

# **Ecological No Net Loss Assessment Report**

Prepared for

**Ken Phillips**

**1945 82<sup>nd</sup> Ave SE**

**Mercer Island, WA 98040**

Prepared by

 **Northwest**  
Environmental Consulting, LLC

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Seattle, WA 98103

206-234-2520

**December 2023**

## 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 dredging of the existing moorage slip.

## Location

The subject property is located at 2003 82<sup>nd</sup> Avenue SE (King County parcel number 5449300080) in the City of Mercer Island, Washington (see Appendix A – Sheet 1 of 9). 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 is to dredge next to an existing pier to increase the water depth from 6 feet to 10 feet. The area to be dredged is 130 by 22 feet, and approximately 385 cubic yards of material will be dredged. Gravel will be added to the beach in front of the bulkhead after dredging is complete.

See Appendix A – Sheets 2 through 4 of 5).

During construction, a floating boom and silt curtain will surround the work barge and dock. (See Appendix A – Sheet 1 of 5)

Project drawings are included in Attachment A.

## Approach

Northwest Environmental Consulting LLC (NVEC) biologist Brad Thiele conducted a site visit on October 25, 2023 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 SalmonScope 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 shoreline tract in a residential neighborhood. It has shoreline on its northern boundary with a single-family home to the east, another shoreline tract to the west, and a hillside with single-family homes to the south. The shores of Luther Burbank Park are approximately 200 feet west.

The substrate of the lake is sand and cobble turning to mostly sand about 30 feet from shore. Milfoil was observed starting approximately 30 feet from shore and continuing waterward.

The shoreline on the property has a rock bulkhead.

The neighboring shorelines are landscaped with bulkheads and docks. See attached photos in Appendix B- Photos.

## 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.

There are wetlands mapped approximately 200 feet northeast in Luther Burbank Park, but no other priority habitats are directly associated with the project site for aquatic or terrestrial species.

## Project Impacts and Conservation Measurements

### **Direct Impacts**

**Sediments:** Dredging can produce temporary localized sediment plumes that would dissipate following cessation of activity. The dredging will disturb the benthic substrate during the implementation of the project. The nearshore environment is used during outmigration by juvenile salmonids and may also provide rearing habitat. The dredge site will be isolated with a silt curtain and work will be completed during the inwater work window when juvenile fish are not likely to be present in significant numbers.

Additionally, the tug and barge propwash may disturb sediments temporarily when making trips to and from the site.

Fifteen cubic yards of beach nourishment gravels will be added to the nearshore. The beach nourishment material will meet WDFW specifications. Beach nourishment gravels will improve the nearshore environment by reducing sediment erosion associated with shoreline armoring.

The project will use BMPs to meet state water quality standards.

**Shoreline:** No changes to the shoreline are proposed except for the addition of beach nourishment gravels along the shore.

**Lakebed:** The lakebed will be lowered in the dredge prism from 6 to 10 feet deep. This will impact approximately 2,860 square feet of lakebed. Submerged aquatic vegetation at the site is dominated by Eurasian milfoil, an invasive aquatic plant that was introduced from the aquarium trade. Removal of this invasive species will be temporary and the dredge prism will likely be recolonized in a season. Eurasian milfoil can act as a false bottom and colonization of the dredge prism will smooth out the depression. The false bottom effect caused by the milfoil may cause outmigrating juvenile salmonids to follow the edge of the milfoil away from shore.

**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 spills that can occur with any equipment operation. The level of potential impact to the aquatic environment is expected to be minimized because a trained crew will be onsite that will implement spill containment measures should a spill occur.

**Recreational Boating:** The project supports continued recreational boating, which has been identified as a limiting factor for salmonid populations in Lake Washington. The proposal 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, including a silt boom to surround the in-water work area. The barge will have a perimeter containment sock to absorb oil and grease that might inadvertently wash from the barge during construction. The barge will not be permitted to ground out. The dredged material will be taken to the contractor's yard for off-loading for upland disposal or if permitted, inwater disposal in Puget Sound.

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.

## **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.

Dredging has the potential to harm juvenile and adult fish. Turbidity from suspended sediments reduce visibility reducing foraging opportunities and can result in greater predation. In addition, suspended sediments can harm fish gills.

