



**CUTLER CAY  
COMMUNITY DEVELOPMENT  
DISTRICT**

**MIAMI-DADE COUNTY  
SPECIAL BOARD MEETING  
DECEMBER 7, 2022  
4:00 P.M.**

Special District Services, Inc.  
8785 SW 165<sup>th</sup> Avenue, Suite 200  
Miami, FL 33193

[www.cutlercaycdd.org](http://www.cutlercaycdd.org)  
786.347.2711 Telephone  
877.SDS.4922 Toll Free  
561.630.4923 Facsimile

**AGENDA**  
**CUTLER CAY COMMUNITY DEVELOPMENT DISTRICT**  
Cutler Cay Community Clubhouse  
7755 SW 192<sup>nd</sup> Street  
Cutler Bay, FL 33157  
**SPECIAL BOARD MEETING**  
**December 7, 2022**  
**4:00 p.m.**

- A. Call to Order**
- B. Proof of Publication.....Page 1**
- C. Establish Quorum**
- D. Welcome & Seat Board Members**
- E. Administer Oath of Office & Review Board Member Responsibilities and Duties**
- F. Election of Officers**
- Chairman
  - Vice Chairman
  - Secretary/Treasurer
  - Assistant Secretaries
- G. Additions or Deletions to Agenda**
- H. Comments from the Public for Items Not on the Agenda**
- I. Approval of Minutes**
- 1. November 14, 2022 Regular Board Meeting Minutes.....Page 2
- J. Lake Bank Erosion Control Shoreline Restoration Project**
- 1. Review the Previously Presented Landshore Enterprises Engineering & Design for Erosion Control Shoreline Restoration Project information dated and presented on August 8<sup>th</sup> 2022.....Page 10
  - 2. Landshore Enterprises Engineering Presentation Regarding Alternate Application Methods
  - 3. Discussion Regarding Funding the Shoreline Restoration Project.....Page 56
  - 4. Direction on How to Proceed with the Erosion Control Shoreline Restoration Project
  - 5. Consider Approval of Alvarez Engineers' Proposal to Oversee Lake Bank Restoration Project....Page 57
- K. New Business**
- 1. Discussion Regarding Road Marking and Restoration of Sidewalk Detectable Warning Mats
- L. Old Business**
- 1. Update on FPL Project
  - 2. Update on Lake Fountain Project
- M. Board Member and/or Staff Comments/Requests**
- N. Adjourn**

## Miscellaneous Notices



Published in Miami Daily Business Review on November 28, 2022

### Location

Miami-Dade County,

### Notice Text

#### NOTICE OF SPECIAL BOARD MEETING OF THE CUTLER CAY COMMUNITY DEVELOPMENT DISTRICT

The Board of Supervisors (the "Board") of the Cutler Cay Community Development District (the "District") will hold a Special Board Meeting on December 7, 2022, at 4:00 p.m. in the Cutler Cay Community Clubhouse located at 7755 SW 192nd Street, Cutler Cay, Florida 33157.

The purpose of the Special Board Meeting is for the Board to discuss the Erosion Control Shoreline Restoration Project and any other business which may properly come before it. A copy of the Agenda may be obtained from the District's website ([www.cutlercaycdd.org](http://www.cutlercaycdd.org)). The meeting is open to the public and will be conducted in accordance with the provisions of Florida law for community development districts. Meetings may be continued as found necessary to a time and place specified on the record.

There may be occasions when one or two Supervisors will participate by telephone; therefore, a speaker telephone will be present at the meeting location so that Supervisors may be fully informed of the discussions taking place.

In accordance with the provisions of the Americans with Disabilities Act, any person requiring special accommodations or an interpreter to participate at this meeting should contact the District Manager at (786) 347-2711 and/or toll free at 1-877-737-4922, at least seven (7) days prior to the date of the meeting.

If any person decides to appeal any decision made with respect to any matter considered at this Special Board Meeting, such person will need a record of the proceedings and such person may need to ensure that a verbatim record of the proceedings is made at their own expense and which record includes the testimony and evidence on which the appeal is based.

Cutler Cay Community Development District

[www.cutlercaycdd.org](http://www.cutlercaycdd.org)

11/28 22-26/0000632856M

**CUTLER CAY COMMUNITY DEVELOPMENT DISTRICT  
REGULAR BOARD MEETING  
NOVEMBER 14, 2022**

**A. CALL TO ORDER**

Mrs. Perez called to order the November 14, 2022, Regular Board Meeting of the Cutler Cay Community Development District (the "District") at 4:00 p.m. in the Cutler Cay Community Clubhouse located at 7755 SW 192<sup>nd</sup> Street, Cutler Bay, Florida 33157.

**B. PROOF OF PUBLICATION**

Proof of publication was presented that notice of the Regular Board Meeting had been published in the *Miami Daily Business Review* on November 2, 2022, as part of the District's Fiscal Year 2022/2023 Meeting Schedule, as legally required.

**C. ESTABLISH A QUORUM**

It was determined that the attendance of the following Supervisors constituted a quorum and it was in order to proceed with the meeting: Chairman Christopher Musser, Vice Chairperson Lois Rubin and Supervisor Omar Fonte.

Staff in attendance included: District Manager Gloria Perez of Special District Services, Inc.; District Counsel Ginger Wald of Billing, Cochran, Lyles, Mauro & Ramsey, P.A.; and District Engineer Angel Camacho of Alvarez Engineers, Inc.

Also present were Jon Kessler of FMS Bonds (via phone) and the following District residents: Kathy Crump, Khalil Munem, Nicolasa Junco, Allision Beyerlein and Leo Corradini.

**D. ADDITIONS AND DELETIONS TO THE AGENDA**

Mrs. Perez added an item to the agenda under New Business, H.9 Discussion Regarding Legal Correspondence Received Regarding Ongoing FP&L Project.

Mrs. Perez announced that the 2022 General Election results were still pending certification and pursuant to Section 190.006, Florida Statutes, incumbents will serve no longer than ninety (90) days from November 22, 2022, or until an appointment to the vacancy has been made.

Mrs. Perez welcomed and noted that:

Seat # 2 Omar Fonte (Qualified Active and Unopposed) to a 4-year term of office, which expires in November 2026; and

Seat #5 Aileen Lorraine Milian (Qualified Active and Unopposed) to a 4-year term of office, which expires in November 2026.

Mrs. Perez added that Seat #1 had two qualifiers, incumbent Lois Rubin and qualified elector Leo Corradini and, pursuant to the General Election process held on November 8, 2022, it appears that Mr. Corradini had a substantial lead over Ms. Rubin. Therefore, incumbent Lois Rubin, currently holding Seat #1, will remain a holdover until the votes are certified on November 22, 2022, after which Leo



Corradini can then be provided with the Oath of Office or it can be provided at the upcoming meeting along with the qualified incumbents, followed by an election of officers.

## **E. COMMENTS FROM THE PUBLIC FOR ITEMS NOT ON THE AGENDA**

Mr. Khalil Munem requested that the District look into the sidewalk and street markings.

Jay Tome, Esquire, made a request on behalf of the owner of 18798 SW 79<sup>th</sup> Avenue, regarding concerns with the vegetation and the perimeter wall that runs along Old Cutler Road.

Tony Lester offered to provide contractor/vendor information for the Lake Bank Erosion Project, due to his expertise in this area.

Lois Rubin reported that FP&L had broken a sewer cap in front of her property located at 7823 SW 193<sup>rd</sup> Street.

## **F. APPROVAL OF MINUTES**

### **1. August 8, 2022, Regular Board Meeting**

A **MOTION** was made by Supervisor Fonte, seconded by Supervisor Musser and passed unanimously approving the minutes of the August 8, 2022, Regular Board Meeting, as presented.

## **G. LAKE BANK EROSION CONTROL SHORELINE RESTORATION PROJECT**

### **1. FMS Bonds Presentation**

Mrs. Perez circulated the information shown below, which was forwarded by Mr. Kessler for today's presentation. Mr. Kessler reviewed the information with the Board.

#### **Cutler Cay CDD**

##### **Proposed Loan Analysis**

##### Loan Assumption

Proposed Loan Amount  
Total Loan Payment  
Estimated Interest Rate\*\*  
Term

\$1,725,000  
\$141,368  
5.25%  
20

##### Assessment Allocation

<u>FF</u>	<u># of Units</u>	<u>Proposed Assessment Per Home</u>	<u>Current Assessment Per Home</u>	<u>Total Assessment Per Home</u>
60	180	\$269	\$1,384	\$1,654
75*	258	\$279	\$1,440	\$1,720
125	<u>67</u>	\$312	\$1,602	\$1,914
	505			

\* One 75' unit prepaid the existing assessments and will only pay the new assessment.

\*\* Estimated Rate. Interest rates are extremely volatile and until a term sheet is provided by a bank, the actual rate is unknown.

No action was taken by the Board at this time.

## **2. Consider Proposal for Erosion Control Shoreline Restoration Project**

Presented by the District Engineer was a Landshore proposal in the amount of \$412,427 with an alternate method, as requested by Supervisor Fonte. It was noted that this method would not have any warranty and that this would only address the issue above the waterline. Mr. Camacho mentioned that several contractors opted not to provide a proposal for this method of application referred to as the alternate method. The District Engineer addressed questions from the Board and members of the public.

### **3. District Engineer Opinion on Proposal for Erosion Control Shoreline Restoration Project**

Mr. Camacho noted that this option would not address the issue causing the erosion, nor would it prevent further erosion from occurring. He also provided information on the limited life expectancy of this method along with the fact that no warranty would be included and does not make this application a favorable option for consideration.

*Supervisor Fishbein joined the meeting at approximately 4:26 p.m. via phone.*

### **4. Discussion on How to Proceed with Lake Bank Erosion Control Shoreline Restoration Project**

After a lengthy discussion, the following motion was made:

A **MOTION** was made by Supervisor Milian and seconded by Supervisor Rubin directing District management to schedule a Special Meeting to discuss the options for the Lake Bank Erosion Control Shoreline Restoration Project and the funding of same for Wednesday, December 7, 2022, at 4:00 p.m. The **MOTION** carried 4 to 1 with Supervisor Fishbein dissenting.

## **H. NEW BUSINESS**

### **1. Consider Ratification of Florida Sidewalk Solutions' Proposal**

A **MOTION** was made by Supervisor Fonte, seconded by Supervisor Musser ratifying the Florida Sidewalk Solutions' Proposal dated September 16, 2022, in the amount of \$3,184.83, noting that this project has been completed, as specified in the agreement. Upon being put to a vote, the **MOTION** carried 4 to 0 with Supervisor Fishbein's response not being audible.

### **2. Consider Sidewalk Slab Replacements**

<u>CC Cutler Cay CDD – Sidewalk Slabs to be Replaced</u>		
<u>GenCon</u>	<u>Big T</u>	<u>Atlantic Southern</u>
Scope:  Replace FIVE (5) standard (5'x5' – 5" Depth) sidewalk slabs in the community.  - Based on the complete inspection performed by Florida Sidewalk Solutions. - Sidewalks to be installed as per the Engineer's approved drainage and paving plans. - Specific locations in the attached map.		
Total Price: <b>\$4,950.00</b>	Total Price: <b>\$7,200.00</b>	Total Price: <b>\$8,676.00</b>

A discussion ensued about the frequency of the replacement of the sidewalks, noting that two factors were the root systems of the mature trees and the parking and driving of BrightView trucks over the sidewalks when service is rendered. Mrs. Perez noted that she had notified the Association of this matter and asked that the HOA request that this practice be discontinued. She also requested that BrightView be asked to contribute to the repair cost.

A **MOTION** was made by Supervisor Fonte, seconded by Supervisor Milian and passed unanimously selecting GenCon for the sidewalk slab replacements in the amount of \$4,950; and simultaneously authorizing District Counsel to prepare an agreement and for District management to execute same on behalf of the District.

### **3. Consider Ratification of Solitude Lake Maintenance First Extension to Maintenance Agreement**

A **MOTION** was made by Supervisor Milian, seconded by Supervisor Musser and passed unanimously ratifying the Solitude Lake Maintenance First Extension to Maintenance Agreement; and simultaneously authorizing District Counsel to prepare an agreement and for District management to execute same on behalf of the District.

### **4. Consider Ratification of Pressure Cleaning Man North and South Entry Features and Structures Proposal**

A **MOTION** was made by Supervisor Milian, seconded by Supervisor Rubin and passed unanimously ratifying the Pressure Cleaning Man Estimate No. 1725, dated August 24, 2022, in the amount of \$987 for pressure cleaning services to the North and South Entry Features, Structures and Water Feature equipment pit cover, as presented.

### **5. Consider First Choice Electric for New Lake Fountain Permit and Electrical Work**

Mrs. Perez noted that the proposal provided by the HOA preferred vendor is familiar with the District was reviewed and recommended by the District Engineer.

A **MOTION** was made by Supervisor Fonte, seconded by Supervisor Milian and passed unanimously approving the First Choice Electric Proposal No. 2022-139, dated September 23, 2022, in the amount of \$2,240 for the new lake fountain permit and electrical work; simultaneously authorizing District Counsel to prepare an agreement and for District management to execute same on behalf of the District.

### **6. Consider Proposal for Removal of Lighting Handholes, Wires and Panels**

At the direction of the Board during the previous meeting, Mr. Camacho gathered various proposals for the removal of lighting handholes, wires and panels that are being abandoned from the old street lighting system. The following proposals were presented the meeting book:

TSTC in the amount of	\$ 40,265.00
Moe's Electric in the amount of	\$ 248,365.00
USI in the amount of	\$ 110,275.00
AV Electrical in the amount of	\$ 34,500.00

A **MOTION** was made by Supervisor Milian, seconded by Supervisor Musser and unanimously passed approving the proposal from AV Electric in the amount of \$34,500 for the removal and disposal of the remaining old street lighting system handholes, wires and panels with a start date to commence upon the issuance of the District Engineer's Notice of Commencement; and simultaneously authorizing District Counsel to prepare an agreement and for District management to execute same on behalf of the District.

#### **7. Consider Updated Phase II Storm Drainage Pipe Replacements and Repairs Project Plans**

A **MOTION** was made by Supervisor Milian, seconded by Supervisor Rubin and unanimously passed directing the District Engineer to gather proposals for the Phase II Storm Drainage Pipe Replacements and Repairs Project.

Ms. Crump noted that she had observed projects throughout the community wherein the sand and debris was entering the District storm drainage system. District management took note of this and will notify Code Enforcement.

Chairman Musser asked that District management submit a request to the HOA asking for the residents' email contact list in order to allow for the District to distribute information.

#### **8. Consider Resolution No. 2022-04 – Authorizing and Adopting as Amended Final Fiscal Year 2021/2022 Budget**

Mrs. Perez presented Resolution No. 2022-04, entitled:

##### **RESOLUTION NO. 2022-04**

**A RESOLUTION OF THE BOARD OF SUPERVISORS OF THE CUTLER CAY COMMUNITY DEVELOPMENT DISTRICT AUTHORIZING AND ADOPTING AN AMENDED FINAL FISCAL YEAR 2021/2022 BUDGET ("AMENDED BUDGET"), PURSUANT TO CHAPTER 189, FLORIDA STATUTES; AND PROVIDING AN EFFECTIVE DATE.**

Mrs. Perez explained, as done every year for administrative and statutory requirements, within 60 days of any given fiscal year end, the Board adopts a revised/amended budget for said year. The fiscal year ended on September 30, 2022. This is the reason it is administrative in nature (past year's budget for past year's expenses) and will serve as the Board's final approval/ratification of the District's expenditures for the past fiscal year.

A **MOTION** was made by Supervisor Fonte, seconded by Supervisor Milian and unanimously passed adopting Resolution No. 2022-04, adopting a Fiscal Year 2021/2022 Amended Budget, as presented.

#### **9. Discussion Regarding Legal Correspondence Received Regarding Ongoing FP&L Project**

Mrs. Perez previously circulated the first of two letters sent to the District on behalf of the Association on November 3, 2022. The second letter was forwarded to the District on behalf of the Association on Veterans Day, Friday, November 11, 2022, regarding a separate matter and forwarded to the Board of Supervisors and District Staff in advance of this meeting.

Mrs. Perez noted that first letter received was a request for permits that had been responded to multiple times and clarified that the District is not required to hold a permit for the FP&L street lighting project with confirmation of the same from the District Engineer.

As for the second letter that appears to be seeking compensation from the District and the FP&L contractor, noting that all previous damage requests the District had received from the Association had been either copied on or forwarded to the FP&L representative for remedy at no additional cost to the community.

District Counsel elaborated that the second notice was not clear as to whom the claim was against. They added that the letter did not require a response. Discussions ensued and clarification was provided: that FP&L is the responsible party for the project being conducted and for any related permitting requirements, as well as for any damages that result from the work being conducted by FP&L with the exception of landscaping. Mrs. Perez noted that FP&L has advised that they will replace the sod where applicable upon the project's completion although it is not a requirement of the contract.

## **I. OLD BUSINESS**

### **1. Update on SAE Street Signage and Asphalt Repairs Project**

Mr. Camacho advised that this project's original scope of work had been completed and noted that CO #1 and CO #2 were still pending completion.

### **2. Update on FP&L Lighting Project**

Mr. Camacho provided an update, noting that a punch list had been prepared for the damages and sod replacement, which will be submitted to FP&L for a site walkthrough. Various resident and Board member questions and concerns were addressed.

### **3. Update on Turf Management Retention Wall Area Exotic & Green Buttonwood Tree Trimming**

Mrs. Perez advised that this work had been completed.

### **4. Update on Molding Repairs and Painting of Old Cutler Perimeter Wall, Entry Features & Structures, Fountain, Monuments, etc.**

Mrs. Perez advised that the Molding Repairs and Painting to Old Cutler Perimeter Wall, Entry Features & Structures, Fountain, Monuments had since been completed over a month ago.

### **5. Update on Pressure Cleaning of Old Cutler Perimeter Wall and Monument Structures**

Mrs. Perez advised that the pressure cleaning of the Old Cutler Perimeter Wall and Monument Structures had been completed.

### **6. Update on Reef Tropical Pool Proposal for Replacement of South Entrance Water Feature Filtration Pump and Waterfall Jet Pump**

Mrs. Perez advised that the fountain maintenance service provider had completed the replacement of South Entrance Water Feature Filtration Pump and Waterfall Jet Pump.

## **J. AUDITOR SELECTION COMMITTEE**

## **1. Ranking of Proposals/Consider Selection of an Auditor**

*Mrs. Perez then recessed the Regular Board Meeting and opened a meeting of the Auditor Selection Committee.*

Mrs. Perez noted that the purpose of the Audit Committee Meeting was to rank and recommend, in order of preference, the auditor proposals. She explained that only two firms had responded and therefore the Board would need to formally waive the three or more proposal requirement followed by ranking the recommendations via motion. A discussion ensued after which:

A **MOTION** was made by Supervisor Milian, seconded by Supervisor Fonte and unanimously passed waiving the three or more proposal requirement followed by ranking Nowlen Holt & Miner as number one (1) and Grau & Associates as number two (2), qualified to perform the auditing services.

*There being no further Audit Committee business to conduct, Mrs. Perez adjourned the Audit Committee Meeting and simultaneously reconvened the Regular Board Meeting.*

A discussion ensued after which the Board, acting as the District Board, accepted the recommendations of the Audit Committee as follows:

A **MOTION** was made by Supervisor Milian, seconded by Supervisor Fonte and unanimously passed waiving the three or more proposal requirement followed by directing District management to engage the auditing services firm of Nowlen, Holt & Miner, a qualified auditing firm, to perform audits for the fiscal years ending September 30, 2021, September 30, 2022, and September 30, 2023, at the following rates:

Audit for fiscal year ended September 30, 2021, in the amount of \$3,400;  
Audit for fiscal year ended September 30, 2022, in the amount of \$3,500; and  
Audit for fiscal year ending September 30, 2023, in the amount of \$3,600

and further authorizing the District management to negotiate fees for the fiscal years ending 2024 and the 2025 audits, as proposed by Nowlen, Holt & Miner at \$3,600 and \$3,600, respectively.

## **K. ADMINISTRATIVE MATTERS**

### **1. Financial Update**

Mrs. Perez presented the financial statements through September 2022. Financials are stable and will cover budgeted expenditures at this time. Available funds as of September 30, 2022, were \$357,137.54.

A **MOTION** was made by Supervisor Fishbein, seconded by Supervisor Milian and passed unanimously ratifying and approving the financials, as presented.

## **L. BOARD MEMBER/STAFF COMMENTS/REQUESTS**

### **1. District Counsel Update on 2022 Florida Legislative Session**

Mr. Camacho distributed a letter he prepared dated November 14, 2022, expressing his concerns with regard to two (2) evergreen trees located at the edge of the property located at 18821 SW 74<sup>th</sup> Court. He made the recommendation for them to be removed, as the trees are obstructing the speed limit signage and one of them is displaying stability issues. It was determined that the tree had been de-rooted by FP&L. District management was instructed to send the homeowner a letter requesting the removal of the evergreen trees and to copy the HOA on same.

**M. ADJOURNMENT**

There being no further business to come before the Board, a **MOTION** was made by Supervisor Musser, seconded by Supervisor Milian and passed unanimously adjourning the meeting at 5:47 p.m.

**ATTESTED BY:**

\_\_\_\_\_  
**Secretary/Assistant Secretary**

\_\_\_\_\_  
**Chairman/Vice Chair**



# *Landshore® Enterprises, LLC*

*Streambank & Shoreline protection/stabilization/reclamation  
Environmental Engineering, Erosion Control, Construction Management  
d/b/a Erosion Restoration, LLC*

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June 29, 2022

Cutler Cay Community Development District  
c/o: Ms. Gloria Perez, District Manager  
2501 Burns Rd., Suite A  
Palm Beach Gardens, FL 33410

Dear Ms. Perez,

Please allow this letter to summarize the findings and proposed solution as described in the Erosion and Sedimentation Control Plan for Cutler Cay Development District, provided by Landshore® Enterprises, LLC ("Landshore®").

On May 5, 2022, Landshore® entered into an agreement with Cutler Cay Development District, to render the following services: ***Engineering and design services for Erosion Control Shoreline Restoration activities.***

As a result of these services, Landshore® provided Cutler Cay CDD with Erosion and Sedimentation Control Plans, which includes:

- Topographic and Bathymetric (Underwater) Survey
- Soil analysis of submerged soils to develop Shoreline Stability Analysis (determining bearing capacity for shoreline and angle of repose for soils)
- Detailed Cross Sections illustrating shoreline profile (above and below water)
- Product recommendation and proposed solution to Erosion Control and Shoreline Restoration (product specifications, installation methods, and quantities)

During the week of May 9, 2022, our engineering team collected field data from what is known as Lake 1 within the Cutler Cay Community Development District. Together with analytical data downloaded from Miami-Dade County's official website plus other sources, our team performed a comprehensive model of existing condition that was examined by staff engineers, certified stormwater inspector, and construction manager of Landshore® to find a viable alternative. Our recommended solution is presented on the set of drawings based on low-altitude high-resolution aerial photographs, geo-referenced in state plane coordinates with cross sections, details, specifications, and best management practices for storm water pollution prevention, attached under this cover letter.





# Landshore® Enterprises, LLC

Streambank & Shoreline protection/stabilization/reclamation  
Environmental Engineering, Erosion Control, Construction Management  
d/b/a Erosion Restoration, LLC

## Technical Findings:

Stormwater retention ponds are becoming common features in urban and new development areas for irrigation water, recreation, flood control, and general watershed management. Relatively small, typically less than 25 acres, these basins are used to capture and store runoff water drained from city streets and development complexes.

Due to the nature of these retention ponds, the conditions at the site featured steep slopes along the embankment and steep drops along the underwater shelf to depths of 20 feet or more at various locations. The area has a bottom of hard and fractured limestone rock, which may result in vulnerable slopes. It was also noted the presence of a large amount of soft soil, which significantly increase the erosion of the lake shorelines due to its instability where the safety factor is less than 1 (see figure 3, Slope stability, existing conditions).

According to the United States Department of Agriculture, the soil found has the following:

Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H
69—Perrine marly silt loam, drained-Urban land complex, 0 to 1 percent slopes														
Perrine, drained	45	C/D	0-11	Marly silt loam	ML	A-4	0- 0- 0	0- 0- 0	76-82-100	75-82-100	72-81-100	69-79-100	0-34 -35	NP-5 -7
			11-26	Marly silt, marly silt loam	ML	A-4	0- 0- 0	0- 0- 0	77-83-100	76-83-100	73-82-100	71-82-100	0-27 -34	NP-2 -5
			26-36	Bedrock	—	—	—	—	—	—	—	—	—	—

Figure 1 - United States Department of Agriculture Soil Classification

## Recommended Solution:

After careful consideration of nonstructural erosion control solutions, it is our professional opinion, to the best of our knowledge and belief that present slope condition may be remedied by utilizing an articulated concrete mat system such as ShoreFlex®, or any other equal product construction approved by Engineer, due to its ability to establish a safe slope condition between 3: 1 to 4: 1, and a hard shield against wave action and wind, where the conditions of the safety factor for stability can be greater than 2.0 (see figure 4). Additionally, there are soft material on the limerock on the shoreline where the placement of ShoreFlex® will help with erosion control.



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**ShoreFlex®** is a permanent erosion prevention system that can be installed to shield channel side slopes and beds, pipe and culvert inlets/outlets, shoreline, and almost any place you may have hydraulic erosion protection needs. ShoreFlex® consists of a concrete block erosion control mat designed to be vegetated. ShoreFlex® comes in various customizable sizes and erosion control backing choices. Shoreflex® performs better than rock riprap and is easy to maintain. In addition, ShoreFlex® is environmentally friendly, grows green and can be mowed.

Source: [www.shoreflex.com](http://www.shoreflex.com)

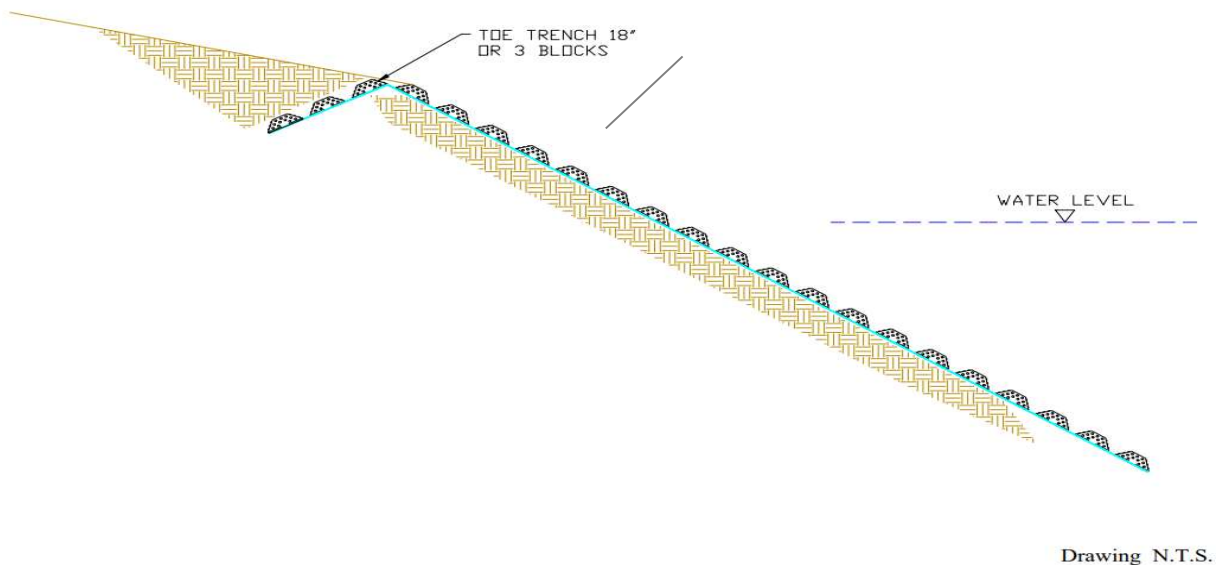


Figure 2 - Typical section of an articulated concrete mat system, such as ShoreFlex®



# Landshore® Enterprises, LLC

Streambank & Shoreline protection/stabilization/reclamation  
Environmental Engineering, Erosion Control, Construction Management  
d/b/a Erosion Restoration, LLC

***Some of our considerations for this recommendation are as follows:***

- ✓ This application will allow for creation of gradual 4:1 slope conditions along the embankment. Such an approach will be ideal for stabilization against fluctuation water levels and hard-arming the existing soils.
- ✓ ShoreFlex's design allows for its weight to be evenly distributed over a large area. This even distribution of weight along with the design of earth anchors, filter fabric and drainage stones to be installed underneath the matting, will secure the application in place and provide slope stability.
- ✓ This design features a continuing slope below the water control elevation. Using a gradual slope, this application will protect against eroding factors such as wave and wind action, seepage by its porous design, and prevent the build-up of hydrostatic pressure.
- ✓ Turf line will be established to the water control elevation. This will provide stability for landscaping and/or recreational activities. This will also allow for littoral plantings, if applicable.

