

Ecological No Net Loss Assessment Report

Prepared for

Aqua Dock
6855 West Mercer Way
Mercer Island, WA 98040

Prepared by

 **Northwest**
Environmental Consulting, LLC

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

January 2024
Revised April 2026

Purpose

The purpose of this report is to fulfill the requirements of City of Mercer Island Municipal Code 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 repairs and associated moorage improvements.

Location

The subject property is located at 6855 West Mercer Way (King County parcel number 2524049080) in the City of Mercer Island, Washington (see Appendix A – Sheet A1.0). The parcel is on the waterfront of Lake Washington, which contains several endangered fish species listed under the Endangered Species Act and Washington State designated priority fish species.

Project Description

The proposed work will reconfigure the existing dock by removing the finger pier and extension and straighten the alignment extending the proposed dock further out into the water into deeper water. The dock will be extended from about 70 feet from shore to 90 feet from shore. The configuration will reduce overwater coverage by 103 square feet.

The existing 526 square foot dock will be demolished and removed. The existing 20 timber piles will be removed (2 6-inch, 6 8-inch, 7 10-inch, 2 12-inch, and 3 16-inch). The new dock will be constructed by driving 14 8-inch epoxy coated steel piles. Framing will be placed on top of the piles and a new grated 426 square foot dock will be constructed. The existing boat lift will be relocated about 80 feet from shore in water 6 to 7 feet deep. The new walkway out to the boat lift will be reduced in width from 5-feet-6-inches wide to 3-feet-11-inches.

The proposal includes installation of 2 12-inch epoxy coated steel mooring piles.

See Appendix A – Sheets 2.0 to 9.0.

During construction, a floating boom will surround the work barge and dock. (See Appendix A – Sheets 7.0)

A shoreline vegetation plan is proposed, that will add 2 native conifers and 3 native shrubs. These shoreline plantings will provide shade and allow beneficial allochthonous material to enter the lake along the shoreline. Existing vegetation will be persevered. (See Appendix A – Sheet 8.0 and 9.0).

Project drawings are included in Attachment A.

Approach

Northwest Environmental Consulting LLC (NVEC) biologist Brad Thiele conducted a site visit on January 16, 2024, 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 in a residential neighborhood. It has shoreline on its western boundary with single-family homes on all other sides.

The only existing structure on the property is a single-family residence. The property has a shoreline consisting of a poured concrete and rock bulkhead with a sandy beach, planted vegetation, and two piers – the east pier and the west pier.

The substrate of the lake is sand and cobble. No milfoil was observed during the site visit.

The shoreline on the property has a beach cove in front of a poured concrete bulkhead with stairs on the north end of the property and a rock bulkhead on the south end of the property. The property to the north has a poured concrete bulkhead and the property to the south has a rock bulkhead.

The property contains a grass lawn, stone walkways, a playset, and shoreline plantings. The property line to the north is planted with ornamental and native vegetation including a shore pine and native groundcovers. The middle of the shoreline has the entrance to the north pier, and is landscaped with Japanese maples, and ground covers. The south end of the shoreline a row of cedar trees and ornamental plantings. A weeping willow surrounded by the children's playset is present about 30 feet from the shore. The entrance to the south pier is at the south property line.

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 lakes system'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 mapped as a Sockeye spawning location.

Priority Habitats and Species mapping, maps a Freshwater Emergent Wetland mapped on the entire property and adjacent properties to the north, but no other priority habitats are directly

associated with the project site for aquatic or terrestrial species. The site was lawn with some ornamental and native vegetation. No hydrology was observed along the shoreline except for the lake. The source of the wetland layer is based on the National Wetland Inventory based on infrared aerial photography taken in 1981. This condition no longer appears to exist at the site. No upland work will occur as part of this proposal.

The City of Mercer Island GIS Portal does not indicate any watercourses at the site, but a piped watercourse in a 12-inch concrete pipe is mapped adjacent to the site. The watercourse will not be affected by the project.

Project Impacts and Conservation Measurements

Direct Impacts:

Sediments: Sediment disturbance could occur during pile splicing, removal, and installation. Additionally, the tug and barge propwash may disturb sediments temporarily when making trips to and from the site.

Pile work is not considered a significant source of turbidity and the course sediments will not become suspended. The project will meet state water quality standards.

Shoreline: Planting native vegetation, including a western red cedar, shore pine and shrubs, will increase the habitat functions of the shoreline by creating natural 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 existing vegetation will be preserved. The proposed planting plan is included (see Appendix A – Sheet 9.0 and 10.0).

Lakebed: Piling repair will not change lakebed coverage. The proposed project includes removing 20 timber piles (2 6-inch, 5 8-inch, 6 10-inch, 2 12-inch, and 1 16-inch) restoring 12.1 square feet of lakebed. A total of 14 8-inch epoxy coated steel piles and 2 16-inch epoxy coated steel mooring piles will be driven displacing 7.7 square feet of lakebed resulting in 4.4 square feet of lakebed being restored.

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 in larger numbers.

Potential spills: Short-term risks include the potential for petroleum and other fluid spills that can occur with any equipment operation. The potential impact to the aquatic environment is minimized because a crew trained in spill containment measures will be present that will employ appropriate containment measurements should a spill occur.

Shading: The existing 536 square-foot dock will be removed. The proposed dock will be reconfigured to extend into deeper water, and the new reconfigured dock will be 426 square feet decreasing overwater coverage by 110 square feet at the site.

The entire new decking will be ThruFlow grated decking. Grated decking allows light to penetrate the waters below the dock, which can increase productivity in the water column, 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 their ability to effectively hunt salmonids.

Overwater structures can be a barrier to migration. In studies associated with the 520 Bridge Project, salmonids were found to show any of three responses to overwater coverage (Celedonia et al. 2008b in NOAA Fisheries 2017):

1. Passing under the structure without delay
2. Hesitating to go under the structure for a few seconds to 46 minutes.
3. Passing under the structure multiple times

The study concluded that overwater structures are a partial, but not complete, barrier to migration because they are believed to cause a delay in outmigration times.

Using grated decking, raising the dock, and reducing overwater coverage within 30 feet of shore will minimize this effect and be an improvement over the existing design.

ThruFlow grated decking has a measured performance at 43 percent light penetration (ThruFlow, 2021). Thus, the increase in lighting under the pier is effectively 57% of the area of a solid decked structure. Table 1 provides a summary of effective coverage:

Table 1 – Effective coverage

	Existing/ Proposed	Proposed grated	Conversion	Effective coverage	Reduction in effective coverage
Existing Dock (SF)	536		n/a		
Proposed Dock (SF)		426	0.57	243	183
TOTAL (SF)	536	426		243	183

The use of grated decking at the site reduces the effective coverage of the reconfigured structure by 183 square feet at the site.

Additional improvements in aquatic habitat functions for salmonids includes reducing overwater coverage within 30 feet of shore. The existing dock is 5 feet 6 inches in width, the proposed dock will be 3 feet 11 inches in width. The new configuration reduces overwater coverage in the nearshore by 47.5 square feet.

The existing 472 hard top moorage cover will be removed. The moorage cover is 8 to 9 feet above the water but still casts a hard shadow on the water. Removal has similar effects to removing overwater cover, but the existing cover has more an effect like grated decking because of its height above the water. Removal of the cover is beneficial to the aquatic environment.

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 December 31). 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 supplies 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.

In-lieu Fee: The shoreline on the subject property will be planted with native, overhanging vegetation. The project requires approval from the National Marine Fisheries Service (NMFS). NMFS has developed a calculator to determine appropriate mitigation costs for proposed in-water structures in Lake Washington. This calculator has established a fund that owners can pay into to offset impacts from the project if not enough mitigation credits can be completed on site. If the owner cannot complete enough of the required mitigation at the subject property required by NMFS, the property owners will pay into the in-lieu fee program to mitigate project impacts. An in-lieu fee program is defined as follows:

“A program involving the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements... Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor.” (Fed. Reg. 40 CFR Part 230)

The fee has been determined using the Restoration And Permitting (RAP) Calculator for Lake Sammamish and will be paid to King County Water & Land Resources Division. The RAP program has funded restoration projects through the King County Conservation District. Project elements include removal of overwater structures, derelict pilings, including creosote, and restoration of Taylor Creek. <https://kingcounty.gov/en/dept/dnrp/nature-recreation/environment-ecology-conservation/wetlands/mitigation-reserves-program/restoration-and-permitting-program>

Impact Minimization and Mitigation

Reasonable efforts were made to apply mitigation sequencing when altering habitats within shoreline areas. This sequence has three steps: avoidance, minimization, and mitigation.

Avoidance and Minimization

The pier is an established use and all activities are allowed by code. It is not possible to work in the lake and avoid impacts to the lake. If the work does not take place, the dock will remain as is and a reduction of overwater coverage, change in decking material, reconfiguration to deeper

water away from the nearshore, and shoreline planting will not occur.