The project will minimize construction effects on the environment by following the prescribed fish window and using applicable BMPs to prevent construction spills, turbidity from escaping the dredge area by surrounding the work area with a floating silt curtain, and removing any floating debris to prevent them from escaping the work 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.

Beach nourishment gravels will be added along the shoreline. Beach nourishment gravels will meet WDFW specifications. Beach nourishment gravels has positive ecological effects in the nearshore by enhancing beach sediment sources reduced by the presence of the bulkheaded shoreline. The beach nourishment gravels will create a more evenly contoured shoreline that will reduce the effect of wave erosion associated with shoreline armoring.

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.**

## Document Preparers

Brad Thiele	Biologist	29 years of experience	Northwest Environmental Consulting, LLC (NVEC)
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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. 2023. King County iMap. Online database. Accessed December 2023 at <https://gismaps.kingcounty.gov/iMap/>

Washington Department of Fish and Wildlife (WDFW). 2023. Priority Habitats and Species. Online database. Accessed December 2023 at <http://apps.wdfw.wa.gov/phsontheweb/>

WDFW. 2023. SalmonScape. Online database. Accessed December 2023 at <http://apps.wdfw.wa.gov/salmonscape/>

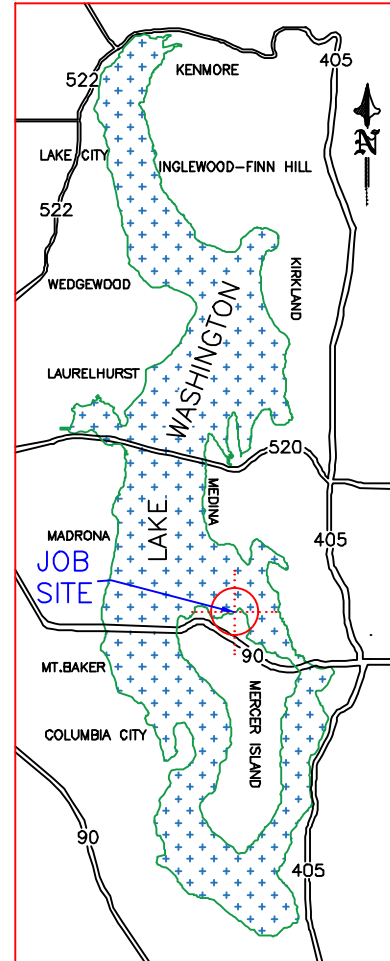
# **Appendix A: Project Drawings**

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VICINITY MAP/NO SCALE



AREA MAP/NO SCALE



LEGAL DESCRIPTION

SECTION: SE-01-24-04 LAT: 47.594030 (47° 35' 38.508" N)  
 TAXLOT #: 544930-0092 LONG: -122.229640 (122° 13' 46.704" W)

MERCER BEACH PARK PORTION OF LOTS 17 & 18 DAF: COMMENCING AT MOST SLY CORNER COMMON TO LOTS 17 & 18 TH WESTERLY ALONG SLY LINE OF SAID LOT 17 ALONG ARC OF CURVE TO LEFT WITH RADIUS OF 80 FT DISTANCE OF 14.02 FT TH N04-51-41W 75.99 FT TH N11-23-33W 170.68 FT TO POB TH S38-08-44W 77.69 FT TO POINT ON CURVE RADIAL CENTER OF WHICH BEARS S63-11-00E 120.00 FT TH SOUTHERLY ALONG ARC OF SAID CURVE TO LEFT 56.53 FT TO POINT OF TANGENCY TH S00-10-30E 58.52 FT TO POINT OF CURVATURE TH SOUTHERLY ALONG ARC OF CURVE TO LEFT HAVING RADIUS OF 100.00 FT DISTANCE OF 19.98 FT TH N89-43-00W 57.57 FT TO E LINE OF W 10 FT OF SAID LOT 17 TH N00-17-00W ALONG SAID E LINE 293 FT MORE OR LESS TO SHORELINE OF LAKE WASHINGTON TH EASTERLY ALONG SAID SHORELINE TO POINT FROM WHICH TPOB BEARS S11-23-33E TH S11-323-33E 141 FT MORE OR LESS TO POB; TGW PORTION OF LOT 18 DAF: COMMENCING AT MOST SLY CORNER COMMON TO LOTS 17 & 18 TH WESTERLY ALONG SLY LINE OF SAID LOT 17 ALONG ARC OF CURVE TO LEFT WITH RADIUS OF 80 FT DISTANCE OF 14.02 FT TH N04-51-41W 75.99 FT TH N11-23-33W 133.82 FT TO POB TH N39-00-00E 29.34 FT TH N70-00-00E 78.00 FT TH N20-00-00W 55 FT TH N02-45-00W 106.00 FT MORE OR LESS TO SHORE LINE OF LAK WASHINGTON TH WESTERLY ALONG SAID SHORE LINE TO POINT WHICH BEARS N11-23-33W OF POB TH S11-23-33E 177.66 FT MORE OR LESS TO POB; TGW SECOND CLASS SHORE LANDS IN FRONT OF, ADJACENT TO OR ABUTTING THEREON (PER CITY OF MERCER ISLAND LOT CONSOLIDATION NO SUB 15-006 RECORDING NO 20170419900004)