The following figures show the different conditions before and after the recommended erosion control product (ShoreFlex®):

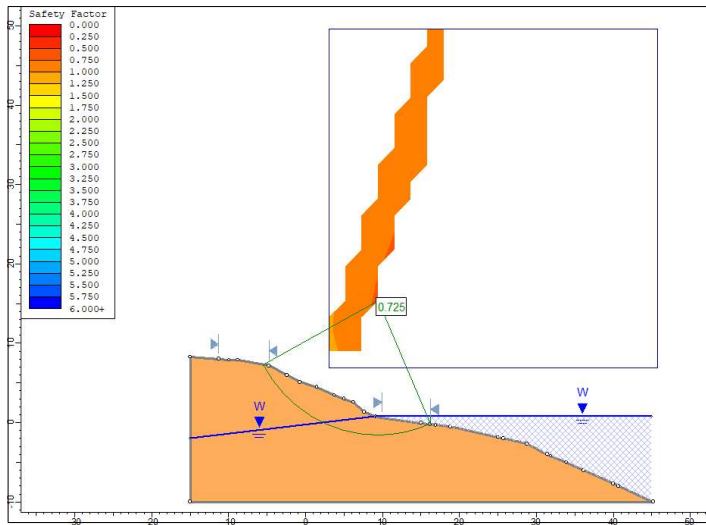


Figure 3 - Slope stability, existing conditions

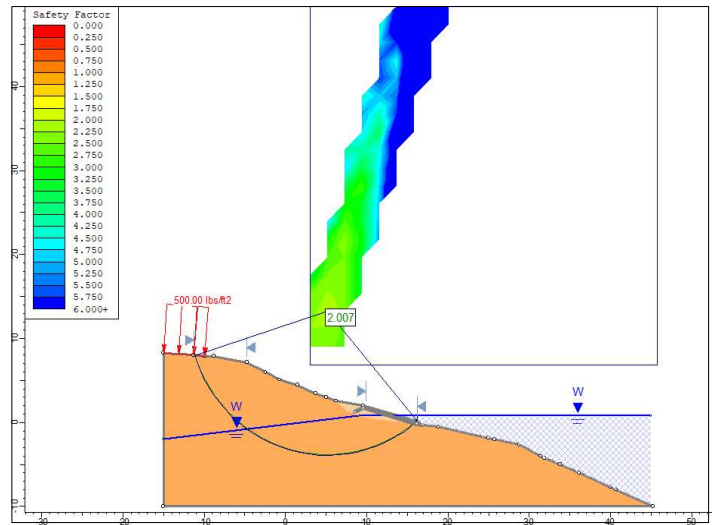


Figure 4 - Slope stability after installation of ShoreFlex®



# *Landshore<sup>®</sup> Enterprises, LLC*

*Streambank & Shoreline protection/stabilization/reclamation  
Environmental Engineering, Erosion Control, Construction Management  
d/b/a Erosion Restoration, LLC*

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*For comparison, please see below for our considerations of other erosion control products:*

After performing a cursory review of several erosion control product alternatives, including rock riprap, eco-filter tubes (or geotextile bags), among others – it is our professional opinion and belief that the present slope condition may be best remediated by utilizing an articulated concrete mat system such as ShoreFlex®, or any other equal product construction approved by Engineer.

#### Rock riprap:

- Due to size of the lake and desire to protect the shoreline from wave and wind action, the size of the rocks will have to range from 18-inch to 24-inch in diameter. This will result in a great amount of weight along the shoreline.

#### Eco-Filter tubes (EFT®):

- Though this application is cost-friendlier due to its low impact installation require little use of machinery, materials for this application will need to be imported as dredging is not recommended due to the lake depths and hard, lime rock bottom. In addition, multiple layers of tubes will be needed to create a safer slope.

#### GeoWeb (or GeoCell):

- To construct the GeoWeb along the escarpment under 4:1 slope conditions, we run the risk of losing the infill materials over time due to the water level fluctuation and wave and wind action. We do not recommend this application as it may require additional maintenance requirements.



# *Landshore® Enterprises, LLC*

*Streambank & Shoreline protection/stabilization/reclamation  
Environmental Engineering, Erosion Control, Construction Management  
d/b/a Erosion Restoration, LLC*

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Landshore's findings concluded that it will be most beneficial to segment portions of the lake into priority areas. Erosion priority has been based on depth of escarpment (unsafe drop-offs along embankment), and potential for further erosion.

The Erosion and Sedimentation Control Plans for Cutler Cay Community Development District are presented as follows:

- ✓ Priority Level 1: High – Immediate attention is recommended.
  - ✓ Priority Level 2: Medium – Attention will be needed over the next 1 to 3 years.
  - ✓ Priority Level 3: Low – Does not need remediation efforts and should be monitored over the next 4 to 6 years.
- 
- Priority Level 1: High (Sta 8+41 to Sta 43+67)
    - Approximately 3,505 linear feet of shoreline, to be restored with ShoreFlex®.
  - Priority Level 2: Medium (Sta 49+13 to Sta 58+15; and Sta 70+40 to 0+31)
    - Approximately 2,104 linear feet of shoreline, to be restored with ShoreFlex®.
  - Priority Level 3: Low (Sta 0+31 to 8+41; Sta 43+67 to 49+13; and Sta 58+15 to 70+40)
    - Approximately 2,541 linear feet of shoreline, to be monitored.

**Engineer's Opinion of Probable Cost:**

\$160.00 to \$180.00 per linear feet.

Landshore® has expertise in design and installation of different remediation applications for slope stabilization and erosion control. Should Cutler Cay Community Development District requests formal construction cost proposals, Landshore® will be glad to provide them.



# *Landshore® Enterprises, LLC*

*Streambank & Shoreline protection/stabilization/reclamation  
Environmental Engineering, Erosion Control, Construction Management  
d/b/a Erosion Restoration, LLC*

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If you have any additional questions, or require further information, do not hesitate to contact us at (954) 327-3300 or via email at [info@landshore.com](mailto:info@landshore.com).

We look forward to having the pleasure of continuing doing business with you.

Sincerely,  
Nicolas Valles-Negrette, Senior Engineer  
Qualified Stormwater Management Inspector Number 41451

André van den Berg, President  
Qualified Stormwater Management Inspector Number 37843

Landshore® Enterprises, LLC

	<b>Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass ASTM D - 2216 -92</b>	<b>Environmental Engineering</b> <i>Erosion Control, Landscaping &amp; Construction Management</i>
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CLIENT:	Cuttler Cay CDD	PLACE:	Lake
PROJECT:	2022-043	DATE:	5/24/2022
ADDRESS:	7755 SW 192nd St, Cutler Bay, FL 33157	REPORTED TO:	Nicolas Valles N.
SAMPLE BY:	A. Jose Pereira		

**Water (Moisture) Content**

**ASTM D - 2216 -92**

Water Content	Points	1	2	3	4	5
	Tare Name	18				
	Tare Mass (gr.)	361.74				
	Tare + Wet Sample (gr)	1,602.74				
	Tare + Dry Sample (gr)	1,243.42				
	Wet Mass (gr)	359.32				
	Dry Mass (gr)	881.68				
	Water Content (%)	40.75%				

**Comments:** Gravel: Gravel ( 2.0 to 75.0 millimeters )

U.S.C.S. : (SM)g Silty sand with gravel

AASHTO. : A-2-4(0) Silty gravel and sand

MANAGEABLE : ( Good to Fair )



# Sieve Analysis of Fine and Coarse Aggregates

**Environmental Engineering**  
Erosion Control, Landscaping  
& Construction Management

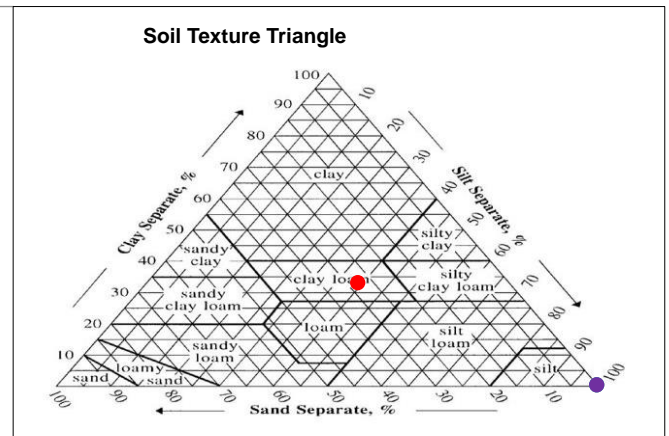
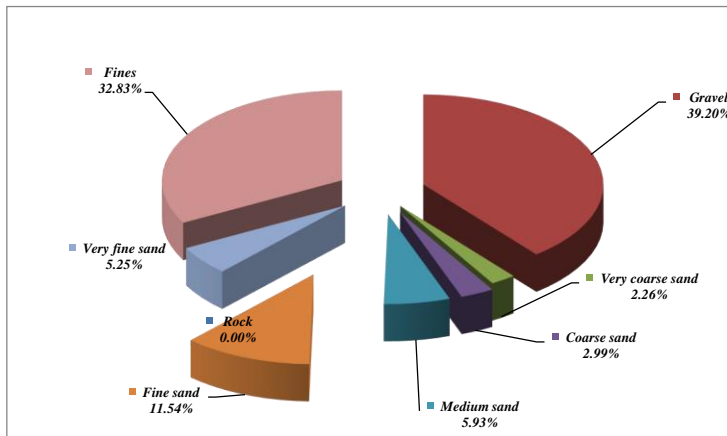
**ASTM C136**

CLIENT: Cuttler Cay CDD PLACE: Lake DATE: 5/24/2022  
PROJECT: 2022-043  
ADDRESS: 7755 SW 192nd St, Cutler Bay, FL 33157  
SAMPLE BY: A. Jose Pereira REPORTED TO: Nicolas Valles N.

COARSE	TOTAL WEIGHT (T):  385.84	CUMULATIVE WEIGHT No. 10 (A)  151.24	PASSING WEIGHT No. 10 (Ba)  234.60	SIEVE	WEIGHT RETAINED	% PARTIAL RETAINED	% CUMULATIVE RETAINED	% PASSING.	GRANULOMETRY ANALYSIS DATA	
				3"	0.00	0.00%	0.00%	100.00%	% w <sub>n</sub> = 40.75%	
				2-1/2"	0.00	0.00%	0.00%	100.00%		
				2"	0.00	0.00%	0.00%	100.00%		
				1-1/2"	0.00	0.00%	0.00%	100.00%		
				1"	0.00	0.00%	0.00%	100.00%	COARSE	
				3/4"	0.00	0.00%	0.00%	100.00%	WT WET SAMPLE =	212.87
				1/2"	0.00	0.00%	0.00%	100.00%	WS DRY SAMPLE =	151.24
				3/8"	0.00	0.00%	0.00%	100.00%	FINE	
				1/4"	0.00	0.00%	0.00%	100.00%	WT WET SAMPLE =	151.97
				N° 4	0.00	0.00%	0.00%	100.00%	WS DRY SAMPLE =	107.97
N° 10	151.24	39.20%	39.20%	60.80%						
FINE	Sample Weight: (Bb)  234.60	SIEVE	WEIGHT RETAINED					$f_1 = \frac{100}{T} = 0.2592$		
		N° 20	8.73	8.73	2.26%	41.46%	58.54%			
		N° 40	11.52	11.52	2.99%	44.45%	55.55%	$f_2 = \frac{Ba}{Bb} = 1.000$		
		N° 60	22.87	22.87	5.93%	50.38%	49.62%			
		N° 80	27.05	27.05	7.01%	57.39%	42.61%	Weight Passing N° 200 =		
		N° 100	17.49	17.49	4.53%	61.92%	38.08%	W <sub>i</sub> = 126.67		
		N° 200	20.27	20.27	5.25%	67.17%	32.83%			
		PAN	0.040	0.04	0.01%	100.00%	0.00%	Total final Weight: 259.21 g Right!		

## RESULTS

Rock	greater than 75.0 millimeters (~2")	0.00%
Gravel	2.0 to 75.0 millimeters	39.20%
Very coarse sand	1.0 to 2.0 millimeters	2.26%
Coarse sand	0.5 to 1.0 millimeters	2.99%
Medium sand	0.25 to 0.5 millimeters	5.93%
Fine sand	0.10 to 0.25 millimeters	11.54%
Very fine sand	0.05 to 0.10 millimeters	5.25%
Fines	Clay and Colloids (Passing #200)	32.83%



Comments:

Gravel: Gravel ( 2.0 to 75.0 millimeters )

U.S.C.S. : (SM)g Silty sand with gravel

AASHTO. : A-2-4(0) Silty gravel and sand





# Sieve Analysis of Fine and Coarse Aggregates

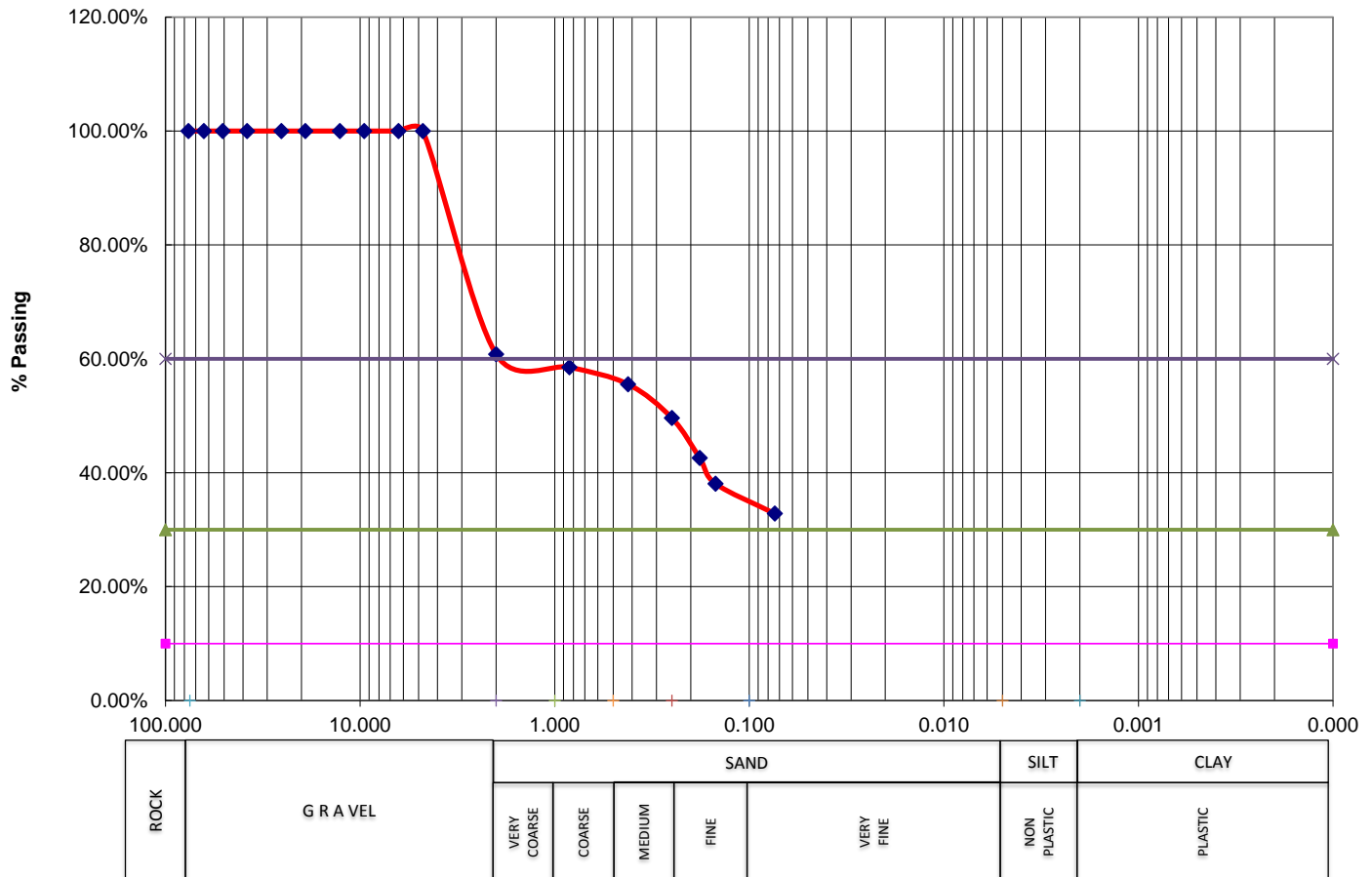
**Environmental Engineering**  
Erosion Control, Landscaping  
& Construction Management

**ASTM C136**

CLIENT: Cuttler Cay CDD PLACE: Lake DATE: 5/24/2022  
PROJECT: 2022-043  
ADDRESS: 7755 SW 192nd St, Cutler Bay, FL 33157  
SAMPLE BY: A. Jose Pereira REPORTED TO: Nicolas Valles N.

**MANAGEABLE : ( Good to Fair )**

**Grain-size distribution Curve**



**Coefficient of Gradation**

$$C_c = \frac{(D_{30})^2}{D_{10} * D_{60}} ; \text{ between 1 and 3}$$

D10=

D30=

D60=

**Uniformity Coefficient**

$$C_u = \frac{D_{60}}{D_{10}}$$

$$C_u = \frac{D_{60}}{D_{10}}$$

(Gravel)

**1.5900**

Cu =

Cc=

**Comments:**

**Gravel: Gravel ( 2.0 to 75.0 millimeters )**

**U.S.C.S. : (SM)g Silty sand with gravel**

**MANAGEABLE : ( Good to Fair )**

	<b>Standard Test Methods for Laboratory Determination of Density (Unit Weight) of Soil Specimens ASTM D7263</b>	<b>Environmental Engineering</b> <i>Erosion Control, Landscaping &amp; Construction Management</i>

CLIENT:	Cuttler Cay CDD	PLACE:	Lake
PROJECT:	2022-043	DATE:	5/24/2022
ADDRESS:	7755 SW 192nd St, Cutler Bay, FL 33157	REPORTED TO:	Nicolas Valles N.
SAMPLE BY:	A. Jose Pereira	DRY SAMPLE:	Y
CONTENT OF WATER:	40.75%		

**Dry Density**

Dry Density	Points	1	2	3	4	5
	Mold + Sample (gr.)	1,098.82				
	Mold Mass (gr.)	973.21				
	Weight Sample (gr.)	125.61				
	Mold Area (cm <sup>2</sup> )	36.00				
	Mold height (cm)	2.53				
	Mold Volume (cm <sup>3</sup> )	90.95				
	Density (Kg/m <sup>3</sup> )	1,381.09				
	Average Density (Kg/m <sup>3</sup> )	1,381.09				
	Dry Density (Lb/ft <sup>3</sup> )	86.22				

Comments: Gravel: Gravel ( 2.0 to 75.0 millimeters )

---

U.S.C.S. : (SM)g Silty sand with gravel


---

AASHTO. : A-2-4(0) Silty gravel and sand

---

MANAGEABLE : ( Good to Fair )

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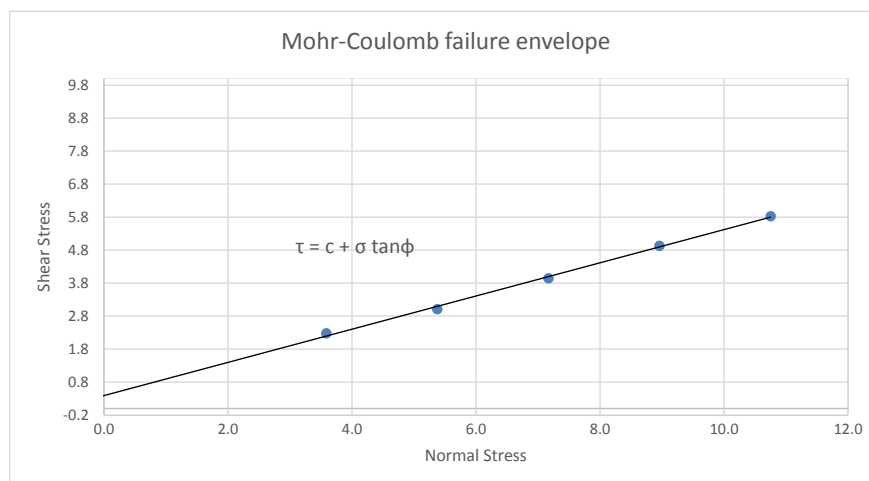
 <small>d/b/a Erosion Restoration</small>	<b>DIRECT SHEAR TEST, PER ASTM D3080 (AASHTO T236)</b>	<b>Environmental Engineering</b> <i>Erosion Control, Landscaping &amp; Construction Management</i>

CLIENT:	Cuttler Cay CDD	PLACE:	Lake
PROJECT:	2022-043	DATE:	5/24/2022
ADDRESS:	7755 SW 192nd St, Cutler Bay, FL 33157	REPORTED TO:	Nicolas Valles N.
SAMPLE BY:	A. Jose Pereira		

### Direct shear test

Area: 5.58

Vertical Load	Compressor Pressure	Normal Stress	Horizontal Load	Shear Stress
lbs	psi	psi	lbs	psi
20	22.6	3.6	12.70	2.3
30	32.6	5.4	16.80	3.0
40	42.2	7.2	22.00	3.9
50	51.8	9.0	27.50	4.9
60	61.5	10.8	32.50	5.8



Angle of internal friction	Cohesion	Compacted
28.0°	0 kPa	Yes

Comments: **DRY SAMPLE TESTED**

Silty sand with gravel with a friction Angle of : 28° and Cohesion of 0 kPa

U.S.C.S. : (SM)g Silty sand with gravel

AASHTO. : A-2-4(0) Silty gravel and sand

MANAGEABLE : ( Good to Fair )



**SOIL CLASSIFICATION**  
**Soil Classification System**  
 (From AASHTO M 145 or ASTM D3282) & ASTM D-2487-00

**Environmental Engineering**  
 Erosion Control, Landscaping  
 & Construction Management

Cherokee Town and Country Club

CLIENT:	<u>Cuttler Cay CDD</u>	CLASSIFICATION:	<u>(SM)g</u>	<u>A-2-4(0)</u>
PROJECT:	<u>2022-043</u>	TYPICAL DESCRIPTION:	<b><u>Silty sand with gravel</u></b>	<b><u>Silty gravel and sand</u></b>
ADDRESS:	<u>7755 SW 192nd St. Cutler Bay, FL 33157</u>			
PLACE:	<u>Lake</u>	DATE:	<u>Tuesday, May 24, 2022</u>	

### AASHTO Classification System

Granulometry Method= Sieve

Laboratory		(%)		
Sieve analysis (percentage passing)	N° 10	60.80	Group Index (G.I.):	
	N° 40	55.55	a:	35 0
	N° 200	32.83		75 40
Characteristics of fraction passing No. 40	Liquid Limit	N.L.	a:	0.00
	Plastic Limit	N.P.	b:	15 0
	Plasticity Index	N.L.		55 40
			b:	17.83
Group Index (G.I.):		(0.00)	c:	40 0
				60 20
Primarily organic matter, dark in color, and organic odor (Y/N)	<u>N</u>		c:	0.00
			d:	10 0
				30 20
			d:	0.00
IG= 0,2 * a + 0,005 * a * c + 0,01 * b * d =			(0.00)	

**Table 01. Classification of Highway Subgrade Material**

GENERAL CLASSIFICATION									
GROUP CLASSIFICATION		Sieve analysis (percentage passing)			Characteristics of fraction passing No. 40		Group Index N°.	Description	
		10	40	200	Liquid limit	Plasticity index			
<b>A-1</b>			50 MAX	25 MAX		6 MAX	0	Stone fragments, gravel, and sand	
	<b>A-1a</b>		50 MAX	15 MAX		6 MAX	0	Stone or gravel fragments	
	<b>A-1b</b>	50 MAX	50 MAX	25 MAX		6 MAX	0	Gravel and sand mixtures	
<b>A-2*</b>				35 MAX			0 to 4	Silty or clayey gravel and sand	
	<b>A-2-4</b>			35 MAX	40 MAX	10 MAX	0	Silty gravel and sand	
	<b>A-2-5</b>			35 MAX	41 MIN	10 MAX	0	Silty gravel and sand	
	<b>A-2-6</b>			35 MAX	40 MAX	11 MIN	4 MAX	Clayey gravel and sand	
	<b>A-2-7</b>			35 MAX	41 MIN	11 MIN	4 MAX	Clayey gravel and sand	
<b>A-3</b>			51 MIN	10 MAX		N.L.	0	Fine sand	
<b>A-4</b>				36 MIN	40 MAX	10 MAX	8 MAX	Silty soils	
<b>A-5</b>				36 MIN	41 MIN	10 MAX	12 MAX	Silty soils	
<b>A-6</b>				36 MIN	40 MAX	11 MIN	16 MAX	Clayey soils	
<b>A-7</b>	<b>A-7-5</b>			36 MIN	41 MIN	11 MIN	20 MAX	Clayey soils	
	<b>A-7-6</b>			36 MIN	41 MIN	11 MIN	20 MAX	Clayey soils	
<b>A-8</b>								Peat and other highly organic soils.	

