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Draft Report

Biological Evaluation for Sensitive Fish and Wildlife Species for Proposed Lakefront Improvements

CITY OF LAKE FOREST PARK

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The information contained in this report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, state, and federal regulatory authorities. No other warranty, expressed or implied, is made.

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1. Introduction

1.1 Background and Purpose

This Biological Evaluation (BE) was prepared to facilitate Endangered Species Act (ESA) Section 7 consultation requirements between the U.S. Army Corps of Engineers (USACE), the National Marine Fisheries Service (NMFS), and the U. S. Fish and Wildlife Service (USFWS) to assess impacts associated with the proposed Lakefront Park Improvements Project in the City of Lake Forest Park, Washington (Figure 1). The project will require authorization under Section 10 of the Rivers and Harbors Act for construction activities in navigable water. The City of Lake Forest Park, acting as Responsible Entity (RE) under the U.S Department of Housing (HUD), will be the lead agency. Consultation with the Services has not been initiated.

The project area is located at 17337, 17345, and 17347 Beach Drive NE (parcels #403010-0035, -0040, and -0050). Parcel 403010-0050 is developed with the existing Lyon Creek Waterfront Preserve, including two stream bridges and a viewing pier. Parcel 403010-0035 is developed with the remnant remains of four buildings. Parcel 403010-0040 is developed with three buildings, two remnant buildings, and a pier. All three parcels are encumbered by critical areas and their corresponding buffers.

The project proposes to improve public waterfront access through the transition of two recently acquired single-family residential properties (parcels 403010-0035 and -0040) into a public waterfront park. The project design aims to incorporate the natural habitat and features of the site, preserve and enhance existing features that represent the historical narrative of Lake Forest Park, and consider the current and future responsibilities of the City. The newly acquired properties and associated improvements will be integrated with the existing Lyon Creek Waterfront Preserve to form one continuous public park, with recreational uses focused on the two newly acquired parcels and the existing Preserve maintained as natural area (see Appendix A for 50% Design Plans.).

1.2 Location

The proposed project is situated within, and adjacent to, the Lyon Creek Waterfront Preserve, southeast of Bothell Way and northwest of Lake Washington in the City of Lake Forest Park, WA (Section 10 of Township 26 North, Range 04 East). The study area is defined as parcels 403010-0035, -0040, and -0050, totaling 3.3-acres in size (Figure 1). The subject parcels are in the Lake Washington-Sammamish River drainage basin of the Cedar-Sammamish Water Resource Inventory Area (WRIA 8).

Figure 1. Project limits and vicinity map.

Figure 2. Aerial photograph of the project area.

1.3 Action Area

The project Action Area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR § 402.02). For this analysis, in-water and terrestrial zones of effect are defined. The outermost extent of both the terrestrial and aquatic zones of effect have been determined based on the extent of noise disturbance expected as well as potential effects of stormwater runoff and sedimentation. The loudest pieces of equipment include a vibratory pile driver, excavator, and backhoe. Other general construction heavy equipment will also be utilized.

The outermost extent of the terrestrial zone of effect has been determined based on the extent of noise disturbance. Maximum terrestrial noise generated from equipment operation is expected to be approximately 105 dB measured 50 feet from the project area. The 105 dB measurement was determined using a decibel escalator calculation based on the three loudest pieces of heavy equipment expected to be used during construction, including a vibratory pile driver, a backhoe (84 dB), and an excavator (87 dB). The existing background noise level for the terrestrial area is anticipated to be approximately 50 dB given a population density between 1,000-3,000 people per square mile (WSDOT 2020). Population density was determined within a one-mile radius of project based data obtained through the EJSCREEN webtool. Noise models are based on the assumption that the project vicinity is a soft site in terrestrial lands, due the presence of mature forested vegetation and physical structures and a hard site over water. Using these assumptions, airborne noise would attenuate to background levels approximately 28,117 feet over water and 7,924 feet over land. (See Table 1)

Maximum aquatic noise generated from equipment is expected to be up to 208 dB (peak) from operation of an underwater chainsaw and pile proofing. Underwater ambient noise recording is not available in the project location so WSDOT data from reference sites is utilized. Based on an average of the reported aquatic data by WSDOT, the project site has an estimated ambient sound level of 116 dB (WSDOT 2020). Using the practical spreading model, attenuation to background is estimated at 34,145 feet. Aquatic areas which are discontinuous and blocked by land masses are excluded from the aquatic Action Area, as depicted in Figure 3.

Table 1. Terrestrial and aquatic noise impacts

Noise Calculation	Distance (feet)
Terrestrial Over Water	
Distance from noise source that construction noise attenuates to background	28,117
Terrestrial Over Land	
Distance from noise source that construction noise attenuates to background	7,924
Underwater Attenuation to Background	
R1: Distance from noise source that construction noise attenuates to background	34,145
Underwater Attenuation to 120 dB Threshold	
R1: Distance from noise source that construction noise attenuates to background	18,478
Underwater Attenuation to 150 dB Threshold	
R1: Distance from noise source that construction noise attenuates to background	185

The underwater zone of effect is also influenced by stormwater discharges which are transported from the site through Lake Washington and discharging into Puget Sound. Stormwater runoff from roads conveys pollutants that can be toxic to fish. The main pollutants of concern are heavy metals from vehicle sources and PAHs from urbanized areas. Roads can also deliver pesticides to surface waters. The ability to remove pollutants from stormwater runoff varies by utilized treatments. Stormwater-delivered pollutants can affect the physiological or behavioral performance of aquatic species in ways that reduce growth, migratory success, reproduction, and cause death. Water-quality degradation can depress growth and survival. The likelihood and extent of effects on aquatic species from the discharge of roadway pollutants to surface waters can vary spatially and temporally. Effects are influenced by background water quality conditions, life stage of the species, duration of exposure, concentration and relative toxicity of the pollutants, and concurrent discharges and/or background levels of other contaminants. Contaminants include sediment, 6PPD-quinone, and metals. (WSDOT 2024)

The proposed project includes existing, replaced, and new impervious surface and pollution generating impervious surface (Table 2). Impervious surface and pollution generating surface impacts have the potential to disperse throughout the entirety of Lake Washington. As a full analysis or calculations of the pollutants, effectiveness of minimization measures, cumulative impacts and dilution are not available, all of Lake Washington has been included in the Action Area. (See Figure 3)

Table 2. Site area and size of improvements

	Project Site Areas			
	Existing		Developed	
	SF	Acres	SF	Acres
Project Areas:				
Building/Roof (On-site)	8,380	0.19	3,500	0.08
Walkway/Deck/Trail (On-site)	5,880	0.13	12,700	0.29
Driveway/Parking Lot (On-site)	1,300	0.03	7,700	0.18
Play Area (On-site)	0	0.00	3,500	0.08
Decking (On-site)	0	0.00	3,260	0.07
Dock	2,640	0.06	3,940	0.09
Total New/Replaced Impervious Surface On-site (excl. Dock):	**15,560**	**0.36**	**30,660**	**0.70**
Total New/Replaced Pollution Generating Impervious Surface On-site:	**1,300**	**0.03**	**7,700**	**0.18**
Approximate Landscape Areas (incl. New Landscape, Existing Trees to Remain, Infill Plantings)	45,350	1.04	30,250	0.69
Lawn Area (to Remain)	6,200	0.14	6,200	0.14
Wetland Area (to Remain)	8,800	0.20	8,800	0.20
Total Project Pervious Surface:	**60,350**	**1.39**	**45,250**	**1.04**
Total Project Limits Area	**75,910**	**1.74**	**75,910**	**1.74**

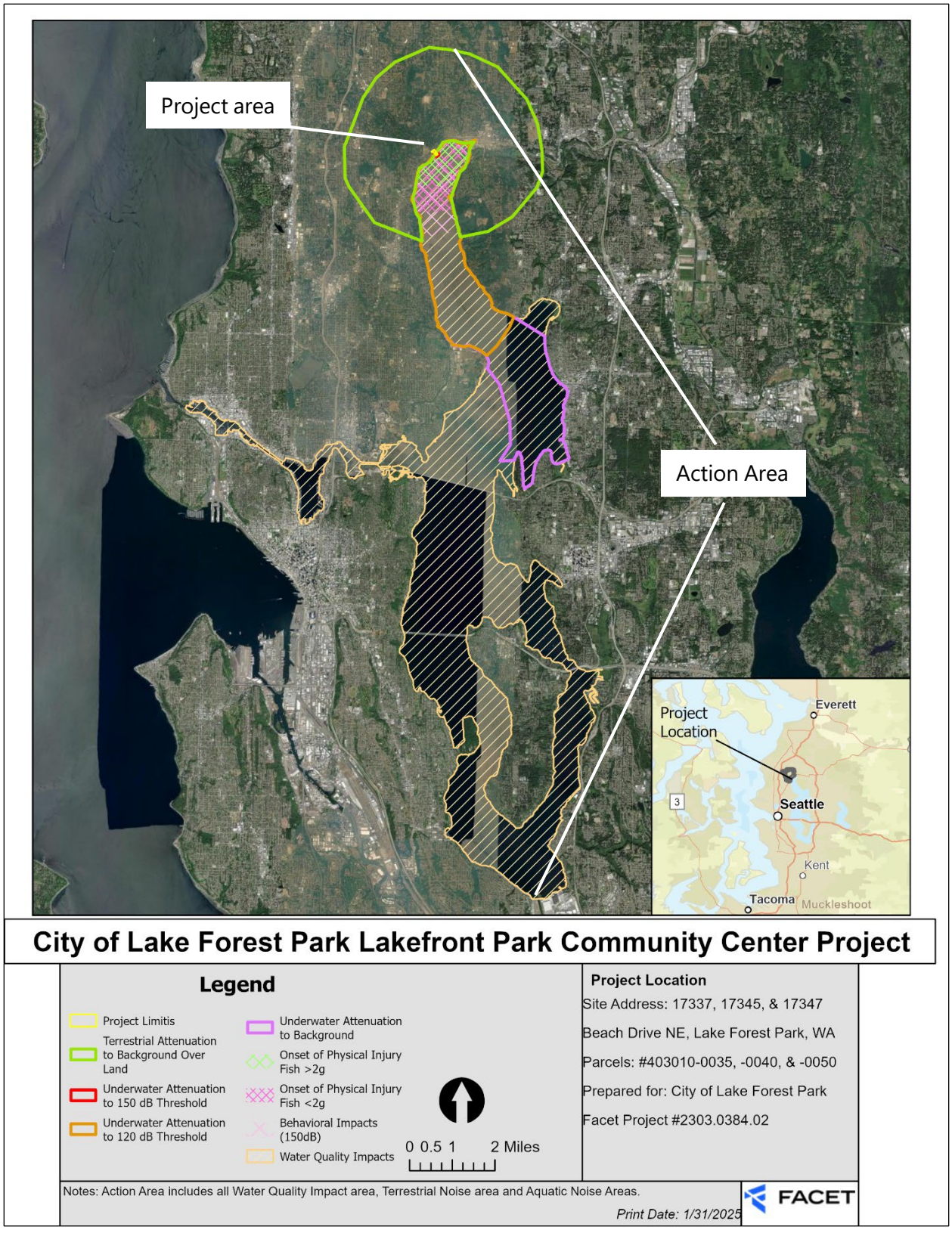

Figure 3. Action Area-terrestrial and aquatic zone of effect.

2. Project Approach

2.1 Project Description

The project proposes to improve public waterfront access through the transition of two recently acquired single-family residential properties (parcels 403010-0035 and -0040) into a public waterfront park. The project design aims to be respective of the natural habitat and features of the site, preserve and enhance existing features that represent the historical narrative of Lake Forest Park, and consider the current and future responsibilities of the City.

The newly acquired properties and associated improvements will be integrated with the existing Lyon Creek Waterfront Preserve to form one continuous public park. New project improvements will be focused on the two recently acquired parcels, nos. 403010-0035 and -0040, while the existing public preserve parcel will be modified to reduce public access to the creek buffer and sensitive area at the creek's outfall to Lake Washington. New project improvements will include a new parking area, access paths, play structure, nature viewing platforms, and new swimming and paddling dock. The open lawn and natural beach will be preserved in place for public use. Three buildings and six remnant buildings are present on the site, including a primary single-family dwelling unit, open-air carport, enclosed garage, and five smaller accessory structures. The primary dwelling unit and one of the accessory units will be renovated for flexible community use. The remaining structures will be permanently removed from the site. A picnic shelter will be reconstructed within the footprint of one accessory structure. A bathhouse will be constructed within the footprint of the garage building. The two existing docks present on parcels no. 403010-0040 and 403010-0050 will be removed and consolidated into a single dock designed for public water access uses. An existing footbridge crossing Lyon Creek is proposed to be relocated from its current location to a downstream area within the creek's floodplain.

2.2 Construction Sequence

Construction activities would only occur within the approved work window, with all work and materials being staged from a barge. The barge will not be allowed to ground and will be stored off-shore when not in use. Construction would occur in the following sequence:

1. Move barge into place, not allowing it to ground. Pin piles will be used to secure barge in place.
2. Deploy containment boom and full depth sediment curtain around the work area.
3. Removal of all dock infrastructure including all piles (piles will be vibrated from the mud, if a pile breaks or is unable to be extracted the pile will be cut just below the mudline and capped with gravel).
4. Construction of dock including vibratory pile driving and the installation of the dock's substructure and grated decking;
5. Remove containment boom and sediment curtain after water is clear of debris and turbidity.

All materials removed from the site will be stored on the barge and taken to an approved upland facility as necessary to maintain adequate space on the barge and prevent materials from entering Lake Washington.

Impact Minimization Measures

The following measures will ensure that impacts to listed fish and wildlife species utilizing the Action Area will be minimized.

Timing Restriction

Care will be taken during all in-water work to prevent sediment plumes from extending outside of the construction area (outside of the containment boom and sediment curtain) and debris, oil, and other machinery fluids from entering the water. To mitigate potential adverse effects of the proposed project, the contractor will adhere to the agency-approved work window when juvenile salmonids are least likely to be present in the Action Area (July 16th – July 31st and Nov 16th – Feb. 1st). The applicant would comply with any amendments made to the timing restrictions following U.S. Army Corps of Engineers (Corps), National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and Washington Department of Fish and Wildlife (WDFW) review.

Best Management Practices

A containment boom and full-depth sediment curtain will be deployed around each work area, while in-water work is being conducted. The containment boom and sediment curtain will only be removed or repositioned when the water is clear of debris and turbidity. The utilization of this system will be sufficient to contain all impacts to the immediate area within the containment boom and negate the potential impacts of this project (sediment plumes, oil, and other machinery fluid spills) outside of the construction area.

If debris or machinery fluid of any kind accidentally enters the waterway, immediate action will be taken to remove the material/substance from the water and properly dispose of it at an approved off-site facility. Oil spill kits will be on-site at all times and readily accessible.

A vibratory hammer will be used for all pile installation and removal. Likely due to the slow rise time of noise generated, impacts to fish and other aquatic organisms have not been observed with vibratory hammers (WSDOT 2019).

2.3 Impact Avoidance and Minimization Measures

2.3.1 Mitigation Sequencing

Measures to avoid and minimize impacts to on-site terrestrial and aquatic habitat have been incorporated into the design and proposed construction sequencing and methods. The sections below address *Mitigation Sequencing* as included in Lake Forest Park's Shoreline Master Plan (SMP) section 130 and Lake Forest Park Municipal Code (LFPMC) section 16.16.130 related to critical areas including ESA species. Critical areas include the three wetlands, Lyons Creek riparian area and Lake Washington

shoreline habitat. Mitigation sequencing is designed to reduce impacts to these critical areas as well as aquatic species in Lyon Creek and Lake Washington.

2.3.2 Avoidance

Avoidance of all impacts with a no-build alternative would result in the continuation of existing conditions. Currently, substantial portions of buffer areas are ecologically low functioning, particularly on parcels #40301000-35 and -40. Five buildings, or the remnant remains of, are located within critical area buffers on these parcels, with remaining buffer areas dominated by impervious hardscape, ornamental landscaping, and maintained lawn. Additionally, a bulkhead and wooden dock are located on Lake Washington.

Parcel #4030100050 functions as a Preserve and is currently the only parcel of the three open to public use. On-site buffer areas on this parcel are currently developed with a small parking lot, pedestrian trails which include two stream crossings, and several seating areas. Mitigation plantings are installed around the stream, however invasive vegetation is extensive in areas. A second wooden dock is present on the Preserve parcel, with signage indicating that water access is prohibited. Currently the City does not possess any properties that allow for public access to Lake Washington. A no-build alternative would perpetuate this lack of public access.

Due to extensive buffer encumbrances, most proposed park features cannot be located outside of critical area buffers. However, the proposed parking lot is sited in the northern portion of the park so that it avoids on-site buffers to the greatest extent feasible. Additionally, a large bike parking area adjacent to the lot is located entirely outside of buffer areas. This amenity, in combination with on-site parking that is limited to seven load/unload-only stalls and three accessible stalls, will encourage park visitors to utilize alternative transportation such as cycling. The extensively used Burke-Gilman Trail passes nearby the park location, providing ready bicycle and pedestrian access.

2.3.3 Minimization

SITE MINIMIZATION MEASURES

The following measures are required to minimize impacts to aquatic species in Lyon Creek and Lake Washington, including Coho and Chinook salmon, steelhead, bull trout and EFH. These measures will be incorporated into project design and construction. (See Table 3)

Table 3. Source of disturbance and minimization requirements

Disturbance	Measures to minimize impacts
Lights	Direct lights away from waters
Noise	Locate activity that generates noise away from waters
	If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source
	For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry, establish an additional 10-foot heavily vegetated buffer strip immediately adjacent to the outer wetland buffer
Toxic runoff	Route all new, untreated runoff away from waters while ensuring waters are not dewatered
	Establish covenants limiting use of pesticides within 150 feet of waters
	Apply integrated pest management
Stormwater runoff	Retrofit stormwater detention and treatment for roads and existing adjacent development
	Prevent channelized flow from lawns that directly enters the buffer
	Use low impact development techniques
Change in water regime	Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	Use privacy fencing or plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion
Dust	Use best management practices to control dust

In addition to these requirements, the following measures will be applied:

Minimization techniques were used during the design process to limit impacts to on-site critical areas and associated buffers. The majority of active park uses, including the parking lot, bike parking area, kayak storage, office building, community building, restroom facilities, and playground, and are proposed to be clustered in the northern portion of the park to concentrate buffer impacts as far from on-site critical areas as feasible. The parking lot is sited to utilize unencumbered portions of the park to the greatest extent practical.

Proposed active uses are primarily sited in existing lawn areas, hardscape surfaces, and within the footprint of existing structures that will be demolished, minimizing new impacts to native vegetation and reducing new impervious areas as much as possible. A public restroom is proposed to be built

within the footprint of an existing garage structure that will be demolished, minimizing new buffer impacts associated with this new park amenity. Similarly, the proposed kayak storage area will utilize the footprint of an existing building that will be demolished with the project. Additionally, two existing buildings will be renovated to provide flexible space for community use (i.e., community events and gathering, workspace for city staff and/or park operations), thus reducing the need for new construction in the park for these facilities.

In addition to minimizing vegetation impacts and the creation of new impervious areas, standard BMPs including temporary erosion and sediment control measures will be implemented during construction and low impact development (LID) techniques will be utilized where appropriate. Construction will be conducted in a manner that minimizes erosion and other impacts to the greatest extent feasible. Required lighting will include shields to prevent light pollution in the park and native vegetation screening will be provided between high use and critical areas.

IN-WATER MINIMIZATION MEASURES

1. **Project Footprint:** The project footprint is within the confines of the area shown in Figure 1 and attached 50% design plans.
2. **Timing Restriction**: In-water work will only occur from July 16th – July 31st and Nov 16th – Feb. 1st, according to the Corps' approved work windows. The window is adequate to minimize the probability that bull trout, Chinook or coho salmon, or steelhead would be in the Action Area during construction.

   The in-water construction timing restrictions are depicted graphically in Table 4 below. The applicant would comply with any amendments made to these timing restrictions following Corps, NOAA Fisheries, WDFW, and USFWS review.

Table 4. Applicable work windows.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
	In-water work						**In-water work**				**In-water work**	**In-water work**

3. **Minimization of Construction Impacts**: The following measures and best management practices will be incorporated into the construction process by the applicant in order to avoid, reduce, or otherwise minimize potential impacts:
   - Potential adverse effects of this project on listed salmonids will be avoided or minimized through the adherence to an agency-approved work window when few juvenile salmonids are anticipated to be present in the Action Area.
   - The contractor shall stockpile construction debris in designated upland areas above the ordinary high-water mark or on the construction barge pending off-site disposal

or recycling. All debris shall be properly disposed of (or recycled) on land in such a manner that it cannot enter this or other waterways or cause water quality degradation (Section 13, Rivers, and Harbors Act)

- All in-water work will be staged from a barge.
- The contractor will prepare a spill prevention control and countermeasures plan.
- If debris or spill material accidentally enters the waterway, immediate actions will be taken to remove the material, and proper entities will be notified.
- Care will be taken in all work to prevent debris, oils, and grease from entering the water.
- Refueling will be conducted away from the project site in accordance with Washington State Department of Ecology requirements and guidelines.
- All equipment will be checked daily for leaks and any necessary repairs will be made away from the active work area prior to commencement of work.
- A sediment curtain will be installed around construction activities.
- Vessels, including the work barge, will not be grounded (pin piles will be used to secure barge).
- If fish are observed to be in distress or if a fish kill occurs, work will be stopped immediately. USACE and WDFW will be contacted by the applicant and work will not resume until approval is given by these permitting agencies.

4. **Minimization of Impacts to Shallow Water Habitat:** The replacement dock was designed to minimize impacts to shallow water habitat. Specifically, the proposed structure will include 3,905 square feet of grated decking to allow light transmission.
5. **Shoreline Vegetation**: There will be temporary impacts to shoreline vegetation during construction and bulkhead removal. Shoreline vegetation will be restored.

2.3.4 Rectification

Existing critical area and buffer impacts to Lyon Creek and the associated wetlands, will be rectified by demolishing select structures or other features currently located in the park. The proposed demolition of one of the stream crossings over Lyon Creek and both dock structures extending into Lake Washington will result in a total of 2,335 square feet of direct critical area impacts being restored within the park. Existing critical area impacts to be removed also include two pilings and two bulkhead features located in the lake that will be demolished. Additionally, 4,050 square feet of buffer impacts associated with existing structures and hardscape areas will be eliminated from the park and will be restored with native plantings.

2.3.5 Reduction

The wetland and buffer mitigation areas will be monitored for a period of up to five years to ensure success of the mitigation actions over time. Fencing and signage will be provided to reduce intrusion into the critical areas and prevent future impacts. All compensatory mitigation areas will be preserved and maintained to ensure successful establishment of a diverse assemblage of native trees and shrubs. Impacts will be reduced over time as the compensatory mitigation areas mature.

2.3.6 Compensation

As mitigation for unavoidable impacts to on-site critical areas and associated buffers, 1,130 square feet of wetland and 2,860 square feet of buffer areas within the park will be enhanced with the removal of non-native species and the planting of new native vegetation. Additionally, 4,050 square feet of existing buffer impacts and 2,335 square feet of existing critical area impacts will be removed and restored in place. 10,825 square feet of temporary buffer impacts required to complete park improvements will also be restored with native plants.

The proposed mitigation plantings will add structural and species diversity to an otherwise minimally functioning buffer and wetland. Native vegetation will support local wildlife use at the site by providing forage, nesting, refuge, and perching opportunities. Enhancing on-site wetland areas with dense native woody vegetation will also improve ecological functions by decreasing and slowing runoff, trapping sediments and pollution, and reducing erosion. Native trees and shrubs proposed near Lyon Creek will also enhance riparian conditions which directly affect water quality, hydrological function, and instream habitat with shading, contribution of autochthonous materials, and large woody debris recruitment.

Additional mitigation details can be found in the mitigation plan (Appendix C).

2.3.7 Monitoring

A five-year maintenance and monitoring program is proposed as part of this project. Under this plan, two monitoring visits will take place per year, one in spring and one in late summer/early fall. The spring visit will function as a maintenance review, ensuring that the site is in a condition to meet the late season performance standard requirements. The late summer/early fall visit will function as the official reporting document to the City. This document will be submitted to the City to report progress and establishment of the mitigation and restoration areas. The maintenance and monitoring period will be approached as a collaborative adaptive management effort between the monitoring team, the City, and maintenance crew, ensuring that appropriate corrective measures are taken as early as possible to guarantee success.

3. Existing Conditions

3.1 Site Description

The project area borders Lake Washington and includes the mouth of Lyon Creek and its lowermost channel section. Lyon Creek originates from wetlands in the Cities of Mountlake Terrace and Brier, north of Lake Forest Park. The Lyon Creek watershed has an area of about 3.8 square miles, sloping from a high elevation of 550 feet down to 20 feet above sea level at the outlet, and is located primarily in the City of Lake Forest Park.

The existing Lyon Creek Waterfront Preserve supports a mix of native, non-native, and ornamental deciduous and herbaceous vegetation in a narrow riparian zone, which is bordered by shoreline areas intended for public use. The Preserve is characterized by a natural area with previously installed mitigation plantings along Lyon Creek, located centrally on the parcel.

Tree species on the Preserve parcel include Douglas-fir (*Pseudotsuga menziesii*), western hemlock (*Thuja plicata*), and black cottonwood (*Populus trichocarpa*); shrub and herbaceous vegetation includes rhododendron (*Rhododendron macrophyllum*), vine maple (*Acer circinatum*), osoberry (*Oemeleria cerasiformis*), beaked hazelnut (*Corylus cornuta*), lady fern (*Pteridium aquilinum*), sword fern (*Polystichum munitum*), and other native species. Some invasives are also present along the creek bank in the park, including Himalayan blackberry (*Rubus armeniacus*), reed canarygrass (*Phalaris arundinacea*), and ivy (*Hedera helix*). The Preserve also includes a pedestrian trail with two creek crossings as well as a viewing dock structure extending into Lake Washington. A small parking area is located at the park entry at the northwest end of the parcel.

Adjacent to the Waterfront Preserve, the two newly acquired parcels currently have several cabins, and a garage structure clustered around the northwest portion of the site. The various buildings are connected by paved paths and compacted gravel driveways. These parcels are characterized by a large, maintained lawn area and ornamental vegetation, including several large, mature trees. A bulkhead is located along Lake Washington in the southeastern part of the site; the parcels also include a dock structure.

Site topography is generally flat, with Lake Washington located at the relatively low elevation point along the southeast boundary of the project area. The surrounding area is characterized by high-intensity residential land use.

Lake Washington, a shoreline of statewide significance, is in the southern portion of the project area. The ordinary high water mark (OHWM) constitutes the limits of this waterbody. Lake Washington drains to Puget Sound via the Ship Canal and the Hiram Chittenden Locks (also called the Ballard Locks). The primary inflow to the system is the Cedar River, which contributes approximately 55 percent of the mean annual inflow. The Sammamish River contributes approximately 27 percent of the surface flow to Lake Washington. Numerous other small streams, including Thornton Creek, Juanita Creek, Kelsey Creek, Lyon Creek, and May Creek, also drain into the lake.

One stream (Lyon Creek) is in the western portion of the study area. The OHWM along left and right banks constitutes the limits of this feature. The stream enters the northwest corner of the Waterfront

Preserve and flows south to Lake Washington along the western boundary of the parcel. OHWM indicators such as flowing water, defined bed and bank characteristics, scour, sorted sediments, and hydrophytic vegetation have been readily observed along the stream channel. Lyon Creek is a low gradient stream with a channel width of approximately 10-feet. The streambed is composed of fine sediments, cobble, and small boulders. Riparian vegetation, including a forested canopy and understory vegetation overhangs the stream banks throughout the project area. Large woody debris is present, and was supplemented by a previous City project, however stream channel complexity, such as pools and braiding, is limited.

Three wetlands (Wetlands A, B, and C) were previously identified and delineated within the project area (DCG/Watershed 2023).

4. Listed Species

4.1 Federally Listed Species and Critical Habitat

The Action Area is located within the geographic range of three federally listed species of salmonids: 1) Chinook salmon of the Puget Sound Evolutionary Significant Unit (ESU) (Reaffirmed as Threatened, U.S. Office of the Federal Register, 28 June 2005), 2) bull trout of the Coastal-Puget Sound Distinct Population Segment (DPS) (Threatened, U.S. Office of the Federal Register, 1 November 1999), and 3) steelhead of the Puget Sound DPS (Threatened, U.S. Office of the Federal Register, 11 May 2007). All these species may be present in the Action Area during a portion of their life cycle (Table 5).

The Action Area is also located within designated critical habitat for Puget Sound Chinook salmon and Coastal-Puget Sound bull trout. Critical habitat for Chinook salmon includes Lake Washington (Watershed Code 17110012-03) of the Puget Sound ESU (U.S. Office of the Federal Register, 2 September 2005), and critical habitat for bull trout of the Coastal-Puget Sound DPS also includes Lake Washington– Puget Sound (U.S. Office of the Federal Register, 18 October 2010). Lake Washington is not designated as critical habitat for Puget Sound steelhead, however the Puget Sound DPS utilizes Lake Washington and its tributaries. Lake Washington is listed as EFH for Groundfish per the NMFS Pacific Coast Groundfish Fishery Management Plan, however groundfish are not known to occupy freshwater including Lake Washington (December 2024).

Table 5. Listed salmonid fish species that may use the project area (NMFS/USFWS as of January 8, 2025).

Species	Federal Status	ESU/DPS/Region	Action Area Critical Habitat
Chinook salmon *(Oncorhynchus tshawytscha)*	Threatened, August 1999[1] Reaffirmed, June 2005[2]	Puget Sound DPS	Yes
Bull trout *(Salvelinus confluentus)*	Threatened, November 1999[3]	Coastal-Puget Sound DPS	Yes
Steelhead *(Oncorhynchus mykiss)*	Threatened, May 2007[4]	Puget Sound DPS	No

[1]U.S. Office of the Federal Register, 2 August 1999.
[2]U.S. Office of the Federal Register, 28 June 2005.
[3]U.S. Office of the Federal Register, 1 November 1999.
[4]U.S. Office of the Federal Register, 11 May 2007.

An Official Species List of threatened and endangered species under the jurisdiction of the USFWS that may occur in the Project's Action Area was also compiled and downloaded from the USFWS Information Planning and Conservation (IPaC) website on July 23, 2024, and December 22, 2024. Of ESA-listed species under the jurisdiction of USFWS, bull trout (*Salvelinus confluentus*), marbled murrelet (*Brachyramphus marmoratus*), yellow-billed cuckoo (*Coccyzus americanus),* North American wolverine *(Gulo gulo luscus*), Northwestern pond turtle *(Actinemys marmorata),* and monarch butterfly *(Danaus Plexippus)* were included as potentially being present within the Action Area. See Table 6 below.

Table 6. Listed species that may use the project area (USFWS as of January 8, 2025).

Species	Federal Status	ESU/DPS/Region	Action Area Critical Habitat
Marbled Murrelet (*Brachyramphus marmoratus)*	Threatened	U.S.A. (CA, OR, WA)	No
Yellow-billed Cuckoo (*Coccyzus americanus*)	Threatened	Western U.S. DPS	No
Northwestern Pond Turtle (*Actinemys marmorata*)	Proposed Threatened	N/A	No
Monarch Butterfly (*Danaus plexippus*)	Proposed Threatened	N/A	N/A

The NMFS Essential Fish Habitat (EFH) mapper was used to determine essential fish habitat in or around the project area on July 23, 2024, and December 22, 2024.

Project Action Area listed species that would not be affected by the proposed waterfront enhancement project include marbled murrelet, yellow-billed cuckoo, North American wolverine, Northwestern pond turtle and monarch butterfly. The presence of these species was not indicated by PHS data or other databases, and further explanation for each of these species follows:

Marbled Murrelet (*Brachyramphus marmoratus*)

Marbled murrelets forage in the nearshore areas of Puget Sound and nest in mature coniferous forests in dense coastal stands up to 70 km inland. No suitable foraging or nesting habitat for marbled murrelets occurs in the Action Area, nor is any designated critical habitat present there. Nesting typically begins in March and April. Nests occur primarily in old growth trees and are most frequently found on the larger, mossy limbs of large, old-growth trees with suitable nesting platforms. There is no suitable nesting habitat, consisting of mature conifer-dominated forests over 80 years old, within the project's Action Area, nor are immature conifer forests present in the vicinity. Furthermore, the project does not involve low elevation operation of aircraft, pile driving (vibratory only), or blasting, which could result in noise-related disturbance to nesting murrelets. The project will not increase or decrease habitat for the Marbled Murrelets nor influence the presence, absence, or abundance of Marbled Murrelets. Due to a lack of suitable habitat, marbled murrelets are not expected to be found in the Action Area. Therefore, **the Project will have no effect on marbled murrelets**, and no further analysis of project effects on this species will be presented.

Yellow-billed Cuckoo *(Coccyzus americanus)*

The Yellow-billed cuckoo was listed as threatened in October 2014 (Federal Register October 3, 2014). Breeding of the western yellow-billed cuckoo has not been recently confirmed in Oregon, Washington, or British Columbia. Yellow-billed cuckoos are extremely rare in Washington, with fewer than 10 recordings since 1950. Cessation of breeding in Washington is believed to have occurred by 1934 (WDFW 2013). Yellow-billed cuckoos are associated with large, continuous riparian corridors dominated by mature cottonwood and willow forests (Ehrlich et al. 1988), a habitat not found in the Action Area or the surrounding vicinity. Dense understory foliage appears to be a key factor in nest site selection, while cottonwood trees are an important foraging habitat in areas where the species has been studied in California (Laymon et al. 1993). In the Pacific Northwest, the species was formerly common in willow bottoms along Willamette and Columbia Rivers in Oregon, and in the Puget Sound lowlands and along the lower Columbia River in Washington (Marshall 1996). Though scattered willow and cottonwood trees do occur at some distance to the south and east of the project area, their presence is patchy or spotty, and discontinuous within this highly urbanized area. Due to a lack of suitable habitat and lack of recent breeding records in Washington and Oregon, yellow-billed cuckoos are not expected to be present in the Action Area. **Therefore, the Project will have no effect on yellow-billed cuckoos,** and no further analysis of project effects on this species will be presented.

North American wolverine *(Gulo gulo luscus)*

North American wolverines generally occupy coniferous forest of sufficient size to support wide-ranging, solitary individuals. Forest stands dominated by fir (*Abies* sp.), spruce (*Picea* sp.), hemlock (*Tsuga* sp.), Douglas fir or lodgepole pine (*Pinus contorta*) are their preferred habitat. Wolverines are positively associated with snags, downed logs, and large hollow trees as well as talus in relatively undisturbed areas. Data suggests that wolverines prefer areas with low human population levels. They generally utilize areas with higher elevations and steeper slopes as well as northern or eastern facing edge habitats. With no suitable habitat present, North American wolverines are not expected to be found in the Action Area. **Therefore, the Project will have no effect on North American**

wolverines, and no further analysis of project effects on this species will be presented. This species was listed on the IPac in July of 2024 and was not present on the revalidation list in December 2024.