PROJECT DESIGNED BY:

Waterfront Construction Inc.

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REVISED  
08/09/2023

PER GEO-TECH  
FEEDBACK 08/09/2023.

ADJACENT OWNERS:

- ① ROBIN PHILLIPS  
2003 82ND AVE SE  
MERCER ISLAND, WA 98040
- ② YANG IRREVOCABLE TRUST  
1950 82ND AVE SE  
MERCER ISLAND, WA 98040

APPLICATION#:

PROPOSED: EAST PIER DREDGING  
 PURPOSE: REMOVAL OF SEDIMENTS TO PRESERVE WILDLIFE & THE ECOSYSTEM  
 DATUM: C.O.E. MLLW=0.0'  
 DWG#: 23-35018-A2-1

APPLICANT: KEN & ROBIN PHILLIPS

SITE ADD. 1945 82ND AVE SE  
MERCER ISLAND, WA 98040

MAIL ADD. (SAME AS ABOVE)

PAGE: 1 OF: 5 DATE: 07/11/2023





**NOTE:**  
ALL ADJACENT PIERS TO  
REMAIN UNALTERED.

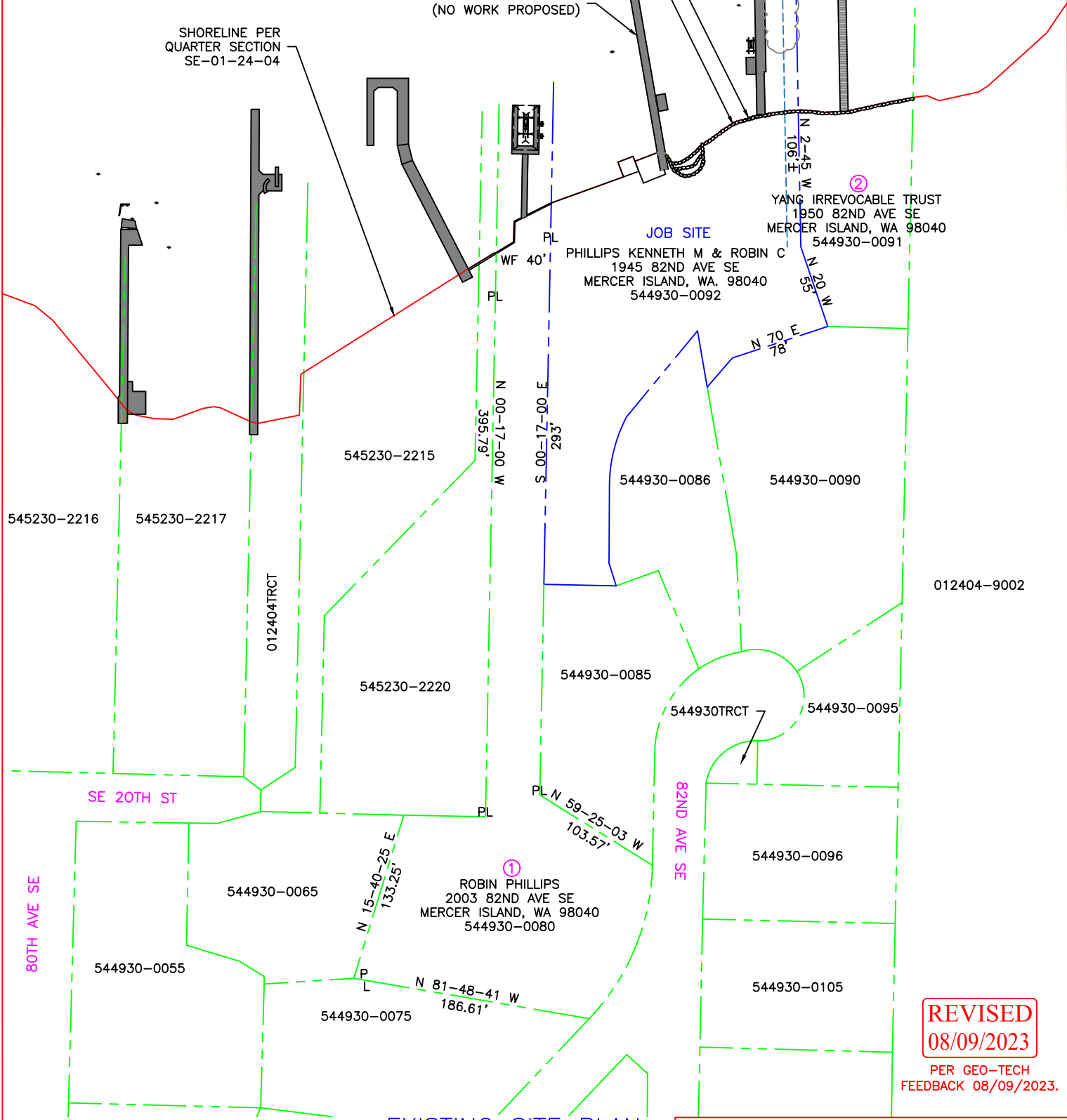