<b>AASHTO CLASSIFICATION</b>	<b>A-2-4(0)</b>
<b>TYPICAL DESCRIPTION:</b>	<b>Silty gravel and sand</b>
<b>VALUE AS SUBGRADE</b>	<b>Excellent to Good</b>
<b>GRANULOMETRY CLASSIFICATION</b>	<b>Gravel: Gravel ( 2.0 to 75.0 millimeters )</b>



# SOIL CLASSIFICATION

## Soil Classification System

(From AASHTO M 145 or ASTM D3282) & ASTM D-2487-00

## Environmental Engineering

Erosion Control, Landscaping

& Construction Management

Cherokee Town and Country Club

CLIENT:	Cuttler Cay CDD	CLASSIFICATION:	(SM)g	AASHTO	A-2-4(0)
PROJECT:	2022-043	TYPICAL DESCRIPTION:	Silty sand with gravel	Silty gravel and sand	
ADDRESS:	7755 SW 192nd St. Cutler Bay, FL 33157	DATE:	Tuesday, May 24, 2022		
PLACE:	Lake				

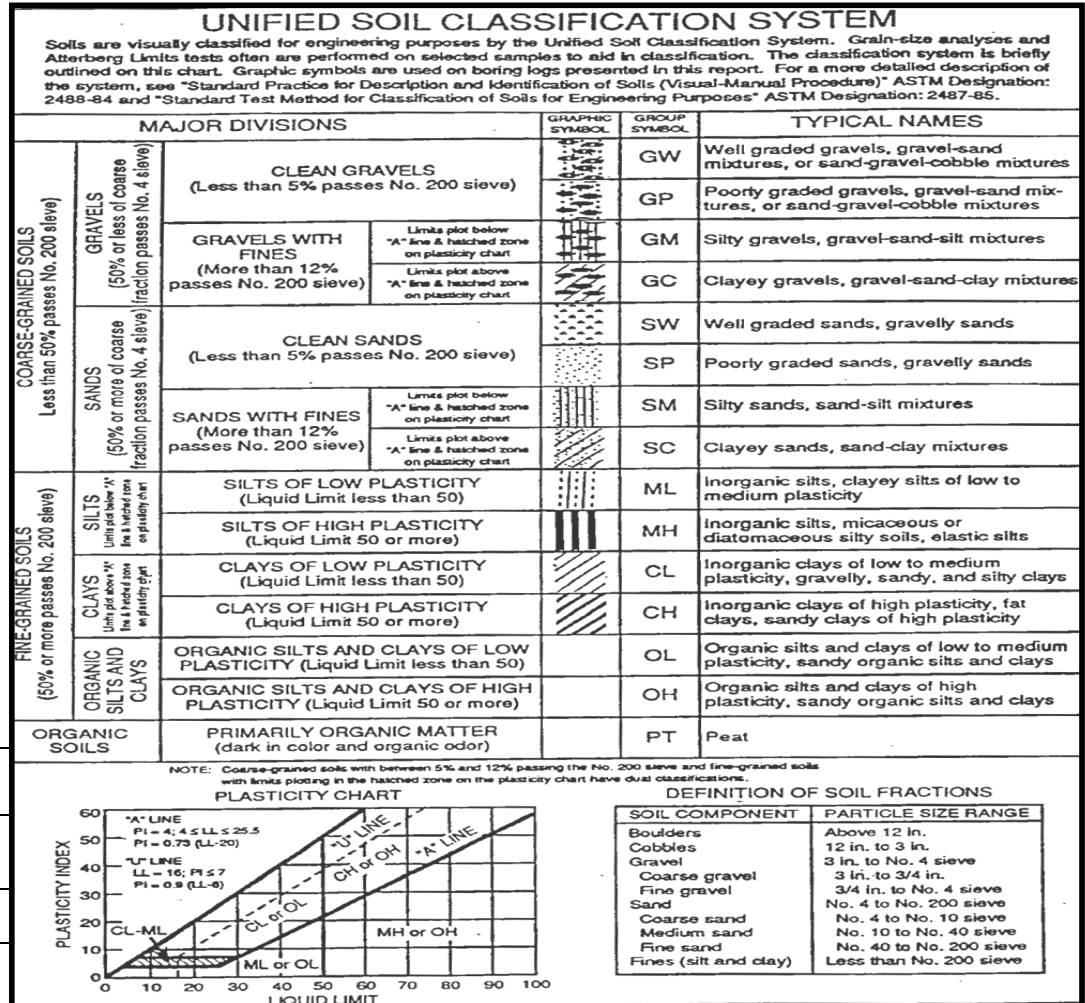
## Unified Soil Classification System

ASTM D-2487-00

### Granulometry Method= Sieve

Laboratory	(%)	
Sieve analysis (percentage passing)	Nº 200	32.83
	Nº 4 (Total)	100.00
	Nº. 4 (Coarse-Grained)	100.00
Characteristics of fraction passing No. 40	Liquid Limit	Oven
	Plastic Limic	N.L.
	Laboratory Plasticity Index	N.P.
	P.I. = LL - PL	N.P.
	Teorical Plasticity Index	"A" LINE
		"U"LINE
		N.L.
		N.P.
Coefficient	Gradation (CC)	
	Uniformity (CU)	
ORGANIC MATTER PRESENCE (Y/N):	N	
Primarily organic matter, dark in color, and organic odor (Y/N)	N	

U.S.C.S. CLASSIFICATION:	(SM)g
TYPICAL DESCRIPTION:	Silty sand with gravel
GRANULOMETRIC CLASSIFICATION :	Gravel: Gravel ( 2.0 to 75.0 millimeters )
MANAGEABLE :	( Good to Fair )





# Erosion and Sedimentation Control Plan for Cutler Cay Community Development District Lake 1

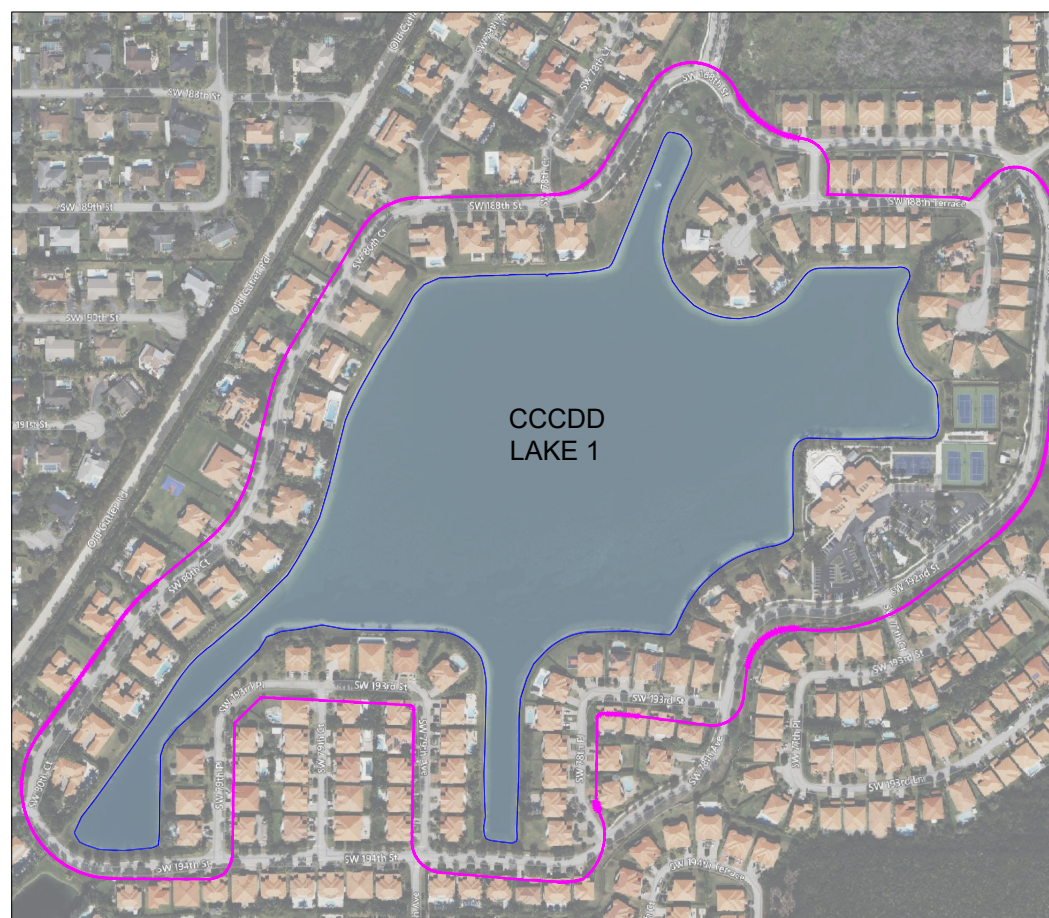
## PROJECT NOTES:

1. GOVERNING STANDARDS AND SPECIFICATIONS: FLORIDA DEPARTMENT OF TRANSPORTATION, STANDARDS SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AS AMENDED BY CONSTRUCTION DOCUMENTS.
2. PLANS WERE PREPARED ACCORDING TO INFORMATION COLLECTING IN THE FIELD WITH SURVEYING INSTRUMENTS, HISTORICAL DATA FROM PUBLICLY AVAILABLE SOURCES, AND PALM BEACH COUNTY GIS DATA ON PARCELS, LOTS, ROADWAY, ETC.
3. THIS IS NOT A BOUNDARY SURVEY.
4. SURVEY WAS PERFORMED ON MAY 11TH, 2022 BY LANDSHORE ENTERPRISES, LLC.
5. THE SCALES OF THE PLANS MAY HAVE CHANGE DUE TO REPRODUCTION, PLAN SHEETS ARE RECOMMENDED TO BE PRINTED OR PLOTTED ON 11"x17" PAPER.
6. COORDINATE SYSTEMS HEREON FOR THE HORIZONTAL SYSTEM ARE BASED ON NORTH AMERICAN DATUM OF 1983 (NAD 83) FLORIDA STATES PLANES, East ZONE AND FOR THE VERTICAL SYSTEM ARE BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88), AND THE UNITS ARE BASED ON US FOOT.
7. THE BEARINGS VALUES SHOWN HEREON ARE BASED ON GPS/RTK OBSERVATIONS AND RTK CORRECTIONS FROM THE FLORIDA DEPARTMENT OF TRANSPORTATION, FLORIDA PERMANENT REFERENCE NETWORK.
8. THE PROJECT SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE. THERE MAY BE INSTRUMENTS OF RECORD AND NOT OF RECORD, AFFECTING THE SUBJECT PARCEL THAT ARE NOT SHOWN ON THIS SURVEY.
9. CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE-CALL AT 1-(800)-432-4770 AT LEAST 48 HOURS PRIOR TO PERFORMING ANY DIGGING TO VERIFY THE EXACT LOCATION OF EXISTING UTILITIES. A CONTRACTOR'S REPRESENTATIVE MUST BE PRESENT WHEN UTILITY COMPANIES LOCATE THEIR FACILITIES.

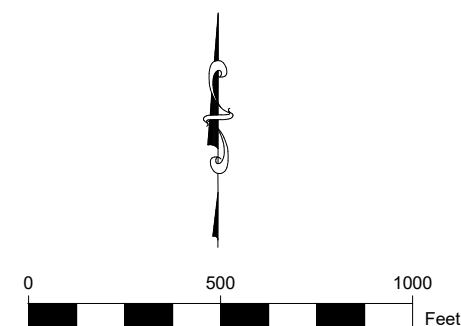
Call 48 hours  
before you dig  
1-800-432-4770  
It's the law!



Sunshine State One Call of Florida, Inc.



VICINITY MAP



SCALE: 1" = 500'

Section 3 Township 56 South, Range 40 East

Section S3 T56S R40E  
Meridian Tallahassee  
State Florida  
Source USFS  
GLO Township Records

JUNE 29, 2022

## CERTIFICATION TO PLANS

THIS IS TO CERTIFY THAT THE CONSTRUCTION PLANS AND SPECIFICATIONS AS CONTAINED HEREIN WERE PREPARED AND DESIGNED BY LANDSHORE ENTERPRISES, LLC. THESE CONSTRUCTION DRAWINGS WERE PREPARED EITHER DIRECTLY, OR UNDER THE SUPERVISION AND DIRECTION OF THE RESPECTIVE UNDERSIGNED, WHOSE LICENSE NUMBER AS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA IS AFFIXED BELOW.

ENGINEER: PIETER M. LOMBARD REG. NO. 66596

## INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	LEGEND AND ABBREVIATIONS
4	PRIORITY LEVELS PLAN
5-8	TOPOGRAPHIC PLAN
9-12	SURVEY CONTROL PLAN
13-14	EROSION CONTROL ELEMENT PLAN
15-18	PLAN AND CROSS SECTIONS
19-20	PLAN AND PROFILE
21	BATHYMETRIC PLAN
22-23	DETAILS
24	SUMMARY OF QUANTITIES
25-27	MANUFACTURER'S SPECIFICATIONS

## PREPARED FOR

Cutler Cay Community  
Development District

7755 SW 192nd St,  
Cutler Bay, FL 33157

## PREPARED BY



**Landshore Enterprises, LLC**  
"Your Shoreline Protection Specialists"

118 Shamrock Blvd.  
Venice, FL 34293  
Office: 941-303-5238  
Fax: 941-218-6113

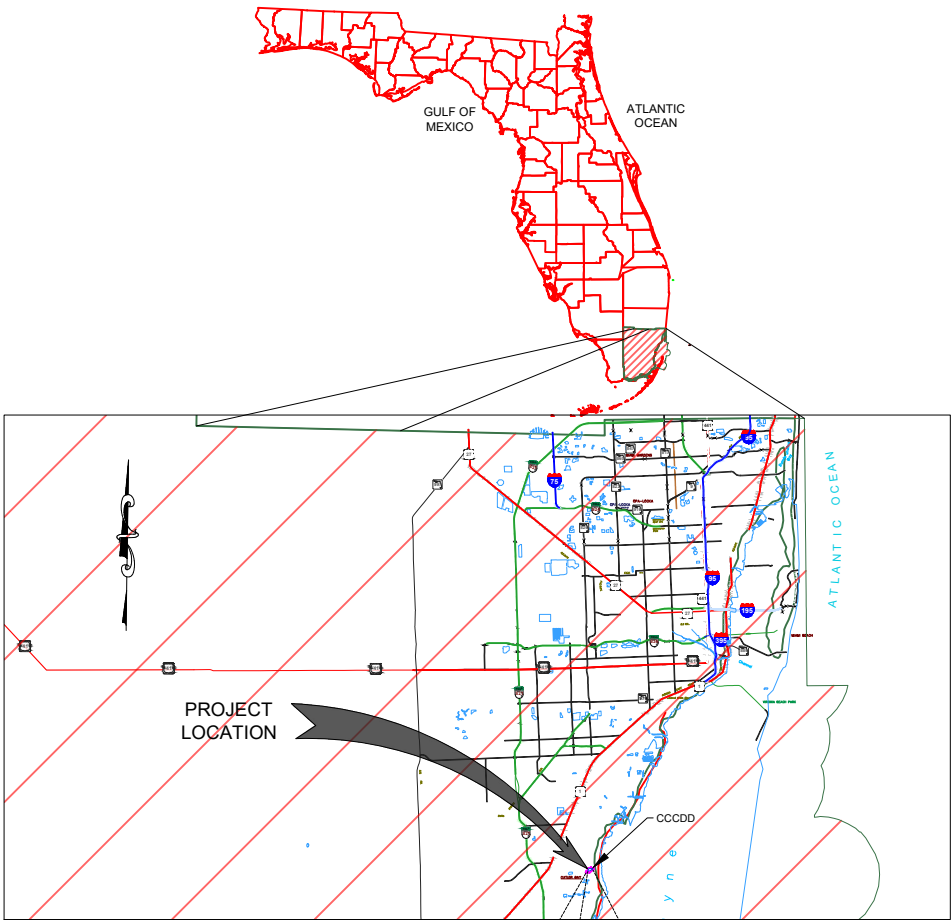
E-mail: info@landshore.com

PIETER M. LOMBARD,  
ENGINEER, P.E.  
FLORIDA REGISTRATION No. 66596

DESIGNED BY: NV  
DRAWN BY: NV  
CHECKED BY: AVDB  
APPROVED BY: PML  
PROJECT NO: 2022-043

SHEET 1  
OF 27





MIAMI DADE COUNTY  
(NORTH SIDE)



LOCATION MAP

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF GOVERNMENT ENTITIES WHICH WILL APPLY, AND ALL OTHER LOCAL AND NATIONAL CODES WHERE APPLICABLE.
2. ALL CONSTRUCTION SHALL BE PERFORMED IN A SAFE MANNER, SPECIFICALLY, THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SHALL BE STRICTLY OBSERVED.
3. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO COMMENCING CONSTRUCTION.
4. UPON RECEIPT OF NOTICE OF AWARD AND AFTER OBTAINING AN ENGINEERING CONSTRUCTION PERMIT FROM APPLICABLE AGENCIES, THE CONTRACTOR SHALL ARRANGE A PRE-CONSTRUCTION CONFERENCE TO INCLUDE CLIENT, THE CONTRACTOR, AND THE ENGINEER OF RECORD.
5. CONTRACTOR SHALL CONTACT STATE 811, AT LEAST 48 HOURS PRIOR TO PERFORMING ANY DIGGING TO VERIFY THE EXACT LOCATION OF EXISTING UTILITIES. A CONTRACTOR'S REPRESENTATIVE MUST BE PRESENT WHEN UTILITY COMPANIES LOCATE THEIR FACILITIES.
6. THE CONTRACTOR IS TO USE CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD AND UNDERGROUND UTILITIES.
7. EXISTING UNDERGROUND UTILITIES, IF SHOWN ON THE DRAWINGS, HAVE BEEN SHOWN BASED UPON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE REQUIRED TO MARK AND CLEARLY DELINEATE LOCATIONS OF EXISTING UTILITIES WITHIN AREAS OF WORK PRIOR TO EXCAVATION TO AVOID DAMAGE. THE CONTRACTOR SHALL MAKE ALL REASONABLE EFFORTS TO LOCATE, IDENTIFY AND MARK EXISTING UTILITIES BY FIELD VERIFICATION, COORDINATION WITH UTILITY COMPANIES AND ELECTRONIC OR OTHER SUCH DETECTION TECHNOLOGY AND MEANS AND SHALL BEAR ALL COSTS FOR THIS WORK.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS AND COSTS TO CORRECT DAMAGES RESULTING FROM FAILURE TO TAKE ALL NECESSARY PRECAUTIONS INCLUDING LOCATING, MARKING AND CAREFUL EXCAVATION. (CONTRACTOR SHALL AVOID DAMAGING EXISTING IRRIGATION SYSTEMS. IN CASE OF DAMAGE, THE CONTRACTOR SHALL REPLACE IRRIGATION SYSTEMS TO MATCH EXISTING CONDITIONS AND LOCATION).
9. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED CONSTRUCTION OR TO BE OF A SIZE OR MATERIAL DIFFERENT FROM THAT SHOWN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER.
10. CONTRACTOR SHALL PROVIDE HIS OWN LINE AND GRADE FROM HORIZONTAL AND VERTICAL CONTROL.
11. FOR EACH PROJECT AREA, VERTICAL CONTROL IS BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).
12. ANY N.A.V.D. BENCH MARK MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED AND PROPERLY REFERENCED BY A REGISTERED-PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE MINIMUM TECHNICAL STANDARDS OF THE STATE BOARD OF PROFESSIONAL LAND SURVEYORS PRIOR TO BEGINNING WORK AT THE SITE.
13. ALL STATIONS AND OFFSETS REFER TO [BASELINE] OF CONSTRUCTION, UNLESS OTHERWISE STATED.
14. CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM PLANS FOR CONSTRUCTION PURPOSES.
15. THE CONTRACTOR IS ALERTED TO THE PRESENCE OF UNDERGROUND WIRES AND POLES IN THE PROJECT AREA. THE METHOD OF CONSTRUCTION IN THESE LOCATIONS MUST COMPLY WITH ALL OSHA SAFETY STANDARDS. THE CONTRACTOR SHALL INSPECT THESE SITES AND BE RESPONSIBLE FOR DETERMINING WHAT METHOD OF PREPARATION AND CONSTRUCTION WILL BE USED TO COMPLY WITH THESE REQUIREMENTS.
16. THE CONTRACTOR SHALL NOTIFY THE CLIENT AT LEAST 24 HOURS PRIOR TO BEGINNING OF WORK.
17. WHERE MATERIAL OR DEBRIS HAS WASHED OR FLOWED INTO OR BEEN PLACED IN WATER COURSES, GRAVITY SEWER, DITCHES, DRAINS, CATCH BASINS, OR ELSEWHERE AS A RESULT OF THE CONTRACTOR'S OPERATIONS, SUCH MATERIAL OR DEBRIS SHALL BE REMOVED AND SATISFACTORILY DISPOSED OF DURING PROGRESS OF THE WORK, AND THE AREA KEPT IN A CLEAN AND NEAT CONDITION.
18. THE CONTRACTOR SHALL RESTORE OR REPLACE, WHEN AND AS DIRECTED BY THE CLIENT ANY PUBLIC OR PRIVATE PROPERTY DAMAGED BY THE WORK, EQUIPMENT, EMPLOYEES OR SUBCONTRACTORS TO A CONDITION AT LEAST EQUAL TO THAT EXISTING IMMEDIATELY PRIOR TO THE BEGINNING OF OPERATIONS.
19. CONTRACTOR SHALL MAINTAIN EXISTING TRAFFIC FLOW PATTERNS THROUGHOUT ALL WORK OPERATIONS. MAINTENANCE OF TRAFFIC IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE CITY, STATE AND LOCAL GOVERNMENT CODES.
20. ALL EXCAVATIONS SHALL COMPLY WITH OSHA'S EXCAVATION SAFETY STANDARDS AND TRENCH SAFETY CODES, CONTRACTOR SHALL FURNISH THE OWNER WITH WRITTEN ASSURANCE THAT HE WILL COMPLY WITH THESE REGULATIONS.
21. THE PROJECT SITE AND ALL ADJACENT AREAS SHALL BE MAINTAINED IN A NEAT AND CLEAN MANNER. UPON FINAL CLEAN UP, THE PROJECT SITE SHALL BE LEFT CLEAR OF ALL SURPLUS MATERIAL OR TRASH.
22. CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING TREES, STRUCTURES AND UTILITIES WHICH MAY NOT BE SHOWN ON PLANS. ANY STRUCTURE, PAVEMENT, TREES OR OTHER EXISTING IMPROVEMENT NOT SPECIFIED FOR REMOVAL WHICH IS TEMPORARY DAMAGED, EXPOSED OR IN ANY WAY DISTURBED BY CONSTRUCTION PERFORMED UNDER THIS CONTRACT, SHALL BE REPAIRED, PATCHED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.

23. CONTRACTOR TO RELOCATE TREES AS DIRECTED BY THE CLIENT. CONTRACTOR SHALL AVOID DAMAGE TO ANY EXISTING TREES TO REMAIN. EXISTING TREES SHALL BE REMOVED ONLY IF REQUIRED FOR CONSTRUCTION. THOSE TREES NOT INTERFERING WITH CONSTRUCTION SHALL BE PROTECTED IN PLACE.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING AT HIS OWN EXPENSE ANY ITEMS, INCLUDING BUT NOT LIMITED TO NEARBY PROPERTIES AND EXISTING DRAINAGE INFRASTRUCTURE, DAMAGED DUE TO HIS PERSONNEL OR EQUIPMENT INSIDE AND/OR OUTSIDE OF THE CONSTRUCTION AREA.
25. CONTRACTOR SHALL ENSURE THAT ALL MUD OR ANY OTHER TYPE OF DEBRIS IS CLEANED FROM ADJACENT ROADWAYS (WHERE APPLICABLE) AT THE END OF EACH DAY. CONTRACTOR SHALL BE LIABLE FOR ANY PERSONAL OR PROPERTY DAMAGE CAUSED BY ANY TYPE OF DEBRIS LEFT ON ROADWAYS AND/OR PEDESTRIAN WAYS.
26. CONTRACTOR SHALL AVOID DAMAGING EXISTING IRRIGATION SYSTEMS. IF PLANS AND BLUEPRINTS ARE NOT PROVIDED OR AVAILABLE THE CONTRACTOR WILL NOT BE RESPONSIBLE.
27. THE INFORMATION PROVIDED IN THESE DRAWINGS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH BIDS WILL BE BASED.

SOIL EROSION, SEDIMENT, AND TURBIDITY CONTROL GENERAL NOTES

1. THIS PROJECT IS SUBJECT TO ALL RELATED ENVIRONMENTAL REQUIREMENTS WHICH INCLUDE A "CONTROL OF EROSION AND SEDIMENTATION PLAN". THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY AND ADEQUATE MEASURES FOR PROPER CONTROL OF EROSION DUE TO SEDIMENTATION RUNOFF FROM THE SITE PRIOR TO CONSTRUCTION OPERATIONS IN A PARTICULAR AREA. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO START OF CONSTRUCTION. FIELD ADJUSTMENTS WITH RESPECT TO LOCATIONS AND DIMENSIONS MAY BE MADE BY THE ENGINEER AS REQUIRED.
2. EROSION CONTROL MEASURES WILL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RAIN FOR DAMAGE AND GENERAL EFFECTIVENESS. ANY DAMAGED OR INEFFECTIVE CONTROLS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR.
3. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED, IF DEEMED NECESSARY, BY THE ON-SITE INSPECTOR.
4. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. TEMPORARY AND PERMANENT MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE LEFT IN PLACE AND MAINTAINED UNTIL THE AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION.
6. ALL CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ON TO ANY PUBLIC RIGHT-OF-WAY. THIS SHALL REQUIRE PERIODIC TOP DRESSING WITH STONE, AS CONDITIONS REQUIRE. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHT-OF-WAY OR INTO STORM DRAINS SHALL BE PROMPTLY REMOVED BY CONTRACTOR.
7. FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED AND MAINTAINED AS CLOSE AS POSSIBLE TO THE CONSTRUCTION OPERATION UPSTREAM AND DOWNSTREAM OF CANALS. TURBIDITY BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS AND DETAILS.
8. TURBIDITY BARRIERS WILL BE RELOCATED ALONG THE SHORELINE AS THE SECTIONS/PHASES OF CONSTRUCTION ARE COMPLETED.
9. TURBIDITY SCREENS OR EQUIVALENT SHALL BE PROPERLY EMPLOYED AND MAINTAINED AS NECESSARY DURING CONSTRUCTION ACTIVITIES SO THAT TURBIDITY LEVELS DO NOT EXCEED 29 NTU'S ABOVE NATURAL BACKGROUND 50 FEET DOWNSTREAM OF POINT OF DISCHARGE. IF TURBIDITY LEVELS EXCEED THESE LIMITS, PROJECT ACTIVITIES SHALL IMMEDIATELY CEASE, AND WORK SHALL NOT RESUME UNTIL TURBIDITY LEVELS DROP TO WITHIN THESE LIMITS.
10. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AND THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES).
11. IF 1 ACRE OR MORE IS DISTURBED, A NPDES GENERAL PERMIT IS REQUIRED.

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REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



Landshore Enterprises, LLC  
Environmental Engineering, Erosion  
Control & Construction Management  
d/b/a Erosion Restoration, LLC  
"Your Shoreline Protection Specialists"

118 Shamrock Blvd.  
Venice, FL 34293  
Office: 941-303-5238  
Fax: 941-218-6113  
E-mail: info@landshore.com

BY: \_\_\_\_\_  
PIETER M. LOMBARD, P.E.  
FL LIC. No. 66596  
ENGINEER OF RECORD

GENERAL NOTES

PROJECT NO.	SHEET	OF
2022-043	2	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	N.T.S.