The lift will be placed in deeper water at the site. Placing watercraft on lifts reduces maintenance of the craft reducing chemical use and loss of sacrificial anodes that may introduce zinc to the water.

Overwater coverage will be reduced. All new decking will be grated to allow light to penetrate to the water below. The existing boat moorage canopy will be removed.

During construction, BMPs will be used to prevent construction debris from entering Lake Washington. All construction debris will be removed from the site.

Additional avoidance and minimization measures include the following:

- No floats are proposed in the nearshore;
- Artificial night lighting on and from overwater structures will be minimized by focusing the light on the pier surface (not the water) and using shades that minimize illumination of the surrounding environment and reduces glare on the water surface. The visible light emitted by an individual fixture shall not exceed 450 lumens, and the total visible light emitted by all fixtures on a pier shall not exceed 2,700 lumens.
- No new boathouses are proposed;
- No new or replaced pier skirting is proposed;
- No use of treated wood for any in-water structures or components is proposed;
- Piles will be epoxy coated steel and the smallest size and quantity practicable;
- No impact pile driving or proofing will occur;
- No galvanized coated steel will be placed below the waterline.

Mitigation Approach

The owner proposes to grate all new deck surfaces and extend the dock into deeper water and reduce overwater coverage in the nearshore. The proposed structure will be 110 square feet smaller. The existing 472 square-foot opaque moorage cover will be removed and not replaced. The new configuration will reduce over water coverage by 47.5 square feet within 30 feet of shore.

The shoreline will be planted with 2 native trees and 3 native shrubs. The existing native Western red cedars and shrubs will be preserved.

In addition, the owner has opted to pay the required in-lieu fee to King County to complete the mitigation requirements as required by the National Marine Fisheries Service using the RAP process.

Shoreline Function and Values Improvements

Shoreline planting will increase the shoreline functions and values by adding a native trees and shrub between the house and Lake Washington that will increase screening, filtering of runoff, and vertical and overhanging structure along the lake edge, and will provide food sources for songbirds and other native fauna that use the Lake Washington shoreline.

Removal of overwater coverage, especially in the nearshore environment and using grated decking will reduce the occurrence of hesitation of outmigrating juvenile salmonids and reduce predator habitat. This will reduce the chances of the structure being a partial fish barrier and improving aquatic habitat and migration functions.

Proposed Mitigation

Mitigation Goals

Mitigation goals will include the following:

- Enhancement of the shoreline by planting with native plantings.
- Reduce overwater and effective overwater coverage at the site.

Performance Standards

Buffer plantings shall maintain a 100% survival for 5 years as required by RAP program and meet the requirements on Sheet 8.0 in Appendix A.

The overwater coverage will be reduced upon completion of the project and do not require any annual monitoring.

Planting Plan

Shrubs and groundcovers will be containerized or bare root. The planting layouts, details, and quantities are shown in Appendix A – Sheet 8.0.

Schedule and Maintenance

Plantings shall be installed in the same season or before completion of the dock construction. Watering will be required for at least the first year after planting during the summer months, and any invasive plants removed.

Maintenance and Monitoring

The owner will maintain and monitor the plantings per Sheet 8.0 of the plan set as required by the RAP program. The required report that will be sent to the Corps of Engineers, will also be sent to the City of Mercer Island when the reports are due annually if required.

Conclusion

Juvenile Chinook salmon, and other salmonids, rear and migrate along the Lake Washington shoreline. Lake Washington is a Shoreline of the State.

There will be temporary impacts from noise and disturbed sediments during construction.

The proposed 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. The effects of construction will be short term.

The proposed project will maintain an overwater structure. Salmonid predators are known to use hard shadowing under solid-decked docks to ambush juvenile salmonids. In addition, hard shadowing may increase juvenile salmonid outmigration times when encountered along the shoreline.

The reconfigured dock will reduce overwater coverage by 110 square feet and extend the dock into deeper water away from the nearshore. The new deck will use grated decking to reduce the effective overwater coverage by 183 square feet. The grating reduces the hard shadows favored by salmonid predators and increases productivity under the pier. Using grated decking may reduce the chances of delaying outmigrating juvenile salmonids. The overwater coverage will be reduced 48 feet within 30 feet of shore. The existing 472 square foot opaque moorage structure will be removed further reducing overwater coverage at the site.

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

The owner has also opted to pay into the In Lieu Fee program that will be used for conservation projects that benefit salmon habitat in King County.

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 **and will result in No Net Loss of ecological functions**. Reducing the overwater structure and planting native trees and shrubs will **improve ecological functions** at the site.

Document Preparers

Brad Thiele

Biologist

32 years of experience

Northwest Environmental
Consulting, LLC (NVEC)

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

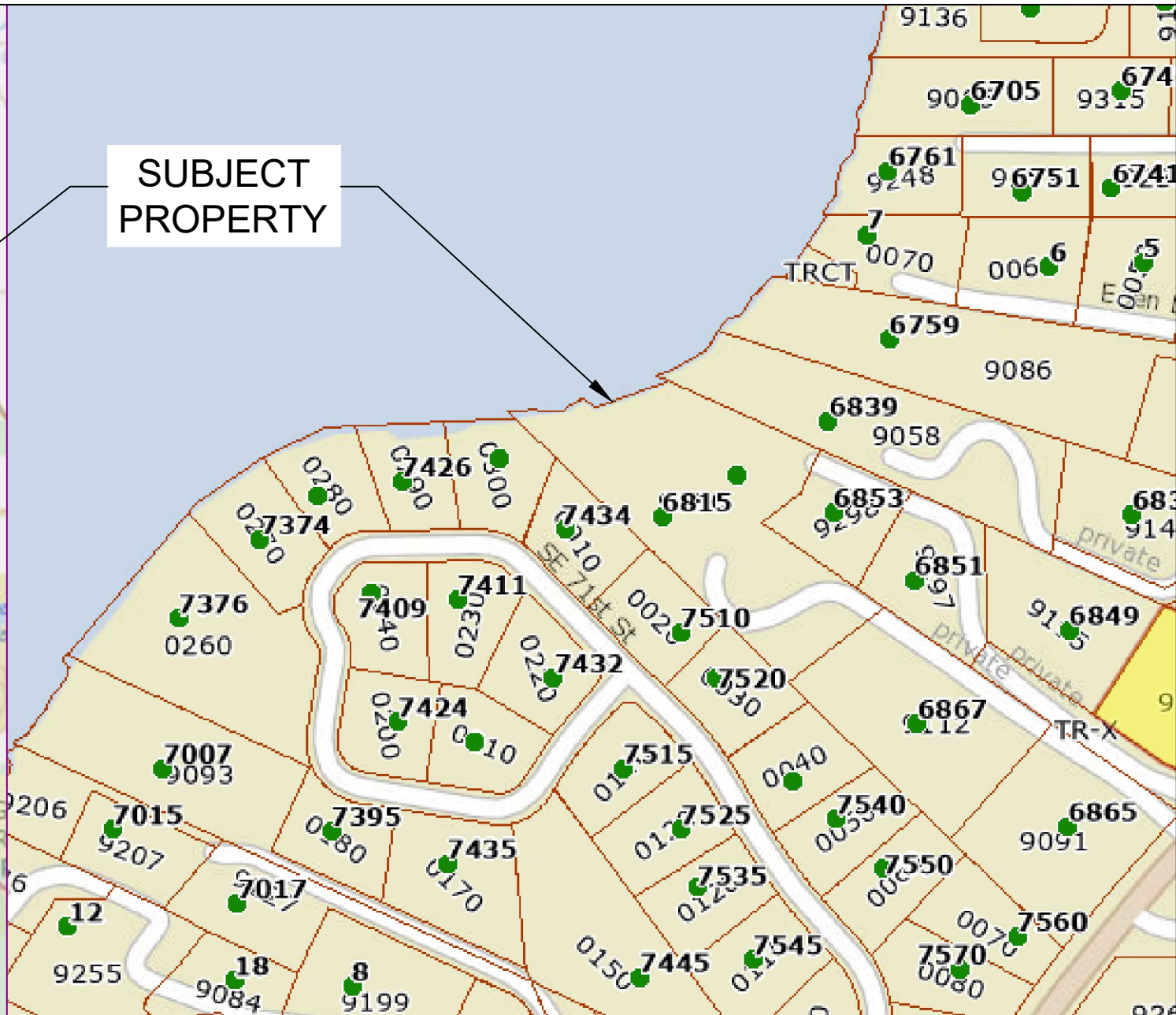
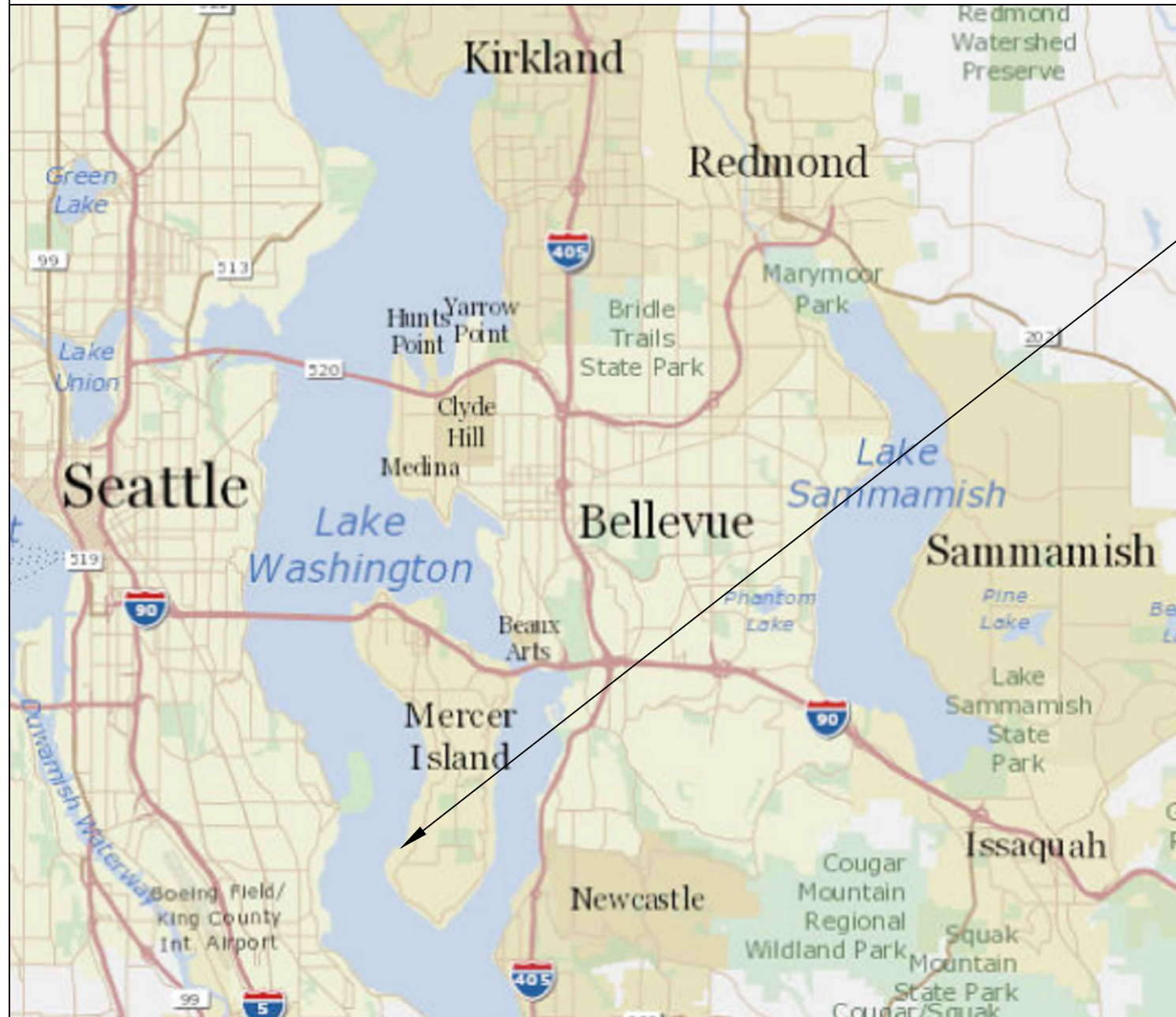
King County. 2024. King County iMap. Online database. Accessed January 2024 at <https://gismaps.kingcounty.gov/iMap/>

