

STORMWATER RETENTION CALCULATIONS

A. SITE INFORMATION

Drainage Basin Area = 14,484 sq.ft.

Impervious Plan Area
(ex. cabana, proposed addition, terraces, walls) = 2,257 sq.ft.

Pervious Plan Area = 12,227 sq.ft.

B. ESTIMATED STORMWATER RETENTION VOLUME

The retention volume is estimated using the Rational Method ($Q=CiA$)
where:
 $C = 1.0$ (impervious surface)
 $C = 0.2$ (pervious surface)
 $i = 2$ in/hr

Impervious Surface Runoff Volume:
 $1.0 \times 2 \text{ in/hr} \times 2,257 \text{ sq.ft.} \times 1 \text{ ft./12 in.} = 377 \text{ cu.ft.}$

Pervious Runoff Volume:
 $0.2 \times 2 \text{ in/hr} \times 12,227 \text{ sq.ft.} \times 1 \text{ ft./12 in.} = 408 \text{ cu.ft.}$

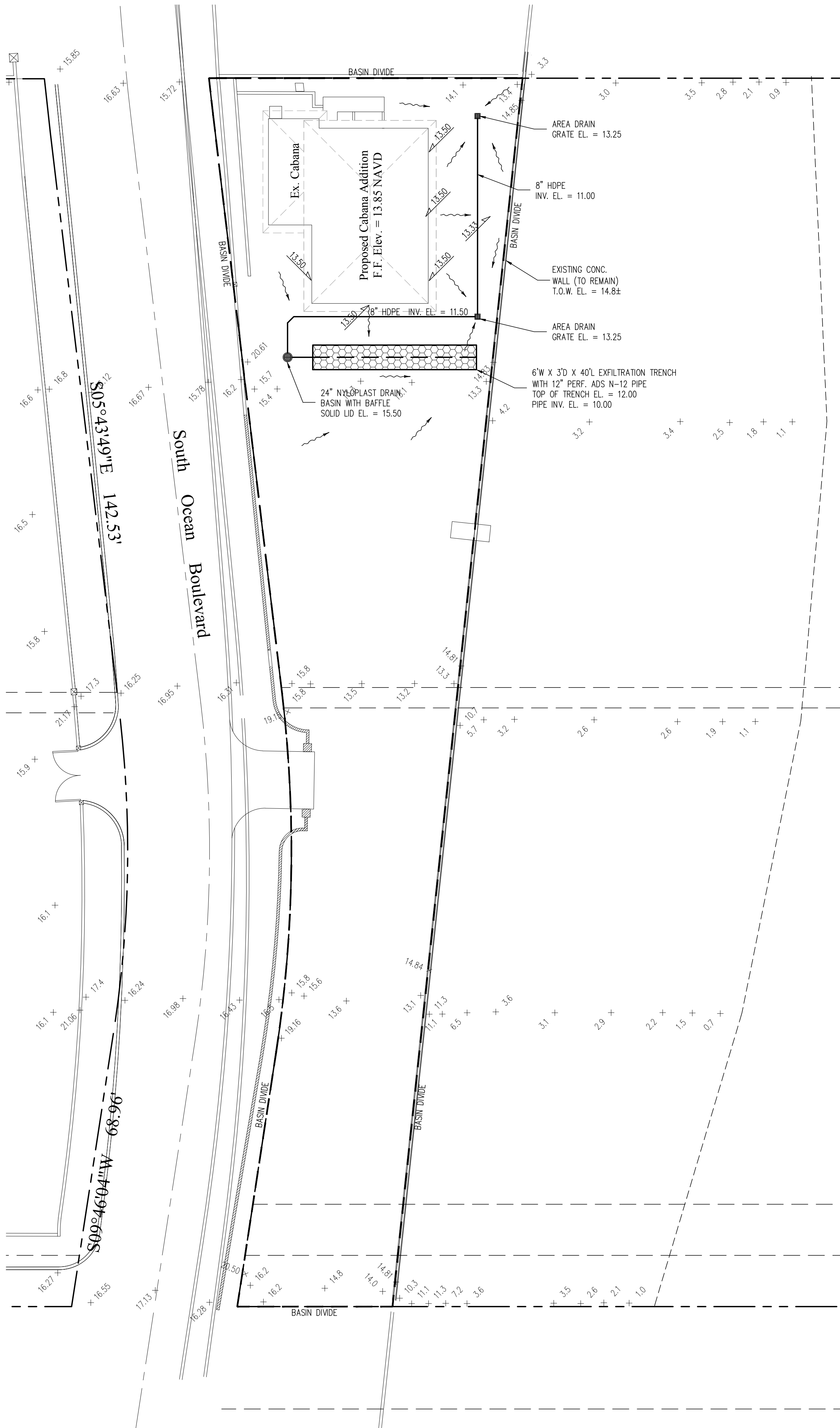
Total Volume to be Retained = 785 cu.ft.