## LEGEND

# ABBREVIATIONS

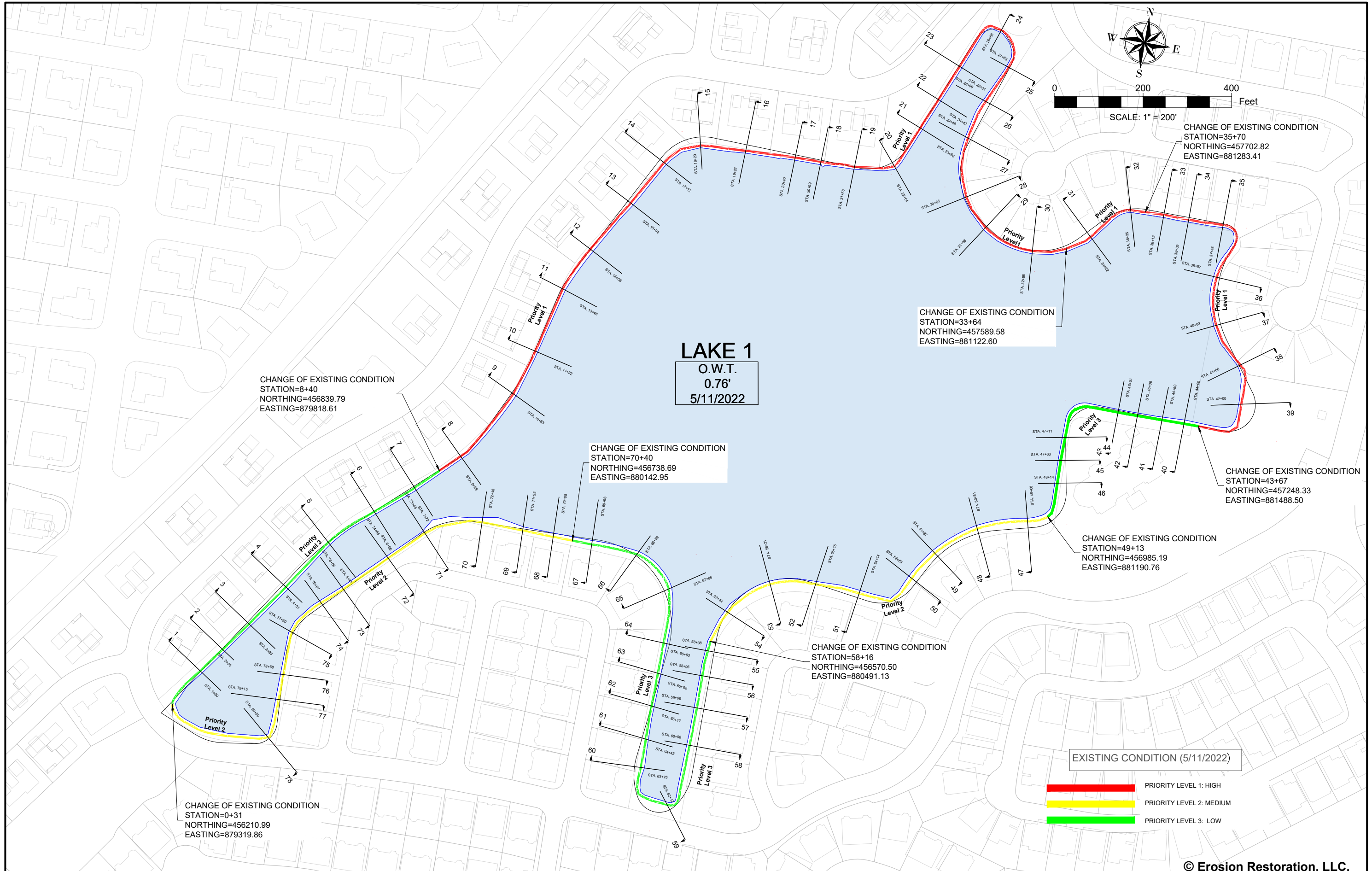
SYMBOL/LINE	DESCRIPTION
	BASELINE
N32°59'57.19"E	BEARING
	CATCH BASIN
	CENTERLINE
Ø	DIAMETER
± 2.94	EXISTING GROUND ELEVATION (FROM SURVEY)
	HYDRANT
	LIGHTPOLE
	OFFICIAL BENCHMARK (BM)
	PALM TREES
	POLE
	SET OR FOUND SURVEY CONTROL POINT
	SIGN (SINGLE SUPPORT)
	SIGNAL MAST ARM
	SURVEY CONTROL POINT (SCP)
	SURVEY CONTROL POINT (SCP/TBM)
	TEMPORARY BENCHMARK (TBM)
	TREES
	CANAL MAINTENANCE EASEMENT
	CANAL RIGHT OF WAY
	CANAL RIGHTS ON RESERVATION
	EFT 6" SACRIFICIAL TUBE
	EFT 7.5' BASE TUBE
	EFT 7.5' SUPPORTING TUBE
	EFT 10' BASE TUBE
	EFT 10' SUPPORTING TUBE
	EXISTING GEOTUBE DONE BY OTHERS
	EXISTING ECO-FILTER TUBE
	EXISTING FENCE
	EXISTING CHAIN LINK FENCE
	EXISTING GUARDRAIL
	EXISTING SHRUBS
	GRASS SOD
	FLEXAMAT OR SHOREFLEX AS NEEDED
	GUY ANCHOR
	PRIORITY 01 (HIGH) :FAILED AND SERIOUS CONDITION TO BE REPAIRED
	PRIORITY 02 (MEDIUM): POOR CONDITION TO BE REPAIRED
	PRIORITY 03 (LOW): FAIR CONDITION MONITORING AND MINIMUM MAINTENANCE
	PROPOSED CHAIN LINK FENCE
	PROPOSED HANDRAIL
	SHEET PILING

SYMBOL/LINE	DESCRIPTION
	DETAIL NUMBER TYPICAL DETAIL CALL OUT DETAIL SHEET NUMBER
	ARTICULATING CONCRETE BLOCK MATS (ACBs)
	BEDDING STONE/CRUSHED CONCRETE
	EMBANKMENT
	REGULAR EXCAVATION
	RIP-RAP
	RIP-RAP (BOULDER)
	FLEXAMAT OR SHOREFLEX AS NEEDED
	PLANTS
	SEAWALL
	STACKED CANAL BANK STABILIZATION (CBS)
	STRUCTURAL FILL
	EROSION CONTROL PANEL
	TREE FOLIAGE
	PROPOSED TOP OF BANK
	TOP OF BANK
	TOP OF SLOPE
	TURBIDITY BARRIER
	WARNING BARRIER FENCE
	WATER LINE
	TREE AND PALM TO BE REMOVED
	LOCAL HARD SURFACE ROAD
	INTERSTATE ROUTE
	TOLL ROUTE
	U.S. ROUTE
	STATE ROUTE
	DIVISION OF PLANNING ROUTE DESIGNATION
	COUNTY ROUTE
	RAILROAD TRACK
	MULTIPLE RAILROAD TRACK
	TRI-RAIL STATION
	RAILROAD STATION
	GRADE CROSSING
	RAILROAD BELOW

ASPH =	ASPHALT
℄ =	BASELINE
BLCP =	BASELINE CONTROL POINT (TO BE SET BY CONTRACTOR)
BM =	BENCHMARK
CCCCDD =	CUTLER CAY CDD, CUTLER BAY MIAMI FL
℄ =	CENTERLINE
C.L.F. =	CHAIN LINK FENCE
C.M.E. =	CANAL MAINTENANCE EASEMENT
CAP =	CORRUGATED ALUMINUM Pipe
CBS =	CANAL BANK STABILIZATION
CES =	CONTROL ELEVATION STRUCTURE
CMP =	CORRUGATED METAL PIPE
COA =	COLLAPSED AREA
CONC =	CONCRETE
COR =	CORNER
CS =	CLEAN SAND
CSLAB =	CONCRETE SLAB
DC=	DATA COLLECTOR
DIP =	DUCTILE IRON Pipe
DWT=	DESIGN WATER TABLE
ELEV =	ELEVATION
EOP =	EDGE OF PAVEMENT
EOW =	EDGE OF WATER
ERA =	ERODED AREA
ESMT =	EASEMENT
ETOB =	EXISTING TOP OF BANK
EXIST =	EXISTING
EG =	EXISTING GROUND
FG =	FINISH GRADE
FDOT =	FLORIDA DEPARTMENT OF TRANSPORTATION
FT =	FEET
G =	GAS
GR =	GRADE
HFT=	HOUSE FOOTPRINT
HOR =	HORIZONTAL
HWT =	HIGH WATER TABLE
INV =	INVERT
IRR =	IRRIGATION
LB =	POUND
LT =	OFFSET LEFT
MUTCD =	MANUAL OF UNIFORM TRAFFIC DEVICES
N/A =	NOT APPLICABLE
NAD =	NORTH AMERICAN DATUM
NAVD =	NATIONAL AMERICAN VERTICAL DATUM
NG=	NATURAL GRADE

NGVD =	NATIONAL GEODETIC VERTICAL DATUM
NTS =	NOT TO SCALE
NTU =	NEPHELOMETRIC TURBIDITY UNITS
OWT =	OBSERVED WATER TABLE
PL =	PROPERTY LINE
PB =	PLAT BOOK
PED =	PEDESTRIAN
PG =	PAGE
PI =	POINT OF INTERSECTION
P&P =	PLAN AND PROFILE
PR=	PRACTICE RANGE
PROP. =	PROPOSED
PVC =	POLYVINYL CHLORIDE
PVMT =	PAVEMENT
R/W =	RIGHT OF WAY
RT =	OFFSET RIGHT
SAN =	SANITARY
SCP =	SURVEY CONTROL POINT
SDWK =	SIDEWALK
WMD =	WATER MANAGEMENT DISTRICT
SP =	SHEET PILING
SPK =	SPRINKLER
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
ST =	STORM
STA =	STATION
STD =	STANDARD
TBM =	TEMPORARY BENCHMARK
TOBP =	TOP OF BANK (PROPOSED)
TOB =	TOP OF BANK
TOS =	TOP OF SLOPE
TYP =	TYPICAL
UT =	UTILITY
VERT =	VERTICAL
W =	WATER
WD =	WOOD DOCKS
WL =	WATERLINE
XS =	CROSS SECTION





REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



Landshore Enterprises, LLC  
Environmental Engineering, Erosion  
Control & Construction Management  
d/b/a Erosion Restoration, LLC  
"Your Shoreline Protection Specialists"

118 Shamrock Blvd.  
Venice, FL 34293  
Office: 941-303-5238  
Fax: 941-218-6113  
E-mail: info@landshore.com

BY: \_\_\_\_\_  
PIETER M. LOMBARD, P.E.  
FL LIC. No. 66596  
ENGINEER OF RECORD

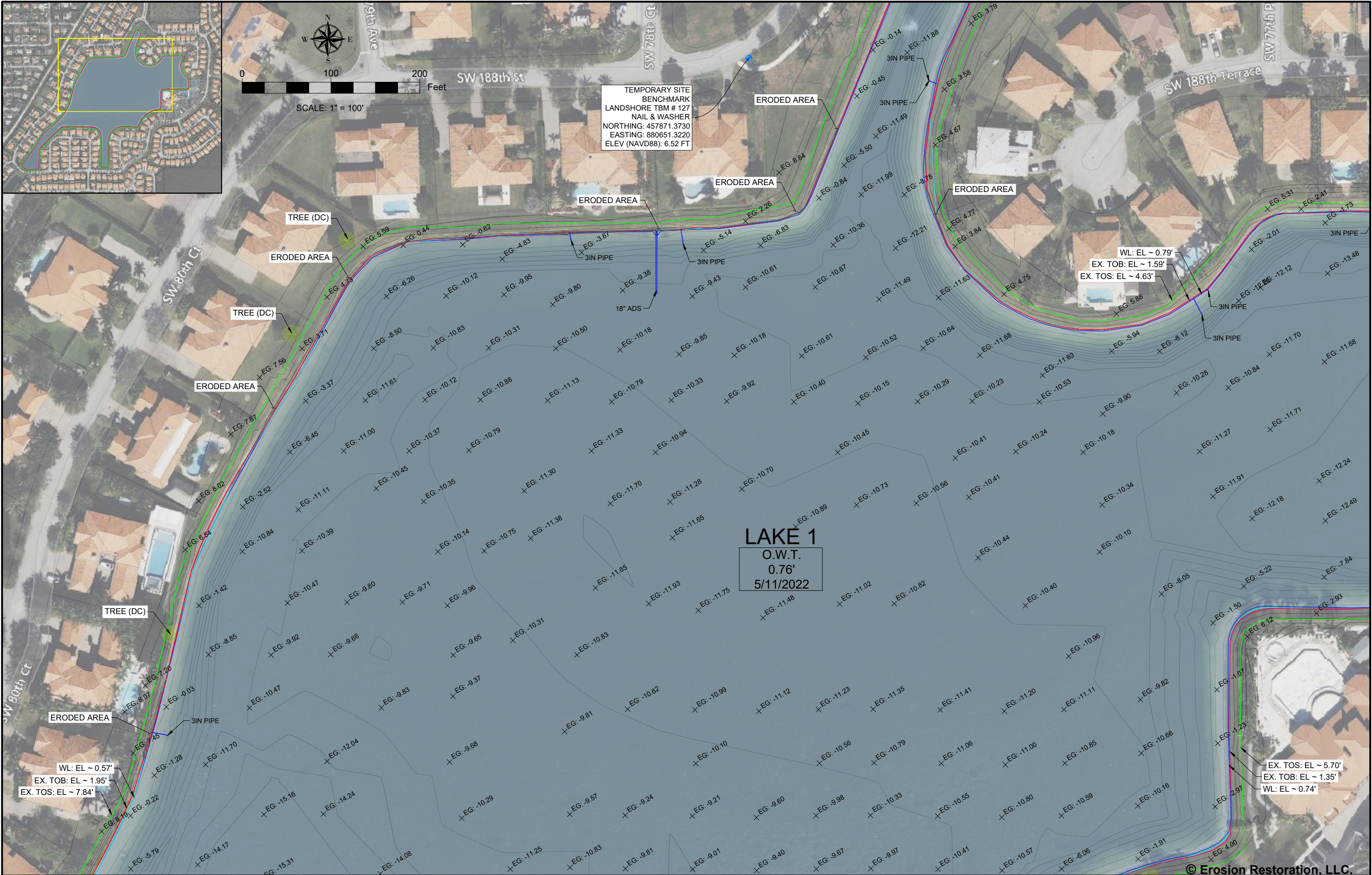
PRIORITY LEVELS  
PLAN

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PROJECT NO. 2022-043	SHEET 4	OF 27
DRAWN BY: NV	DATE: 06/29/2022	SCALE: 1" = 200'









REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
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District Lake 1



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Venice, FL 34293  
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ENGINEER OF RECORD

TOPOGRAPHIC PLAN

PROJECT NO.	SHEET	OF
2022-043	6	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	1" = 100'





REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
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District Lake 1



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118 Shamrock Blvd.  
Venice, FL 34293  
Office: 941-303-5238  
Fax: 941-218-6113  
E-mail: info@landshore.com

BY: \_\_\_\_\_  
PIETER M. LOMBARD, P.E.  
FL LIC. No. 66596  
ENGINEER OF RECORD

TOPOGRAPHIC PLAN

PROJECT NO.	SHEET	OF
2022-043	7	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	1" = 100'





REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



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Venice, FL 34293  
Office: 941-303-5238  
Fax: 941-218-6113  
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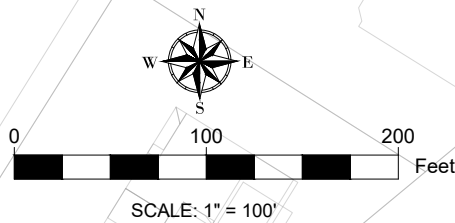
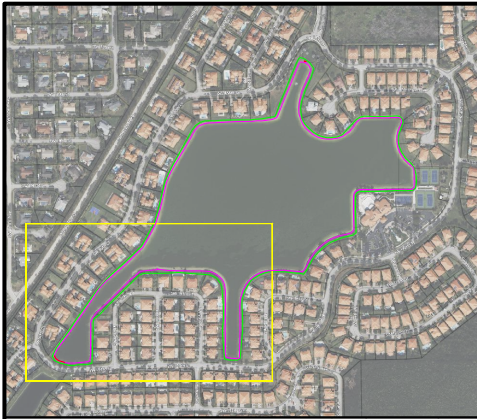
BY: \_\_\_\_\_  
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### TOPOGRAPHIC PLAN

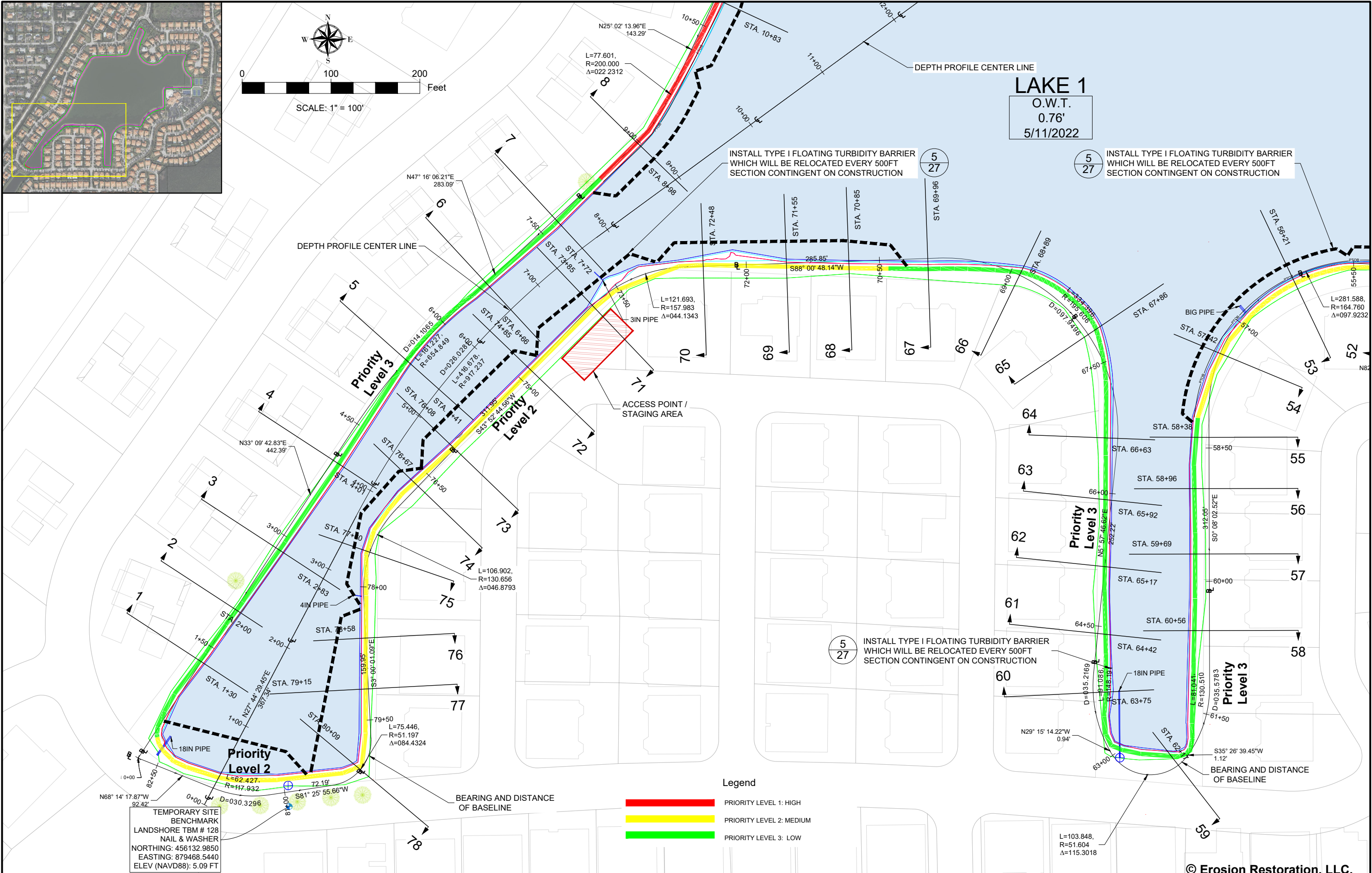
PROJECT NO. 2022-043	SHEET 8	OF 27
DRAWN BY: NV	DATE: 06/29/2022	SCALE: 1" = 100'

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**LAKE 1**  
O.W.T.  
0.76'  
5/11/2022



**Legend**

- PRIORITY LEVEL 1: HIGH
- PRIORITY LEVEL 2: MEDIUM
- PRIORITY LEVEL 3: LOW

REVISIONS		
DATE	BY	DESCRIPTION

**Erosion and Sedimentation Control Plan**  
**for Cutler Cay Community Development**  
**District Lake 1**



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Environmental Engineering, Erosion  
Control & Construction Management  
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"Your Shoreline Protection Specialists"

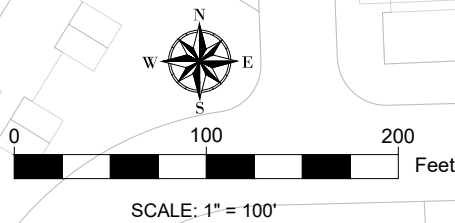
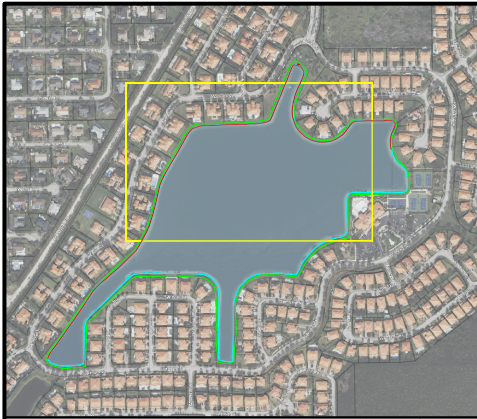
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Venice, FL 34293  
Office: 941-303-5238  
Fax: 941-218-6113  
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BY: \_\_\_\_\_  
**PIETER M. LOMBARD, P.E.**  
FL LIC. No. 66596  
**ENGINEER OF RECORD**

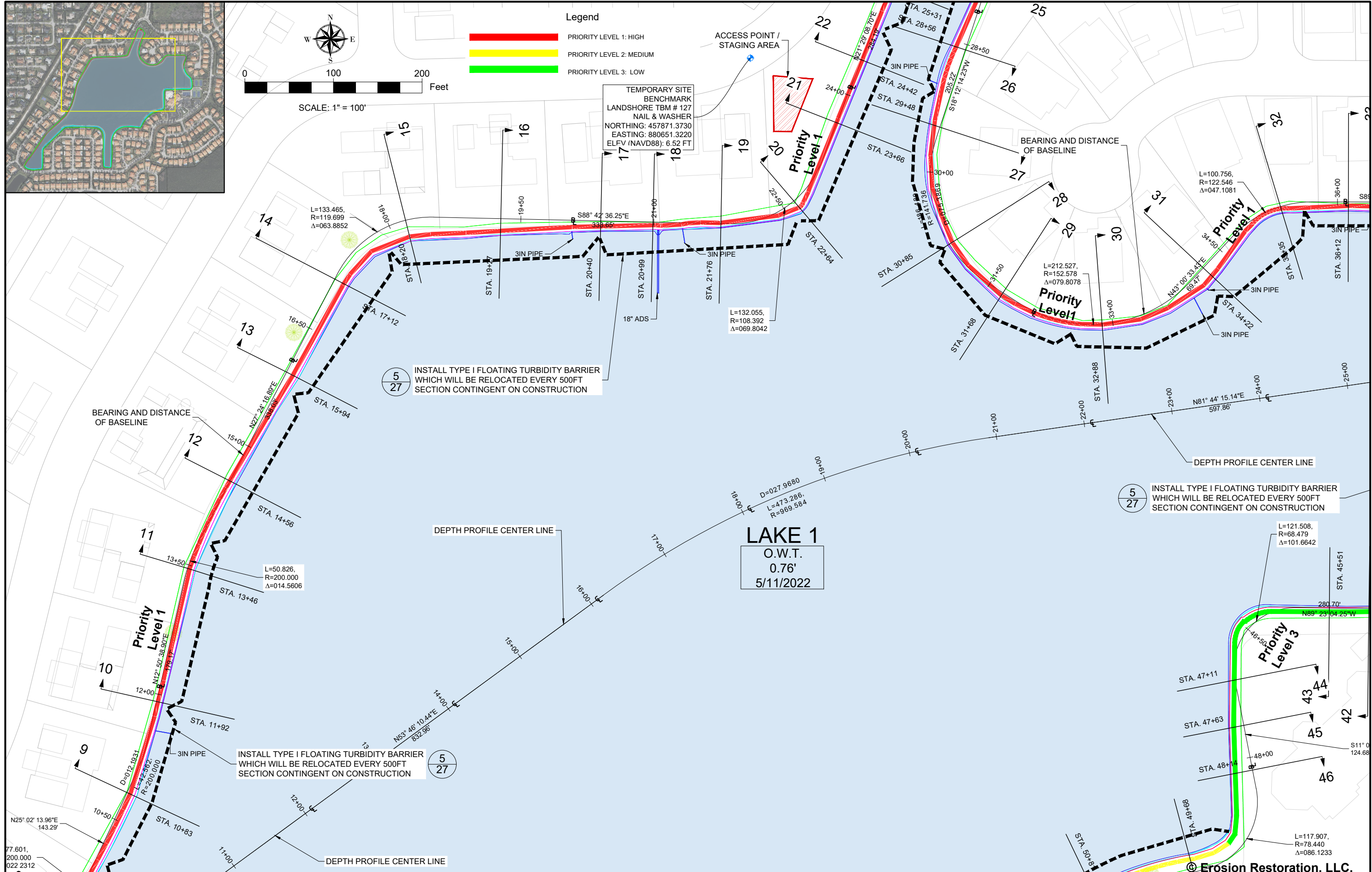
**SURVEY CONTROL PLAN**

PROJECT NO.	SHEET	OF
2022-043	9	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	1" = 100'

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- Legend
- PRIORITY LEVEL 1: HIGH
  - PRIORITY LEVEL 2: MEDIUM
  - PRIORITY LEVEL 3: LOW



REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



Landshore Enterprises, LLC  
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d/b/a Erosion Restoration, LLC  
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118 Shamrock Blvd.  
Venice, FL 34293  
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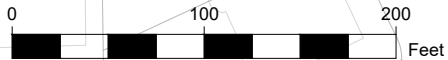
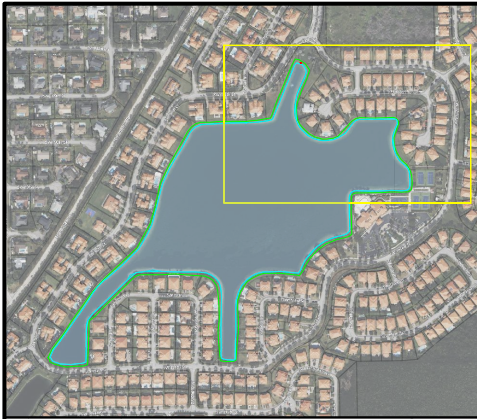
BY: \_\_\_\_\_  
PIETER M. LOMBARD, P.E.  
FL LIC. No. 66596  
ENGINEER OF RECORD

