Lake Area Management Plan

SW Greenridge Street & SW Citrus Boulevard
Palm City, Martin County, Florida
Parcel ID's: 15-39-40-000-000-00010-0 (±126.35 acres)
& 15-39-40-000-000-00012-0 (±48.03)

Prepared For:

Martin County
Growth Management Department

Prepared By:

Jennifer Acevedo

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ENVIRONMENTAL CONSULTING DEPARTMENT
Aquatic **RESEARCH** Monitoring, Equipment, & Deployment, LLC.

Revised April 24, 2020

Introduction

The following Lake Area Management Plan (LAMP) is provided to augment the littoral and upland transitional zone planting plan associated with the creation of on-site lake (±32.97 acres) with 67,310 linear feet of shoreline as measured at the proposed control elevation. The subject property is located at corner of SW Greenridge St. and SW Citrus Blvd., Palm City, Martin County, Florida. The subject property is further located in Section 15, Township 39 E, and Range 40 E and is identified by the Martin County Property Appraiser as Parcel ID number's 15-39-40-000-000-00010-0 (±126.35 acres) & 15-39-40-000-000-00012-0 (±48.03). See Appendix A, Figures 1 and 2.

Littoral and upland transitional zone plantings are mandated to include a minimum of ten square feet per linear foot of shoreline created with one (1) tree for each 500 square feet. Based on this the Lake will require 67,310 square feet of littoral and upland transitional zone plantings with 135 trees in each zone. In accordance with the Martin County Land Development (LDR) Code 4.348.C. sufficient vegetation shall be installed to achieve a minimum of 80% coverage. See Appendix A Figure 3 for the littoral and upland transitional area planting plan.

Plant Material

The upland transitional zone and littoral planting zone within and adjacent to the constructed lake will be planted with native material in accordance with the planting plan and associated detail sheets. Modifications to the proposed plant installation material can be completed only after receiving written permission from the Martin County Growth Management Department or their assigns. Plants will be installed in accordance with spacing and hydrological zone reference as depicted on the approved final site plan/planting plan. Planting of the littoral and upland transitional zone will be done no later than 30 days after the completion of the lake excavations. To assist with establishment of plants a 6" layer of topsoil shall be added as necessary.

Temporary irrigation will be installed for 45 days after the initial plantings, if necessary, to ensure survival of the plantings. Monitoring will be conducted by an Environmental Professional with experience in restoration ecology.

An Environmental Professional familiar with littoral and upland transitional zone plant installation shall oversee the installation activity.

Planting specifications for the Lake are as follows:

Lake Plant List – Typical 10' X 50' Section 135 Sections to be Installed							
Zone	***Type***	***Common Name***	***Scientific Name***	***Quantity- One Typical Section***	***Unit- (gal)***	***Spacing- off center (o.c.)***	***Total Number of Plants to be Installed***
Littoral	Tree	Bald Cypress	*Taxodium distichum*	1 per section – species to vary per section	15	10' o.c.	135
Littoral	Tree	Red Maple	*Acer rubrum*	1 per section – species to vary per section	15	10' o.c.	
Littoral	Tree	Dahoon Holly	*Ilex cassine*	1 per section – species to vary per section	15	10' o.c.	
Total Trees = 135 trees							
Littoral	Groundcover	Arrowhead	*Sagittaria latifolia*	23	1	2' o.c.	3,105
Littoral	Groundcover	Pickerelweed	*Pontederia cordata*	23	1	2' o.c.	3,105
Littoral	Groundcover	Maidencane	*Panicum hemitomon*	23	1	2' o.c.	3,105
Littoral	Groundcover	Native rush	*Eleocharis spp.*	24	1	2' o.c.	3,240
Littoral	Groundcover	Saw Grass	*Cladium jamaicense*	23	1	2' o.c	3,105
Total Groundcover=15,660 groundcover plants							
Upland/Transitional	Tree	Laurel Oak	*Quercus laurifolia*	1 per section – species to vary per section	15	10' o.c.	135
Upland/Transitional	Tree	Slash Pine	*Pinus elliotttii*	1 per section – species to vary per section	15	10' o.c.	
Total Trees = 135 trees							
Upland/Transitional	Shrub	Saw Palmetto	*Serona repens*	6	3	5' o.c.	810
Upland/Transitional	Shrub	Beauty Berry	*Callicarpa americana*	6	3	5'o.c.	810
Upland/Transitional	Shrub	Cocoplum	*Chrysobalanus icaco*	7	3	5' o.c.	945
Total Midstory = 2,565 shrubs							
Upland/Transitional	Groundcover	Sand Cordgrass	*Spartina bakeri*	40	1	2' o.c.	5,400
Upland/Transitional	Groundcover	Muhly Grass	*Muhlenbergia capillaris*	40	1	2' o.c.	5,400
Upland/Transitional	Groundcover	Dwarf Fakahatchee Grass	*Tripsacum floridana*	36	1	2'o.c.	4,860
Total groundcover = 15,120 groundcover plants							

