

# **Ecological No Net Loss Assessment Report**

Prepared for

**Mason Helms  
7234 West Ridge Road  
Mercer Island, WA 98040**

Prepared by

 **Northwest**  
Environmental Consulting, LLC

Northwest Environmental Consulting, LLC  
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Seattle, WA 98103  
206-234-2520

**March 2023**

## Purpose

The purpose of this report is to fulfill the requirements of City of Mercer Island Municipal Code (MICC) 19.13 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 retaining wall and landscaping work along the shoreline.

## Location

The subject property is located at 7234 West Ridge Road (King County parcel number 2524049152) 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 project consists of removing the existing 51-lineal-foot 4 to 8-foot tall rock retaining wall. The new retaining wall will be set back 13 feet from the existing footprint and a new 63-lineal-foot 8 to 12-foot tall rock retaining wall will be constructed to create a single terrace. The extra dirt will be removed by moving it onto the barge to be disposed at a licensed upland facility. No work will occur to the existing bulkhead or dock. See sheets A2.0 to A6.0.

During construction, a floating boom with a silt curtain will be used to prevent turbid water from leaving the site. All disturbed areas will be stabilized and planted with lawn. Existing vegetation planted in beds will be salvaged and replanted or replaced. See sheet A7.0 for a list of BMPs and Sheet A8.0 and A9.0 for proposed planting.

Project drawings are included in Attachment A.

## Approach

Northwest Environmental Consulting LLC (NVEC) biologist Brad Thiele conducted a site visit on March 10, 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 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 in a residential neighborhood. 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 house and a dock. The waterfront is down a steep incline from the house to the shoreline area.

The shoreline is armored with a rock bulkhead with a cove and beach. A set of terraces are present above the OHWM of the lake. Vegetation is lawn with beds along the existing rock retaining walls. The slope area is planted with English ivy and trees.

The neighboring shorelines are landscaped with bulkheads and docks and are similar in use. 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.

Priority Habitats and Species mapping, maps wetlands about 2,300 feet to the northeast as the closest feature to the site. Other than the aquatic species mentioned above, the PHS mapping does not indicate any terrestrial priority species as occurring at the site.

The City of Mercer Island GIS Portal does not indicate any watercourses or other habitat features are present or within 300 feet of the site besides Lake Washington.

## Project Impacts and Conservation Measurements

### **Direct Impacts:**

**Sediments:** Negligible disturbance may occur to the lake bottom during installation of the silt curtain.

**Shoreline:** Disturbances to the shoreline will be temporary from construction and all disturbed soils will be stabilized after construction. The work will result in a similar shoreline as the existing landscaping that currently exists. The cove and existing bulkhead will remain the same with no change. The disturbed areas will be planted with lawn or planting beds with ornamental shrubs. The proposed planting plan is included (see Appendix sheet 8.0 and 9.0).

**Lakebed:** No changes in lakebed coverage will result.

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

***Other Conservation measures:***

**Best Management Practices:** Applicable BMPs will be used, such as a floating boom and silt curtain around the in-water work area. The silt curtain will contain any floating debris and potential turbidity 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.

To reduce impacts and potential erosion to the hazardous slope, a barge will be used to transport the excavator to the shoreline. All removed dirt will be placed on the barge using the excavator and disposed of at a licensed upland facility.

## **Conclusion**

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

There will be temporary impacts from noise during construction. No change to overwater coverage or the bulkhead is proposed.

The project will minimize construction effects on the environment by using applicable BMPs to prevent construction spills and floating debris from escaping the area. A floating silt boom will prevent runoff from entering the lake during construction. No access will be created to get materials down the slope. All equipment and material ingress and egress will be done via a barge and ramp to shore, no clearing or access will be done along the hazardous slope.

All disturbance will be stabilized and the planting beds will be planted with ornamental woody vegetation.

This project has been designed to meet current construction standards and will use Best Management Practices to minimize project impacts. The BMPs are designed to prevent further degradation of habitat. All disturbed areas will be replanted in a similar fashion to the existing conditions and **will result in No Net Loss of ecological functions** at the site.

## Document Preparers

Brad Thiele

Biologist

29 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

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King County. 2023. King County iMap. Online database. Accessed March 2023 at <https://gismaps.kingcounty.gov/iMap/>