Northwestern pond turtle *(Actinemys marmorata)*

The range of the northwestern pond turtle extends from the Puget Sound Lowlands in Washington, the Columbia River Gorge in Washington and Oregon, down through western Oregon and California, and south to Baja California. Northwestern pond turtles disappeared from the Puget lowlands by the 1980s, with only a few isolated adult turtles remaining. In Washington, northwestern pond turtles occur in open upland habitats that receive extensive sun exposure such as prairies in the Puget Sound region, oak-pine savanna and other more open forest types in the Columbia Gorge, and pasture. The turtles utilize a variety of flowing and still water habitats in other parts of their range, but in Washington they are only known to inhabit ponds and lakes. This species is primarily aquatic, but strays from water to lay eggs, to disperse to new water bodies, to overwinter and to aestivate during periods of drought. They nest in grasslands and open woodland around ponds. Northwestern pond turtles are omnivorous, eating aquatic animals, including insects and amphibians, as well as aquatic plants. With no suitable habitat present, Northwestern pond turtle are not expected to be found in the Action Area. **Therefore, the Project will have no effect on Northwestern pond turtles,** and no further analysis of project effects on this species will be presented.

Monarch butterfly *(Danaus plexippus)*

Monarchs occur throughout most of the United States, southern Canada, and northern Mexico. In Washington, they are found east of the Cascades where milkweed occurs. The number of monarchs in Washington is relatively low. Milkweeds are patchily distributed within the Columbia Basin. Monarchs migrating south through Washington often concentrate along the large river courses of the Columbia and Snake Rivers. Monarchs require secure patches of milkweed and nectar resources during breeding, roosting sites, and safe travel corridors for migration. Milkweeds and monarchs in Washington occur in weedy fields and sparsely vegetated habitats, typically near wetlands or riparian areas. On their southbound travel corridors, often river courses, the butterflies require abundant late season nectar and trees for roosting at night and during periods of inclement weather. Monarch butterflies are not expected to be found in the Action Area. **Therefore, the Project will have no effect on Monarch butterflies,** and no further analysis of project effects on this species will be presented.

Site-specific information about each ESA-listed species potentially found in the Action Area is presented below. General life history information related to temperature, diet, and migration is contained in the Federal Register listings.

4.1.1 Chinook Salmon

In the Lake Washington watershed, Chinook salmon are broken into two stocks: 1) the Cedar River, and 2) the Sammamish River (City of Seattle 2008). Most summer/fall-run Chinook salmon migrate through the Lake Washington Ship Canal to reach spawning habitat in either the Cedar or Sammamish River systems, while a smaller proportion of Chinook salmon spawn in other Lake Washington tributaries. The Lake Washington basin has seen an average escapement of 1,199 returning Cedar Chinook salmon

and 1,267 returning Sammamish Chinook salmon from 2004 to 2016 (WDFW SCORE electronic reference).

Adults migrate into freshwater in late July through early September and spawn in the tributaries to Lake Washington between August and November (City of Seattle 2008). Typically, Chinook salmon travel through the Ship Canal in two or fewer days at depths of approximately 6 m (20 feet) (City of Seattle 2008).

Graphs of trapping data indicate that juvenile Chinook salmon migrating from the tributaries into Lake Washington exhibit two basic strategies: 1) direct migration to the lake as fry without extended stream rearing; and 2) migration to the lake as parr or smolts (average length 100 mm), following extended stream rearing. Chinook fry begin entering Lake Washington around the first of the year, peaking in February, while parr and smolts enter the lake from April through July, peaking in late May (Tabor et al. 2006). Early in the period of lake residency, Chinook salmon fry are typically found near the shoreline in waters less than 0.5 m (1.6 feet) deep (Tabor et al. 2006). Juveniles entering the lake as fry rear until they emigrate as smolts beginning in April. Most of the juvenile Chinook salmon in the Lake Washington basin emigrate from the system via the Lake Washington Ship Canal by mid-summer, peaking in June, and most of the remaining juveniles have left by September. However, some juveniles exhibit extended rearing in the Lake Washington basin (emigrating as two-year-olds), while a small fraction may residualize in the Lake.

Most naturally produced Chinook salmon juveniles in Lake Washington originate in the Cedar River, and a smaller number of juveniles originate in Bear Creek, a tributary to the Sammamish River (Celedonia et al. 2008). Other tributaries contribute small numbers as well. Hatchery-produced Chinook in the basin originate from WDFW's Issaquah Creek salmon hatchery in the City of Issaquah, and juveniles enter Lake Washington via the Sammamish River mouth at the north end of the lake.

Past studies of juvenile Chinook salmon in Lake Washington indicate the density of Chinook salmon fry using Lake Washington shorelines in the spring decreases logarithmically with increasing distance from the mouth of the Cedar River (Figure 4, Tabor et al. 2006). The project site is located approximately 15 miles northwest of the mouth of the Cedar River. Given the location of the Action Area, Chinook salmon fry are unlikely to rear along the shorelines of the Action Area in the spring months (Tabor et al. 2006). However, in June, Tabor et al. (2004) observed low densities of Chinook salmon, and the relationship between the density of Chinook salmon smolts and distance from the Cedar River mouth was no longer apparent (Figure 4, Tabor et al. 2006).

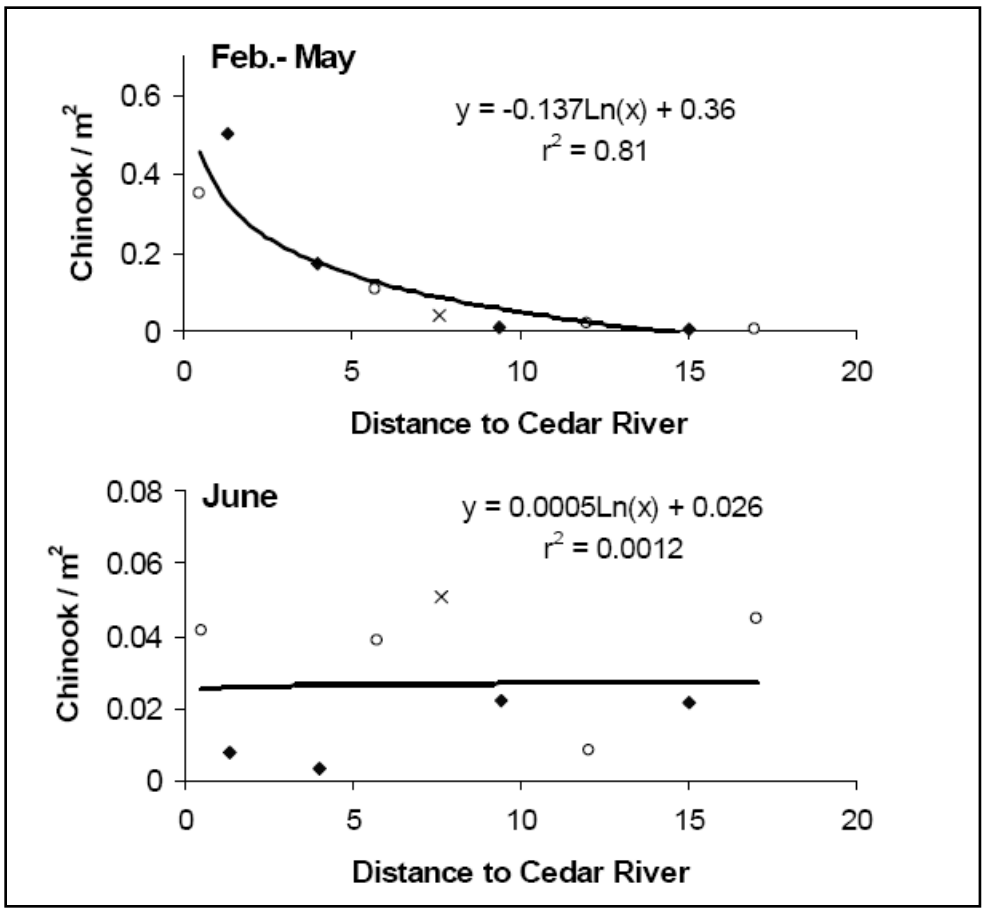

Figure 4. Relationship (logarithmic function) between the mean juvenile Chinook salmon density and the shoreline distance (km) to the mouth of the Cedar River in south Lake Washington, 2003. *(From Tabor et al. 2006. West shoreline=o, east shoreline=□, and Mercer Island=x.)*

In laboratory experiments, Chinook salmon fry and pre-smolts preferred flat (<5% slope), sandy bottoms, and avoided steeply sloping substrates (Sergeant and Beauchamp 2006). In field observations, juvenile Chinook were observed over a sand/gravel substrate with slopes less than 20 percent, and they avoided silty substrates (Tabor et al. 2004, Tabor and Piaskowski 2002). The preferential use of shallow, gradually sloping substrates is likely a reflection of predator avoidance behavior, since large predators are less likely to occur in such habitats (Celedonia et al. 2008).

During the daytime from late-February to late-April, juvenile Chinook salmon are typically found within 10 m (33 feet) of shore (Tabor and Piaskowski 2002), and they prefer shallow water habitats with overhanging vegetation (approximately 4.5:1 ratio of fish using overhanging vegetation: fish away from overhanging vegetation) (Tabor et al. 2004, 2006). Riparian vegetation likely provides juvenile Chinook salmon with refuge from predators, shading, and a source of insect prey. By May, juvenile Chinook are rarely associated with overhanging vegetation or woody debris, presumably because as the salmon grow larger, they move into deeper water habitats and away from shoreline vegetation (Tabor et al.

2006). As Chinook salmon grow, their swimming abilities improve, so they can better escape from predators.

Juvenile Chinook salmon use delta habitats in Lakes Washington and Sammamish almost twice as much as associated lakeshore habitats, with highest densities in the deltas of small and medium sized tributaries in comparison to the deltas of larger tributaries (Tabor et al. 2004). Tabor et al. (2004) hypothesized that juvenile Chinook salmon may show a preference for delta sites because they consume insect prey that drifts downstream from the tributaries into the deltas. In general, during high flow conditions more Chinook salmon occur at tributary mouths where they consume a wider range of prey (many of which are commonly associated with tributary rather than lakeshore habitats) (Tabor et al. 2006).

In conclusion, juvenile Chinook salmon may occur in sparse numbers within the aquatic portion of the Action Area from February through September. Based on the characteristics of the Action Area, shallow lakeshore areas may provide rearing areas for Chinook salmon fry early in the outmigratory period (February-May). For the southern part of Lake Washington, referenced studies have shown that density decreases markedly with distance from the Cedar River (Figure 4). By June, densities are more constant, irrespective of distance from the Cedar River mouth (Figure 4). The same relationship likely occurs in the northern part of Lake Washington for a decrease in juvenile Chinook density with distance from the Sammamish River mouth. Chinook near the project area would predominantly originate from the Sammamish River since the project area is much nearer to the Sammamish River mouth (0.85 mile) than the Cedar River mouth (18 miles). Chinook salmon parr and smolts may use the aquatic portion of the Action Area in low densities later in the spring and summer (June- September) as they pass by the site on their way to marine waters beyond the Ballard locks, but they would generally occur in deeper water away from the shoreline and the project and aquatic Action Areas. Adult Chinook salmon may pass by the Action Area from late July through September.

4.1.2 Bull Trout

Native char do not commonly occur within Lake Washington. Bull trout are observed at the Hiram M. Chittenden (Ballard) Locks every year with numbers observed or caught varying from three to nine fish per year (F. Goetz, pers. comm., 14 May 2004). Bull trout entering and exiting the Ship Canal would likely occur between February and June, with those fish coming from North Puget Sound tributaries. They are observed/caught at the Locks between May and July (note: little or no monitoring occurs at the Locks from February through April; data are not available for that period). In 2003, two bull trout were observed entering the Ship Canal in June (F. Goetz, pers. comm., 14 May 2004). In Lake Washington, bull trout have been captured during winter and spring, typically in the south Lake Washington/Cedar River area.

Little is known about bull trout distribution or habitat use within Lake Washington. Current projections are generally based on extrapolation of similar information from other bull trout populations. Bull trout would not occur within the littoral zone when nearshore temperatures exceed 15˚C (generally, from May through mid-October). Juvenile bull trout remain in headwater streams until the onset of piscivory, at a body length of approximately 300 mm, at which point they migrate as subadults in

search of improved foraging opportunities. Subadult bull trout often migrate with adults to headwater streams during the summer and fall and return to larger rivers to overwinter. Bull trout may be attracted to spawning aggregations of prey fish.

In conclusion, juvenile bull trout are unlikely to occur in the Action Area. Adult and subadult bull trout would avoid the littoral zone during the summer due to excessive temperatures. Furthermore, given the lack of spawning, rearing, and feeding opportunities within the Action Area, adult and subadult bull trout are unlikely to utilize the Action Area during any phase of their life history.

4.1.3 Steelhead

The Cedar River and North Lake Washington/Sammamish Winter steelhead comprise natural populations within the Puget Sound steelhead DPS. These steelhead are native stocks with wild production. Historic steelhead escapement for the Lake Washington basin was approximately 1,816 in 1986 and has steadily declined since that time. In 2002, their stock status was adjusted downward from "depressed" to "critical" due to chronically low escapements and severe short-term declines in escapement in 2000 and 2001. The Cedar River saw an average escapement of 11 returning steelhead from 2004 to 2016, with no fish returning in 2009, 2012, 2014, 2017, or 2019 (WDFW SCORE electronic reference).

Steelhead historically spawned in many Lake Washington and Lake Sammamish tributaries. Adult steelhead may pass through the Ship Canal from February through June (City of Seattle 2008). Steelhead spawning in the Lake Washington basin extends from March to September (City of Seattle 2008), with most adult fish in the run typically returning to the Cedar River. Both anadromous (steelhead) and resident (rainbow trout) life forms of *O. mykiss* (based on life history characteristics) are present in the Lake Washington basin.

Juveniles generally emigrate as smolts between April and June, after two years of stream residence. However, the duration of freshwater rearing can vary greatly before juveniles grow large enough (>170 mm) to undergo smoltification. Steelhead exhibit a highly variable anadromous life history. Steelhead in the Lake Washington basin are winter run fish, characteristic of coastal streams. They enter freshwater from November to April and spawn shortly thereafter (Busby et al. 1996). Summer surface temperatures in the Lake Washington system often exceed the thermal preferences of most salmonids, including steelhead.

In conclusion, juvenile steelhead may be emigrating through Lake Washington throughout the year but would likely not rear in the Ship Canal nor occur in the nearshore area during the timeframe for in-water work. Adult steelhead would not be present in the Action Area during the construction period.

5. Analysis of Effects

5.1 Direct Impacts

A total of 3,930 square feet of direct stream and shoreline impacts are proposed with the project. Impacts include installation of a footbridge to improve access to the existing stream crossing over Lyon Creek and construction of a new dock and swimming platform in Lake Washington. These new water-related structures will replace one of the two existing stream crossings and the two existing wooden docks, which currently impact 2,229 square feet of the stream and lake. A small portion of a proposed viewing platform near Lyon Creek will overhang 5 square feet of wetland C, however, fill or excavation within wetlands will not occur.

Although the total square footage of proposed direct impacts is larger than those that will be removed, the proposed dock will improve water quality and habitat conditions within the lake compared to current conditions. Two existing wooden docks will be replaced with a single new dock, consolidating water access to one overwater structure. Currently one of the existing docks is located near the mouth of Lyon Creek; the other dock abuts one of the on-site wetlands and requires users to walk directly through the critical area. Locating the new dock away from these critical areas will reduce ongoing wetland disturbance and provide salmonids with better habitat near Lyon Creek.

Dock design, materials, and construction techniques will utilize BMPs such as grated decking, non-toxic materials, and finishes, avoiding side skirts and overwater lighting, completing in-water work within approved work windows, and using floating sediment curtains. These BMPs will ensure that impacts are minimized and are consistent with the best available science to create more favorable habitat conditions for juvenile salmonids, minimize disturbance during bald eagle nesting and salmon migration seasons, and eliminate leaching associated with older dock structures.

5.2 Indirect Impacts

Proposed park improvements will result in a total of 18,125 square feet of new permanent buffer impacts. A net total of 4,065 square feet of existing hardscape surfacing within buffers will be demolished with the project. Additionally, construction of the new park design will require 13,360 square feet of temporary buffer impacts. It is estimated that 42 significant trees will require removal with the project; however, the majority of remaining impacts will occur in areas where existing structures, hardscape, ornamental landscaping, and maintained lawn are located. Proposed features that result in permanent and temporary buffer impacts are located further from the Preserve parcel that contains Lyon Creek and the associated riverine wetland.

5.3 Salmonids

The proposed project could potentially affect salmonids in generally similar manners. Thus, unless otherwise noted, the following discussion does not distinguish between ESA-listed or EFH salmonids.

5.3.1 Noise

In-water work requires pile installation using vibration hammers which create vibratory noise and proofed using an impact pile driver. The proposed new dock is estimated to require 36 strikes per pile (55 total piles) for proofing after installation.

The WSDOT data above in the NMFS Pile Driving Calculator shows the distance to onset of physical injury threshold to fish less than and greater than two grams, respectively is 5,173 feet (1,577 meters) and 2,798 feet (853 meters). Noise would be attenuated to a level below the disturbance threshold for small fish (150 dB) at approximately 24,133 feet (7,356 meters). Adult Chinook salmon that may be present in the Action Area are less sensitive to noise and vibration effects, so the effects of noise from the project would not affect adult salmon. (Table 7 and Figure 5)

Pile installation may cause direct injury to fish and the disturbance caused by the sound in the aquatic environment is expected to extend approximately 34,145 feet (10,407 meters) from the project area. Noise may also cause behavioral changes. An avoidance response could expose juvenile salmonids to increased predation or force them away from preferred rearing areas. Thus, noise and vibration impacts are expected to affect fish. (Figure 5)

Construction and equipment noise from removal of the existing docks and installation of new dock will produce temporary air-borne and in-water noise. In-water noise from towing the old dock away is anticipated to be minimal and result in negligible impacts to listed and EFH salmonid fish species.

In conclusion, construction noise levels from removal of the existing docks and installation of a new dock are anticipated to cause direct injury to salmonids. To minimize the impacts on Chinook and Coho salmon, bull trout, and steelhead, construction will follow the prescribed timing restrictions and no in-water work will occur from July 16th – July 31st and Nov 16th – Feb. 1st. This restriction is required to minimize the probability that those salmonid fish species would be present in the Action Area during construction, however, impacts to both adult and juvenile fish is possible.

Table 7. Acoustic metrics and fish impacts

	Acoustic Metric			
	Peak	**SEL**	**RMS**	**Effective Quiet**
		183	193	150
Distance (m)	10	10	10	
Estimated number of strikes	1,980.0			
Cumulative SEL at measured distance	216.0			
	Distance (m) to threshold			
	Onset of Physical Injury			**Behavior**
	Peak	**Cumulative SEL dB****		**RMS**
	dB	Fish ≥ 2 g	Fish < 2 g	dB
Transmission loss constant (15 if unknown)	206	187	183	150
15	14	853	1,577	7,356

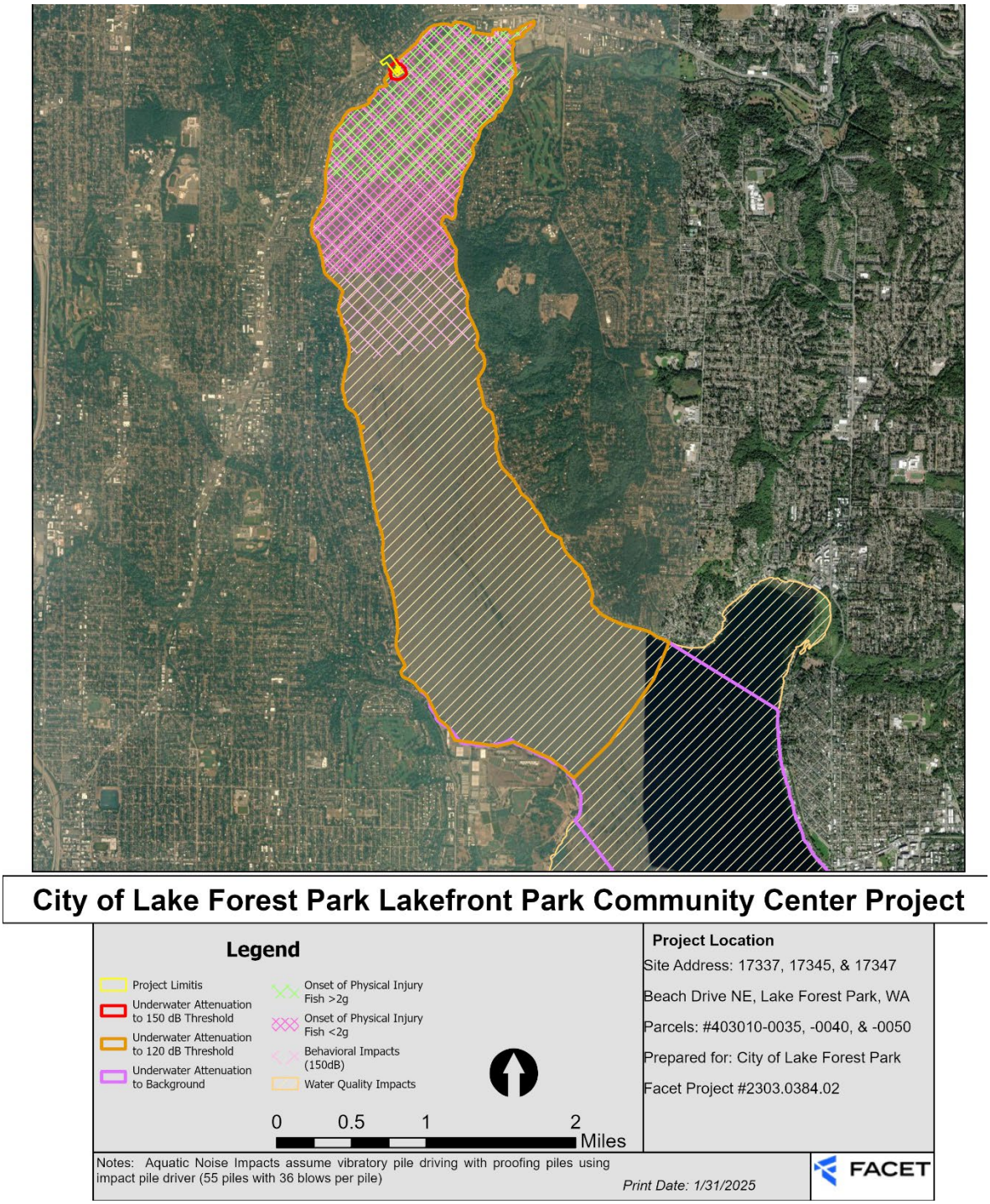

Figure 5. Project Area and Noise Impacts and Attenuation.

5.3.2 Shallow Water Habitat

As described in Section 4.1.1, past studies in Lake Washington have found that during the period from mid-February to mid-April, juvenile Chinook salmon rear along shorelines less than 0.5 m (1.6 feet) deep, with less than 20 percent slopes, and with a preference for small creek deltas (Tabor et al. 2006). Fry density also can be expected to fall precipitously with distance from the mouth of the Cedar River, and by inference the Sammamish River, from February through May (Figure 4). The project area is .75 miles from the mouth of the Sammamish River. Chinook salmon fry, which particularly depend upon shallow waters, would be expected to occur in decreasing densities in the construction area as the spring season progresses. Furthermore, in-water work would only occur from July 16th – July 31st and Nov 16th – Feb. 1st.

Actively migrating juvenile Chinook salmon tend to avoid docks and other overwater structures (Celedonia et al. 2008). Toft et al. (2005) found that overwater structures appear to affect salmonid movements, as juvenile salmonids were never observed underneath either the overwater structure or the floating dock at the Salmon Bay Natural Area. Researchers hypothesized this avoidance behavior may be related to factors including light levels beneath the structure, degree of contrast at the light-dark edge, and width and height of the structure (Celedonia et al. 2008). Project impacts to shallow water habitat and outmigration will be reduced by eliminating 2,229 square feet of overwater coverage through the removal of the existing docks. The new dock will be constructed with 3,905 square feet of grated surface decking. The grated decking will reduce overall shading effects and allow for light transmission with an overall positive impact to fish species.

Juvenile Chinook salmon also show a preference for shallow, gradually sloping areas with fine substrate (Sergeant and Beauchamp 2006). To eliminate these existing impacts to shallow water habitat the existing bulkheads will be removed from the shoreline.

Because bull trout and steelhead are not associated with shallow lakeshore rearing habitats, effects of the project on shallow rearing habitat are not relevant for these species.

5.3.3 Water Quality

Project construction activities have the potential to generate localized, temporary turbidity, and to affect water quality through accidental release of pollutants, such as petroleum products. Motor vehicles are the primary source of pollutants present in stormwater runoff from impervious surfaces. Pollutants and contaminants include those derived from tire wear (e.g., 6PPD-quinone), brake pads (e.g., copper, and other metals), and exhaust (e.g., phenanthrene and other polycyclic aromatic hydrocarbons, or PAHs). Stormwater may also include additional contaminants depending on the surrounding land use (e.g., herbicides and pesticides) and proximity to industrial facilities (i.e., facilities with inadequate source controls). (WSDOT 2024)

Turbidity is generally an undesirable condition for salmonids, as exposure to potentially contaminated or abrasive sediments suspended in the water column is thought to result in lethal and sub-lethal effects (Newcombe and MacDonald 1991). However, localized episodic turbidity events from an individual construction activity would not represent a permanent sediment source and would not

produce conditions of chronic exposure necessary to produce a direct detrimental effect on juvenile fishes (Newcombe and MacDonald 1991).

Removal of the existing docks and installations of the new dock could generate elevated turbidity. However, any elevation in turbidity would be localized and temporary. The most probable impact on juvenile salmonids would be behavioral modification (avoidance response) rather than injury or reduction in growth potential. An avoidance response could expose juvenile salmonids to increased predation or force them away from preferred rearing areas.

The most effective strategy for minimizing or eliminating potential construction-related impacts would be to restrict construction to periods when the presence of listed species is improbable. Proposed construction work-windows for this project in Lake Washington are adequate to minimize the probability that Chinook or coho salmon, steelhead, or bull trout would be in the Action Area during construction. Thus, temporary water quality impacts associated with the proposed project on federally listed and EFH species are discountable.

The installation of impervious surfaces and new pollution generating surfaces may increase 6PPD-quione, microplastics, PGTs, PAHs and other chemicals and the effectiveness of BMPs in removing these pollutants is unknown, therefore the installation of new pollution generating surfaces may have both temporary and permanent effects on water quality in Lake Washington.

5.3.4 Direct Mortality

Vibratory pile driving is not expected to kill salmonids, however impact driving to proof piles could potentially kill salmonids. The vibratory driving and use of an underwater saw for dock removal and installation is expected to cause any juvenile bull trout, Chinook, or steelhead to leave the work area; however, the potential for salmonid mortality during proofing is not discountable.

5.3.5 Indirect Effects

Effects resulting from the activity that are later in time could include changes in habitat quality and quantity, prey availability, and water quality experienced by juvenile salmonids.

5.3.6 Habitat and Prey Availability

The proposed action would include temporary disruption of the benthic community (including aquatic insects, worms, snails, and freshwater bivalves) in limited areas where pile driving, pile removal and barge attachment occurs. The total area of disturbance is relatively small, and benthic organisms are very resilient to habitat disturbance and would quickly recover to pre-disturbance levels. Removal of the existing docks will remove 40 12" timber piles, restoring approximately 31 square feet of benthic habitat. The entire area of existing dock removal is 2,229 square feet which will increase lighting and overall quality of prey habitat. Therefore, the localized and temporary nature of the proposed action would have a negligible impact to benthic invertebrates.

Vegetated shallows provide refuge and foraging habitat for juvenile salmonids and spawning substrate for forage fish. The new dock will be grated, which will allow for more light and enhance foraging habitat.

5.4 Effects on Critical Habitat

Critical habitat is defined and used in the ESA in reference to specific geographic areas that contain features essential to the conservation or recovery of endangered or threatened species that may require special management and protection. Critical habitat has been designated for Chinook salmon and bull trout in Lake Washington.

5.4.7 Chinook Salmon

Critical habitat was designated for the Puget Sound Chinook salmon DPS on 2 September 2005 (U.S. Office of the Federal Register), specifically including the Lake Washington sub-basin (Watershed Code 1711001203). Critical habitat includes areas with physical or biological features essential to the conservation of the species and which may require special management considerations or protection. Primary constituent elements of Chinook salmon critical habitat include the following:

- Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.
- Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
- Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
- Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.
- Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.
- Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Project activities that introduce or remove physical elements to and/or from Lake Washington, or that contribute to short-term changes in water quality, may alter certain primary constituent elements, as described in Table 8.

Table 8. Assessment of primary constituent elements for Chinook salmon.

Primary Constituent Elements	Direct, Indirect, Interrelated and Interdependent Effects
1. Freshwater spawning	Typically, it is not applicable in a lake environment. Chinook salmon rarely spawn in Lake Washington. No change in usage of the site would occur with the proposed project.
2. Freshwater rearing	The proposed project may impair shoreline foraging and refuge habitat for juvenile Chinook salmon during construction activities only. The project may result in avoidance behavior and direct impacts to fish during construction. Total area of the overwater structure will decrease by 2,229 square feet, replaced with 3,905 square feet of grated decking. A slight, long-term, overall improvement to rearing habitat would result from increased light penetration into the shoreline area.
3. Freshwater migration	Adult Chinook salmon migrate past the project site, though primarily farther offshore and outside the project's Action Area. Incorporation of grated decking will reduce migration impacts to juvenile Chinook by reducing the barrier and shading effects from existing conditions. Impacts to freshwater migration will be minimized by following the conservation measures, including sediment curtains/fencing and timing restrictions mentioned previously; however, water quality may be temporarily or permanently impacted.
4. Estuarine areas	The project would have no effect on estuarine areas.
5. Nearshore marine areas	The project would have no effect on nearshore marine areas.
6. Offshore marine areas	The project would have no effect on offshore marine areas.

Given the direct and indirect effects from the proposed action, the proposed project is **likely to adversely affect** the critical habitat of the Puget Sound Chinook salmon DPS.

5.4.8 Bull Trout

The Action Area is in the *Puget Sound Unit* (Unit 28), *Lake Washington CHSU* (critical habitat subunit). Bull trout critical habitat includes the following primary constituent elements (excerpted from the final rule, U.S. Office of the Federal Register 26 September 2005):

- Water temperatures ranging from 36 to 59 [deg]F (2 to 15 [deg]C), with adequate thermal refugia available for temperatures at the upper end of this range. Specific temperatures within this range would vary depending on bull trout life history stage and form, geography, elevation, diurnal and seasonal variation, shade (such as that provided by riparian habitat), and local groundwater influence;
- Complex stream channels with features such as woody debris, side channels, pools, and undercut banks to provide a variety of depths, velocities, and instream structures;

- Substrates of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine substrate less than 0.25 in (0.63 cm) in diameter and minimal substrate embeddedness are characteristic of these conditions;
- A natural hydrograph, including peak, high, low, and base flows within historic ranges or, if regulated, a hydrograph that demonstrates the ability to support bull trout populations by minimizing daily and day-to-day fluctuations and minimizing departures from the natural cycle of flow levels corresponding with seasonal variation;
- Springs, seeps, groundwater sources, and subsurface water connectivity to contribute to water quality and quantity;
- Migratory corridors with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and foraging habitats, including intermittent or seasonal barriers induced by high water temperatures or low flows;
- An abundant food base including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish;
- Few or no nonnative predatory, interbreeding, or competitive species present; and
- Permanent water of sufficient quantity and quality such that normal reproduction, growth and survival are not inhibited.

According to the Federal Register, Lake Washington "provides FMO [foraging, migratory and overwintering] habitat for amphidromous bull trout outside of currently delineated core areas in the Puget Sound Recovery Unit." Project activities that introduce or remove physical elements from the Lake or that contribute to short-term changes in water quality may alter certain primary constituent elements (Table 9).

Table 9. Assessment of primary constituent elements for bull trout.

Primary Constituent Elements (PCEs)	Direct, Indirect, Interrelated and Interdependent Effects
1. Water temperature	The project would have no effect on water temperature.
2. Complex stream channel	N/A in a lake environment.
3. Substrate	Permanent impacts to benthic surface with pile installation and removal. Temporary impacts from barge securing pins.
4. Natural hydrograph	The project would have no effect on natural hydrograph.
5. Spring, seeps, groundwater sources and subsurface water connectivity	The project would have no effect on groundwater sources or connectivity.

Primary Constituent Elements (PCEs)	Direct, Indirect, Interrelated and Interdependent Effects
6. Migratory corridors with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering and foraging habitats	The proposed project would not create any barrier to migration, particularly as lake bull trout are larger fish that are not generally subject to predation-pressure and are not oriented near the shoreline. Migration conditions would be slightly improved over existing conditions due to a grated deck and removal of existing decks.
7. Abundant food base	The project would have little to no effect on food supplies for bull trout.
8. Few or no nonnative predatory, interbreeding, or competitive species	The proposed project would not increase populations of any predatory, interbreeding, or competitive species.
9. Permanent water of sufficient quantity and quality such that normal reproduction, growth and survival are not inhibited.	Potential temporary water-quality impacts are possible because of sediment disturbance during construction. Impacts would be minimized by following the conservation measures and timing restrictions mentioned previously. Permanent impacts may occur due to an increase in impervious surface and pollution generating surfaces.

Given the direct and indirect effects from the proposed action, the proposed project is **likely to adversely affect** the critical habitat for the Coastal-Puget Sound bull trout DPS.

6. Determination of Effect

6.1 Chinook Salmon

The project is likely to adversely affect Puget Sound Chinook salmon because:

- Underwater noise levels that would occur during construction could disturb or directly injure Chinook.
- The project will include impacts to the Lyon Creek floodplain and riparian areas and increase impervious surface and pollution generating surfaces.

6.2 Bull Trout

The project is likely to adversely affect Coastal-Puget Sound bull trout because:

- Underwater noise levels that would occur during construction could disturb or directly injure bull trout.
- The project will include impacts to the Lyon Creek floodplain and riparian areas and increase impervious surface and pollution generating surfaces.

6.3 Steelhead

The project is likely to adversely affect Puget Sound steelhead because:

- Underwater noise levels that would occur during construction could disturb or directly injure steelhead.
- The project will include impacts to the Lyon Creek floodplain and riparian areas and increase impervious surface and pollution generating surfaces.

