

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
**DRIVEWAY CONNECTION PERMIT  
FOR ALL CATEGORIES****PART 1: PERMIT INFORMATION**APPLICATION NUMBER: 2023-A-491-00051Permit Category: B - 21 to 600 VTPD

Access Classification: \_\_\_\_\_

Project: SKIPPERS DOCKSIDEPermittee: Michael WalshSection/Mile Post: /

State Road: \_\_\_\_\_

Section/Mile Post: /

State Road: \_\_\_\_\_

**PART 2: PERMITTEE INFORMATION**Permittee Name: Michael WalshPermittee Mailing Address: 1001 East Atlantic Avenue, Suite 202City, State, Zip: Delray Beach, Florida 33483Telephone: (603) 767-0483 ext. \_\_\_\_\_

Engineer/Consultant/or Project Manager: \_\_\_\_\_

Engineer responsible for construction inspection: \_\_\_\_\_

NAME

P.E. #

Mailing Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_ FAX, Mobile Phone, etc. Fax: / Mobile: \_\_\_\_\_**PART 3: PERMIT APPROVAL**

The above application has been reviewed and is hereby approved subject to all Provisions as attached.

Permit Number: 2023-A-491-00051

Department of Transportation

Signature: Reveleno BamberryTitle: PERMITS COORDINATOR IIDepartment Representative's Printed Name Reveleno BamberryTemporary Permit ☐ YES ☒ NO (If temporary, this permit is only valid for 6 months)Special provisions attached ☒ YES ☐ NODate of Issuance: 7/27/2023

If this is a normal (non-temporary) permit it authorizes construction for one year from the date of issuance. This can only be extended by the Department as specified in 14-96.007(6).

See following pages for General and Special Provisions

Approved  
2023-A-491-00051  
Reveleno Bamberry  
7/27/2023

**PART 4: GENERAL PROVISIONS**

1. Notify the Department of Transportation Maintenance Office at least 48 hours in advance of starting proposed work.  
Phone: 7863146067 , Attention: Paul Donovan
2. A copy of the approved permit must be displayed in a prominent location in the immediate vicinity of the connection construction.
3. Comply with Rule 14-96.008(1), F.A.C., Disruption of Traffic.
4. Comply with Rule 14-96.008(7), F.A.C., on Utility Notification Requirements.
5. All work performed in the Department's right of way shall be done in accordance with the most current Department standards, specifications and the permit provisions.
6. The permittee shall not commence use of the connection prior to a final inspection and acceptance by the Department.
7. Comply with Rule 14-96.003(3)(a), F.A.C., Cost of Construction.
8. If a Significant Change of the permittee's land use, as defined in Section 335.182, Florida Statutes, occurs, the Permittee must contact the Department.
9. Medians may be added and median openings may be changed by the Department as part of a Construction Project or Safety Project. The provision for a median might change the operation of the connection to be for right turns only.
10. All conditions in NOTICE OF INTENT WILL APPLY unless specifically changed by the Department.
11. All approved connection(s) and turning movements are subject to the Department's continuing authority to modify such connection(s) or turning movements in order to protect safety and traffic operations on the state highway or State Highway System.
12. **Transportation Control Features and Devices in the State Right of Way.** Transportation control features and devices in the Department's right of way, including, but not limited to, traffic signals, medians, median openings, or any other transportation control features or devices in the state right of way, are operational and safety characteristics of the State Highway and are not means of access. The Department may install, remove or modify any present or future transportation control feature or device in the state right of way to make changes to promote safety in the right of way or efficient traffic operations on the highway.
13. The Permittee for him/herself, his/her heirs, his/her assigns and successors in interest, binds and is bound and obligated to save and hold the State of Florida, and the Department, its agents and employees harmless from any and all damages, claims, expense, or injuries arising out of any act, neglect, or omission by the applicant, his/her heirs, assigns and successors in interest that may occur by reason of this facility design, construction, maintenance, or continuing existence of the connection facility, except that the applicant shall not be liable under this provision for damages arising from the sole negligence of the Department.
14. The Permittee shall be responsible for determining and notify all other users of the right of way.
15. Starting work on the State Right of Way means that I am accepting all conditions on the Permit.

Approved  
2023-A-491-00051  
Reveleno Bamberry  
7/27/2023

**PART 5: SPECIAL PROVISIONS**

NON-CONFORMING CONNECTIONS: ☐ YES ☐ NO

If this is a non-conforming connection permit, as defined in Rule Chapters 14-96 and 14-97, then the following shall be a part of this permit.

1. The non-conforming connection(s) described in this permit is (are) not permitted for traffic volumes exceeding the Permit Category on page 1 of this permit, or as specified in "Other Special Provisions" below.
2. All non-conforming connections will be subject to closure or relocation when reasonable access becomes available in the future.

OTHER SPECIAL PROVISIONS:

A Pre Construction meeting will be needed before any work may begin in FDOR R/W. Please see attached Special Instructions

**PART 6: APPEAL PROCEDURES**

You may petition for an administrative hearing pursuant to sections 120.569 and 120.57, Florida Statutes. If you dispute the facts stated in the foregoing Notice of Intended Department Action (hereinafter Notice), you may petition for a formal administrative hearing pursuant to section 120.57 (1), Florida Statutes. If you agree with the facts stated in the Notice, you may petition for an informal administrative hearing pursuant to section 120.57(2), Florida Statutes. You must file the petition with:

Clerk of Agency Proceedings  
Department of Transportation  
Haydon Burns Building  
605 Suwannee Street, M.S. 58  
Tallahassee, Florida 32399-0458

The petition for an administrative hearing must conform to the requirements of Rule 28-106.201(2) or Rule 28-106.301(2), Florida Administrative Code, and be filed with the Clerk of Agency Proceedings by 5:00 p.m. no later than 21 days after you received the Notice. The petition must include a copy of the Notice, be legible, on 8 1/2 by 11 inch white paper, and contain:

1. Your name, address, telephone number, any Department of Transportation identifying number on the Notice, if known, the name and identification number of each agency affected, if known, and the name, address, and telephone number of your representative, if any, which shall be the address for service purposes during the course of the proceeding.
2. An explanation of how your substantial interests will be affected by the action described in the Notice;
3. A statement of when and how you received the Notice;
4. A statement of all disputed issues of material fact. If there are none, you must so indicate;
5. A concise statement of the ultimate facts alleged, including the specific facts you contend warrant reversal or modification of the agency's proposed action, as well as an explanation of how the alleged facts relate to the specific rules and statutes you contend require reversal or modification of the agency's proposed action;
6. A statement of the relief sought, stating precisely the desired action you wish the agency to take in respect to the agency's proposed action.