Washington Department of Fish and Wildlife (WDFW). 2024. Priority Habitats and Species. Online database. Accessed January 2024 at <http://apps.wdfw.wa.gov/phsontheweb/>

WDFW. 2024. SalmonScape. Online database. Accessed January 2024 at <http://apps.wdfw.wa.gov/salmonscape/>

Appendix A: Project Drawings

SITE PLAN

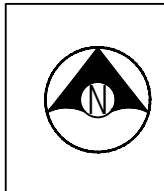


Pin: 252404-9080

Legal Description: CONSOLIDATED LOT PER MERCER ISLAND LOT CONSOLIDATION # MI SUB 09-004 REC# 20091202900012 SD LOT DAF- LOT C-3 TGW UND INT IN TR X MI SP #85-06-16 REC #8511139001 TGW LOTS A & B MI SP #MI-79-03-08 REC #7911130595 BEING POR N 1/2 GLS 2 & 3 & S 1/4 OF GL 1 LY W OF MERCER WAY & NELY OF MCLEAN ADD TGW SH LDS ADJ BUILDING 1

Plat Block:
Plat Lot:

Parcel	Dock
LAT: 47.54166	LAT: 47.541999
LONG: -122.23839	LONG: -122.239380



Seaborn Pile Driving
1080 W Ewing St
Seattle, WA 98119

Office: 206-236-1700 ext. 5
www.seabornpiledriving.com

Scope of Work: We propose to reconfigure the existing dock with new grated decking, remove (20) existing piles, drive (14) new epoxy coated steel piles, drive (2) new epoxy coated steel mooring piles, and relocate the existing boat lift.

County: King County
Location: Lake Washington

Applicant: Aqua Dock
6855 W. Mercer Way
Mercer Island, WA 98040

Datum: CORPS OF ENGINEERS 1919
SW Quarter Of Section 24, Township 14, Range 05

Adjacent Owners:
WANG ZHUO+JUNE
6839 W MERCER WAY

HAGSTROM COLIN S+JILLIAN J
7428 SE 71ST ST 98040

SHEET 1.0

NWS-2023-XXX
PAGE 1 OF 9

Created: 11/08/23
Last Updated: 3/18/2026 2:30 PM Kady

GENERAL NOTES:

MATERIALS SPEC LIST:

Boat Lifts: Aluminum
 * SL10014ARW - 146" x 191"

Decking Material: FRPP - Fiberglass reinforced polypropylene
 Light permeable percentage:
 * Surface - 43%

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 8" steel piles
 * Repair piles are done as a sleeve/strap method
 * All Pile tops exposed will have a conical cap placed on top
 * Piles are driven using the vibro method

Preservatives
 * Structural Glued Laminated timber shall be alaskan cedar AC.AC. 20f-V12
 * Wood Shall be seasoned dry with a maximum moisture content of 19%
 * Preservative treated wood shall conform to the american wood protection association (AWP) UC4A. All wood shall bear a treatment identification mark by the certifying agency.

CODE REFERENCES: Mercer Island

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

"Development Standards for New and Expanded Moorage Facilities" per MIMC 19.13050(F)(1).

F. Moorage Facilities. All permits for new and expanded moorage facility, other than public access piers or boardwalks, shall meet the following standards unless otherwise exempted. Moorage facilities have the option of meeting either the development standards prescribed in subsection (F)(1) or (F)(2) of this section, or the "alternative development standards" in subsection (F)(3) of this section.

i. Development Standards for New and Expanded Moorage Facilities. A proposed moorage facility shall be presumed to not create a net loss of ecological functions pursuant to subsection (B)(2) of this section if:

- i. The surface coverage area of the moorage facility is:
 - a. Four hundred eighty square feet or less for a single property owner;
 - b. Seven hundred square feet or less for two residential property owners (residential); or
 - c. One thousand square feet or less for three or more residential property owners;

No net loss report attached.

ii. Piers, docks, and platform lifts must be fully grated with materials that allow a minimum of 40 percent light transmittance;

Dock will be a grated material with at least 40% light transmittance.

iii. Vegetation. The code official approves a vegetation plan that conforms to the following: Ch. 19.13 Shoreline Master Program | Mercer Island City Code Page 27 of 34 The Mercer Island City Code is current through Ordinance 20C-13, passed June 16, 2020. Vegetation must be planted as provided in Figure C and as follows: Within the 25-foot shoreline setback, a 20-foot vegetation area shall be established, measured landward from the OHWM. Twenty-five percent of the area shall contain vegetation coverage. The five feet nearest the OHWM shall contain at least 25 percent native vegetation coverage. A shoreline vegetation plan shall be submitted to the city for approval. The vegetation coverage shall consist of a variety of ground cover shrubs and trees, excluding nonnative grasses. No plants on the current King County noxious weed lists shall be planted within the shorelands. Figure C: Vegetation Plan

The vegetation plan will conform to these standards. See page 11 and 12.

iv. Only docks, ramps, and boatlifts may be within the first 30 feet from the OHWM. No skirting is allowed on any structure;

Only the dock will be within the first 30 feet of the OHWM.

v. The height above the OHWM for docks shall be a minimum of one and one-half feet and a maximum of five feet;

The height of the dock above the OHWM will be 14".

vi. The first in-water (nearest the OHWM) set of pilings shall be steel, 10 inches in diameter or less, and at least 18 feet from the OHWM. Piling sets beyond the first shall also be spaced at least 18 feet apart and shall not be greater than 12 inches in diameter. Piles shall not be treated with pentachlorophenol, creosote, CCA or comparably toxic compounds. If ammoniacal copper zinc arsenate (ACZA) pilings are proposed, the applicant shall meet all of the best management practices, including a post-treatment procedure, as outlined in the amended Best Management Practices of the Western Wood Preservers. All piling sizes are in nominal diameter;

All new piles will be epoxy coated steel piles measuring 8" in diameter. All repaired piles will be repaired with epoxy coated steel sleeves.

vii. Any paint, stain or preservative applied to components of the dock must be leach resistant, completely dried or cured prior to installation. Materials shall not be treated with pentachlorophenol, creosote, CCA or comparably toxic compounds; Ch. 19.13 Shoreline Master Program | Mercer Island City Code Page 28 of 34 The Mercer Island City Code is current through Ordinance 20C-13, passed June 16, 2020.