6.4 Critical Habitat

Given the direct and indirect effects from the proposed action, the proposed project is likely to adversely affect the designated critical habitat of Puget Sound Chinook salmon or Coastal-Puget Sound bull trout. Species-specific effect determination details are provided below.

6.4.1 Chinook Salmon

A may affect determination is warranted for Puget Sound Chinook salmon critical habitat because:

- The project occurs in a designated critical habitat area.
- Primary constituent elements for Chinook salmon critical habitat in the Action Area include freshwater rearing and migration.

The project is likely to adversely affect Puget Sound Chinook salmon critical habitat because:

- Underwater noise levels that would occur during construction could disturb or directly injure salmonids.
- The project will include impacts to the Lyon Creek floodplain and riparian areas and increase impervious surface and pollution generating surfaces.

6.4.2 Bull Trout

A may affect determination is warranted for Coastal-Puget Sound bull trout critical habitat because:

- The project occurs in a designated critical habitat area.
- According to the Federal Register, Lake Washington "provides FMO [foraging, migratory and overwintering] habitat for amphidromous bull trout outside of currently delineated core areas in the Puget Sound Recovery Unit."

The project is likely to adversely affect Coastal-Puget Sound bull trout habitat because:

- Underwater noise levels that would occur during construction could disturb or directly injure salmonids.
- The project will include impacts to the Lyon Creek floodplain and riparian areas and increase impervious surface and pollution generating surfaces.

6.5 Effects Summary

Determination of effect for all species and their respective assessment areas are listed in Table 10.

Table 10. Determination of effect for federally listed species

Species	Overall Project Effect	Effect on Critical Habitat
Puget Sound DPS Chinook salmon	Likely to adversely effect	Likely to adversely effect
Coastal-Puget Sound DPS bull trout	Likely to adversely effect	Likely to adversely effect
Puget Sound DPS steelhead	Likely to adversely effect	Likely to adversely effect
Marbled Murrelet (*Brachyramphus marmoratus)*	No effect	No effect
Yellow-billed Cuckoo (*Coccyzus americanus*)	No effect	No effect
Northwestern Pond Turtle (*Actinemys marmorata*)	No effect	No effect
Monarch Butterfly (*Danaus plexippus*)	No effect	No effect

7. Magnuson Stevens Fishery Conservation And Management Act Essential Fish Habitat

Pacific salmon species of interest related to EFH in the Action Area are Chinook and coho salmon (U.S. Office of the Federal Register 15 October 2008). The following is a description of Pacific salmon EFH per the federal Fisheries Management Plan (FMP).

> *EFH for the Pacific coast salmon fishery means those waters and substrate necessary for salmon production needed to support a long-term sustainable salmon fishery and salmon contributions to a healthy ecosystem. To achieve that level of production, EFH includes all those streams, lakes, ponds, wetlands, and other currently viable water bodies and most of the habitat historically accessible to salmon in Washington, Oregon, Idaho, and California. Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds wetlands, and other water bodies currently or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the Pacific Fishery Management Council), and longstanding, naturally-impassable barriers (e.g., natural waterfalls in existence for several hundred years).*

Discussions regarding Pacific salmon essential fish habitat (EFH) in the Lake Washington basin are indirectly included in this BE. The information below identifies where these discussions are located within the BE and concludes with a determination of effect. In accordance with comments from the Corps and prior concurrence letters from NOAA Fisheries, this discussion should be sufficient to make this determination.

7.1 Description of the Project / Proposed Activity

The project description and location are described within Sections 1 and 2 of the BE.

7.2 Status/Presence of Pacific Salmon Essential Fish Habitat in the Action Area

Pacific Salmon EFH within the Action Area may include habitat for Chinook and coho salmon. Pink salmon do not occur in the Lake Washington basin and will not be discussed further. A discussion of Chinook salmon status and presence is included in Section 4.1 of the BE. Coho salmon status and presence in the Action Area are discussed below.

7.3 Coho Salmon

Coho salmon of the Puget Sound-Strait of Georgia ESU are federally listed as a Species of Concern (U.S. Office of the Federal Register 15 April 2004) and considered a Washington State Priority Species.

In the Lake Washington watershed, coho salmon are broken into two stocks: 1) the Cedar River, and 2) the Lake Washington/Sammamish River Tributaries (WDFW SCORE electronic reference). Adult coho salmon migrate through the Ship Canal and Lake Union to reach tributaries suitable for spawning from late September through November. Adults spawn from October through February, peaking between November and December in most tributaries. Escapement levels for both stocks have been declining steadily.

Coho salmon typically rear for one year in freshwater prior to migrating to saltwater. Most juvenile coho enter Lake Washington from tributaries as smolts (average length >100 mm) in mid-May to late June or as young-of-year fish (City of Seattle 2008). In general, peak coho outmigration takes place in May (Weitkamp et al. 1995). The majority of juvenile coho are not rearing in Lake Washington for extended periods; rather, they are emigrating from natal streams via the Ship Canal, only spending a matter of days in the system before transitioning to saltwater (City of Seattle 2008). Variation in juvenile salmonid emigration timing may be attributable to increasing water temperatures, primarily caused by increasing air temperatures throughout the northwest (Wetherbee and Houck 2000). Smolts may respond to high water temperatures through: 1) avoidance (~15˚C), 2) smoltification ability (15-16˚C), and 3) changes in growth (19-20˚C) (City of Seattle 2008). Juvenile coho may avoid the elevated temperatures in the littoral zone during the summer and are likely to migrate from the littoral zone or from the lake before water temperatures exceed 17˚C, which often occurs in shallow areas by mid- to late-June.

In conclusion, juvenile coho may occur in those portions of Lyon Creek and Lake Washington within the Action Area throughout the year. Juvenile coho may emigrate through the Action Area in Lake Washington from mid-March through June. Adult coho may migrate upstream through the Action Area from September to December.

7.4 Potential Adverse Effects of the Proposed Project

Potential direct impacts to Pacific salmon EFH, as described in Section 5 of this BE, include the following:

- Production of aquatic noise above the threshold of disturbance to salmonids;
- Production of temporary, localized sediment plumes that would dissipate following cessation of construction activities; and
- Potential to kill Chinook or coho salmon, to the extent that they may be present in the Project Area during construction activities.

Indirect beneficial effects of the project on Chinook and coho salmon include a decrease in both physical and light migration barriers and slightly increased foraging and refugia opportunities.

7.5 EFH Conservation Measures

Impact minimization measures are addressed in Section 2.3 of the BE. Incorporated impact minimization measures include but are not limited to following in-water work windows, reducing the draft of the floating dock, and bridging the gap between the shore and the floating dock.

7.6 Conclusion

All the proposed project's potential impacts on Coho and Chinook salmon, steelhead, bull trout and EFH are considered collectively. While both beneficial and detrimental effects could result from the proposed project, the detrimental effects have been avoided and minimized to the extent feasible. Potential impacts will be offset by replacing existing docks with one grated dock that will have an overall increase in light and habitat value. Existing abutments will also be removed and passively restored. In addition, a mitigation plan has been designed to improve riparian function of Lyon creek and associated wetlands. Underwater noise levels from construction may disturb or directly injure fish though in-water work would be limited to the approved work windows when fish are least likely to be present. Thus, the collective impact of the proposed project may adversely affect Pacific salmon, steelhead, bull trout and EFH.

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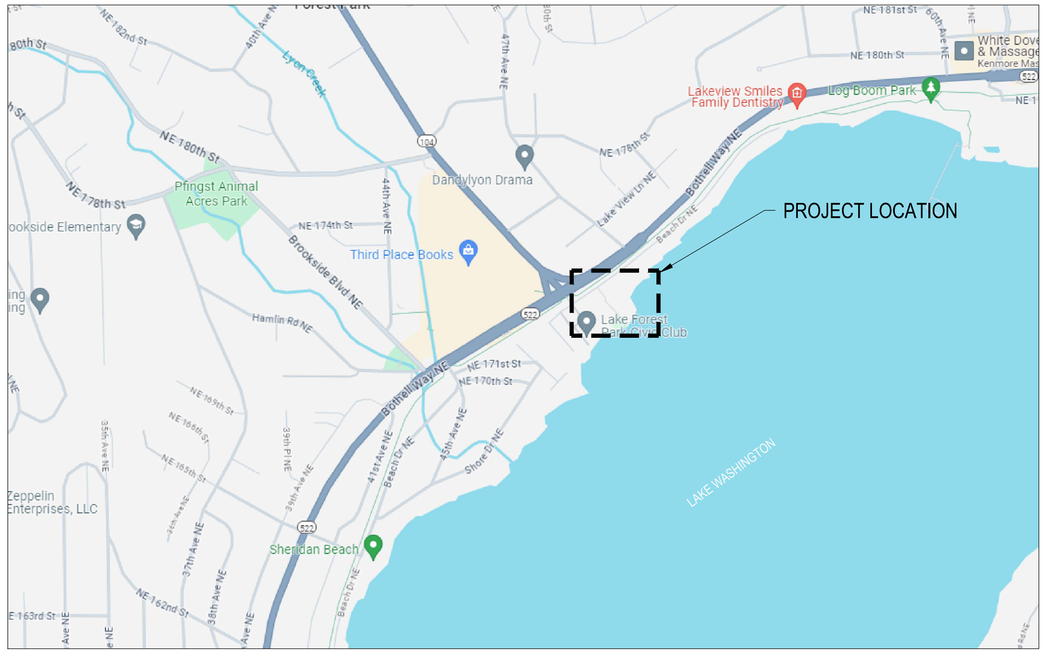
APPENDIX A: 50% Design Plans

LAKE FOREST PARK LAKEFRONT IMPROVEMENTS

50% DESIGN

VICINITY MAP



PROJECT LOCATION

SITE DATA

ADDRESS:
LAKE FOREST PARK
17337, 17345, & 17347 BEACH DR. NE
LAKE FOREST PARK, WA 98155

PARCEL NUMBERS:
403010-0050, 403010-0035, AND 403010-0040

SITE AREA:
403010-0050= 60,532 SF (1.39 AC)
403010-0035= 35,601.1 SF (0.82 AC)
403010-0040= 48,111.5 SF (1.10 AC)

PROJECT TEAM

APPLICANT:
CITY OF LAKE FOREST PARK
17425 BALLINGER WAY NE
LAKE FOREST PARK, WA
CONTACT: CORY ROCHE, ENVIRONMENTAL & SUSTAINABILITY SPECIALIST
PH: (206) 957-2814

PROJECT MANAGER:
FACET
9706 4TH AVE NE
SEATTLE, WA 98115
CONTACT: AMBER MIKLUSCAK, PLA, GISP
PH: (206) 523-0024

CIVIL:
FACET
CONTACT: ERIK DAVIDO, PE

MARINE:
FACET
CONTACT: STEVE ROBERT, PE

PERMITTING:
FACET
CONTACT: KENNY BOOTH, AICP

ARBORIST:
FACET
CONTACT: ROEN HOHLFELD, ISA CERT

STRUCTURAL:
FACET
CONTACT: MATT SCHMITTER, PE

ARCHITECTURE:
JOHNSTON ARCHITECTS
3131 WESTERN AVE #510
SEATTLE, WA 98121
CONTACT: JACK CHAFFIN, AIA
PH: (206) 523-6150

GEOTECHNICAL:
HWA GEOSCIENCES
21312 30TH DR SE
BOTHELL, WA 98021
CONTACT: WILL ROSSO
PH: (425) 774-0106

ELECTRICAL:
ELCON ASSOCIATES
16300 CHRISTENSEN RD #330
TUKWILA, WA 98188
CONTACT: DIMITRI SATERLIS
PH: (206) 243-5022

BUILDING MEP:
SAZAN GROUP, INC.
600 STEWART ST #1400, SEATTLE
SEATTLE, WA 98101
CONTACT:
PH: (206) 267-1700

SURVEYOR:
APS SURVEY & MAPPING
13221 SE 26TH STREET, SUITE A
BELLEVUE, WA 98005
CONTACT: SAM WARD, PRINCIPAL SURVEYOR
PH: (425) 746-3200

HAZMAT:
EHS-INTERNATIONAL, INC.
1011 SW KLICKITAT WAY, SUITE 104
SEATTLE, WA 98134
CONTACT: FRED LUCK
PH: (206) 306-1900

SHEET INDEX

50% PROGRESS SET
NOT FOR PERMIT

Know what's below.
Call before you dig.

NO.	DATE	BY	REVISION

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG/WATERSHED CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, AND ALL OTHER EXISTING FEATURES AND CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN AND/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG/WATERSHED PRIOR TO CONSTRUCTION.

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STATE OF WASHINGTON
AMBER V. MIKLUSCAK
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No. 3176 EXP. 12/10/25

PRELIMINARY

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(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

LAKE FOREST PARK LAKEFRONT IMPROVEMENTS
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LAKE FOREST PARK, WA 98155
2303.0384.02

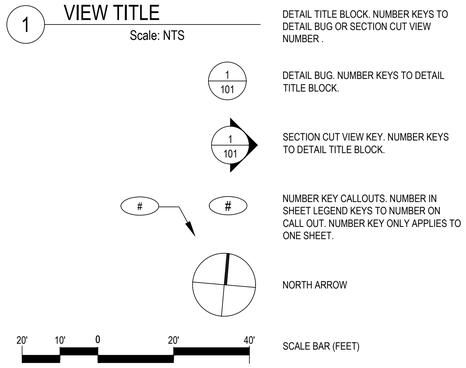
50% DESIGN

COVERSHEET

DATE: 10/7/2024
PLAN NUMBER: G001
SHEET 1 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\02303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\02XX_GENERAL.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED

PLAN SYMBOLS



DETAIL TITLE BLOCK. NUMBER KEYS TO DETAIL BUG OR SECTION CUT VIEW NUMBER .

DETAIL BUG. NUMBER KEYS TO DETAIL TITLE BLOCK.

SECTION CUT VIEW KEY. NUMBER KEYS TO DETAIL TITLE BLOCK.

NUMBER KEY CALLOUTS. NUMBER IN SHEET LEGEND KEYS TO NUMBER ON CALL OUT. NUMBER KEY ONLY APPLIES TO ONE SHEET.

NORTH ARROW

SCALE BAR (FEET)

ABBREVIATIONS

BM = BENCHMARK
BP = BIORETENTION POND
BPL = BIORETENTION PLANTER
BTM = BOTTOM
CB = CATCH BASIN
CL = CENTER LINE
CONC = CONCRETE
CW = CONCRETE WALK
GR = GRADE
EL = ELEVATION
EOP = EDGE OF PAVEMENT
EX = EXISTING
EG = EXISTING GRADE
FF = FINISHED FLOOR
FG = FINISHED GRADE
FL = FLOWLINE
IE = INVERT ELEVATION
LSCAPE = LANDSCAPING
LT = LEFT
M.I.C. = MONUMENT IN CASE
NO. = NUMBER
PC = POINT OF CURVE
PT = POINT OF TANGENT
RT = RIGHT
SD = STORM DRAIN
SSS = SANITARY SIDE SEWER
SSFM = SANITARY SIDE SEWER FORCE MAIN
STA = STATION
STD = STANDARD
TOC = TOP OF CURB
TOP = TOP OF PAVEMENT
TOPS = TOP OF STAIR
TYP = TYPICAL

GENERAL NOTES

1) ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH PERMIT CONDITIONS, THE KING COUNTY CODE (KCC), THE KING COUNTY ROAD DESIGN AND CONSTRUCTION STANDARDS (KCRDCS), WASHINGTON STATE DOT (WSDOT) STANDARD SPECIFICATIONS AND THE CONDITIONS OF PRELIMINARY APPROVAL. IT SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICANT AND THE PROFESSIONAL CIVIL ENGINEER TO CORRECT ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS. ALL CORRECTIONS SHALL BE AT NO ADDITIONAL COST OR LIABILITY TO KING COUNTY.

(2) THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THE KING COUNTY DEPARTMENT OF PERMITTING AND ENVIRONMENTAL REVIEW (DPER) ENGINEERING REVIEW CHECKLIST. SOME ELEMENTS MAY HAVE BEEN OVERLOOKED OR MISSED BY THE DPER PLAN REVIEWER. ANY VARIANCE FROM ADOPTED STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY KING COUNTY PRIOR TO CONSTRUCTION.

(3) APPROVAL OF THIS ROAD, GRADING, PARKING AND DRAINAGE PLAN DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION (E.G. DOMESTIC WATER CONVEYANCE, SEWER CONVEYANCE, GAS, ELECTRICAL, ETC.)

(4) BEFORE ANY CONSTRUCTION OR DEVELOPMENT ACTIVITY, A PRECONSTRUCTION MEETING MUST BE HELD BETWEEN THE DPER'S DEVELOPMENT INSPECTOR, THE APPLICANT, AND THE APPLICANT'S CONSTRUCTION REPRESENTATIVE.

(5) A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

(6) GRADING ACTIVITIES (SITE ALTERATION) ARE LIMITED TO THE HOURS OF 7 A.M. TO 7 P.M. MONDAY THROUGH SATURDAY AND 10 A.M. TO 5 P.M. ON SUNDAY, UNLESS OTHERWISE APPROVED WITH A WRITTEN DECISION BY THE REVIEWING AGENCY.

(7) IT SHALL BE THE APPLICANT'S/CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS NECESSARY BEFORE INITIATING OFF-SITE WORK. EASEMENTS REQUIRE REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

(8) FRANCHISED UTILITIES OR OTHER INSTALLATIONS THAT ARE NOT SHOWN ON THESE APPROVED PLANS SHALL NOT BE CONSTRUCTED UNLESS AN APPROVED SET OF PLANS THAT MEET ALL REQUIREMENTS OF KCRDCS CHAPTER 8 ARE SUBMITTED TO THE DPER'S DEVELOPMENT INSPECTOR THREE DAYS PRIOR TO CONSTRUCTION.

(9) DATUM SHALL BE NAVD88 UNLESS OTHERWISE APPROVED BY DPER.

(10) DEWATERING SYSTEM (UNDERDRAIN) CONSTRUCTION SHALL BE WITHIN A RIGHT-OF-WAY OR APPROPRIATE DRAINAGE EASEMENT, BUT NOT UNDERNEATH THE ROADWAY SECTION. ALL UNDERDRAIN SYSTEMS MUST BE CONSTRUCTED IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS.

(11) ALL UTILITY TRENCHES AND ROADWAY SUBGRADE SHALL BE BACKFILLED AND COMPACTED TO 95 PERCENT MAXIMUM DENSITY PER WSDOT STANDARD SPECIFICATIONS 2-03.3(14)D, METHOD C.

(12) OPEN CUTTING OF EXISTING ROADWAYS FOR NON-FRANCHISED UTILITY OR STORM WORK IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY DPER AND NOTED ON THESE APPROVED PLANS. ANY OPEN CUT SHALL BE RESTORED IN ACCORDANCE WITH KCRDCS.

(13) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SHALL APPLY. WORK IN RIGHT-OF-WAY IS NOT AUTHORIZED UNTIL A TRAFFIC CONTROL PLAN IS APPROVED BY KING COUNTY.

STANDARD ESC AND SWPP PLAN NOTES

1. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).

2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.

3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY SURVEY TAPE OR FENCING, IF REQUIRED, PRIOR TO CONSTRUCTION (SWDM APPENDIX D). DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.

4. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN AND TRACK OUT TO ROAD RIGHT OF WAY DOES NOT OCCUR FOR THE DURATION OF THE PROJECT.

5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, FLOW CONTROL BMP LOCATIONS (EXISTING AND PROPOSED),AND ADJACENT PROPERTIES IS MINIMIZED.

6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.) AS DIRECTED BY KING COUNTY.

7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES.

8. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).

9. ANY AREA NEEDING ESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.

10. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH DURING THE DRY SEASON, BI-MONTHLY DURING THE WET SEASON, OR WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT.

11. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.

12. ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION SYSTEM, THE TEMPORARY FACILITY MUST BE ROUGH GRADED SO THAT THE BOTTOM AND SIDES ARE AT LEAST THREE FEET ABOVE THE FINAL GRADE OF THE PERMANENT FACILITY. FLOW CONTROL BMP AREAS (EXISTING OR PROPOSED) SHALL NOT BE USED AS TEMPORARY FACILITIES AND SHALL BE PROTECTED FROM SEDIMENTATION AND INTRUSION.

13. COVER MEASURES WILL BE APPLIED IN CONFORMANCE WITH APPENDIX D OF THE KING COUNTY SURFACE WATER DESIGN MANUAL.

14. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE DPER INSPECTOR.

15. ALL POLLUTANTS, INCLUDING WASTE MATERIALS, THAT OCCUR ONSITE SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER.

16. COVER, CONTAINMENT, AND PROTECTION FROM VANDALISM SHALL BE PROVIDED FOR ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND NON-INERT WASTES PRESENT ON THE SITE (SEE CHAPTER 173-304 WAC FOR THE DEFINITION OF INERT WASTE). ONSITE FUELING TANKS SHALL INCLUDE SECONDARY CONTAINMENT.

17. MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, SOLVENT AND DE-GREASING CLEANING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO STORMWATER RUNOFF MUST BE CONDUCTED USING SPILL PREVENTION MEASURES, SUCH AS DRIP PANS. CONTAMINATED SURFACES SHALL BE CLEANED IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL INCIDENT. EMERGENCY REPAIRS MAY BE PERFORMED ONSITE USING TEMPORARY PLASTIC PLACED BENEATH AND, IF RAINING, OVER THE VEHICLE.

18. APPLICATION OF AGRICULTURAL CHEMICALS, INCLUDING FERTILIZERS AND PESTICIDES, SHALL BE CONDUCTED IN A MANNER AND AT APPLICATION RATES THAT WILL NOT RESULT IN LOSS OF CHEMICAL TO STORMWATER RUNOFF. MANUFACTURERS' RECOMMENDATIONS FOR APPLICATION RATES AND PROCEDURES SHALL BE FOLLOWED.

19. MEASURES SHALL BE USED TO PREVENT OR TREAT CONTAMINATION OF STORMWATER RUNOFF BY PH MODIFYING SOURCES. THESE SOURCES INCLUDE, BUT ARE NOT LIMITED TO, BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHING AND CURING WATERS, WASTE STREAMS GENERATED FROM CONCRETE GRINDING AND SAWING, EXPOSED AGGREGATE PROCESSES, AND CONCRETE PUMPING AND MIXER WASHOUT WATERS. STORMWATER DISCHARGES SHALL NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE WATER QUALITY STANDARD FOR PH IN THE RECEIVING WATER.

DRAINAGE NOTES

1. PROOF OF LIABILITY INSURANCE SHALL BE SUBMITTED TO DPER PRIOR TO THE CONSTRUCTION OF THE DRAINAGE FACILITIES, PREFERABLY AT THE PRECONSTRUCTION MEETING.
2. ALL PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH WSDOT SPECIFICATIONS. THIS SHALL INCLUDE LEVELING AND COMPACTING THE TRENCH BOTTOM, THE TOP OF THE FOUNDATION MATERIAL, AND ANY REQUIRED PIPE BEDDING, TO A UNIFORM GRADE SO THAT THE ENTIRE PIPE IS SUPPORTED BY A UNIFORMLY DENSE UNYIELDING BASE.
3. STEEL PIPE SHALL BE ALUMINIZED, OR GALVANIZED WITH ASPHALT TREATMENT #1 OR BETTER INSIDE AND OUTSIDE.
4. ALL DRAINAGE STRUCTURES, SUCH AS CATCH BASINS AND MANHOLES, NOT LOCATED WITHIN A TRAVELED ROADWAY OR SIDEWALK, SHALL HAVE SOLID LOCKING LIDS. ALL DRAINAGE STRUCTURES ASSOCIATED WITH A PERMANENT RETENTION/DETENTION FACILITY SHALL HAVE SOLID LOCKING LIDS.
5. ALL CATCH BASIN GRATES SHALL CONFORM TO KCRDCS, WHICH INCLUDES THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS" AND "PROPERTY OF KING COUNTY", EXCEPT THAT PRIVATE DRAINAGE SYSTEMS SHALL NOT HAVE THE WORDS "PROPERTY OF KING COUNTY".
6. ALL DRIVEWAY CULVERTS LOCATED WITHIN KING COUNTY RIGHT-OF-WAY SHALL BE OF SUFFICIENT LENGTH TO PROVIDE A MINIMUM 3:1 SLOPE FROM THE EDGE OF THE DRIVEWAY TO THE BOTTOM OF THE DITCH. CULVERTS SHALL HAVE BEVELED END SECTIONS TO MATCH THE SIDE SLOPE PER KCRDCS.
7. ROCK FOR EROSION PROTECTION OF ROADWAY DITCHES, WHERE REQUIRED, MUST BE OF SOUND QUARRY ROCK, PLACED TO A DEPTH OF 1 FOOT, AND MUST MEET THE FOLLOWING SPECIFICATIONS: 4"-8"/40%-70% PASSING; 2"- 4" ROCK/30%-40% PASSING; AND -2" ROCK/10%-20% PASSING. INSTALLATION SHALL BE IN ACCORDANCE WITH KCRDCS.
8. DRAINAGE OUTLETS (STUB-OUTS) SHALL BE PROVIDED FOR EACH INDIVIDUAL LOT, EXCEPT FOR THOSE LOTS APPROVED FOR INFILTRATION BY KING COUNTY. STUB-OUTS SHALL CONFORM TO THE FOLLOWING:
   A) EACH OUTLET SHALL BE SUITABLY LOCATED AT THE LOWEST ELEVATION ON THE LOT, SO AS TO SERVICE ALL FUTURE ROOF DOWNSPOUTS AND FOOTING DRAINS, DRIVEWAYS, YARD DRAINS, AND ANY OTHER SURFACE OR SUBSURFACE DRAINS NECESSARY TO RENDER THE LOTS SUITABLE FOR THEIR INTENDED USE. EACH OUTLET SHALL HAVE FREE-FLOWING, POSITIVE DRAINAGE TO AN APPROVED STORMWATER CONVEYANCE SYSTEM OR TO AN APPROVED OUTFALL LOCATION.
   B) OUTLETS ON EACH LOT SHALL BE LOCATED WITH A FIVE-FOOT-HIGH, 2" X 4" STAKE MARKED "STORM" OR "DRAIN". THE STUB-OUT SHALL EXTEND ABOVE SURFACE LEVEL, BE VISIBLE, AND BE SECURED TO THE STAKE.
   C) PIPE MATERIAL SHALL CONFORM TO UNDERDRAIN SPECIFICATIONS DESCRIBED IN KCRDCS AND, IF NON-METALLIC, THE PIPE SHALL CONTAIN WIRE OR OTHER ACCEPTABLE DETECTION.
   D) DRAINAGE EASEMENTS ARE REQUIRED FOR DRAINAGE SYSTEMS DESIGNED TO CONVEY FLOWS THROUGH INDIVIDUAL LOTS.
   E) THE APPLICANT/CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL STUB-OUT CONVEYANCE LINES WITH RESPECT TO THE UTILITIES (E.G. POWER, GAS, TELEPHONE, TELEVISION).
   F) ALL INDIVIDUAL STUB-OUTS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE LOT HOME OWNER.
9. ALL DISTURBED PERVIOUS AREAS (COMPACTED, GRADED, LANDSCAPED, ETC.) OF THE DEVELOPMENT SITE MUST DEMONSTRATE ONE OF THE FOLLOWING, IN ACCORDANCE WITH KCC AND THE LOW IMPACT DEVELOPMENT (LID) COMPONENTS OF THE APPROVED SITE PLAN: THE EXISTING DUFF LAYER SHALL BE STAGED AND REDISTRIBUTED TO MAINTAIN THE MOISTURE CAPACITY OF THE SOIL, OR; AMENDED SOIL SHALL BE ADDED TO MAINTAIN THE MOISTURE CAPACITY.
10. SEASONAL CLEARING IS LIMITED BETWEEN OCTOBER 1 AND APRIL 30 INCLUSIVE, UNLESS OTHERWISE APPROVED WITH A WRITTEN DECISION BY THE REVIEWING AGENCY.
11. IMPROVEMENTS AND/OR BUILDINGS SHALL NOT BE INSTALLED UNTIL DRAINAGE FACILITIES ARE "IN OPERATION", (KCC 9.04).

RECOMMENDED TESC SEQUENCING

1. HOLD PRE-CONSTRUCTION MEETING.
2. POST SIGN WITH NAME AND PHONE NUMBER OF ESC SUPERVISOR.
3. FLAG OR FENCE CLEARING LIMITS.
4. INSTALL CATCH BASIN PROTECTION.
5. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).
6. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).
7. CONSTRUCT SEDIMENT PONDS AND TRAPS AS NEEDED.
8. GRADE AND STABILIZE CONSTRUCTION ROADS AS NEEDED.
9. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT. CONSTRUCT SWPPS IN ANTICIPATION OF SCHEDULED CONSTRUCTION ACTIVITY.
10. MAINTAIN EROSION CONTROL AND SWPPS MEASURES IN ACCORDANCE WITH KING COUNTY STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
11. RELOCATE EROSION CONTROL AND SWPPS MEASURES, OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE EROSION AND SEDIMENT CONTROL AND POLLUTANT PROTECTION IS ALWAYS IN ACCORDANCE WITH THE KING COUNTY CONSTRUCTION STORMWATER POLLUTION PREVENTION STANDARDS.
12. COVER ALL AREAS THAT WIL BE UNWORKED FOR MORE THAT SEVEN DAYS DURING THE DRY SEASON OR TWO DAYS DURING THE WET SEASON WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING, OR EQUIVALENT.
13. STABILIZE ALL AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADE.
14. SEED, SOD, STABILIZE, OR COVER ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
15. UPON COMPLETION OF THE PROJECT, STABILIZE ALL DISTURBED AREAS AND REMOVE BMPS IF APPROPRIATE.

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50% DESIGN

GENERAL NOTES AND SYMBOLS

DATE: 10/10/2024

PLAN NUMBER:
G002
SHEET 2 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\0323\03.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\G0XX_GENERAL.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED

LEGEND

- LIMITS — LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- WETLAND AND STREAM BUFFER
- SILT FENCE (1 / C003)
- CHAINLINK FENCE (INSTALLED DURING PHASE I EARLY WORKS CONSTRUCTION)
- CHAINLINK FENCE (INSTALLED DURING PHASE II FALL 2024 CONSTRUCTION)
- HVF — HIGH VISIBILITY FENCE (2 / C003)
- CONSTRUCTION ENTRANCE (3 / C003)
- INLET PROTECTION (4 / C003)
- SEDIMENT CURTAIN (5 / C003)
- CONSTRUCTION STAGING AREA (6 / C003)
- COIR LOG (7 / C003)

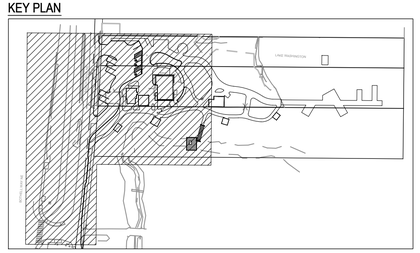
KEY NOTES

1. PARKING, LOADING, STORAGE, AND STAGING AREA
2. CHAINLINK FENCE FROM PREVIOUS PROJECT PHASE ALREADY INSTALLED. ADJUST VEHICLE SWING GATE LOCATION TO CONSTRUCTION ENTRANCE AS NEEDED
3. PLACE COIR LOG ALONG FACE OF TRENCH DRAIN
4. TEMPORARY STORM DRAIN INLET PROTECTION (4 / C003)
5. CONTRACTOR TO SWEEP STREET DAILY OR MORE OFTEN IF NECESSARY TO REMOVE TRACKED SEDIMENT
6. CONNECT CHAIN LINK FENCE TO TEMPORARY CHAIN LINK FENCE INSTALLED DURING PHASE 1
7. IMPROVEMENTS SHOWN FOR CONTEXT RELATIVE TO EROSION AND SEDIMENT CONTROLS ONLY
8. LAWN AREA TO REMAIN UNDISTURBED
9. IN-WATER ESC MEASURES

NOTES

1. THIS PLAN IDENTIFIES THE MINIMUM MEASURES REQUIRED; ADDITIONAL MEASURES AND ADJUSTMENT MAY BE REQUIRED BASED ON CONSTRUCTION METHODS AND AREA OF DISTURBANCE. SEE ESC AND SWPP PLAN NOTES FOR FURTHER GUIDANCE.
2. ADJUST AND RELOCATE ESC BMP'S TO ACCOMMODATE WORKABLE AREA OR AS DIRECTED BY ENGINEER.
3. SEE SHEET L004 - L006 FOR TREE PROTECTION FENCE AND DETAILS.
4. SEE SHEET C007 - C008 FOR DEMOLITION PLAN AND UTILITIES TO BE PROTECTED / REMOVED.