If there are disputed issues of material fact a formal hearing will be held, where you may present evidence and argument on all issues involved and conduct cross-examination. If there are no disputed issues of material fact an informal hearing will be held, where you may present evidence or a written statement for consideration by the Department.

Mediation, pursuant to section 120.573, Florida Statutes, may be available if agreed to by all parties, and on such terms as may be agreed upon by all parties. The right to an administrative hearing is not affected when mediation does not result in a settlement.

Your petition for an administrative hearing shall be dismissed if it is not in substantial compliance with the above requirements of Rule 28-106.201(2) or Rule 28-106.301(2), Florida Administrative Code. If you fail to timely file your petition in accordance with the above requirements, you will have waived your right to have the intended action reviewed pursuant to chapter 120, Florida Statutes, and the action set forth in the Notice shall be conclusive and final.

Approved  
Reveleno Bamberry  
7/27/2023

FDOT Pay Item #	July 25, 2023 Description	Unit of Measure	A. J. Hydro Engineering		
			Quantity	Unit Price	Total
	Paving, Drainage, & Sidewalk				
0120 1	Demo Existing Driveways	SY	175	100.00	17,500
0120 1	Regular Excavation	CY	100	7.31	731
0160 4	Type B Stabilization	SY	700	2.70	1,890
285710	Base Group #10	SY	650	13.70	8,905
0520 1 10	Type "F" Curb & Gutter	LF	121	24.58	2,974
0522 1	Concrete Sidewalk, 4" Thick	SY	135	47.68	6,437
			0	0.00	0
	Pavement Markings		0	0.00	0
			0	0.00	0
0700 1 11	Single Post Sign, Ground Mount, Up to 12 SF	AS	4	359.35	1,437
0711 11125	24" Stop Bar, White Solid Thermoplastic Pavement Markings	LF	46	4.16	191
0711 11141	2' - 4' White Skip, 6", Thermoplastic Pavement Markings	GM	0.145	1582.19	229
0711 11170	Thermoplastic Standard White Arrow	EA	2	53.78	108
			0	0.00	0
	Total Construction Cost:				\$40,403
<b>Miscellaneous</b>					
	Mobilization (9% of Construction Total)	%	9%	\$40,403	3,636
0102 1	Maintenance of Traffic (10% of Construction Total)	%	10%	\$40,403	4,040
		%	0	\$0	0
Total:					\$7,677
<b>Grand Total:</b>					<b>\$48,079</b>

Howard  
E Jablon

Digitally signed  
by Howard E  
Jablon  
Date: 2023.07.25  
17:13:19 -04'00'

Approved  
2023-A-491-00051  
Reveleno Bamberry  
7/27/2023



## Florida Department of Transportation

RON DESANTIS  
GOVERNOR

605 Suwannee Street  
Tallahassee, FL 32399-0450  
June 7, 2023

JARED W. PERDUE, P.E.  
SECRETARY

THIS PRE-APPLICATION LETTER IS VALID UNTIL – June 7, 2024  
**THIS LETTER IS NOT A PERMIT APPROVAL**

Mr. Howard Jablon, P. E.  
A. J. Hydro Engineering, Inc.  
5932 NW 73rd Court, Parkland, FL 33067

Dear Mr. Howard Jablon, P. E.:

RE: Pre-application Review for **Category B Driveway**, Pre-application Meeting Date: **June 1, 2023**

Broward County - Hollywood; SR A1A; Sec. # 86030000; MP: 3.5; Access Class - 7;

Posted Speed - 35; SIS - 0; FDOT Ref. Project: FM 441733.1-Larry Hymowitz-URBAN CORRIDOR PLANNING

### Request:

**Driveway 1: Right-in only access on the west side of SR A1A, approximately 19 feet from south of the north property line.**

**Close existing driveway 2 on the west side of SR A1A, approximately 150 feet south of Taft Street.**

**Close existing driveway 3 on the west side of SR A1A, approximately 220 feet south of Taft Street.**

**Close existing driveway 4 on the west side of SR A1A, approximately 310 feet south of Taft Street.**

**Driveway 5: Right-out only access on the west side of SR A1A, approximately 24 feet from north of the south property line.**

### SITE SPECIFIC INFORMATION

Project Name & Address: **Skipper's Dockside – 2308 North Ocean Drive, Hollywood, FL 33019**

Property Owner: **Oceanside Marina, LLC**; Parcel Size: **1.37 Acres**

Development Size: **4,600 sf Restaurant and marina**

### REQUEST APPROVED/DISAPPROVED

This decision is based on your presentation of the facts, site plan and survey - please see the conditions and comments below. You may choose to review this concept further with the District Access Management Review Committee (AMRC).

### Conditions:

- **A minimum driveway length of 25 feet, as measured from the ultimate right-of-way line to the first conflict point shall be provided.**
- **Driveway 1 shall be channelized with striping and signs to limit access to ingress only.**
- **Driveway 2 shall be channelized with striping and signs to limit access to egress only.**

### Comments:

- All driveways not approved in this letter must be fully removed and the area restored.
- A Drainage Permit is required for any stormwater impacts within FDOT right-of-way (i.e. increased runoff or reduction of existing storage).
- The applicant shall donate property to the Department if right-of-way dedication is required to implement the improvements.
- Dimensions between driveways are measured from the near edge of pavement to near edge of pavement and for median openings are measured from centerline to centerline unless otherwise indicated.

The purpose of this Pre-Application letter is to document the conceptual review of the approximate location of driveway(s) to the State Highway System and to note required improvements, if any. This letter shall be submitted with any further reviews and for permitting. The Department's personnel shall review permit plans for compliance with this letter as well as current Department standards and/or specifications. Final design must consider the existing roadway profile and any impacts to the existing drainage system. **Note, this letter does not guarantee permit approval.** The permit may be denied based on the review of the submitted engineering plans. Be aware that any approved median openings may be modified (or closed) in the future, at the sole discretion of the Department. For right-of-way dedication requirements go to: <https://osp.fdot.gov>; click on Statewide Permit News; Scroll down to District 4; Scroll down to Additional Information and Examples and choose Right-of-way Donations/Dedications.

Please contact the Access Management Manager - Tel. # 954-777-4363 or e-mail: [D4AccessManagement@dot.state.fl.us](mailto:D4AccessManagement@dot.state.fl.us) with any questions regarding the Pre-Approval Letter.