No material will be treated with a toxic compound.

viii. No more than two mooring piles shall be installed per structure. Joint-use structures may have up to four mooring piles. The limits include existing mooring piles. Moorage piling shall not be installed within 30 feet of the OHWM. These piles shall be as far offshore as possible;

No mooring piles are proposed.

ix. The applicant shall abide by the work windows for listed species established by the U.S. Army Corps of Engineers and Washington Fish and Wildlife; and

Work will only be done within the work windows specified.

x. Disturbance of bank vegetation shall be limited to the minimum amount necessary to accomplish the project. Disturbed bank vegetation shall be replaced with native, locally adapted herbaceous and/or woody vegetation. Herbaceous plantings shall occur within 48 hours of the completion of construction. Woody vegetation components shall be planted in the fall or early winter, whichever occurs first. The applicant shall take appropriate measures to ensure revegetation success.

No bank vegetation will be disturbed.

Mitigation" Disturbance of bank vegetation shall be limited to the minimum amount necessary to accomplish the project. Disturbed bank vegetation shall be replaced with native, locally adapted herbaceous and/or woody vegetation. Herbaceous plantings shall occur within 48 hours of the completion of construction. Woody vegetation components shall be planted in the fall or early winter, whichever occurs first. The applicant shall take appropriate measures to ensure revegetation success;

Piers legally established and parcels joined under SUB 09-04 DEC 2009

The non-conformity created by the consolidation of parcels under SUB09-004 may continue under 19.01.050 -Nonconforming structures, sites, lots and uses.

County: King County
 Location: Lake Washington
 Applicant: Aqua Dock
 6855 W. Mercer Way
 Mercer Island, WA 98040
 Datum: CORPS OF ENGINEERS 1919
 SW Quarter Of Section 24, Township 14, Range 05
 Adjacent Owners:
 HAGSTROM COLLIN S+JILLIAN J
 7428 SE 71ST ST 98040
 WANG ZHUO+JUNE
 6839 W MERCER WAY
 Created: 11/08/23
 Last Updated: 3/18/2026 2:30 PM Kady



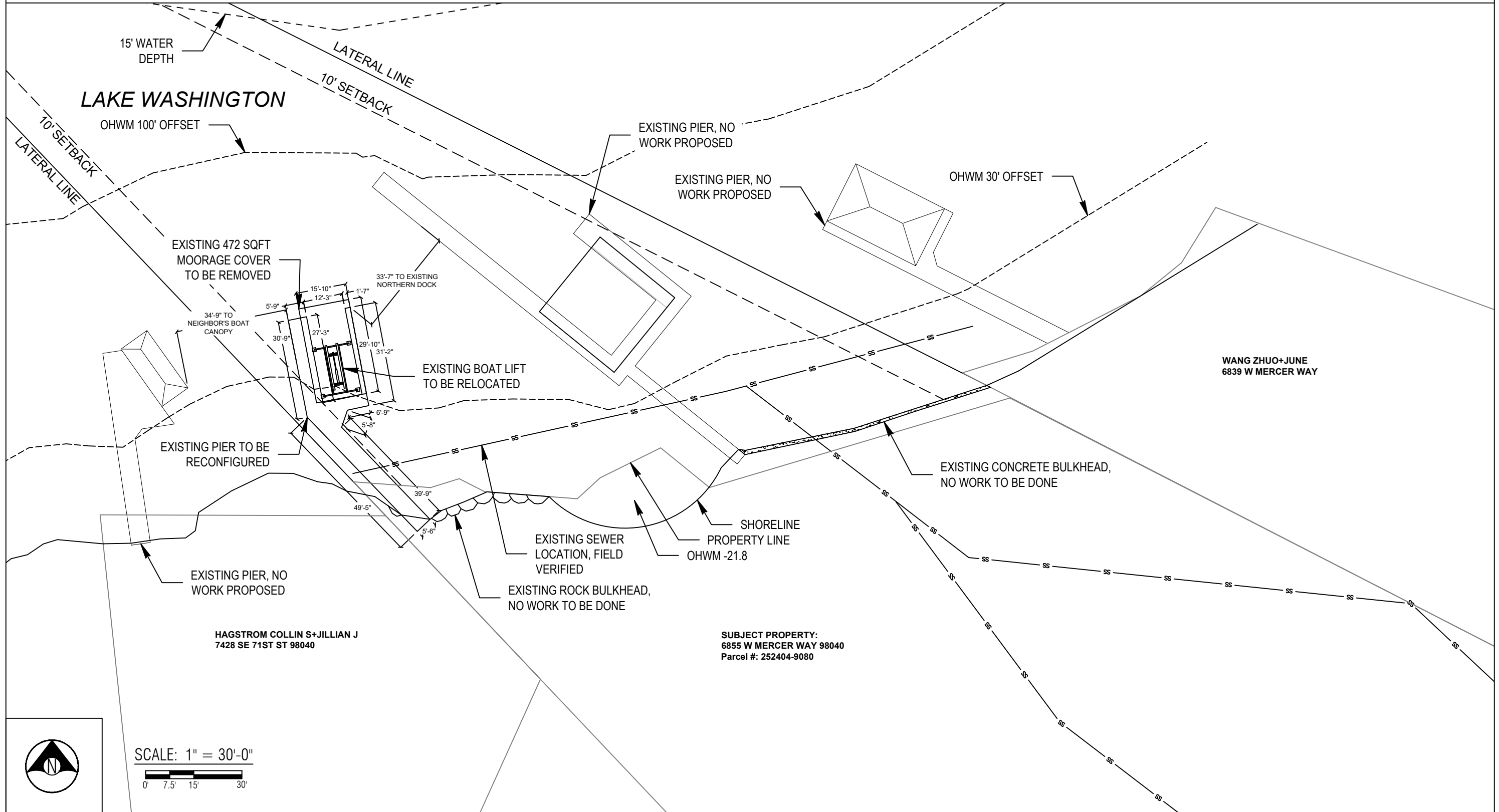
Seaborn Pile Driving
 1080 W Ewing St
 Seattle, WA 98119
 Office: 206-236-1700 ext. 5
 www.seabornpiledriving.com

Scope of Work: We propose to reconfigure the existing dock with new grated decking, remove (20) existing piles, drive (14) new epoxy coated steel piles, drive (2) new epoxy coated steel mooring piles, and relocate the existing boat lift.

SHEET
2.0
 NWS-2023-XXX
 PAGE 2 OF 9

EXISTING CONDITIONS

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



SCALE: 1" = 30'-0"
 0' 7.5' 15' 30'



Seaborn Pile Driving
 1080 W Ewing St
 Seattle, WA 98119

Office: 206-236-1700 ext. 5
www.seabornpiledriving.com

Scope of Work: We propose to reconfigure the existing dock with new grated decking, remove (20) existing piles, drive (14) new epoxy coated steel piles, drive (2) new epoxy coated steel mooring piles, and relocate the existing boat lift.