KEY PLAN



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SCALE: 1" = 20'

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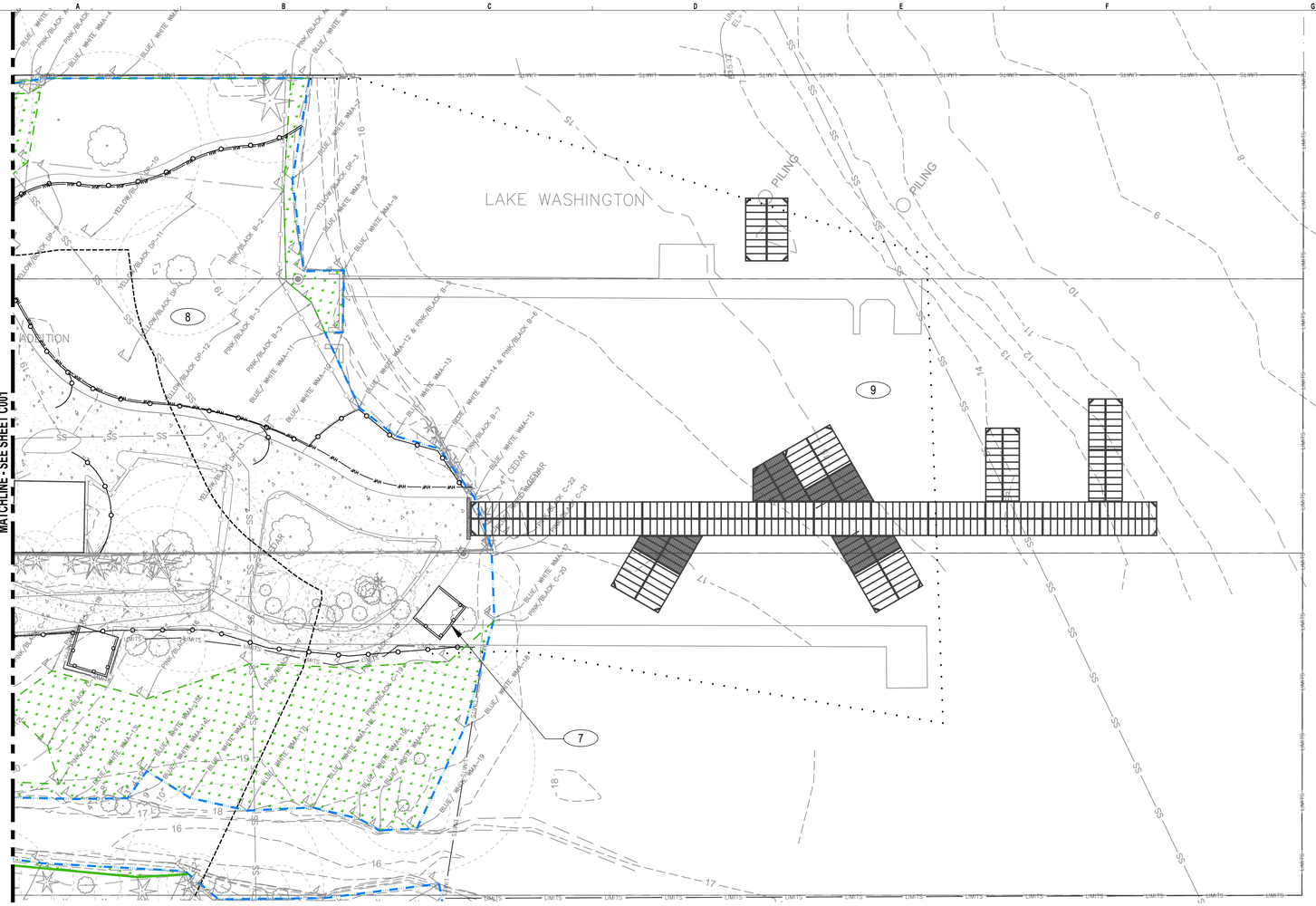
TESC PLAN

DATE: 10/7/2024
PLAN NUMBER: C001
SHEET 3 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C001-C003_TESC PLAN AND DETAILS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

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- WETLAND BOUNDARY (NOT-DELINEATED)
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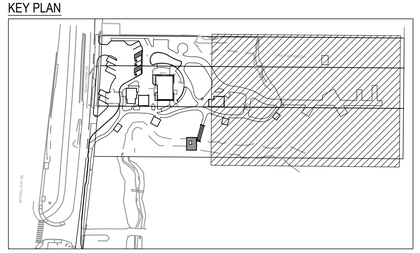
KEY PLAN



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TESC PLAN

DATE: 10/7/2024
PLAN NUMBER:
C002
SHEET 4 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C001-C003_TESC PLAN AND DETAILS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES)
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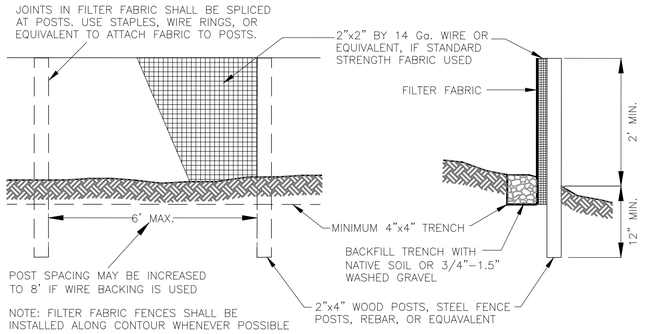
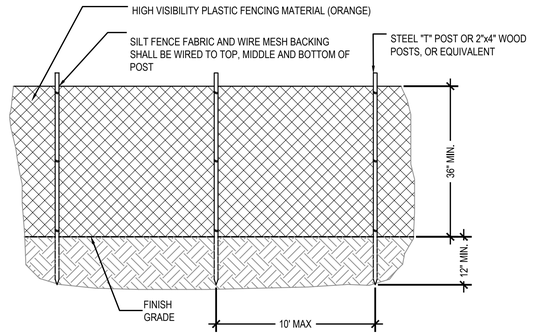


1 SILT FENCE

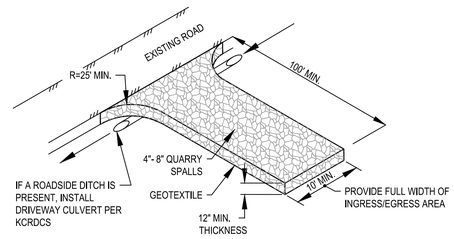
NTS



NOTES:
1. DO NOT NAIL OR STAPLE FENCE TO EXISTING TREES OR UTILITY POLES.
2. ANY DAMAGE TO THE FENCE SHALL BE REPAIRED IMMEDIATELY.

2 HIGH VISIBILITY FENCE

NTS



NOTES:

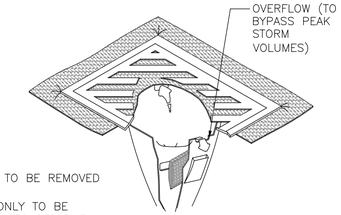
- PER KING COUNTY ROAD DESIGN AND CONSTRUCTION STANDARDS (KCRDCS), DRIVEWAYS SHALL BE PAVED TO EDGE OF R-O-W PRIOR TO INSTALLATION OF THE CONSTRUCTION ENTRANCE TO AVOID DAMAGING OF THE ROADWAY.
- IT IS RECOMMENDED THAT THE ENTRANCE BE CROWNED SO THAT RUNOFF DRAINS OFF THE PAD.

3 STABILIZED CONSTRUCTION ENTRANCE

NTS

STORM DRAIN INLET (INSERT)

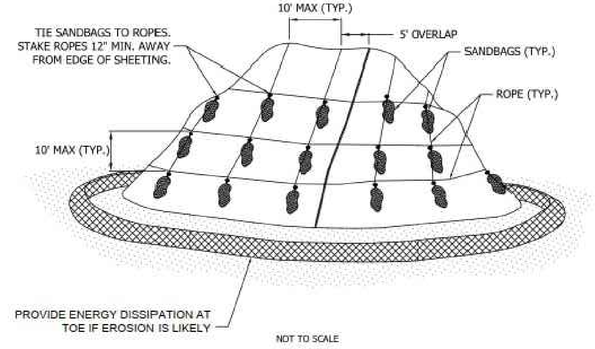
PRE–MANUFACTURED CATCH BASIN OR INLET INSERT



NOTES:
1. STORM DRAIN INLETS NEED TO BE REMOVED AT THE END OF THE JOB.
2. STORM DRAIN INLETS ARE ONLY TO BE INSTALLED IN DRAINAGE DEVICES PER THE MANUFACTURER'S RECOMMENDATIONS. CATCH BASIN INSERTS ARE NOT TO BE INSTALLED IN CURB INLETS.
3. INSERTS SHALL BE INSPECTED AND MAINTAINED WHEN A 1/2 INCH RAIN ACCUMULATES WITHIN A 24 HOUR PERIOD. CLEAN AND/OR REPLACE INSERT WHEN HALF OF THE TRAP IS FILLED WITH SEDIMENTS.

4 STORM INLET PROTECTION

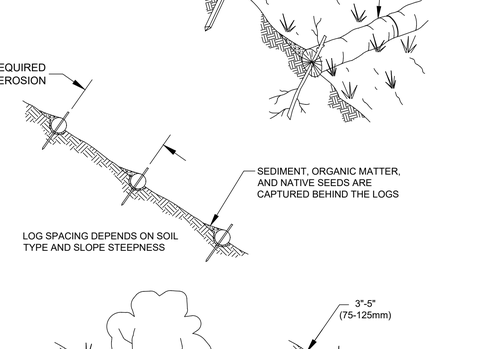
NTS



NOTES
1. INSTALL PLASTIC SHEETING VERTICALLY DOWN SLOPE.
2. INSTALL PLASTIC SHEETING SO EDGES OVERLAP AND ARE SHINGLED AWAY FROM PREVAILING WINDS.
3. SEE PROJECT SPECIFICATION XX XX XX FOR PLASTIC SHEETING REQUIREMENTS.
4. COVER MEASURES SHALL BE INSTALLED IN AN AREA IS TO REMAIN UNWORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON (MAY 1 TO SEPTEMBER 30) OR FOR MORE THAN TWO CONSTRUCTION WORKING DAYS DURING THE WET SEASON (OCTOBER 1 TO APRIL 30).
5. DURING THE WET SEASON, EXPOSED STOCKPILE SLOPES WITH AN INCLINE OF 3 HORIZONTAL TO 1 VERTICAL (3H:1V) OR STEEPER AND WITH MORE THAN TEN FEET OF VERTICAL RELIEF SHALL BE COVERED IF THEY ARE TO REMAIN UNWORKED FOR MORE THAN 12 HOURS.

6 PLASTIC COVERING (STOCKPILE)

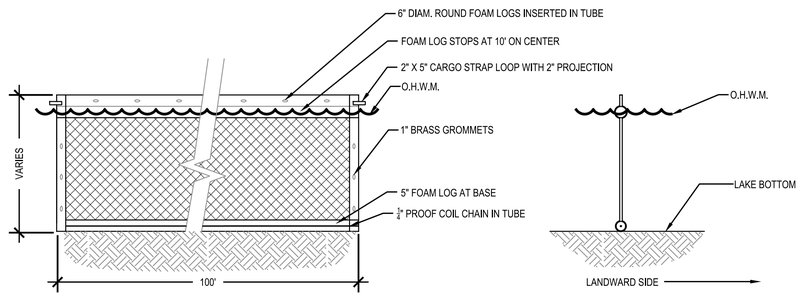
NTS



NTS

NOTES:
1. COIR LOG INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" x 5" (75-125mm) DEEP, DUG ON CONTOUR.
2. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.

7 COIR LOG



NOTE:
1. HEIGHT OF CURTAIN WILL VARY. SEDIMENT CURTAIN MUST FULLY CONTAIN WORK AREA - ENSURE THAT CURTAIN REACHES COMPLETELY TO THE LAKE BOTTOM, INSTALL DEEPER CURTAIN AS-NEEDED.
2. INSTALL PER MANUFACTURER'S DIRECTIONS

5 SEDIMENT CURTAIN

NTS

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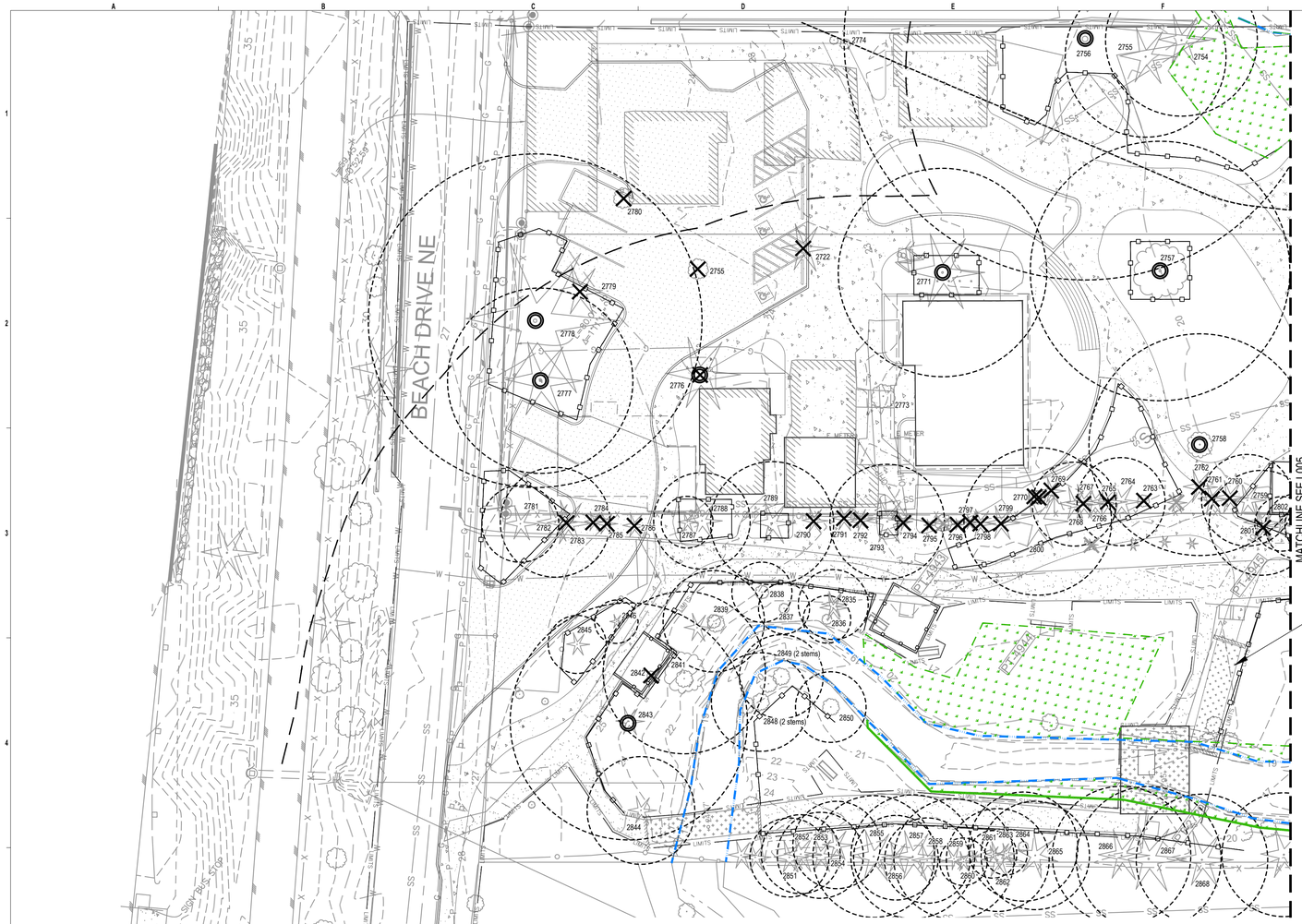
TESC DETAILS

DATE: 10/7/2024

PLAN NUMBER:
C003
SHEET 5 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C001-C003_TESC PLAN AND DETAILS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

- LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- WETLAND AND STREAM BUFFER
- EXISTING TREE
- EXISTING LANDMARK TREE
- TREE PROTECTION FENCE — 1 / L006
- ROOT PRUNING TRENCH
- EXISTING SIGNIFICANT TREE TO BE REMOVED
- EXISTING NON-SIGNIFICANT TREE TO BE REMOVED — 2 / L006
- CRITICAL ROOT ZONE (CRZ)

KEY NOTES

1 — IMPROVEMENTS SHOWN FOR CONTEXT RELATIVE TO TREE PROTECTION ONLY

NOTES

1. TREE PROTECTION SHALL BE APPROVED BY THE PROJECT ARBORIST. IF NEEDED, CHANGES TO TREE PROTECTION FENCING MAY BE MADE ONLY UNDER THE DIRECTION OF THE PROJECT ARBORIST OR LANDSCAPE ARCHITECT.
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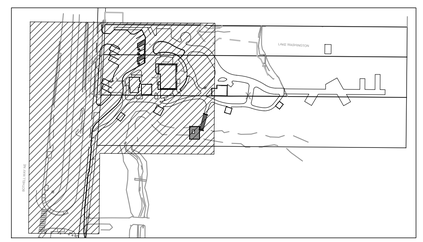
3. SALVAGE AND STORE TREES TO BE REMOVED FOR HABITAT STRUCTURES.



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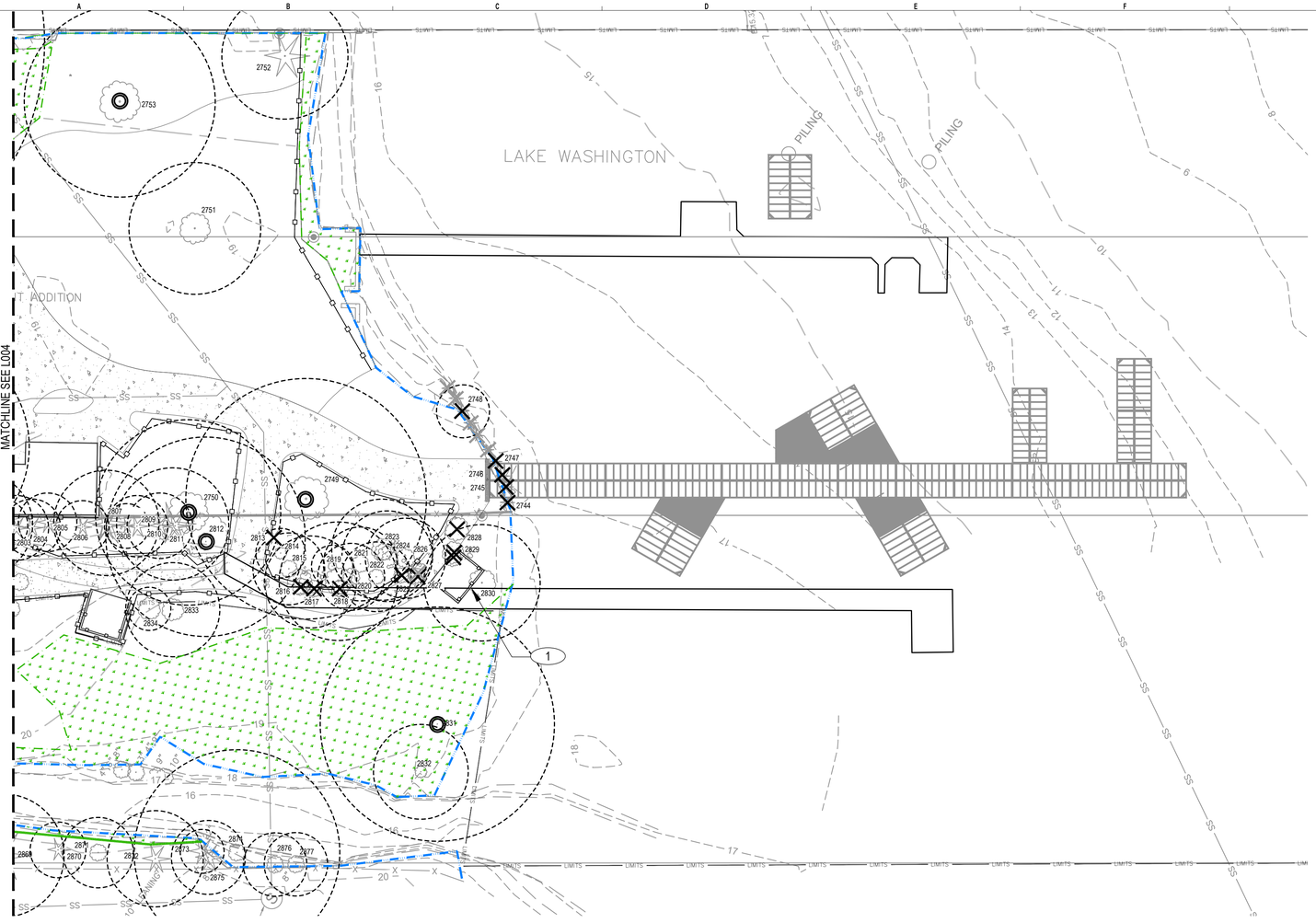
TREE PROTECTION PLAN

DATE: 10/7/2024
PLAN NUMBER: L004
SHEET 6 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\L004-006_TREE PROTECTION PLAN AND DETAILS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

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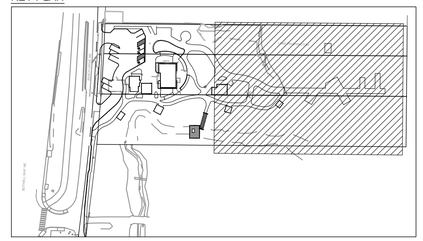
KEY PLAN



SCALE: 1" = 20'

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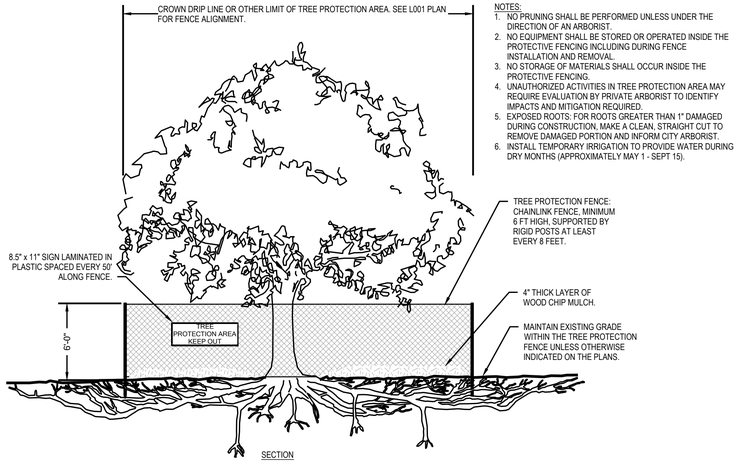
TREE PROTECTION PLAN

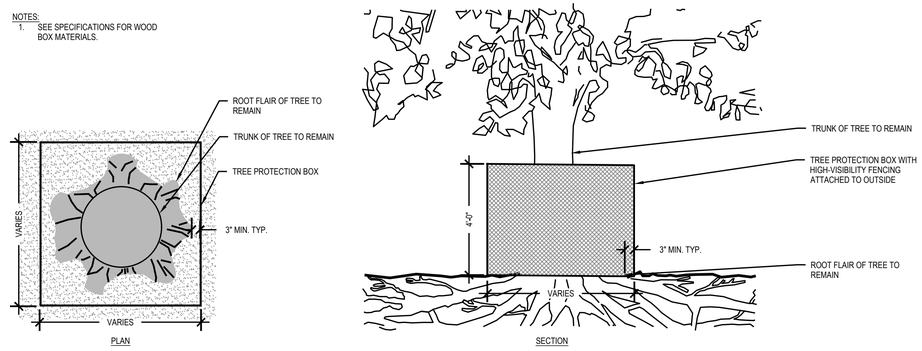
DATE: 10/7/2024
PLAN NUMBER: **L005**
SHEET 7 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\0323\0303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\004-L006_TREE PROTECTION PLAN AND DETAILS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



1 TREE PROTECTION FENCE

NTS



2 TREE PROTECTION BOX

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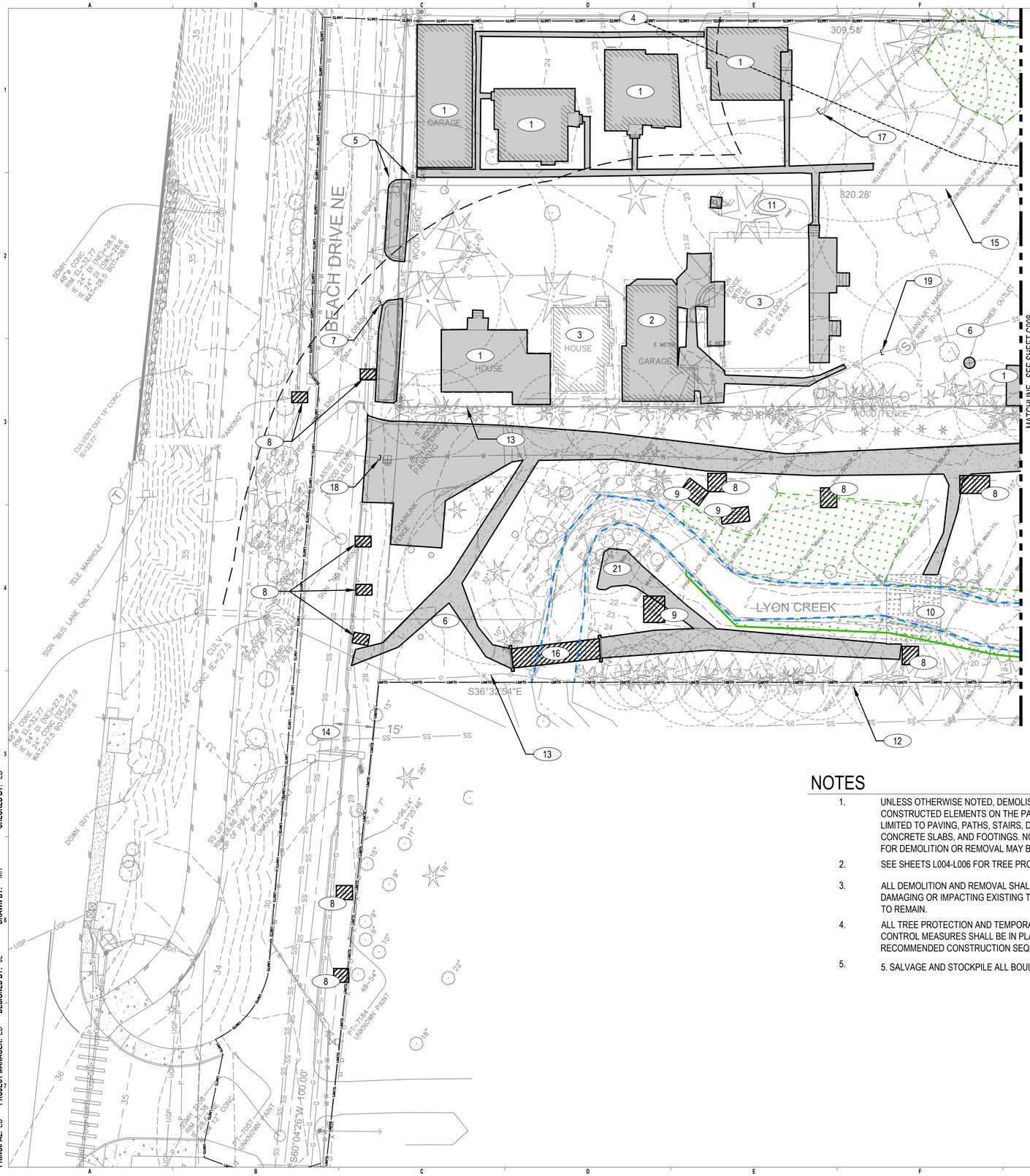
TREE PROTECTION DETAILS

DATE: 10/7/2024
PLAN NUMBER: **L006**
SHEET 8 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\0323\0303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\L004-L006_TREE PROTECTION PLAN AND DETAILS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

- LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- WETLAND AND STREAM BUFFER
- REMOVE / DEMOLISH
- REMOVE AND SALVAGE

KEY NOTES

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4. WALL TO REMAIN
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6. PROTECT UTILITY
7. CUT, CAP, AND ABANDON GAS SERVICE. REMOVE GAS SERVICE TO CAP
8. REMOVE AND SALVAGE SIGN
9. REMOVE AND SALVAGE BENCH
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11. REMOVE POND
12. FENCE TO REMAIN
13. REMOVE FENCE WITHIN PROJECT LIMITS
14. PROTECT ALL ROW UTILITIES / INFRASTRUCTURE UNLESS OTHERWISE NOTED
15. APPROXIMATE LOCATION OF WELL, FILL WITH MATERIAL
16. REMOVE AND SALVAGE BRIDGE, REMOVE / DEMOLISH ABUTMENTS
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18. CUT AND CAP WATER SERVICE FOR REUSE, AND REMOVE WATER METER. REMOVE SERVICE ON-SITE TO CAP
19. CUT AND CAP SEWER SERVICE FOR REUSE, REMOVE SERVICE UPSTREAM OF CAP
20. SEE SHEET S001 FOR PIER DEMOLITION
21. SALVAGE BOULDERS

NOTES

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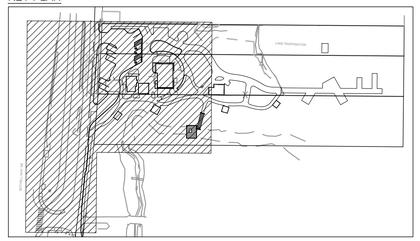
5. 5. SALVAGE AND STOCKPILE ALL BOULDERS GREATER THAN 6" EST. DIA.

KEY PLAN



20' 10' 0 20' 40'

SCALE: 1" = 20'

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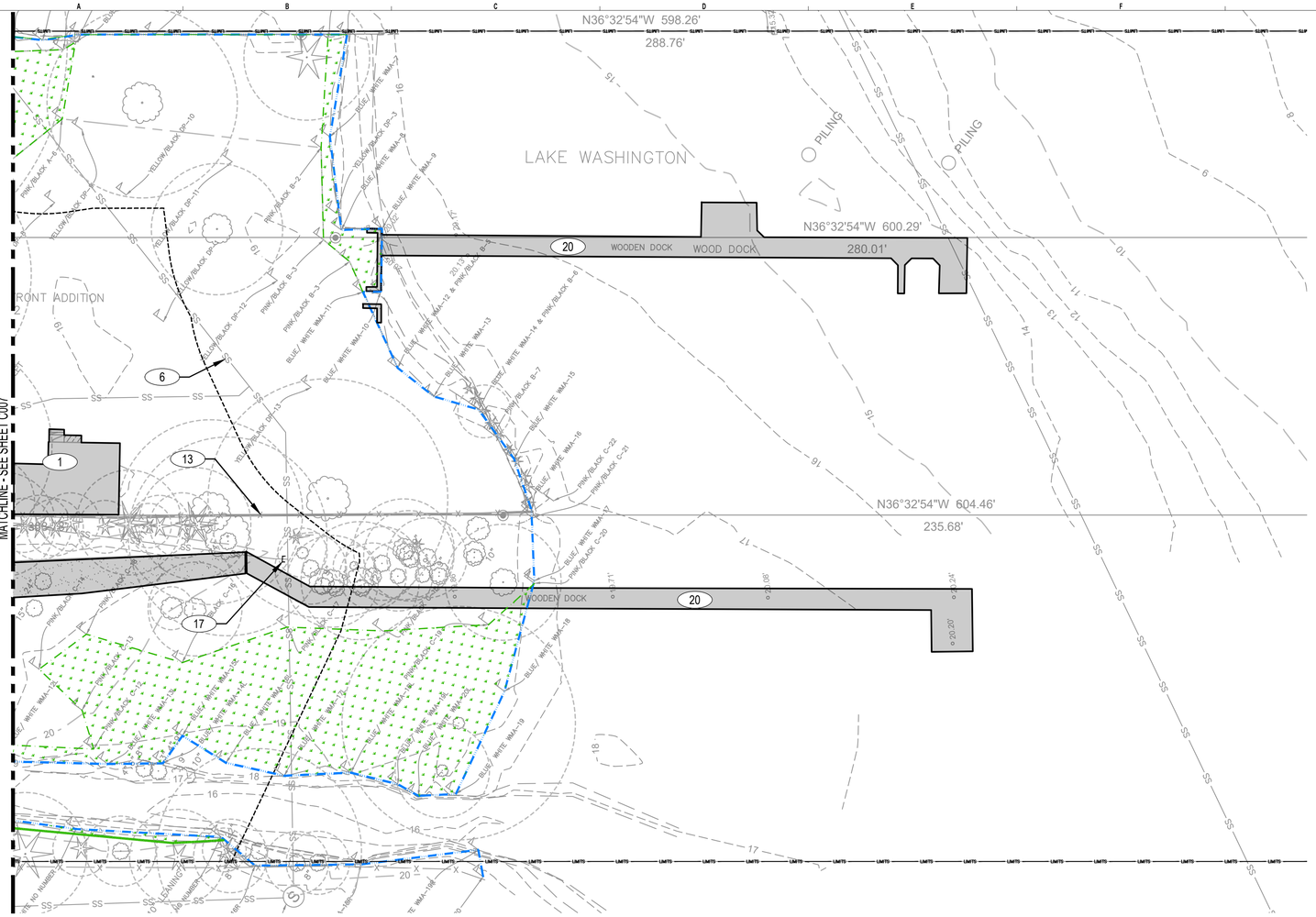
SITE DEMOLITION PLAN

DATE: 10/7/2024
PLAN NUMBER:
C007
SHEET 9 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP_LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C007-C008_SITE DEMOLITION PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

- LIMITS — LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
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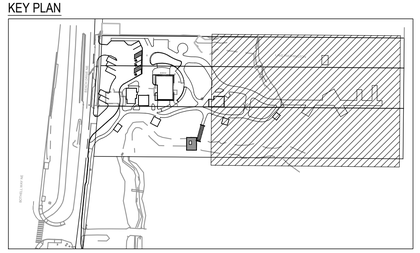
KEY PLAN



20' 10' 0 20' 40'
SCALE: 1" = 20'
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SITE DEMOLITION PLAN

DATE: 10/7/2024
PLAN NUMBER:
C008
SHEET 10 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C007-C008_SITE DEMOLITION PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI

PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED

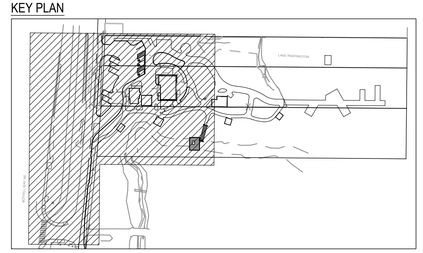
LEGEND

- LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- COMBINED CRITICAL AREA BUFFER
- 50' LAKE WASHINGTON SHORELINE SETBACK
- NEW PERMANENT CRITICAL AREA IMPACT (3,930 SF)
- NEW PERMANENT BUFFER IMPACT (18,125 SF)
- EXISTING CRITICAL AREA IMPACT TO BE REMOVED (2,335 SF)
- EXISTING BUFFER IMPACT TO THE REMOVED (4,065 SF)
- NEW TEMPORARY BUFFER IMPACTS TO BE RESTORED (13,360 SF)
- EXISTING SIGNIFICANT TREES TO BE REMOVED (42 TOTAL)
- EXISTING LANDMARK TREES TO BE REMOVED (1 TOTAL)
- EXISTING NON-SIGNIFICANT TREES TO BE REMOVED (4 TOTAL)
- EXISTING NON-SIGNIFICANT TREES TO REMAIN

NOTES

1. CRITICAL AREAS WERE DELINEATED BY FACET ON OCTOBER 9 AND 31, 2023.

KEY PLAN



20' 10' 0 20' 40'

SCALE: 1" = 20'

50% PROGRESS SET
NOT FOR PERMIT

Know what's **below.**
Call before you dig.

NO.	DATE	BY	REVISION

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG/WATERSHED CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, AND ALL OTHER EXISTING FEATURES AND CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN AND/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG/WATERSHED PRIOR TO CONSTRUCTION.

