

# **Ecological No Net Loss Assessment Report**

Prepared for

**Septimus Community Association**  
**7735 SE 58<sup>th</sup> Street**  
**Mercer Island, WA 98040**

Prepared by

 **Northwest**  
Environmental Consulting, LLC

Northwest Environmental Consulting, LLC  
600 North 36<sup>th</sup> Street, Suite 423  
Seattle, WA 98103  
206-234-2520

**August 2022**

## Purpose

The purpose of this report is to fulfill the requirements of City of Mercer Island Municipal Code (MICC) 19.07.110 Shoreline Master Program by assessing overall project impacts and proposed mitigation to determine if the project meets the “No Net Loss” General Regulation of the Shoreline Master Program.

No Net Loss is defined as “An ecological concept whereby conservation losses in one geographic or otherwise defined area are equaled by conservation gains in function in another area.”

Permits are being applied for a dock extension, reconfiguration of lifts, and repair.

## Location

The subject property is located at 7735 SE 58<sup>th</sup> Street, Mercer Way (King County parcel number 294890TRCT) in the City of Mercer Island, Washington (see Appendix A – Sheet A1.0). The parcel is on the waterfront of Lake Washington, a shoreline of the state, that contains several endangered fish species listed under the Endangered Species Act and Washington State designated priority fish species.

## Project Description

The proposed work includes removal of the existing 957 square foot dock and removal of 23 piles and 1 moorage pile. A new, different configuration, 1,072 square foot dock will be constructed supported by 30 8-inch and 12 12-inch steel pilings. The existing 7 boat lifts and dual jet ski lift will be relocated into the new configuration. Two new jet ski lifts, 1 personal watercraft lift, and a platform lift will be placed at the site. The existing dock mounted jet ski lift and 894 square feet of moorage covers will be removed. All new decking will use Thruflow grated decking.

Project drawings are included in Attachment A, sheets A2.0 to A7.0

During construction, a floating boom will surround the work barge and dock. (See Appendix A – Sheets A8.0)

A shoreline vegetation plan is proposed, that will add 2 native trees and 3 native shrubs. These shoreline plantings will provide shade and allow allochthonous material to enter the lake along the shoreline and improve shoreline conditions (see Appendix A – Sheet A9.0 – 10.0).

## Approach

Northwest Environmental Consulting LLC (NVEC) biologist Brad Thiele conducted a site visit on July 20, 2022 to evaluate conditions on site and adjacent to the site. NVEC also consulted the following sources for information on potential critical fish and wildlife habitat along this shoreline:

- Washington Department of Fish and Wildlife (WDFW): Priority Habitats and Species online database (<http://apps.wdfw.wa.gov/phsontheweb/>)

- WDFW SalmonScape online database of fish distribution and ESA listing units (<https://apps.wdfw.wa.gov/salmonscape/>)
- Mercer Island GIS online database (<https://chgis1.mercergov.org/Html5Viewer/Index.html?viewer=PubMaps&viewer=PubMaps>)

## Site Description

The subject property is a shoreline tract owned by a community association. It has shoreline on its western boundary with single-family homes to the north and south along the shoreline.

The only existing structures on the property are the existing wood decked dock. A patio and kayak storage is present on the property.

The shoreline is bulkheaded with a low broken face concrete bulkhead with lawn landward. A sand beach is present on the north shoreline. A magnolia tree is present behind the beach and a mature western red cedar is present along the fence line.

The substrate of the lake is sand and gravel shifting to sand about 20 feet from shore. Milfoil is present in the lake about 20 feet from shore.

The property to the north is a swim area with a wave attenuator and the property to the south is residential with an armored shoreline and landscaping along the shoreline.

## Species Use

WDFW's PHS mapping and SalmonScape mapping tools show the following salmonid species using Lake Washington for migration and/or rearing: residential coastal cutthroat (*Oncorhynchus clarkii*), winter steelhead (*O. mykiss*), Dolly Varden/bull trout (*Salvelinus malma*), sockeye salmon (*O. nerka*), fall Chinook (*O. tshawytscha*), coho salmon (*O. kisutch*), and kokanee (*O. nerka*). The SalmonScape database maps the site as accessible to the Endangered Species Units (ESU) of Threatened Chinook and steelhead. Juveniles migrate and may rear in the waters near the project when traveling from spawning sites on other lake tributaries to the lake's outlet at the Hiram M. Chittenden Locks. The project site is accessible to any fish migrating or rearing in the lake. The shoreline is not mapped as a sockeye salmon spawning location, but a spawning area is located north of the project.

Priority Habitats and Species mapping does not show any other aquatic or terrestrial occurrences at the site. Wetlands are mapped about 150 to the south along the shoreline. Wetland presence could not be confirmed from the site. No shoreline work is proposed that could occur in a wetland buffer.

The Mercer Island GIS does not show any environmental layers at the location.

## Project Impacts and Conservation Measurements

### **Direct Impacts:**

**Sediments:** Sediment disturbance will occur below the OHWM and along the shoreline of Lake Washington during pile installation and removal. Additionally, the tug and barge propwash may disturb sediments temporarily when making trips to/from the site.

Impacts to sediments should be minimal from pile work and the project actions are not expected to exceed State Water Quality Standards.

In addition the new boat lifts will be moved further from shore into water from starting at about 4 feet deep to about 8 feet deep.

**Shoreline:** Planting additional native vegetation, especially a native cedar tree and native willow trees, will increase the habitat functions of the shoreline by creating shade along the shoreline that will be an improvement from the existing baseline habitat conditions at the project site. These plants will provide overhanging cover for fish, structural diversity for birds and wildlife, detritus for aquatic invertebrates and long-term recruitment of woody material and other allochthonous food sources. The proposed planting plan is included (see Appendix A - Sheet A9.0).

**Lakebed:** The proposed project will remove 4 8-inch, 3 10-inch, 13 12-inch, 3 14-inch, and 1 16-inch piling resulting in the restoration of 17.8 square feet of lakebed. The new dock will add 30 8-inch piles and 12 12-inch piles and will displace 19.9 square feet of lakebed resulting in the displacement of 2.1 square feet of lakebed upon completion of the project.

**Noise:** Construction equipment will create noise audible to neighbors and in-water. Noise disturbance will be short-term and should have negligible effects on fish and wildlife in the area. Work will be completed during the in-water work window when juvenile fish are not expected to be present. No impact pile driving will take place.

**Potential spills:** Short-term risks include the potential for petroleum spills that can occur with any equipment operation. The level of impact to the aquatic environment is expected to be reduced because a crew competent using spill containment measures will be on site and employ these measures should a spill occur.

**Indirect Impacts:**

**Shading:** The proposed configuration will remove 1,852 square feet of solid overwater coverage from removal of the solid wood decked dock and mooring covers. The new dock will add 1,252 square feet of new overwater coverage from the construction of the new dock and platform lift reducing overwater coverage at the site by 600 square feet. The new dock decking and platform lift will be constructed using ThruFlow grated decking.

Grated decking allows more light to penetrate the water below a dock that can increase productivity in the littoral zone below the dock and reduce the full shade favored by salmonid predators. Salmonid predators are known to use hard shadowing under solid-decked docks to ambush juvenile salmonids. Reducing these hard shadows limits predation opportunity caused by hard shading under the dock.

ThruFlow grated decking has a measured performance at 43 percent light penetration (ThruFlow, 2020). Thus, effective cover of the area is 57% of the area of a solid decked structure. Table 1 provides a summary of effective coverage:

**Table 1 – Effective coverage**

	Solid Coverage	Grated decking	Conversion	Effective coverage	Reduction in coverage
Existing Solid decking (SF)	957	0	0.57	957	-957

New Grated dock (SF)	0	1072	0.57	611	461
Existing Moorage canopies (SF)	895	0	0.57	895	-895
New grated platform lift (SF)		180	0.57	103	77
Total (SF)	1852	1252			-1,313

The use of grated decking reduces the proposed overwater coverage by 1,313 square feet.

**Recreational Boating:** The project supports continued recreational boating, which has been identified as a limiting factor for salmonid populations in Lake Washington. The pier will not introduce additional boating to Lake Washington, as the owners could still access the lake from a public boat launch or private moorage facility.

***Other Conservation measures:***

**Work window:** The work will be completed during the prescribed in-water work window for this area of Lake Washington (July 16 to April 30). Operating within this time frame helps protect Chinook salmon, steelhead, bull trout and other salmonid fish species by doing work when juvenile fish are not expected to be present.

**Best Management Practices:** Applicable BMPs will be used, such as a floating boom around the in-water work area, to contain any floating debris that may escape during construction. The barge will have a perimeter containment sock to absorb oil and grease that might inadvertently wash from the barge during construction.

Hazardous material containment materials such as spill absorbent pads and trained personnel will be required onsite during any phase of construction where machinery is in operation near surface waters.

## Conclusion

Juvenile Chinook salmon, and other salmonids, rear and migrate along the Lake Washington shoreline.

There will be temporary impacts from noise and disturbed sediments during construction. The project will displace 2.1 square feet of lakebed by removing pilings.

The proposed new dock configuration will result in a decrease of 600 square feet of opaque decking and moorage coverage. The new dock and moorage will use grated decking to provide light penetration under the new structure resulting in an effective decrease are of 1,313 square feet over the existing condition. The grating reduces the hard shadows favored by salmonid predators and increases productivity under the pier.

The new dock will place moorage in the deepest water possible to reduce the chances of sediment disturbance during docking and castoff, away from the nearshore and will be an improvement over existing conditions.

A shoreline planting plan will be implemented and will add native trees and shrubs to the shoreline that will provide natural shading, allochthonous food sources and will eventually be a source of woody materials and will improve shoreline conditions at the site in the long-term to offset temporary construction impacts. The planting includes 2 native trees and 3 native shrubs.

The project will minimize construction effects on the environment by following the prescribed fish window and using applicable BMPs to prevent construction spills, turbidity, and floating debris from escaping the area. The construction crew will retrieve all dropped items from the bottom and dispose of them properly.

This project has been designed to meet current residential dock standards and will use Best Management Practices to reduce project impacts. The conservation measures are designed to improve ecological functions or prevent further degradation of habitat. The project will improve shoreline conditions, reduce overwater coverage in the nearshore and reduce effective overwater coverage at the site. The proposed project has been designed to improve baseline ecological conditions at the site **and will result in No Net Loss of ecological functions** and will be an improvement over the existing condition in the aquatic and shoreline environment.

