STORMWATER RETENTION CALCULATIONS

A. SITE INFORMATION

Total Property Area = 13,781 sq.ft.

Drainage Area Impervious Surface = 7,579 sq.ft.

Drainage Area Pervious Surface = 6,202 sq.ft.*

* Min. required by zoning code without a variance

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 7,579 sq.ft. x 1 ft./12 in. = 1,264 cu.ft.

Pervious Runoff Volume:
0.2 x 2 in/hr x 6,202 sq.ft. x 1 ft./12 in. = 207 cu.ft.

Total Volume to be Retained = 1,471 cu.ft.

C. PROPOSED EXFILTRATION TRENCH SIZING

Exfiltration Trench #1

L	=	Total Length of Trench Provided	=	40 ft
W	=	Trench Width	=	16 ft
K	=	Hydraulic Conductivity	=	0.00005 cfs/sq.ft./ft. of head
H2	=	Depth to Water Table	=	1.83 ft
DU	=	Un-Saturated Trench Depth	=	1.00 ft
DS	=	Saturated Trench Depth	=	1.00 ft
V	=	Volume Treated	=	581 cu.ft.

Exfiltration Trench #2

L	=	Total Length of Trench Provided	=	20 ft
W	=	Trench Width	=	20 ft
K	=	Hydraulic Conductivity	=	0.00005 cfs/sq.ft./ft. of head
H2	=	Depth to Water Table	=	1.83 ft
DU	=	Un-Saturated Trench Depth	=	1.00 ft
DS	=	Saturated Trench Depth	=	1.00 ft
V	=	Volume Treated	=	357 cu.ft.

Exfiltration Trench #3

L	=	Total Length of Trench Provided	=	30 ft
W	=	Trench Width	=	14 ft
K	=	Hydraulic Conductivity	=	0.00005 cfs/sq.ft./ft. of head
H2	=	Depth to Water Table	=	1.83 ft
DU	=	Un-Saturated Trench Depth	=	1.00 ft
DS	=	Saturated Trench Depth	=	1.00 ft
V	=	Volume Treated	=	385 cu.ft.

