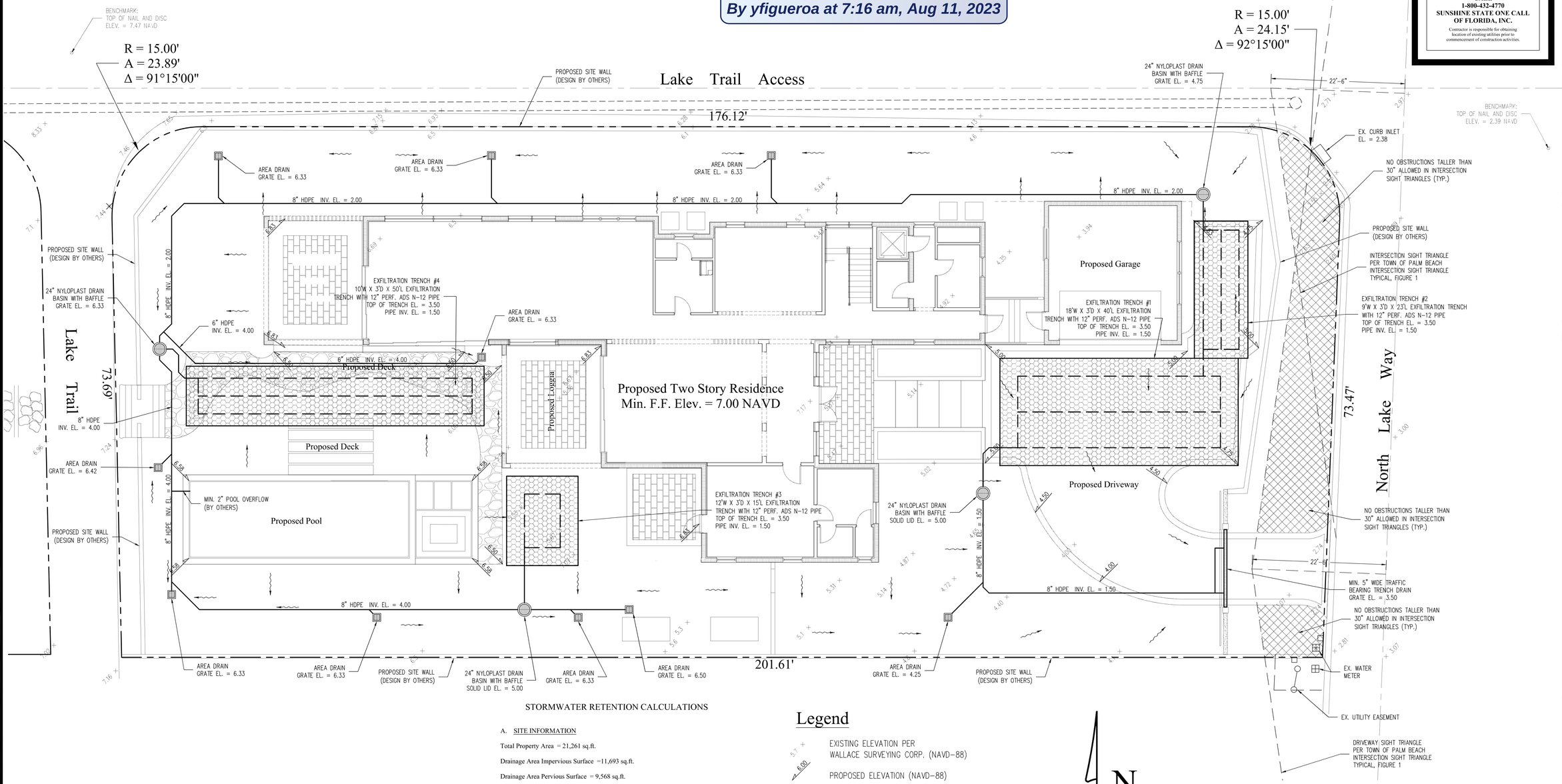



## STORMWATER RETENTION CALCULATIONS

A. SITE INFORMATION

Total Property Area = 21,261 sq.ft.

Drainage Area Impervious Surface =11,693 sq.ft.

Drainage Area Pervious Surface = 9,568 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 x11,693 sq.ft. x 1 ft./12 in. = 1,949 cu.ft.

Pervious Runoff Volume:
0.2 x 2 in/hr x 9,568 sq.ft. x 1 ft./12 in. = 319 cu.ft.

Total Volume to be Retained = 2,268 cu.ft.

