

STORMWATER RETENTION CALCULATIONS
Basin A

A. SITE INFORMATION

Total Property Area = 30,818 sq.ft.
Proposed Drainage Area = 23,448 sq.ft.
Drainage Area Impervious Surface = 10,869 sq.ft.
Drainage Area Pervious Surface = 12,579 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 x 2 in/hr x 10,869 sq.ft. x 1 ft./12 in. = 1,812 cu.ft.

Pervious Runoff Volume:
0.2 x 2 in/hr x 12,579 sq.ft. x 1 ft./12 in. = 420 cu.ft.

Total Volume to be Retained = 2,232 cu.ft.

C. PROPOSED EXFILTRATION TRENCH SIZING

L = Total Length of Trench Provided = 130 ft
W = Trench Width = 12 ft
K = Hydraulic Conductivity = 0.00005 cfs/sq.ft./ft. of head
H2 = Depth to Water Table = 3.15 ft
DU = Un-Saturated Trench Depth = 2.50 ft
DS = Saturated Trench Depth = 0.50 ft
V = Volume Treated = 3,158 cu.ft.

STORMWATER RETENTION CALCULATIONS
Basin B

A. SITE INFORMATION

Total Property Area = 30,818 sq.ft.
Proposed Drainage Area = 7,370 sq.ft.
Drainage Area Impervious Surface = 5,755 sq.ft.
Drainage Area Pervious Surface = 1,615 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

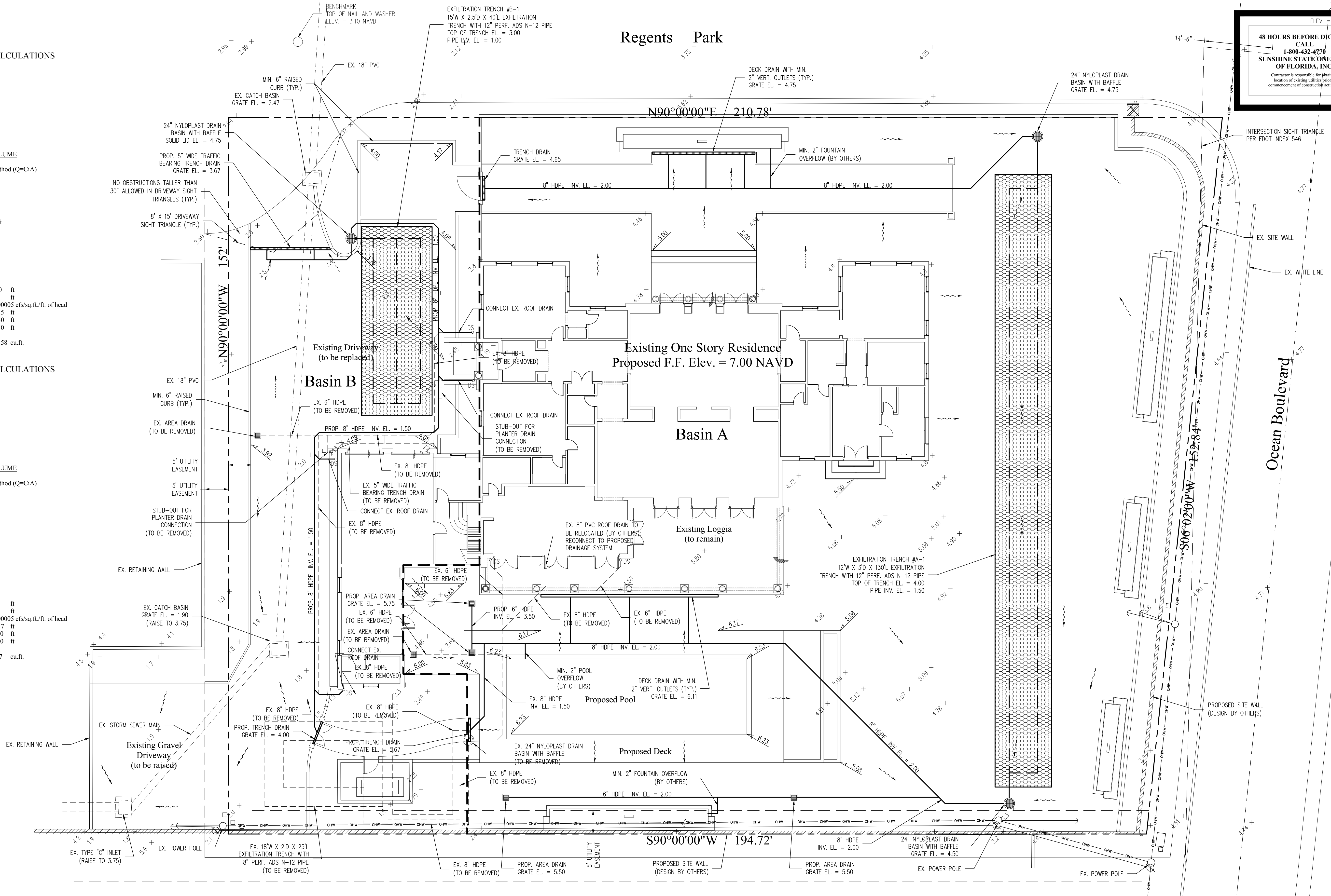
Impervious Surface Runoff Volume:
1.0 x 2 in/hr x 5,755 sq.ft. x 1 ft./12 in. = 960 cu.ft.