LAKE WASHINGTON

EAST PIER TO REMAIN  
(NO WORK PROPOSED)  
OHWL = 21.85'  
⊙ ROCK BULKHEAD  
ROCK BULKHEAD TO REMAIN  
(NO WORK PROPOSED)  
WEST PIER TO REMAIN  
(NO WORK PROPOSED)  
PROPOSED AREA  
TO BE DREDGED  
10' SETBACK

SHORELINE PER  
QUARTER SECTION  
SE-01-24-04

**JOB SITE**  
PHILLIPS KENNETH M & ROBIN C  
1945 82ND AVE SE  
MERCER ISLAND, WA. 98040  
544930-0092

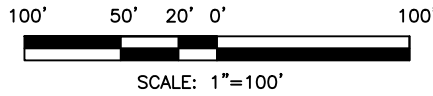
②  
YANG IRREVOCABLE TRUST  
1950 82ND AVE SE  
MERCER ISLAND, WA 98040  
544930-0091



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08/09/2023

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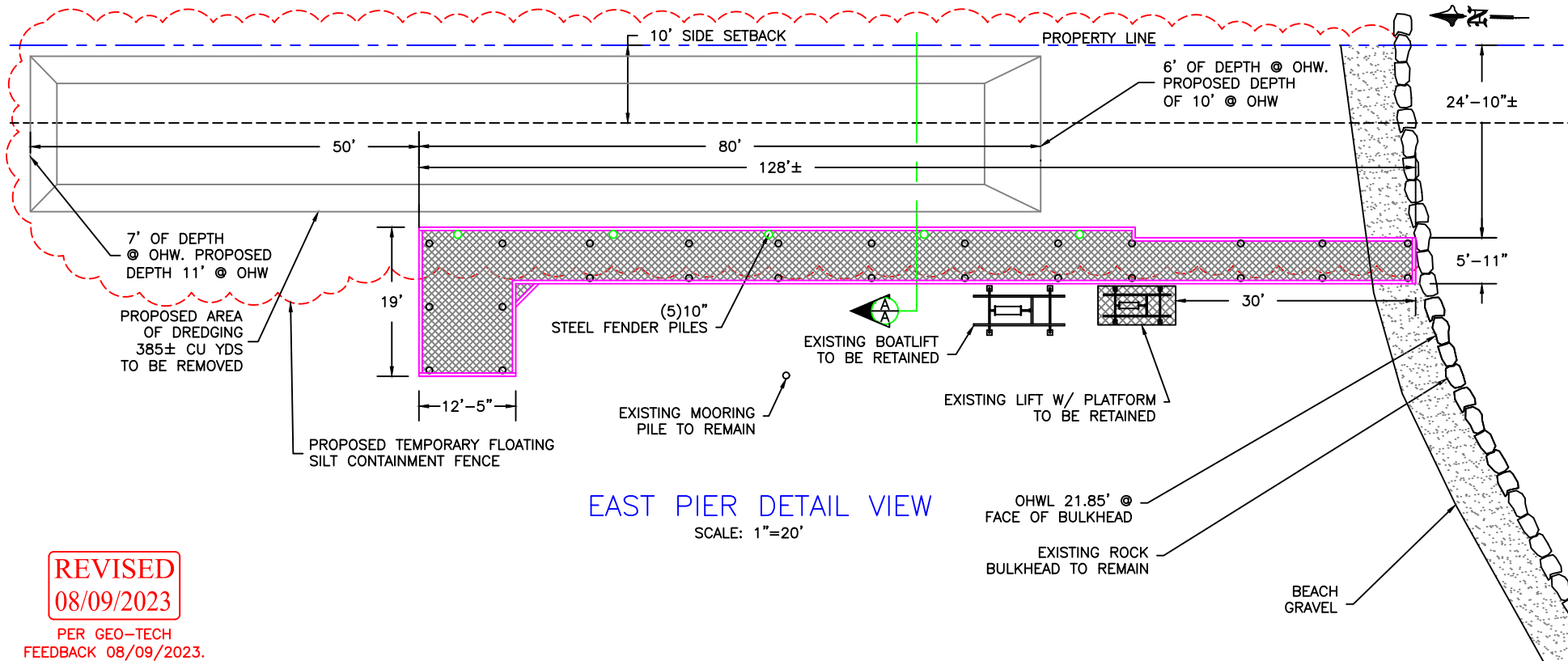
EXISTING SITE PLAN