C. PROPOSED EXFILTRATION TRENCH SIZING

Exfiltration Trench #1

| | | | | |
|---|---|---|---|---|
| L | = | Total Length of Trench Provided | = | 40 ft |
| W | = | Trench Width | = | 18 ft |
| K | = | Hydraulic Conductivity | = | 0.00005 cfs/sq.ft./ft. of head |
| H2 | = | Depth to Water Table | = | 2.00 ft |
| DU | = | Un-Saturated Trench Depth | = | 2.00 ft |
| DS | = | Saturated Trench Depth | = | 1.00 ft |
| V | = | Volume Treated | = | 1,046 cu.ft. |

Exfiltration Trench #2

| | | | | |
|---|---|---|---|---|
| L | = | Total Length of Trench Provided | = | 23 ft |
| W | = | Trench Width | = | 9 ft |
| K | = | Hydraulic Conductivity | = | 0.00005 cfs/sq.ft./ft. of head |
| H2 | = | Depth to Water Table | = | 2.00 ft |
| DU | = | Un-Saturated Trench Depth | = | 2.00 ft |
| DS | = | Saturated Trench Depth | = | 1.00 ft |
| V | = | Volume Treated | = | 317 cu.ft. |

Exfiltration Trench #3

| | | | | |
|---|---|---|---|---|
| L | = | Total Length of Trench Provided | = | 15 ft |
| W | = | Trench Width | = | 12 ft |
| K | = | Hydraulic Conductivity | = | 0.00005 cfs/sq.ft./ft. of head |
| H2 | = | Depth to Water Table | = | 2.00 ft |
| DU | = | Un-Saturated Trench Depth | = | 2.00 ft |
| DS | = | Saturated Trench Depth | = | 1.00 ft |
| V | = | Volume Treated | = | 268 cu.ft. |

Exfiltration Trench #4

| | | | | |
|---|---|---|---|---|
| L | = | Total Length of Trench Provided | = | 50 ft |
| W | = | Trench Width | = | 10 ft |
| K | = | Hydraulic Conductivity | = | 0.00005 cfs/sq.ft./ft. of head |
| H2 | = | Depth to Water Table | = | 2.00 ft |
| DU | = | Un-Saturated Trench Depth | = | 2.00 ft |
| DS | = | Saturated Trench Depth | = | 1.00 ft |
| V | = | Volume Treated | = | 758 cu.ft. |

Total Volume Retained in Exfiltration Trenches = 2,389 cu.ft.

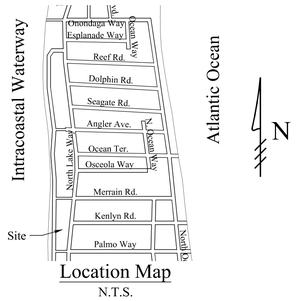
## Legend

- 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

N

0 4 8 16 32

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




Location Map
N.T.S.

## 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.

**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 Engineers, Inc.**
3475 MERCER AVE., SUITE 305
WEST PALM BEACH, FL 33401
PHONE: 561.312.3041
office@grubercngineers.com

| Project Information | |
|---|---|
| Project No. | 2022-0103 |
| Issue Date | 03/08/2023 |
| Scale | 1/8" = 1'-0" |
| Drawn By | KM |
| Checked By | CG |

Conceptual Site Grading & Drainage Plan For:

# Proposed Residence

1265 North Lake Way

Palm Beach, Florida

| Revisions | |
|---|---|
| 1 | 04/29/2023 |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |

1 04/29/23 UPDATE PLAN BACKGROUND; REVISE PROPOSED GRADING AND DRAINAGE; REVISE CALCULATIONS

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: 2023.04.29 13:56:42 -04'00'