Pervious Runoff Volume:
0.2 x 2 in/hr x 1,615 sq.ft. x 1 ft./12 in. = 54 cu.ft.

Total Volume to be Retained = 1,014 cu.ft.

C. PROPOSED EXFILTRATION TRENCH SIZING

L = Total Length of Trench Provided = 40 ft
W = Trench Width = 15 ft
K = Hydraulic Conductivity = 0.00005 cfs/sq.ft./ft. of head
H2 = Depth to Water Table = 2.17 ft
DU = Un-Saturated Trench Depth = 1.30 ft
DS = Saturated Trench Depth = 1.00 ft
V = Volume Treated = 737 cu.ft.

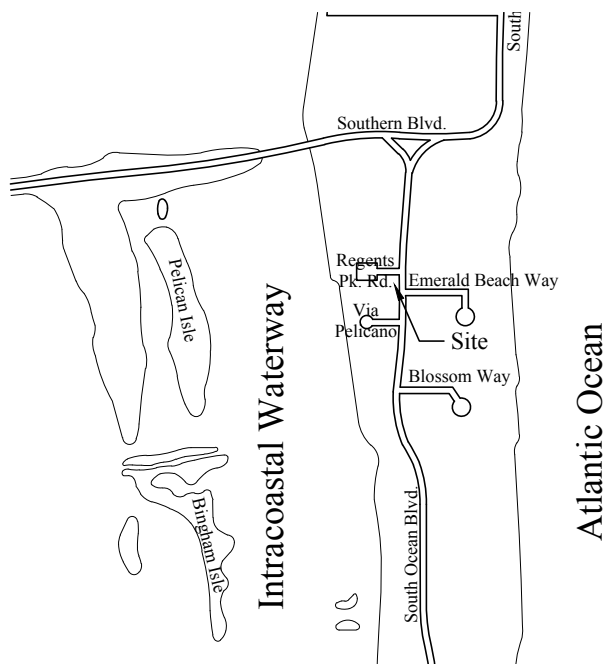
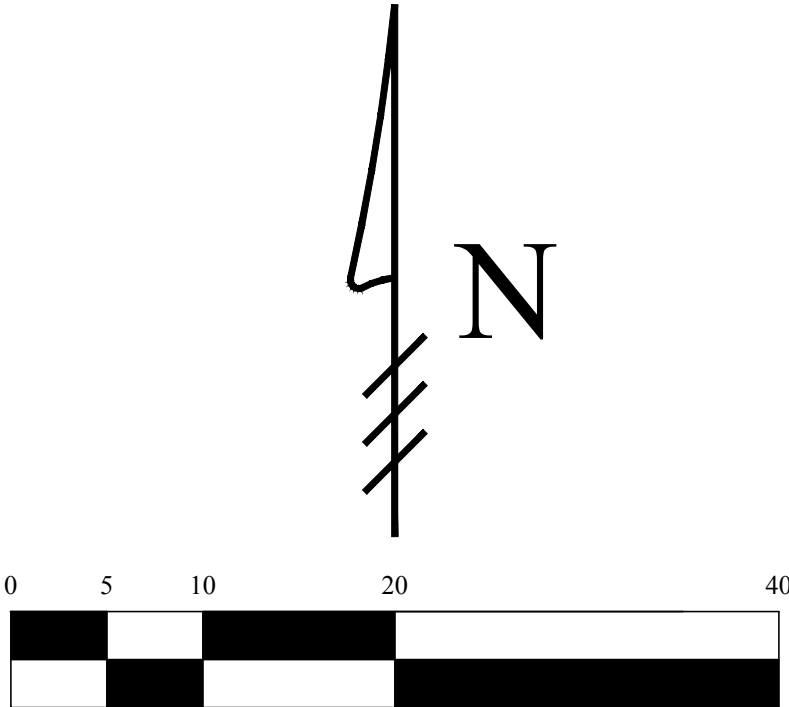


Notes:

- Exfiltration trenches and storm piping to be protected from roots with a root barrier.
- 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.
- 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.
- 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.
- Contractor is responsible for installing and maintaining erosion control measures during construction.
- 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 planning
location of existing utilities prior to
commencement of construction activities.



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Project Information				
Project No.	2015-0124	Issue Date	09/25/2022	Scale
Scale	1" = 10'	Drawn By	KM	Checked By
			CG	

Conceptual Site Grading & Drainage Plan For:
Proposed Renovation
200 Regents Park Road
Palm Beach, Florida

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

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 Hardscape Plan by
Nievera Williams Design Received 9/22/22

COA-22-050
ZON-22-136

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Sheet No.

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