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STATE OF WASHINGTON
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No. 9176 EXP. 12/19/25
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY

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2 BUSINESS DAYS
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(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

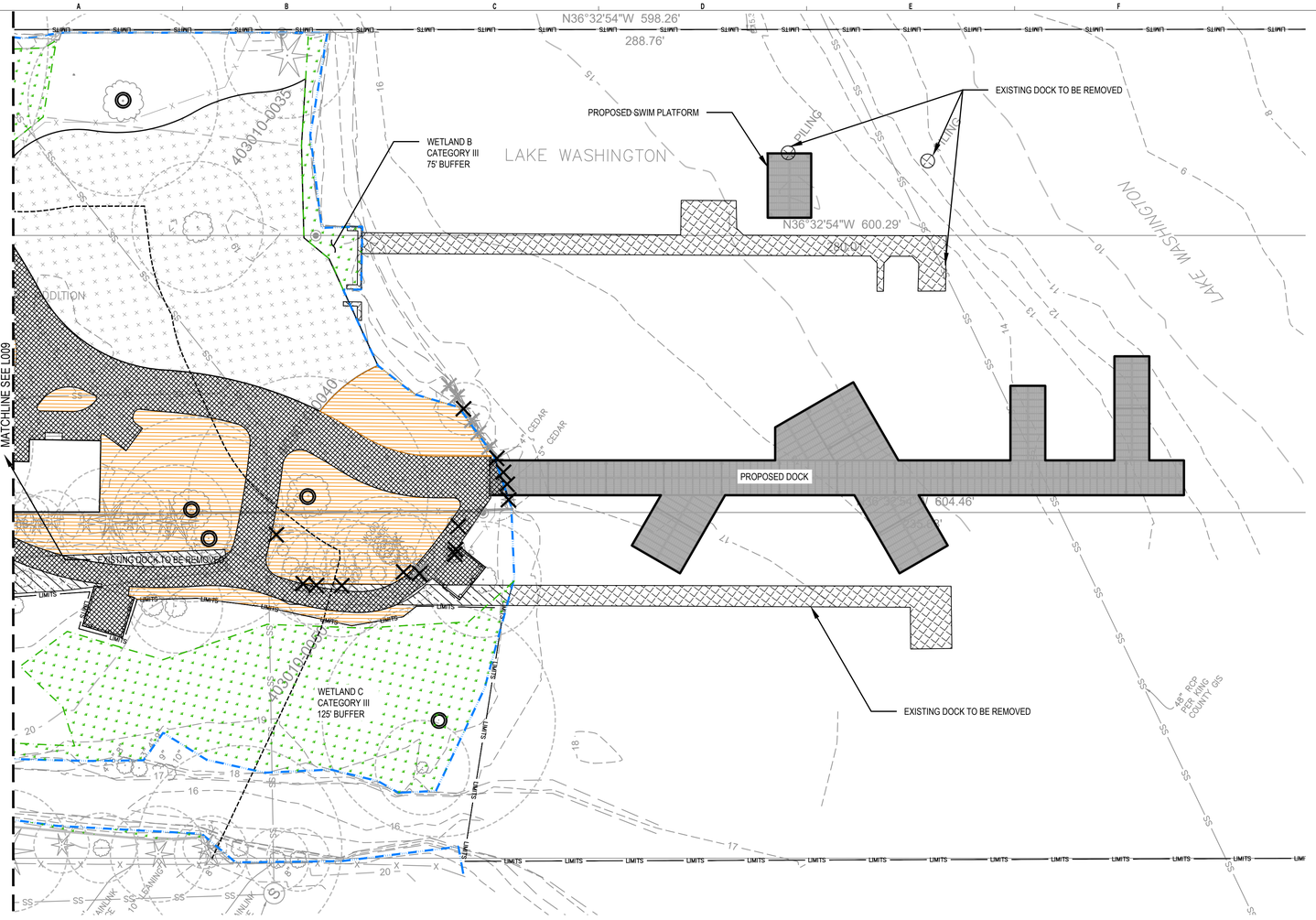
LAKE FOREST PARK LAKEFRONT IMPROVEMENTS
17337, 17345, & 17347 BEACH DR NE
LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

IMPACT ANALYSIS

DATE: 10/7/2024
PLAN NUMBER:
L009
SHEET 11 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\L010_IMPACTS ANALYSIS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

- LIMITS — LIMIT OF WORK
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- WETLAND BOUNDARY (NOT-DELINEATED)
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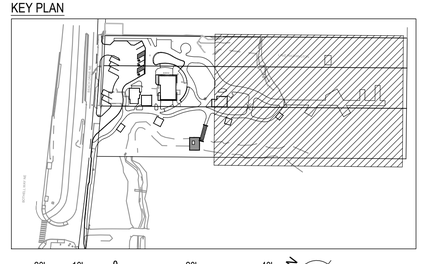

20' 10' 0 20' 40'

SCALE: 1" = 20' SCALE: 1" = 20'

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STATE OF WASHINGTON ROBERT V. MIKLUCAN No. 9176 EXP. 12/10/25 REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY

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LAKE FOREST PARK LAKEFRONT IMPROVEMENTS

17337, 17345, & 17347 BEACH DR NE
LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

IMPACT ANALYSIS

DATE: 10/7/2024
PLAN NUMBER:
L010
SHEET 12 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\2303.0384.02_IMPACTS ANALYSIS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED

LEGEND

- LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- COMBINED CRITICAL AREA BUFFER
- 50' LAKE WASHINGTON SHORELINE SETBACK
- WETLAND MITIGATION AREA (1,130 SF)
- WETLAND BUFFER MITIGATION AREA (2,861 SF)
- EXISTING BUFFER IMPACT TO BE RESTORED (4,050 SF)
- EXISTING CRITICAL AREA IMPACT TO BE REMOVED (2,335 SF)
- TEMPORARY BUFFER IMPACT TO BE RESTORED WITH NATIVE PLANTINGS (10,825 SF)
- TEMPORARILY IMPACTED LAWN RESTORED TO ENGINEERED WOOD CHIPS (2,535 SF)

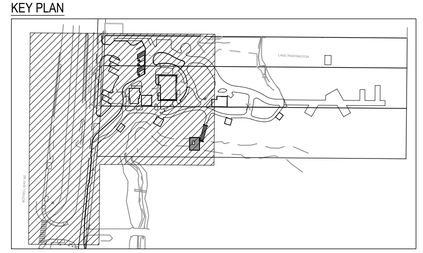
CANDIDATE PLANT LIST

TREES:	PINUS CONTORTA / SHORE PINE
	PSEUDOTSUGA MENZIESII / DOUGLAS-FIR
	THUJA PLICATA / WESTERN REDCEDAR
SHRUBS:	ACER CIRCINATUM / VINE MAPLE
	CORNUS SERICEA / RED OSIER DOGWOOD
	CORYLUS CORNUTA / BEAKED HAZELNUT
	LONICERA INVOLUCRATA / TWINBERRY
	MAHONIA AQUIFOLIUM / TALL OREGON GRAPE
	MYRICA CALIFORNICA / PACIFIC WAX MYRTLE
	OEMLERIA CERASIFORMIS / OSOBERRY
	PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK
	RUBUS PARVIFORUS / THIMBLEBERRY
	RUBUS SPECTABILIS / SALMONBERRY
	SYMPHORICARPUS ALBUS / SNOWBERRY
	VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY
GROUNDCOVERS:	ASTER SUBSPICATUS / DOUGLAS ASTER
	BLECHNUM SPICANT / DEER FERN
	GAULTHERIA SHALLON / SALAL
	MAHONIA NERVOSA / DULL OREGON GRAPE
	OXALIS OREGANA / WOOD SORREL
	POLYSTICHUM MINITUM / WESTERN SWORD FERN

NOTES

1 CRITICAL AREAS WERE DELINEATED BY FACET ON OCTOBER 9 AND 31, 2023.

KEY PLAN



20' 10' 0 20' 40'

SCALE: 1" = 20'

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STATE OF WASHINGTON
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No. 3176 EXP. 12/10/25
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY

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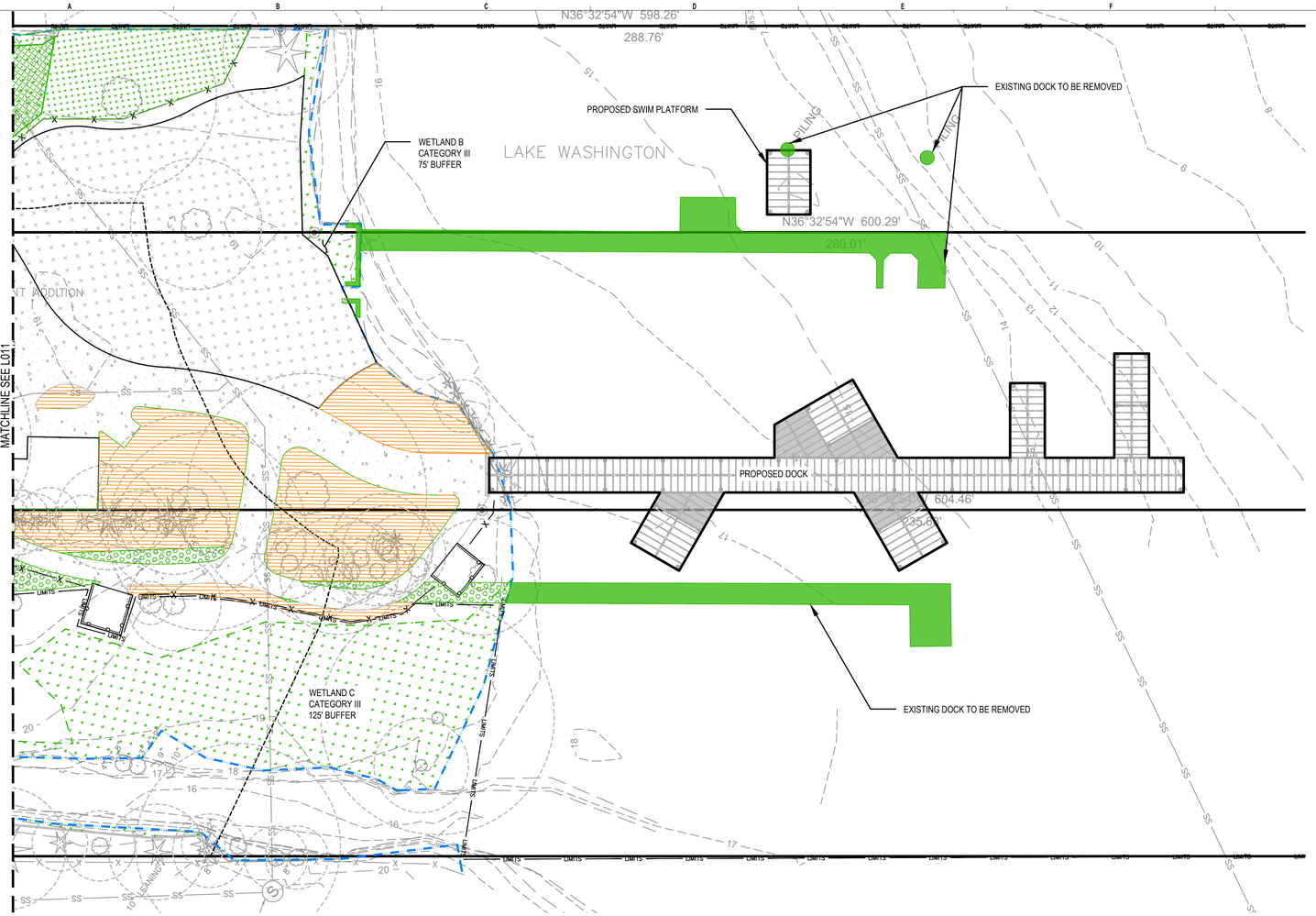
LAKE FOREST PARK LAKEFRONT IMPROVEMENTS
17337, 17345, & 17347 BEACH DR NE
LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

MITIGATION PLAN

DATE: 10/7/2024
PLAN NUMBER: **L011**
SHEET 13 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\L011-L015_MITIGATION PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES)
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

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NOTES

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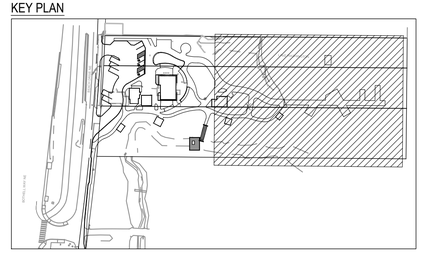
KEY PLAN



20' 10' 0 20' 40'

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LANDSCAPE ARCHITECT
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LAKE FOREST PARK LAKEFRONT IMPROVEMENTS

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LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

MITIGATION PLAN

DATE: 10/7/2024

PLAN NUMBER:
L012
SHEET 14 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\L014.L015 MITIGATION PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED

LEGEND

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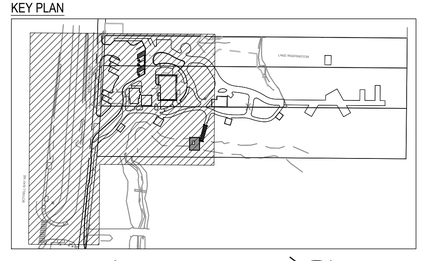
- WETLAND AND STREAM BUFFER
- SPLIT RAIL FENCE
- GUARDRAIL
- ASPHALT
- CONCRETE PAVING
- PLANTING AREA
- BIORETENTION PLANTING AREA
- LAWN AREA
- ENGINEERED WOOD FIBER AREA

KEY NOTES

1. STORAGE AREA
2. VIEWING PLATFORM WITH BENCH AND GUARDRAIL
3. RENOVATED VIEWING DECK
4. RELOCATED FOOTBRIDGE
5. SEE SHEET A.200B FOR DECK DETAILS

NOTES

KEY PLAN



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LAKE FOREST PARK LAKEFRONT IMPROVEMENTS
17337, 17345, & 17347 BEACH DR NE
LAKE FOREST PARK, WA 98155
2303.0384.02

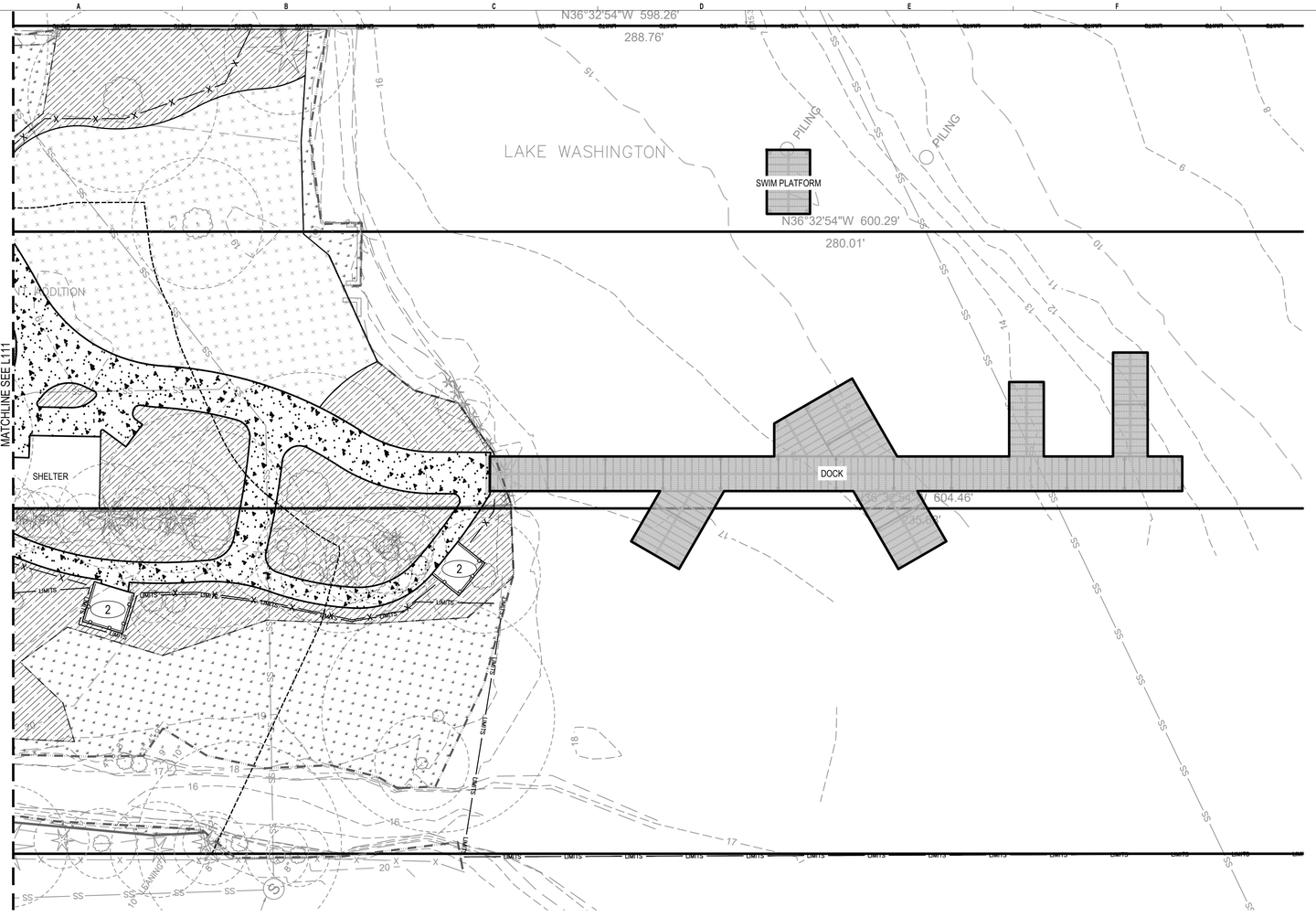
50% DESIGN

SITE PLAN

DATE: 10/7/2024

PLAN NUMBER:
L111
SHEET 15 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\L111-L112_SITE PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES)
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



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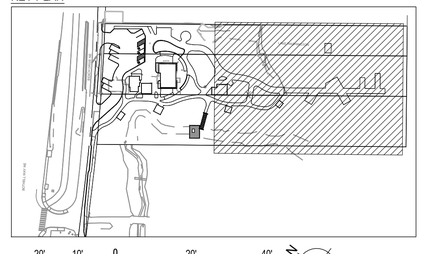
KEY PLAN



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STATE OF WASHINGTON
ABBEY V. MIKLUCAS
No. 21976 EXP. 12/19/25
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY

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LAKE FOREST PARK LAKEFRONT IMPROVEMENTS

17337, 17345, & 17347 BEACH DR NE
LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

SITE PLAN

DATE: 10/7/2024
PLAN NUMBER:
L112
SHEET 16 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\02303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\111-L112_SITE PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
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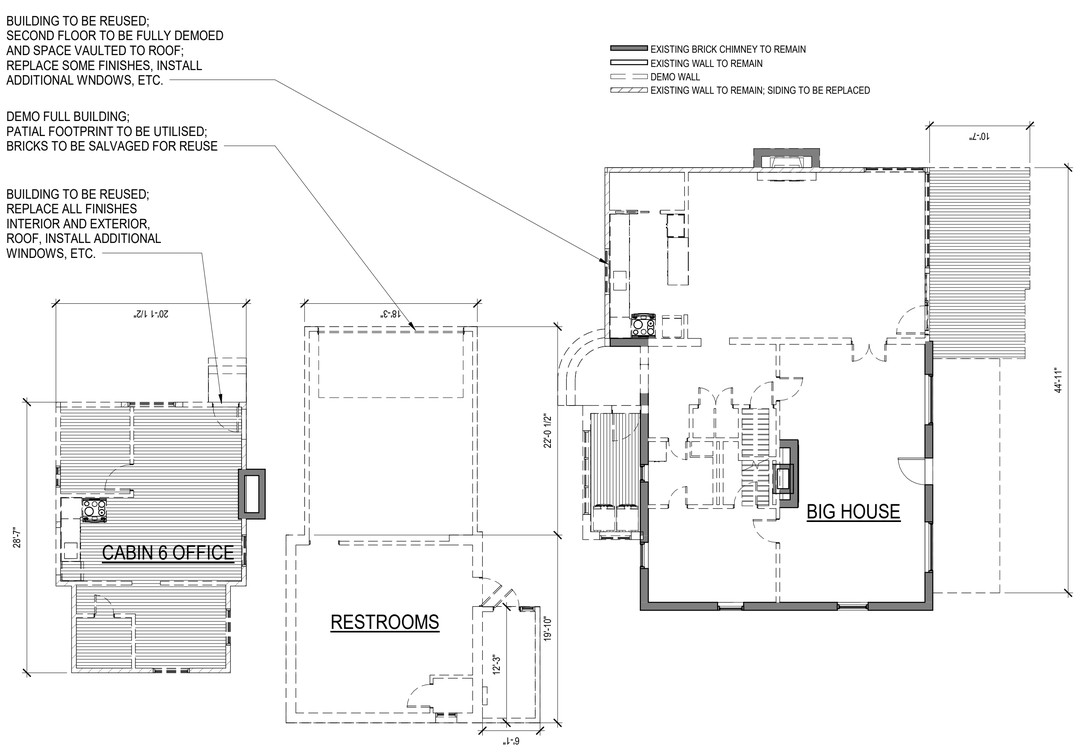

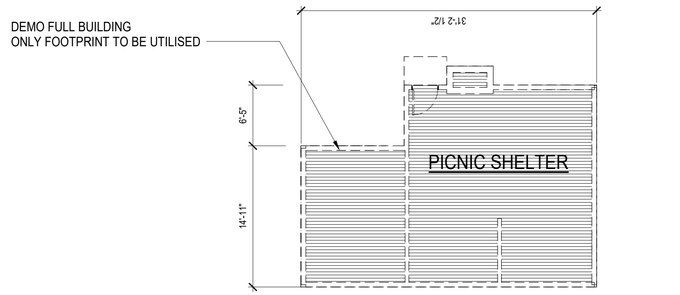

SITE PLAN - DEMO
1

0' 8' 16'

50% PROGRESS SET
NOT FOR PERMIT

Printed: 9/11/2024 4:52:59 PM

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3131 Western Ave,
Suite 510
Seattle, WA 98121
t 206.523.6150
f 206.523.9382

LAKE FOREST PARK
LAKEFRONT PARK

PROJECT ADDRESS

DRAWING ISSUE

#	DATE	DESCRIPTION

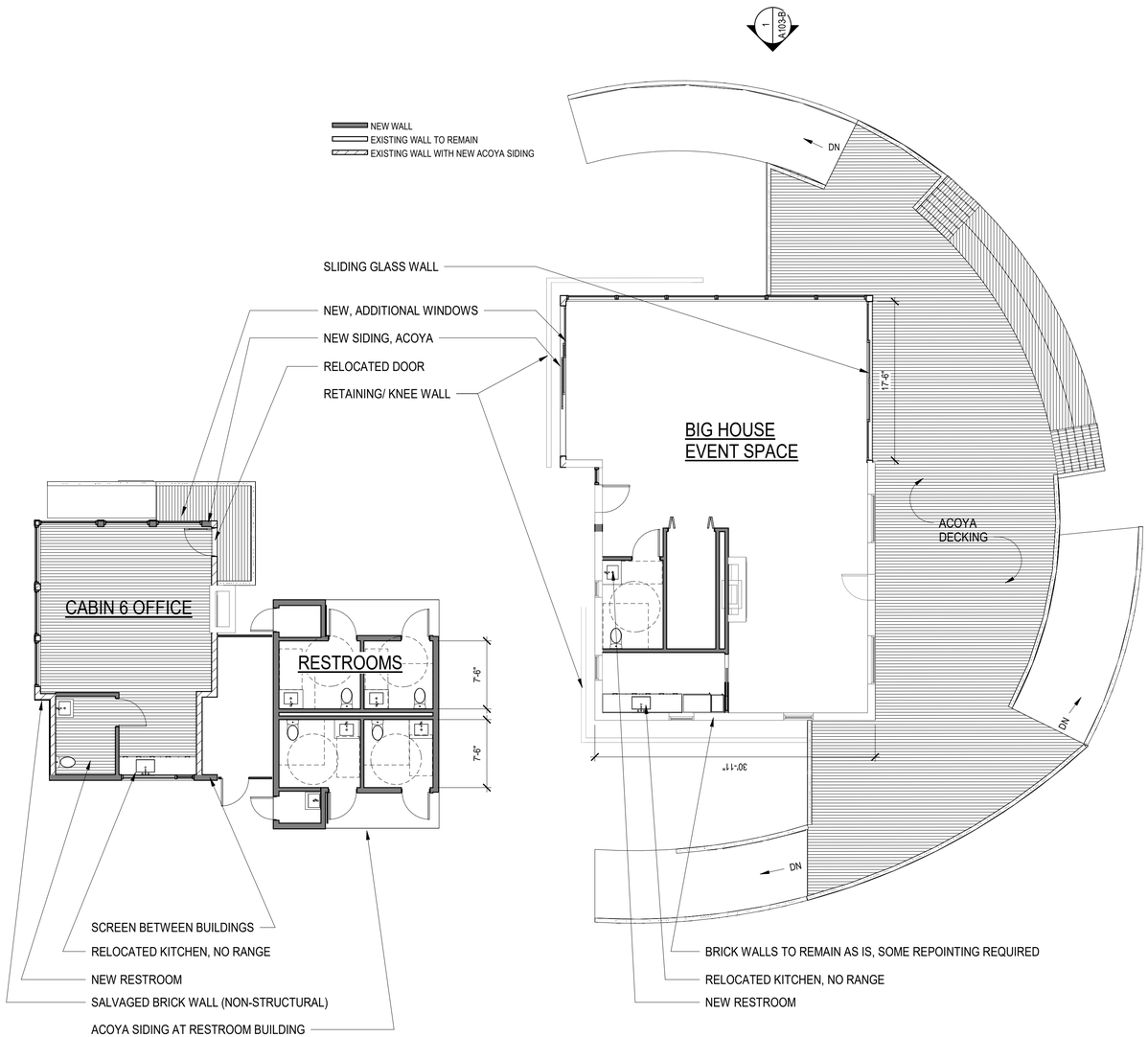
SHEET TITLE

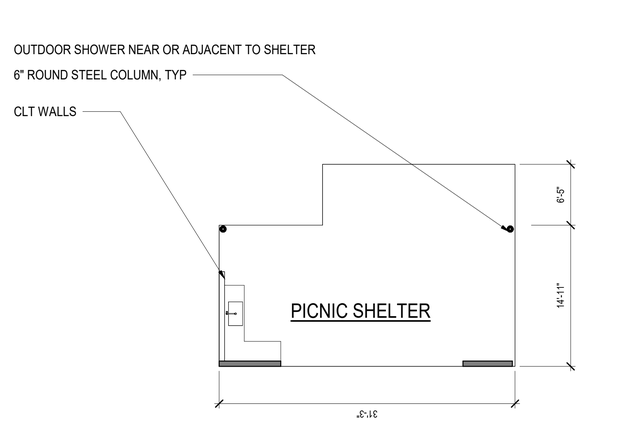
SITE - DEMO PLAN

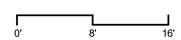
SHEET NO.

A100-B

Drawn Author
Checked Checker







1 PROPOSED SITE PLAN
SCALE: 1/8" = 1'-0"

1/8

50% PROGRESS SET
NOT FOR PERMIT

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t 206.523.6150
f 206.523.9382

LAKE FOREST PARK
LAKEFRONT PARK

PROJECT ADDRESS

DRAWING ISSUE

#	DATE	DESCRIPTION

SHEET TITLE

SITE - BUILIDING PLAN

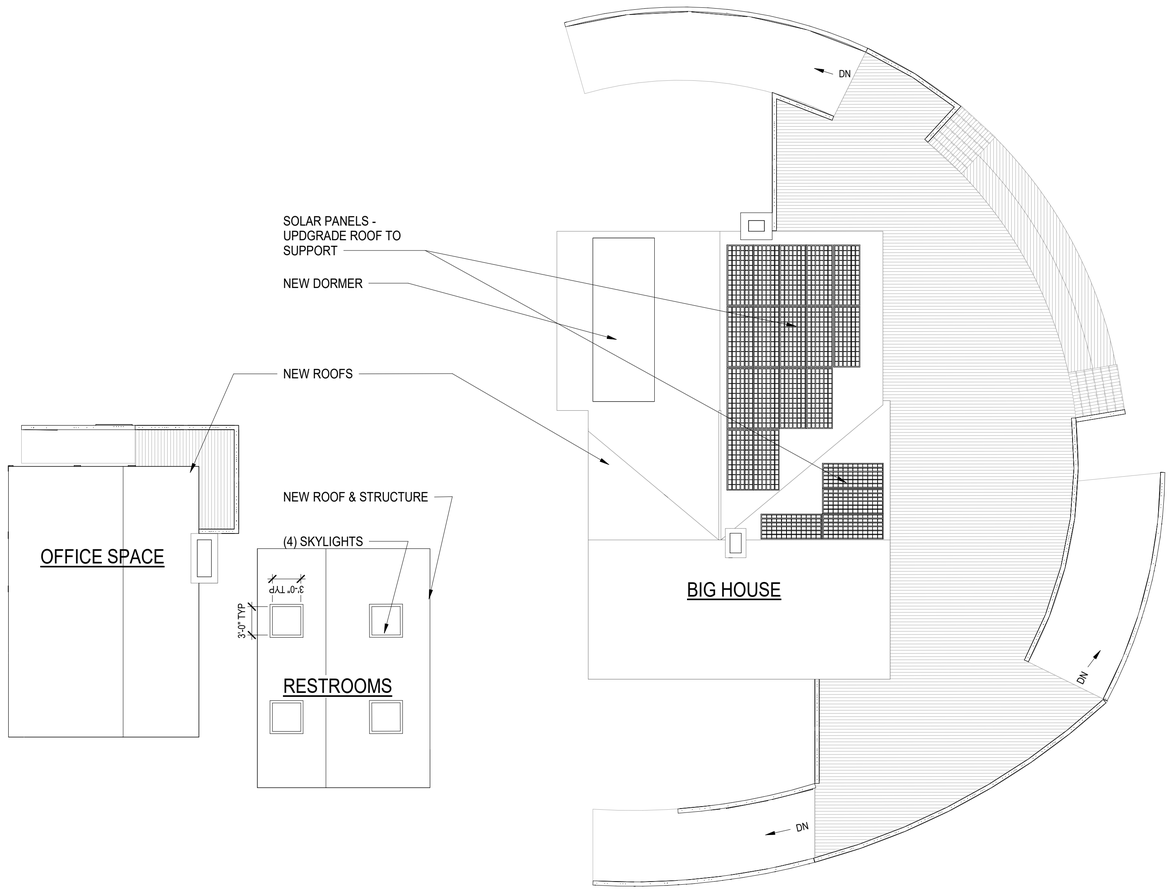
SHEET NO.

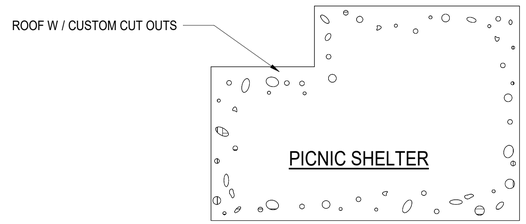
A101-B

Drawn
Checked

Author
Checker

Printed: 9/11/2024 4:53:00 PM





0' 8' 16'

PROPOSED ROOF PLAN
1/16" = 1'-0"

50% PROGRESS SET
NOT FOR PERMIT

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t 206.523.6150
f 206.523.9382

LAKE FOREST PARK
LAKEFRONT PARK

PROJECT ADDRESS

DRAWING ISSUE

#	DATE	DESCRIPTION

SHEET TITLE

SITE - ROOF PLAN

SHEET NO.

A102-B

Drawn Author
Checked Checker

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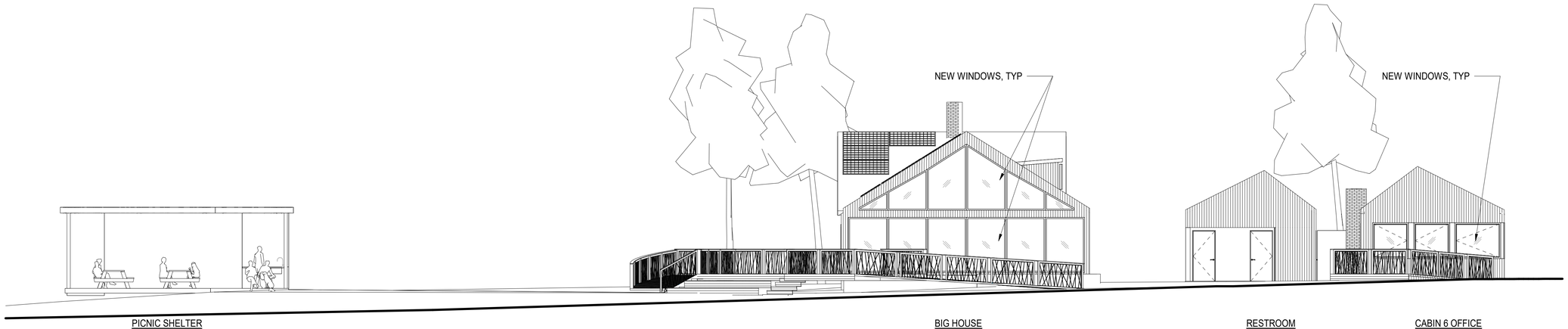
2 SITE ELEVATION - EXISTING

SCALE: 1/8" = 1'-0"



1 SITE ELEVATION - PROPOSED

SCALE: 1/8" = 1'-0"

0' 8' 16'

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DRAWING ISSUE

#	DATE	DESCRIPTION

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SHEET TITLE

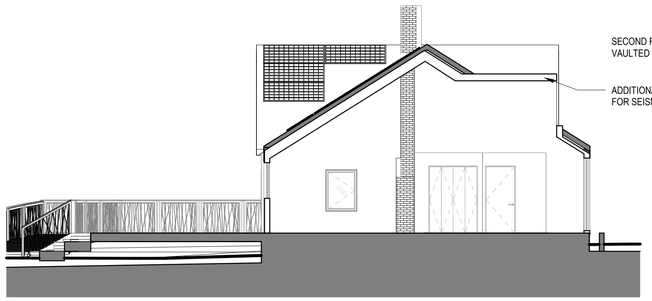
SITE ELEVATION

SHEET NO.