Maintenance of Littoral and Upland Transitional Zones

Littoral and upland transitional zone planting areas as shown on the approved final site plan/planting plan will be kept free of nuisance and exotic vegetation as listed by the Florida Exotic Pest Plant Council. The property owner shall be responsible for conducting maintenance of littoral and upland transitional zone in accordance with this LAMP. Exotic removal will be conducted through manual removal or the application of appropriate herbicides approved for in water use. All manual eradication will be conducted through hand clearing and non-native material will be disposed of off-site.

The criterion for eradication will be the 100% removal of viable exotic vegetation after maintenance activities. If initial activity is not successful in achieving this criterion, additional treatment will be required. Transportation of exotic vegetation out of the maintenance area will be conducted in a fashion to minimize the distribution of seed. All herbicide application will be conducted under the supervision of a Florida Department of Agriculture (FDA) licensed applicator, licensed for the application of aquatic herbicides. All herbicides applied within the lake system must be properly labeled for use in accordance with FDA regulations. All herbicide applied in the maintenance area must contain a visible tracer dye in the mix to facilitate observation of treated vegetation.

The vegetative success criteria for the littoral and upland transitional area includes the requirement for 80 percent coverage of desirable vegetation by the end of the second year (after installation), aerial coverage of exotic vegetation at zero percent, and aerial coverage of nuisance species limited to five percent. After two years, the littoral and upland transitional zones will meet the vegetative success criteria of 80 percent coverage of desirable vegetation.

Littoral and Upland Transitional Zone Alteration Provision

It shall be prohibited to alter the approved slopes, contours, or cross-sections of the upland transitional zone or littoral zone after initial planting has occurred without the permission of the Growth Management Department or his assigns.

Regular maintenance as outlined above is allowed within the upland transitional zone and littoral zone. However, it is the responsibility of the owner, developer, or its successors or assigns to maintain the required survivorship and native plant coverage of the upland transitional zone and the littoral shelf.

Littoral and Upland Transitional Zone Monitoring

The littoral and upland transitional zones will be monitored on a yearly basis with reports to be submitted to the county within 30 days of completion of monitoring activities. Monitoring will be conducted for a period of three years. Property owner shall be responsible for conducting monitoring.

Martin County is authorized to inspect any County regulated site or appurtenance. Duly authorized representatives of Martin County may, at any time, and upon proper identification, enter upon and shall be given access to any premises for the purpose of such inspection.