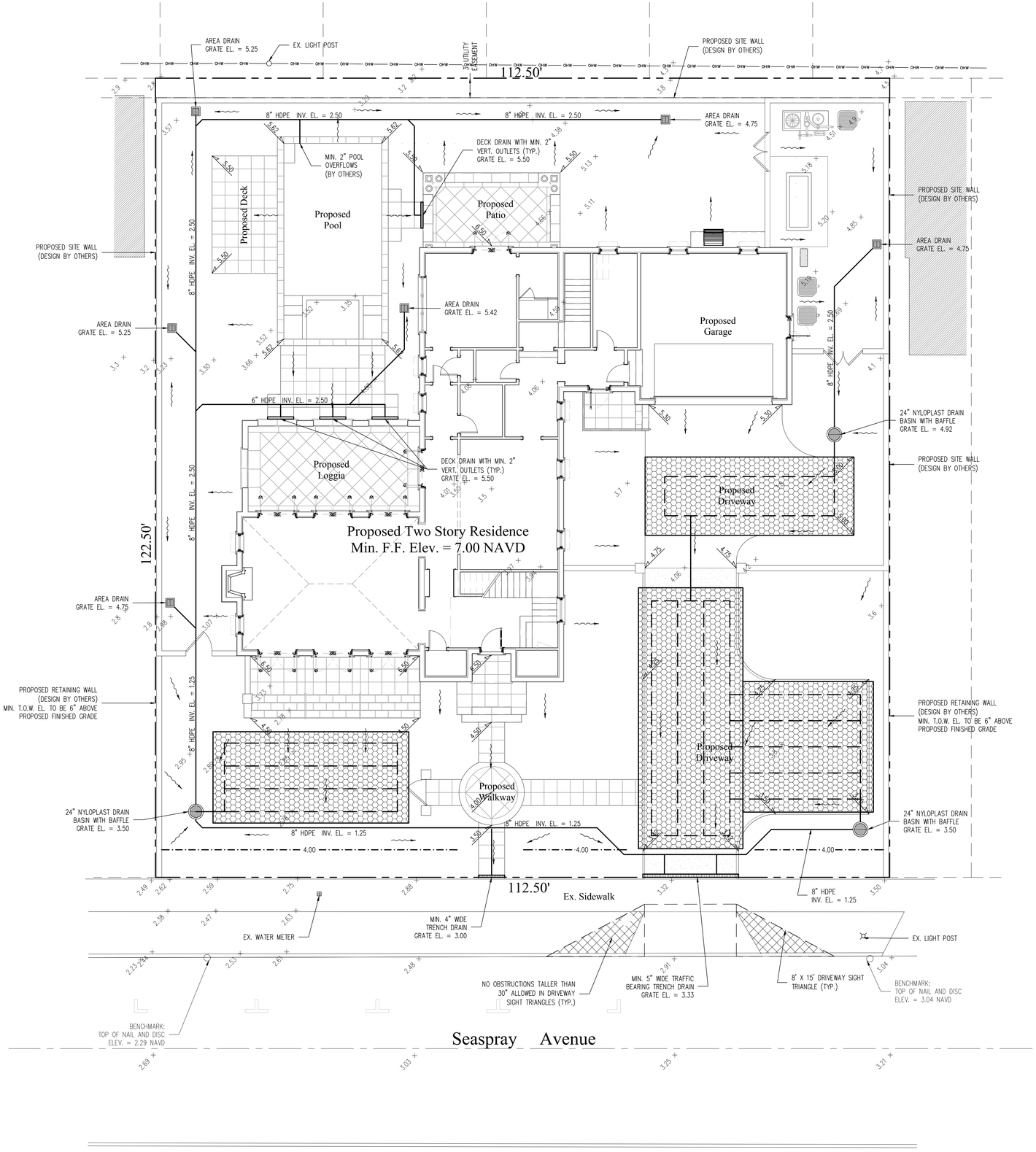
Exfiltration Trench #4

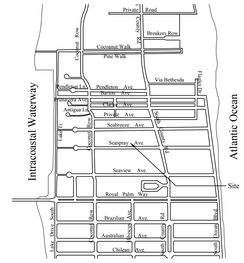
L	=	Total Length of Trench Provided	=	32 ft
W	=	Trench Width	=	12 ft
K	=	Hydraulic Conductivity	=	0.00005 cfs/sq.ft./ft. of head
H2	=	Depth to Water Table	=	1.83 ft
DU	=	Un-Saturated Trench Depth	=	1.50 ft
DS	=	Saturated Trench Depth	=	1.50 ft
V	=	Volume Treated	=	468 cu.ft.

Total Volume Retained in Exfiltration Trenches = 1,791 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.

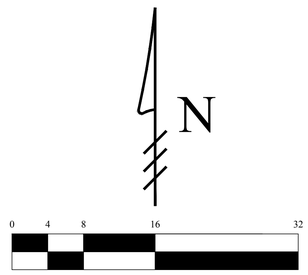




Location Map
N.T.S.

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



Scale: 1/8" = 1'-0"

Gruber Consulting Engineers, Inc.
2475 MERCER AVE., SUITE 305
WEST PALM BEACH, FL 33401
PHONE: 561.312.3341
office@grubercgineers.com

Project Information	
Project No.	2022-0053
Issue Date	05/08/2023
Scale	1/8" = 1'-0"
Drawn By	KM
Checked By	CG

Conceptual Site Grading & Drainage Plan For:

Proposed Residence

243 Seaspray Avenue

Palm Beach, Florida

Revisions	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Chad M. Gruber

FL P.E. No. 57466

CHAD M. GRUBER LICENSE No. 57466 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Chad M Gruber
Date: 2023.05.08 09:03:33 -04'00'

This item has been electronically signed and sealed by Chad M. Gruber on the date adjacent to the seal using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies.

Plan Background from Site Plan by Asbacher Architecture Inc. Received 5/5/23

ARC-23-036

Sheet No.
C-1