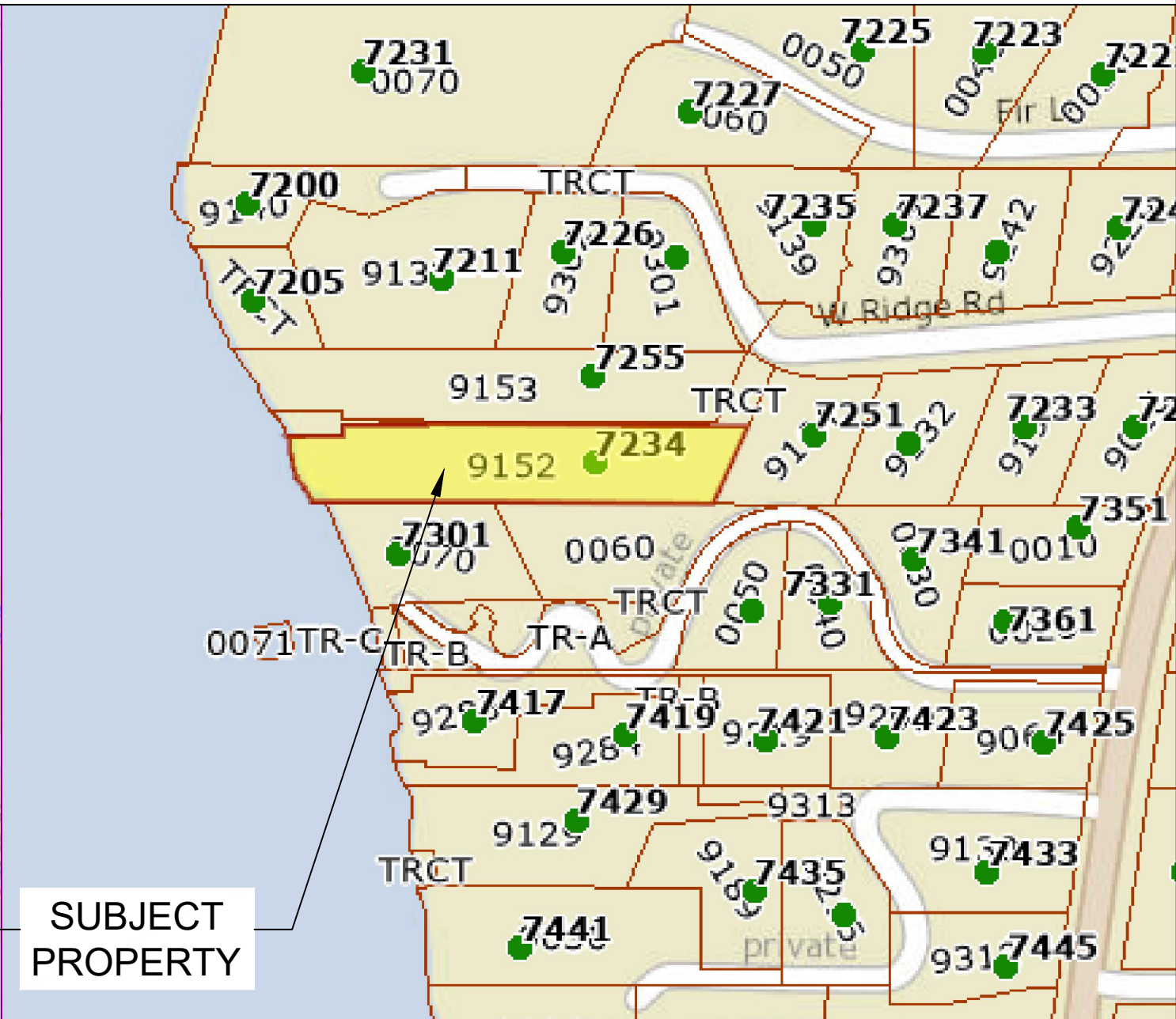
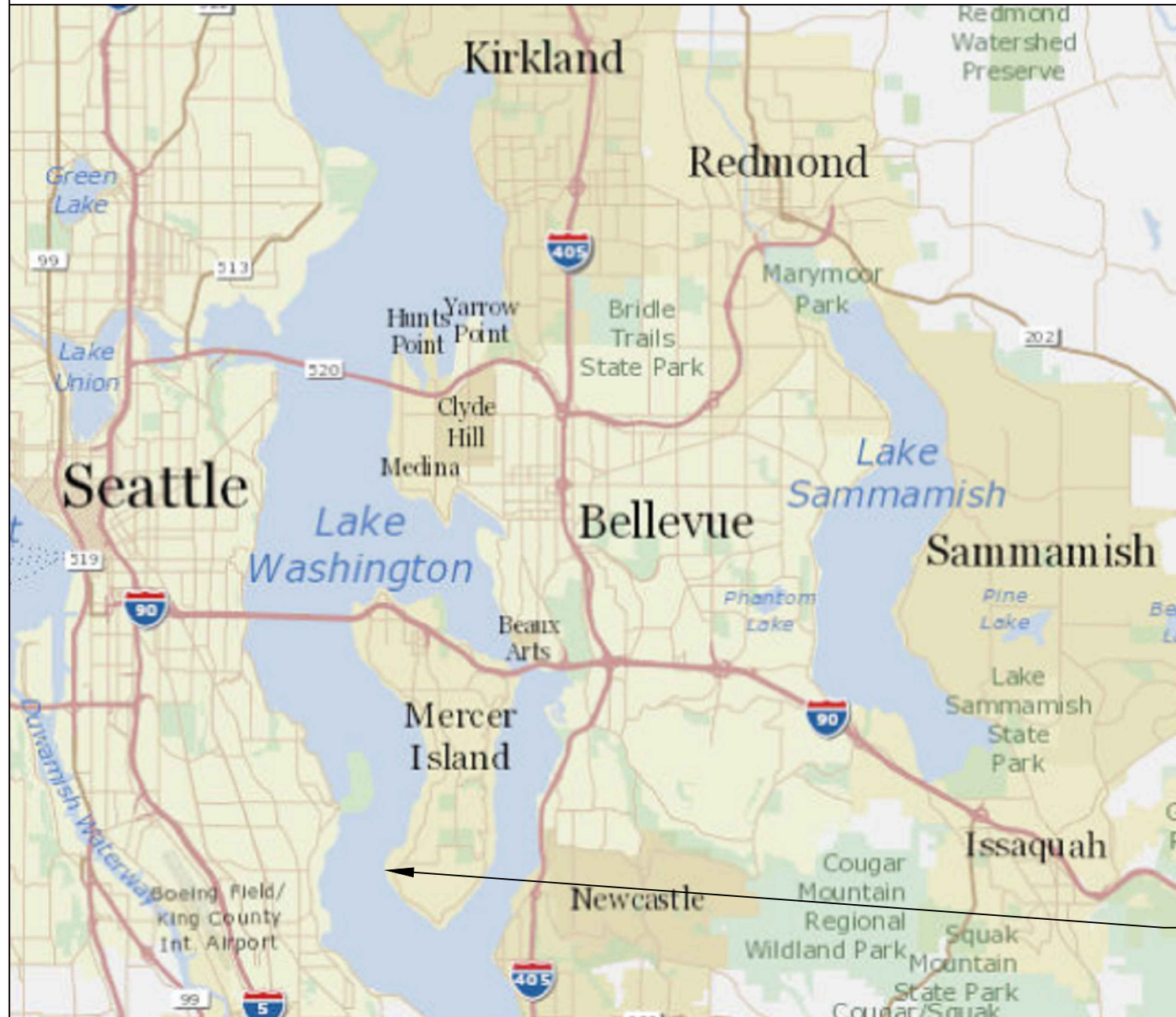
Washington Department of Fish and Wildlife (WDFW). 2023. Priority Habitats and Species. Online database. Accessed March 2023 at <http://apps.wdfw.wa.gov/phsontheweb/>

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

# **Appendix A: Project Drawings**

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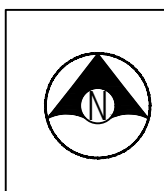
# SITE PLAN



**SUBJECT  
PROPERTY**

Pin: 252404-9152  
 Legal Description: BEG AT PT ON W MGN OF W MERCER WAY 668.5 FT S OF N LN OF GL 4 TH N 88-41-04 W 430 FT TO POB TH N 25-15-51 E 80.42 FT TH N 88-41-04 W 312.61 FT TH S 01-18-56 W 1 FT TH N 88-41-04 W 84.38 FT TH S 01-18-56 W 12.5 FT TH N 88-41-04 W TO SH OF LAKE WASH TH SLY ALG SH LN TO PT N 88-41-04 W OF POB TH S 88-41-04 E TO POB TGW 2ND CL SH LDS ADJ TGW 1/6 INT IN COMMUNITY BEACH VOL 3615 PG 501

Plat Block:  
 Plat Lot:  
 PARCEL  
 LAT: 47.53676  
 LONG: -122.24298  
 DOCK  
 LAT: 47.536673  
 LONG: -122.243793



Seaborn Pile Driving  
 1080 W Ewing St  
 Seattle, WA 98119  
 Office: 206-236-1700 ext. 3  
 www.seabornpiledriving.com

Scope of Work: We propose to remove 51 lft of retaining wall, and install 63 lft of retaining wall setback from shoreline.

County: King County  
 Location: Lake Washington  
 Applicant: Helms Residence  
 7234 W Ridge Rd  
 Mercer Island, WA 98040  
 Datum: CORPS OF ENGINEERS 1919  
 SW Quarter Of Section 25, Township 24, Range 04  
 Adjacent Owners:  
 HARRINGTON DOLORES C-QPRT  
 7301 W MERCER WAY 98040  
 NEIGHBORING PROPERTY  
 7205 W RIDGE RD, 98040  
 Created: 09-23-22  
 Last Updated: 3/3/2023 12:26 PM Zion  
**SHEET  
1.0**  
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# GENERAL NOTES:

MATERIALS SPEC LIST:

**Boat Lifts:** Aluminum

- \* SL10014ARW - 146" x 191"
- \* SL8012ARW - 146" x 167"

**Sewer:**

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

CODE REFERENCES: Mercer Island

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

**"Bulkheads and Shoreline Stabilization Structures." Per MIMC 19.13.050.B.**

1. An existing shoreline stabilization structure may be replaced with a similar structure if there is a demonstrated need to protect principal uses or structures from erosion caused by currents or waves, and the following conditions shall apply:

i. The replacement structure should be designed, located, sized, and constructed to assure no net loss of ecological functions. The Mercer Island City Code is current through Ordinance 20C-13, passed June 16, 2020.Ch. 19.13 Shoreline Master Program | Mercer Island City Code Page 15 of 34

**NNL report attached.**

ii. Replacement walls or bulkheads shall not encroach waterward of the ordinary high water mark or existing structure unless the primary structure was occupied prior to January 1, 1992, and there are overriding safety or environmental concerns. In such cases, the replacement structure shall abut the existing shoreline stabilization structure. Soft shoreline stabilization measures that provide restoration of shoreline ecological functions may be permitted waterward of the ordinary high water mark.

**Replacement bulkhead will not encroach waterward of OHWM.**

iii. For purposes of this section standards on shoreline stabilization measures, "replacement" means the construction of a new structure to perform a shoreline stabilization function of an existing structure which can no longer adequately serve its purpose. Additions to or increases in size of existing shoreline stabilization measures shall be considered new structures.

**Project proposes no additions or increase in size.**

iv. Construction and maintenance of normal protective bulkhead common to single-family dwellings requires only a shoreline exemption permit, unless a report is required by the code official to ensure compliance with the above conditions; however, if the construction of the bulkhead is undertaken wholly or in part on lands covered by water, such construction shall comply with SEPA mitigation.