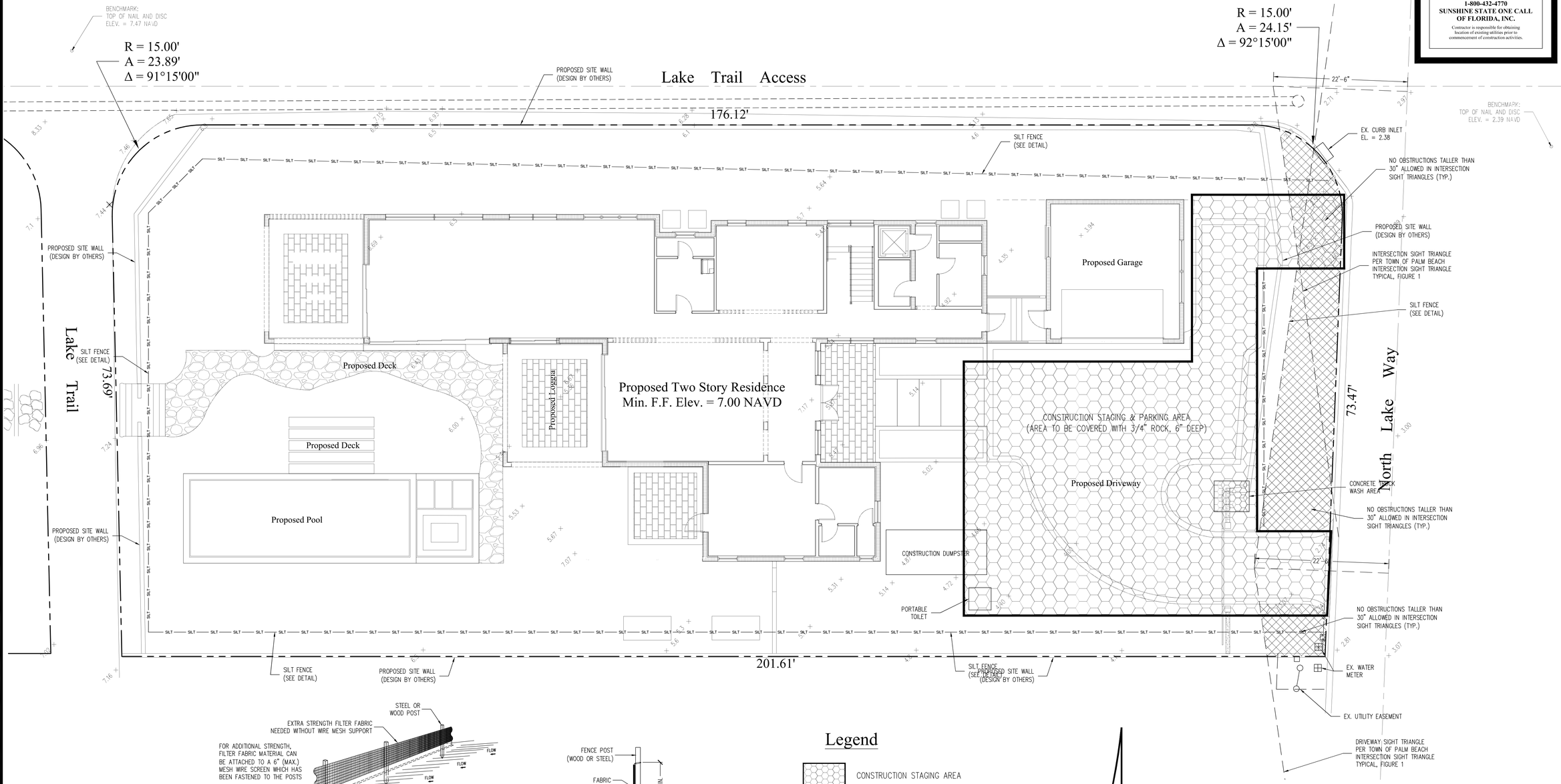
This item has been electronically signed and sealed by Chad M. Gruber on the date adjacent to the seal using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies.

Plan Background from Hardscape Plan by Todd Maclean Outdoors Received 4/27/23

ARC-23-063



Sheet No.
C-1



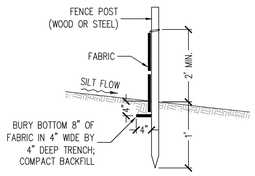




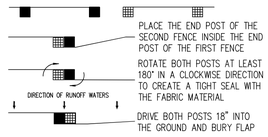
Notes:

1) The height of a silt fence shall not exceed 36".
2) Filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints.
3) Posts shall be spaced a maximum of 10' apart at the barrier location and driven securely into the ground a minimum of 12". When extra strength fabric is used without the wire support fence, post spacing shall not exceed 6'.
4) A trench shall be excavated approximately 4" wide and 4" deep along the line of posts and upslope from the barrier.
5) When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least 1" long, tie wires, or hog rings. The wire shall extend into the trench a minimum of 2" and shall not extend more than 36" above the original ground surface.
6) The standard strength filter fabric shall be stapled or wired to the fence, and 8" of the fabric shall be extended into the trench. The fabric shall not extend more than 36" above the original ground surface.
7) The trench shall be backfilled and the soil compacted over the filter fabric.

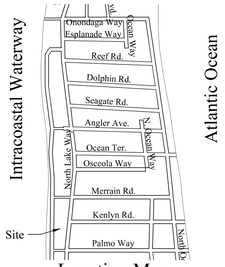
## SILT FENCE DETAIL
N.T.S.




## SILT FENCE SECTION
N.T.S.




## ATTACHING TWO SILT FENCES
N.T.S.




## Location Map
N.T.S.

## Legend

CONSTRUCTION STAGING AREA

SILT FENCE (SEE DETAIL)

## Notes:

1) Contractor is responsible for installing and maintaining erosion control measures during construction.
2) Contractor to investigate condition of existing sewer service prior to building permit submittal. If existing service is smaller than 6" dia. or in poor condition, service will be replaced to main per Town of Palm Beach standards

N

0 4 8 16 32

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

**48 HOURS BEFORE DIGGING CALL**
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| Drawn By | KM |
| Checked By | CG |

Conceptual Construction Staging & Parking and Erosion Control Plan For:

# Proposed Residence

1265 North Lake Way

Palm Beach, Florida

| Revisions | |
|---|---|
| 1 | 04/29/2023 |
| 2 | |
| 3 | |
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| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |

1 04/29/23 UPDATE PLAN BACKGROUND; REVISE EROSION CONTROL

Chad M. Gruber

FL P.E. No. 57466

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

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ARC-23-063



**Sheet No.**

EC-1