County: King County
 Location: Lake Washington
 Applicant: Aqua Dock
 6855 W. Mercer Way
 Mercer Island, WA 98040
 Datum: CORPS OF ENGINEERS 1919
 SW Quarter Of Section 24, Township 14, Range 05
 Adjacent Owners:
 HAGSTROM COLLIN S+JILLIAN J
 7428 SE 71ST ST 98040
 WANG ZHUO+JUNE
 6839 W MERCER WAY

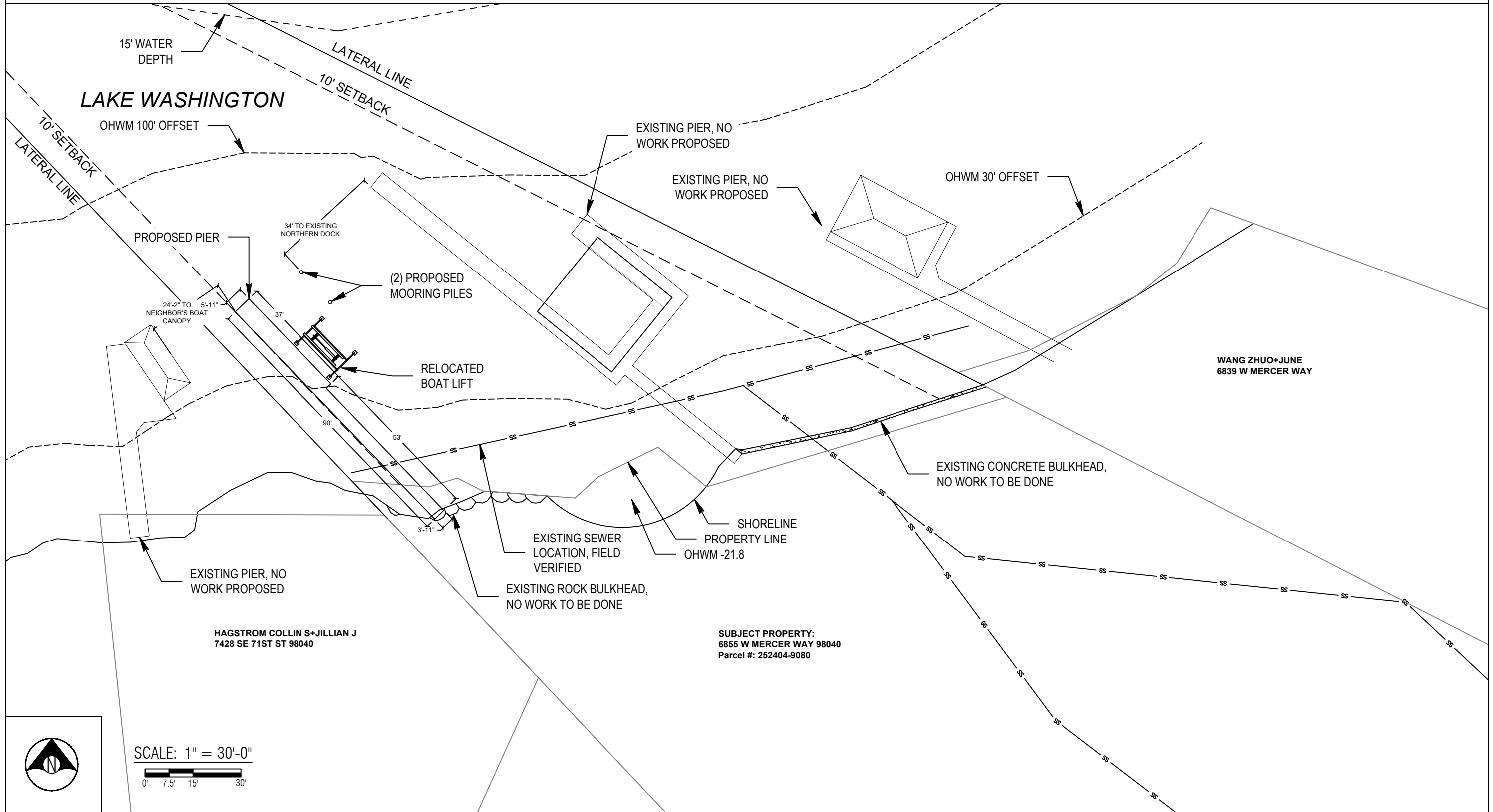
SHEET 3.0
 NWS-2023-XXX
 PAGE 3 OF 9

Last Updated: 3/18/2026 2:30 PM Kady

Created: 11/08/23

PROPOSED CONDITIONS

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



County: King County
 Location: Lake Washington
 Applicant: Aqua Dock
 6855 W. Mercer Way
 Mercer Island, WA 98040
 Datum: CORPS OF ENGINEERS 1919
 SW Quarter Of Section 24, Township 14, Range 05
 Adjacent Owners:
 HAGSTROM COLLIN S+JILLIAN J
 7428 SE 71ST ST 98040
 WANG ZHUO+JUNE
 6839 W MERCER WAY

Last Updated: 3/18/2026 2:30 PM Kady

Created: 11/08/23



Seaborn Pile Driving
 1080 W Ewing St
 Seattle, WA 98119
 Office: 206-236-1700 ext. 5
www.seabornpiledriving.com

Scope of Work: We propose to reconfigure the existing dock with new grated decking, remove (20) existing piles, drive (14) new epoxy coated steel piles, drive (2) new epoxy coated steel mooring piles, and relocate the existing boat lift.

SHEET 4.0

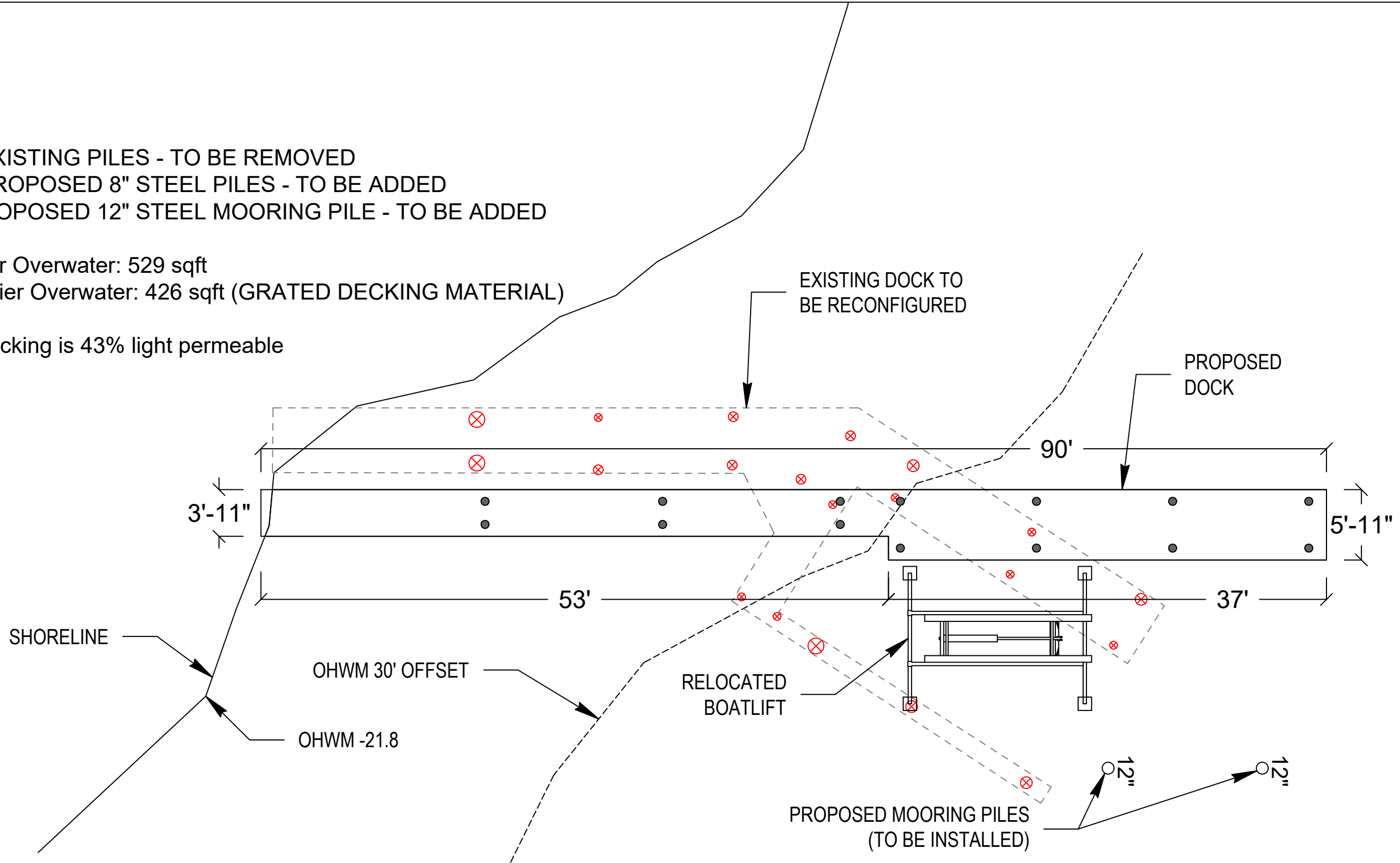
PIER DETAILS - PROPOSED PLAN VIEW

LEGEND

- ⊗ (20) EXISTING PILES - TO BE REMOVED
- (14) PROPOSED 8" STEEL PILES - TO BE ADDED
- (2) PROPOSED 12" STEEL MOORING PILE - TO BE ADDED

Existing Pier Overwater: 529 sqft
 Proposed Pier Overwater: 426 sqft (GRATED DECKING MATERIAL)

**Grated decking is 43% light permeable



PLAN VIEW



Seaborn Pile Driving
 1080 W Ewing St
 Seattle, WA 98119

Office: 206-236-1700 ext. 5
www.seabornpiledriving.com

Scope of Work: We propose to reconfigure the existing dock with new grated decking, remove (20) existing piles, drive (14) new epoxy coated steel piles, drive (2) new epoxy coated steel mooring piles, and relocate the existing boat lift.