Water Management Procedures

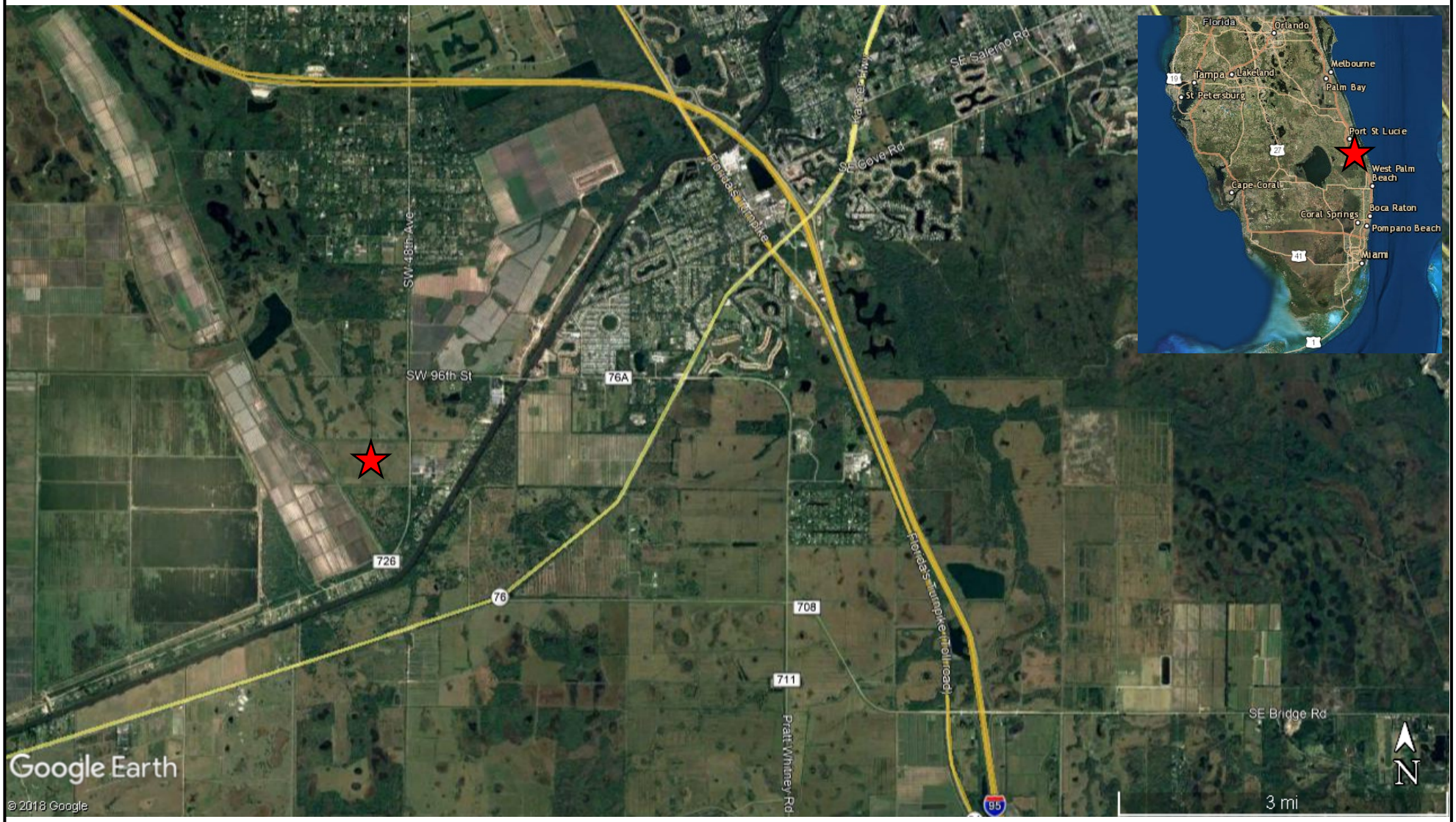
To ensure the continued viability and health of the littoral and transitional area plantings the lake will be held at or near the prescribed control level elevation in accordance with the applicable approved permit. In order to avoid siltation and/or eutrophication, practices such as pumping water and the discharge of turbid waste will be avoided. As per Florida's Storm Water Regulatory Program, Best Management Practices (BMP's) will be used both during and after construction to minimize erosion and sedimentation and to properly manage runoff for both storm water quality and quantity. Additionally, the littoral and upland transitional area planting will act to stabilize the area, limiting siltation and the probability of eutrophication. Areas of the lake without littoral or transitional area plantings will be stabilized with appropriate vegetation. The system will be operated and maintained in perpetuity in accordance with approved permits.