## Document Preparers

Brad Thiele	Biologist	28 years of experience	Northwest Environmental Consulting, LLC (NVEC)
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NVEC followed standard acceptable field methods and protocols at the time work was performed. These standards may include delineation of wetland and stream boundaries, characterization, rating, functional analyses, impact assessments and mitigation of impacts. The conclusions and findings in this report are based on field observations and measurements and represent our best professional judgment and to some extent rely on other professional service firms and available site information. Within the limitations of project scope, budget, and seasonal variations, we believe the information provided herein is accurate and true to the best of our knowledge. Northwest Environmental Consulting does not warrant any assumptions or conclusions not expressly made in this report or based on information or analyses other than what is included herein.

## REFERENCES

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King County. 2022. King County iMap. Online database. Accessed August 2022 at <https://gismaps.kingcounty.gov/iMap/>

Washington Department of Fish and Wildlife (WDFW). 2022. Priority Habitats and Species. Online database. Accessed August 2022 at <http://apps.wdfw.wa.gov/phsontheweb/>

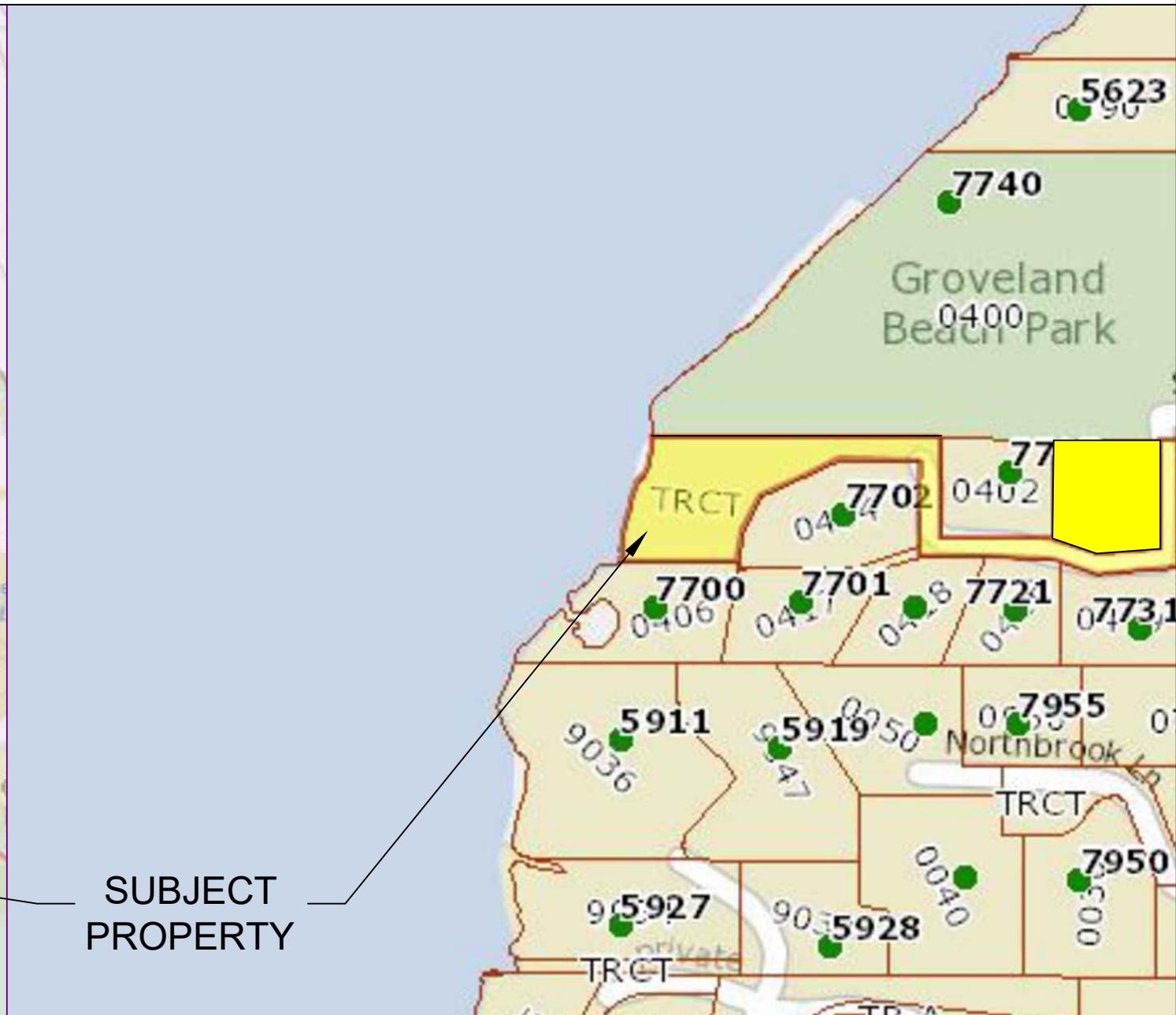
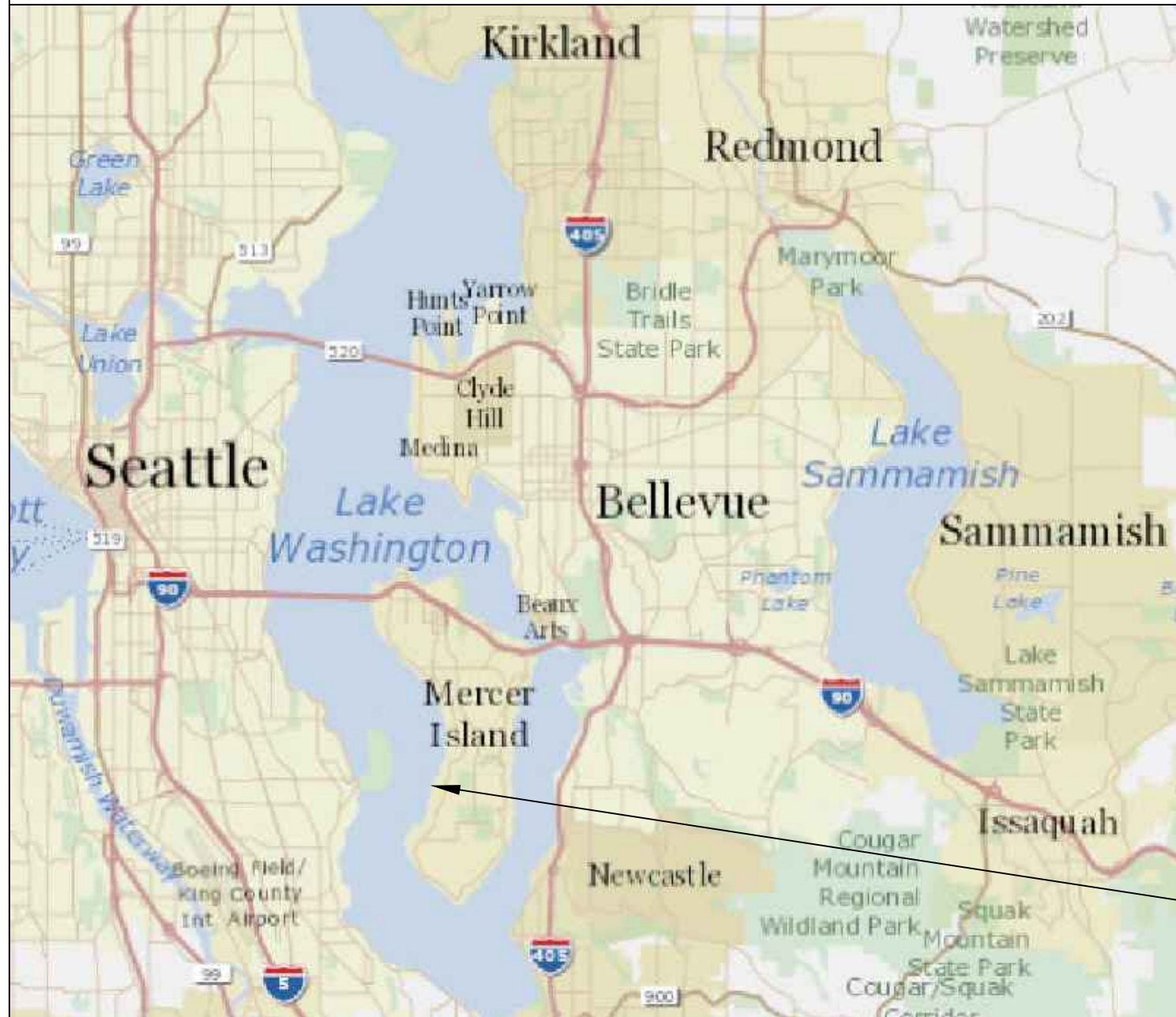
WDFW. 2022. SalmonScape. Online database. Accessed August 2022 at <http://apps.wdfw.wa.gov/salmonscape/>

# **Appendix A: Project Drawings**

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# SITE PLAN



**SUBJECT  
PROPERTY**

Pin: 294890TRCT

Legal Description: GROVELAND PARK ADD BEG NXN S LN VAC BAKER ST WITH W LN CHRISTIAN CHURCH COMMUNITY CAMP DIV #2 TH N ALG SD W LN 223 FT TO S LN VAC BEARD ST TH W ALG SD S LN 20 FT TO TPOB TH CONTG W ALG SD VAC BEARD ST 110 FT TH S 00 DEG 02 MIN 16 SEC E 96.50 FT TH S 71 DEG 12 MIN 59 SEC E 48.59 FT TH N 85 DEG 16 MIN 12 SEC E 64.22 FT TH N 00 DEG 02 MIN 16 SEC W 106.5 FT TO TPOB TGW UND 1/2 INT IN FOLG BEG S LN VAC BAKER ST WITH W LN CHRISTIAN CHURCH COMMUNITY CAMP DIV #2 TH N ALG SD W LN 98.22 FT TO POB TH S 85-16-12 W 84.28 FT TH N 71-12-59 W 48.59 FT TH N 89-49-00 W 130 FT TH N 00-02-16 W 96.5 FT TH N 89-49-00 W 80 FT TH S 65-19-10 W 87.22 FT TH S 27-26-12 W 38.5 FT TH S 09-50-00 W TAP 102 FT N OF S LN VAC BAKER ST TH WLY TO SH LN LK WASHINGTON AT PT 102 FT N OF S LN VAC BAKER ST EXTND WLY TH NELY ALG SH TO S LN VAC BEARD ST TH ELY ALG SD S LN TAP 240 FT FR W LN SD CHRISTIAN CH COMM CAMP DIV #2 TH S 00-02-16 E 96.5 FT TH S 89-49-00 E 110 FT TH S 71-12-59 E 48.59 FT TH N 85-16-12 E 64.22 FT TH N 00-02-16 W 106.5 FT TH E ALG S LN VAC BEARD ST 20 FT TO W LN SD CHRISTIAN CHURCH COMM CAMP DIV #2 TH S ALG SD W LN 124.78 FT TO POB