## SURVEY CONTROL PLAN

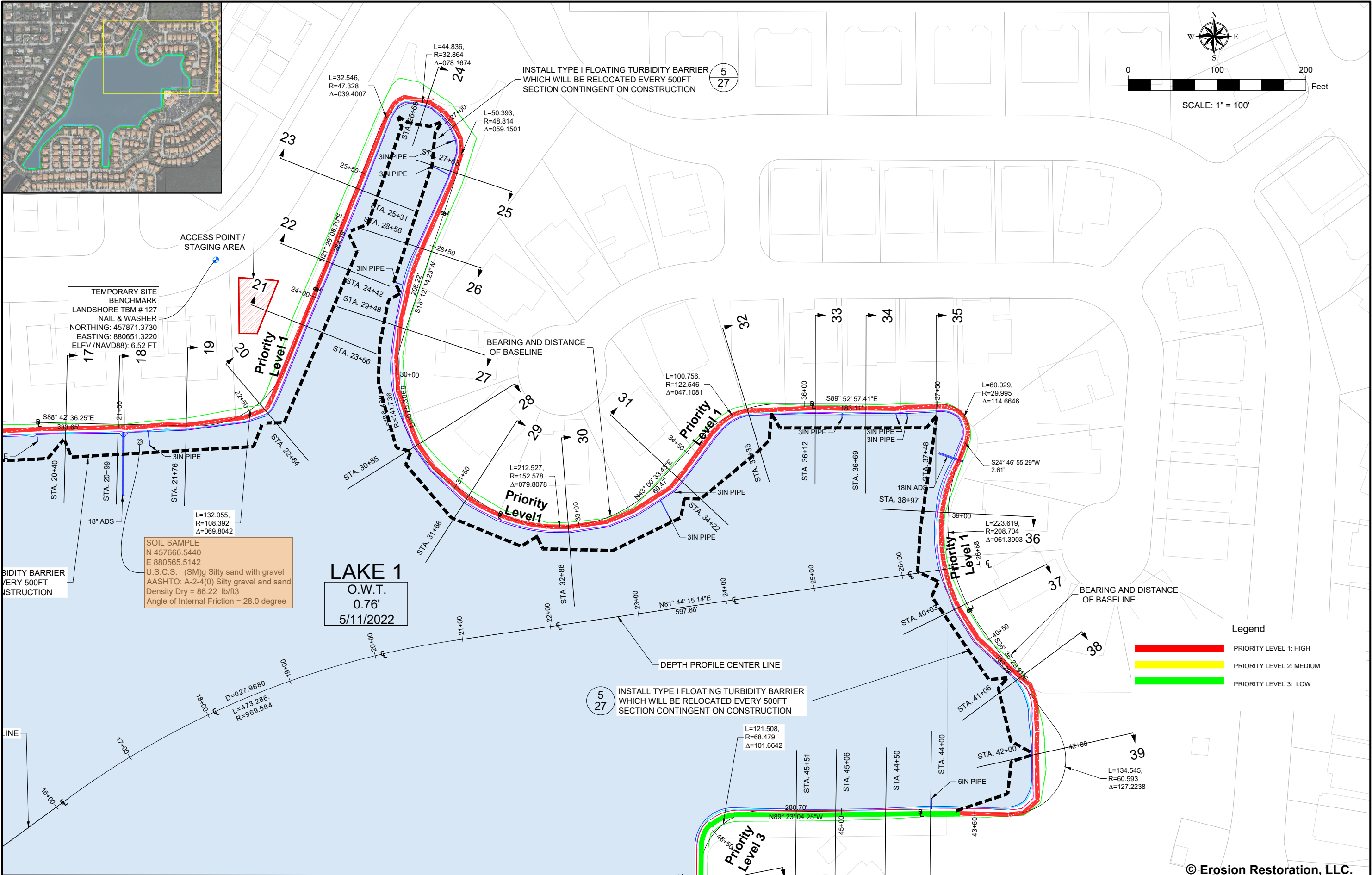
PROJECT NO.	SHEET	OF
2022-043	10	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	1" = 100'

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SCALE: 1" = 100'



REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



Landshore Enterprises, LLC  
Environmental Engineering, Erosion  
Control & Construction Management  
d/b/a Erosion Restoration, LLC  
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118 Shamrock Blvd.  
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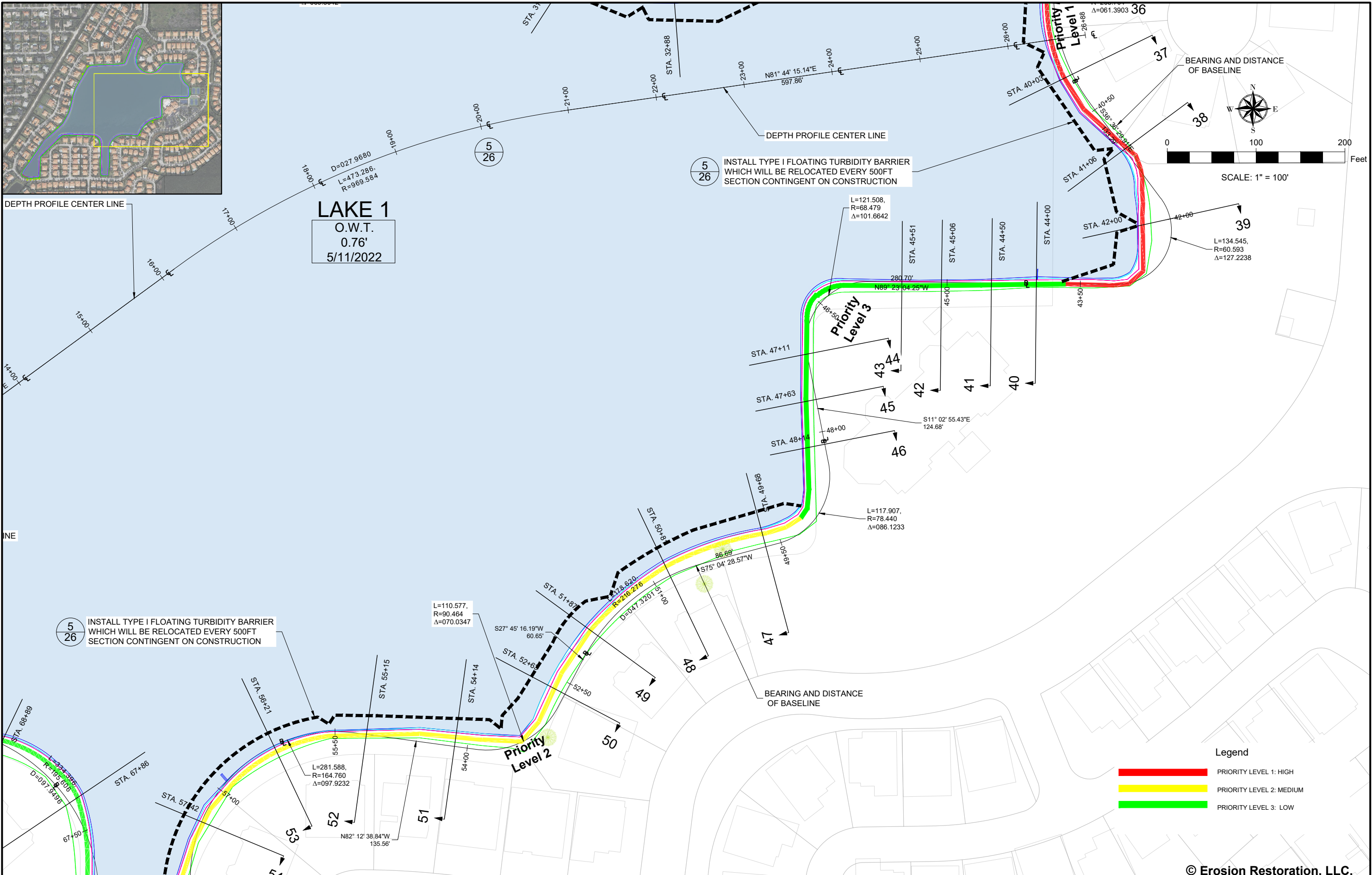
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SURVEY CONTROL PLAN

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PROJECT NO.	SHEET	OF
2022-043	11	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	1" = 100'

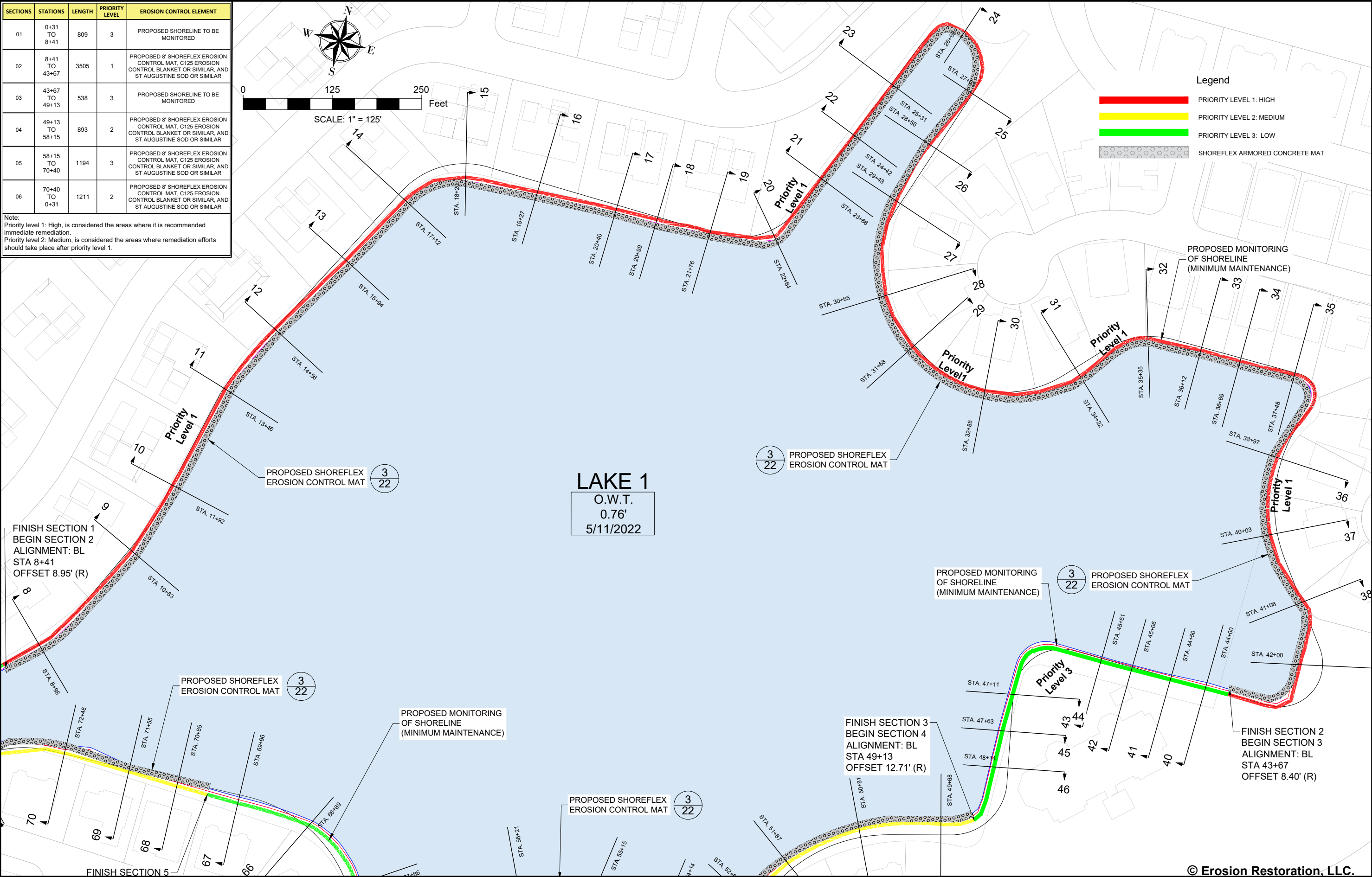




REVISIONS			Erosion and Sedimentation Control Plan for Cutler Cay Community Development District Lake 1			SURVEY CONTROL PLAN		
DATE	BY	DESCRIPTION						
			<div><div></div><div><b>Landshore Enterprises, LLC</b> Environmental Engineering, Erosion Control &amp; Construction Management d/b/a Erosion Restoration, LLC "Your Shoreline Protection Specialists"</div></div>			PROJECT NO. 2022-043 SHEET 12 OF 27 DRAWN BY: NV DATE: 06/29/2022 SCALE: 1" = 100'		
			<div><div></div><div><b>Landshore Enterprises, LLC</b> Environmental Engineering, Erosion Control &amp; Construction Management d/b/a Erosion Restoration, LLC "Your Shoreline Protection Specialists"</div></div>			BY: PIETER M. LOMBARD, P.E. FL LIC. No. 66596 ENGINEER OF RECORD		
			<div><div></div><div><b>Landshore Enterprises, LLC</b> Environmental Engineering, Erosion Control &amp; Construction Management d/b/a Erosion Restoration, LLC "Your Shoreline Protection Specialists"</div></div>			118 Shamrock Blvd. Venice, FL 34293 Office: 941-303-5238 Fax: 941-218-6113 E-mail: info@landshore.com		

SECTIONS	STATIONS	LENGTH	PRIORITY LEVEL	EROSION CONTROL ELEMENT
01	0+31 TO 8+41	809	3	PROPOSED SHORELINE TO BE MONITORED
02	8+41 TO 43+67	3505	1	PROPOSED 8" SHOREFLEX EROSION CONTROL MAT, C125 EROSION CONTROL BLANKET OR SIMILAR, AND ST AUGUSTINE SOD OR SIMILAR
03	43+67 TO 49+13	538	3	PROPOSED SHORELINE TO BE MONITORED
04	49+13 TO 58+15	893	2	PROPOSED 8" SHOREFLEX EROSION CONTROL MAT, C125 EROSION CONTROL BLANKET OR SIMILAR, AND ST AUGUSTINE SOD OR SIMILAR
05	58+15 TO 70+40	1194	3	PROPOSED 8" SHOREFLEX EROSION CONTROL MAT, C125 EROSION CONTROL BLANKET OR SIMILAR, AND ST AUGUSTINE SOD OR SIMILAR
06	70+40 TO 0+31	1211	2	PROPOSED 8" SHOREFLEX EROSION CONTROL MAT, C125 EROSION CONTROL BLANKET OR SIMILAR, AND ST AUGUSTINE SOD OR SIMILAR

Note:  
Priority level 1: High, is considered the areas where it is recommended immediate remediation.  
Priority level 2: Medium, is considered the areas where remediation efforts should take place after priority level 1.



DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



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Venice, FL 34293  
Office: 941-303-5238  
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BY: \_\_\_\_\_  
PIETER M. LOMBARD, P.E.  
FL LIC. No. 66596  
ENGINEER OF RECORD

EROSION CONTROL ELEMENT  
PLAN

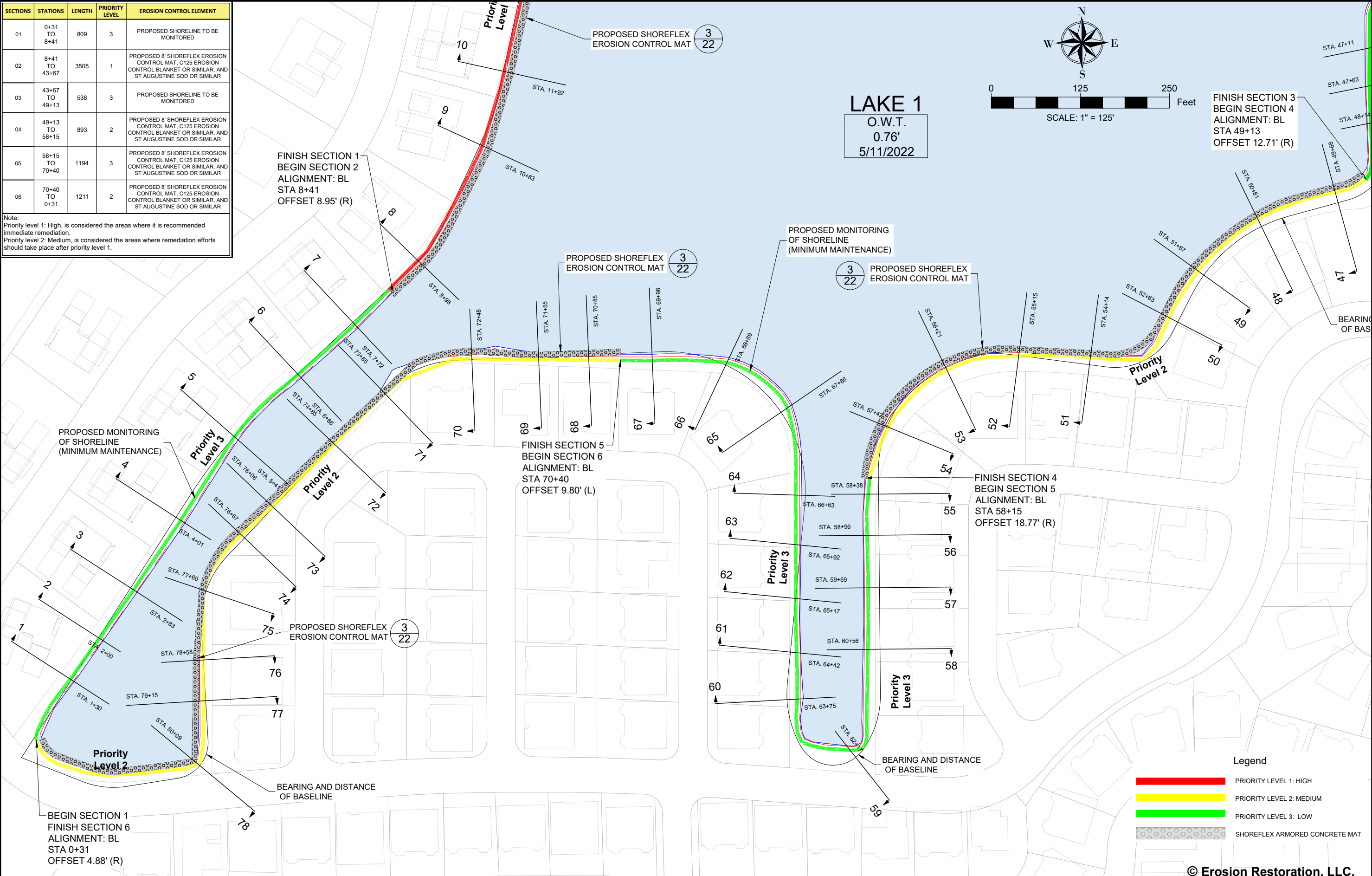
PROJECT NO.	SHEET	OF
2022-043	13	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	1" = 125'

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SECTIONS	STATIONS	LENGTH	PRIORITY LEVEL	EROSION CONTROL ELEMENT
01	0+31 TO 8+41	809	3	PROPOSED SHORELINE TO BE MONITORED
02	8+41 TO 43+67	3505	1	PROPOSED 8" SHOREFLEX EROSION CONTROL MAT, C125 EROSION CONTROL BLANKET OR SIMILAR, AND ST AUGUSTINE SOD OR SIMILAR
03	43+67 TO 49+13	538	3	PROPOSED SHORELINE TO BE MONITORED
04	49+13 TO 58+15	893	2	PROPOSED 8" SHOREFLEX EROSION CONTROL MAT, C125 EROSION CONTROL BLANKET OR SIMILAR, AND ST AUGUSTINE SOD OR SIMILAR
05	58+15 TO 70+40	1194	3	PROPOSED 8" SHOREFLEX EROSION CONTROL MAT, C125 EROSION CONTROL BLANKET OR SIMILAR, AND ST AUGUSTINE SOD OR SIMILAR
06	70+40 TO 0+31	1211	2	PROPOSED 8" SHOREFLEX EROSION CONTROL MAT, C125 EROSION CONTROL BLANKET OR SIMILAR, AND ST AUGUSTINE SOD OR SIMILAR

Note:  
Priority level 1: High, is considered the areas where it is recommended immediate remediation.  
Priority level 2: Medium, is considered the areas where remediation efforts should take place after priority level 1.



REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



**Landshore Enterprises, LLC**  
Environmental Engineering, Erosion Control & Construction Management  
d/b/a Erosion Restoration, LLC  
"Your Shoreline Protection Specialists"

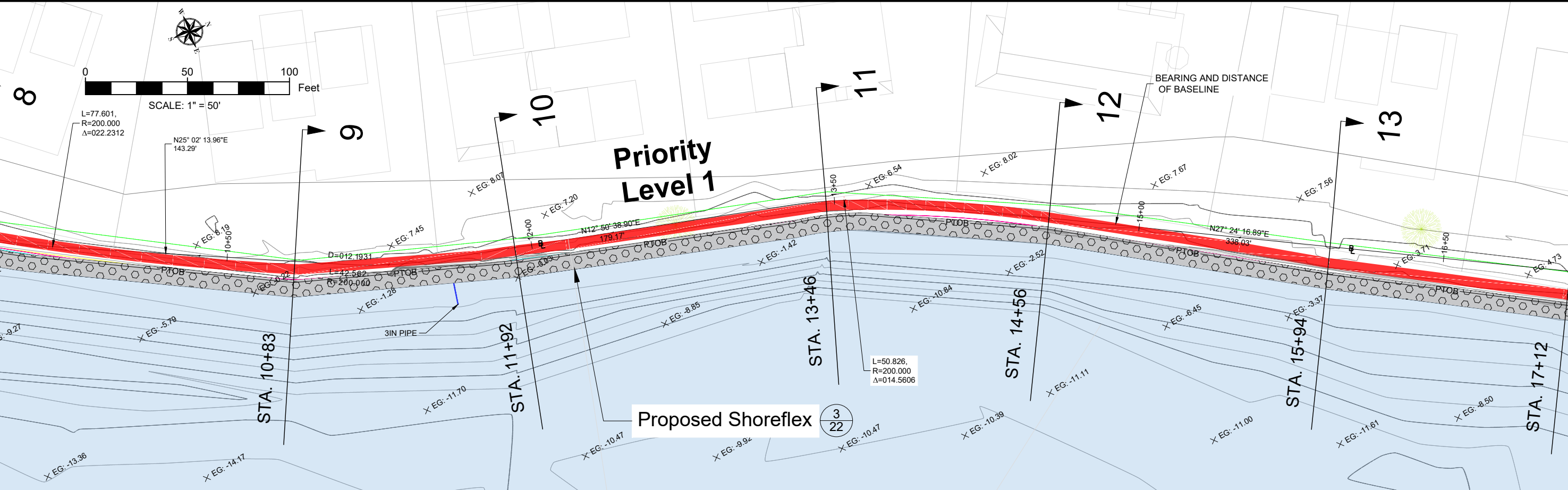
118 Shamrock Blvd.  
Venice, FL 34293  
Office: 941-303-5238  
Fax: 941-218-6113  
E-mail: info@landshore.com

BY: \_\_\_\_\_  
PIETER M. LOMBARD, P.E.  
FL LIC. No. 66596  
ENGINEER OF RECORD

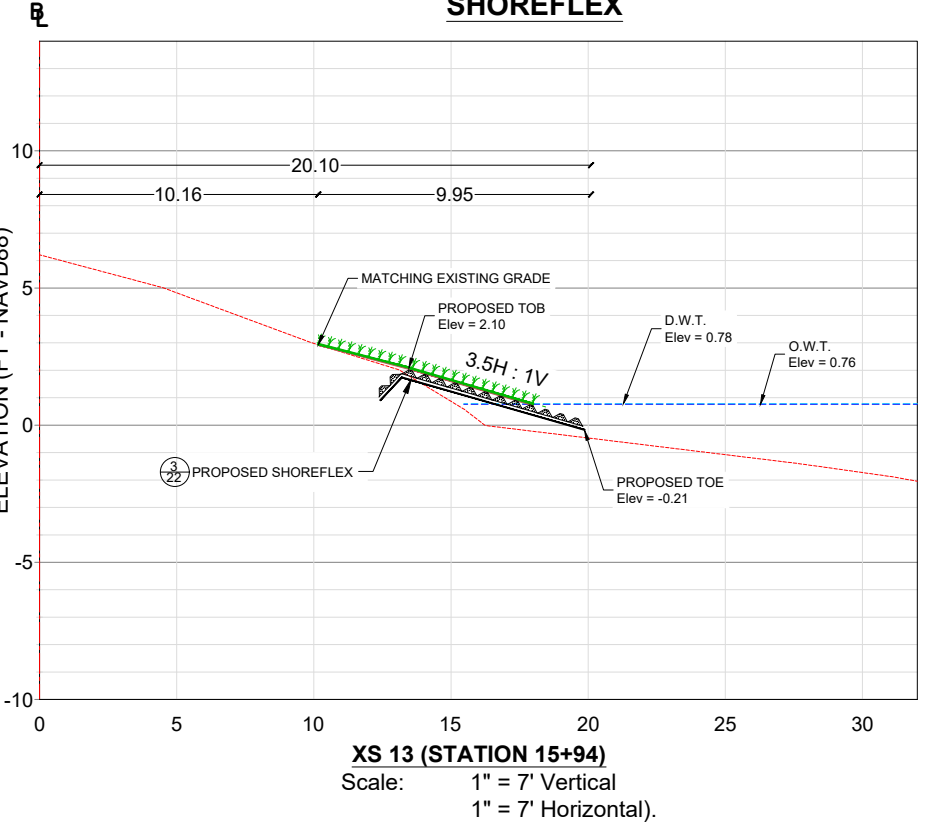
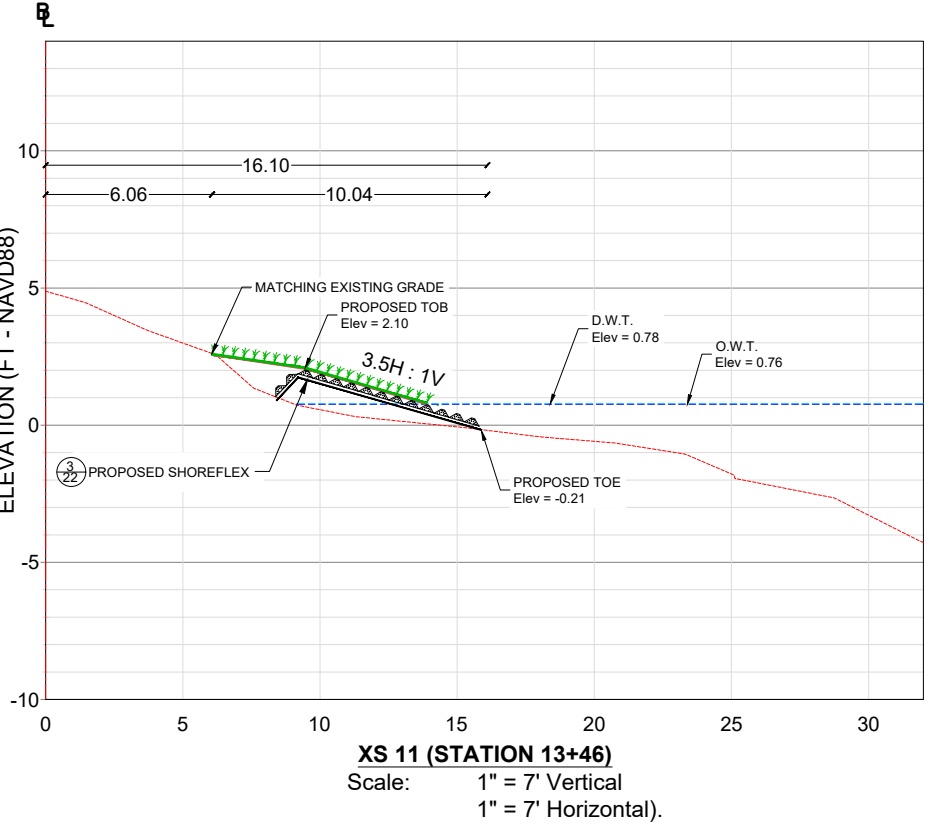
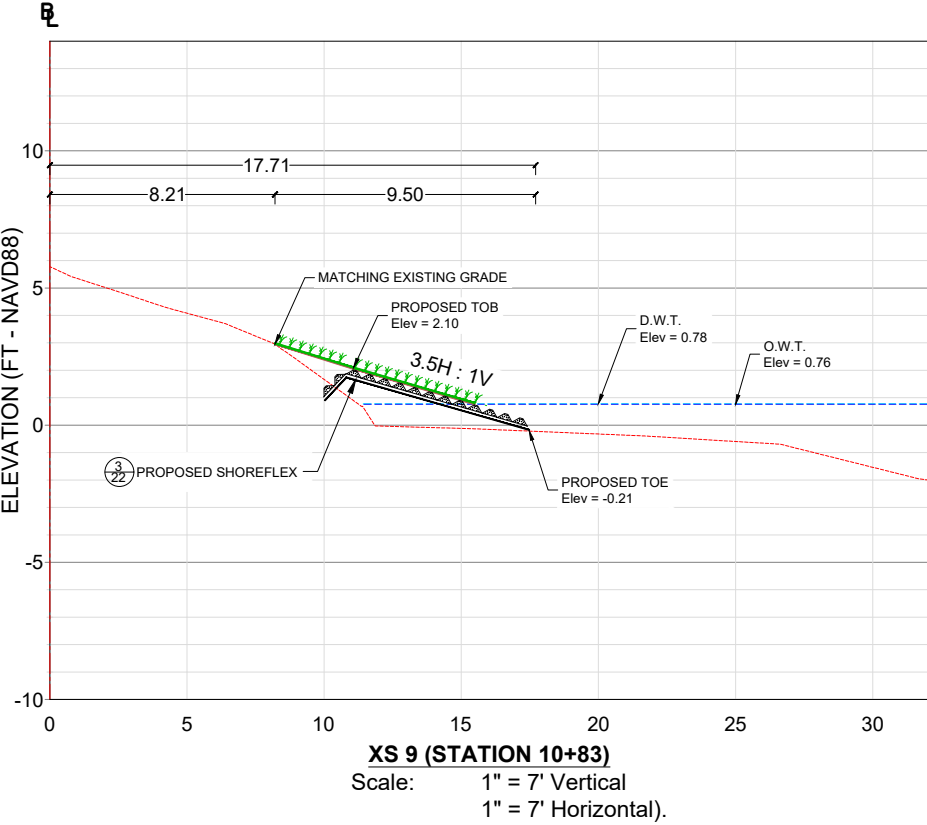
EROSION CONTROL ELEMENT  
PLAN