C. PROPOSED EXFILTRATION TRENCH SIZING

L	=	Total Length of Trench Provide	=	40	ft
W	=	Trench Width	=	6	ft
K	=	Hydraulic Conductivity	=	0.00005 cfs/sq.ft./ft. of head	
H2	=	Depth to Water Table	=	6.00	ft
DU	=	Un-Saturated Trench Depth	=	3.00	ft
DS	=	Saturated Trench Depth	=	0.00	ft
V	=	Volume Treated	=	821	cu.ft.

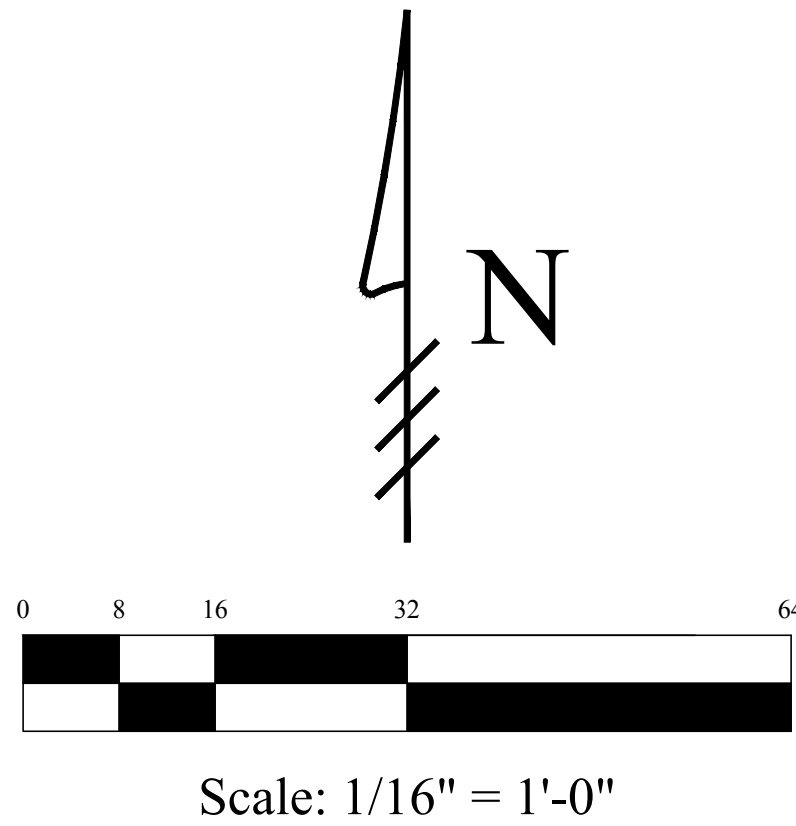
Notes:

- 1) Exfiltration trenches and storm piping to be protected from roots with a root barrier.
- 2) Roof drain downspouts are to be connected to the proposed drainage system. Contractor to provide engineer with downspout locations prior to installation of drainage system.
- 3) Exfiltration trench design uses an assumed value of hydraulic conductivity. Client may obtain a site specific test for hydraulic conductivity prior to exfiltration trench installation.
- 4) Contractor shall mill and overlay all roadway cuts a minimum of 50 ft. on either side of the excavation the entire width of each affected lane.
- 5) Contractor is responsible for installing and maintaining erosion control measures during construction.
- 6) Video inspection of storm drainage system required prior to installation of sod.