Sincerely,

Carina Harvey  
District Access Management Manager

cc: Anthony Beecher

File: S:\Transportation Operations\Traffic Operations\Access Management\1. Pre-Apps and Variance\2023-06-01 & AMRC\Pre-App 01. 86030000 MP 3.5 SR A1A\_Skipper's Dockside\Pre-App 01. 86030000 MP 3.5 SR A1A\_Skipper's Dockside.docx

[www.dot.state.fl.us](http://www.dot.state.fl.us)

SKIPPERS DOCKSIDE

2023.07.20

THE FOLLOWING COMMERCIAL GREEN BUILDING PRACTICES WILL BE PROVIDED/ADOPTED:

1. Central air conditioner of 18 SEER or higher.

PA: Central AC will be higher rated AC.

2. *Energy efficient (Low e) windows.* All windows shall conform to the Energy Star rating criteria for South Florida as approved by the NFRC (National Fenestration Rating Council).

PA: All windows shall be high-energy star rating.

3. *Energy efficient doors.* All doors shall conform to the Energy Star rating criteria for South Florida.

PA: All Doors shall be high-energy star rating.

4. Programmable thermostats.

PA: Will have energy Star rated thermostats.

5. Dual flush toilets. These toilets when flushed use less than one gallon to flush liquid and 1.6 gallons or less for solids (USGBC). Plans shall indicate dual flush toilet. System must be verified by plumbing inspector at final inspection.

PA: Will not fit in pre made restroom the type of toilet used is too wide for bathroom stalls.

6. At least 80% of plants, trees and grasses per the South Florida Water Management District recommendations (latest edition). Landscape plan, reviewed and approved by a landscape architect, shall be submitted with permit application. Landscaping shall be verified by inspection prior to final certificate of occupancy.

PA: Will apply to landscape plans

7. All energy-efficient outdoor lighting. Suggested lights for outdoor spaces include fluorescent bulbs and fixtures with electronic ballasts (more efficient than magnetic types), low pressure sodium or mercury vapor, photovoltaic systems, LED lighting and low voltage landscape lights that run on a timer. All energy-efficient outdoor lighting shall be verified by electrical inspector at final inspection.

PA: All outdoor lighting will be energy efficient.

8. Energy performance at least 10% more efficient than standard established by ASHRAE (latest edition). Calculations shall be submitted with permit application.

PA: Will comply with

9. MERV of air filters on all air conditioning units at least 8 with anti-microbial agent. MERV of at least 8 shall be verified by mechanical inspector on site at final inspection

PA: Will apply MERV air filters

10. Tankless water heater in lieu of a standard tank water heater. Documentation of energy savings must be provided. Product approvals should be provided with plans and shall indicate total energy demand. Tankless water heater shall be shown on plans and shall pass all required inspections.

PA: Already applied to the pre made restrooms

11. Electric vehicle-charging-station infrastructure.

PA: Applied to site plan (2 charging stations)



**HOLLYWOOD BEACH LLC**

1001 East Atlantic Avenue  
Suite 202  
Delray Beach, Florida 33483

July 19, 2023

Oceanside Marina LLC  
1001 East Atlantic Avenue  
Suite 202  
Delray Beach, Florida 33483


Re: Authorization of Parcel 514212020021 (the "Southern Parcel") to  
encroach upon Parcel 514212020020 (the "Northern Parcel")

Gentlemen:

This letter authorizes Oceanside Marina LLC, the owner of the Southern Parcel, to encroach upon the contiguous Northern Parcel owned by Hollywood Beach LLC in connection with its marina operations conducted from time to time at the Southern Parcel including such encroachment upon and into the Northern Parcel as is necessary or desirable to accommodate the requirements of Oceanside Marina LLC in connection with the docking of a vessel northward of the common boundary line between the Southern Parcel and the Northern Parcel.

If you require any additional documentation to evidence the authorization which is the subject matter of this letter, please do not hesitate to call or write.

Yours truly,  
HOLLYWOOD BEACH LLC,  
a Florida limited liability company

By:   
Manager





Geotechnical & Construction Materials  
Engineering, Testing, & Inspection  
Environmental Services

Offices throughout the state of Florida

[www.nuttingengineers.com](http://www.nuttingengineers.com) [info@nuttingengineers.com](mailto:info@nuttingengineers.com)

July 14, 2022

Mr. Thomas Walsh  
North-South Corp.  
1001 E. Atlantic Avenue, Suite 202  
Delray Beach, FL 33483

Subject: Report of Exfiltration Tests  
**Skippers Dockside Marina**  
2308 N. Ocean Drive  
Hollywood, FL 33019

Dear Mr. Walsh:

Nutting Engineers of Florida, Inc. has performed two exfiltration tests at the above referenced location. This report presents a brief description of the field procedures, and the results of the exfiltration tests.

Two exfiltration tests were performed to a depth of six feet below existing grade in accordance with South Florida Water Management District (SFWMD) criteria for 'Usual Open-Hole' conditions.

Prior to starting the test, a 6-inch diameter hole was augured to the test depth to determine the depth to groundwater and to examine subgrade soils. After establishing the above parameters, the hole was stabilized by a full-length perforated PVC pipe in accordance with South Florida Water Management District specifications. Water was then pumped into the hole maintaining a constant water level at the ground surface. The stabilized flow rates were recorded in one-minute intervals for a total of 10 minutes.

The exfiltration tests revealed the hydraulic conductivity ('K'-value) of the soil of  $6.25 \times 10^{-5}$  cubic feet per second per square foot per foot of head. Soil descriptions and flow rates for the tests are shown on the attached exfiltration summary sheets. We note that the water table was encountered at a depth of approximately three feet. This testing was performed to determine the hydraulic conductivity value only. Soil information shall not be used for other purposes.

We appreciate the opportunity to provide these services for you. Should you have any questions, or if we can be of further assistance, please feel free to contact us.

Respectfully Submitted:  
**NUTTING ENGINEERS OF FLORIDA, INC.**

Stephen J. Mrachek, P.E. #70784  
Senior Engineer



## Report of Exfiltration Test

Client:	<u>North-South Corp.</u>	Order No	<u>2663.1</u>
Project:	<u>Skippers Dockside Marina</u>	Report No	<u>1</u>
Location:	<u>2308 N. Ocean Drive</u>	Date:	<u>7/14/22</u>
	<u>Hollywood, FL 33019</u>		
Test:	<u>Usual Open Hole Exfiltration Test</u>		
Surface		Water table from ground	
Elevation:	<u>Approx. @ Road Crown</u>	surface:	<u>2.92'</u>
Casing			
Diameter:	<u>6"</u>		
Tube Depth:	<u>6'</u>		