Plat Block: 12-18      Plat Lot: POR      LAT: 47.55063      LONG: -122.23326



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Seattle, WA 98119  
  
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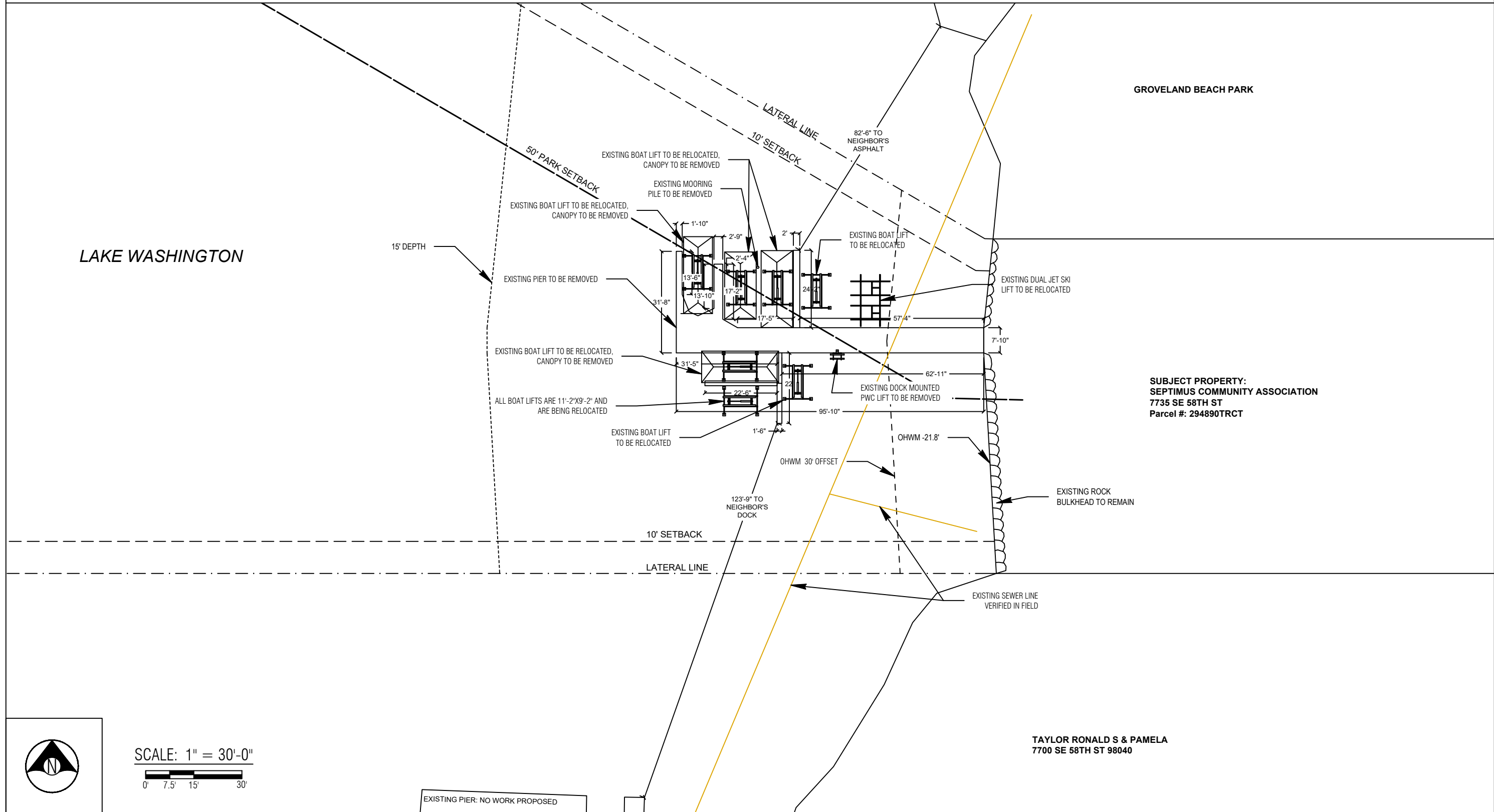
Scope of Work: We propose to demo the existing 957sqft dock, remove (23) existing piles, relocate (7) existing boat lifts, relocate (1) existing dual jet ski lift, propose (2) new dual jet ski lifts, propose (1) new PWC lift, remove (1) existing dock mounted PWC lift, drive (30) 8" steel piles, drive (12) 12" steel piles, propose (1) platform lift, and propose a new 1,072 sqft dock made of grated decking material.

King County  
Lake Washington  
Septimus Community Association  
7735 SE 58th Street  
Mercer Island, WA 98040  
Applicant: Septimus Community Association  
Location: Lake Washington  
Date: CORPS OF ENGINEERS 1919  
SE Quarter Of Section 24, Township 24, Range 04  
Adjacent Owners:  
TAYLOR RONALD S & PAMELA  
7700 SE 58TH ST 98040  
GROVELAND BEACH PARK  
Created: 03/14/22  
Last Updated: 7/1/2022 3:04 PM Dray  
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**SHEET  
A1.0**

# EXISTING CONDITIONS

**\*\*CLEAN UP LAKE AROUND PROJECT\*\***



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 Mercer Island, WA 98040

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 SE Quarter Of Section 24, Township 24, Range 04

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**Location:** Lake Washington

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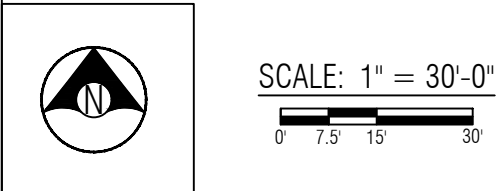
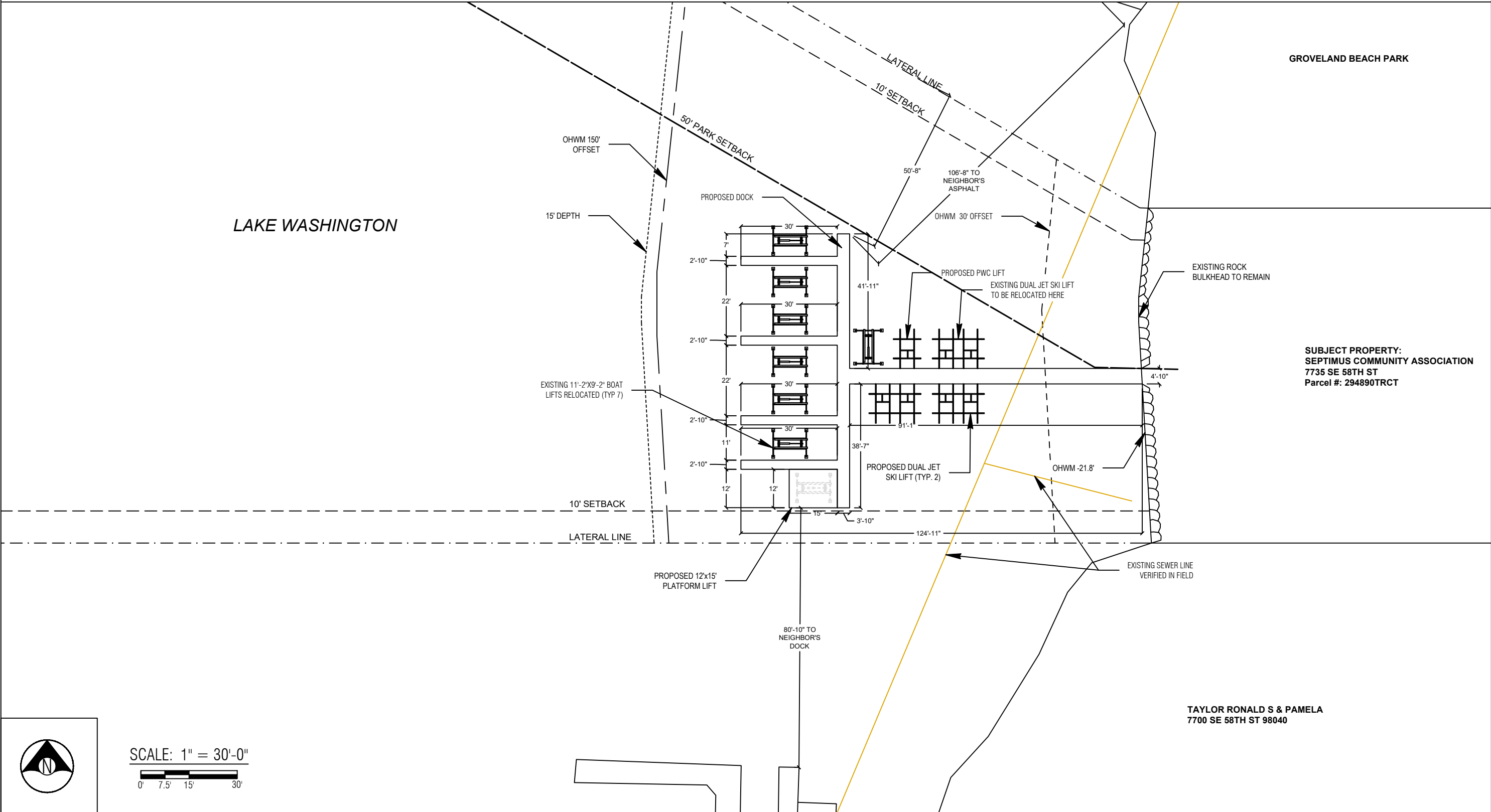
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**SHEET**  
**A2.0**



# PROPOSED CONDITIONS



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 SE Quarter Of Section 24, Township 24, Range 04