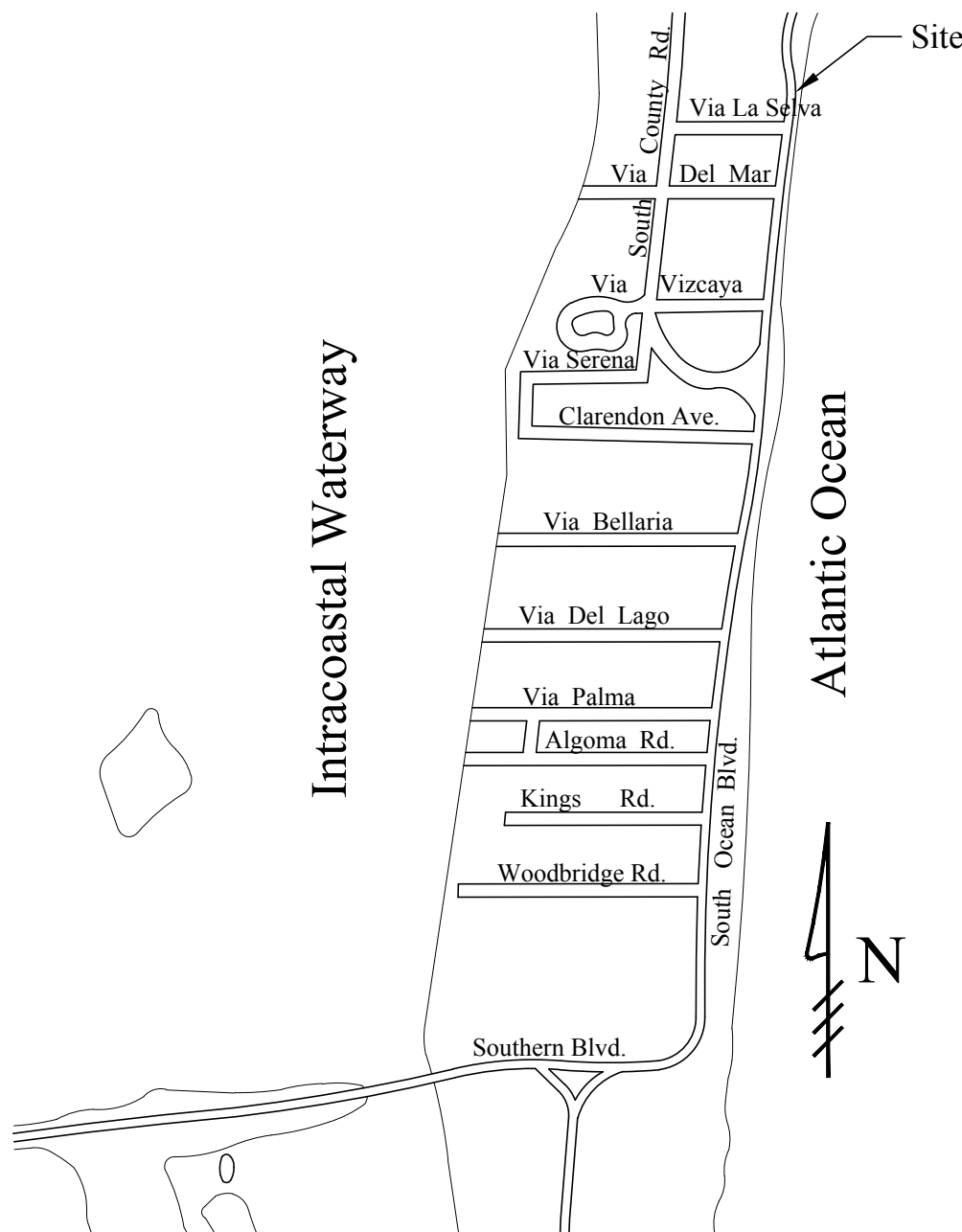


Legend

- EXISTING ELEVATION PER WALLACE SURVEYING CORP. (NAVD-88)
- PROPOSED ELEVATION (NAVD-88)
- PROPOSED ELEVATION CONTOUR (NAVD-88)
- FLOW DIRECTION
- EXFILTRATION TRENCH
- AREA DRAIN
- 24" NYLOPLAST DRAIN BASIN WITH BAFFLE



Location Map
N.T.S.



48 HOURS BEFORE DIGGING
CALL
1-800-432-4770
SUNSHINE STATE ONE CALL
OF FLORIDA, INC.
Contractor is responsible for obtaining
location of existing utilities prior to
commencement of construction activities.

Gruber Consulting
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Project Information				
Project No.	2011-0056	Issue Date	02/27/2023	1/16" = 1'-0"
Scale		Drawn By	CG	CG
Checked By				

Conceptual Site Grading & Drainage Plan For:
Beach Cabana Renovation
801 South County Road
Palm Beach, Florida

Revisions	
1	
2	
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Chad M. Gruber
FL P.E. No. 57466

Sheet No.
C-1

This item has been electronically signed and sealed by Chad M. Gruber
on the date adjacent to the seal using a SHA authentication code.
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the SHA authentication code must be verified on any electronic copies.

Plan Background from Site Plan by
Laberge & Menard Received 1/10/23

COA-22-040
ZON-22-115

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