Hydraulic Conductivity (K) =  $6.25 \times 10^{-5}$  cfs/ft<sup>2</sup>ft.head

EXFIL NO. 1		One Minute Increme	Pump Rate in Gal/Min
Sample Location: <u>Approx. as located on site plan.</u>  Material:    0'- 0.17'    ASPHALT 0.17'- 0.5'    Lt. brown LIMESTONE FRAGMENTS 0.5'- 6'    Lt. brown coarse SAND and SHELL		1	0.6
		2	0.6
		3	0.6
		4	0.6
		5	0.6
		6	0.6
		7	0.6
		8	0.6
		9	0.6
		10	0.6

## Report of Exfiltration Test

Client: North-South Corp. Order No 2663.1  
 Project: Skippers Dockside Marina Report No 2  
 Location: 2308 N. Ocean Drive Date: 7/14/22  
Hollywood, FL 33019  
 Test: Usual Open Hole Exfiltration Test  
 Surface Elevation: Approx. @ Road Crown Water table from ground surface: 2.92'  
 Casing Diameter: 6"  
 Tube Depth: 6'

Hydraulic Conductivity (K) =  $6.25 \times 10^{-5}$  cfs/ft<sup>2</sup>ft.head

EXFIL NO. 2			One Minute Increme	Pump Rate in Gal/Min
Sample Location: <u>Approx. as located on site plan.</u>  Material: 0'- 0.17' ASPHALT 0.17'- 0.5' Lt. brown LIMESTONE FRAGMENTS 0.5'- 6' Lt. brown coarse SAND and SHELL			1	0.6
			2	0.6
			3	0.6
			4	0.6
			5	0.6
			6	0.6
			7	0.6
			8	0.6
			9	0.6
			10	0.6



## LIMITATIONS OF LIABILITY

### WARRANTY

We warrant that the services performed by Nutting Engineers of Florida, Inc. are conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession in our area currently practicing under similar conditions at the time our services were performed. **No other warranties, expressed or implied, are made.** While the services of Nutting Engineers of Florida, Inc. are a valuable and integral part of the design and construction teams, we do not warrant, guarantee or insure the quality, completeness, or satisfactory performance of designs, construction plans, specifications we have not prepared, nor the ultimate performance of building site materials or assembly/construction.

### SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings; test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report. This information is represented in the soil boring logs and/or a drawing. The location and elevation of the borings should be considered accurate only to the degree inherent with the method used and may be approximate.

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata as encountered and immediate depth to water data. The log represents conditions recorded specifically at the location where and when the boring was made. Site conditions may vary through time as will subsurface conditions. The boundaries between different soil strata as encountered are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling, nature and consistency of the respective strata. Substantial variation between soil borings may commonly exist in subsurface conditions. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors. Water level data provided on soil boring logs shall not be relied upon for groundwater based design or construction considerations.

### LABORATORY AND FIELD TESTS

Tests are performed in *general* accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test boring report indicates the measurements and data developed at each specific test location.

### ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it shall not be utilized to determine the cost of construction nor to stand alone as a construction specification. Contractors shall verify subsurface conditions as may be appropriate prior to undertaking subsurface work.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations commonly exist between boring locations. Such variations may not become evident until construction. Test pits sometimes provide valuable supplemental information that derived from soil borings. If variations are then noted, the geotechnical engineer shall be contacted in writing immediately so that field conditions can be examined and recommendations revised if necessary.

The geotechnical report states our understanding as to the location, dimensions and structural features proposed for the site. **Any significant changes of the site improvements or site conditions must be communicated in writing to the geotechnical engineer immediately** so that the geotechnical analysis, conclusions, and recommendations can be reviewed and appropriately adjusted as necessary.

### CONSTRUCTION OBSERVATION

Construction observation and testing is an important element of geotechnical services. The geotechnical engineer's field representative (G.E.F.R.) is the "owner's representative" observing the work of the contractor, performing tests and reporting data from such tests and observations. **The geotechnical engineer's field representative does not direct the contractor's construction means, methods, operations or personnel.** The G.E.F.R. does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The G.E.F.R. is responsible for his/her safety, but has no responsibility for the safety of other personnel at the site. The G.E.F.R. is an important member of a team whose responsibility is to observe and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications. The enclosed report may be relied upon solely by the named client.

# SOIL AND ROCK CLASSIFICATION CRITERIA

## SAND/SILT

N-VALUE (bpf)	RELATIVE DENSITY
0 – 4	Very Loose
5 – 10	Loose
11 – 29	Medium
30 – 49	Dense
>50	Very dense
100	Refusal

## CLAY/SILTY CLAY

N-VALUE (bpf)	UNCONFINED COMP. STRENGTH (tsf)	CONSISTENCY
<2	<0.25	v. Soft
2 – 4	0.25 – 0.50	Soft
5 – 8	0.50 – 1.00	Medium
9 – 15	1.00 – 2.00	Stiff
16 – 30	2.00 – 4.00	v. Stiff
>30	>4.00	Hard

## ROCK

N-VALUE (bpf)	RELATIVE HARDNESS	ROCK CHARACTERISTICS
$N \geq 100$	Hard to v. hard	Local rock formations vary in hardness from soft to very hard within short vertical and horizontal distances and often contain vertical solution holes of 3 to 36 inch diameter to varying depths and horizontal solution features. Rock may be brittle to split spoon impact, but more resistant to excavation.
$25 \leq N \leq 100$	Medium hard to hard	
$5 \leq N \leq 25$	Soft to medium hard	

## PARTICLE SIZE

Boulder	>12 in.
Cobble	3 to 12 in.
Gravel	4.76 mm to 3 in.
Sand	0.074 mm to 4.76 mm
Silt	0.005 mm to 0.074 mm
Clay	<0.005 mm

## DESCRIPTION MODIFIERS

0 – 5%	Slight trace
6 – 10%	Trace
11 – 20%	Little
21 – 35%	Some
>35%	And

Major Divisions			Group Symbols	Typical names	Laboratory classification criteria				
Coarse-grained soils (More than half of material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (Little or no fines)	GW	Well-graded gavels, gravel-sand mixtures, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3				
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	Not meeting all gradation requirements for GW				
		Gravels with fines (Appreciable amount of fines)	GW*	d u	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are <i>borderline</i> cases requiring use of dual symbols.		
			GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits above "A" line with P.I. greater than 7				
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3				
			SP	Poorly graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for SW				
		Sands with fines (Appreciable amount of fines)	SM*	d u	Silty sands, sand-silt mixtures	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in hatched zone with P.I. between 4 and 7 are <i>borderline</i> cases requiring use of dual system.		
			SC	Clayey sands, sand-clay mixtures	Atterberg limits above "A" line with P.I. more than 7				
			Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than five percent.....GW, GP, SW, SP More than 12 percent.....GW, GC, SW, SC 5 to 12 percent..... <i>Borderline</i> cases requiring dual systems**						
Fine-grained soils (More than half of material is smaller than No. 200 sieve size)	Silt and clays (Liquid limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity						
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy, clays, silty clays, lean clays						
		OL	Organic silts and organic silty clays of low plasticity						
	Silt and clays (Liquid limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts						
		CH	Inorganic clays or high plasticity, fat clays						
		OH	Organic clays of medium to high plasticity, organic silts						
	Highly organic soils	PT	Peat and other highly organic soils						

## Howard Jablon

---

**Subject:** FW: [EXT]Re: Skipper's Dockside

**From:** Jorge Castano [<mailto:JCastano@hollywoodfl.org>]

**Sent:** Wednesday, July 20, 2022 8:19 AM

**To:** Keith Poliakoff

**Cc:** Leslie Del Monte; Howard Jablon; Chris Clinton

**Subject:** RE: [EXT]Re: Skipper's Dockside

Good morning Mr. Poliakoff,

Thank you for the new drawings but I believe there are still some issues.