**Project will not touch lands covered by water.**

Last permit issued for property: 1704-081 04/10/2017

Dock established/constructed: 04/22/1970

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NEIGHBORING PROPERTY  
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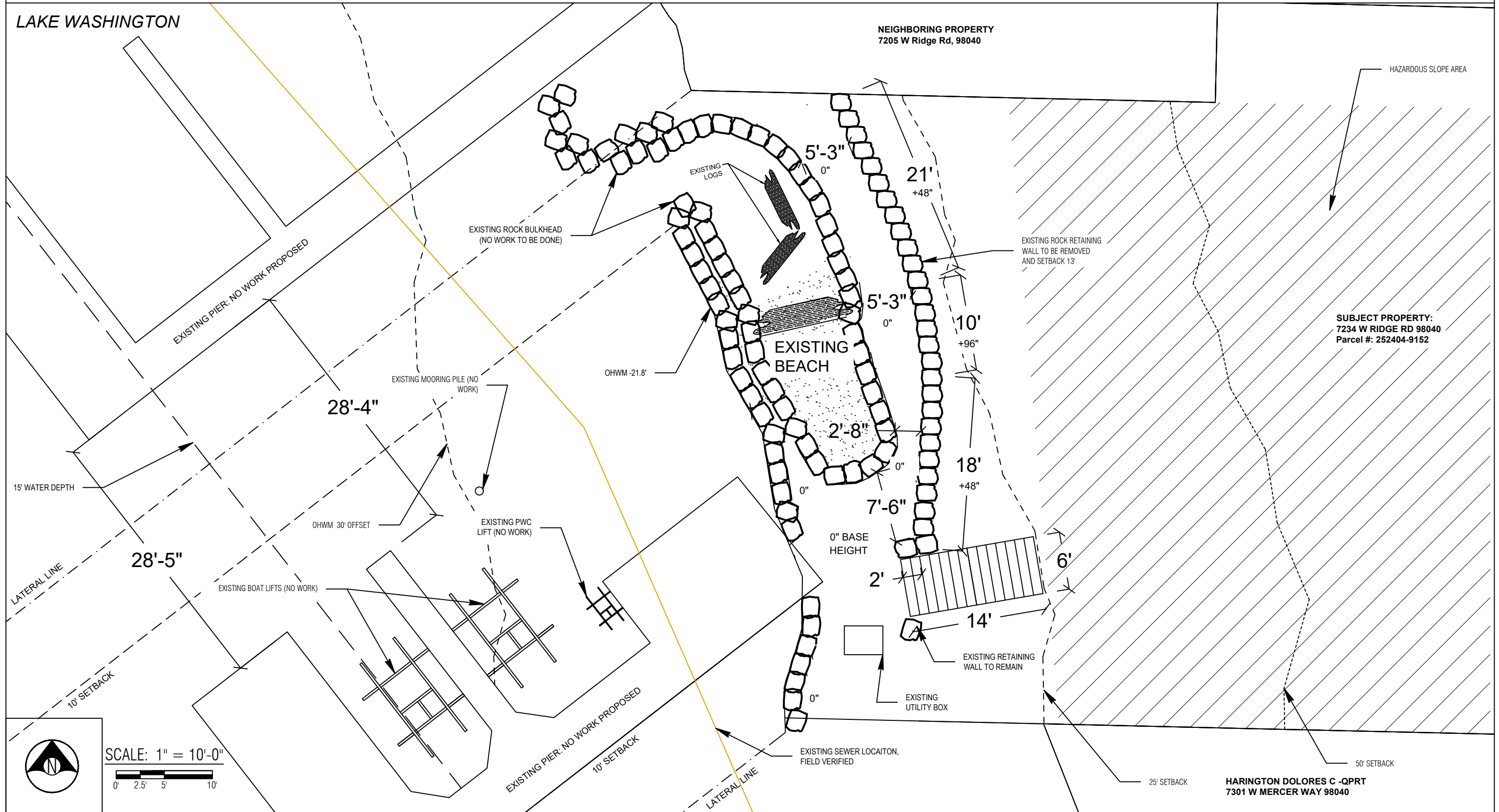
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Scope of Work: We propose to remove 51 lft of retaining wall, and install 63 lft of retaining wall setback from shoreline.

**SHEET  
2.0**

# EXISTING CONDITIONS

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



SCALE: 1" = 10'-0"  
0' 2.5' 5' 10'



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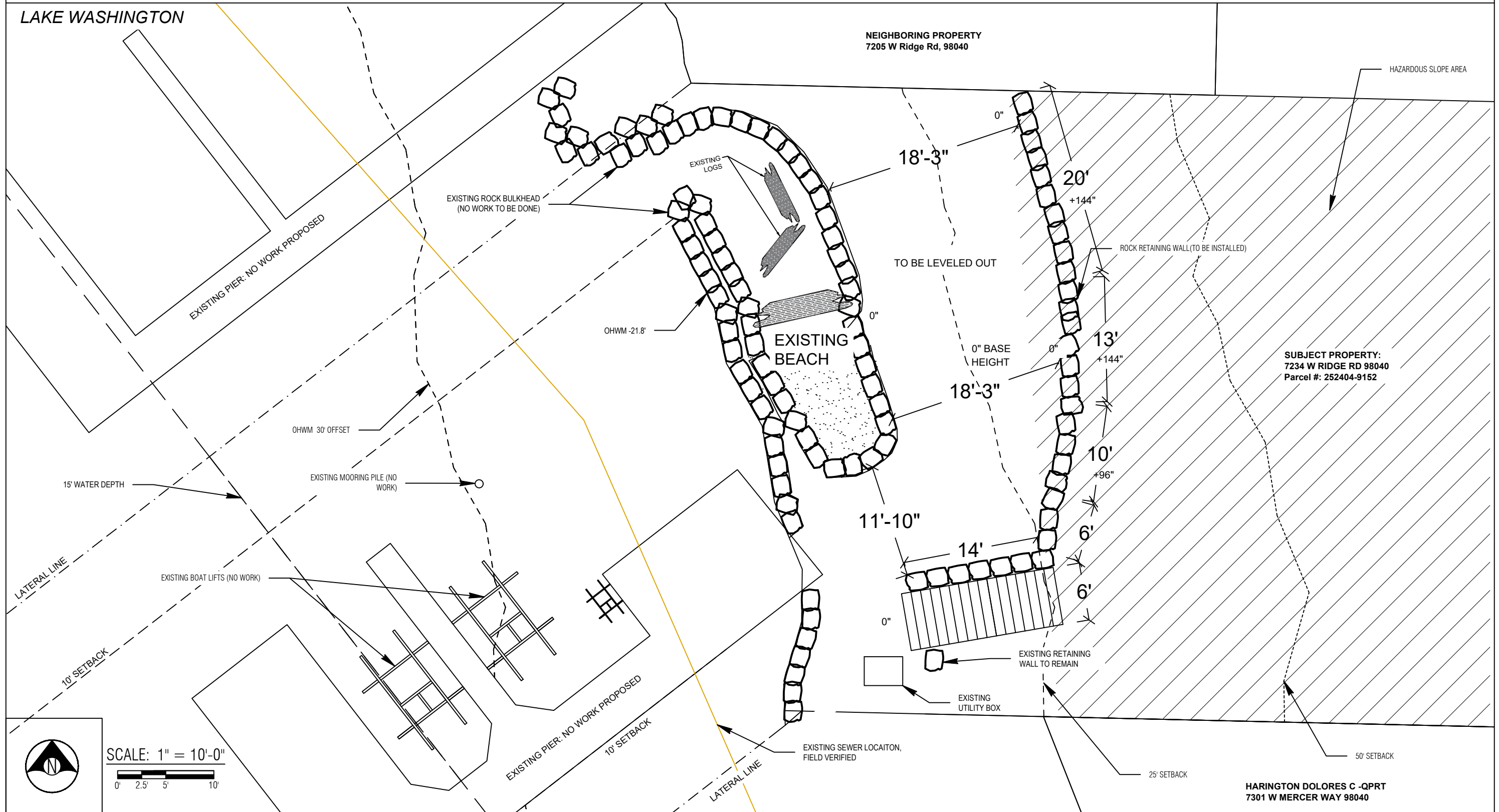
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# PROPOSED CONDITIONS