Appendix A

Figure 1 – Location Map
Figure 2 – Site Map
Figure 3 – Lake Littoral and Upland Transitional Area Planting Plan

Appendix A

Site Maps



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Location Map

SW Greenridge Street & SW Citrus Boulevard
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Figure 1

Image: Google Earth

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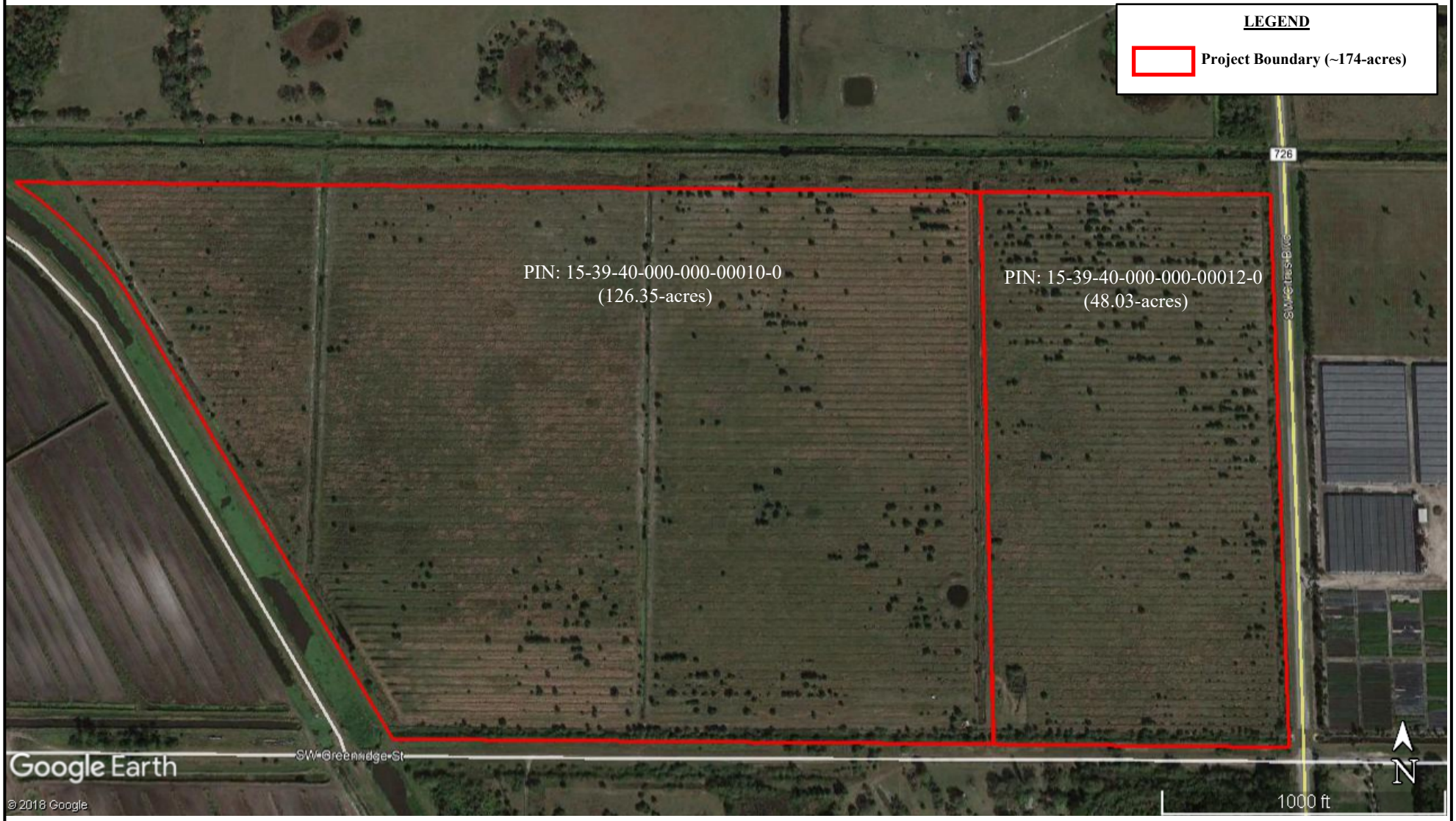

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Figure 2

Image: Google Earth
Data: Martin County Property Appraisers
Site Plan: Milcor Group Inc