PROJECT NO.	SHEET	OF
2022-043	14	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	1" = 125'

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**PRIORITY LEVEL 1: TYP SECTION SHOREFLEX**



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DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
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District Lake 1

**Landshore Enterprises, LLC**  
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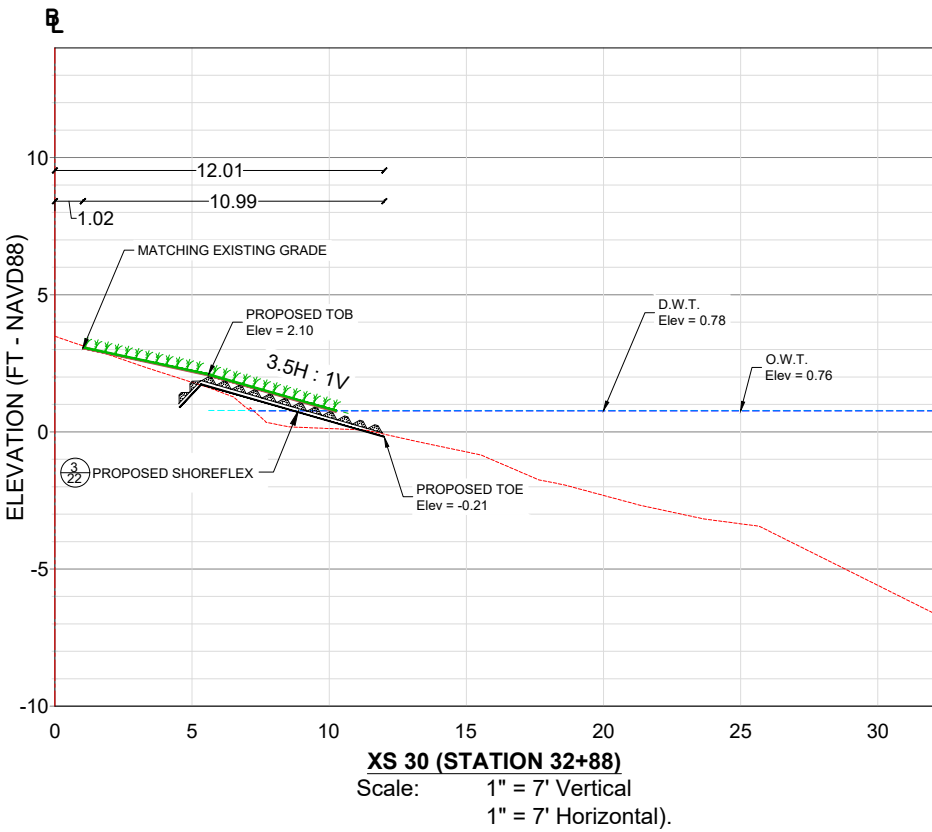
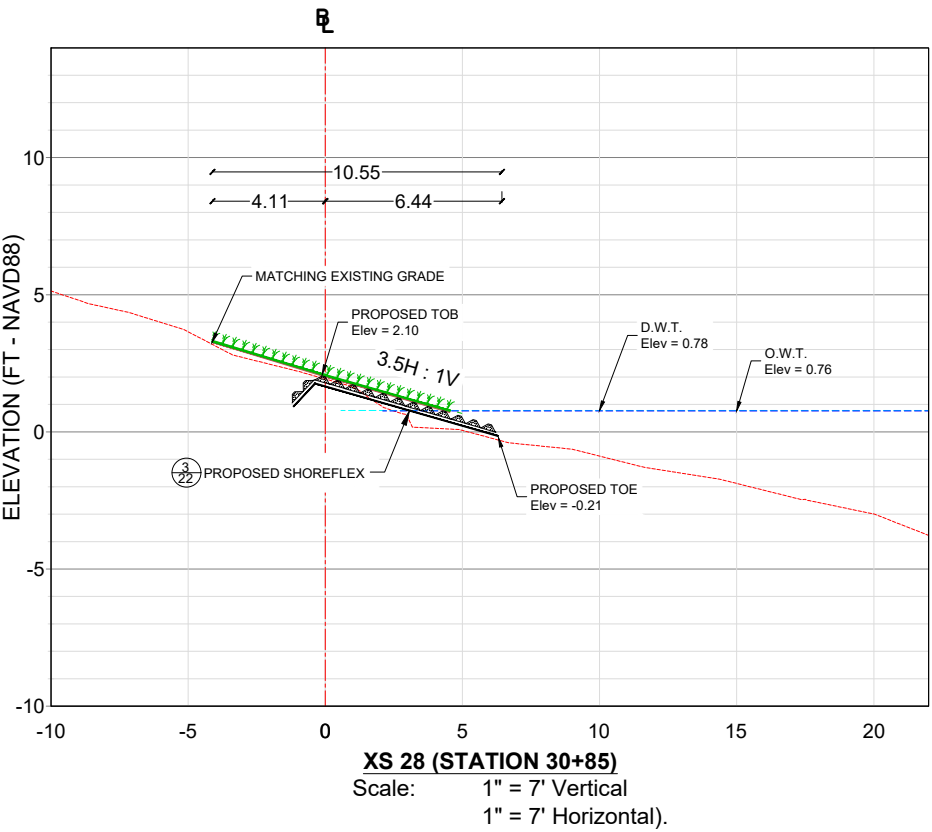
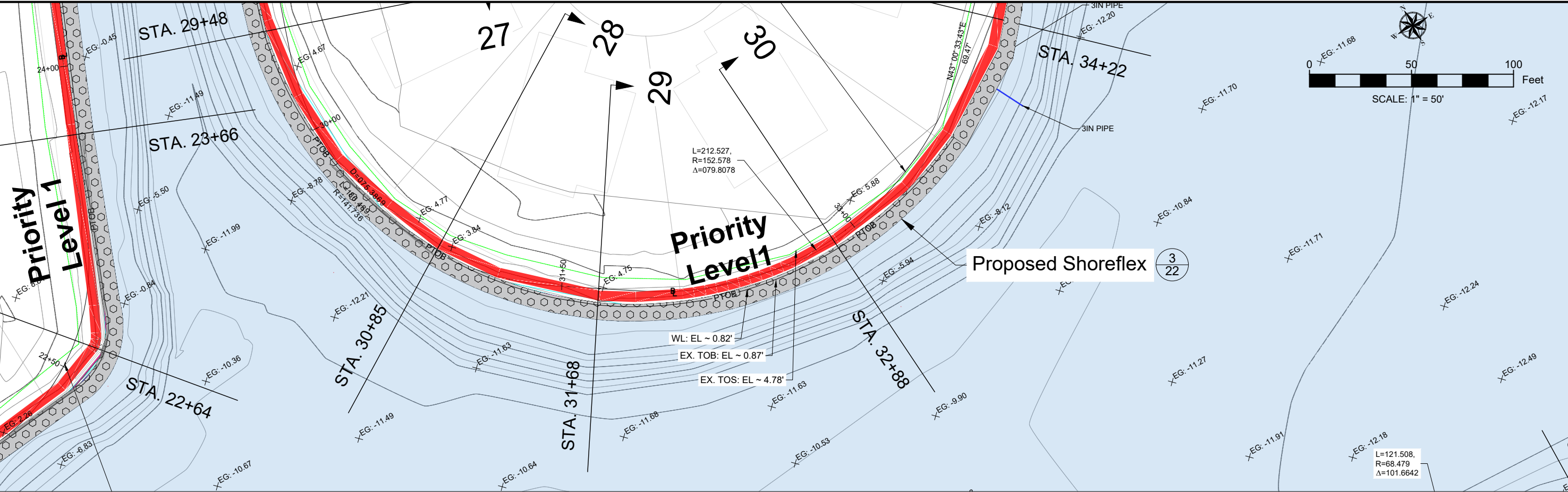
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**PLAN AND CROSS SECTIONS**

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PROJECT NO.	SHEET	OF
2022-043	15	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	AS SHOWN







**PRIORITY LEVEL 1: TYP SECTION SHOREFLEX**

REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



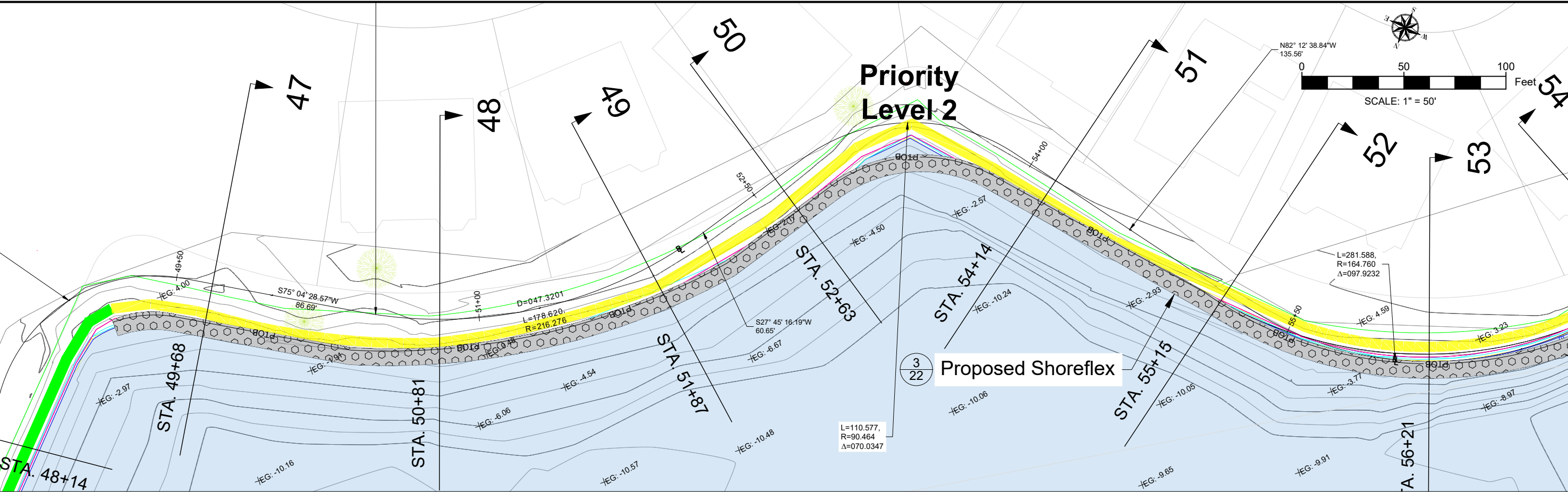
118 Shamrock Blvd.  
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Fax: 941-218-6113  
E-mail: info@landshore.com

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FL LIC. No. 66596  
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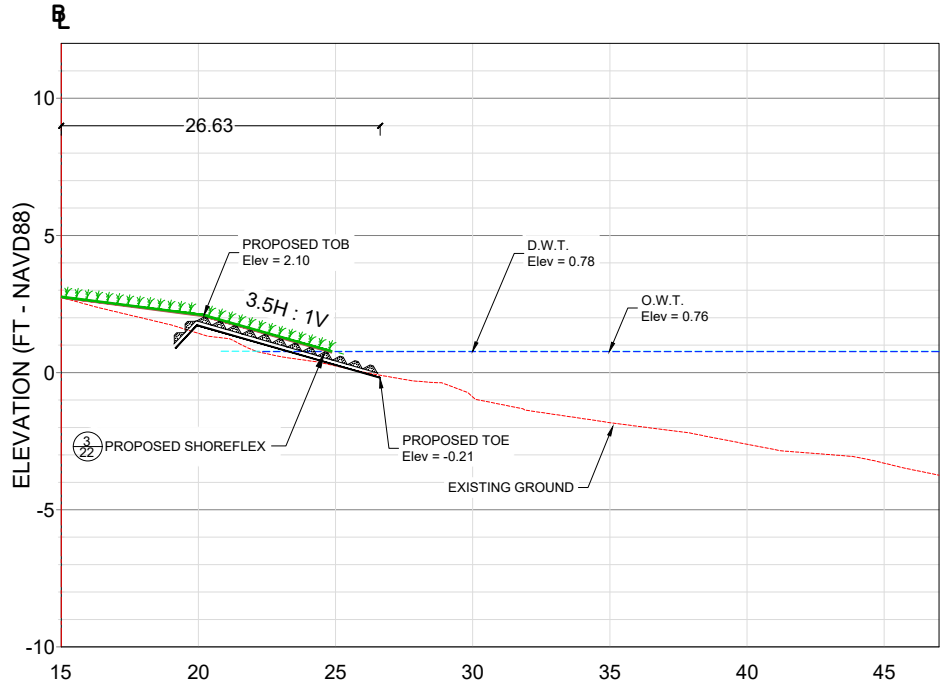
PLAN AND CROSS SECTIONS

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PROJECT NO.	SHEET	OF
2022-043	17	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	AS SHOWN

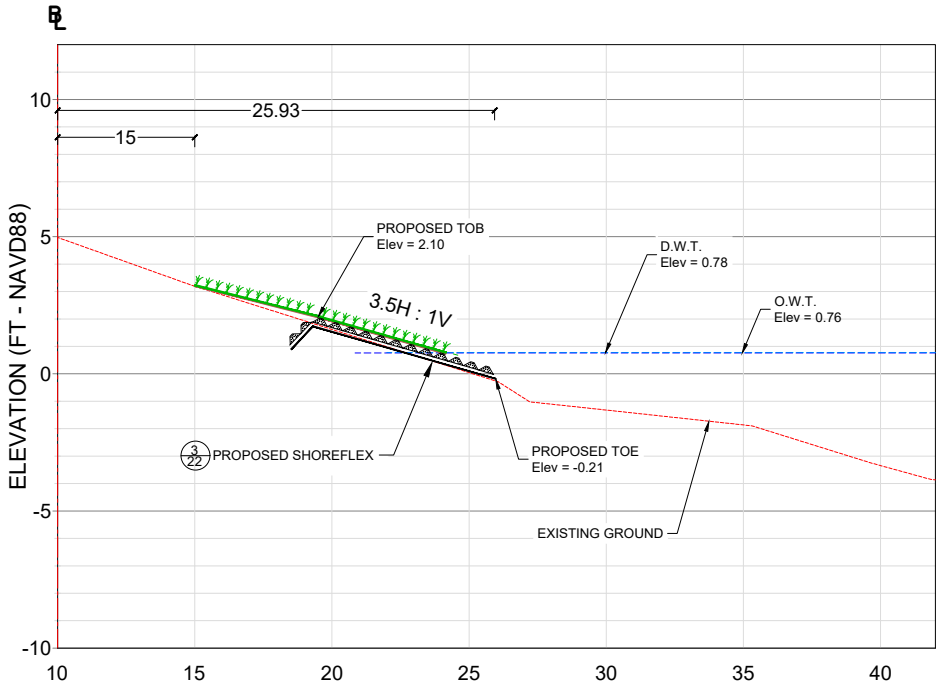




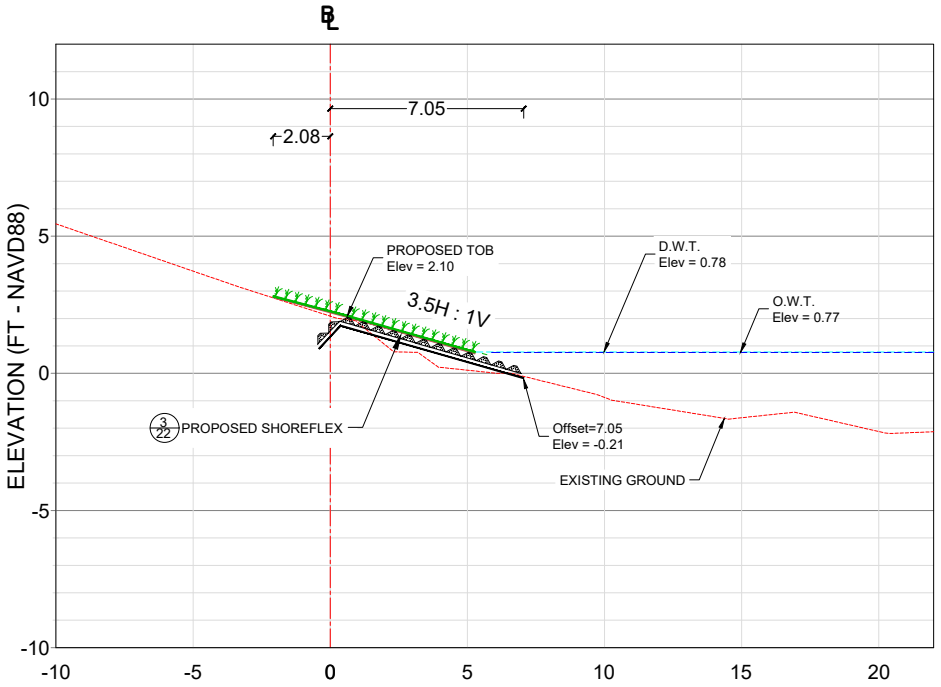
PRIORITY LEVEL 2: TYP SECTION



**XS 47 (STATION 49+68)**  
Scale: 1" = 7' Vertical  
1" = 7' Horizontal).



**XS 50 (STATION 52+63)**  
Scale: 1" = 7' Vertical  
1" = 7' Horizontal).

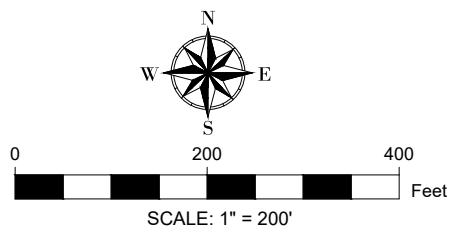


**XS 52 (STATION 55+15)**  
Scale: 1" = 7' Vertical  
1" = 7' Horizontal).





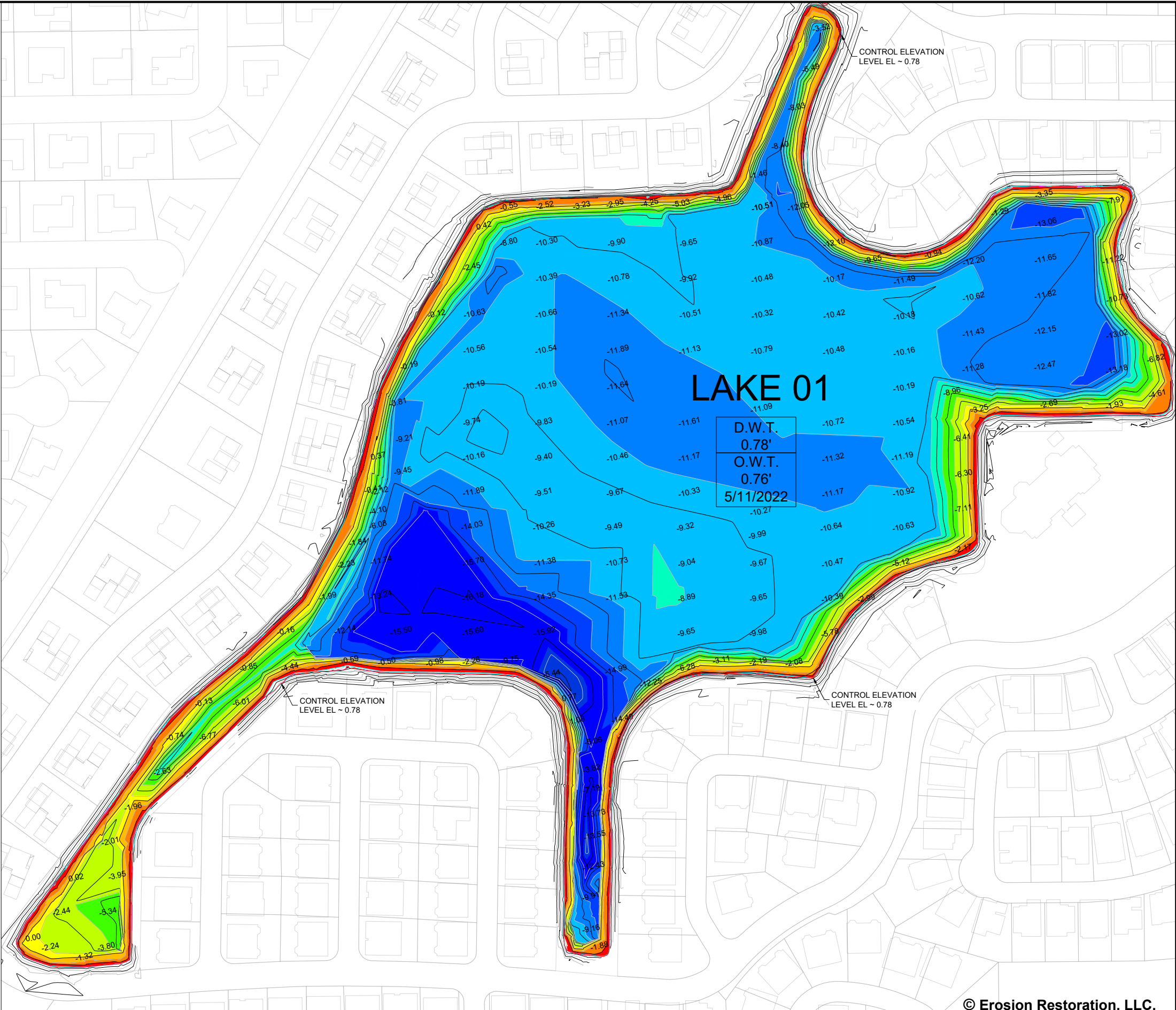




Bathymetric Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-18.44'	-16.50'	
2	-16.50'	-14.50'	
3	-14.50'	-13.00'	
4	-13.00'	-11.00'	
5	-11.00'	-9.00'	
6	-9.00'	-7.00'	
7	-7.00'	-5.00'	
8	-5.00'	-3.00'	
9	-3.00'	-2.00'	
10	-2.00'	-1.00'	
11	-1.00'	0.00'	
12	0.00'	0.80'	

**Lake Characteristics**

Date : 5/11/2022  
Area : 1,359,880 Sq. Ft.  
Perimeter : 8,150 Ft.  
Capacity : ± 502,030 CY  
Av. Sed. : ± 1.00 Ft  
M.W.T. : 0.76 Ft  
Depth : ± 19.22 Ft.  
Min. Slope : Horizontal  
Max. Slope : 0.01H:1V  
Mean Slope : 7.57H:1V



REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



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Venice, FL 34293  
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Fax: 941-218-6113  
E-mail: info@landshore.com

BY: \_\_\_\_\_  
PIETER M. LOMBARD, P.E.  
FL LIC. No. 66596  
ENGINEER OF RECORD

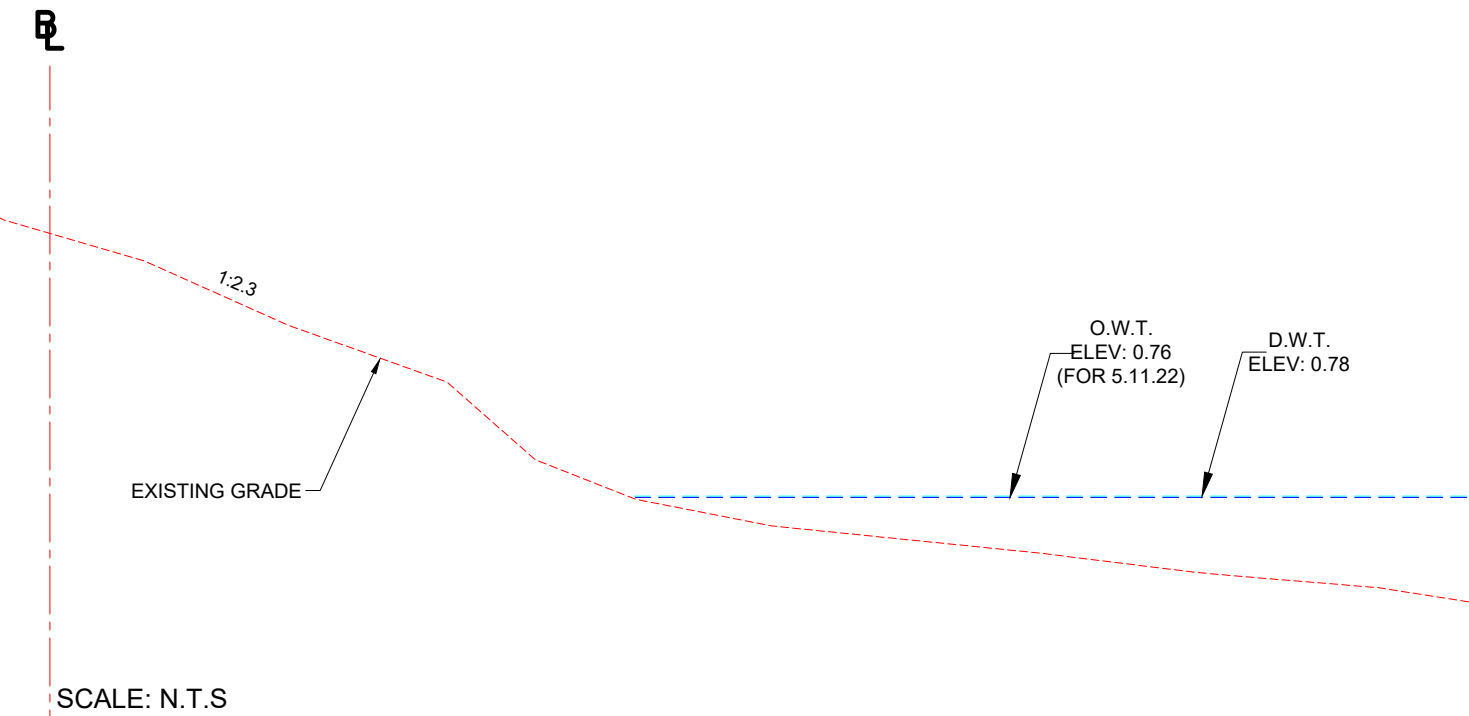
**BATHYMETRIC PLAN**

PROJECT NO.	SHEET	OF
2022-043	21	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	1" = 200'