**County:** King County  
**Location:** Lake Washington

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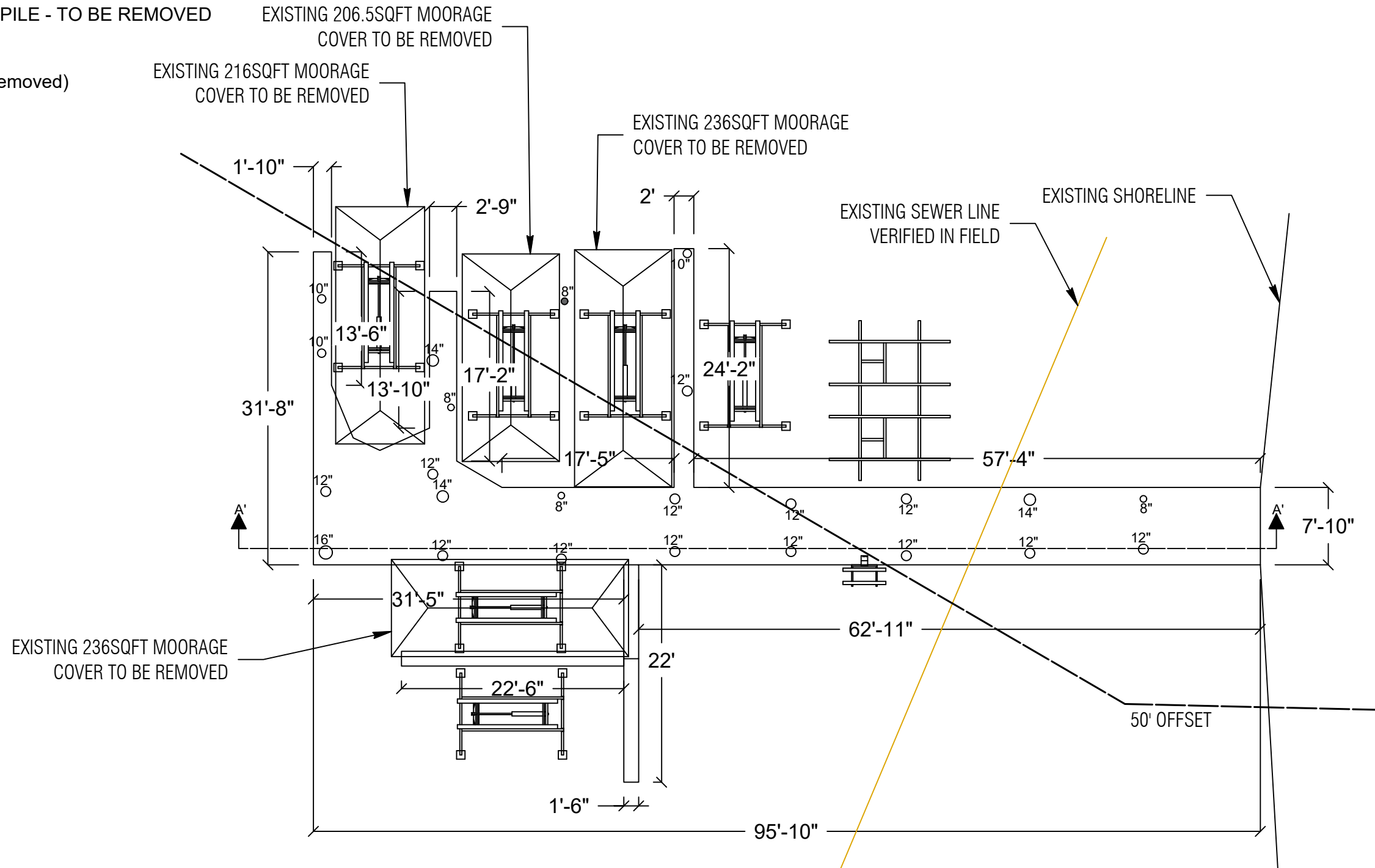
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 PAGE 3 OF 14

# PIER DETAILS - EXISTING

## LEGEND

- (23) EXISTING PILES - TO BE REMOVED
- (1) EXISTING MOORING PILE - TO BE REMOVED

Area: 957 sqft (overater - to be removed)



PLAN VIEW



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GROVELAND BEACH PARK

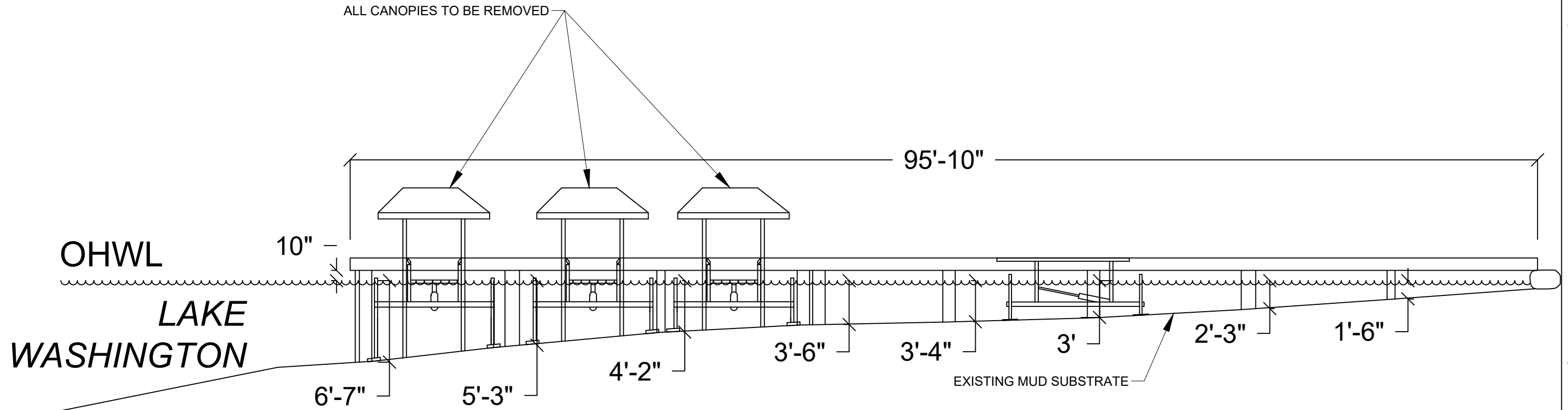
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# PIER DETAILS EXISTING



SECTION VIEW: A'-A'



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**SHEET**  
**A5.0**

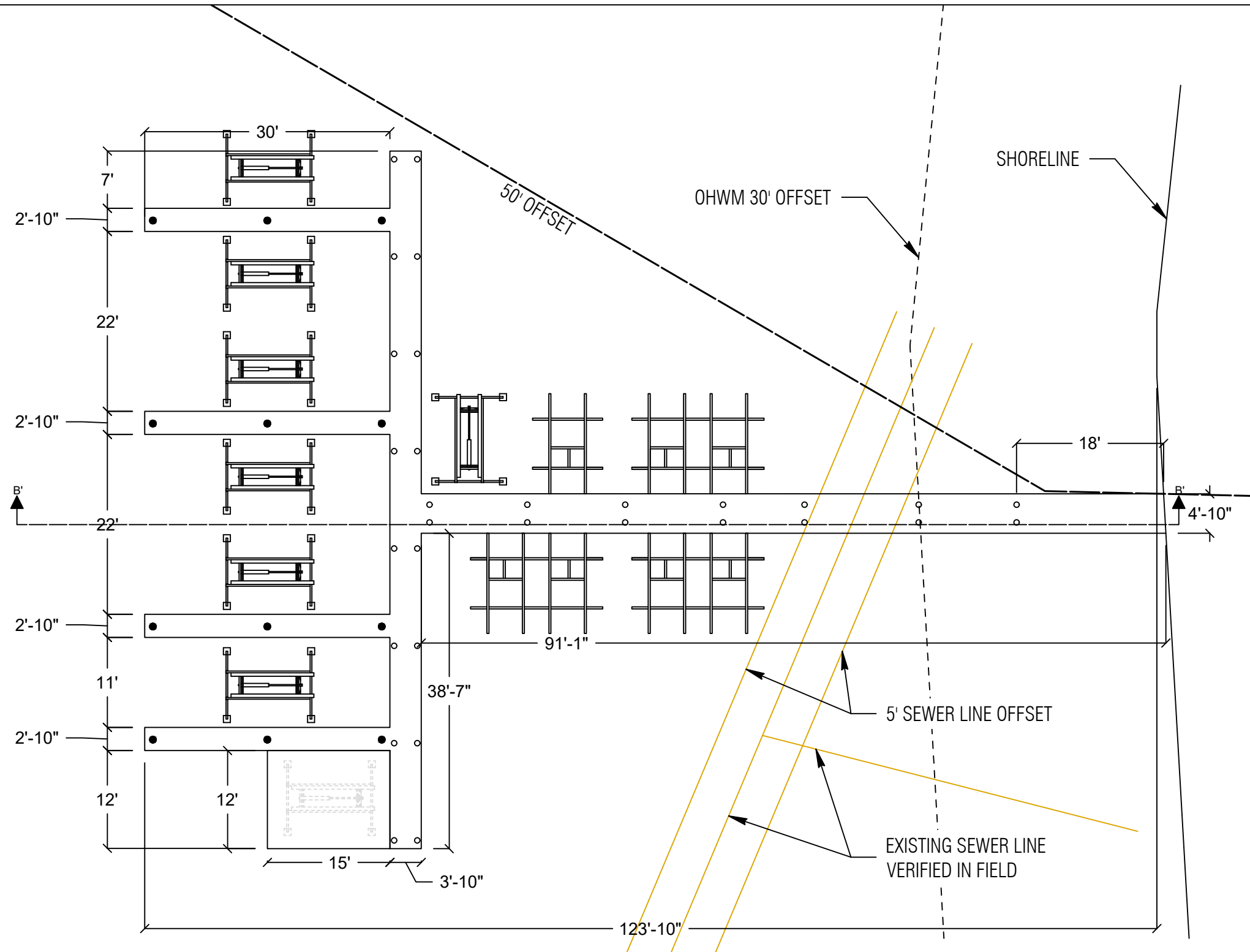
# PIER DETAILS - PROPOSED

## LEGEND

- (30) PROPOSED 8" STEEL PILES - TO BE ADDED
- (12) PROPOSED 12" STEEL PILES - TO E ADDED
- (1) PROPOSED PLATFORM LIFT - 12'x15' (180SQFT)

Area: 1,072 sqft (new overwater grated decking material)

