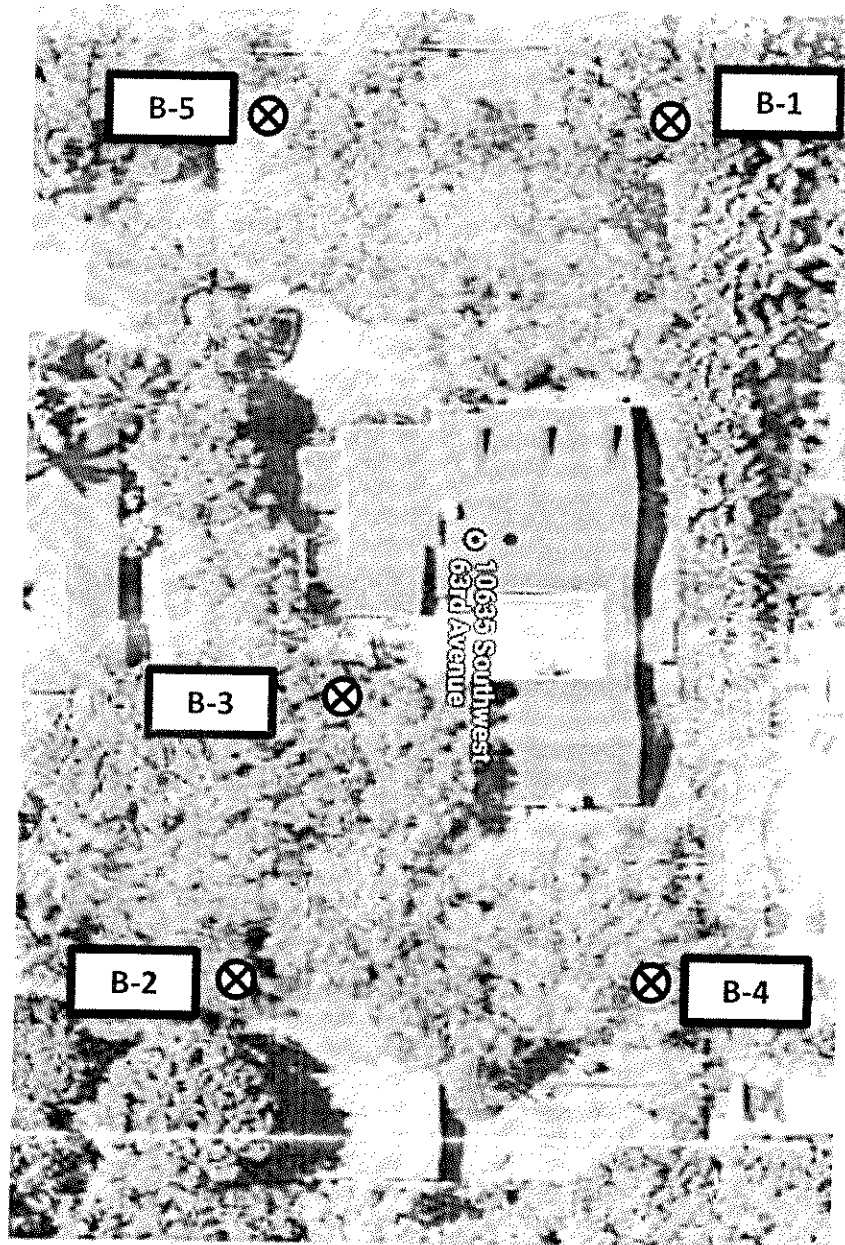


All State Engineering & Testing Consultants, Inc.

TESTING LABORATORIES-ENGINEERS-INSPECTION SERVICES-CHEMISTS-DRILLING-ENVIRONMENTAL SERVICES
12949 West Okeechobee Rd, Hialeah Gardens, Florida 33018 / Phone: 305-888-3373 Fax: 305-888-7443

Boring Location Map

10635 SW 63rd Avenue, Pinecrest, FL 33156



N



Legend

⊗ Boring Location