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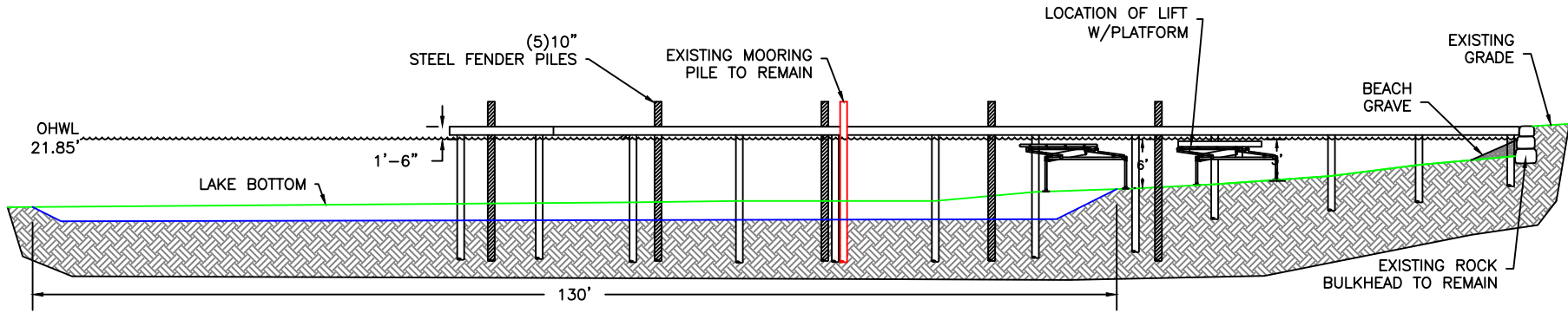
REFERENCE #:	
APPLICANT: KEN & ROBIN PHILLIPS	
PROPOSED: EAST PIER DREDGING	
SHEET: 2 OF: 5	NEAR/AT: LAKE WASHINGTON
DATE: 07/11/2023	DWG#: 23-35018-A2-2