\*\*Grated decking material is 43% open area



PLAN VIEW



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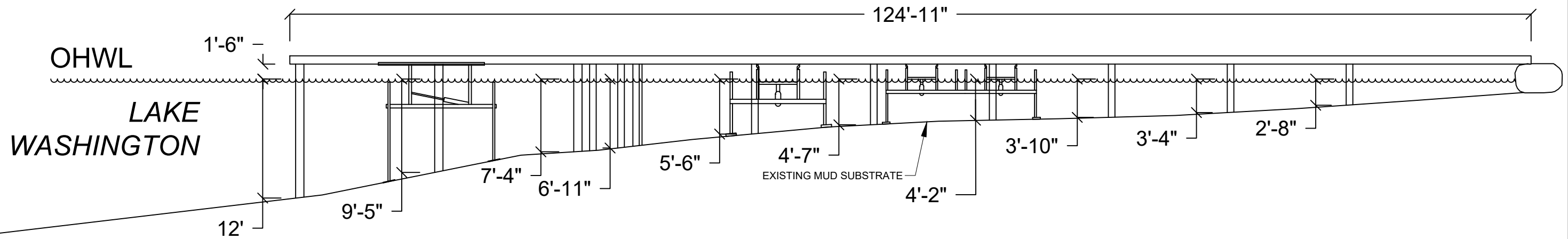
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# PIER DETAILS PROPOSED



SECTION VIEW: A'-A'



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GROVELAND BEACH PARK

**SHEET**  
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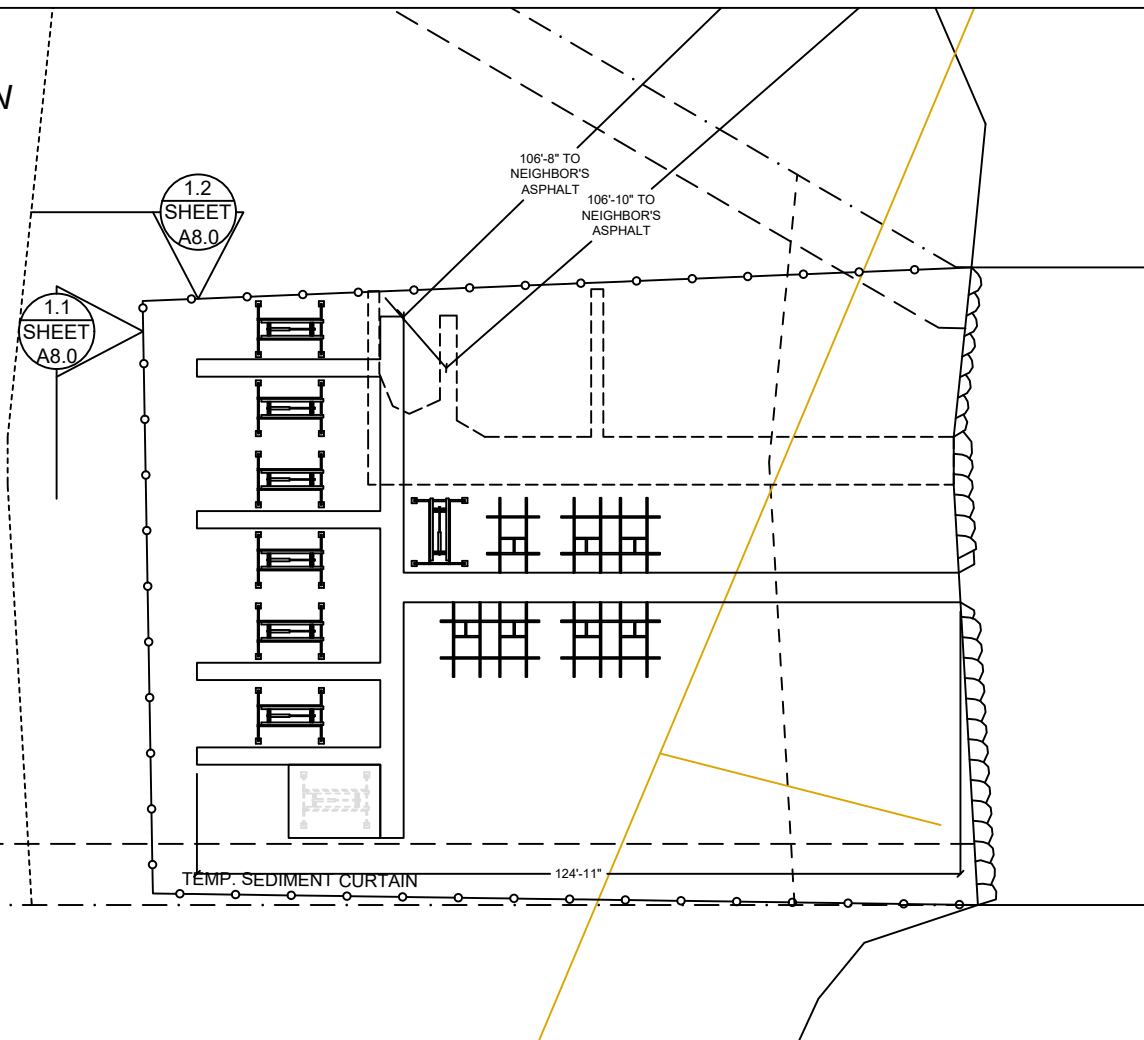
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# BMP INFORMATION

LAKE WASHINGTON

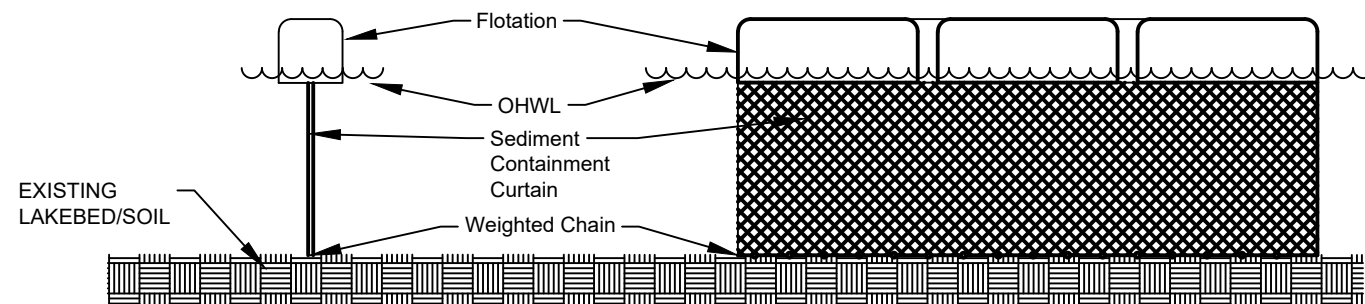


## BMP NOTES:

- A. Constant vigilance shall be kept for the presence of protected fish species during all aspects of the proposed action, particularly during in-water activities such as vessel movement, deployment of anchors & spuds, pile driving, dredging, and placement of gravels and other fill.
- The project manager shall designate an appropriate number of competent observers to survey the project site and adjacent areas for protected species, including the presence of fish as conditions allow.
  - Visual surveys shall be made prior to the start of work each day, and prior to resumption of work following any break of more than an hour. Periodic additional visual surveys throughout the work day are strongly recommended.
  - All in-water work shall be done during the in-water work window for the waterbody. Where there is a difference between the USCOE and WDFW work windows, the overlap of the two shall apply.
  - All pile driving and extraction shall be postponed or halted when obvious aggregations or schooling of fish are observed within 50 yards of that work, and shall only begin/resume after the animals have voluntarily departed the area.
  - When piloting vessels, vessel operators shall operate at speeds and power settings to avoid grounding vessels, and minimize substrate scour and mobilization of bottom sediments.
- B. No contamination of the marine environment shall result from project-related activities.
- Appropriate materials to contain and clean potential spills shall be stored and readily available at the work site and/or aboard project-related vessels.
  - The project manager and heavy equipment operators shall perform daily pre-work equipment inspections for cleanliness and leaks. All heavy equipment operations shall be postponed or halted should a leak be detected, and shall not proceed until the leak is repaired and the equipment is cleaned.
  - To the greatest extent practicable, utilize biodegradable oils for equipment that would be operated in or near water.
  - Fueling of land-based vehicles and equipment shall take place at least 50 feet away from the water, preferably over an impervious surface. Fueling of vessels shall be done at approved fueling facilities.
  - Turbidity and siltation from project-related work shall be minimized and contained through the appropriate use of erosion control practices, effective silt containment devices, and the curtailment of work during adverse weather and tidal/flow conditions.
  - All wastes shall be collected and contained for proper disposal at approved upland disposal sites appropriate for the material(s).
  - When removing piles and other similarly treated wood, containment booms must fully enclose the work area. Wood debris, oils, and any other materials released into lake waters must be collected, removed, and properly disposed of at approved disposal sites.
  - All in- and over-water wood cutting would be limited to the minimum required to remove the subject wood component, and all cutting work should be enclosed within floating containment booms.
  - When removing piles, no actions shall be taken that would cause adhering sediments to return to lake waters.
  - Above-water containment shall be installed around removed piles to prevent sediment laden waters from returning to lake waters.
  - Construction staging (including stocking of materials, etc.) will occur on the supply barge.
  - All Exposed wood to be used on the project will be treated with a cheminite treatment.