It appears that the minimum 50' required to reach the structure is met.

However, I see that the road narrows from 22' to 12'. That's too narrow. A true fire department access road shall have an

unobstructed width of not less than 20 ft. (NFPA 1:18.2.3.5.1.1). Since you are proposing a one way fire department access road,

as the AHJ, I will allow the fire department access road to be reduced to 15' but no less.

I also don't see the detail of the turning radius to access the property. The fire apparatus currently in service require a turning

radius of 28'.5" interior radius, 38' centerline of the turning radius, and 45' exterior.

The design professional, Mr. Howard Jablon, P.E., can find all the requirements needed to meet the code in NFPA 1, 2018 Edition - Chapter 18 Fire Department Access and Water Supply.

Respectfully,

Jorge Castano, CFI-1, CFPE, CFPS

Fire Marshal/Division Chief

Hollywood Fire Rescue and Beach Safety Dept.

2741 Stirling Rd.

Hollywood, FL 33312

954-967-4404

---

**From:** Keith Poliakoff <[kpoliakoff@govlawgroup.com](mailto:kpoliakoff@govlawgroup.com)>

**Sent:** Tuesday, July 19, 2022 11:21 PM

**To:** Jorge Castano <[JCastano@hollywoodfl.org](mailto:JCastano@hollywoodfl.org)>

**Cc:** Leslie Del Monte <[LDELMONTE@hollywoodfl.org](mailto:LDELMONTE@hollywoodfl.org)>; Howard Jablon <[ajhydro@bellsouth.net](mailto:ajhydro@bellsouth.net)>

**Subject:** [EXT]Re: Skipper's Dockside

Sorry had typo.

At PACO you advised that you were worried about the distance to the shade structure on the water. We changed the access, put auto turn on it, and got you within 38 feet. Please let us know if this works.

Regards, Keith





**Keith M. Poliakoff, Esq.**

kpoliakoff@govlawgroup.com  
O: 954.909.0590 | M: 917.532.6492

200 S. Andrews Ave. | Suite 601 | Fort Lauderdale, FL 33301  
Admitted in FL and NY

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---

**Jorge Castano, CFI-1, CFPE, CFPS**

Fire Marshal/Division Chief  
City of Hollywood  
Fire Rescue and Beach Safety  
2741 Stirling Road  
P.O. Box 229045  
Hollywood, FL 33312-6505  
Office: 954-967-4404  
E-mail: [JCastano@hollywoodfl.org](mailto:JCastano@hollywoodfl.org)



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**SURFACE WATER MANAGEMENT**  
**APPLICATION FOR**

***SKIPPER'S DOCKSIDE***

*PREPARED BY*

*A. J. HYDRO ENGINEERING, Inc.*  
*5932 NW 73<sup>RD</sup> COURT*  
*PARKLAND, FLORIDA 33067*

*JUNE 15, 2023*

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**CERTIFICATION**

---

Howard E. Jablon, P.E.  
REGISTRATION # 47514

Revised:

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### **Attachments:**

Stormwater Plans  
Stage Storage Tables  
Runoff Calculations  
Exfiltration Trench Calculations  
Geotechnical Data



## **INTRODUCTION**

The purpose of this report is to describe the surface water management system for the proposed 1.370 acre **Skipper's Dockside** project. The project is located 2308 North Ocean Drive in the City of Hollywood, Broward County. It is on the west side of Ocean Boulevard (A1A) about one mile north of Hollywood Boulevard (see attached location map on the cover sheet). This project is not located within a local water management district.

The existing property consists of an upland and surface water portion. The upland portion is considered from the seawall east and is (0.824 Ac). Everything west of the seawall is surface water (0.546 Ac).

The property previously consisted of an Office Building and parking lot.

The proposed project will be a Tiki restaurant and bar with a parking lot. No principal buildings are proposed. The existing building has already been demolished. The existing parking lot shall be re-paved with minor adjustments, as necessary, to serve the new vehicular circulation pattern. There will be a semi-permanent bathroom and food service container, along with storage containers.

The required pre-treatment retention shall be provided in an exfiltration trench and dry retention area. The project will be considered as one basin. All of the site runoff will be directed into the proposed exfiltration trench and dry retention area either by overland flow or through storm sewers.

As described below, per my discussion with Johana Narvaez, the upland portion of the project shall be required to retain the first half inch of runoff. The remaining water quality is provided in the portion of the property that is surface water. The calculations shall show that there are no net increases in the pre-post stages for the 100 year storm.

There is an existing storm sewer that connects the existing parking lot to the surface water portion of the property located on the west side of the seawall. Once the pre-treatment has been retained, the runoff shall overflow the control structure and discharge into the Intracoastal.

## **EXISTING TOPOGRAPHY**

The upland portion of the site is currently paved, see the included existing conditions survey. The building was +/- 5,125 sf and has since been demolished. The finished floor elevation was 6.11 NAVD (7.61 NGVD). There is an existing, relatively new, seawall separating the upland and surface water portions of the site. The existing topography of the site varies slightly between elevations 1.75 NAVD and 4.4 NAVD. Included in this application is the topographic and existing conditions survey for this site.

## **ENVIRONMENTAL CONDITIONS:**

There do not appear to be any environmental concerns with the upland portion of this site. The applicant has engaged a coastal marine consultant to obtain the applicable permits for the proposed Marina, such as the ACOE. There may be environmentally sensitive sea grasses within the surface water portion of the site to the Intracoastal Waterway.