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Lake Plant List – Typical 10' X 50' Section							
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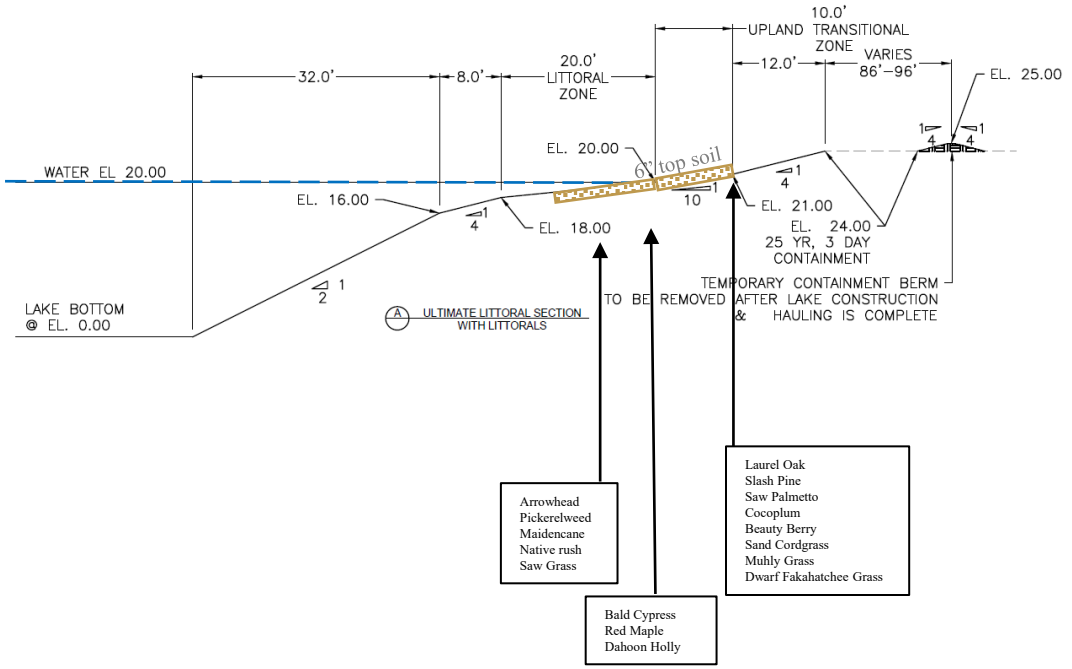
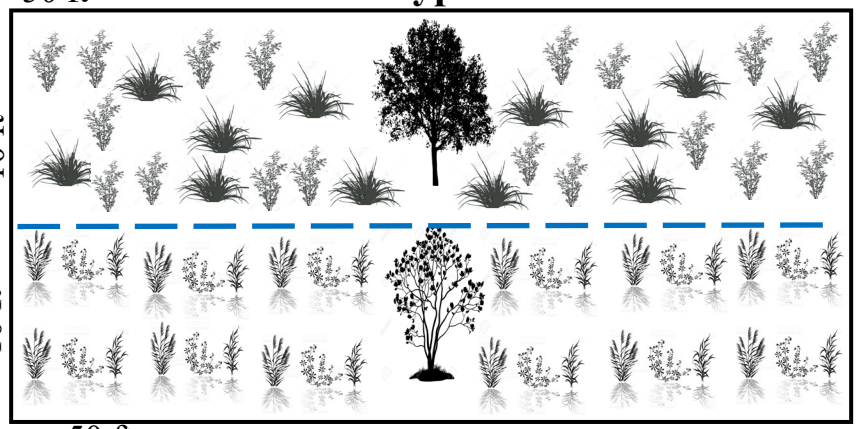


Overview of Typical Lake Section

Upland Plantings
10ft x 50ft
135 Sections Required

Littoral Plantings
10ft x 50ft
135 Sections Required



Legend

- Upland Trees (1 per Section)
- Upland Shrub (19 per Section)
- Represents 10 Upland Groundcover (116 per Section)
- Littoral Trees (1 per Section)
- Represents 10 Littoral Emergent Vegetation (116 per Section)

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Figure 3

Site Plan: Milcor Group Inc
Data: Aquatic Research Monitoring, Equipment, & Deployment, LLC

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