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



SCALE: 1" = 10'-0"  
0' 2.5' 5' 10'



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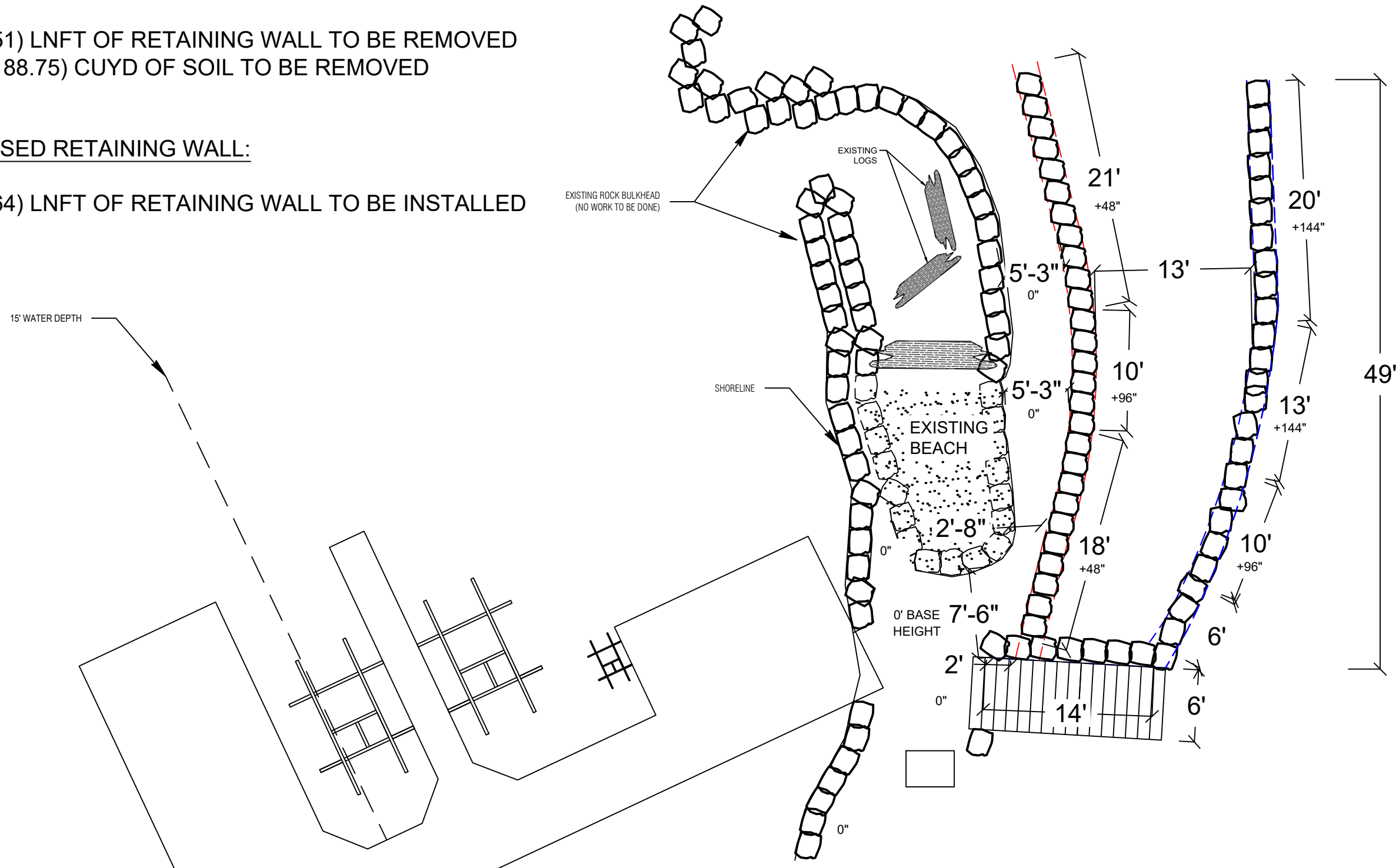
# PIER DETAILS - EXISTING/PROPOSED PLAN VIEW

**EXISTING RETAINING WALL:**

(51) LNFT OF RETAINING WALL TO BE REMOVED  
 (188.75) CUYD OF SOIL TO BE REMOVED

**PROPOSED RETAINING WALL:**

(64) LNFT OF RETAINING WALL TO BE INSTALLED



PLAN VIEW



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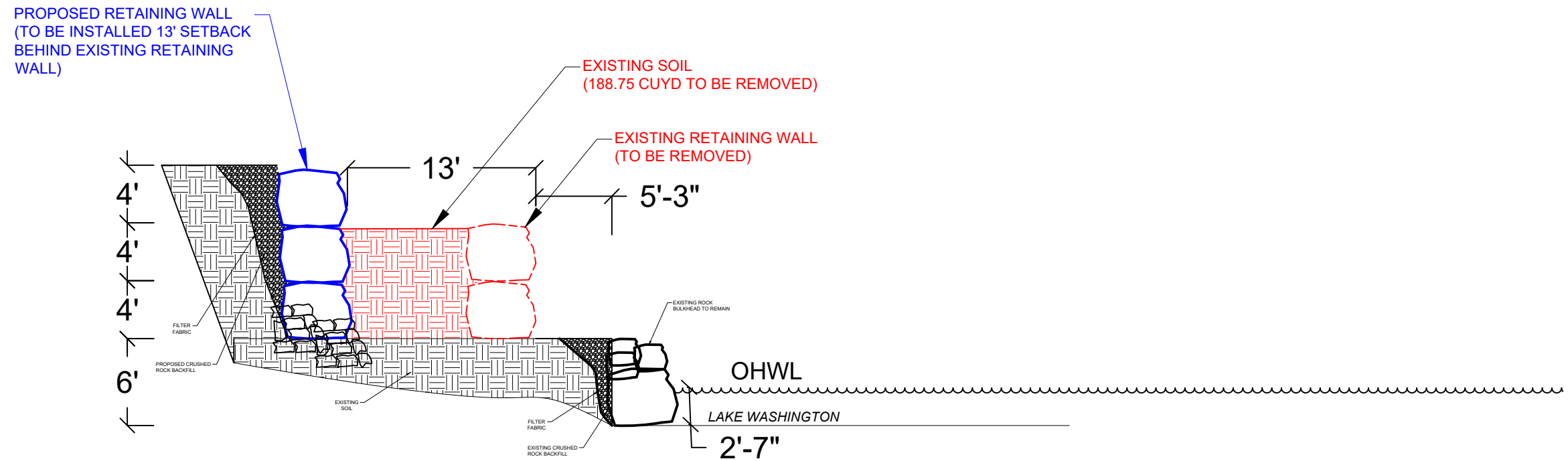
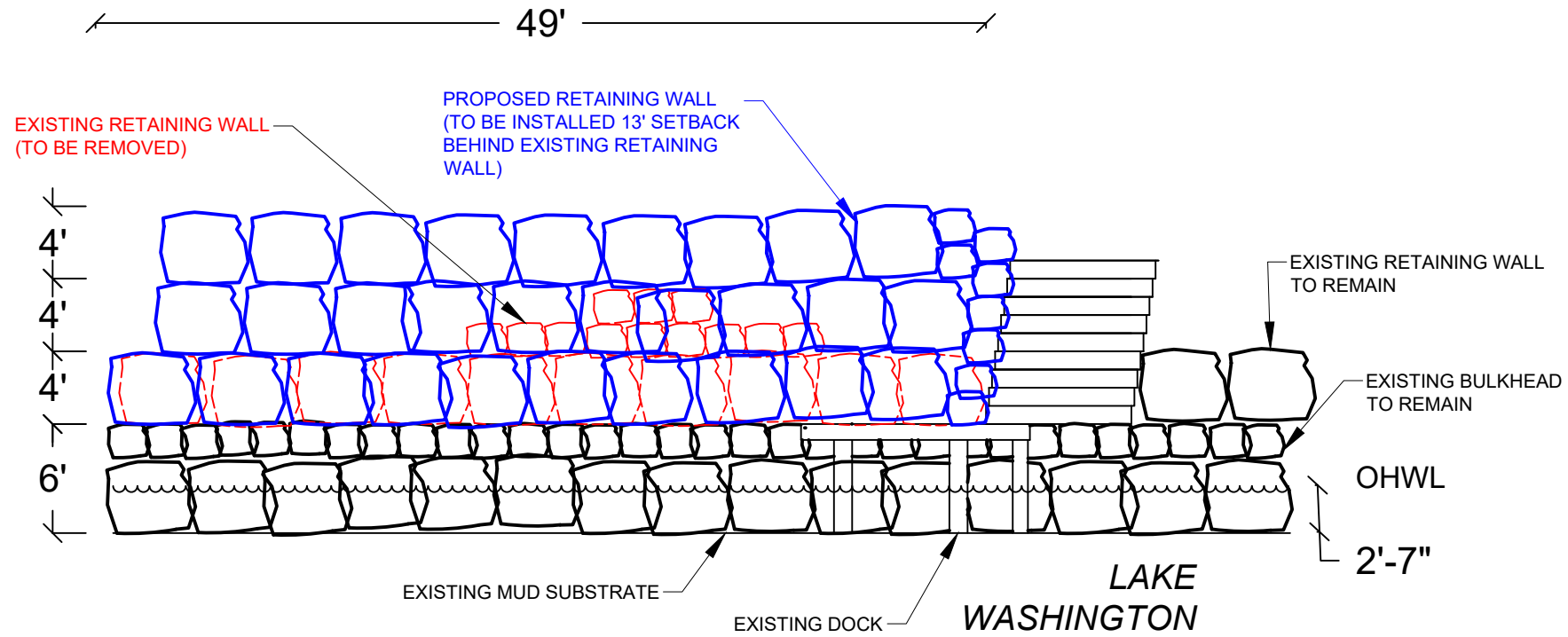
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# PIER DETAILS EXISTING/PROPOSED - SECTION VIEW