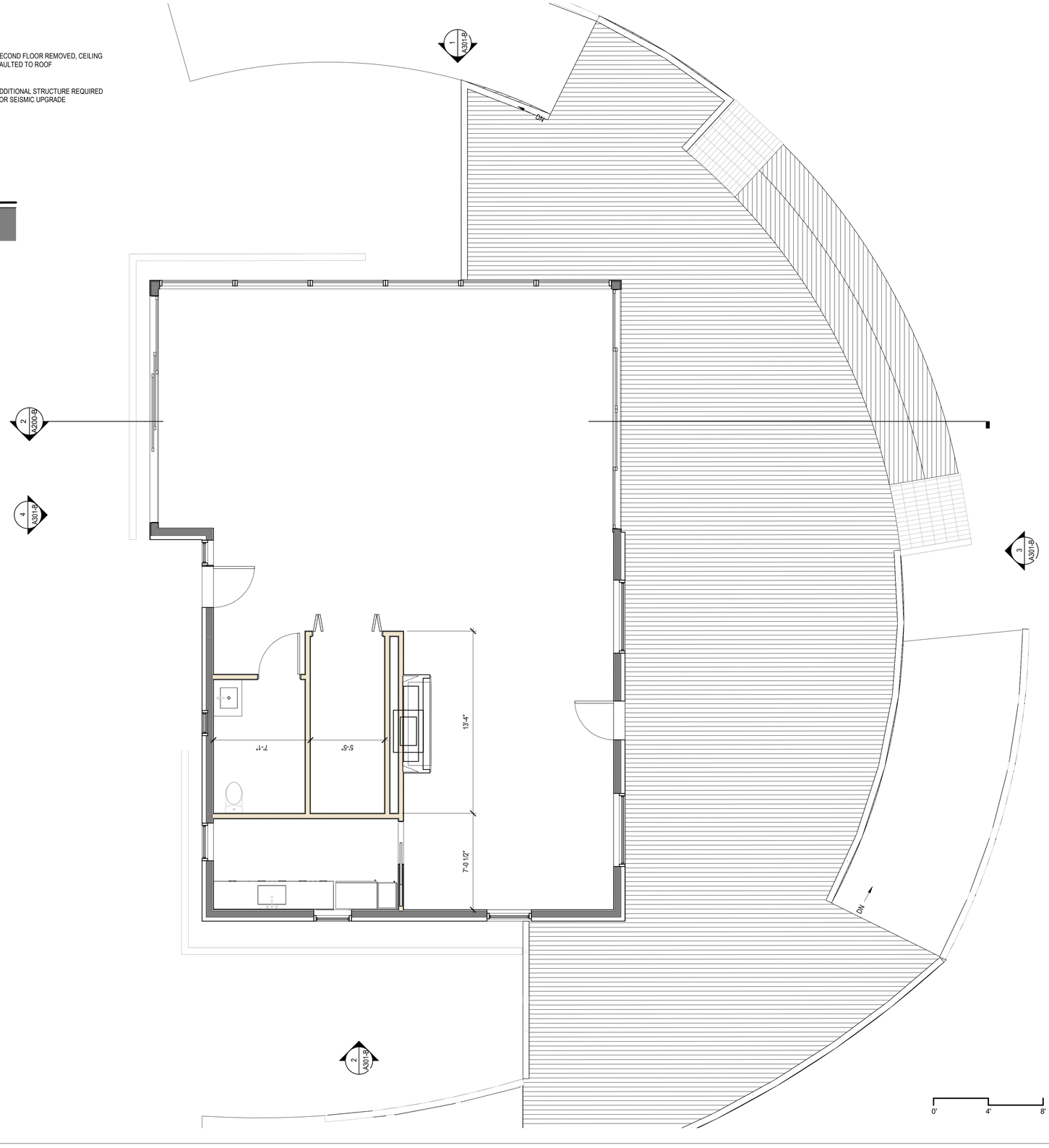
A103-B

Drawn Author
Checked Checker

Printed: 9/11/2024 4:53:03 PM



2 BIG HOUSE SECTION



1 BIG HOUSE AND GARAGE - LARGE OPTION
SCALE: 1/4" = 1'-0"

50% PROGRESS SET
NOT FOR PERMIT

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PROJECT ADDRESS

DRAWING ISSUE

#	DATE	DESCRIPTION

SHEET TITLE

BIG HOUSE PLAN

SHEET NO.

A200-B

Drawn
Checked
Author
Checker

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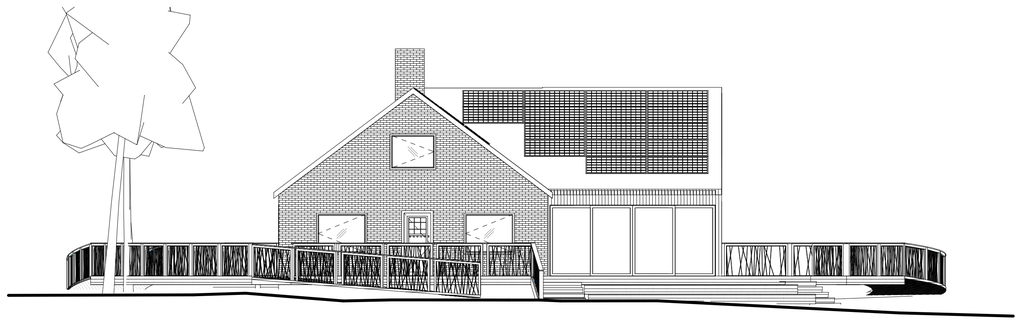
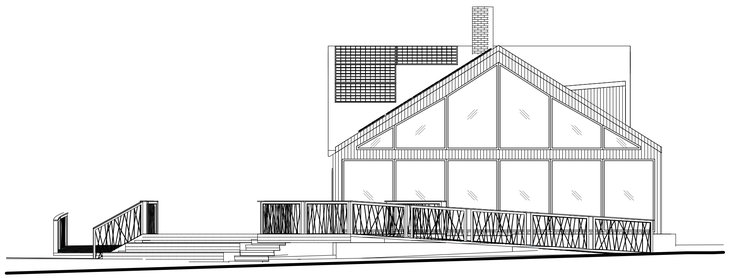
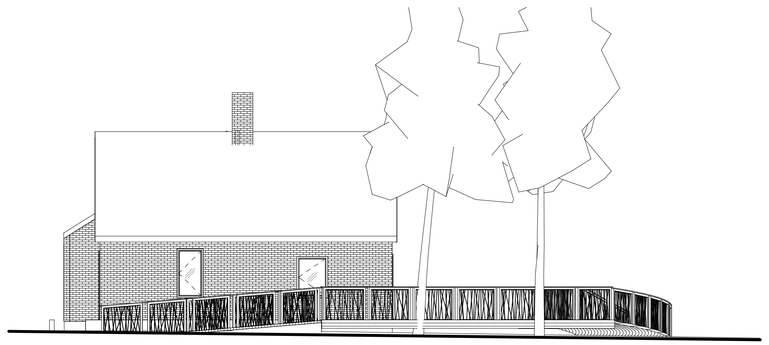


3 BIG HOUSE - LAKE ELEVATION
SCALE: 1/8" = 1'-0"



1 BIG HOUSE - PARK ELEVATION
SCALE: 1/8" = 1'-0"

4 BIG HOUSE - STREET ELEVATION
SCALE: 1/8" = 1'-0"



2 BIG HOUSE - LYON CREEK ELEVATION
SCALE: 1/8" = 1'-0"

0' 8' 16'

50% PROGRESS SET
NOT FOR PERMIT

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LAKE FOREST PARK
LAKEFRONT PARK

PROJECT ADDRESS

DRAWING ISSUE

#	DATE	DESCRIPTION

SHEET TITLE

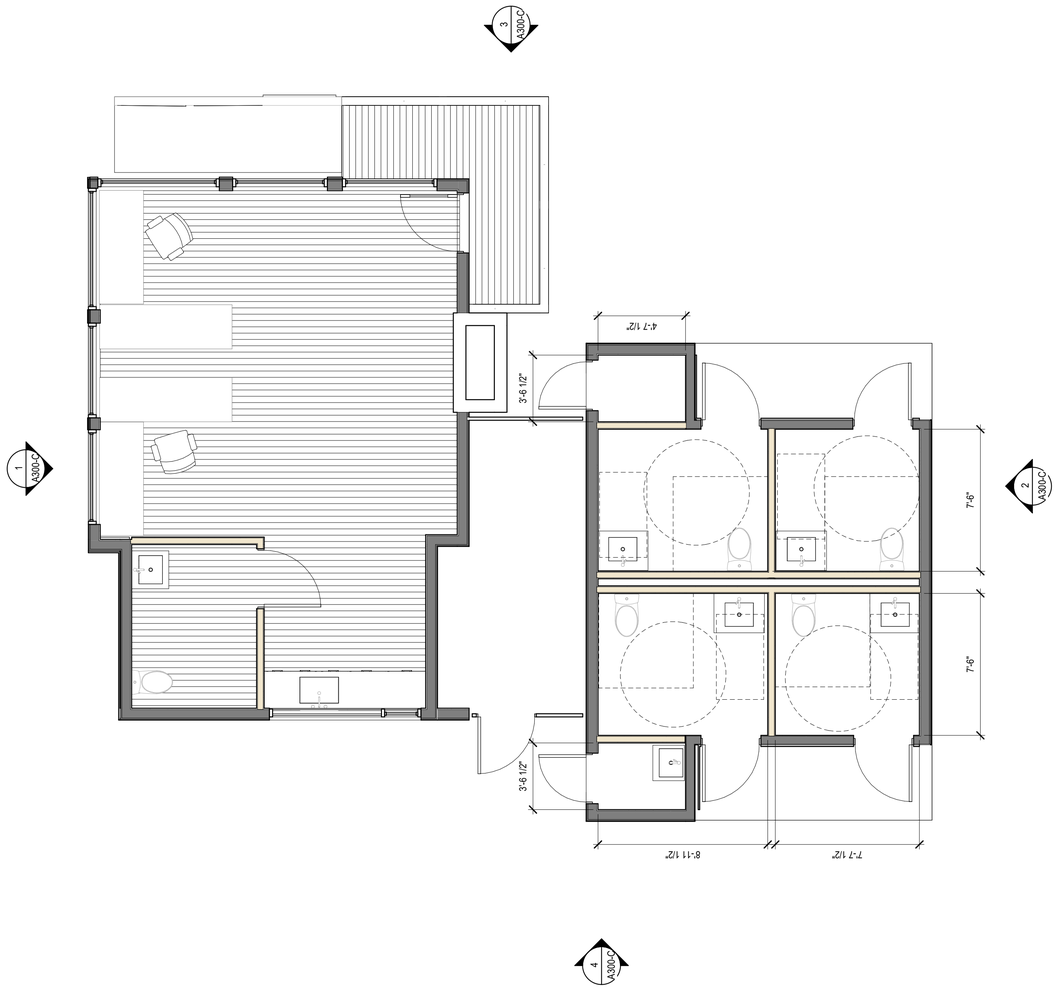
BIG HOUSE
ELEVATIONS

SHEET NO.

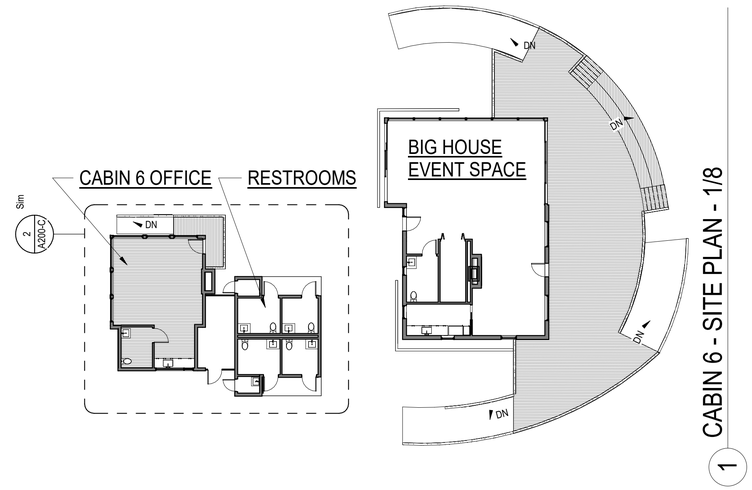
A301-B

Drawn Author
Checked Checker

Printed: 9/11/2024 4:53:07 PM



2 CABIN 6 & RESTROOM - PLAN



1 CABIN 6 - SITE PLAN - 1/8

0' 4' 8'

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DRAWING ISSUE		
#	DATE	DESCRIPTION

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SHEET TITLE

CABIN 6 &
RESTROOM PLAN

SHEET NO.

A200-C

Drawn Author
Checked Checker

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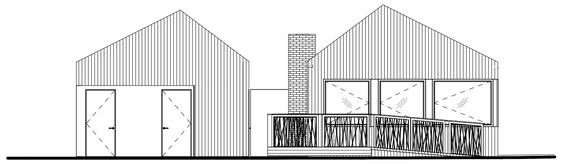
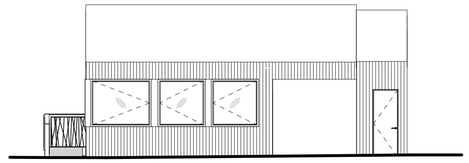


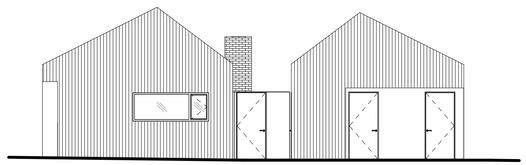
3 CABIN 6 & RESTROOM - PARK ELEVATION

SCALE: 1/8" = 1'-0"



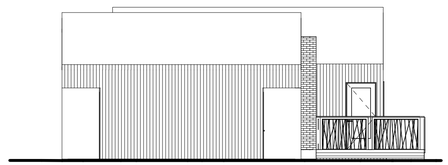
1 CABIN 6 - STREET ELEVATION

SCALE: 1/8" = 1'-0"



4 CABIN 6 & RESTROOM - LYON CREEK ELEVATION

SCALE: 1/8" = 1'-0"



2 RESTROOM - LAKE ELEVATION

SCALE: 1/8" = 1'-0"

0' 8' 16'

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LAKE FOREST PARK LAKEFRONT PARK

PROJECT ADDRESS

DRAWING ISSUE

#	DATE	DESCRIPTION

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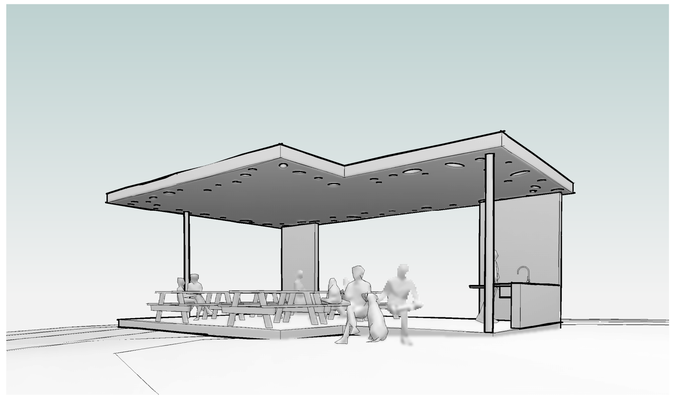
SHEET TITLE
CABIN 6 & RESTROOM ELEVATIONS

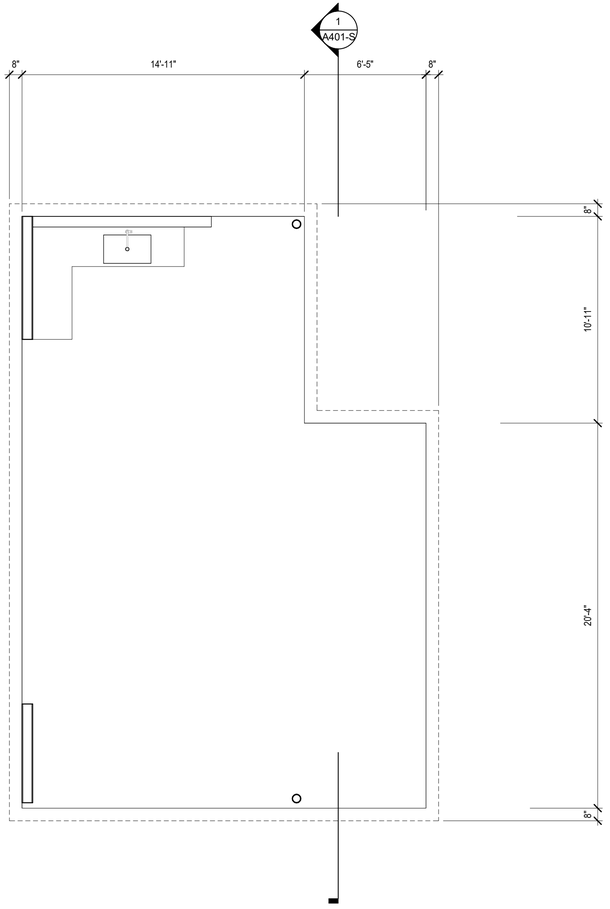
SHEET NO.
A300-C

Drawn Author
Checked Checker

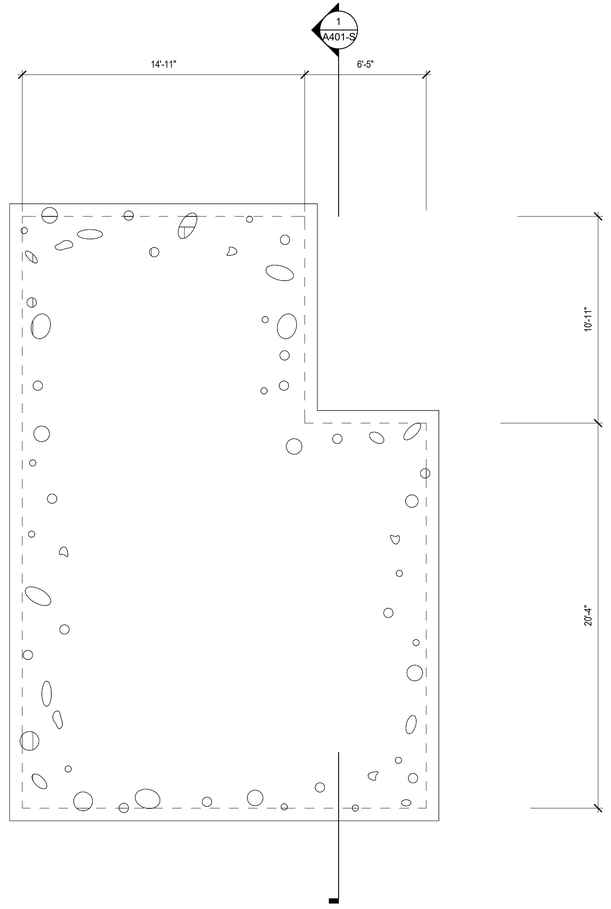
Printed: 9/11/2024 4:53:09 PM



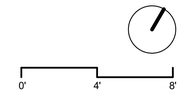
3 PICNIC SHELTER - PROPOSED



2 PICNIC SHELTER - PROPOSED PLAN
SCALE: 1/4" = 1'-0"



1 PICNIC SHELTER - ROOF PLAN



4 KEY PLAN PICNIC SHELTER

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SHEET TITLE

PICNIC SHELTER

SHEET NO.

A200-S

Drawn Author
Checked Checker

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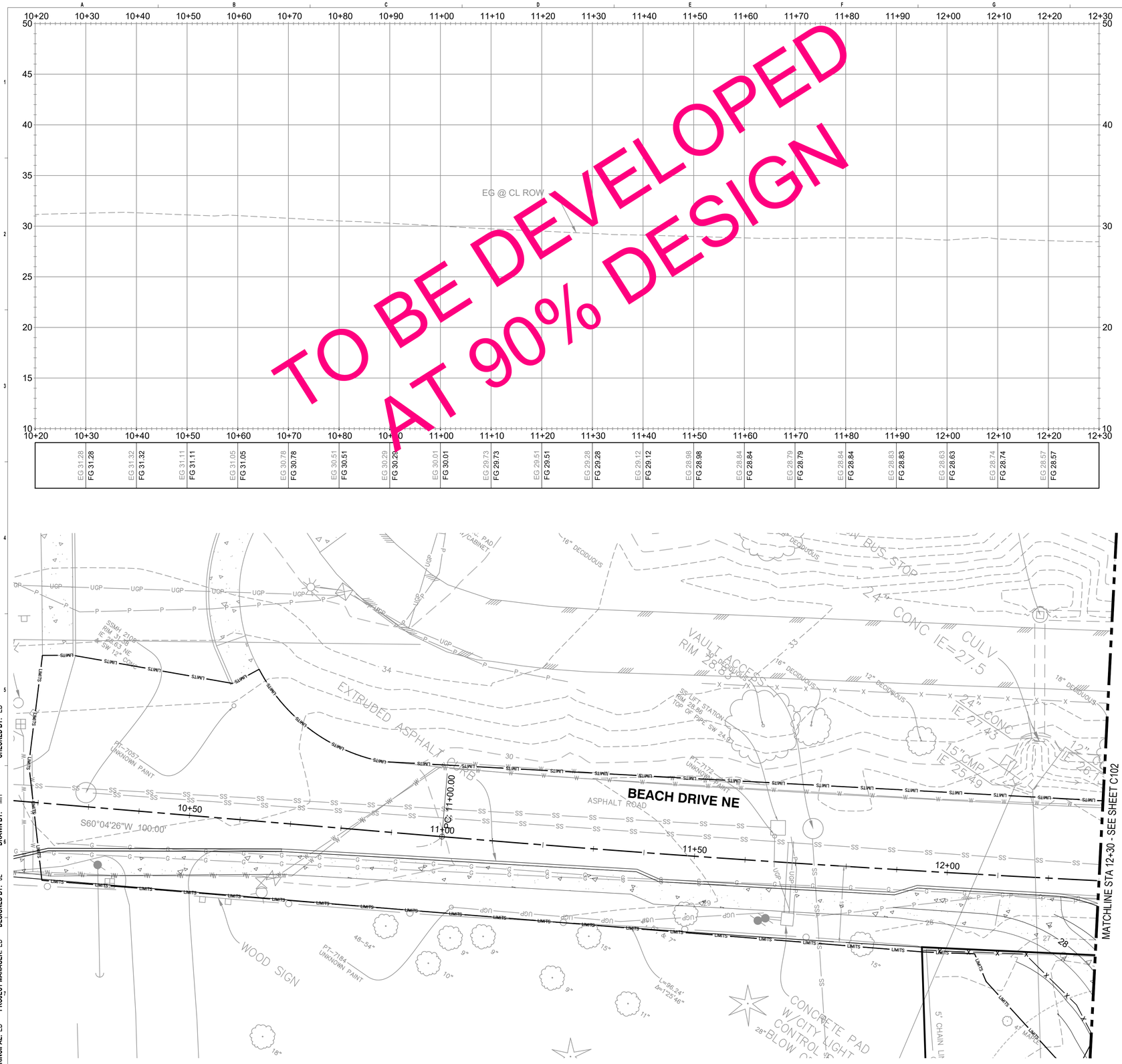


LEGEND

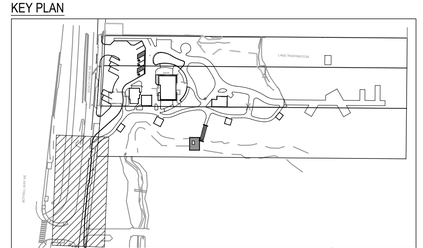
LIMITS — LIMIT OF WORK

KEY NOTES

1
2
3

NOTES

KEY PLAN



10' 5' 0 10' 20'

SCALE: 1" = 10'

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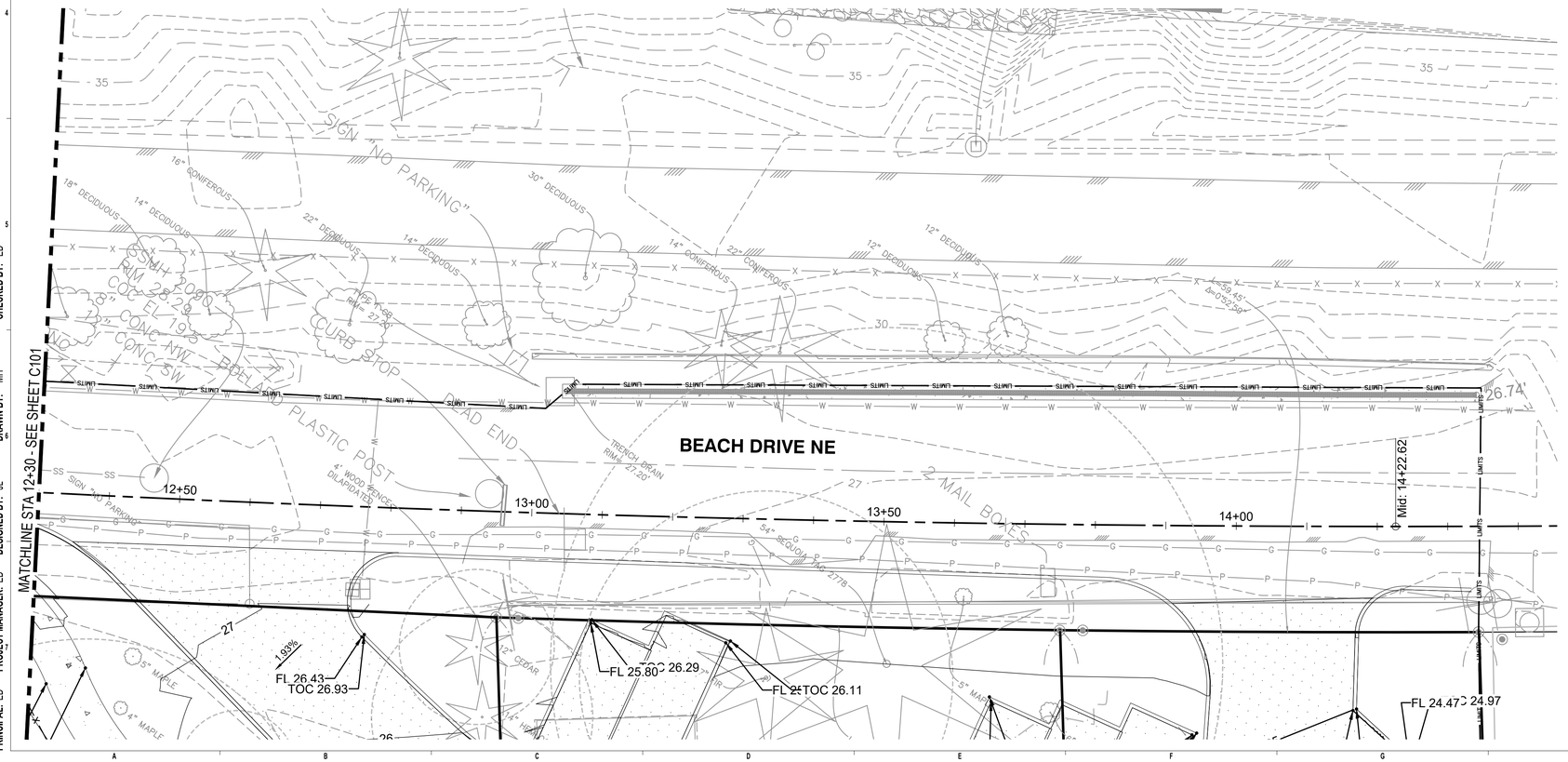
LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

FRONTAGE PLAN

DATE: 10/7/2024
PLAN NUMBER: C101
SHEET 26 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C101-C102_FRONTAGE PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

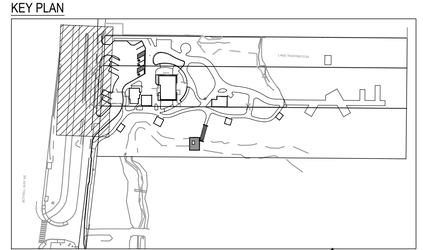
LIMITS — LIMIT OF WORK

KEY NOTES

1
2
3

NOTES

KEY PLAN



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NO.	DATE	BY	REVISION

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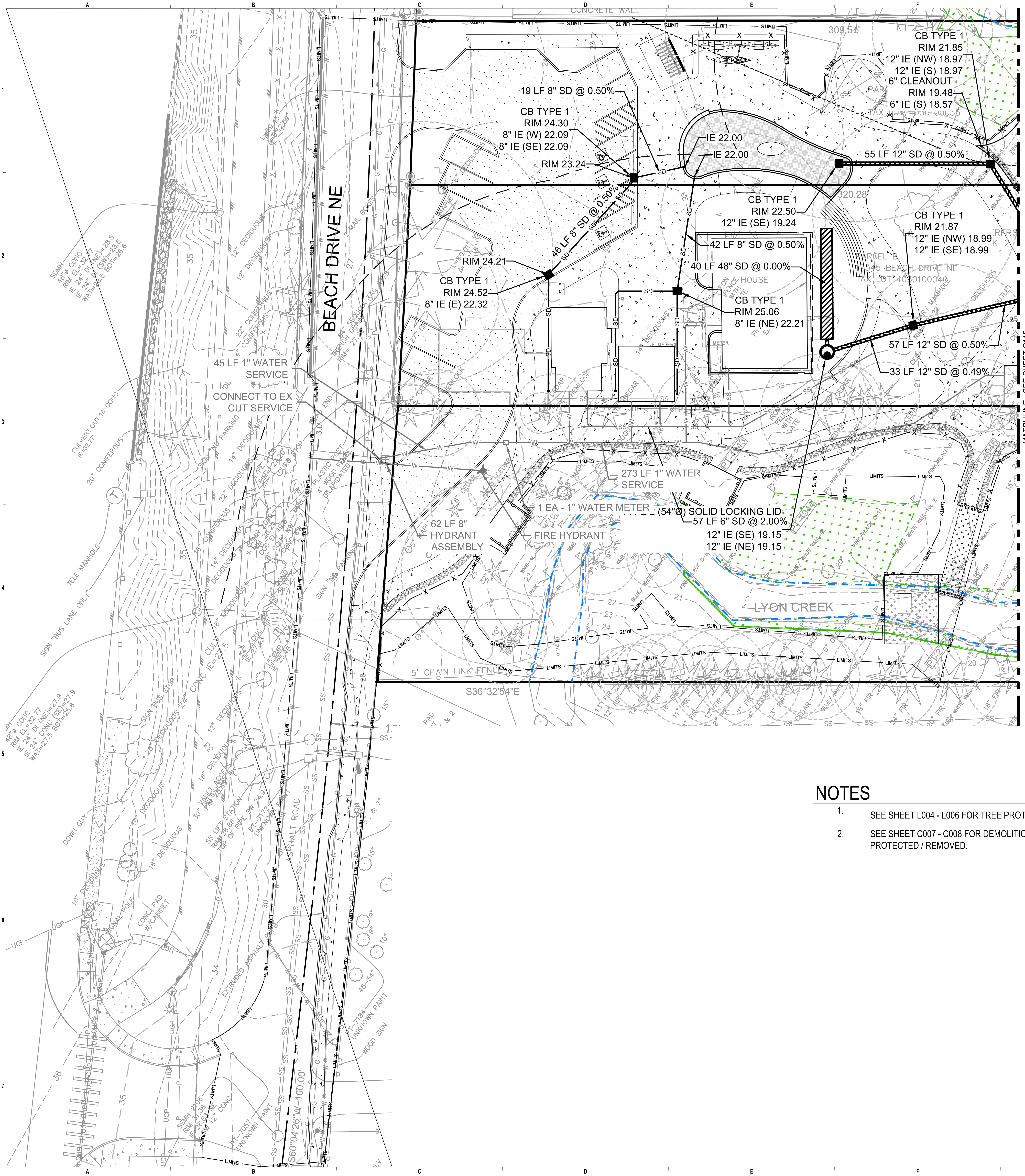
50% DESIGN

FRONTAGE PLAN

DATE: 10/7/2024
PLAN NUMBER:
C102
SHEET 27 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C101-C102_FRONTAGE PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA.SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

—LIMITS—	LIMIT OF WORK
🟩	WETLAND BOUNDARY (DELINEATED)
🟩	WETLAND BOUNDARY (NOT-DELINEATED)
— —	ORDINARY HIGH WATER MARK (OHWM)
— —	WETLAND AND STREAM BUFFER
■	TYPE 1 CATCH BASIN
◐	TYPE 2 CATCH BASIN
•	CLEANOUT
—SD—	LESS THAN 12" DRAINAGE PIPE
▨	12" AND GREATER DRAINAGE PIPE
—PERF—	PERFORATED PIPE
▨	DISPERSION TRENCH WITH NOTCHED BOARD
▨	BIORETENTION PLANTER

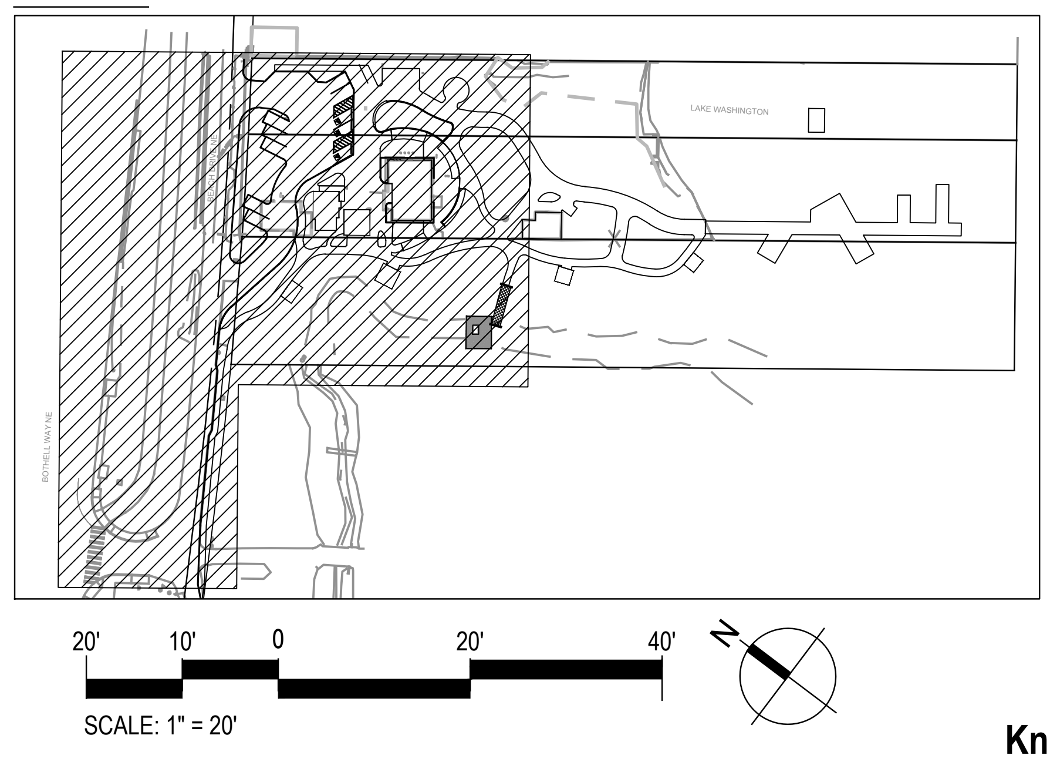
KEY NOTES

①	BIORETENTION PLANTER
②	FRENCH DRAIN. SLOPE TO SOUTH. INSTALL FITTINGS AS NECESSARY
③	50' L x 2' W x 3' D DISPERSION TRENCH WITH NOTCHED BOARD 6" IE 18.23
④	50' L x 2' W x 3' D DISPERSION TRENCH WITH NOTCHED BOARD 6" IE 16.57
⑤	
⑥	
⑦	
⑧	
⑨	

NOTES

1. SEE SHEET L004 - L006 FOR TREE PROTECTION FENCE AND DETAILS.
2. SEE SHEET C007 - C008 FOR DEMOLITION PLAN AND UTILITIES TO BE PROTECTED / REMOVED.