## **SITE DATA**

The proposed **Skipper's Dockside** project has a total of 1.370 acres. A portion of the property is directly connected to the Intracoastal Waterway. So the total drainage area of the upland portion of the property is 0.824 acres as noted below. The pervious/impervious breakdown for the project is shown below:

### PERVIOUS / IMPERVIOUS AREA

Marina (Surface Water + Docks)	= <u>23,776 sf</u>	= <u>0.546 Acres</u>
<b>Total Drainage Area = 1.37 Acres (Total) - 0.546 (Marina) = 0.824 Acres Drainage Area</b>		
Buildings (Upland Only, Does not include Tiki Bar)	= <u>982 ft<sup>2</sup></u>	
Impervious Asphalt/Concrete Drive	= <u>19,426 ft<sup>2</sup></u>	
Impervious sidewalk	= <u>3,206 ft<sup>2</sup></u>	
<b>TOTAL AREA IMPERVIOUS</b>	= <u>23,614 ft<sup>2</sup></u>	= <u>0.542 Acres</u>
<b>TOTAL AREA PERVIOUS</b>	<b>= 0.824 - 0.542 = <u>0.282 Acres</u></b>	

### ½" DRY PRE-TREATMENT CALCULATIONS

The following calculation will establish the ½" dry pre-treatment volume for the site. The ½" dry pre-treatment must be retained on-site prior to any discharge into the Intracoastal Waterway. The dry pretreatment is based on the upland developed area only, that is the area west of the existing seawall.

- A) Rainfall = 0.5"  
Area = 0.824 Acres = 35,888 sf
- ½" Dry Pre-treatment Volume = (0.5")(0.824 Acres)(1 ft./12")
- ½" Dry Pre-treatment Volume = **0.0343 Ac-Ft = 1,496 cf**

Thus the ½" Dry Pre-treatment Volume of **0.0343 Ac-Ft** must be retained prior to any discharge over the control structure weir. Per the attached stage storage table, sufficient volume has been retained on-site within the dry retention / swale areas and an exfiltration trench.

Per the attached stage storage calculations, the pre-treatment has been provided at elevation 2.50 NAVD. So a control structure has been designed with a baffle set at elevation **2.50 NAVD**.

### WATER QUALITY CALCULATIONS

Based on my discussions with Johana, the full water quality treatment can be provided with the surface water portion of the site. Below are the water quality volume calculations.

The following calculation will establish the design water quality volume for the site. The water quality volume to be retained is the larger of the following two calculations:

- A) Rainfall = 1"  
Area = 1.370 Acres
- Water Quality = (1")(1.370 Acres)(1 ft./12")
- Water Quality Volume = 0.114 Ac-ft



**Water Quality Volume = 0.069 Ac-ft**

B) Rainfall = 2.5" x [Percentage Impervious]

Total Drainage Area = 1.370 Acres  
Surface Water Area = 0.546 Acres  
Roof = 982 ft<sup>2</sup> = 0.023 Acres  
Pervious = 0.282 Acres  
Roads & Sidewalk = 0.519 Acres

Area = 1.370 - 0.546 - 0.282  
= 0.542 Acres

% Impervious = [ 0.542 / 1.370 ] x 100%  
= 39.56 %

Rainfall Depth = 2.5" x (0.3956) = 0.9891  
Water Quality = Depth x Area  
= (0.9891") x 1.370 x 1/12" = 0.113 Ac-ft

**Water Quality Volume = 0.113 Ac-Ft**

From above, the volume from part A is greater than part B.

Thus, the Water Quality Treatment Volume = **0.114 Ac-ft = 4,966 CF.**

From the Stage Storage Table, it can be seen that the water quality volume is stored on site in the Dry Retention areas and the Surface Water area west of the seawall at elevation 2.81 NAVD (by interpolation).

**STORMWATER SYSTEMS**

The stormwater system consists of one basin with several watersheds. The runoff from the perimeter of the property, seating area, and the parking area is directed to the catch basins in the parking lot. The catch basins are connected to an exfiltration trench and the dry retention area via a series of storm sewers.

A control structure with an inverted baffle is proposed to keep the pre-treatment runoff in the retention area to achieve the required 1/2" dry pre-treatment retention volume. Details of the control structure are provided on the paving and drainage detail sheets.

There is an existing storm sewer that connects the existing parking lot to the surface water portion of the property located on the west side of the seawall. Once the pre-treatment has been retained, the runoff shall overflow the control structure and discharge into the Intracoastal.

**LANDSCAPING IN DRY RETENTION AREA**

The applicant is proposing some trees to be located in the dry retention area. The reduced retention area and volume from these trees have been reflected in the stage storage table.

There are a total of 10 proposed trees in the dry retention area. Therefore, the following area shall be reduced from the stage storage calculation.

pi = 3.14159  
r = 0.75' radius (1.5' = 18" diameter)

$$\begin{array}{rclcl}
 \# \text{ Trees} & = & 10 & & \\
 \text{Area of Trees} & = & 15 \times \pi \times r^2 & = & 10 \times 3.14159 \times 0.75' \times 0.75' \\
 \text{Area of Trees} & = & 17.7 \text{ sf} & = & 18 \text{ sf}
 \end{array}$$

Therefore, the total bottom area of the dry retention area has been reduced by 18 sf in the stage storage table.

#### **RETENTION REQUIREMENTS (for projects within the jurisdiction of Broward County SWM)**

This project is located within the City of Hollywood. There is no existing SFWMD permit for this project and this project is not located within a local water management district.

This site was previously developed as a building and parking lot. The building has been removed, but the asphalt parking still remains. There is an existing outfall that historically flows from the upland portion of the property to the water surface portion of the property west of the existing seawall. This water surface area is directly connected to the Intracoastal Waterway.

Based on my discussions with Johana Narvaez, since there is an existing pipe discharging to the Intracoastal, this project will be permitted to discharge runoff to the west after retaining the required ½" Dry Pre-treatment. Once the Dry Pre-treatment is retained the additional runoff can freely discharge through the control structure and storm pipe to the Intracoastal.

The following are the retention requirements for this project:

1. Provide ½" Dry Pre-treatment prior to discharge.
2. Provide a pre vs. post development 100 Year flood analysis to ensure post development 100 Year Peak Stage does not exceed the Pre-Development 100 Year Peak Stage.

Per my discussion with Johana, the water control elevation for this 1.0 NAVD.

#### **WATER QUANTITY COMPUTATIONS & RESULTS**

This project is located in the City of Hollywood. The requirements of retention for this project have been stated above. Listed below are the results of the calculations.

The surface water management system consists of a combination of dry retention areas and exfiltration trench.

The pre-treatment retention volume has been computed above and is **1.496 cf**.

The total amount of required pre-treatment storage is **1,496 cf**. Per the attached stage storage calculations, the pre-treatment has been provided at elevation 2.50 NAVD. So a control structure has been designed with a baffle set at elevation **2.50 NAVD**.