County: King County
 Location: Lake Washington

Applicant: Aqua Dock
 6855 W. Mercer Way
 Mercer Island, WA 98040

Datum: CORPS OF ENGINEERS 1919
 SW Quarter Of Section 24, Township 14, Range 05
 Adjacent Owners:
 HAGSTROM COLIN S+JILLIAN J
 7428 SE 71ST ST 98040
 WANG ZHUO+JUNE
 6839 W MERCER WAY

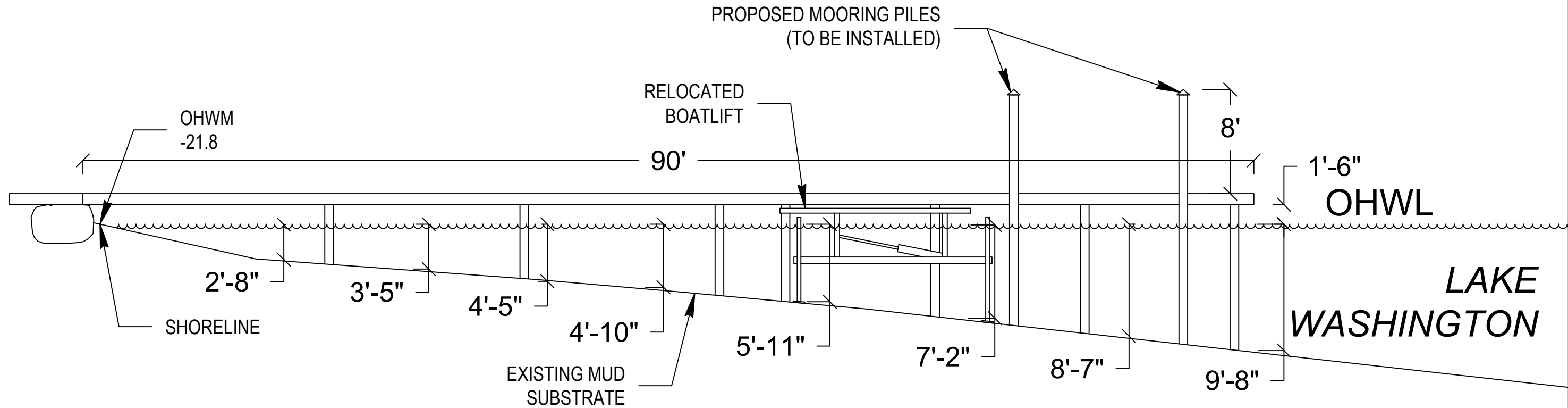
SHEET
5.0

NWS-2023-XXX
 PAGE 5 OF 9

Last Updated: 3/18/2026 2:30 PM Kady

Created: 11/08/23

PIER DETAILS EXISTING/PROPOSED - SECTION VIEW



SECTION VIEW: A'-A'



Seaborn Pile Driving
1080 W Ewing St
Seattle, WA 98119

Office: 206-236-1700 ext. 5
www.seabornpiledriving.com

Scope of Work: We propose to reconfigure the existing dock with new grated decking, remove (20) existing piles, drive (14) new epoxy coated steel piles, drive (2) new epoxy coated steel mooring piles, and relocate the existing boat lift.

County: King County
Location: Lake Washington

Applicant: Aqua Dock
6855 W. Mercer Way
Mercer Island, WA 98040

Datum: CORPS OF ENGINEERS 1919
SW Quarter Of Section 24, Township 14, Range 05

Adjacent Owners:
HAGSTROM COLIN S+JILLIAN J
7428 SE 71ST ST 98040

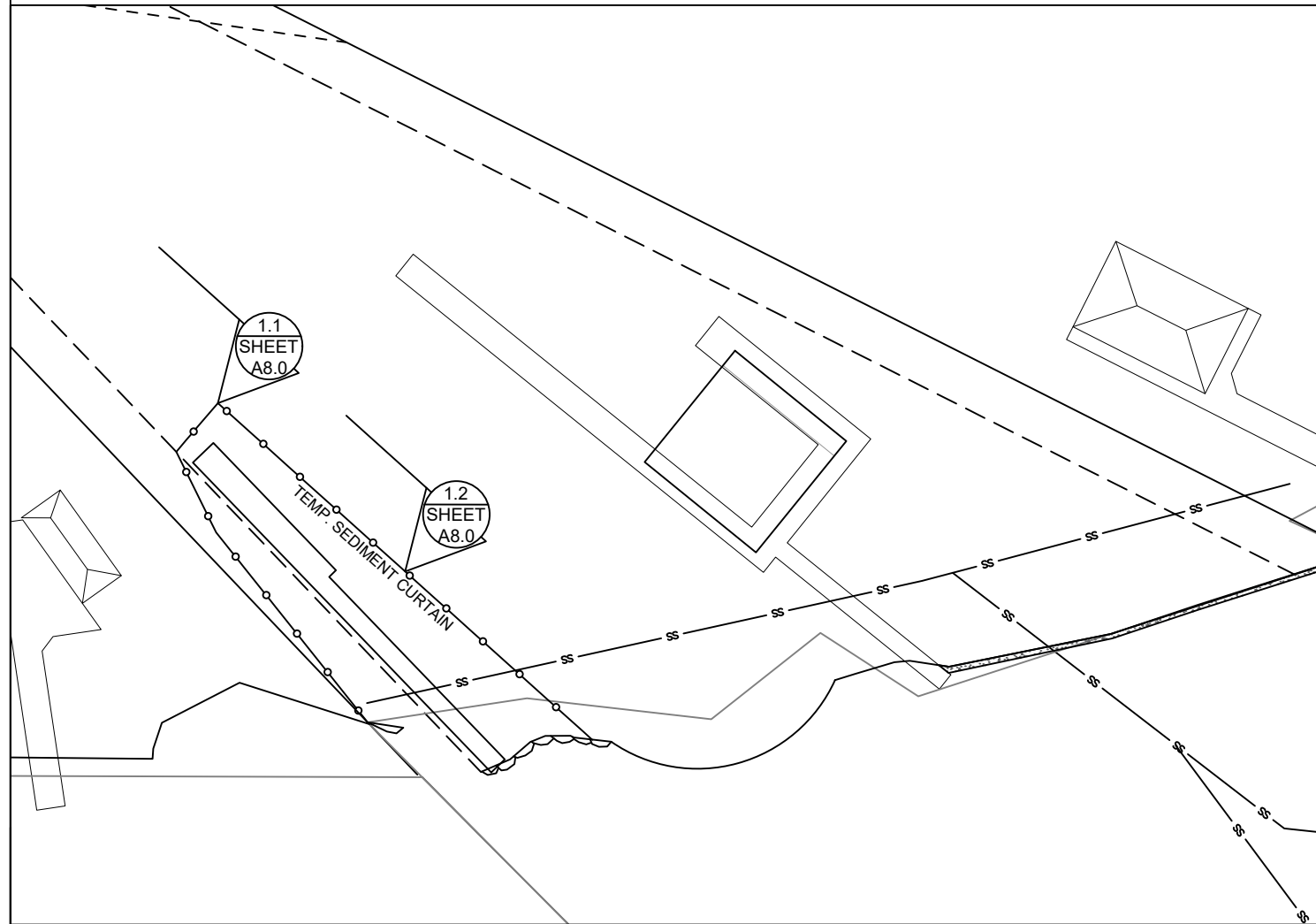
WANG ZHUO+JUNE
6839 W MERCER WAY

Last Updated: 3/18/2026 2:30 PM Kady

Created: 11/08/23

SHEET
6.0

BMP INFORMATION

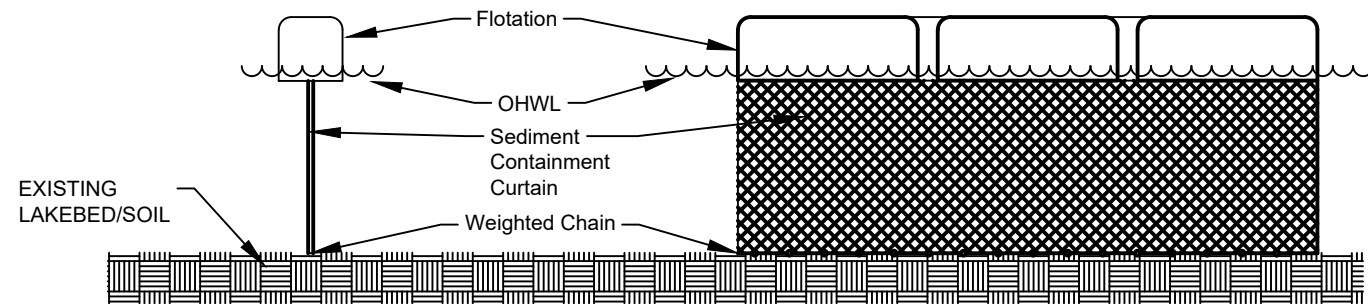


BMP NOTES:

- 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.
 1. 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.
 2. 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.
 3. 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.
 4. 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.
 5. 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.
 1. Appropriate materials to contain and clean potential spills shall be stored and readily available at the work site and/or aboard project-related vessels.
 2. 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.
 3. To the greatest extent practicable, utilize biodegradable oils for equipment that would be operated in or near water.
 4. 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.
 5. 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.
 6. All wastes shall be collected and contained for proper disposal at approved upland disposal sites appropriate for the material(s).
 7. When removing piles and other similarly treated wood, containment curtain 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.
 8. 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 curtain.
 9. When removing piles, no actions shall be taken that would cause adhering sediments to return to lake waters.
 10. Above-water containment shall be installed around removed piles to prevent sediment laden waters from returning to lake waters.
 11. Construction staging (including stocking of materials, etc.) will occur on the supply barge.
 12. All Exposed wood to be used on the project will be treated with an agency approved treatment.