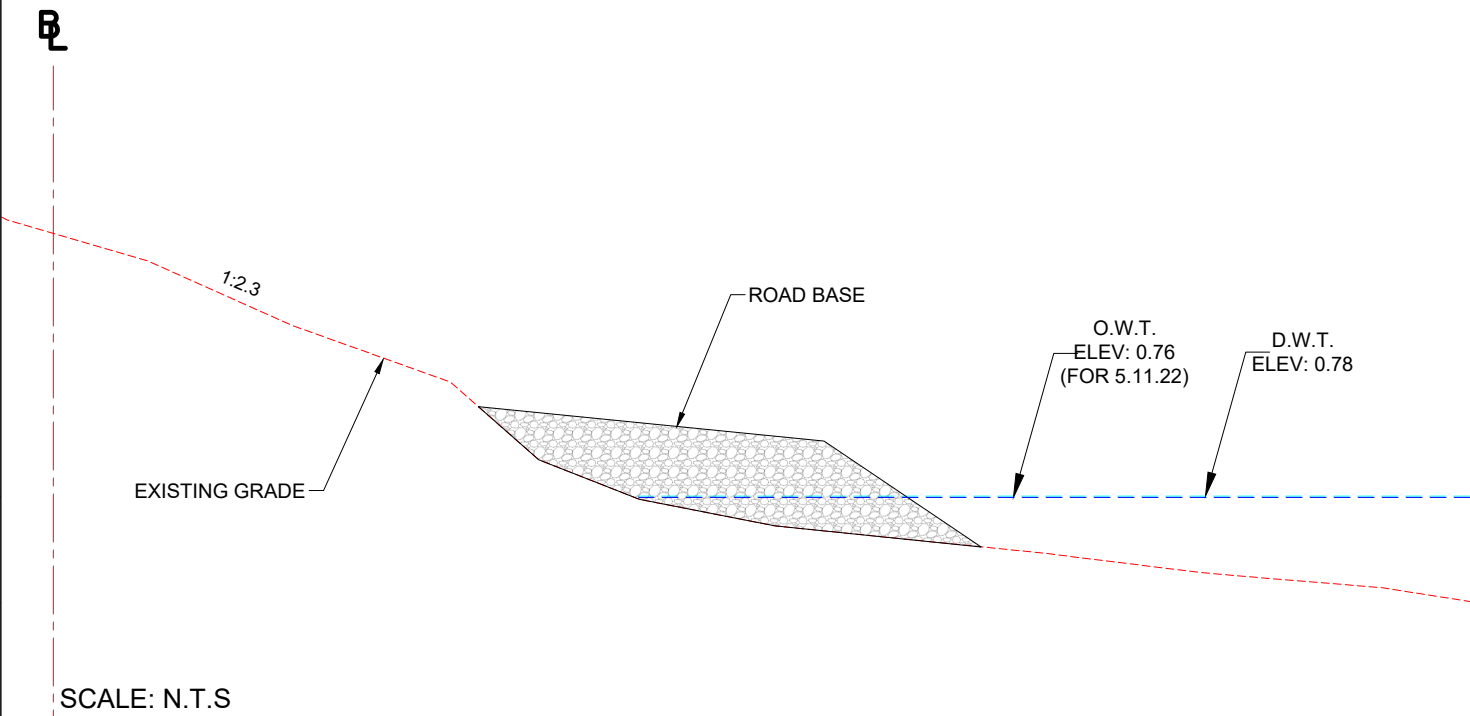
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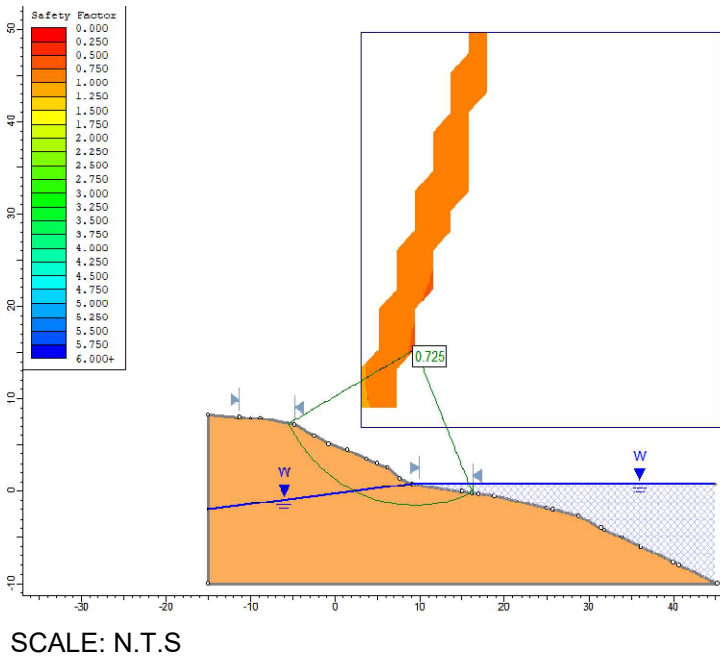
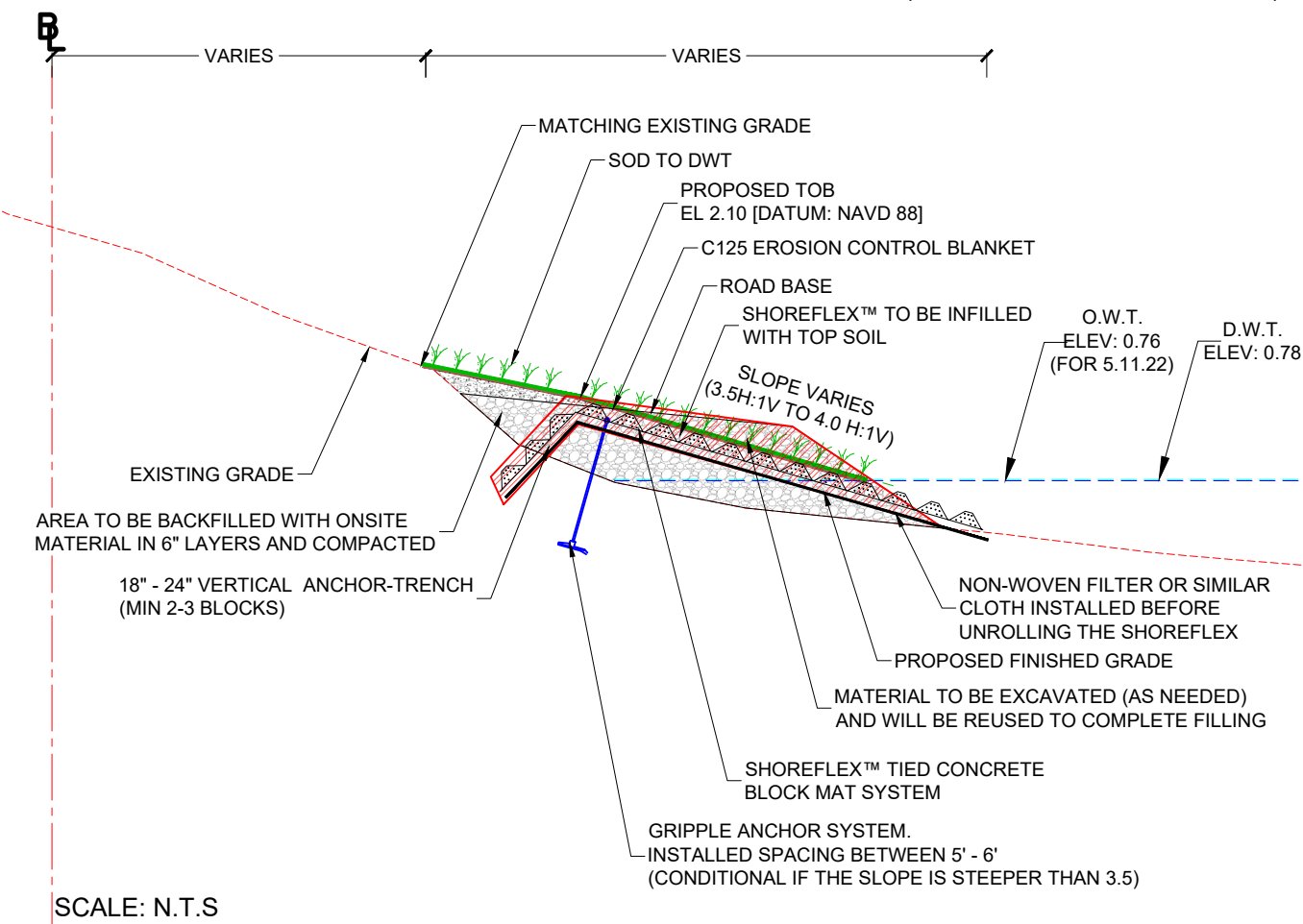
1. TYPICAL SECTION: LAKE 1  
EXISTING CONDITION



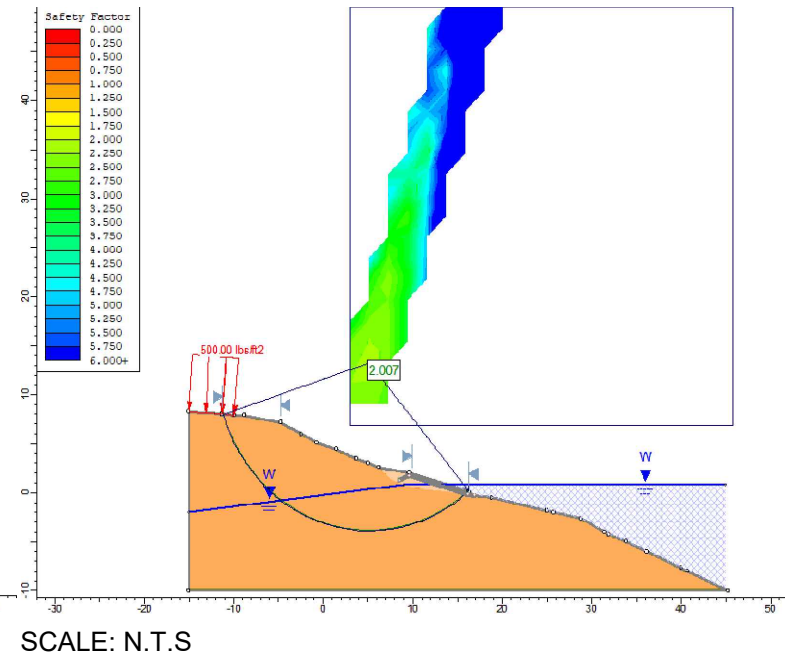
2. TYPICAL SECTION: LAKE 1  
DURING CONSTRUCTION (ACCESS ROAD)



3. TYPICAL SECTION: LAKE 1  
PROPOSED DESIGN (PRIORITY LEVELS 01 AND 02)



4. SLOPE STABILITY ANALYSIS (EXISTING CONDITION)  
FACTOR OF SAFETY = 0.725



5. SLOPE STABILITY ANALYSIS (WITH SHOREFLEX)  
FACTOR OF SAFETY = 2.007

REVISIONS		
DATE	BY	DESCRIPTION

Erosion and Sedimentation Control Plan  
for Cutler Cay Community Development  
District Lake 1



**Landshore Enterprises, LLC**  
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Control & Construction Management  
d/b/a Erosion Restoration, LLC  
"Your Shoreline Protection Specialists"

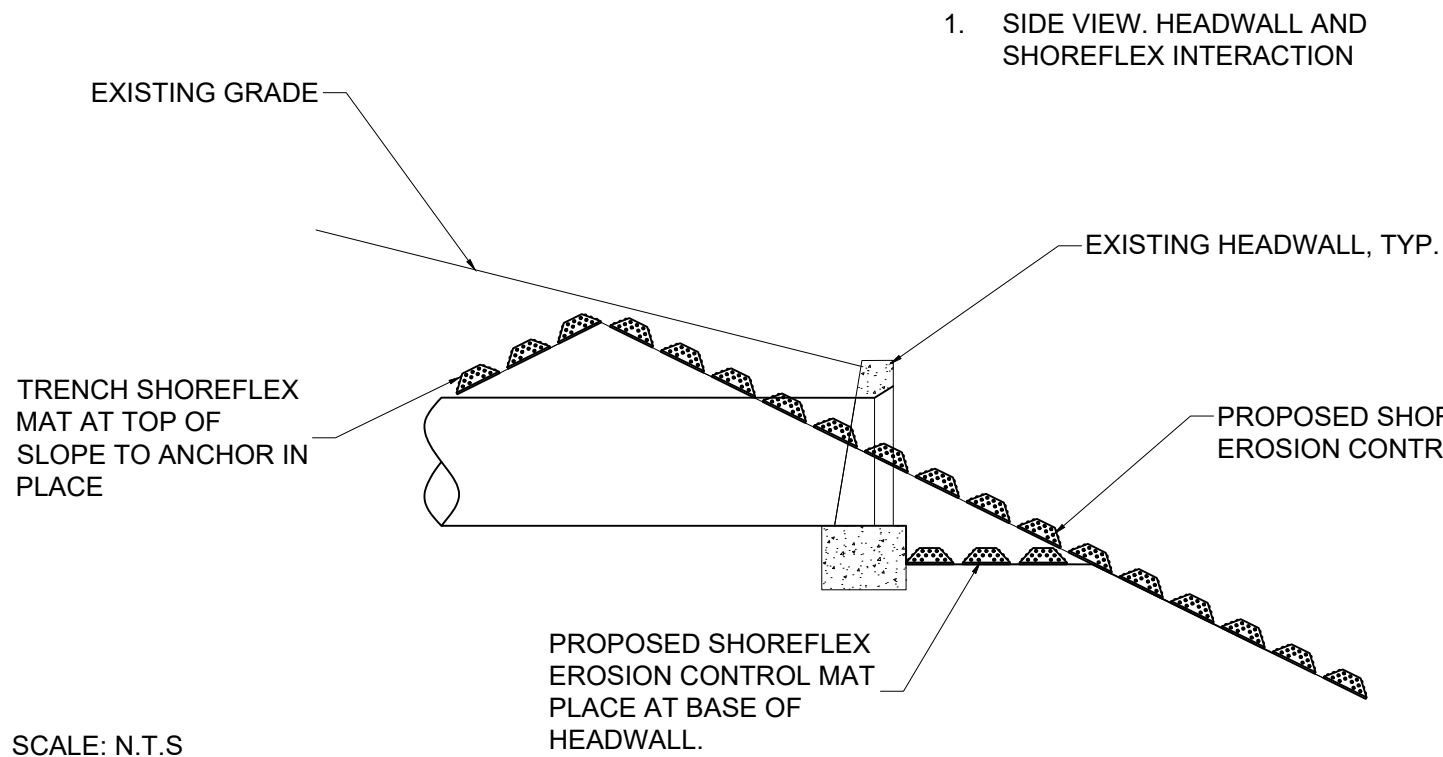
118 Shamrock Blvd.  
Venice, FL 34293  
Office: 941-303-5238  
Fax: 941-218-6113  
E-mail: info@landshore.com

BY: \_\_\_\_\_  
PIETER M. LOMBARD, P.E.  
FL LIC. No. 66596  
ENGINEER OF RECORD

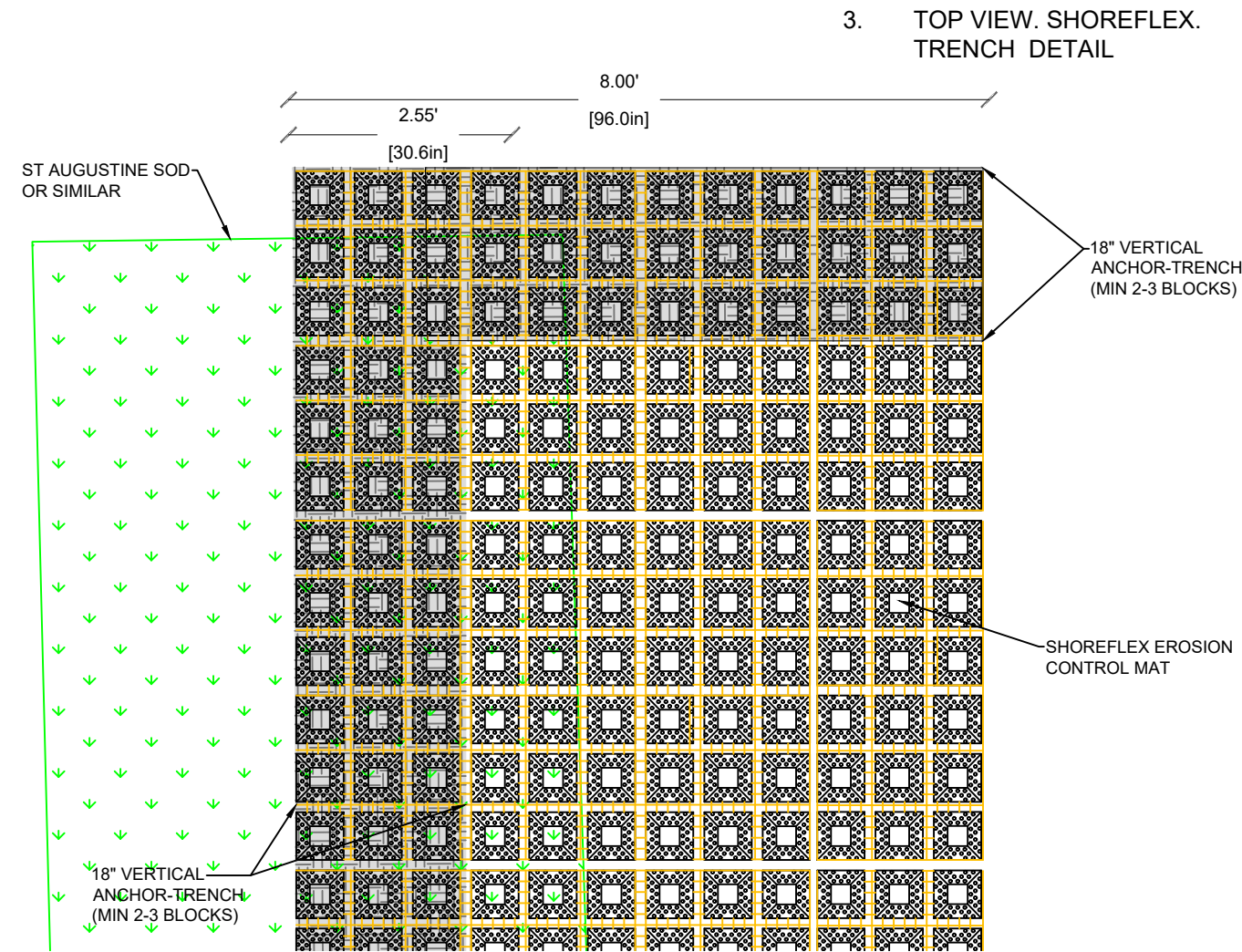
DETAILS

PROJECT NO.	SHEET	OF
2022-043	22	27
DRAWN BY:	DATE:	SCALE:
NV	06/29/2022	N.T.S

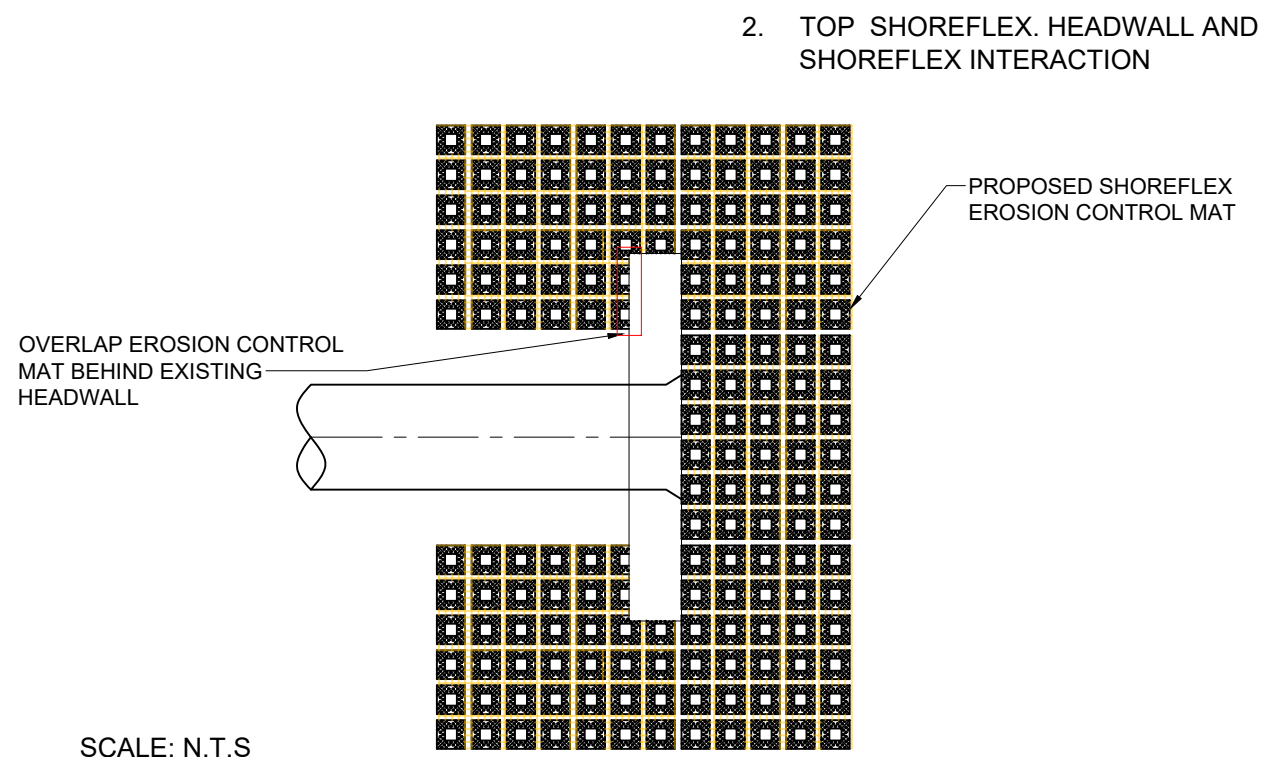
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SCALE: N.T.S



SCALE: N.T.S



SCALE: N.T.S

4. FOUNDATION PREPARATION AND MAT PLACEMENT

4.1. Installation

ShoreFlex® installation shall be performed by a manufacturer approved installer. All equipment, materials, labor, and incidentals associated with placing ShoreFlex® are to be covered by the approved installer. Subgrade prep should follow the construction plans submitted either by the engineer or manufacturer.

The subgrade should be smooth, firm, unyielding, and free from all debris including sticks, rocks, roots, and other protrusions that would inhibit intimate contact with the subgrade. No individual block should be raised more than ¼ in. above the immediately adjacent block to ensure proper hydraulic performance. Compaction of base to meet 95% proctor unless specified otherwise.

Topsoil and seed can be applied directly to prepared subgrade prior to the placement of the ShoreFlex® to obtain desired expedited vegetation growth.

Mats should be installed according to the line and grade shown in the plans that have been provided by the engineer or the manufacturer. Onsite technical assistance will be available from the manufacturer during installation if needed.

Installation of adjacent mat seams perpendicular to the flow should be done with a shingle installation. The downstream mat should be placed a minimum of 18

in. underneath the upstream adjoining mat and can be fastened together as per the engineer or manufacturer's recommendation.

Installation of adjacent mat seams parallel to the direction of flow should not meet in the middle of the channel and should have a 2ft. erosion control blanket placed equally under both mats and both mats shall be fastened together using the engineer or manufacturers recommendation.

A minimum toe trench of 18 in. should be dug for the leading edge of the concrete mat that is perpendicular to channelized flow. All exterior edges of the concrete mat not exposed to channelized flow should be trenched in a minimum of 3". The leading edge and sides of the mat will be placed in the trenches and backfilled with a non-erodible soil or site-specific soil.

Additional anchoring can be achieved by using the lifting/anchoring loops that are embedded into the concrete blocks at the edges of each mat. Each loop can be used to adjust mats during installation as well as be used for attaching earth anchors to permanently hold the concrete mats in place.

4.2. Finishing: The cells or openings in the mats may be backfilled and compacted with suitable material, as specified by the EOR. Backfilling and compaction shall be completed in a timely manner so that no more than 500 feet of exposed mats exist at any time. Finishing requirements are explicitly at the discretion of the EOR.

REVISIONS			Erosion and Sedimentation Control Plan for Cutler Cay Community Development District Lake 1		Landshore Enterprises, LLC Environmental Engineering, Erosion Control & Construction Management d/b/a Erosion Restoration, LLC "Your Shoreline Protection Specialists"	118 Shamrock Blvd. Venice, FL 34293 Office: 941-303-5238 Fax: 941-218-6113 E-mail: info@landshore.com	BY: _____ PIETER M. LOMBARD, P.E. FL LIC. No. 66596 ENGINEER OF RECORD	DETAILS	PROJECT NO.	SHEET	OF
DATE	BY	DESCRIPTION							2022-043	23	27
									DRAWN BY:	DATE:	SCALE:
									NV	06/29/2022	N.T.S.

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ITEM NUMBER	FDOT OR LSE REFERENCE NUMBER	DESCRIPTION	UNIT	PRIORITY LEVEL 1	PRIORITY LEVEL 2	"QUANTITY TOTAL"
1	01026 1	MOBILIZATION AND DEMOLITION	LS	1	1	2
2	104-11-3	SILT FENCE (PER LF)	LF	201	201	402
3	104-11-I	FLOATING TURBIDITY BARRIER. TYPE I	LF	500	500	1000
4	110-1-1	CLEARING AND GRUBBING	LS	1	1	2
5	120- 1	REGULAR EXCAVATION	CY	380	108	488
6	120-6	EMBANKMENT	CY	786	300	1086
7	900-4	NON-WOVEN FILTER	SY	3116	1870	4987
8	900-1	SHOREFLEX WITH ANCHORS	SY	3116	1870	4987
9	900-2	C125 EROSION CONTROL BLANKET	SY	3116	1870	4986
10	02930-2.1	SODDING	SY	3505	2104	5609
11	E900-100-200	ACCESS AREA REPAIR	SY	244	244	488

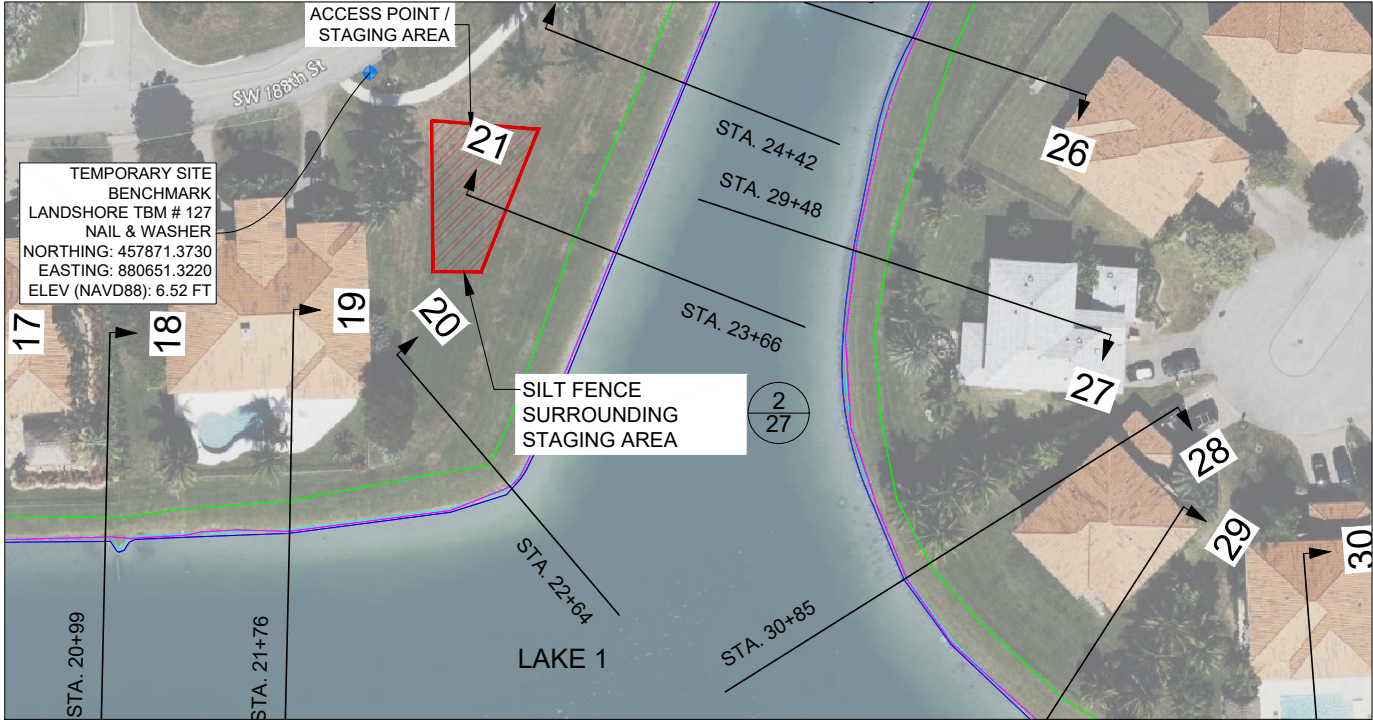
QUANTITY INFORMATION FOOTNOTES:

1. PROJECT LENGTH =~ 8,150 FT
2. 110-1-1 - INCLUDES CLEARING AND GRUBBING OF ALL MATERIAL WILL BE REMOVED FROM THE JOB SITE
3. 104-11-3 - TURBIDITY BARRIERS WILL BE RELOCATED EVERY 500 FT ALONG THE SHORELINE AS THE SECTIONS/PHASES OF CONSTRUCTION ARE COMPLETED.
4. 120-1 - INCLUDES ALL EXCAVATING AND EXPORTING EXCESS AND UNSUITABLE MATERIAL OFF-SITE TO COMPLETE THE PLACEMENT OF THE SHOREFLEX
5. 120-6 - INCLUDES SUITABLE BACKFILL COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE (ACCORDING ASTM D 698)
6. 02930-2.1. SOD:

6.1. INCLUDES GROUND PREPARATION AND COMPLETE MAINTENANCE OF THE AREA UNTIL FINAL COMPLETION. REFER TO VEGETATION SPECIFICATION 02930 FOR ADDITIONAL PLANTING DETAILS.