Since this project is primarily re-developing an existing parking lot, calculations have been provided to ensure that the 100 Year Post Development Peak Stage is at or below the 100 Year Pre-Development Peak Stage.

Attached please find:

1. **The Pre-Development Runoff calculation for the 100 Year storm.** Based on the existing conditions survey, the pre-development site is 91.5% impervious. The average site elevation is about 2.5 NAVD. So the compacted water storage value is 1.165 leading to a soil storage of 0.10 in. The total pre-development runoff for the 100 Year Storm was computed to be **53,476 cf**.



2. **The Pre-Development Stage Storage Table.** Based on the existing conditions survey, the pre-development stage storage table was prepared. The stage storage includes the parking lot, the minimal landscape areas, and the previously existing office building.

The pre-development 100 Year Peak Stage was interpolated from this table utilizing the pre-development runoff noted in item 1 above. The resulting peak stage was **4.38 NAVD**.

3. **The Post-Development Runoff calculation for the 100 Year storm.** Based on the paving grading and drainage plans, the post-development site is 65.8% impervious. This is due to the larger dry retention areas, expanded swales, and pervious walkways. However, for purposes of computing the runoff, it was assumed that the site was **100%** impervious. Therefore, there is zero soil storage assumed for the post development condition. The total post-development runoff for the 100 Year Storm was computed to be **53,832 cf**.

4. **The Post-Development Stage Storage Table.** Based on the paving grading and drainage plans, the post-development stage storage table was prepared. The stage storage includes the dry retention areas, the exfiltration storage, the parking lot, the landscape areas, and the new semi-permanent buildings.

The post-development 100 Year Peak Stage was interpolated from this table utilizing the pre-development runoff noted in item 1 above. The resulting peak stage was **4.34 NAVD**.

5. The minimum elevation of the semi-permanent structures shall be the maximum of the 100 Year post development stage or the FEMA BFE +1.

As noted above in item 4, the post development 100 Year stage is **4.34 NAVD**.

Based on the latest FIRM map, this property is in Flood Zone AE with a BFE of 5.0 NAVD. Therefore, per the City of Hollywood criteria, the finished floor must be set to at least (BFE +1'), or **6.0 NAVD**, per the FEMA Maps.

The finished floor for the semi-permanent structures have been set at **6.00 NAVD**.

#### **ADJACENT PROPERTY TOPOGRAPHY**

Consideration has been given to the topography and drainage patterns of adjacent properties. Listed below is the manner in which the adjacent properties historical drainage is affected by this project.

**East:** There is an existing roadway, Ocean Boulevard, abutting the east property line. The grading shall be pitched to the west to ensure no (or minimal) runoff discharges off-site, see cross sections.

**North:** North of this property is an existing and parking lot. The property to the north is at roughly the same elevation as the current property. A high point and curb has been placed at the north property line to ensure that all runoff is directed south, into the subject property.

**West:** West of this property is the Intracoastal Waterway. All runoff east of the seawall is directed into the subject property. Then the runoff is treated in dry retention areas before discharging to the Intracoastal through a control structure and baffle box (ACOE required).

**South:** South of this property is an existing building and parking lot. The property to the south is at a bit higher elevation as the subject property. And it will remain higher. So no runoff from the subject property should discharge onto the adjacent property to the south.

**SKIPPER'S DOCKSIDE  
PRE-DEVELOPMENT  
STORMWATER CALCULATIONS**

## 100 Year - 3 Day PRE-DEVELOPMENT RUNOFF COMPUTATION

Project Name: Skipper's Dockside  
Project Number: 21-0010  
Project Engineer: Howard Jablon, P.E.  
Date: 06/01/23  
Revised

Site Area 0.82 Ac 35,888 sf  
Design Storm 100 Year 3 Day  
Rainfall (1 Day) in  
Rainfall (3 Day = 1 Day x 1.359) 18.0 in

**Runoff Formula (Page C-II-I, SFWMD Volume IV)**  $Q = [(P - I_a)^2] / [(P - I_a) + S]$   
and  $I_a = 0.2 \times S$

where,

Q = accumulated direct runoff (inches)  
P = accumulated rainfall (inches)  
 $I_a$  = initial abstraction  
S = potential maximum retention (inches)

**Substituting  $I_a = 0.2 \times S \Rightarrow$**

$$Q = [(P - 0.2S)^2] / [P + 0.8S]$$

**Soil Storage, S**

$$S = \text{Water Storage} \times (1 - \% \text{ Impervious})$$

Average Finished Grade 2.50 NAVD  
Average Water Table Elevation 1.0 NAVD  
Percent of Project Lakes 0.0 %  
Percent of Project Impervious 91.5 %

**Compacted Water Storage Value = 1.165 in**

**Soil Storage, S = 0.10 in**

**Runoff Computation, Q = 17.88 in**

**Volume of Runoff, V = Q x A**  
**1.23 Ac-Ft**  
**53,476 cf**

### For Flatwoods Soils

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Depth to Water Table Feet	Cumulative Water Storage Inches	Compacted Water Storage Inches
1	0.60	0.45
2	2.50	1.88
3	5.40	4.05
4	9.00	6.75



# STAGE-STORAGE COMPUTATION FOR SKIPPER'S DOCKSIDE - PRE-DEVELOPMENT

Project Name: Skipper's Dockside  
 AJH #: 21-0100  
 Project Engineer: Howard Jablon, P.E.  
 Date: 06/01/23  
 Revision:

Total Project Acreage: 1.37 Ac 59,682  
 Drainage Area (East of Seawall) 0.82 Ac 35,888  
 Design Water Surface 1.00 NAVD

## PRE DEVELOPMENT STAGE-STORAGE TABLE FOR BASIN #1

### BASIN 1 SITE DATA:

				AVG LOW ELEVATION	AVG HIGH ELEVATION	
Marina (West of Seawall)	0.546	Ac	23,776	sf	NA	NAVD
Total DRA @ Bottom:	0.00	Ac	0	sf	NA	NAVD
Trees in DRA	0.00	Ac	0	sf	NA	NAVD
Total DRA Bank Area :	0.00	Ac	0	sf	NA	NAVD
Green Area:	0.07	Ac	3,070	sf	2.50	NAVD
Impervious Area:	0.64	Ac	27,693	sf	1.75	NAVD
Building Area:	0.12	Ac	5,125	sf	6.31	NAVD
Total Area Basin 1:	1.37	Ac	59,664	sf		
Total Area for Storage	1.25	Ac	30,763	sf	(Removed Marina & Building)	