**EAST PIER DETAIL VIEW**  
SCALE: 1"=20'

**REVISED**  
**08/09/2023**

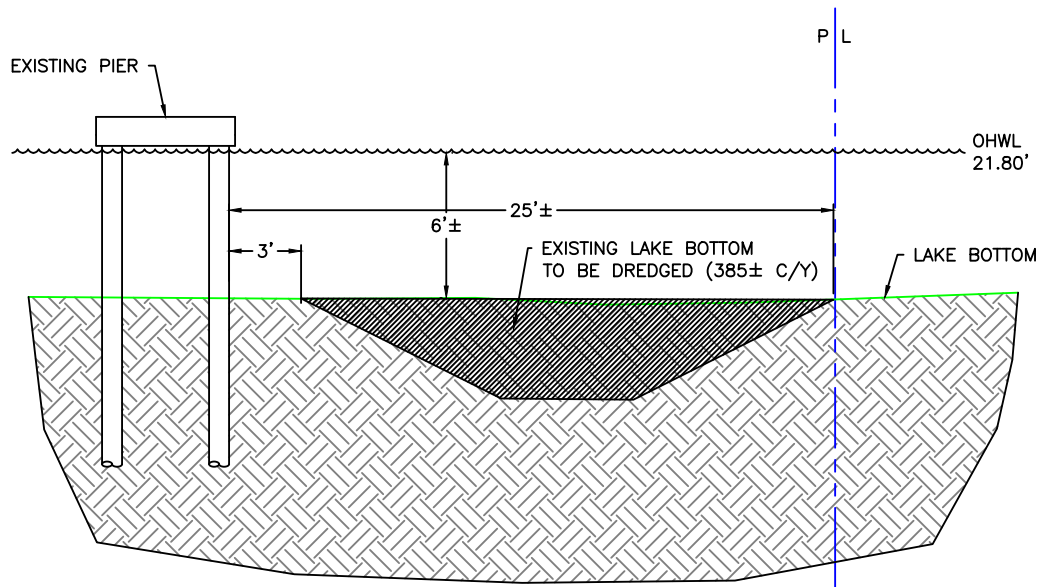
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**PROPOSED ELEVATION VIEW**  
SCALE: 1"=20'

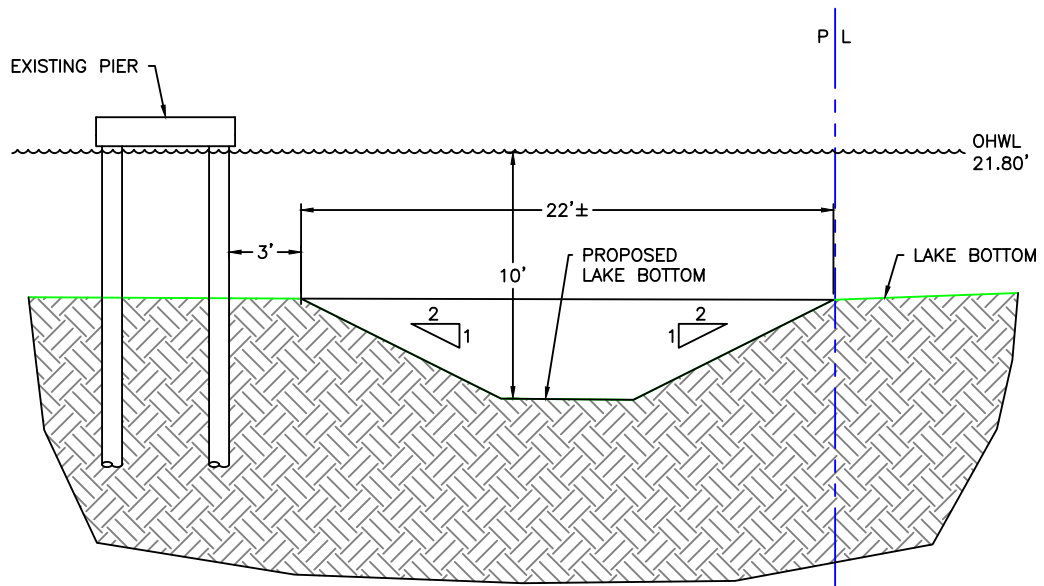
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REFERENCE #:	
APPLICANT:	KEN & ROBIN PHILLIPS
PROPOSED:	EAST PIER DREDGING
SHEET:	3 OF 5
NEAR/AT:	LAKE WASHINGTON
DATE:	07/11/2023
DWG#:	23-35018-A2-3

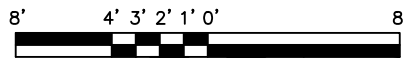


EXISTING SECTION A-A

SCALE: 1/8"=1'



PROPOSED SECTION A-A



SCALE: 1/8"=1'