DETAIL 1.1

DETAIL 1.2



DETAIL 1.1 & 1.2



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King County  
Lake Washington

Applicant: Septimus Community Association  
7735 SE 58th Street  
Mercer Island, WA 98040

Datum: CORPS OF ENGINEERS 1919  
SE Quarter Of Section 24, Township 24, Range 04

Adjacent Owners:  
TAYLOR RONALD S & PAMELA  
7700 SE 58TH ST 98040

**SHEET  
A8.0**

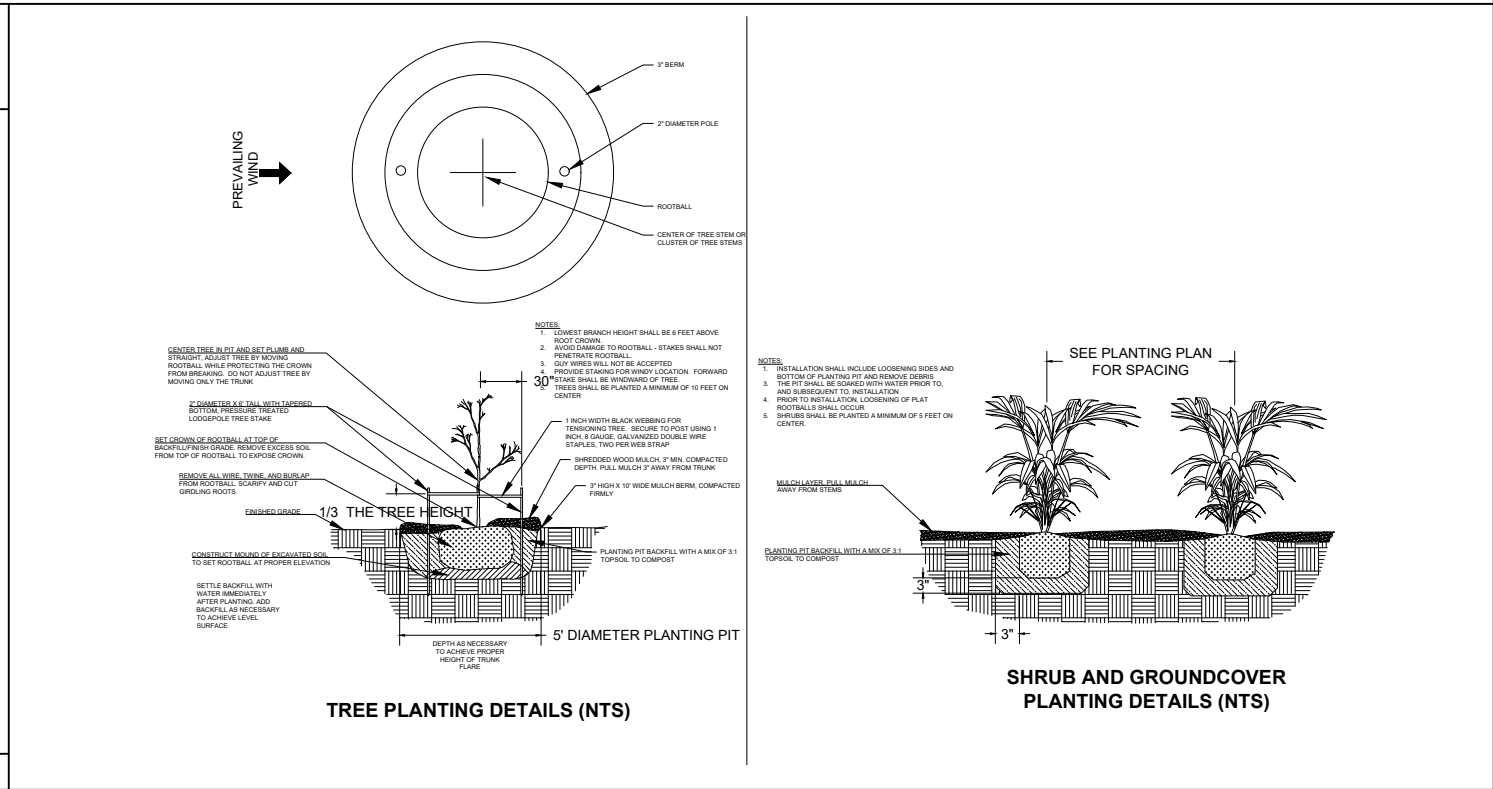
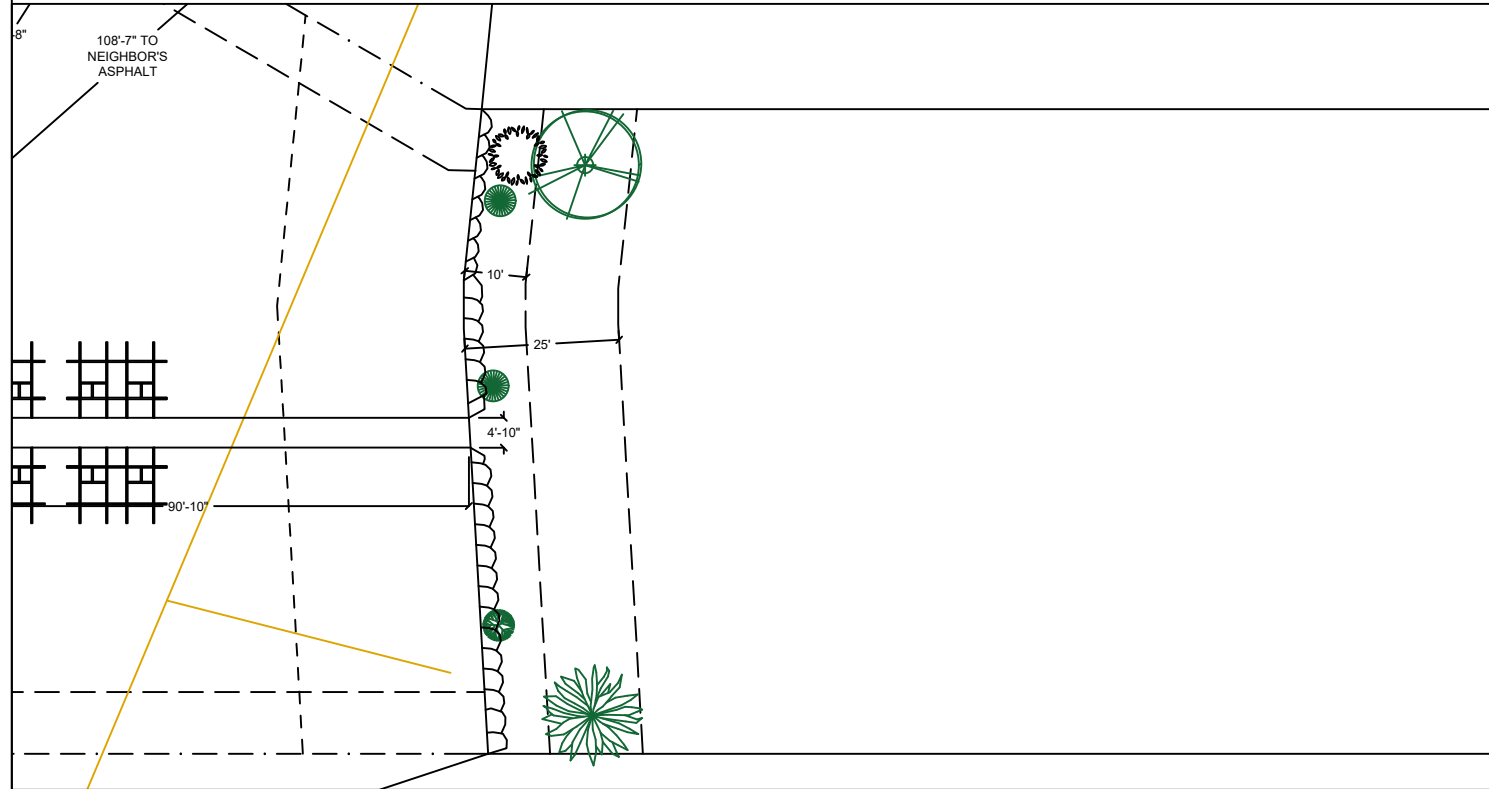
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# MITIGATION PLAN



**Notes:**

1. Shrubs are show, and shall be planted, at least five feet on center. Trees are show, and shall be planted, at least ten feet to center.
2. The property owner will implement and abide by the shoreline planting plan. The plants shall be installed before or concurrent with the work authorized by this permit. A report, as-built drawing and photographs demonstrating the plants have been installed or a report on the status of project construction will be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch, within 12 months from the date of permit issuance. This reporting requirement may be met by completing and submitting a U.S. Army Corps of Engineers approved Report for Mitigation Work Completion form.
3. The property owner will maintain and monitor the survival of installed shoreline plantings for five years after the U.S. Army Corps of Engineers accepts the as-built report. Installed plants shall achieve 100% survival during monitoring Years 1 and 2. Installed plants shall achieve at least 80% survival during monitoring Years 3, 4 and 5. Percent survival is based on the total number of plants installed in accordance with the approved riparian planting plan. Individual plants that die will be replaced with native riparian species in order to meet the survival performance standards.
4. The property owner will provide annual monitoring reports for five years (Monitoring Years 1-5). Each annual monitoring report will include written and photographic documentation on plant mortality and replanting efforts and will document whether the performance standards are being met. Photos will be taken from established points and used repeatedly for each monitoring year. In addition to photos at designated points, photo documentation will include a panoramic view of the entire planting area. Submitted photos will be formatted on standard 8 1/2 x 11" paper, dated with the date the photo was taken, and clearly labeled with the direction from which the photo was taken. The photo location points will be identified on an appropriate drawing. Annual shoreline planting monitoring reports will be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch, by November 31 of each monitoring year. This reporting requirement may be met by completing and submitting a U.S. Army Corps of Engineers approved Mitigation Planting Monitoring Report form.

## PROPOSED PLANTING SPECIES/QUANTITIES

SYMBOL	LATIN NAME	COMMON NAME	QTY	SIZE
	Thuja plicata	Western Redcedar	1	3 ft
	Salix lasiandra	Pacific Willow	1	3 ft
	Rosa nutkana	Nootka Rose	1	1 Gallon
	Philadelphus lewisii	Mock Orange	2	1 Gallon