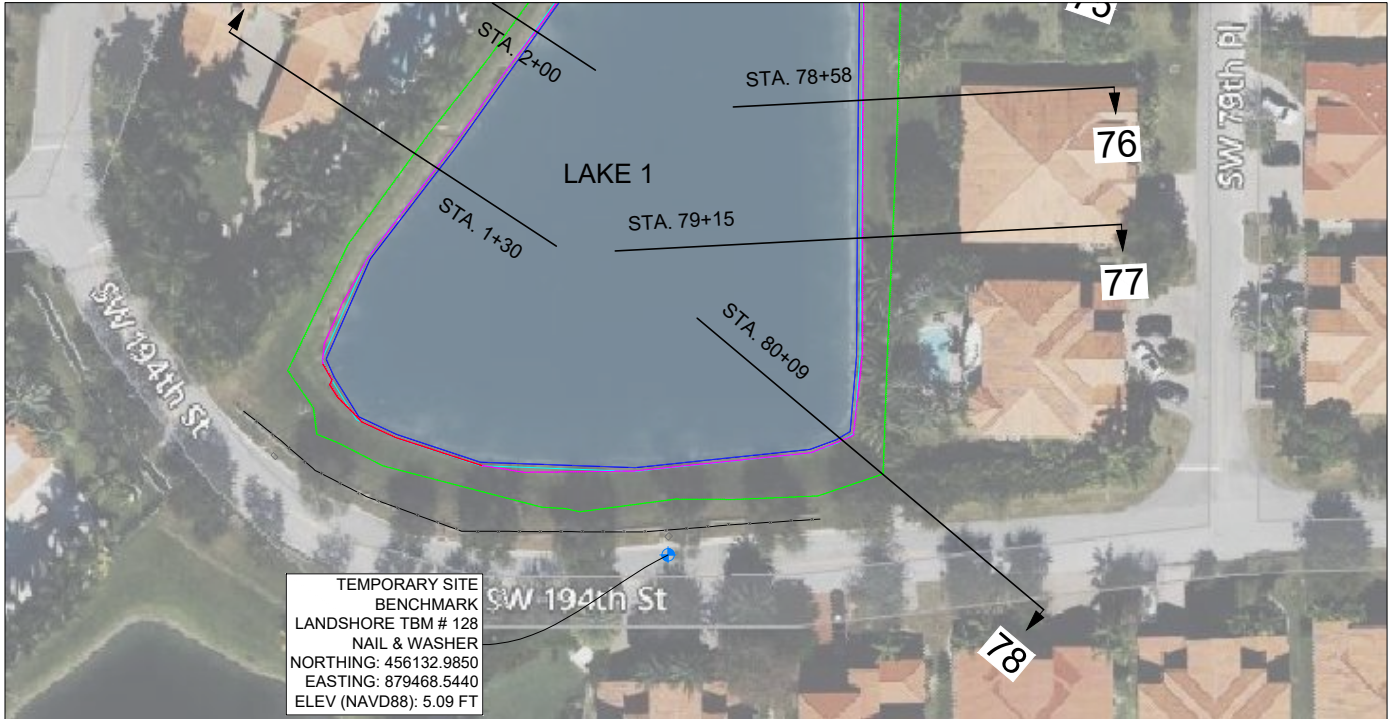
FDOT: FLORIDA DEPARTMENT OF TRANSPORTATION  
LSE: LANDSHORE ENTERPRISES, LLC

BENCHMARK LOCATION



SCALE: 1" = 80'

BENCHMARK LOCATION



SCALE: 1" = 80'

REVISIONS			Erosion and Sedimentation Control Plan for Cutler Cay Community Development District Lake 1			<div><div>Landshore Enterprises, LLC</div><div>Environmental Engineering, Erosion Control &amp; Construction Management d/b/a Erosion Restoration, LLC</div><div>"Your Shoreline Protection Specialists"</div></div>			BY: PIETER M. LOMBARD, P.E. FL LIC. No. 66596 ENGINEER OF RECORD			SUMMARY OF QUANTITIES			© Erosion Restoration, LLC. PROJECT NO. 2022-043 SHEET 24 OF 27 DRAWN BY: NV DATE: 06/29/2022 SCALE: N.T.S.		
DATE	BY	DESCRIPTION															

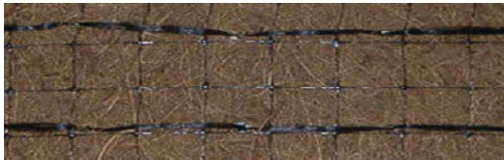




Specification Sheet  
EroNet™ C125® Erosion Control Blanket

DESCRIPTION

The long-term double net erosion control blanket shall be a machine-produced mat of 100% coconut fiber with a functional longevity of up to 36 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with a heavyweight photodegradable polypropylene netting having ultraviolet additives to delay breakdown and an approximate 0.63 x 0.63 in (1.59 x 1.59 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats. The C125 shall meet Type 4 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17



Index Property	Test Method	Typical
Thickness	ASTM D6525	0.22 in. (5.59 mm)
Resiliency	ECTC Guidelines	82%
Water Absorbency	ASTM D1117	167%
Mass/Unit Area	ASTM 6475	7.73 oz/sy (262.8 g/sm)
Swell	ECTC Guidelines	13%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	0.75 oz-in
Light Penetration	ASTM D6567	16.6%
Tensile Strength - MD	ASTM D6818	472.8 lbs/ft (7.01 kN/m)
Elongation - MD	ASTM D6818	25.6%
Tensile Strength - TD	ASTM D6818	225.6 lbs/ft (3.35 kN/m)
Elongation - TD	ASTM D6818	33.9%
Biomass Improvement	ASTM 7322	257%

Design Permissible Shear Stress	
Unvegetated Shear Stress	2.25 psf (108 Pa)
Unvegetated Velocity	10.0 fps (3.05 m/s)

Slope Design Data: C Factors			
Slope Gradients (S)			
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.001	0.029	0.082
20-50 ft	0.036	0.060	0.096
≥ 50 ft (15.2 m)	0.070	0.090	0.110

Roughness Coefficients – Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.022
0.50 – 2.0 ft	0.022-0.014
≥ 2.0 ft (0.60 m)	0.014

Material Content		
Matrix	100% Coconut Fiber	0.5 lbs/sq yd (0.27 kg/sm)
Netting	Heavyweight photodegradable with UV additives	3 lbs/1000 sq ft (14.6 g/sm)
Thread	Black polypropylene	

Standard Roll Sizes			
Width	6.67 (2.03 m)	8 ft (2.44 m)	16 ft (4.87 m)
Length	108 ft (32.92 m)	112 ft (35.14 m)	112 ft (34.14 m)
Weight ± 10%	44 lbs (19.95 kg)	56.25 lbs (25.5 kg)	112.5 lbs (51 kg)
Area	80 sq yd (66.9 sm)	100 sq yd (83.61 sm)	200 sq yd (167.22 sm)



Western Green  
4609 E. Boonville-New Harmony Rd.  
Evansville, IN 47725

nagreen.com  
800-772-2040

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EC\_RM\_X\_MPDS\_C125\_3.20

SHOREFLEX DATA SHEET AND PERFORMANCE

WIDTH	LENGTH	8'	16'	25'	32'	50'
4'	ROLL WEIGHT (lbs)	352	704	1,100	1,408	2,200
	MATS/TRUCKLOAD	127	63	40	31	20
8'	ROLL WEIGHT (lbs)	704	1,408	2,200	2,816	4,400
	MATS/TRUCKLOAD	63	31	20	15	10
10'	ROLL WEIGHT (lbs)	880	1,760	2,750	3,520	5,500
	MATS/TRUCKLOAD	51	25	16	12	8
16'	ROLL WEIGHT (lbs)	1,408	2,816	4,400	5,632	8,800
	MATS/TRUCKLOAD	31	15	10	7	5
* CUSTOM SIZES AVAILABLE UP TO 16' WIDE * ROLL WEIGHT IS MAX SHIPPING WEIGHT						

SHOREFLEX® TECHNICAL INFORMATION	
Blocks	5,000 PSI, Wet-Cast Portland Cement / ASTM C39/C39 M
Block Size	6.5"x6.5"x2.5" / Avg. Weight 4.5 lbs
Percentage Open Area (POA)	30% min.
Material Weight	Min. 10 lbs. / sf
SF Per Load	4,000 to 4,300 lbs/T: (pending trucking ability and roll sizes)
Interlocking	Polypropylene 30/30 w/ 2,000 lb/ft biaxial strength Grid Aperture 1.6"
"Backing Options"	Double Net Straw (DNS2), GS 50. Non-Woven Fabrics
Anchor Types	18" Rebar "U" & Earth Anchors Stainless, Galvanized or Steel

PERFORMANCE TESTING

ShoreFlex® will resist erosion and scour due to hydraulic forces. ShoreFlex® will meet the requirements listed in Table 2 when tested with a backing material on a non-vegetated surface. 30% testing is not recommended for ASTM D6460-12 due to slope stability during testing.

Sampling and Testing: The purchaser (or their authorized representative) shall be accorded access to the relevant manufacturing facility or facilities, if desired, in order to inspect and/or sample the units from lots ready for delivery prior to release for delivery to the job site. Such inspections are at the sole expense of the requesting entity.

Purchaser may request additional testing other than that provided by the manufacturer as needed. Such requested testing will extend any stated lead times for manufacturing and delivery, if the results of such testing are a prerequisite to approval (i.e., approval for release to manufacturing). Costs associated with such testing shall be borne by the purchaser.

Table 2. Limiting shear stress, ASTM D46460-12

Test	Tested value	Bed Slope	Limiting Value
ASTM D6460-12	Shear Stress	10% & 20%	18 lb./ft. <sup>2</sup>
ASTM D6460-12	Velocity	10% & 20%	30 ft./sec

Full Specification available upon request or available at Manufacturer Website (Link provide Below)  
[https://49d5b17d-c449-4dcb-bd77-bcc30683e1d7.filesusr.com/ugd/7ba743\\_f2b617ac401a4fadb75c9e64dcf43e5a.pdf](https://49d5b17d-c449-4dcb-bd77-bcc30683e1d7.filesusr.com/ugd/7ba743_f2b617ac401a4fadb75c9e64dcf43e5a.pdf)

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REVISIONS			Erosion and Sedimentation Control Plan for Cutler Cay Community Development District Lake 1		Landshore Enterprises, LLC Environmental Engineering, Erosion Control & Construction Management d/b/a Erosion Restoration, LLC "Your Shoreline Protection Specialists"	118 Shamrock Blvd. Venice, FL 34293 Office: 941-303-5238 Fax: 941-218-6113 E-mail: info@landshore.com	BY: PIETER M. LOMBARD, P.E. FL LIC. No. 66596 ENGINEER OF RECORD	MANUFACTURER'S SPECIFICATIONS	PROJECT NO.	SHEET	OF
DATE	BY	DESCRIPTION							2022-043	25	27
									DRAWN BY:	DATE:	SCALE:
									NV	06/29/2022	

## Mirafi® 160 N

Mirafi® 160N is a nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. Mirafi® 160N is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids. Mirafi® 160N meets AASHTO M288 Class 2 for Elongation > 50%.

TenCate Geosynthetics Americas Laboratories are accredited by Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP). NTPEP Listed

Mechanical Properties	Test Method	Unit	Minimum Average	
			Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	160 (712)	160 (712)
Grab Tensile Elongation	ASTM D4632	%	50	50
Trapezoid Tear Strength	ASTM D4533	lbs (N)	60 (267)	60 (267)
CBR Puncture Strength	ASTM D6241	lbs (N)	410 (1825)	
			Maximum Opening Size	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	70 (0.212)	
			Minimum Roll Value	
Permittivity	ASTM D4491	sec-1	1.5	
Flow Rate	ASTM D4491	gal/min/ft2 (l/min/m2)	110 (4481)	
			Minimum Test Value	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70	
Physical Properties		Unit	Roll Size	
Roll Dimensions (width x length)		ft (m)	15 x 300 (4.5 x 91)	
Roll Area		yd2 (m2)	500 (418)	

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365 South Holland Drive  
Pendergrass, GA 30567

Tel 706 693 2226  
Tel 888 795 0808

Fax 706 693 4400  
[www.tencate.com](http://www.tencate.com)

FGS000361  
ETQR89

## Mirafi® FW404

Mirafi® FW404 is composed of high-tenacity monofilament polypropylene yarns, which are woven into a stable network such that the yarns retain their relative position. Mirafi® FW404 geotextile is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids

TenCate Geosynthetics Americas Laboratories are accredited by Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP). NTPEP Listed

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	400 (1780) 315 (1402)	
Grab Tensile Elongation	ASTM D4632	%	15	15
Trapezoid Tear Strength	ASTM D4533	lbs (N)	150 (668)	165 (734)
CBR Puncture Strength	ASTM D6241	lbs (N)	1150 (5118)	
			Minimum Roll Value	
Percent Open Area	COE-02215	%	1.0	
Permittivity	ASTM D4491	sec-1	0.9	
Flow Rate	ASTM D4491	gal/min/ft2 (l/min/m2)	70 (2852)	
			Maximum Opening Size	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	40 (0.425)	
			Minimum Test Value	
UV Resistance (at 500 hours)	ASTM D4355 % strength retained		90	
Physical Properties		Unit	Roll Size	
Roll Dimensions (width x length)		ft (m)	15 x 300 (4.57 x 91.4)	
Roll Area		yd2 (m2)	500 (418)	

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Pendergrass, GA 30567


Tel 706 693 2226  
Tel 888 795 0808

Fax 706 693 4400  
[www.tencate.com](http://www.tencate.com)

FGS000015  
ETQR29

GAI-LAP-25-97

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REVISIONS			Erosion and Sedimentation Control Plan for Cutler Cay Community Development District Lake 1	 <b>Landshore Enterprises, LLC</b> Environmental Engineering, Erosion Control & Construction Management d/b/a Erosion Restoration, LLC "Your Shoreline Protection Specialists"	118 Shamrock Blvd. Venice, FL 34293 Office: 941-303-5238 Fax: 941-218-6113 E-mail: <a href="mailto:info@landshore.com">info@landshore.com</a>	BY: _____ PIETER M. LOMBARD, P.E. FL LIC. No. 66596 ENGINEER OF RECORD	MANUFACTURER'S SPECIFICATIONS	PROJECT NO.	SHEET	OF
DATE	BY	DESCRIPTION						2022-043	26	27
								DRAWN BY:	DATE:	SCALE:
								NV	06/29/2022	NA









# *Landshore® Enterprises, LLC*

*Streambank & Shoreline protection/stabilization/reclamation  
Environmental Engineering, Erosion Control, Construction Management  
d/b/a Erosion Restoration, LLC*

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## **Engineering Properties:**

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 ([www.directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba](http://www.directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba)). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers.

These properties are depth to a seasonal high-water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained, or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high-water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."



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Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004). The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT.

Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).



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Environmental Engineering, Erosion Control, Construction Management  
d/b/a Erosion Restoration, LLC*

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## **References:**

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

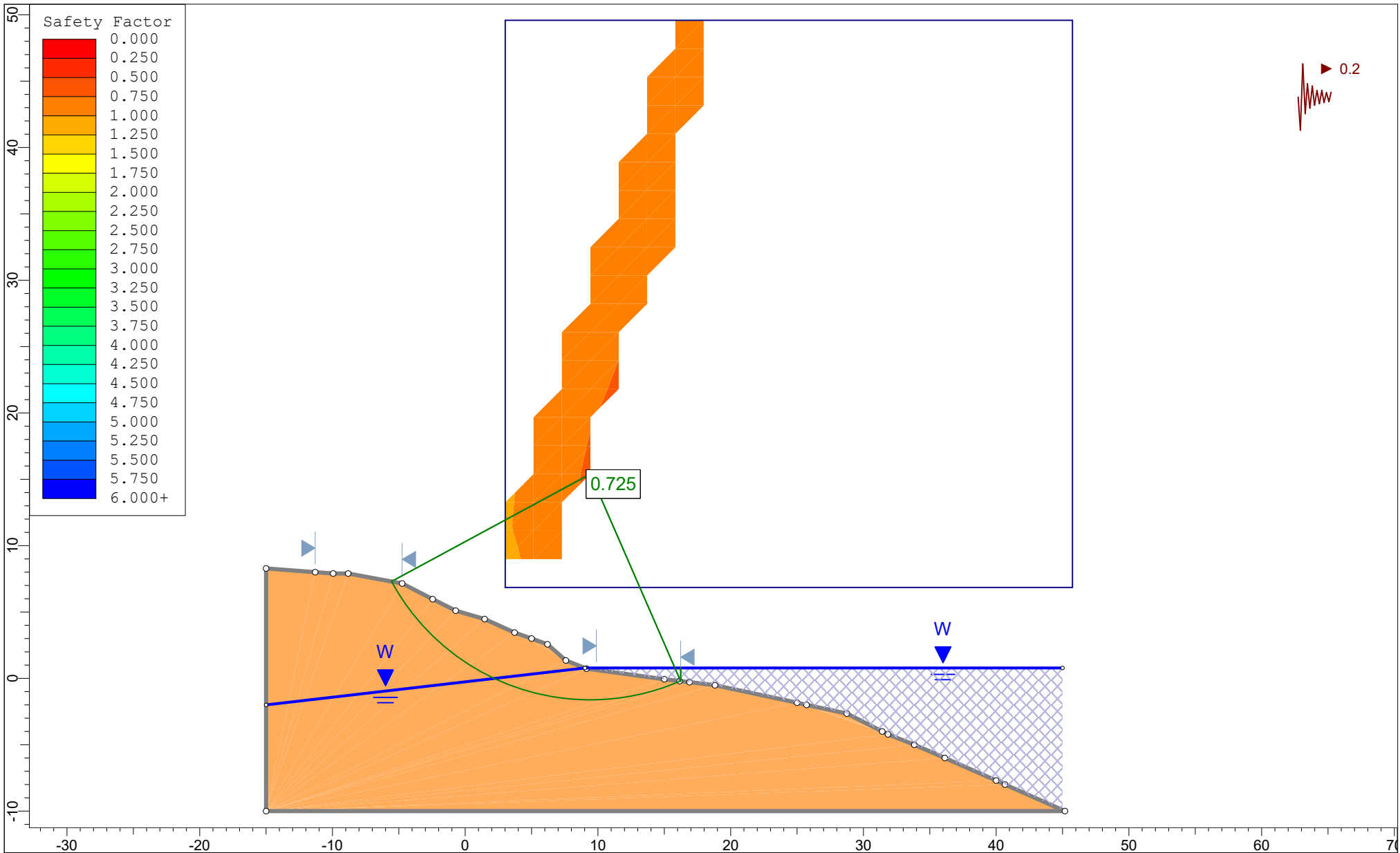
American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.


Data Source Information

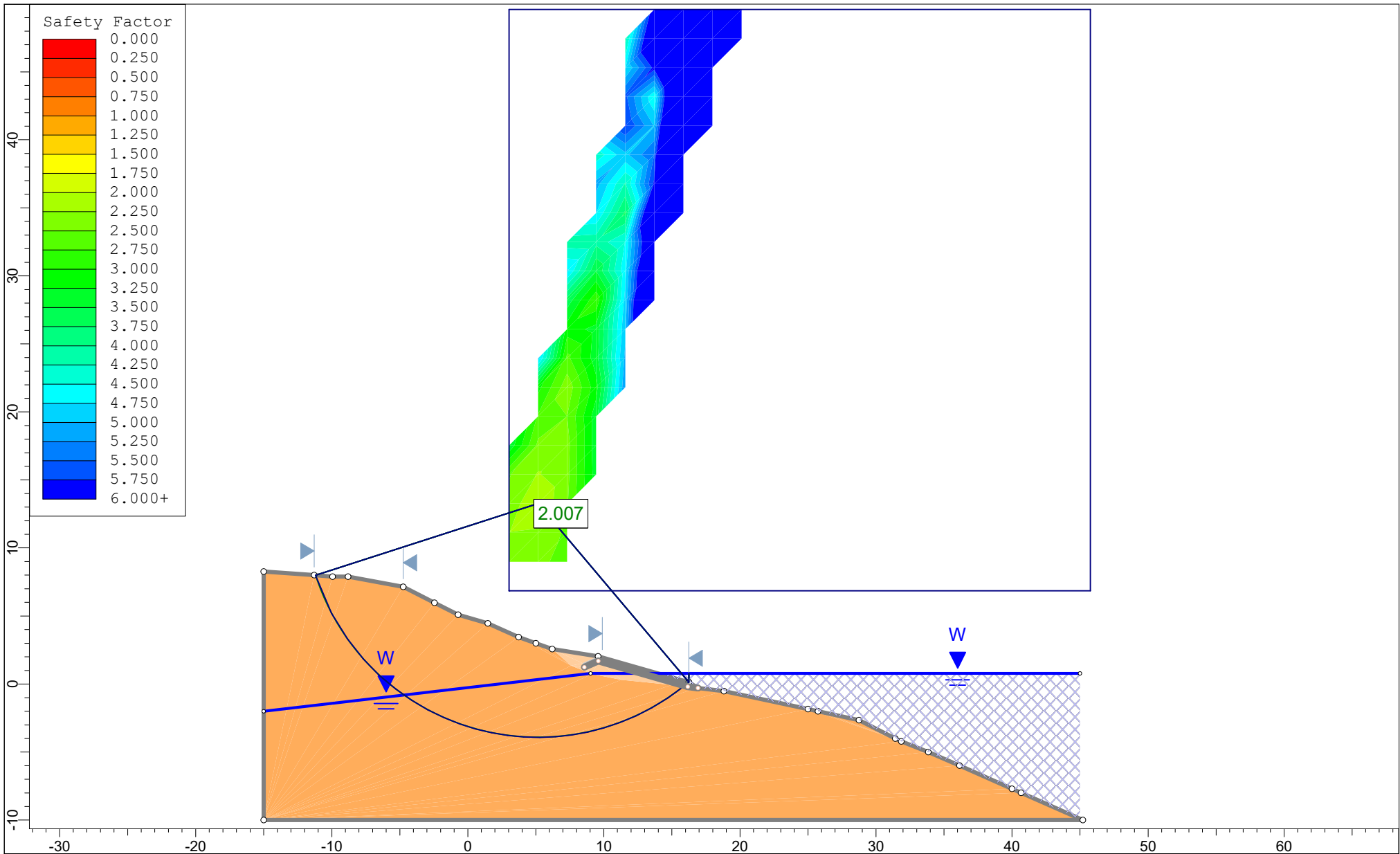
Soil Survey Area: Miami-Dade County Area, Florida


Survey Area Data: Version 13, Aug 25, 2021

Valles, N. and Becerrit, Z. (2002) Fundamental of Soil Mechanics. Francisco de Miranda Experimental National University. Coro, Falcon-Venezuela.



	Project		CUTLER CAY CDD - CUTLER BAY - MIAMI DADE COUNTY, FLORIDA
	Analysis Description		Slope Stability Analysis
	Drawn By	Nicolas Negrette, MSMC	Company Landshore Enterprises, LLC
	Date	5/27/2022	CC_X11_6_TYP_BEFORE2.slim



	Project		CUTLER CAY CDD - CUTLER BAY - MIAMI DADE COUNTY, FLORIDA
	Analysis Description		Slope Stability Analysis
	Drawn By	Nicolas Negrette, MSMC	Company
	Date	5/27/2022	CC_X11_6_TYP_AFTER.slim
Landshore Enterprises, LLC		Landshore Enterprises, LLC	

## Cutler Cay CDD

### Proposed Loan Analysis

#### Loan Assumption

Proposed Loan Amount  
Total Loan Payment  
Estimated Interest Rate\*\*  
Term

\$1,725,000  
\$141,368  
5.25%  
20

#### Assessment Allocation

FF	# of Units	Proposed Assessment Per Home	Current Assessment Per Home	Total Assessment Per Home
60	180	\$269	\$1,384	\$1,654
75*	258	\$279	\$1,440	\$1,720
125	<u>67</u>	\$312	\$1,602	\$1,914
	505			

\* One 75' unit prepaid the existing assessments and will only pay the new assessment.

\*\* Estimated Rate. Interest rates are extremely volatile and until a term sheet is provided by a bank, the actual rate is unknown.



8935 NW 35 Lane, Suite 101 Doral, FL 33172

Tel (305) 640-1345

Email [juan.alvarez@alvarezeng.com](mailto:juan.alvarez@alvarezeng.com)

July 25, 2022

Ms. Gloria Perez  
District Manager  
Cutler Cay Community Development District  
2501A Burns Road  
Palm Beach Gardens, FL 33410

**Via email (Only):** [gperez@sdsinc.org](mailto:gperez@sdsinc.org)

**Reference:**               **Proposal for Construction Administration Services  
Lake Banks Restoration Project**

Dear Ms. Perez:

As preliminarily discussed at the District's meeting of April 11, 2022, Alvarez Engineers proposes to provide the following services in connection with the referenced project:

**1. Scope of Services**

1. Review of contractor design and plans.
2. Assistance with contractor bidding and contract negotiations.
3. Overseeing contractor processing of construction permits.
4. Periodic visits to the site to ensure the construction is substantially completed in accordance with plans and permits.
5. Processing contractor applications for payment in accordance with the construction agreement.
6. Preparation of punch list items after substantial completion.
7. Ensure the contractor closes all permits.
8. Issue a certification of completion at the end of the project.

**2. Compensation**

The total compensation for services described above, will be a lump sum amount of \$6,000.00. Invoices will be prepared by Alvarez Engineers monthly based on the percentage of completion of the project. It is our understanding that invoices are due and payable by the District thirty days after the invoice is submitted.

Please acknowledge acceptance of this agreement by signing below. We look forward to working with Cutler Cay CDD on this project.

\_\_\_\_\_  
For the District  
Date:

DocuSigned by:  
  
91E21FBBCEDD4E0...

\_\_\_\_\_  
Juan R. Alvarez, PE  
President, Alvarez Engineers, Inc.