DETAIL 1.1

DETAIL 1.2



DETAIL 1.1 & 1.2



Seaborn Pile Driving
1080 W Ewing St
Seattle, WA 98119

Office: 206-236-1700 ext. 5
www.seabornpiledriving.com

Scope of Work: We propose to reconfigure the existing dock with new grated decking, remove (20) existing piles, drive (14) new epoxy coated steel piles, drive (2) new epoxy coated steel mooring piles, and relocate the existing boat lift.

County: King County
Location: Lake Washington

Applicant: Aqua Dock
6855 W. Mercer Way
Mercer Island, WA 98040

Datum: CORPS OF ENGINEERS 1919
SW Quarter Of Section 24, Township 14, Range 05

Adjacent Owners:
HAGSTROM COLLIN S+JILLIAN J
7428 SE 71ST ST 98040

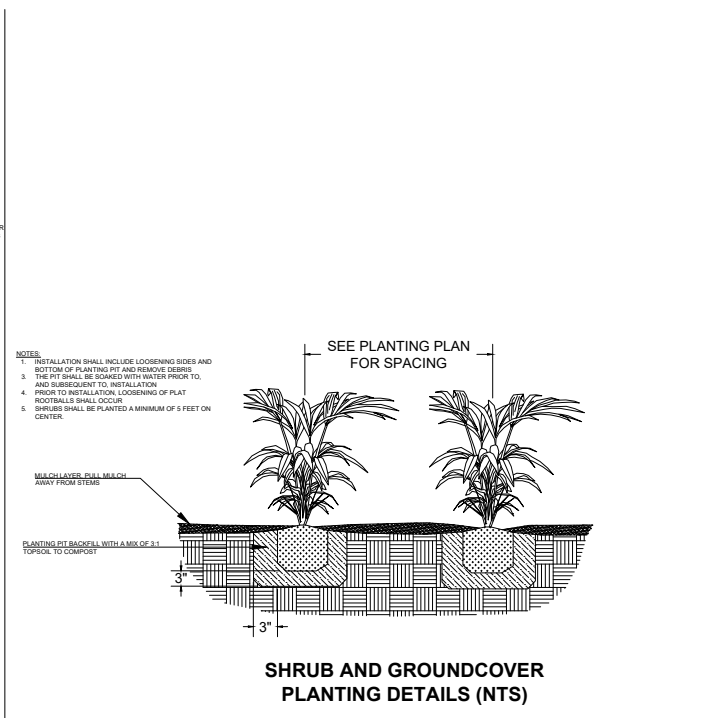
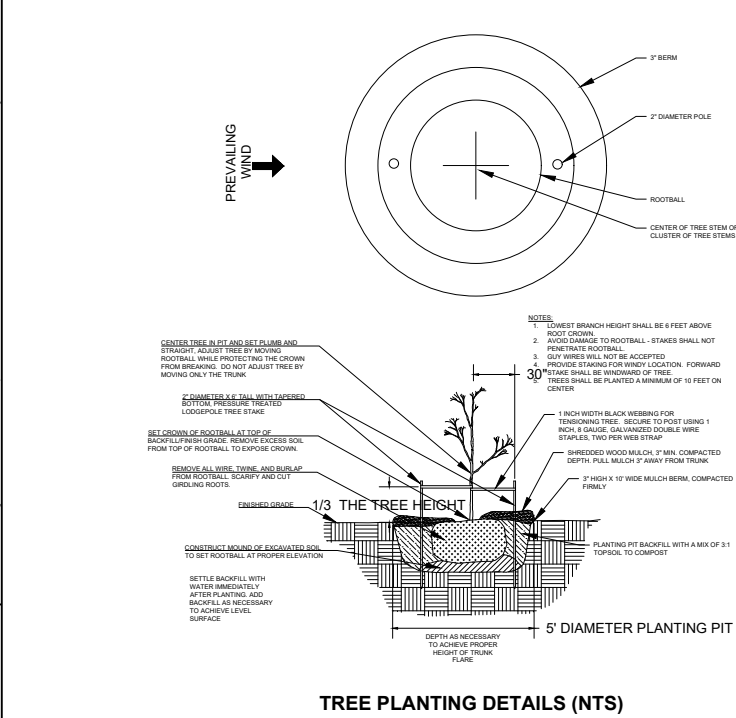
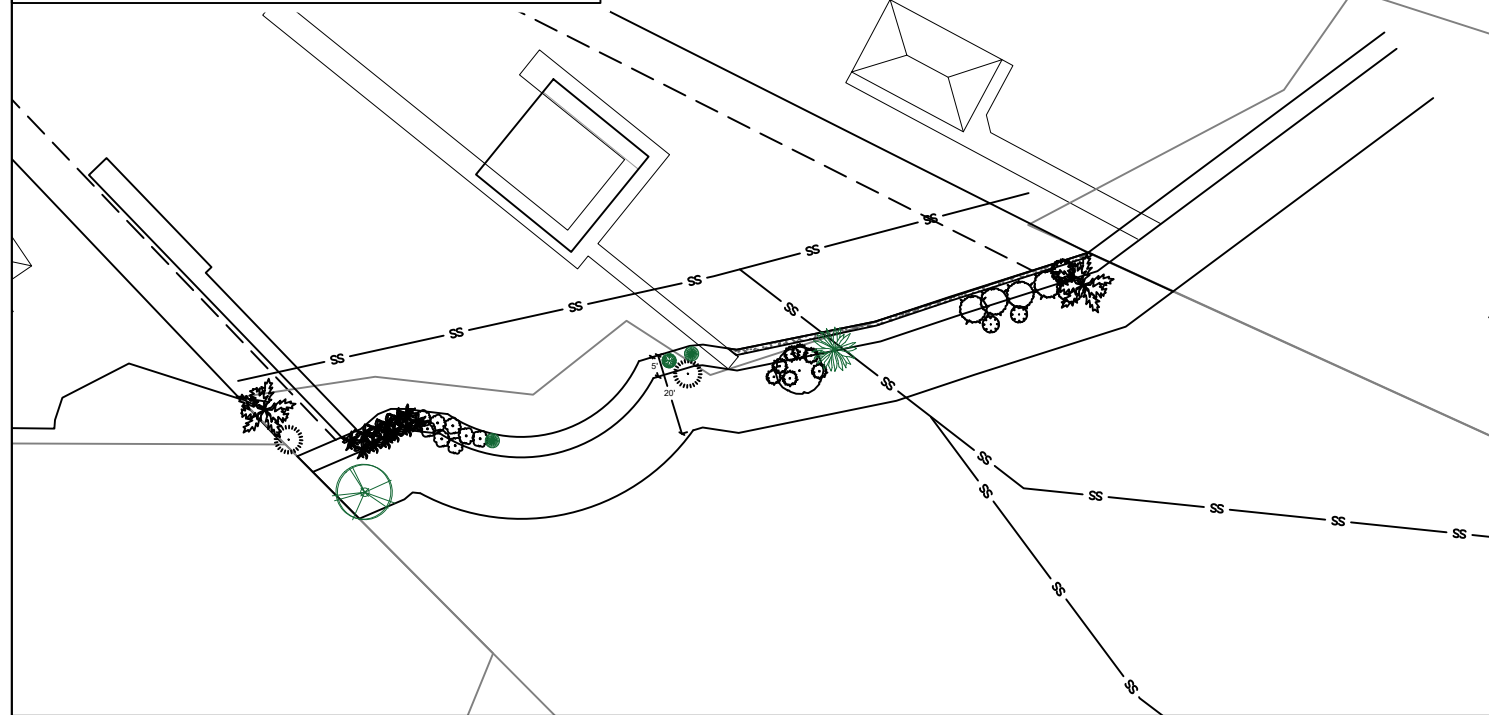
Last Updated: 3/18/2026 2:30 PM Kady

Created: 11/08/23

SHEET
7.0

MITIGATION PLAN

5' SETBACK VEGETATION COVERAGE - 38.3%
20' SETBACK VEGETATION COVERAGE - 25.2%



Notes:

- The property owner shall implement and abide by the shoreline planting plan, including the installation of the identified species, in the identified locations. Shrubs shall be planted at least five feet on center, and trees shall be planted at least ten feet on center.
- For best plant survival, planting should be completed the first October through March period concurrent with or immediately following 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.
- The property owner shall preserve in good health 100% of shoreline planting plan vegetation for as long as the structures that have been permitted under the RAP program remain in place. Plants that die must be replaced with the appropriate plant type (i.e. tree for tree, shrub for shrub) from the RAP Plant List.
- The property owner shall monitor the survival of shoreline planting plan vegetation for five years (Monitoring Years 1-5) after the U.S. Army Corps of Engineers accepts the as-built report. The property owner shall also submit annual monitoring reports to the U.S. Army Corps of Engineers each year during this period. Each annual monitoring report will include written and photographic documentation that the performance standards are being met, including documentation of plant mortality and replacement. 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
	<i>Thuja plicata</i>	Western Red Cedar	1	3 ft
	<i>Pinus contorta v contorta</i>	Shore pine	1	3 ft
	<i>Rosa nutkana</i>	Nootka Rose	1	1 Gallon
	<i>Philadelphus lewisii</i>	Mock Orange	2	1 Gallon

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



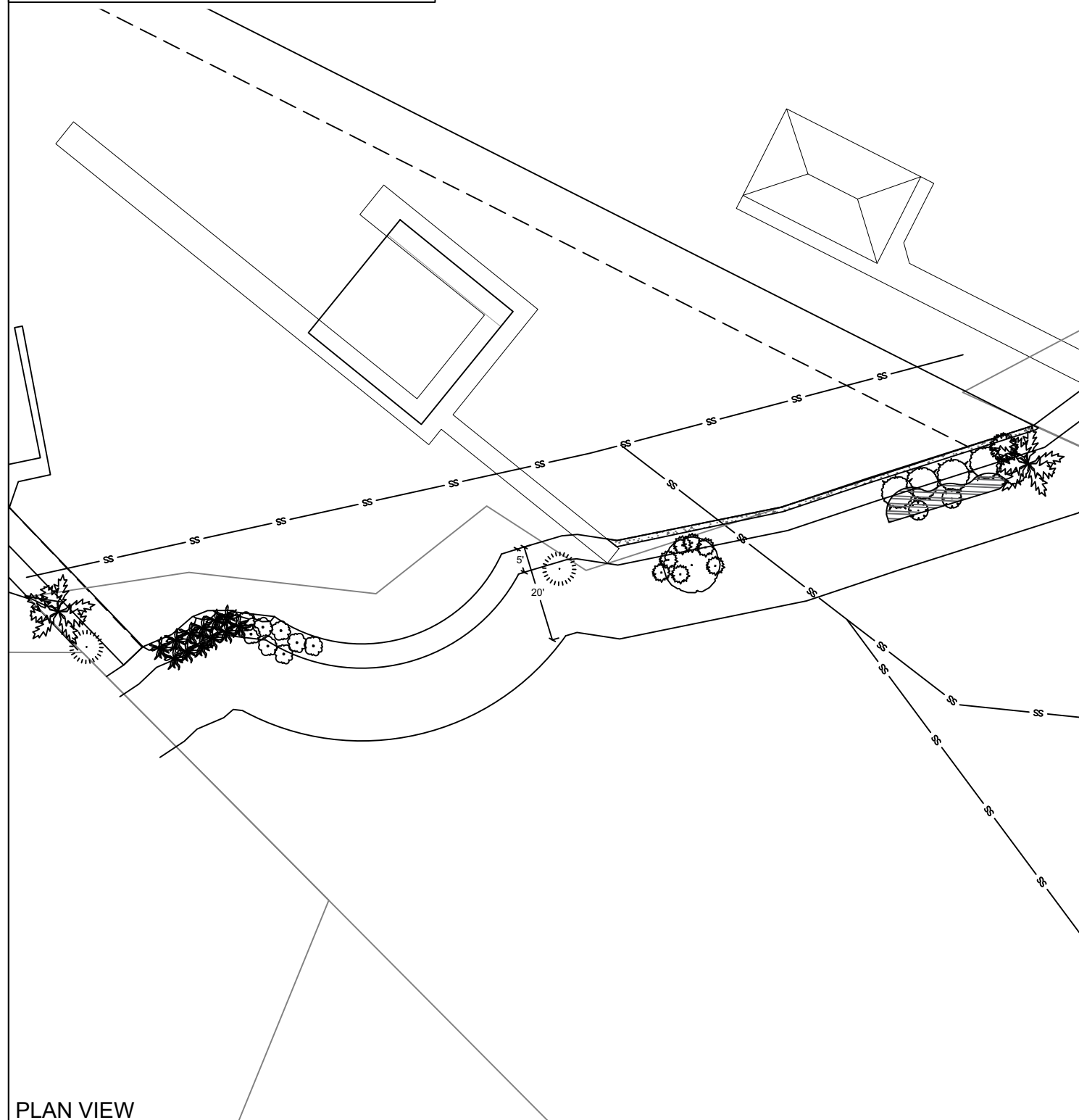
Seaborn Pile Driving
1080 W Ewing St
Seattle, WA 98119
Office: 206-236-1700 ext. 5
www.seabornpiledriving.com

Scope of Work: We propose to reconfigure the existing dock with new grated decking, remove (20) existing piles, drive (14) new epoxy coated steel piles, drive (2) new epoxy coated steel mooring piles, and relocate the existing boat lift.

County: King County
Location: Lake Washington
Applicant: Aqua Dock
6855 W. Mercer Way
Mercer Island, WA 98040
Datum: CORPS OF ENGINEERS 1919
SW Quarter Of Section 24, Township 14, Range 05
Adjacent Owners:
HAGSTROM COLLIN S+JILLIAN J
7428 SE 71ST ST 98040
WANG ZHUO+JUNE
6839 W MERCER WAY
Created: 11/08/23
Last Updated: 3/18/2026 2:30 PM Kady
SHEET 8.0
NWS-2023-XXX
PAGE 8 OF 9



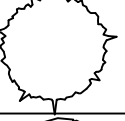
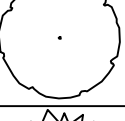
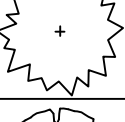
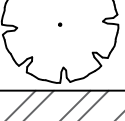

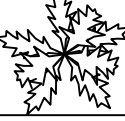
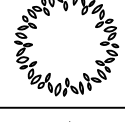

EXISTING PLANT PLAN

5' SETBACK VEGETATION COVERAGE - 38.3%
 20' SETBACK VEGETATION COVERAGE - 25.2%



PLAN VIEW

EXISTING PLANTING SPECIES/QUANTITIES

SYMBOL	SCIENTIFIC NAME	COMMON NAME	QTY	SIZE
	<i>Phyllostachys area</i>	Bamboo	N/A	~3'x15'x12'
	<i>Phormium tenax</i>	Flax	1	~2ft
	<i>Ficus microcarpa</i>	Fig Tree	5	~ 3ft
	<i>Acer circinatum</i>	Vine Maple	1	~ 8ft
	<i>Cenchrus setaceus</i>	Rose fountain grass	N/A	N/A
	<i>Pseudognaphalium microphalum</i>	Rabbit tobacco	N/A	N/A
	<i>Impatiens hawkeri</i>	Impatiens	N/A	N/A
	<i>Thuja picatta</i>	Western Redcedar	2	~ 5ft
	<i>Rosa nutkana</i>	Nootka Rose	1	~ 3 ft
	<i>Philadelphus lewisii</i>	Mock Orange	2	~ 3 ft

EXISTING PLANTS TABLE

County: King County
 Location: Lake Washington
 Applicant: Aqua Dock
 6855 W. Mercer Way
 Mercer Island, WA 98040
 Datum: CORPS OF ENGINEERS 1919
 SW Quarter Of Section 24, Township 14, Range 05
 Adjacent Owners:
 WANG ZHUO+JUNE
 6839 W MERCER WAY
 HAGSTROM COLIN S+JILLIAN J
 7428 SE 71ST ST 98040
 Created: 11/08/23
 Last Updated: 3/18/2026 2:30 PM Kady



Seaborn Pile Driving
 1080 W Ewing St
 Seattle, WA 98119

Office: 206-236-1700 ext. 5
www.seabornpiledriving.com

Scope of Work: We propose to reconfigure the existing dock with new grated decking, remove (20) existing piles, drive (14) new epoxy coated steel piles, drive (2) new epoxy coated steel mooring piles, and relocate the existing boat lift.

SHEET
9.0

Appendix B: Site Photographs



Photo 1 - Existing dock looking waterward.



Photo 2 - Existing dock looking landward.



Photo 3 - Existing shoreline looking easterly.



Photo 4 - Existing shoreline looking westerly.



Photo 5 - Existing conditions east of the project.



Photo 6 - Existing conditions west of the project.