## LEGEND

BLUE: PROPOSED 63 LNFT OF 8' TO 12' HIGH RETAINING WALL

RED: REMOVAL OF 51 LNFT OF EXISTING 4' TO 8' HIGH RETAINING WALL



SECTION VIEW: A'-A'



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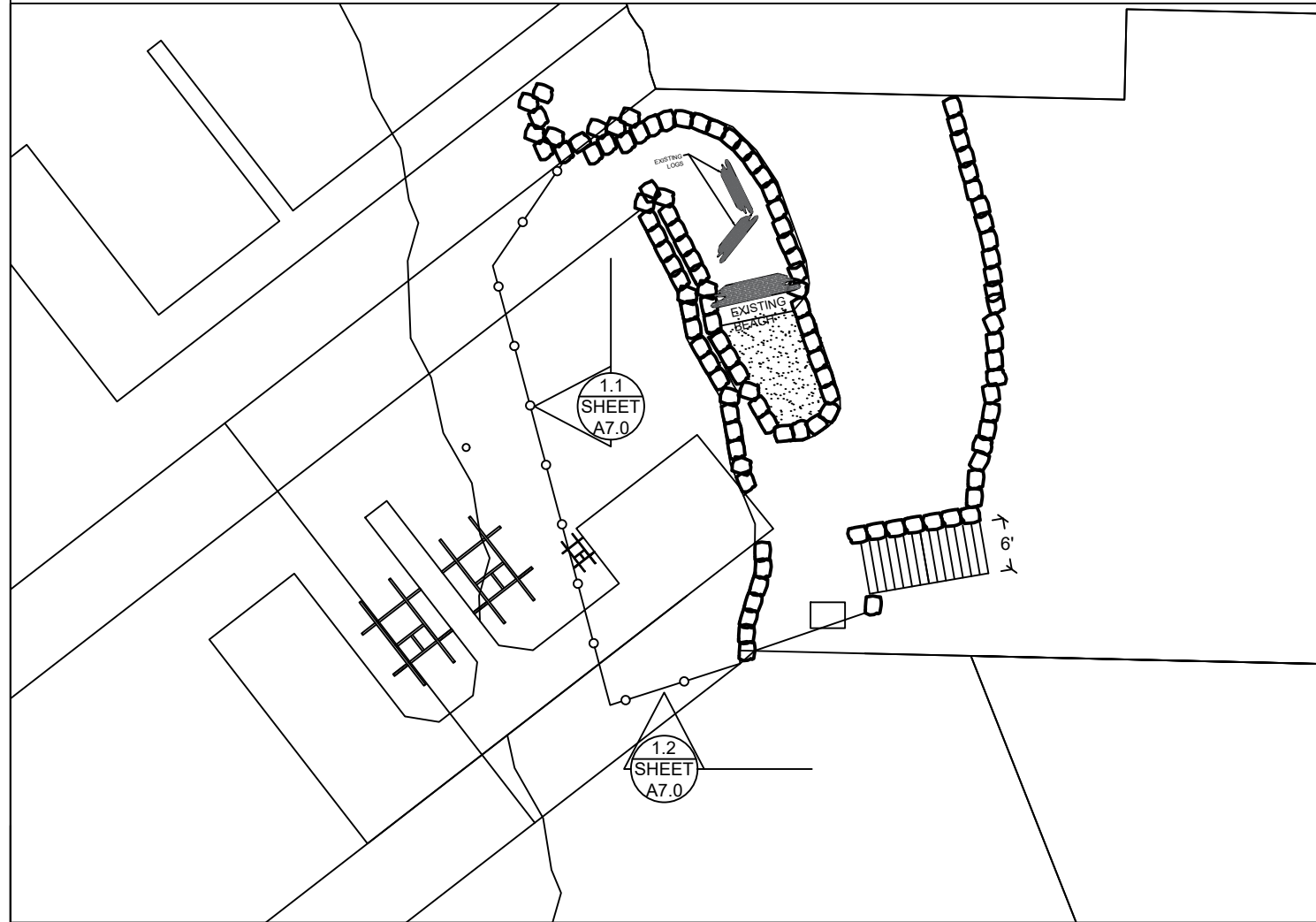
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# BMP INFORMATION

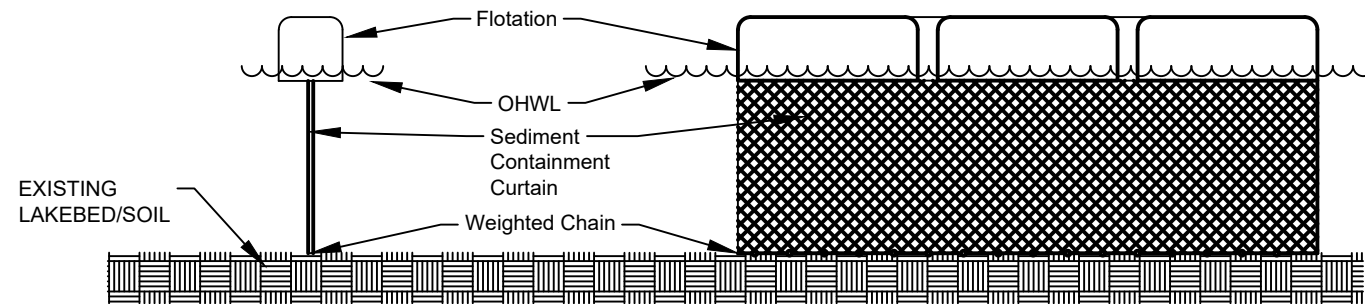


## BMP NOTES:

- 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 a cheminite treatment.