**PLANTS:** Shrubs to be installed 5ft on center and trees to be installed 10ft on center.

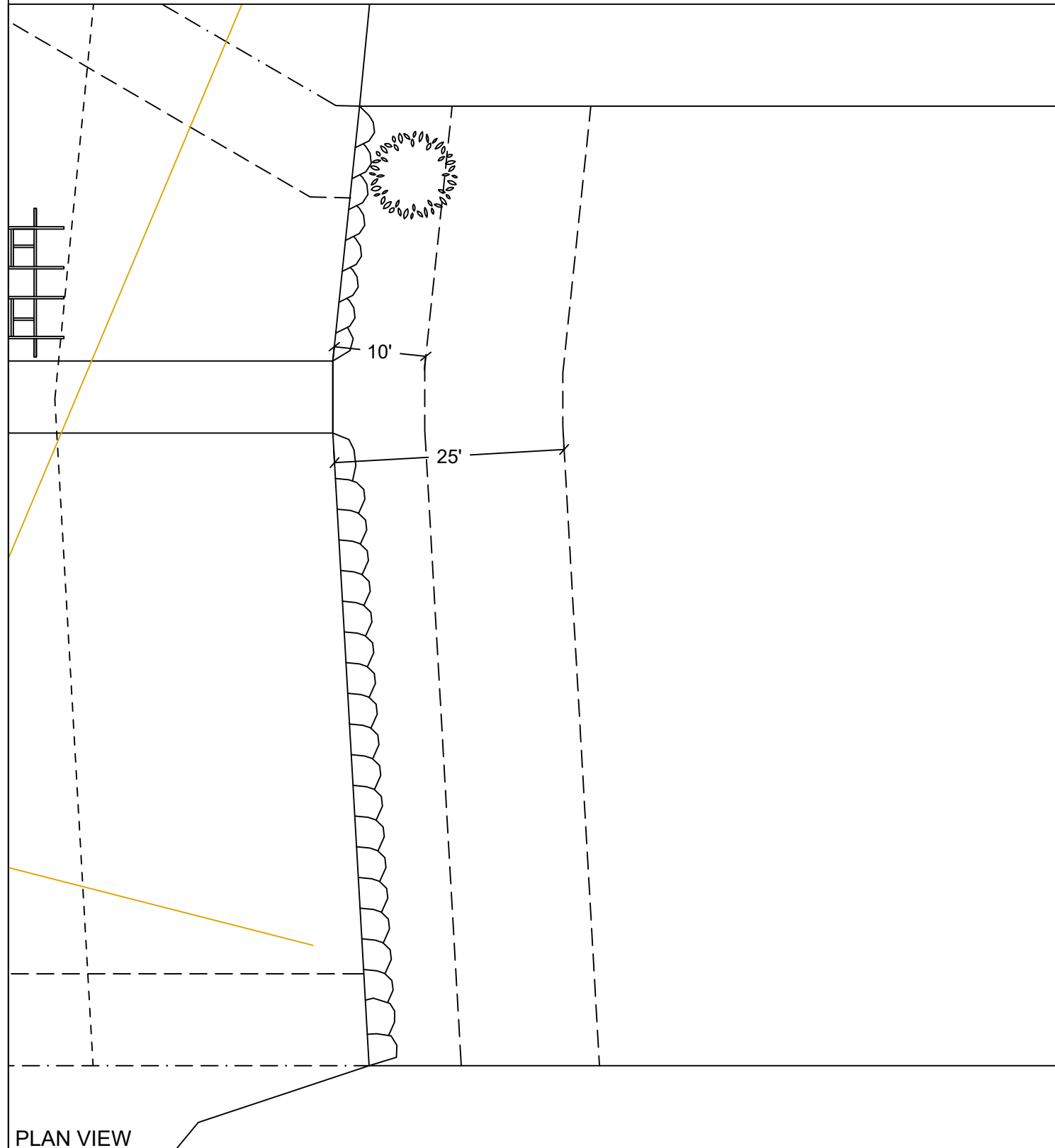


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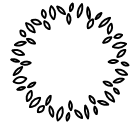
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 County: King County  
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# EXISTING PLANT PLAN



PLAN VIEW

## EXISTING PLANTING SPECIES/QUANTITIES

SYMBOL	SCIENTIFIC NAME	COMMON NAME	QTY	SIZE
	<i>Pinus contorta</i> var. <i>contorta</i>	Shore Pine	1	~8'

EXISTING PLANTS TABLE



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GROVELAND BEACH PARK

**SHEET  
A10.0**

# GENERAL NOTES:

## MATERIALS SPEC LIST:

### Boat Lifts:

- \* (7) SL10014ARW - 146" x 191"
- \* (3) SL2008AR2D2 - 104" x 132" (dual jet ski)

### Decking Material: FRPP - Fiberglass reinforced polypropylene

#### Open area percentage:

- \* Surface - 43%
- \* 18" Dock Height - 61%

### SEWER:

- \* All sewer is field verified by probing the lake bed manually during the allowed work windows for the area.

### PILES:

- \* All new piles are epoxy coated steel piles \*size varies, see plan set
- \* All Pile tops exposed will have a conical cap placed on top
- \* Piles are driven using the Virbo method

### DOCK: being repaired/replaced

- \* \_100\_ % of Decking
- \* \_100\_ % of stringers
- \* \_100\_ % of caps

## CODE REFERENCES: Mercer Island

### We are applying for the permit to be reviewed under the:

**“Alternative Development Standards” per MIMC 19.13050(F)(3).**

The code official shall approve moorage facilities not in compliance with the development standards in subsection (F)(1) or (F)(2) of this section subject to both U.S. Army Corps of Engineers and Washington Department of Fish and Wildlife approval to an alternate project design. The following requirements and all other applicable provisions in this chapter shall be met:

i. The dock must be no larger than authorized through state and federal approval; Ch. 19.13 Shoreline Master Program | Mercer Island City Code Page 30 of 34 The Mercer Island City Code is current through Ordinance 20C-13, passed June 16, 2020.

#### The dock is within the authorized size.

ii. The maximum width must comply with the width of moorage facilities standards specified in standards specified in subsection D of this section (Table D);

#### The maximum width is compliant of ADA standards.

iii. The minimum water depth must be no shallower than authorized through state and federal approval;

#### The minimum water depth is not shallower than authorized.

iv. The applicant must demonstrate to the code official's satisfaction that the proposed project will not create a net loss in ecological function of the shorelands; and

#### No Net Loss report is attached.

v. The applicant must provide the city with documentation of approval of the moorage facilities by both the U.S. Army Corps of Engineers and the Washington Department of Fish and Wildlife.

#### The plan set is under review with CORPS and WDFW.

Last permit issued for property: BLDG 82-037

Dock established/constructed: 3/16/1982



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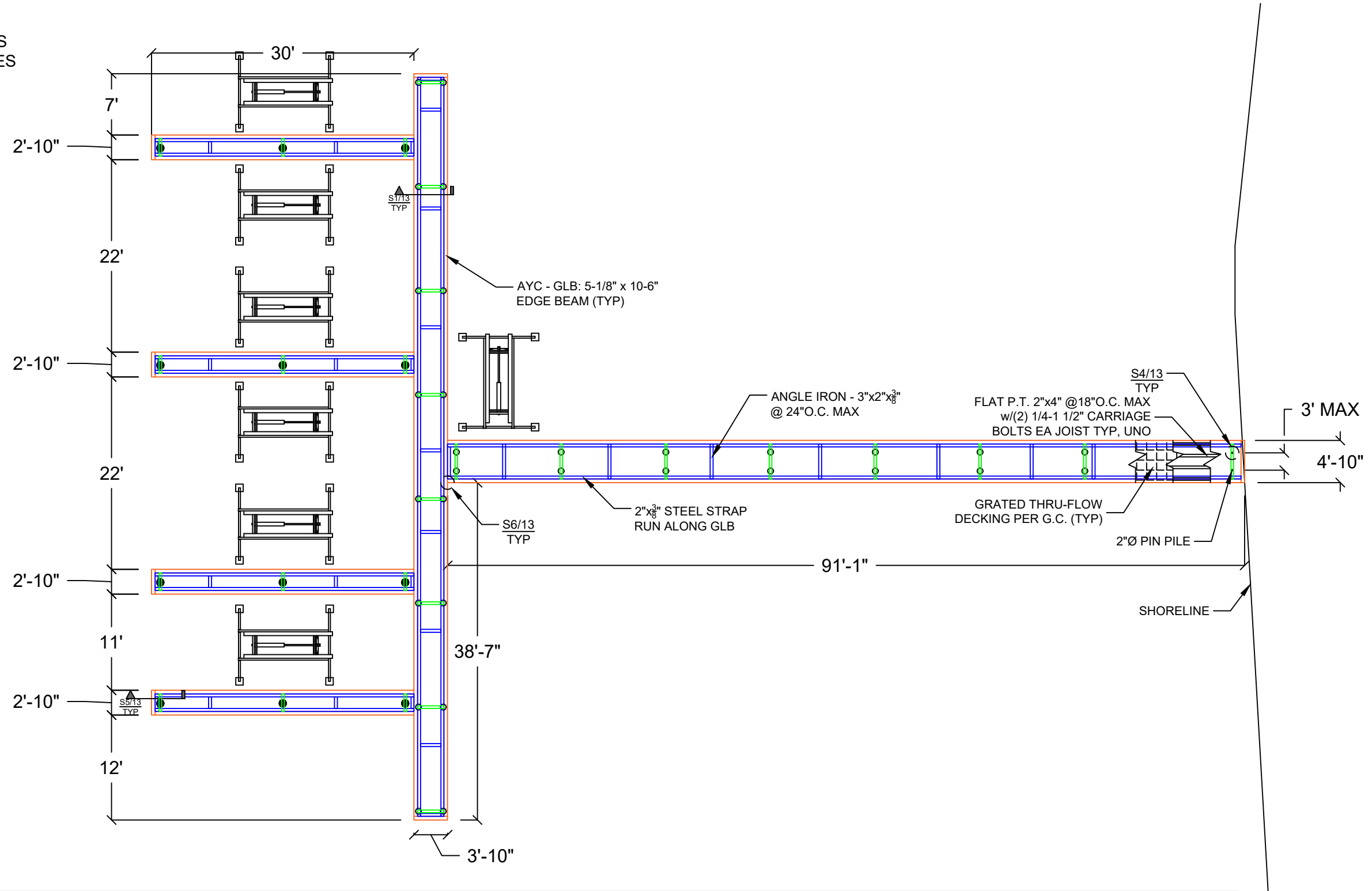
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# FRAMING PLAN