**REVISED**

**08/09/2023**

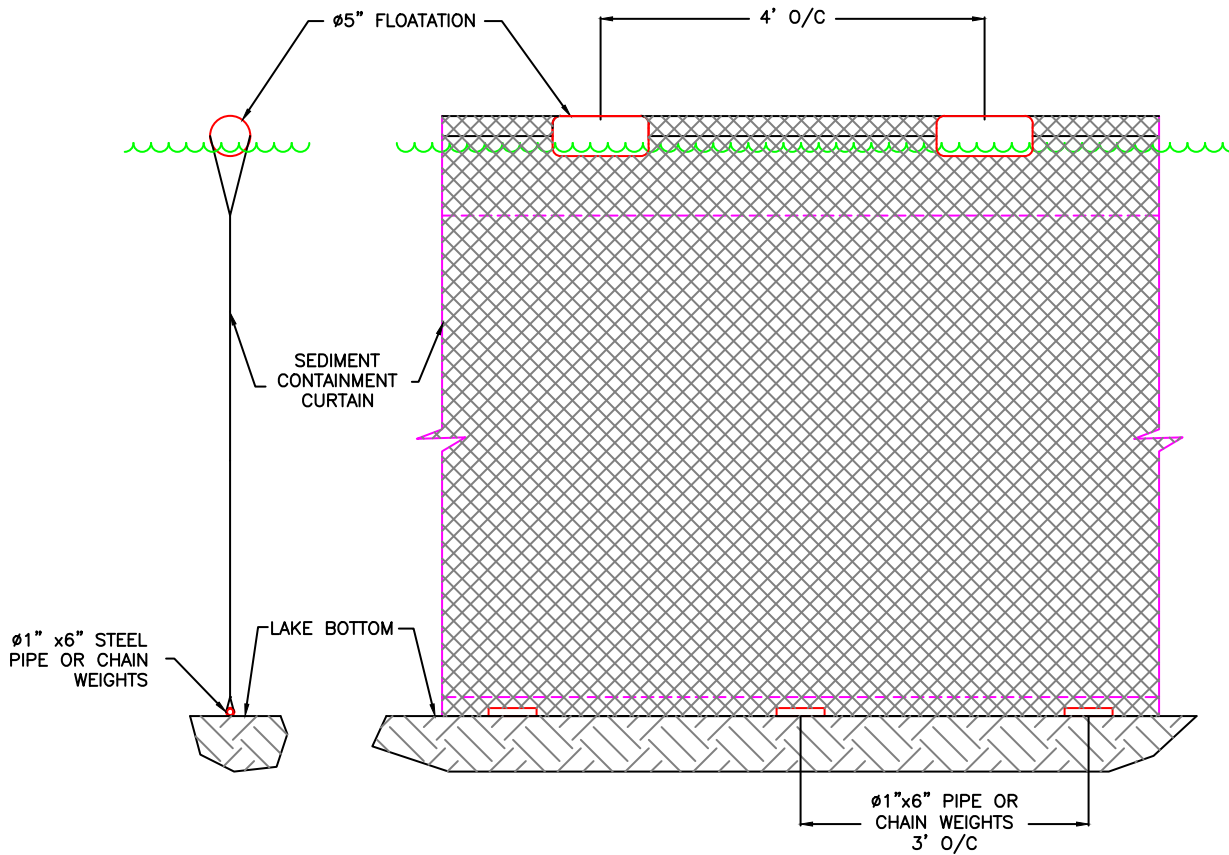
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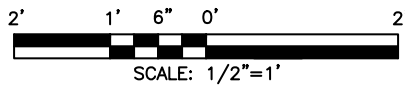
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PROPOSED: EAST PIER DREDGING	
SHEET: 4 OF 5	NEAR/AT: LAKE WASHINGTON
DATE: 07/11/2023	DWG#: 23-35018-A2-4



TEMP. FLOATING SILT CONTAINMENT FENCE



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PROPOSED: EAST PIER DREDGING	
SHEET: 5 OF: 5	NEAR/AT: LAKE WASHINGTON
DATE: 07/11/2023	DWG#: 23-35018-A2-5

## **Appendix B: Site Photographs**

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Photo 1 - Existing conditions looking waterward.



Photo 2 - Existing conditions looking landward.



Photo 3 - Shoreline conditions east of the dock.



Photo 4 - Shoreline conditions west of the dock.



Photo 5 - Existing conditions east of the site.



Photo 6 - Existing conditions west of the site.