DETAIL 1.1

DETAIL 1.2



DETAIL 1.1 & 1.2



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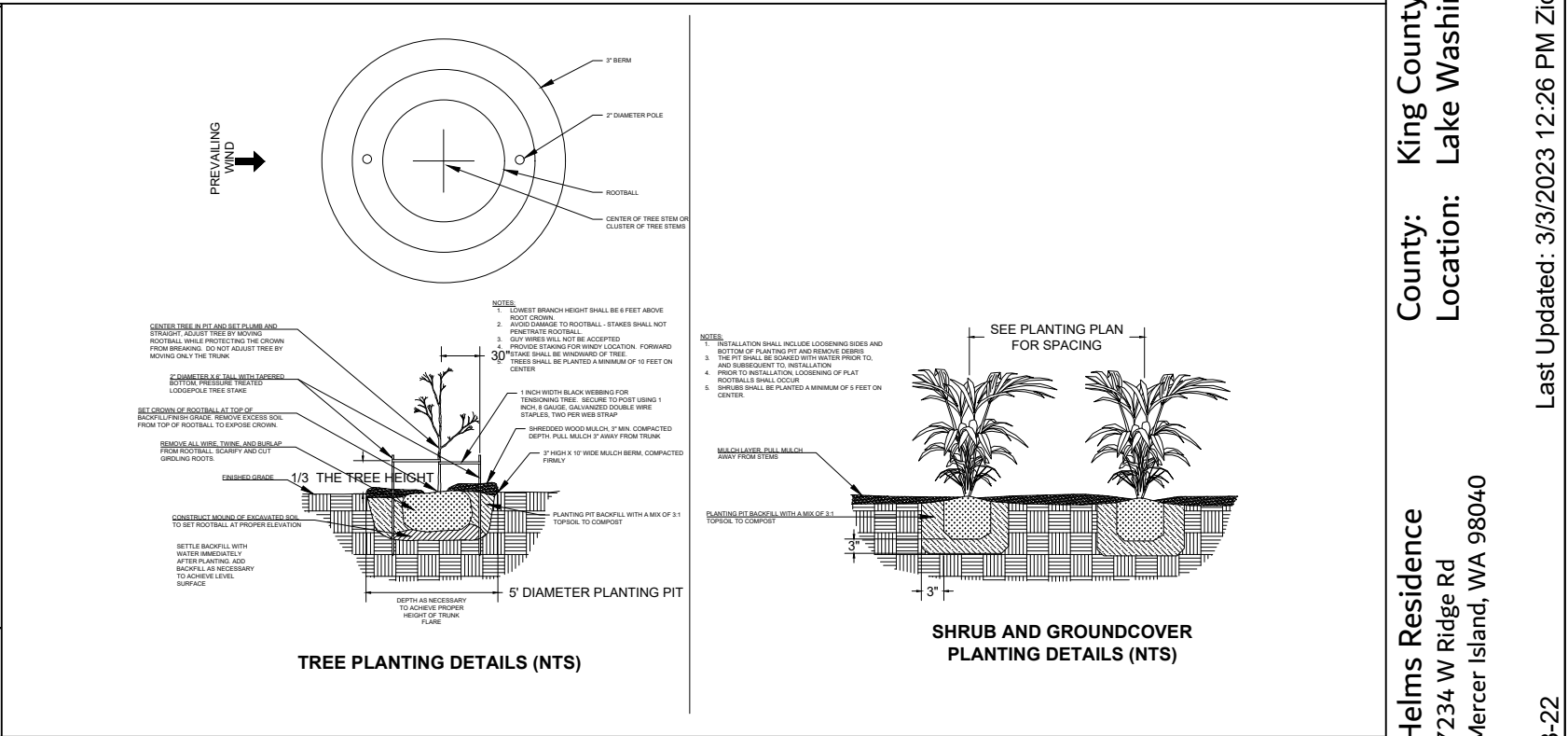
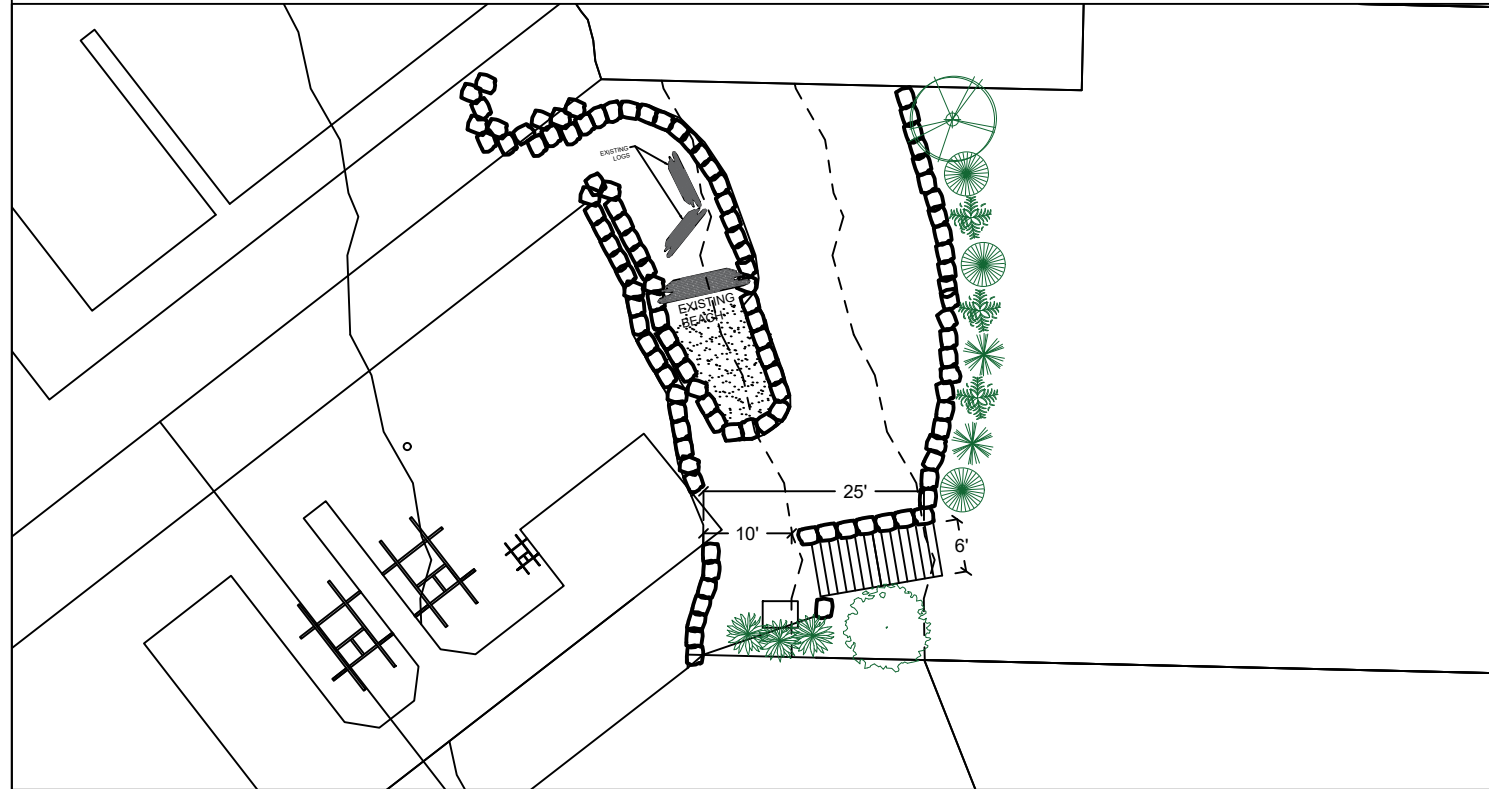
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# MITIGATION PLAN



**Notes:**

1. Shrubs are shown, and shall be planted, at least five feet on center. Trees are shown, 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.

Existing plans to be replanted behind the proposed retaining wall.