## LEGEND

- (30) PROPOSED 8" STEEL PILES
- (12) PROPOSED 12" STEEL PILES



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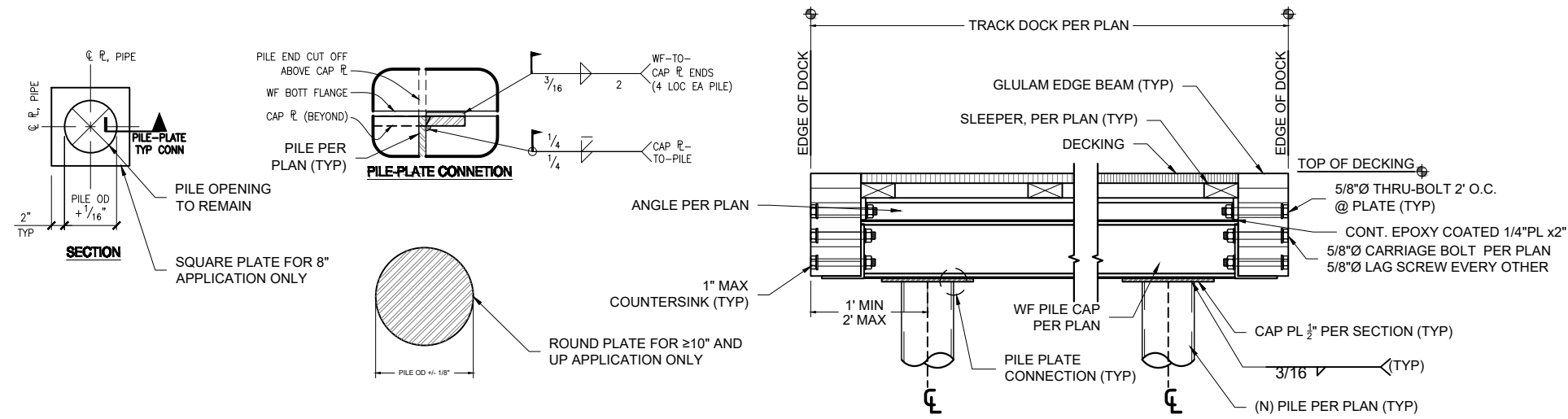
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**SHEET**  
**A12.0**

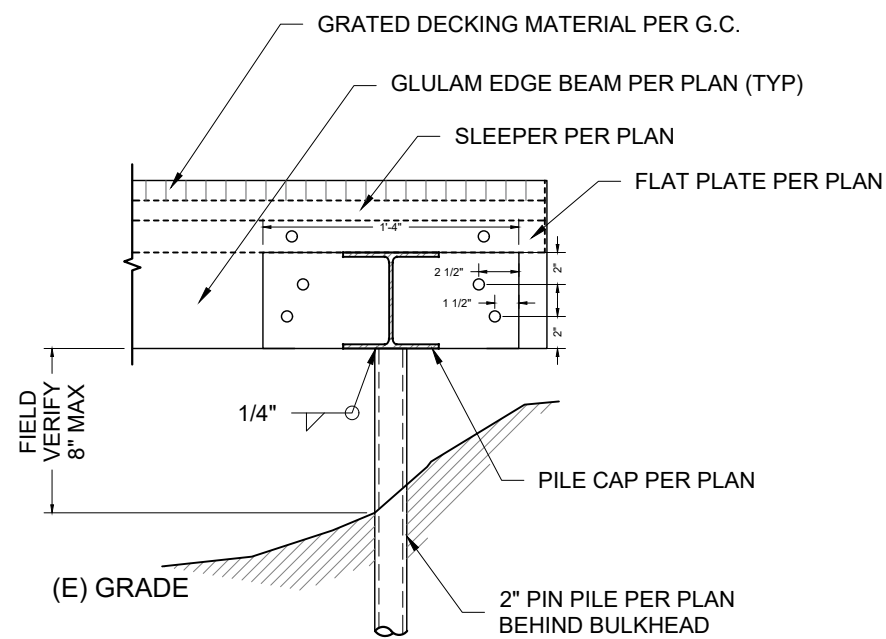
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# DETAILS - TRACK

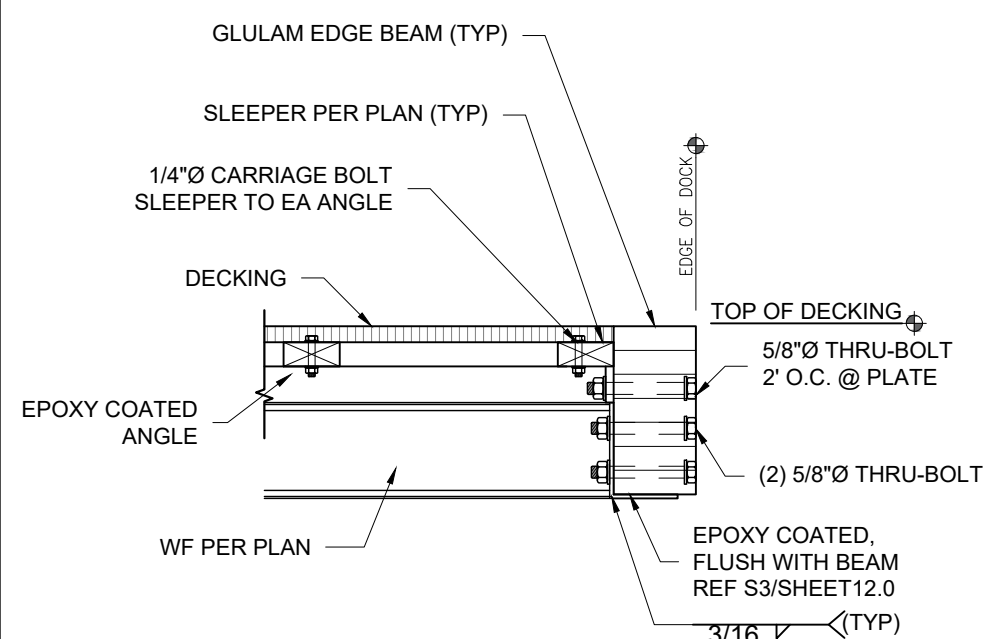


**S1** DOCK SECTION w/PILES - TYP  
SCALE: 1" = 1'

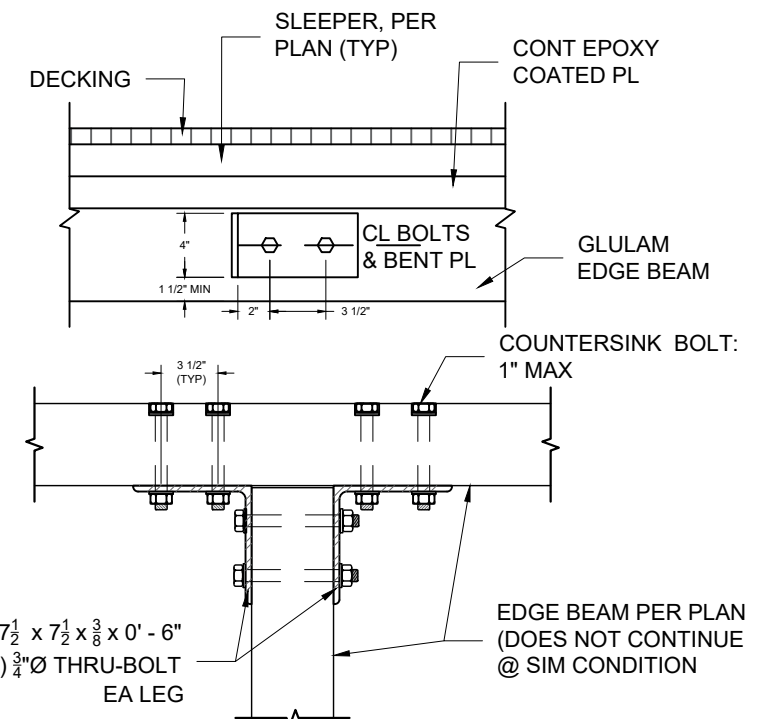
**S3** DETAIL NOT IN USE



**S4** PIN PILE @SHORE MOUNT - TYP  
SCALE: 1" = 1'



**S5** EDGE SECTION (STEEL TRACK) - TYP  
SCALE: 1" = 1'



**S6** BEAM TO BEAM - TYP  
SCALE: 1" = 1'



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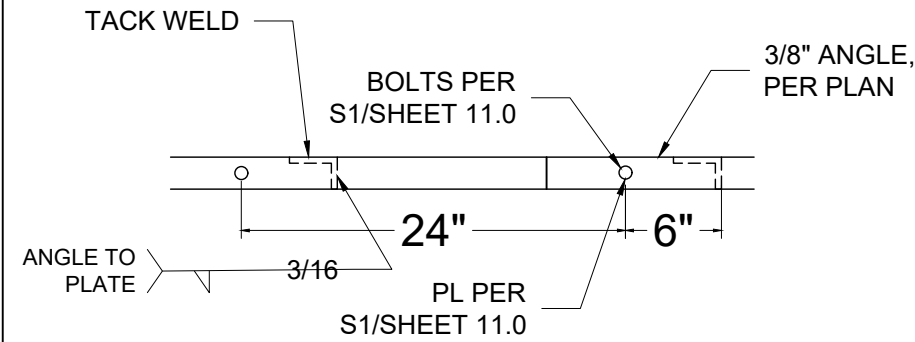
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GROVELAND BEACH PARK

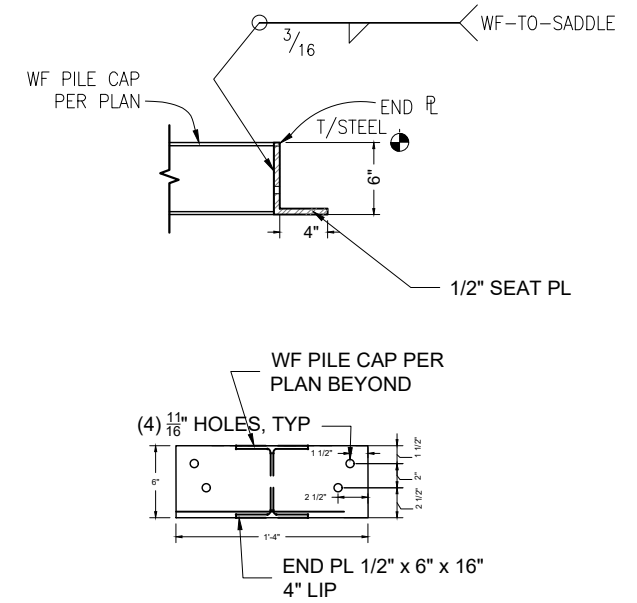


# DETAILS - TRACK

S1 DETAIL NOT BEING USED



S2 ANGLE TO PLATE - TYP  
SCALE: 1" = 1"



S3 BEAM SADDLE BRACKET  
SCALE: 3/4" = 1"

S4 DETAIL NOT BEING USED

S5 DETAIL NOT BEING USED

S6 DETAIL NOT BEING USED



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# **Appendix B: Site Photographs**

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Photo 1 - Existing dock looking waterward.



Photo 2 -Existing dock looking landward.





Photo 3 - Shoreline conditions looking south.



Photo 4 - Shoreline conditions looking north.





Photo 5 - Shoreline conditions south of the site.



Photo 6 - Shoreline conditions north of the site.