STAGE NAVD	Retention Area Vertical SF	Retention Bank Area Linear SF	Green Area Linear SF	Impervious Area Linear SF	TOTAL AREA SF	STORAGE CF	TRENCH STORAGE CF	CUMULATIVE STORAGE CF	AcFt
1.75	0	0	0	0		0	0	0	0.00
2.00	0	0	0	3,956	3,956	495	0	495	0.01
2.50	0	0	0	11,868	11,868	3,956	0	4,451	0.10
3.00	0	0	3,070	19,781	22,851	8,680	0	13,130	0.30
3.50	0	0	3,070	27,693	30,763	13,404	0	26,534	0.61
4.00	0	0	3,070	27,693	30,763	15,382	0	41,915	0.96
4.50	0	0	3,070	27,693	30,763	15,382	0	57,297	1.32
5.00	0	0	3,070	27,693	30,763	15,382	0	72,678	1.67
6.10	0	0	3,070	27,693	30,763	33,839	0	106,518	2.45

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**SKIPPER'S DOCKSIDE  
POST-DEVELOPMENT  
STORMWATER CALCULATIONS**

# EXFILTRATION TRENCH COMPUTATION FOR SITE STORAGE

## EXFILTRATION TRENCH #1

Project Name: Skipper's Dockside  
Project Number: 21-0100  
Project Engineer: Howard Jablon, P.E.  
Date: 06/013/23  
Revised

Watershed Area 0.82 Ac  
Runoff 0.04 in  
Water Table Elevation (Per BC EE & PD) 1.00 NAVD

Volume to be stored = Area x Runoff 0.034 Ac-In  
Volume to be stored (cf) 122 cf = 0.00 Ac-Ft

Use Exfiltration Trench Calculation (Page C-V-8 SFWMD Basis of Review)  $L = FS * V / [k (H2W + 2*H2Du - DuDu + 2xH2Ds) + (1.39x10^{-4})WDu]$

Refer to the attached Typical Exfiltration Trench  
for cross section of trench and definitions

Length of trench required, L in feet =  
Factor of Safety 2  
Volume treated (Total WQ + Additional), V 0.034 Ac-In  
Width of trench, W 4.0 ft  
Hydraulic Conductivity of soil, K 6.25E-05 cfs/sf - ft head  
Depth to water table, H2 1.00 ft  
Non-Saturated trench depth, Du 1.00 ft  
Saturated trench depth, Ds 1.00 ft

**Length of trench required, L = 68 ft**

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# 100 Year - 3 Day POST-DEVELOPMENT RUNOFF COMPUTATION

Project Name: Skipper's Dockside  
Project Number: 21-0010  
Project Engineer: Howard Jablon, P.E.  
Date: 06/01/23  
Revised

Site Area 0.82 Ac 35,888 sf  
Design Storm 100 Year 3 Day  
Rainfall (1 Day) in  
Rainfall (3 Day = 1 Day x 1.359) 18.0 in

**Runoff Formula (Page C-II-I, SFWMD Volume IV)**  $Q = [ (P - I_a)^{**2} ] / [ (P - I_a) + S ]$   
and  $I_a = 0.2 \times S$

where,

Q = accumulated direct runoff (inches)  
P = accumulated rainfall (inches)  
I<sub>a</sub> = initial abstraction  
S = potential maximum retention (inches)

**Substituting  $I_a = 0.2 \times S \Rightarrow$**

$$Q = [ (P - 0.2S)^{**2} ] / [ P + 0.8S ]$$

**Soil Storage, S**

$$S = \text{Water Storage} \times (1 - \% \text{ Impervious})$$

Average Finished Grade 2.50 NAVD  
Average Water Table Elevation 1.0 NAVD  
Percent of Project Lakes 0.0 %  
Percent of Project Impervious 100.0 %

**Compacted Water Storage Value = 1.165 in**

**Soil Storage, S = 0.00 in**

**Runoff Computation, Q = 18.00 in**

**Volume of Runoff, V = Q x A**  
**1.24 Ac-Ft**  
**53,832 cf**

## For Flatwoods Soils

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Depth to Water Table Feet	Cumulative Water Storage Inches	Compacted Water Storage Inches
1	0.60	0.45
2	2.50	1.88
3	5.40	4.05
4	9.00	6.75



# STAGE-STORAGE COMPUTATION FOR SKIPPER'S DOCKSIDE - POST-DEVELOPMENT

Project Name: Skipper's Dockside  
 AJH #: 21-0100  
 Project Engineer: Howard Jablon, P.E.  
 Date: 06/01/23  
 Revision:

Total Project Acreage: 1.370 Ac 59,682  
 Drainage Area (East of Seawa 0.824 Ac 35,888  
 Design Water Surface 1.00 NAVD

## POST DEVELOPMENT STAGE-STORAGE TABLE FOR BASIN #1

**BASIN 1 (Drainage Area = 0.824 Ac, 35,888 sf)**

### BASIN 1 SITE DATA:

					AVG LOW ELEVATION	AVG HIGH ELEVATION	
Marina (West of Seawall)	0.546	Ac	23,776	sf	NA	NA	NAVD
Trees in DRA	0.000	Ac	18	sf	NA	NA	NAVD
Total DRA @ Bottom (2.0):	0.054	Ac	2,357	sf	2.00	2.00	NAVD
Total DRA Bank Area (2.5):	0.018	Ac	799	sf	2.00	2.50	NAVD
Green Area:	0.209	Ac	9,118	sf	2.50	3.50	NAVD
Impervious Area:	0.520	Ac	22,632	sf	2.50	3.50	NAVD
Building/Container Area:	0.023	Ac	982	sf	6.00	6.00	NAVD
Total Area Basin 1:	1.370	Ac	59,682	sf			
Total Area for Storage	0.801	Ac	34,906	sf	(Removed Marina & Building & Trees)		

STAGE NAVD	Retention Area Vertical SF	Retention Bank Area Linear SF	Green Area Linear SF	Impervious Area Linear SF	TOTAL AREA SF	STORAGE CF	TRENCH STORAGE CF	CUMULATIVE STORAGE CF	AcFt
2.00	2,357	0	0	0		0	122	122	0.00
2.50	2,357	799	0	0	3,156	1,378	0	1,500	0.03
3.00	2,357	799	4,559	19,426	27,141	7,574	0	9,075	0.21
3.50	2,357	799	9,118	22,632	34,906	15,512	0	24,586	0.56
4.00	2,357	799	9,118	22,632	34,906	17,453	0	42,039	0.97
4.50	2,357	799	9,118	22,632	34,906	17,453	0	59,492	1.37
5.00	2,357	799	9,118	22,632	34,906	17,453	0	76,945	1.77
6.00	2,357	799	9,118	22,632	34,906	34,906	0	111,851	2.57
7.00	2,357	799	9,118	22,632	34,906	34,906	0	146,757	3.37

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