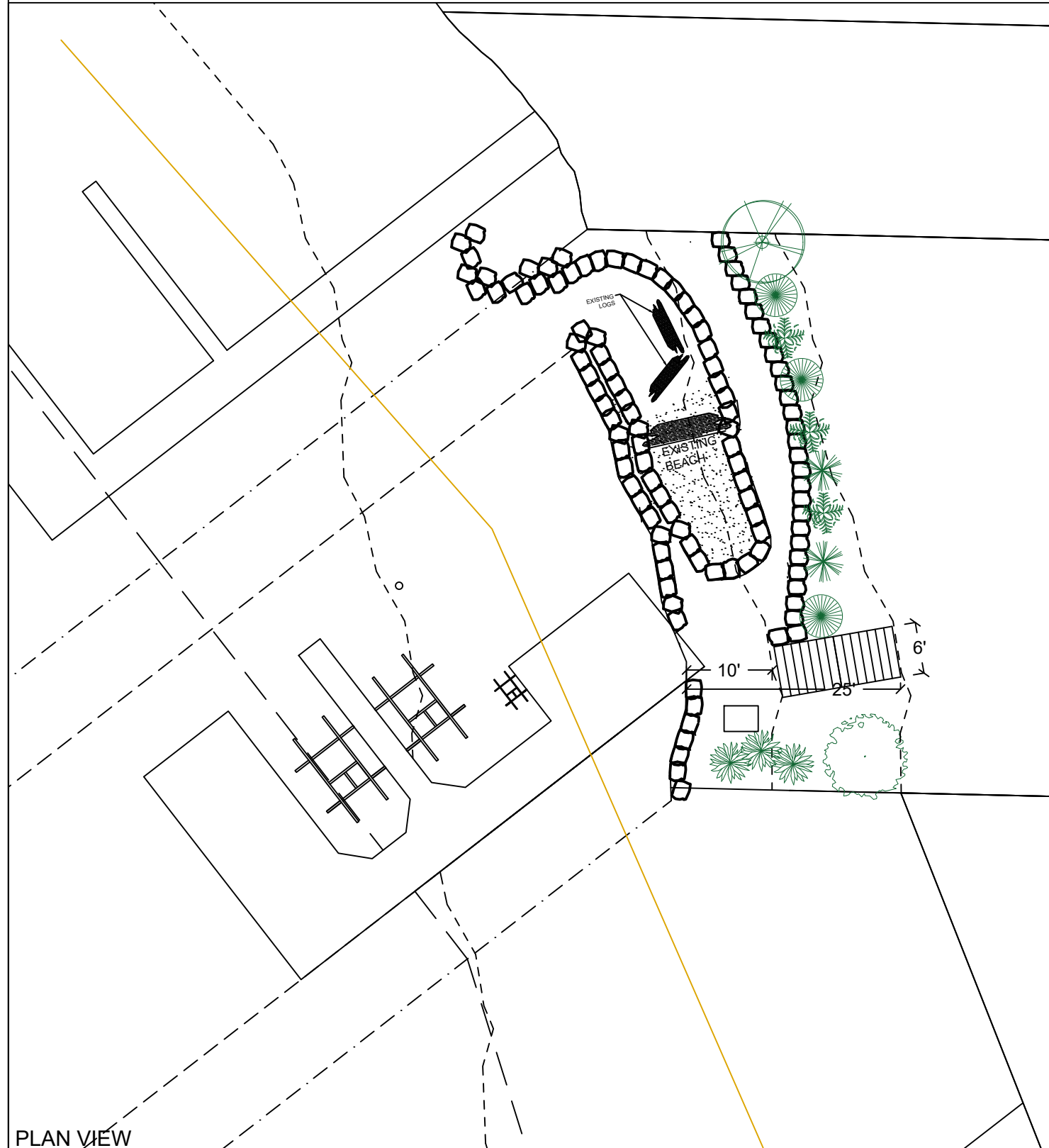


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# EXISTING PLANT PLAN



## EXISTING PLANTING SPECIES/QUANTITIES

SYMBOL	SCIENTIFIC NAME	COMMON NAME	QTY	SIZE
	Populus Alba	White Poplar	1	Large
	Picea Pungens	Blue Spruce	1	Large
	Weigela Florida	Weigela	3	~ 1ft
	Ligustrum Ovalifolium	California Privet	3	~1ft
	Glandora Diffusa	Purple Gromwell	2	~1ft
	Buxus Sempervirens	Common Boxwood	3	~4ftx2ftx1ft

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**SHEET 9.0**



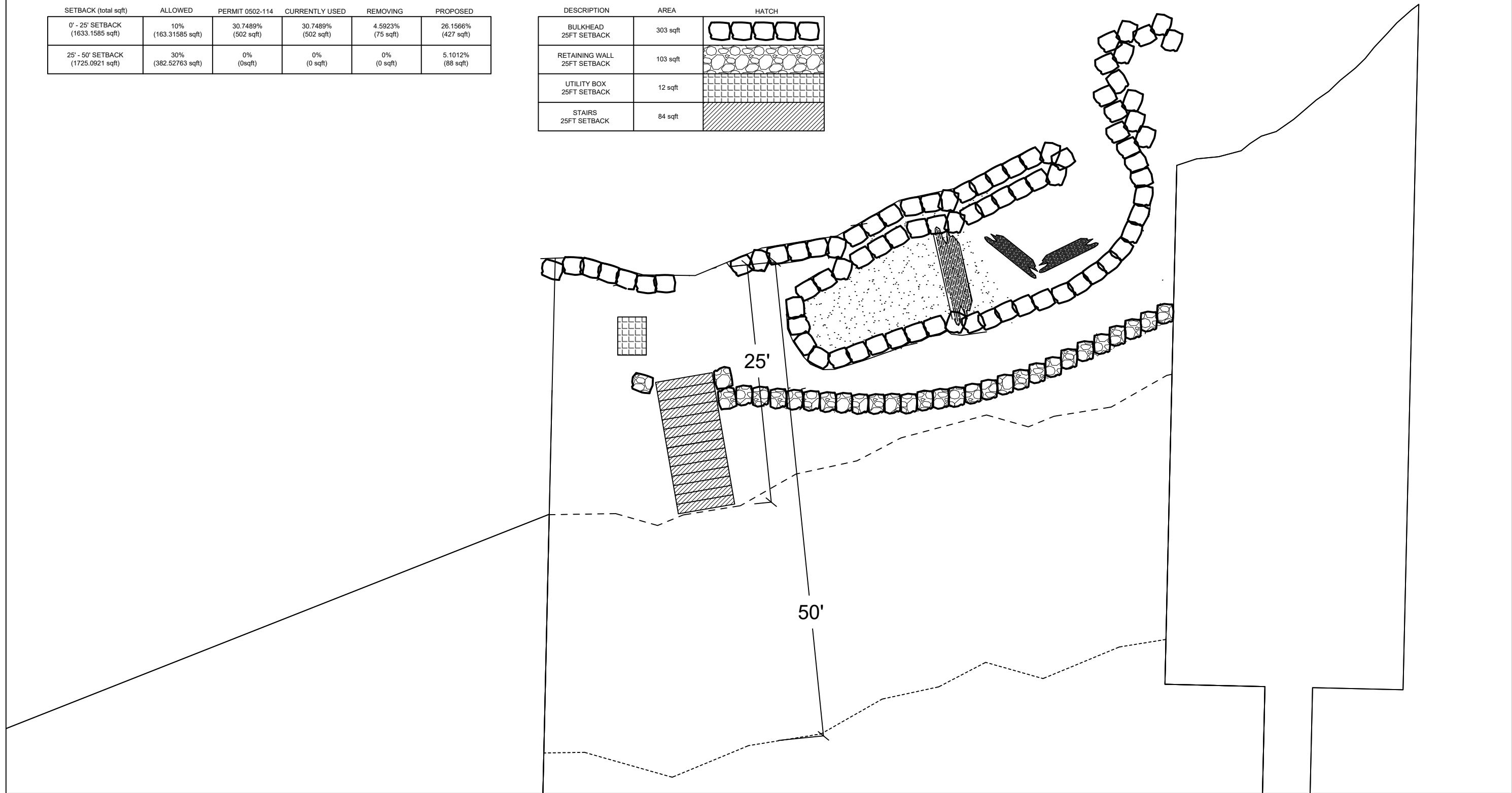
# EXISTING HARDSCAPE CALCULATION DRAWING

## Allowed Impervious Quantities

SETBACK (total sqft)	ALLOWED	PERMIT 0502-114	CURRENTLY USED	REMOVING	PROPOSED
0' - 25' SETBACK (1633.1585 sqft)	10% (163.31585 sqft)	30.7489% (502 sqft)	30.7489% (502 sqft)	4.5923% (75 sqft)	26.1566% (427 sqft)
25' - 50' SETBACK (1725.0921 sqft)	30% (382.52763 sqft)	0% (0sqft)	0% (0 sqft)	0% (0 sqft)	5.1012% (88 sqft)

## LEGEND

DESCRIPTION	AREA	HATCH
BULKHEAD 25FT SETBACK	303 sqft	
RETAINING WALL 25FT SETBACK	103 sqft	
UTILITY BOX 25FT SETBACK	12 sqft	
STAIRS 25FT SETBACK	84 sqft	



County: King County  
 Location: Lake Washington  
 Applicant: Helms Residence  
 7234 W Ridge Rd  
 Mercer Island, WA 98040  
 Datum: CORPS OF ENGINEERS 1919  
 SW Quarter Of Section 25, Township 24, Range 04  
 Adjacent Owners:  
 HARRINGTON DOLORES C.-QPR  
 7301 W MERCER WAY 98040  
 NEIGHBORING PROPERTY  
 7205 W RIDGE RD, 98040  
 Created: 09-23-22  
 Last Updated: 3/3/2023 12:26 PM Zion



Seaborn Pile Driving  
 1080 W Ewing St  
 Seattle, WA 98119  
 Office: 206-236-1700 ext. 3  
 www.seabornpiledriving.com

Scope of Work: We propose to remove 51 lft of retaining wall, and install 63 lft of retaining wall setback from shoreline.

**SHEET 10.0**

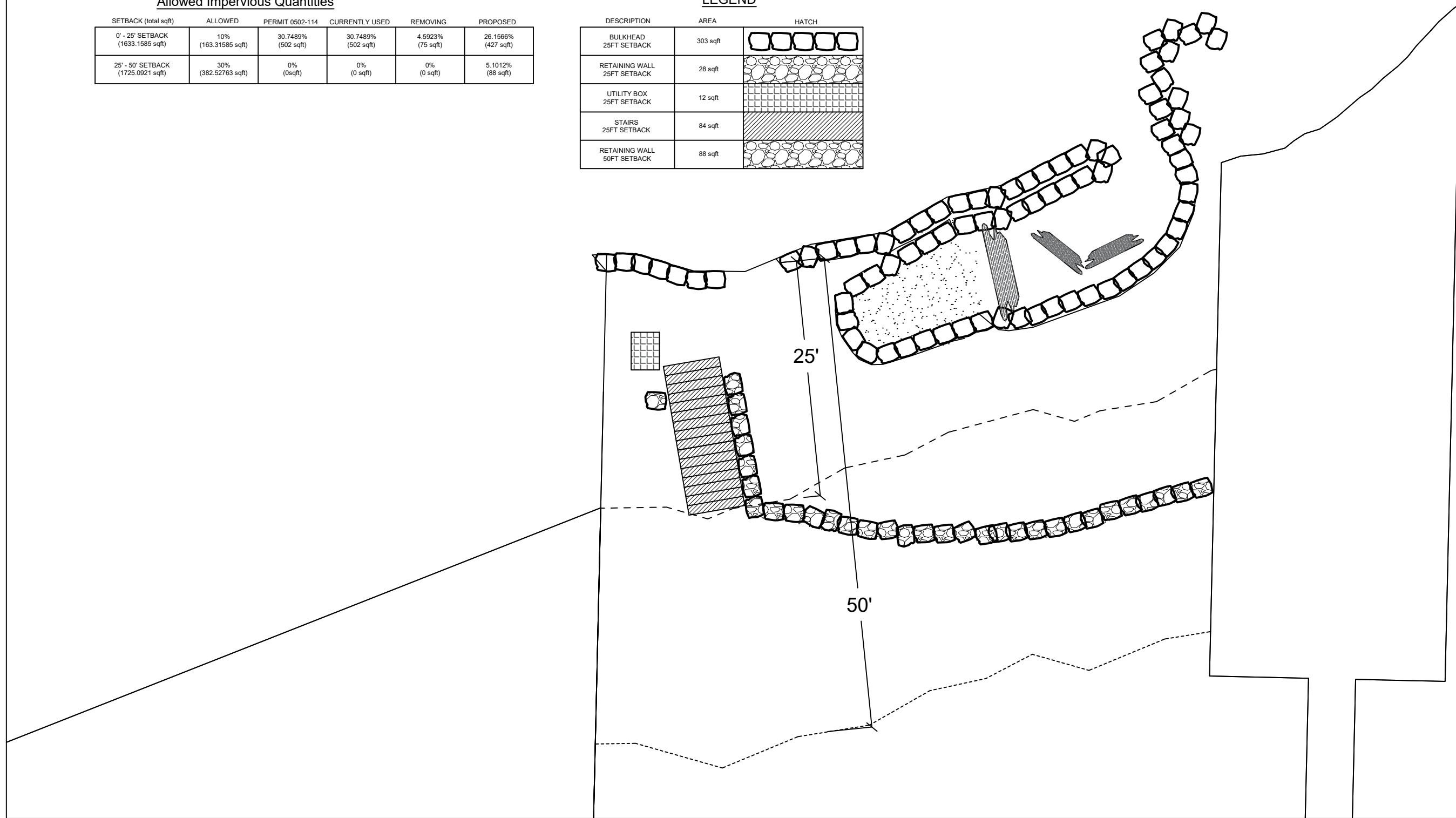
# PROPOSED HARDSCAPE CALCULATION DRAWING

## Allowed Impervious Quantities

SETBACK (total sqft)	ALLOWED	PERMIT 0502-114	CURRENTLY USED	REMOVING	PROPOSED
0' - 25' SETBACK (1633.1585 sqft)	10% (163.31585 sqft)	30.7489% (502 sqft)	30.7489% (502 sqft)	4.5923% (75 sqft)	26.1566% (427 sqft)
25' - 50' SETBACK (1725.0921 sqft)	30% (382.52763 sqft)	0% (0sqft)	0% (0 sqft)	0% (0 sqft)	5.1012% (88 sqft)

## LEGEND

DESCRIPTION	AREA	HATCH
BULKHEAD 25FT SETBACK	303 sqft	
RETAINING WALL 25FT SETBACK	28 sqft	
UTILITY BOX 25FT SETBACK	12 sqft	
STAIRS 25FT SETBACK	84 sqft	
RETAINING WALL 50FT SETBACK	88 sqft	



County: King County  
Location: Lake Washington

Applicant: Helms Residence  
7234 W Ridge Rd  
Mercer Island, WA 98040

Datum: CORPS OF ENGINEERS 1919  
SW Quarter Of Section 25, Township 24, Range 04

Adjacent Owners:  
HARRINGTON DOLORES C.-QPR  
7301 W MERCER WAY 98040

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Scope of Work: We propose to remove 51 lft of retaining wall, and install 63 lft of retaining wall setback from shoreline.

**SHEET**  
**11.0**

## **Appendix B: Site Photographs**

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Photo 1 - Existing shoreline looking waterward.



Photo 2 - Existing shoreline looking landward.



Photo 3 - Rock retaining wall to be moved away from shore.



Photo 4 - Top of retaining wall to be relocated away from shore.



Photo 5 - Shoreline conditions.