KEY PLAN



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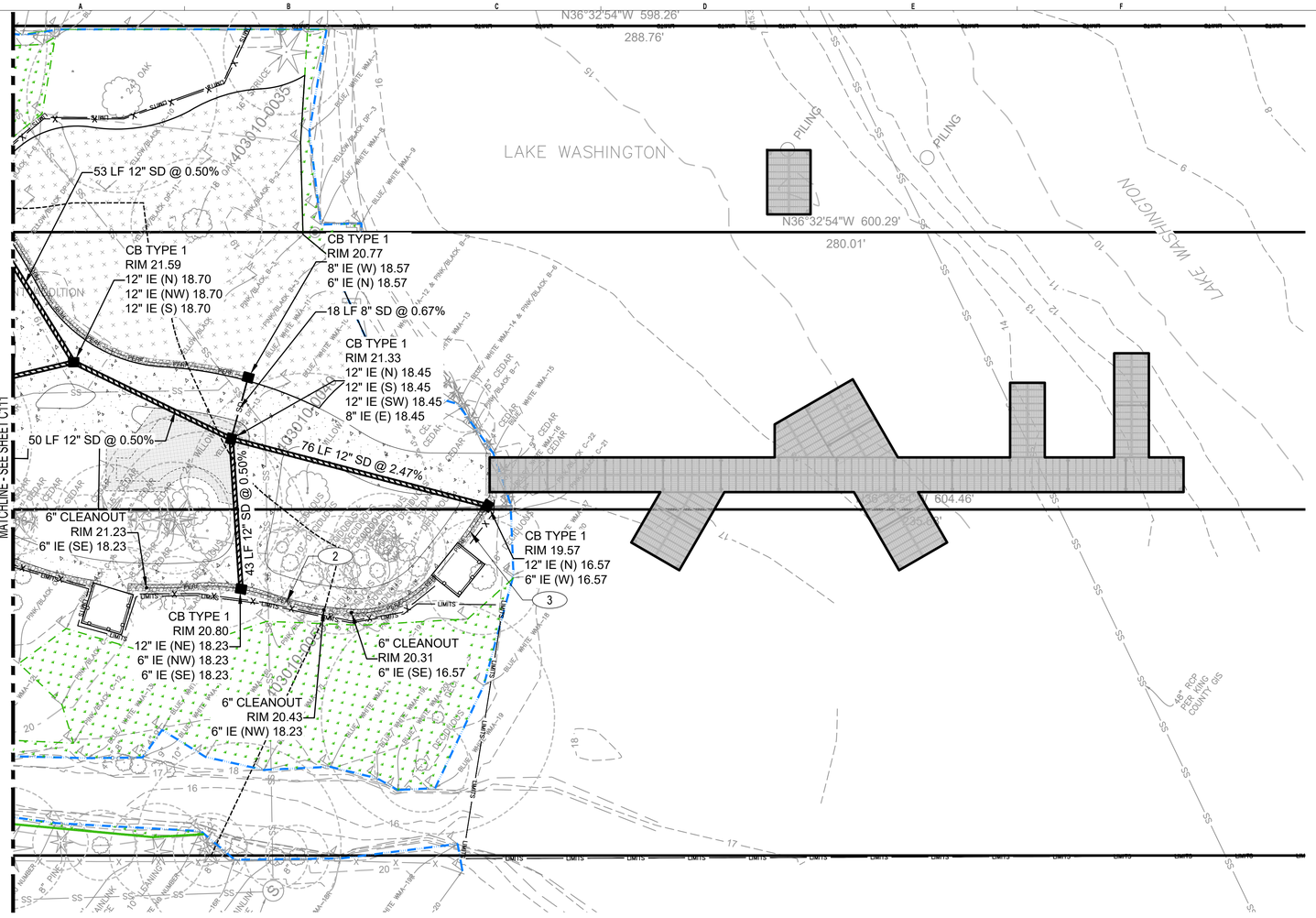
SITE DRAINAGE PLAN

DATE: 10/3/2024
PLAN NUMBER:
C111
SHEET 28 **OF** 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C111-C112_SITE DRAINAGE PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: MIKE HECK
PRINCIPAL: ED **PROJECT MANAGER:** ED **DESIGNED BY:** JL **DRAWN BY:** MH **CHECKED BY:** ED



LEGEND

- LIMITS — LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- WETLAND AND STREAM BUFFER
- TYPE 1 CATCH BASIN
- TYPE 2 CATCH BASIN
- CLEANOUT
- SD — LESS THAN 12" DRAINAGE PIPE
- 12" AND GREATER DRAINAGE PIPE
- PERF — PERFORATED PIPE
- DISPERSION TRENCH WITH NOTCHED BOARD
- BIORETENTION PLANTER

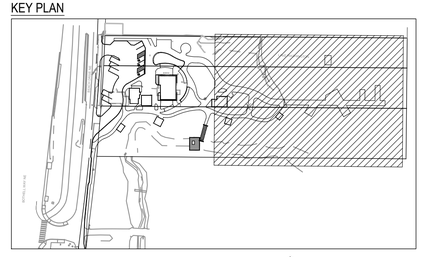
KEY NOTES

1. BIORETENTION PLANTER
2. FRENCH DRAIN. SLOPE TO SOUTH. INSTALL FITTINGS AS NECESSARY
3. 50' L x 2' W x 3' D DISPERSION TRENCH WITH NOTCHED BOARD
   6" IE 18.23
4. 50' L x 2' W x 3' D DISPERSION TRENCH WITH NOTCHED BOARD
   6" IE 16.57
5.
6.
7.
8.
9.

NOTES

1. SEE SHEET L004 - L006 FOR TREE PROTECTION FENCE AND DETAILS.
2. SEE SHEET C007 - C008 FOR DEMOLITION PLAN AND UTILITIES TO BE PROTECTED / REMOVED.

KEY PLAN



20' 10' 0 20' 40'
SCALE: 1" = 20'
SCALE: 1" = 20'

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2303.0384.02

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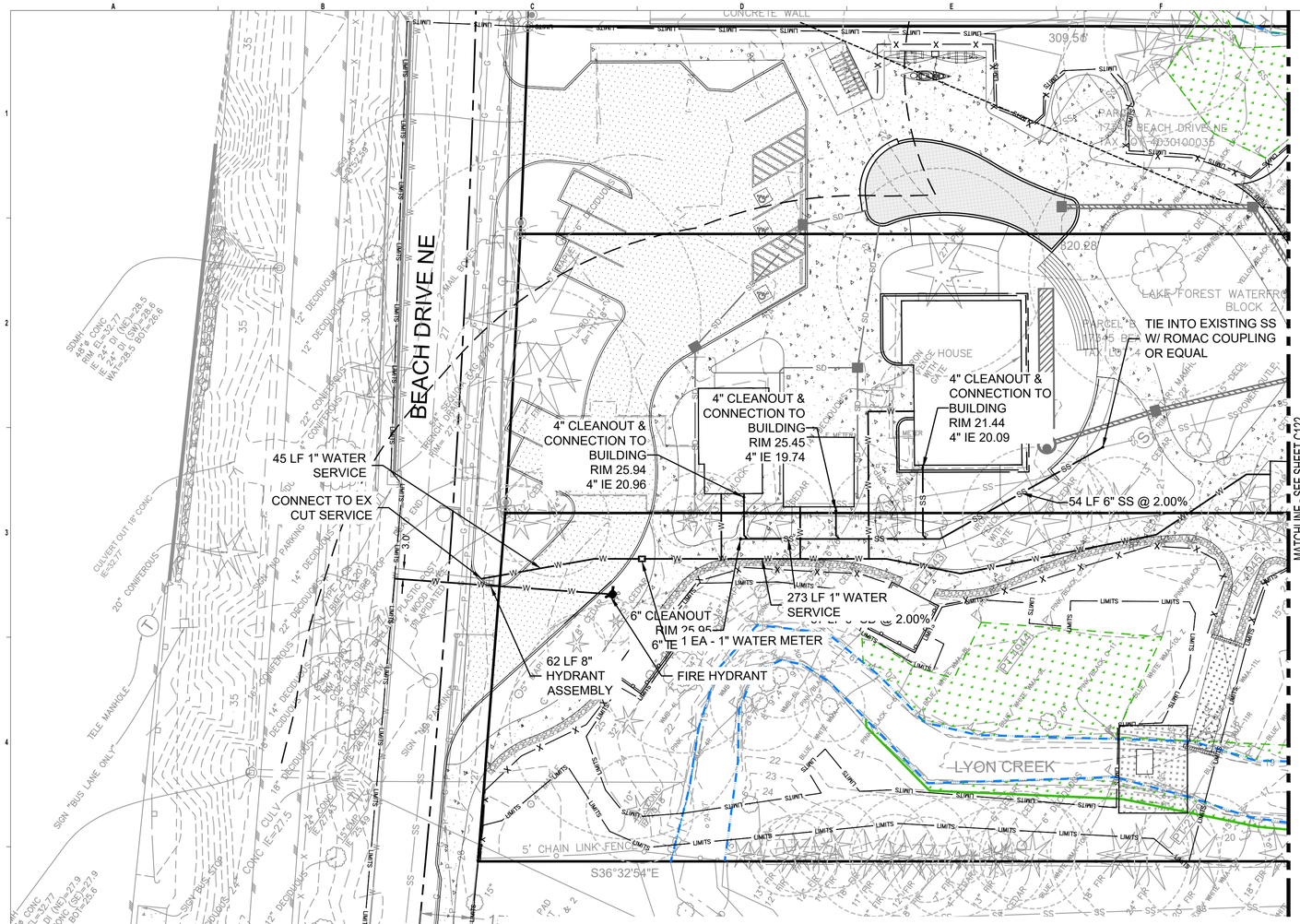
SITE DRAINAGE PLAN

DATE: 10/3/2024
PLAN NUMBER:
C112
SHEET 29 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD\REVIT\ACTIVEFILE\C111-C112_SITE DRAINAGE PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: MIKE HECK
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



NOTES

1. SEE SHEET L004 - L006 FOR TREE PROTECTION FENCE AND DETAILS.
2. SEE SHEET C007 - C008 FOR DEMOLITION PLAN AND UTILITIES TO BE PROTECTED / REMOVED.
3. SEWER PIPE TO BE PVC CONFORMING TO ASTM-D3034.
4. 5' MINIMUM SEPARATION IS REQUIRED FOR SEWER AND WATER. THE SERVICES MUST BE LAID IN SEPARATE TRENCHES. 18" MINIMUM VERTICAL SEPARATION BETWEEN SEWER AND WATER IS REQUIRED.
5. 3' MINIMUM SEPARATION IS REQUIRED FOR SEWER AND OTHER UTILITIES (GAS, POWER, STORM).

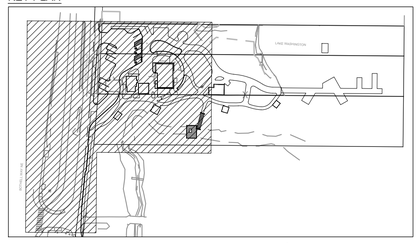
LEGEND

- LIMITS — LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- WETLAND AND STREAM BUFFER
- HYDRANT
- CLEANOUT
- W — WATER MAIN
- SS — SANITARY SEWER MAIN

KEY NOTES

1. BIORETENTION PLANTER
2. FRENCH DRAIN. SLOPE TO SOUTH. INSTALL FITTINGS AS NECESSARY
3. 50' L x 2' W x 3' D DISPERSION TRENCH WITH NOTCHED BOARD 6" IE 18.23
4. 50' L x 2' W x 3' D DISPERSION TRENCH WITH NOTCHED BOARD 6" IE 16.57
5.
6.
7.
8.
9.

KEY PLAN



20' 10' 0 20' 40'
SCALE: 1" = 20'

Know what's below. Call before you dig.

50% PROGRESS SET
NOT FOR PERMIT

NO.	DATE	BY	REVISION

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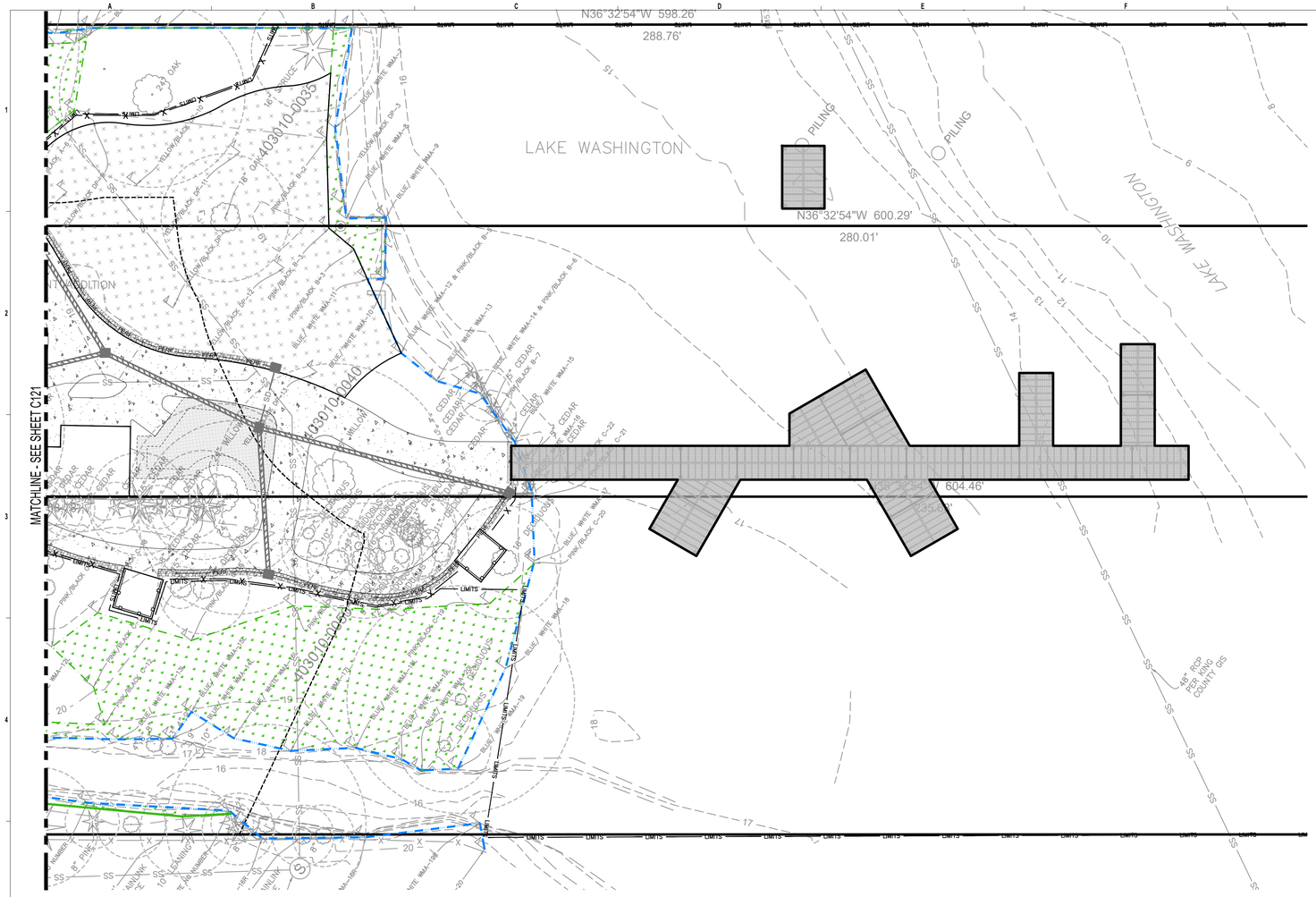
17337, 17345, & 17347 BEACH DR NE
LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

UTILITY PLAN

DATE: 10/3/2024
PLAN NUMBER: C121
SHEET 30 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C121-C122_SITE UTILITY PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: MIKE HECK
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

- LIMITS — LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- WETLAND AND STREAM BUFFER
- HYDRANT
- CLEANOUT
- W — WATER MAIN
- SS — SANITARY SEWER MAIN

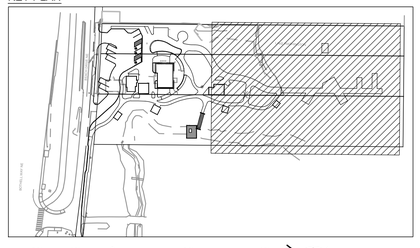
KEY NOTES

1. BIORETENTION PLANTER
2. FRENCH DRAIN. SLOPE TO SOUTH. INSTALL FITTINGS AS NECESSARY
3. 50' L x 2' W x 3' D DISPERSION TRENCH WITH NOTCHED BOARD 6" IE 18.23
4. 50' L x 2' W x 3' D DISPERSION TRENCH WITH NOTCHED BOARD 6" IE 16.57
5.
6.
7.
8.
9.

NOTES

1. SEE SHEET L004 - L006 FOR TREE PROTECTION FENCE AND DETAILS.
2. SEE SHEET C007 - C008 FOR DEMOLITION PLAN AND UTILITIES TO BE PROTECTED / REMOVED.
3. SEWER PIPE TO BE PVC CONFORMING TO ASTM-D3034.
4. 5' MINIMUM SEPARATION IS REQUIRED FOR SEWER AND WATER. THE SERVICES MUST BE LAID IN SEPARATE TRENCHES. 18" MINIMUM VERTICAL SEPARATION BETWEEN SEWER AND WATER IS REQUIRED.
5. 3' MINIMUM SEPARATION IS REQUIRED FOR SEWER AND OTHER UTILITIES (GAS, POWER, STORM).

KEY PLAN



20' 10' 0 20' 40'

SCALE: 1" = 20'

811 Know what's **below.** **Call** before you dig.

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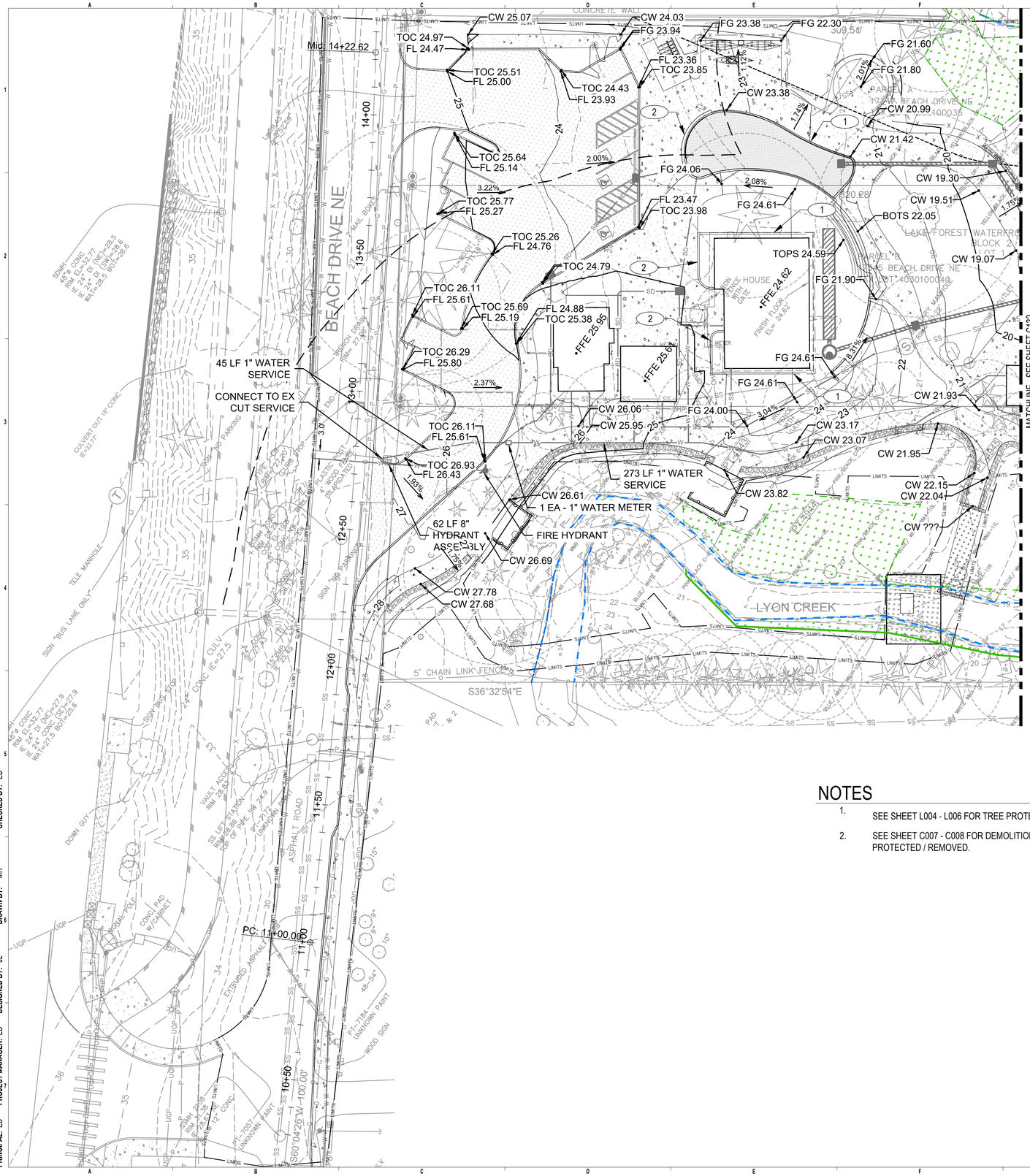
2303.0384.02

50% DESIGN

UTILITY PLAN

DATE: 10/3/2024
PLAN NUMBER:
C122
SHEET 31 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD\REVIT\ACTIVEFILE\C121-C122_SITE UTILITY PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: MIKE HECK
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

- LIMITS — LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- WETLAND AND STREAM BUFFER
- 20 — MINOR CONTOUR
- 20 — MAJOR CONTOUR
- GL — GRADING DAYLIGHT LINE

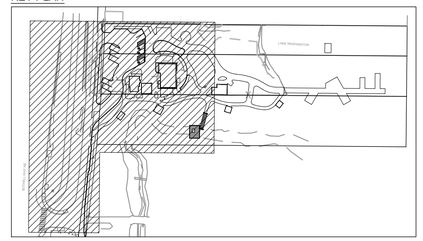
KEY NOTES

1. 12" WIDE CIP WALL
2. 18" HIGH SEAT WALL
3.
4.
5.
6.
7.
8.
9.

NOTES

1. SEE SHEET L004 - L006 FOR TREE PROTECTION FENCE AND DETAILS.
2. SEE SHEET C007 - C008 FOR DEMOLITION PLAN AND UTILITIES TO BE PROTECTED / REMOVED.

KEY PLAN



20' 10' 0 20' 40'

SCALE: 1" = 20'

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2303.0384.02

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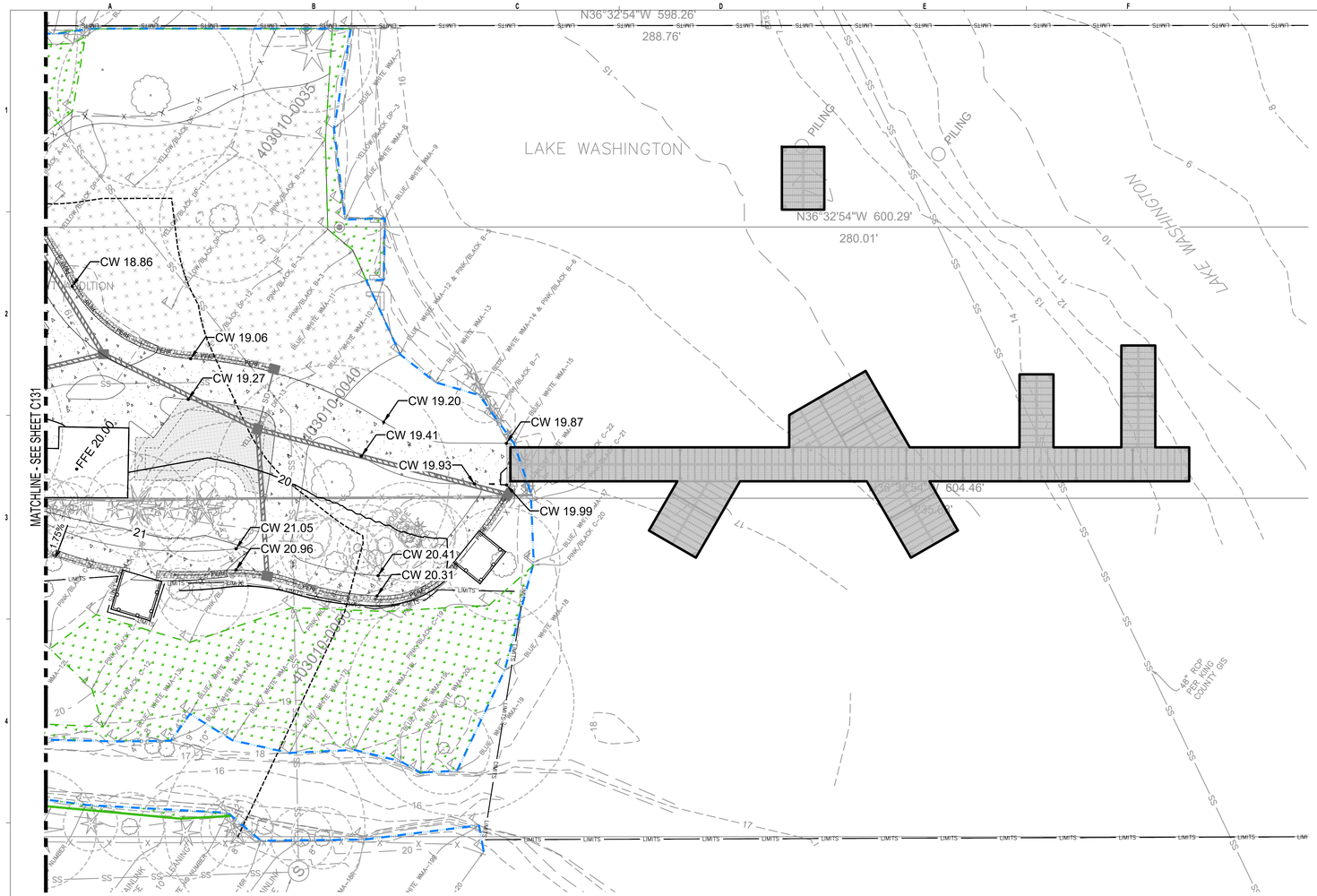
GRADING PLAN

DATE: 10/7/2024

PLAN NUMBER:
C131
SHEET 32 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\03\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVE\FILE\C131-C132, GRADING PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

- LIMITS — LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
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- ORDINARY HIGH WATER MARK (OHWM)
- WETLAND AND STREAM BUFFER
- 20 — MINOR CONTOUR
- 20 — MAJOR CONTOUR
- GL — GRADING DAYLIGHT LINE

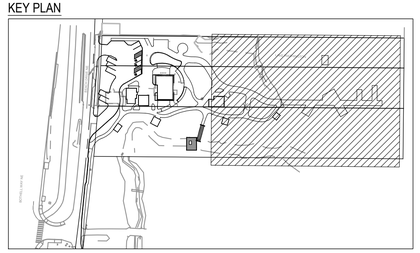
KEY NOTES

1. 12" WIDE CIP WALL
2. 18" HIGH SEAT WALL
3.
4.
5.
6.
7.
8.
9.

NOTES

1. SEE SHEET L004 - L006 FOR TREE PROTECTION FENCE AND DETAILS.
2. SEE SHEET C007 - C008 FOR DEMOLITION PLAN AND UTILITIES TO BE PROTECTED / REMOVED.

KEY PLAN



20' 10' 0 20' 40'

SCALE: 1" = 20'

SCALE: 1" = 20'

50% PROGRESS SET
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2303.0384.02

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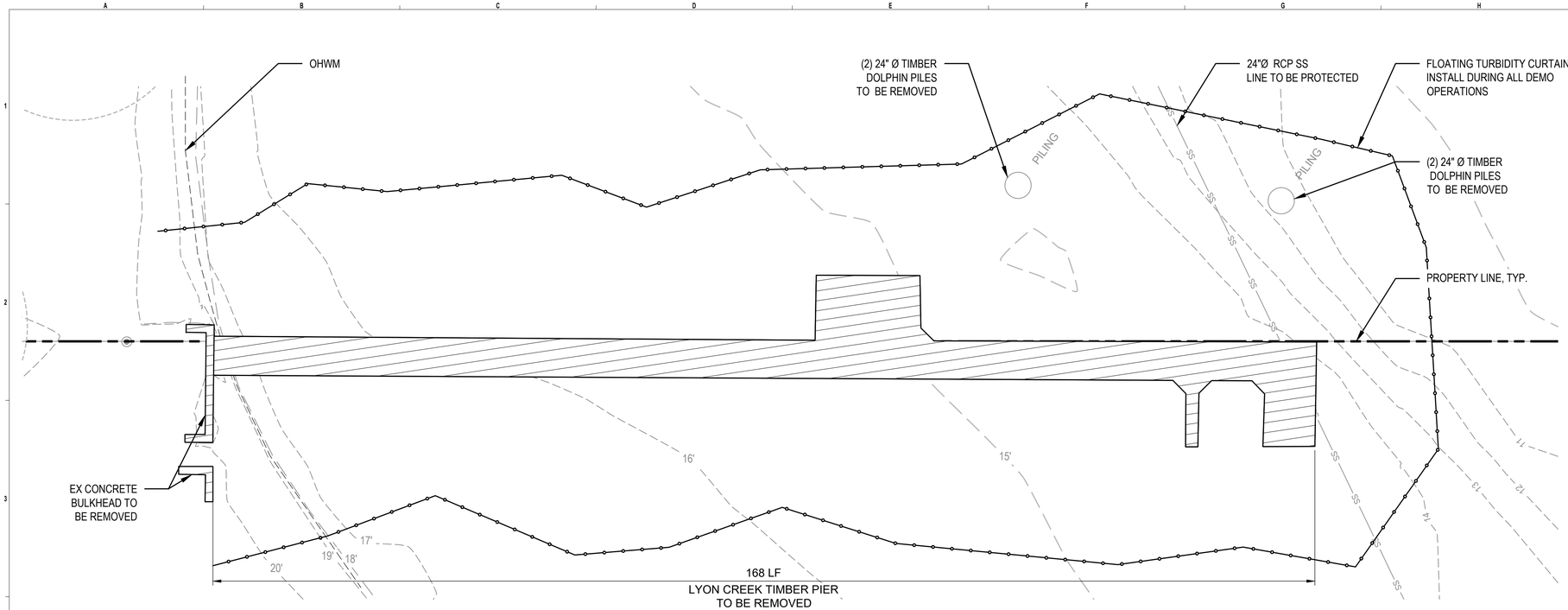
GRADING PLAN

DATE: 10/7/2024

PLAN NUMBER:
C132
SHEET 33 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\02303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\C131-C132_GRADING PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI

PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED

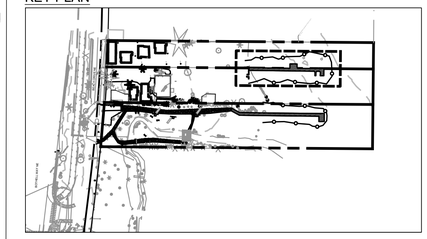


EXISTING LAKEFRONT PIER DEMOLITION PLAN

10' 5' 0 10' 20'

SCALE: 1" = 10'

KEY PLAN

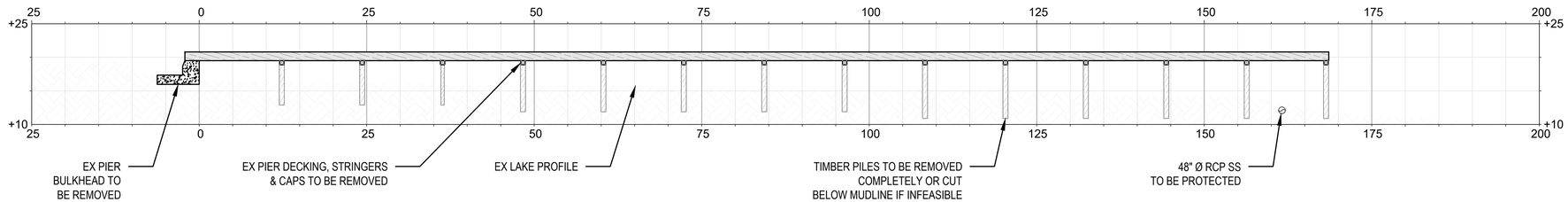


LEGEND (SCALE MAY VARY)

= MAJOR CONTOUR
= MINOR CONTOUR
= PROPERTY LINE
= EXISTING DOCK TO BE REMOVED

DEMOLITION QUANTITY ESTIMATE

TIMBER PIER (STRINGERS, CAPS, END BOARDS, DECK BOARDS)	1,260	SF
12"Ø TIMBER PILE APPROXIMATE 15-20' LENGTH	35	EA
24"Ø TIMBER DOLPHIN PILE APPROXIMATE 15-20'	2	EA
CONCRETE PIER BULKHEAD	19	TN



EXISTING LAKEFRONT PIER DEMOLITION PROFILE

10' 5' 0 10' 20'

SCALE: 1" = 10'

50% PROGRESS SET
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2303.0384.02

50% DESIGN

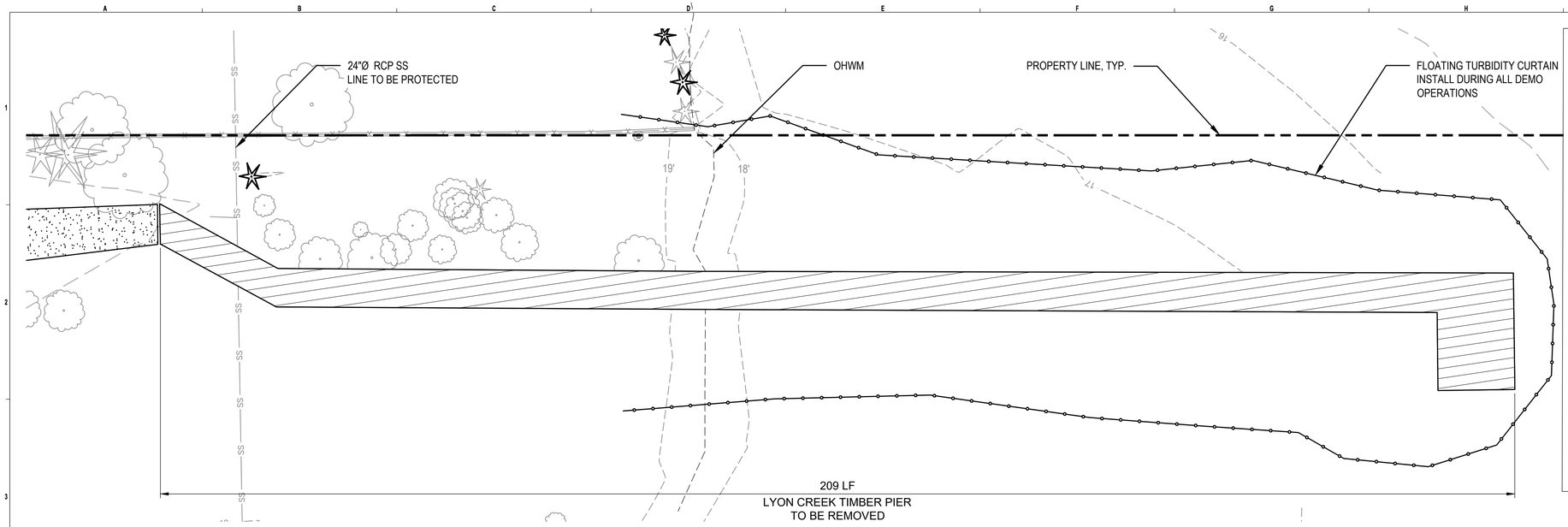
EXISTING LAKEFRONT PIER DEMOLITION PLAN AND PROFILE

DATE: 10/7/2024

PLAN NUMBER:
S001
SHEET 34 OF 46

PRINCIPAL: SR PROJECT MANAGER: DM DESIGNED BY: ED DRAWN BY: NM CHECKED BY: DM

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\0323\03230384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVE\LES001-EX DOCK DEMO PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI

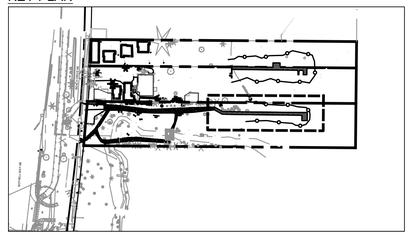


EXISTING LYON CREEK PIER DEMOLITION PLAN

10' 5' 0 10' 20'

SCALE: 1" = 10'

KEY PLAN

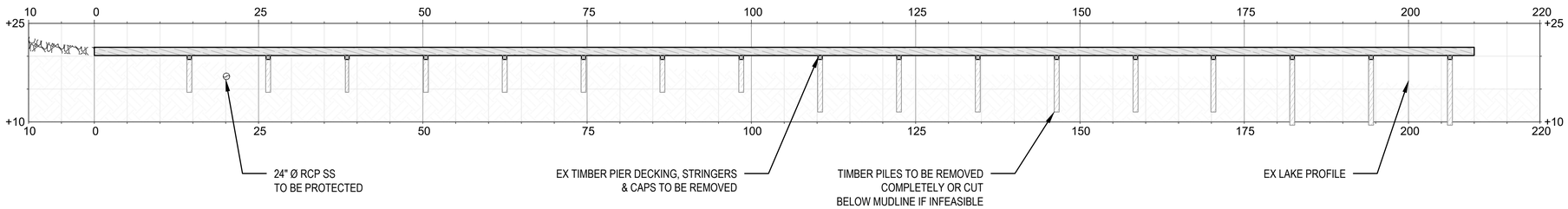


LEGEND (SCALE MAY VARY)

= MAJOR CONTOUR
= MINOR CONTOUR
= PROPERTY LINE
= EXISTING DOCK TO BE REMOVED

DEMOLITION QUANTITY ESTIMATE

TIMBER PIER (STRINGERS, CAPS, END BOARDS, DECK BOARDS)	1,370	SF
12"Ø TIMBER PILE APPROXIMATE 15-20' LENGTH	40	EA



EXISTING LYON CREEK PIER DEMOLITION PROFILE

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SCALE: 1" = 10'

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2303.0384.02

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EXISTING LYON CREEK PIER DEMOLITION PLAN AND PROFILE

DATE: 10/7/2024
PLAN NUMBER:
S002
SHEET 35 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\02303.0384.02 - LFP LAKEFRONT PARK PH 2\09\MWNS\CAD-REVIT\ACTIVEFILES\S01-EX DOCK DEMO PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: SR PROJECT MANAGER: DM DESIGNED BY: ED DRAWN BY: NM CHECKED BY: DM

LAKEFRONT DOCK GENERAL NOTES

SURVEY

EXISTING CONDITIONS, PROJECT CONTROL, AND PRE-CONSTRUCTION CONDITIONS ARE PROVIDED BY THE PROJECT SURVEY. THE PROJECT SURVEY HAS BEEN PERFORMED BY APS SURVEY AND MAPPING AND WAS ISSUED ON 02/16/2024.

CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY LOCATIONS OF ALL EXISTING AND PROPOSED CONSTRUCTION. REFER TO CONTRACT DRAWINGS FOR EXISTING AND PROPOSED LOCATIONS. NOTIFY THE OWNER OF ANY DISCREPANCIES OR INTERFERENCES.

GEOTECHNICAL INVESTIGATION

SUBSURFACE CONDITIONS CONSIDERED FOR THE DESIGN HAVE BEEN TAKEN FROM THE INFORMATION PROVIDED BY THE GEOTECHNICAL REPORT. THE GEOTECHNICAL REPORT IS PENDING AND SHALL BE COMPLETED BY HWA GEOSCIENCES, INC.

FEDERAL, STATE, AND LOCAL LAWS AND PERMITS

CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF ALL FEDERAL, STATE, AND LOCAL LAWS AND PERMITS. IT IS THE OWNERS' AND CONTRACTORS' RESPONSIBILITY TO UNDERSTAND THE LAWS AND PERMIT CONDITIONS APPLICABLE TO THE PROJECT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THESE DRAWINGS IN ACCORDANCE WITH ALL PROJECT AND PERMIT REQUIREMENTS.

ABBREVIATIONS

ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
CF	CUBIC FEET
CFR	CODE OF FEDERAL REGULATIONS
CSC	COUNTERSINK
DIA	DIAMETER
E	EASTING
EL	ELEVATION
ELEV	ELEVATION
FT	FEET
LBS	POUNDS
MIN	MINIMUM
N	NORTHING
OC	ON CENTER(S)
OFF	OFFSET
PSI	POUND PER SQUARE INCH
ROW	RIGHT OF WAY
STA	STATION
USACE	US ARMY CORPS OF ENGINEERS
VIF	VERIFY IN FIELD

DESIGN CODES

THE DESIGN WAS PREPARED WITH THE FOLLOWING DESIGN CODES:

A. IBC 2021 INTERNATIONAL BUILDING CODE;
B. AISC 360-16 STEEL CONSTRUCTION MANUAL 15TH EDITION;
C. ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES;
D. ASCE 61-14 SEISMIC DESIGN OF PIERS AND WHARVES;
E. ASCE DESIGN OF MARINE FACILITIES.

DESIGN CRITERIA

DEAD LOAD

WEIGHT OF ALL DECK COMPONENTS INCLUDING GRATING

LIVE LOAD

DOCK LL: 100 PSF UNIFORM

WIND LOAD

98 MPH, EXPOSURE D (3 SEC GUSTS)
RISK CATEGORY II

SEISMIC LOAD

SITE CLASS: D
RISK CATEGORY: II
SPECTRAL ACCELERATION: S~.S = 1.097G
S1 = 0.389
SMS = 1.64

MATERIALS AND METHODS

CATHODIC PROTECTION

CATHODIC PROTECTION PROVIDED BY EPOXY COATING. AFTER 10 YEARS, OWNER SHALL INSPECT AND PROVIDE ANODES, IF NECESSARY.

STEEL PIPE PILES

ALL STEEL PIPE PILES SHALL BE SEAMLESS OR STRAIGHT SEAM PIPE CONFORMING TO ASTM A252, GRADE 3, WITH MINIMUM YIELD STRENGTH OF 50 KSI. CHEMISTRY OF STEEL SHALL HAVE A C.E. LESS THAN 0.45 PER AWS.

STRUCTURAL STEEL

WIDE FLANGE SHAPES SHALL CONFORM TO A992 GRADE 50.
PLATE SHALL CONFORM TO A572 GRADE 50, UNLESS OTHERWISE NOTED.
FLATBAR SHALL CONFORM TO ASTM A36.
RECTANGULAR HSS SHALL CONFORM TO ASTM A500 GRADE B/C.
PIPE SECTIONS WITH 12-INCHES O.D. OR LESS SHALL CONFORM TO ASTM A53 GRADE B, TYPE E OR S.
ANGLES SHALL CONFORM TO ASTM A36 AT A MINIMUM.

STRUCTURAL STEEL WELDING

ALL SHOP AND FIELD WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AMERICAN SOCIETY FOR WELDING IN BUILDINGS AND CONSTRUCTION AWS D1.1. WELDING ELECTRODES SHALL BE E70XX.

EPOXY COATING

ALL STEEL SHALL BE EPOXY COATED PER ASTM A775 OR A943 AFTER FABRICATION UNLESS OTHERWISE NOTED.

DECKING

DECKING SHALL BE FIBERGRATE ECOGRATE OR APPROVED EQUAL.
DECKING SHALL BE ATTACHED PER MANUFACTURER'S RECOMMENDATIONS.

BOLTS AND OTHER HARDWARE

ALL BOLTS, SCREWS, NUTS, WASHERS, HINGES, HINGE RODS, AND MISCELLANEOUS HARDWARE SHALL BE STAINLESS STEEL TYPE 316.
ALL CONNECTING BOLTS FOR STEEL TO STEEL SHALL BE WITH THREADS EXCLUDED FROM THE SHEAR PLANE.
ALL STEEL TO CONCRETE AND ANCHOR BOLTS SHALL BE ASTM F1554, GRADE 105, GALVANIZED.
FOR BOLTS IN TREATED WOOD, SWAB FIELD-DRILLED BOLT HOLES WITH PRESERVATIVE BEFORE INSTALLING BOLTS.
BOLTS AND OTHER HARDWARE SHALL BE AS SPECIFIED ON THE DRAWINGS.

REINFORCING STEEL

REINFORCING STEEL SHALL BE ASTM A615, GRADE 60 DEFORMED BARS, EPOXY-COATED.
REINFORCING STEEL TO BE WELDED SHALL BE ASTM A706, GRADE 60 DEFORMED BARS.

CONCRETE

CONCRETE CEMENT SHALL CONFORM TO ASTM C150 TYPE II, OR TYPE I OR TYPE III WITH TRI--CALCIUM ALUMINATE CONTENT BELOW 8%. AGGREGATE SHALL CONFORM TO ASTM C33 WITH MAXIMUM SIZE OF 3/4--INCH. CONCRETE SHALL BE STANDARD WEIGHT, PORTLAND CEMENT CONCRETE APPROPRIATELY PROPORTIONED TO MEET OR EXCEED THE FOLLOWING MINIMUM REQUIREMENTS FOR STRENGTH AND SERVICEABILITY.

PRECAST CONCRETE

MINIMUM 28 DAY COMPRESSIVE STRENGTH f'c = 5,000 PSI.
MAX W/C RATIO = 0.40
AIR ENTRAINMENT = 4% TO 8%

GROUT

MINIMUM 28 DAY COMPRESSIVE STRENGTH f'c = 6,000 PSI
INSTALL PER MANUFACTURER'S RECOMMENDATIONS .
GROUT SHALL CONSIST OF ONE PART CEMENT TO THREE PARTS PAVING SAND, BY WEIGHT.

TIMBER

TO BE DEVELOPED

PREFABRICATED COMPONENTS

INSTALL ALL PREFABRICATED COMPONENTS PER MANUFACTURES RECOMMENDATIONS.
INSTALL SWIM LADDER PER MANUFACTURES RECOMMENDATIONS. THE SWIM LADDERS ON EACH SIDE OF THE DOCK SHALL BE 4 STEP LIFT LADDERS FROM INTERNATIONAL DOCK PRODUCTS, INC OR OWNER APPROVED EQUAL.

50% PROGRESS SET
NOT FOR PERMIT

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NO.	DATE	BY	REVISION

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17337, 17345, & 17347 BEACH DR NE
LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

LAKEFRONT DOCK GENERAL NOTES

DATE: 10/7/2024
PLAN NUMBER:
S101
SHEET 36 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2303\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\101-S102_DOCK NOTES.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: SR PROJECT MANAGER: ED DESIGNED BY: DM DRAWN BY: NM CHECKED BY: DM

LAKEFRONT DOCK GENERAL NOTES CONTINUED

STRUCTURAL OBSERVATIONS

1. VISUAL OBSERVATION WILL BE PERFORMED AT THE DISCRETION OF THE OWNER, ARCHITECT, E.O.R. AND AS REQUIRED BY THE BUILDING OFFICIAL IN ACCORDANCE WITH THE BUILDING CODE. VISUAL OBSERVATION SHALL NOT BE CONSIDERED AS A SUBSTITUTE FOR THE SPECIAL INSPECTION REQUIREMENTS.

2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY THE E.O.R AS TO WHEN EACH MAJOR PHASE OF CONSTRUCTION IS READY FOR OBSERVATION A MINIMUM OF FIVE(5) WORKING DAYS IN ADVANCE.

3. THE FOLLOWING MAJOR PHASES OF CONSTRUCTION REQUIRE A SITE VISIT AND STRUCTURAL OBSERVATION REPORT FROM THE S.E.O.R:
   - FOUNDATION REBAR AND ANCHORS;
   - PRIOR TO POUR OF CONCRETE;
   - STRUCTURAL FRAMING;
   - AFTER ERECTION AND PRIOR TO CLOSING IN;
   - SLABS AND REBAR;
   - PRIOR TO POUR OF CONCRETE;
   - ROOF NAILING;
   - PRIOR TO INSTALLATION OF ROOFING AND CRICKETS;
   - COMPLETION OF STRUCTURAL SYSTEMS(S).

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT NAILING, REINFORCEMENT, WELDS, CONNECTIONS, ETC. ARE VISIBLE FOR OBSERVATION WHEN THE S.E.O.R IS ON SITE AND FOR ANY SCHEDULING DELAYS DUE TO NONCOMPLIANT ITEMS FOUND DURING OBSERVATION.

5. AT THE CONCLUSION OF WORK INCLUDED IN THE PERMIT, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE MADE AND IDENTIFY ANY REPORTED DEFICIENCIES THAT, TO THE BEST OF THE STRUCTURAL OBSERVERS' KNOWLEDGE, HAVE NOT BEEN RESOLVED

STATEMENT OF SPECIAL INSPECTIONS

1. THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR THE INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

2. SPECIAL INSPECTIONS ARE NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVED FABRICATORS MUST SUBMIT A CERTIFICATE OF COMPLIANCE FOR OFFSITE FABRICATIONS SUCH AS STRUCTURAL STEEL, PRECAST CONCRETE, GLUED LAMINATED TIMBER, ETC.

3. ALL INSPECTIONS SHALL BE PERFORMED BY INDEPENDENT SPECIAL INSPECTORS. JOB SITE VISITS BY THE STRUCTURAL ENGINEER OR BUILDING OFFICIAL DO NOT CONSTITUTE AND ARE NOT A SUBSTITUTE FOR INSPECTION BY A SPECIAL INSPECTOR.

4. ALL INSPECTION REPORTS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND E.O.R. THE FINAL REPORTS BY THE SPECIAL INSPECTOR(S) MUST CERTIFY THAT THE ENTIRE STRUCTURAL SYSTEM COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.

5. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT THESE INSPECTIONS ARE PERFORMED.

6. WORK REQUIRING SPECIAL INSPECTION SHALL BE INSPECTED BY THE SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS PERFORMED AND AT THE COMPLETION OF WORK. CONTINUOUS INSPECTION CONSIST OF FULL-TIME INSPECTION; PERIODIC INSPECTION CONSIST OF PART-TIME OR INTERMITTENT INSPECTION.

7. THE FOLLOWING SPECIAL INSPECTIONS ARE IN ADDITION TO THE INSPECTION BY THE BUILDING OFFICIAL. THIS LIST IS NOT INTENDED TO BE ALL INCLUSIVE.

SOILS SUPPORTING FOUNDATIONS

PERIODIC: VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.
PERIODIC: VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL .
PERIODIC: PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.
CONT: VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION.
PERIODIC: PRIOR TO PLACEMENT OF CONTROLLED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.

STRUCTURAL CONCRETE

PERIODIC: INSP. OF REINFORCING STEEL AND PLACEMENT.
CONT: INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE.
PERIODIC: VERIFY USE OF REQUIRED DESIGN MIX.
CONT: SAMPLING FRESH CONCRETE & PERFORMING SLUMP AND AIR CONTENT TEST & DETERMINING THE TEMPERATURE OF FRESH CONCRETE AT THE TIME OF MAKING SPECIMENS FOR STRENGTH TEST.
CONT: INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPL. TECHNIQUES.
PERIODIC: INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUE.
PERIODIC: VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.
PERIODIC: INSPECT FORMWORK FOR SHAPE, LOCATION AND DIM. OF THE CONCRETE MEMBER BEING FORMED.
PERIODIC: POST-INSTALLED AND ADHESIVE ANCHORS.

STRUCTURAL STEEL

PERIODIC: HIGH-STRENGTH BOLTS, NUTS, AND WASHERS IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS, MANUFACTURE'S CERTIFICATE OF COMPLIANCE REQUIRED.
PERIODIC: INSPECTION OF HIGH-STRENGTH BOLTING BEARING-TYPE CONNECTIONS.
PERIODIC: STRUCTURAL STEEL MANUFACTURER'S CERTIFIED MILL TEST REPORTS REQUIRED.
PERIODIC: INSPECTION OF STEEL FRAME BRACING & STIFFENER DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS.
PERIODIC: APPLICATIONS OF JOINT DETAILS AT EACH CONNECTION.

WELDING

CONT: COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.
CONT: FILLET WELDS > 5/16" AND MULTIPASS FILLET WELDS.
PERIODIC: FILLET WELDS < 5/16"
PERIODIC: METAL DECK WELDS.
PERIODIC: LIGHT GAUGE METAL WELDS.
PERIODIC: WELD FILLER MATERIAL IDENTIFICATION MARKINGS TO CONFORM TO AWS STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS. MANUFACTURER'S CERTIFICATION OF COMPLIANCE REQUIRED.
CONT: WELDING OF REINFORCEMENT STEEL RESISTING SEISMIC FORCES, INDICATED ON PLANS AND DETAILS AS LRFS ELEMENTS AND CONNECTIONS.
PERIODIC: VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706.
CONT: WELDING OF STIRRUPS, HOOPS OR TIERS.
PERIODIC: ALL OTHER REINFORCEMENT WELDS, U.N.O.

STRUCTURAL SUBMITTALS

1. REVIEW OF SHOP DRAWINGS AND SUBMITTALS BY THE E.O.R IS FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS.

2. SHOP DRAWINGS SHALL BE SUBMITTED TO THE E.O.R FOR REVIEW PRIOR TO FABRICATION. THE CONTRACTOR WILL REMAIN RESPONSIBLE FOR ALL ERRORS OF DETAILING, FABRICATION, AND FOR CORRECT FITTING OF ALL STRUCTURAL MEMBERS INCLUDING COORDINATION WITH OTHER TRADES.
   A. SHOP DRAWINGS SHALL BE SUBMITTED A MINIMUM OF 2 WEEK PRIOR TO SCHEDULED FABRICATION AND SHALL CONSIST OF ONLY ONE SET FOR OUR RECORDS AND ONE REPRODUCIBLE SET. ONE ELECTRONIC SET IS ACCEPTABLE.
   B. E.O.R WILL RETURN THE REPRODUCIBLE OR ELECTRONIC SET CLEARLY MARKED WITH COMMENTS. ANY REQUIRED RECORD SET COPIES SHALL BE MADE FROM THIS RETURNED SET.
   C. REPRODUCTION OF STRUCTURAL PLANS & DETAILS FOR SHOP DRAWINGS IS PROHIBITED. SUBCONTRACTOR/FABRICATOR IS TO PROVIDE INDEPENDENTLY CREATED DRAWINGS BASED ON THE STRUCTURAL PLANS DETAIL.

3. THE FOLLOWING LIST SUMMARIZES IMPORTANT STRUCTURAL SUBMITTALS FOR THIS PROJECT. REFER TO THE SPECIFICATIONS FOR A COMPLETE LIST OF ADDITIONAL REQUIREMENTS.

GENERAL

REQD: QUALIFICATION DATA FOR APPROVED INSTALLERS AND FABRICATORS.
REQD: CERTIFICATES OF CONFORMANCE FOR PREFABRICATED MEMBERS.
REQD: PROVIDE PRODUCT DATA FOR ALL MANUFACTURED STRUCTURAL PRODUCTS AND ACCESSORIES USED.

CONCRETE FORMWORK

REQD: MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR PROPRIETARY MATERIALS INCLUDING FORM COATINGS, MANUFACTURED FORM SYSTEMS, TIES AND ACCESSORIES.
REQD: SHOP DRAWINGS FOR FABRICATION AND ERECTION OF FORMWORK AND SHORING.

CONCRETE REINFORCEMENT

REQD: MANUFACTURER'S PRODUCT DATA, SPECIFICATIONS AND INSTALLATION PROCEDURES FOR PROPRIETARY MATERIALS AND REINFORCEMENT.
REQD: STEEL PRODUCERS CERTIFICATES OF MILL ANALYSIS, TENSILE AND BEND TEST.
REQD: SHOP DRAWINGS FOR FABRICATION, BENDING AND PLACEMENT.

CAST-IN-PLACE CONCRETE

REQD: DESIGN MIX FOR EACH CONCRETE MIX.
REQD: MATERIAL TEST REPORTS.
REQD: MATERIAL CERTIFICATES FOR CEMENT, AGGREGATES AND ADMIXTURES.
REQD: SHOP DRAWINGS FOR PROPOSED LOCATIONS OF ADDITIONAL CONSTRUCTION OR CONTROL JOINTS NOT SHOWN ON THE STRUCTURAL PLANS.
REQD: MINUTES FROM PREINSTALLATION CONFERENCE.

STRUCTURAL STEEL

REQD: MANUFACTURES MILL CERTIFICATES.
REQD: MILL TEST REPORTS.
REQD: SHOP DRAWINGS FOR FABRICATION AND ASSEMBLY OF MEMBERS.
REQD: ERECTION PLAN SEQUENCE AND PROCEDURES.
REQD: WELDING PROCEDURE SPECIFICATIONS (WPS).
REQD: CERTIFICATES FOR ALL WELDERS VERIFYING CURRENT AWS QUALIFICATIONS.
REQD: TEST REPORTS FOR SHOP AND FIELD WELDED AND BOLTED CONNECTIONS.

STEEL DECK

REQD: SHOP DRAWINGS INDICATING LAYOUT AND DETAILS.

COLD-FORMED METAL FRAMING

REQD: SHOP DRAWINGS INDICATING LAYOUT AND DETAILS.
REQD: ENGINEERING CALCULATIONS.

ROUGH CARPENTRY

REQD: PRODUCT DATA FOR TREATMENTS AND PRESERVATIVES.
REQD: MATERIAL CERTIFICATES FOR DIMENSION LUMBER.

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2303.0384.02

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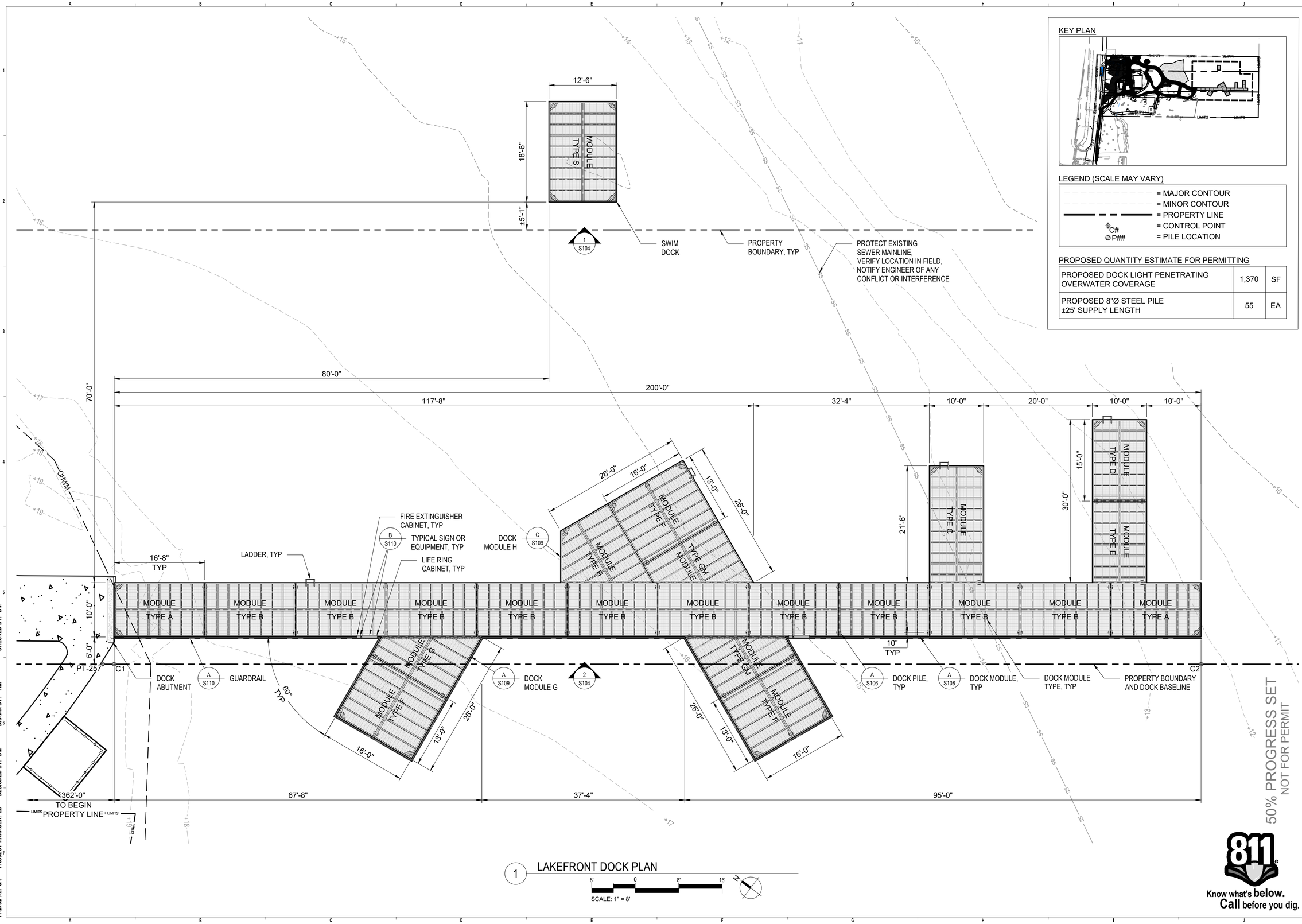
LAKEFRONT DOCK GENERAL NOTES CONTINUED

DATE: 10/7/2024

PLAN NUMBER:
S102
SHEET 37 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\S101-S102_DOCK NOTES.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: SR PROJECT MANAGER: ED DESIGNED BY: DM DRAWN BY: NM CHECKED BY: DM



1 LAKEFRONT DOCK PLAN

SCALE: 1" = 8'

KEY PLAN

LEGEND (SCALE MAY VARY)

	= MAJOR CONTOUR
	= MINOR CONTOUR
	= PROPERTY LINE
C#	= CONTROL POINT
P##	= PILE LOCATION

PROPOSED QUANTITY ESTIMATE FOR PERMITTING

PROPOSED DOCK LIGHT PENETRATING OVERWATER COVERAGE	1,370	SF
PROPOSED 8"Ø STEEL PILE ±25' SUPPLY LENGTH	55	EA

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2303.0384.02

50% DESIGN

LAKEFRONT DOCK PLAN

DATE: 10/7/2024
PLAN NUMBER: S103
SHEET 38 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\02303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\103-S106_DOCK PLANS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
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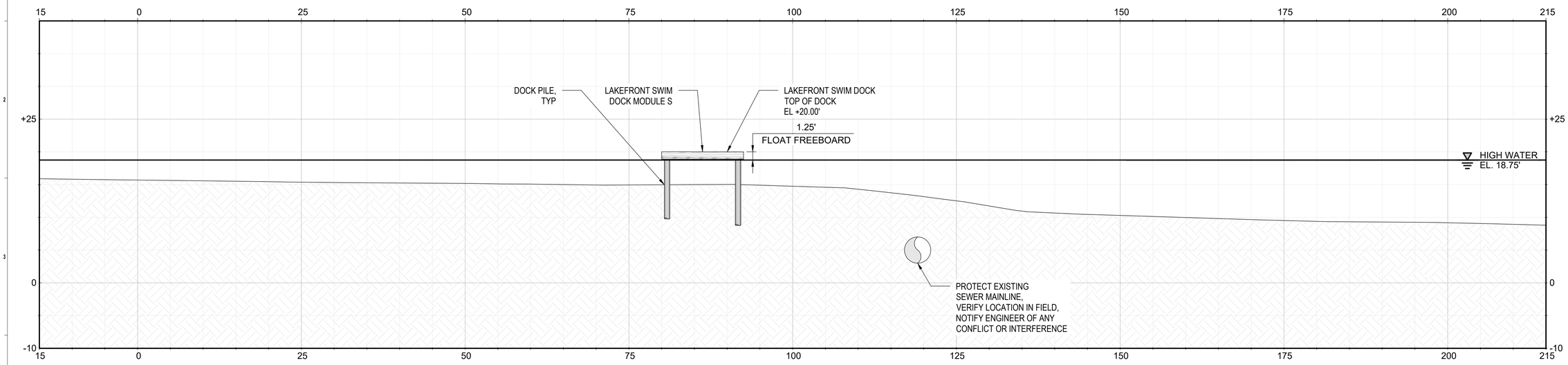
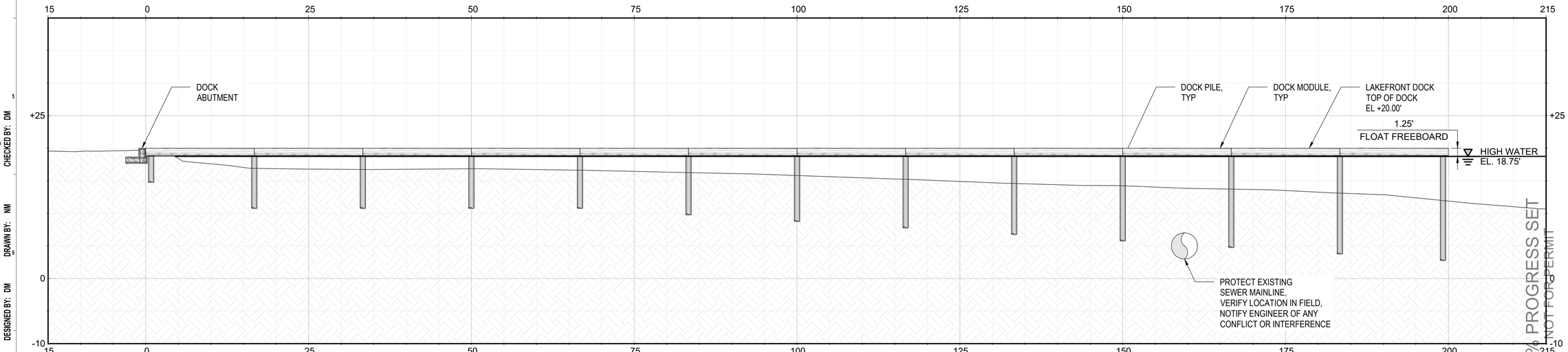


1 LAKEFRONT SWIM DOCK PROFILE

8' 0 8' 16'

SCALE: 1" = 8'



2 LAKEFRONT DOCK PROFILE

8' 0 8' 16'

SCALE: 1" = 8'

50% PROGRESS SET
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LAKEFRONT DOCK PROFILE

DATE: 10/7/2024
PLAN NUMBER:
S104
SHEET 39 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\103-S106_DOCK PLANS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
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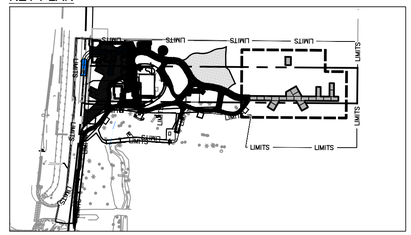
KEY PLAN



LEGEND (SCALE MAY VARY)

	= MAJOR CONTOUR
	= MINOR CONTOUR
	= PROPERTY LINE
C#	= CONTROL POINT
P##	= PILE LOCATION

LAKEFRONT DOCK BASELINE CONTROL

BASELINE CONTROL SCHEDULE		
PT	STATION, OFFSET	NORTHING, EASTING
C1	0+00.00', 0.00'	277939.85', 1285976.03'
C2	2+00.00', 0.00'	277779.18', 1286095.13'
PT-257	-0+02.08', 0.04' L	277941.55', 1285974.83'

12'-6"
18'-6"
±5'-1"
MODULE TYPE S
PS1
PS2
PS3
PS4
SWIM DOCK
PROPERTY BOUNDARY, TYP
PROTECT EXISTING SEWER MAINLINE, VERIFY LOCATION IN FIELD, NOTIFY ENGINEER OF ANY CONFLICT OR INTERFERENCE
80'-0"
200'-0"
117'-8"
32'-4"
10'-0"
20'-0"
10'-0"
10'-0"
70'-0"
OHWM
16'-8" TYP
10'-0"
5'-0"
PT-257
BEGIN BASELINE POINT C1, STA 0+00
C1
DOCK ABUTMENT
362'-0"
TO BEGIN PROPERTY LINE
67'-8"
37'-4"
95'-0"
MODULE TYPE A
MODULE TYPE B
MODULE TYPE C
MODULE TYPE D
MODULE TYPE E
MODULE TYPE F
MODULE TYPE G
MODULE TYPE H
MODULE TYPE GM
PA1
PA2
PB1
PB2
PC1
PC2
PD1
PD2
PD3
PD4
PD5
PE1
PE2
PE3
PE4
PF1
PF2
PF3
PG1
PG2
PG3
PG4
PG5
PG6
PG7
PG8
PG9
PH1
PH2
PH3
PH4
PH5
PH6
PI1
PI2
PJ1
PJ2
PJ3
PJ4
PK1
PK2
PK3
PK4
PL1
PL2
PL3
PL4
PM1
PM2
PM3
PM4
PM5
26'-0"
16'-0"
13'-0"
26'-0"
60° TYP
21'-6"
15'-0"
30'-0"
10" TYP
0+25
0+50
0+75
1+00
1+25
1+50
1+75
PROPERTY BOUNDARY AND DOCK BASELINE
DOCK PILE, TYP
DOCK MODULE, TYP
DOCK MODULE TYPE, TYP
C2
END BASELINE POINT C2, STA 2+00
50% PROGRESS SET NOT FOR PERMIT

1 LAKEFRONT DOCK FOUNDATION PLAN

SCALE: 1" = 8'

Know what's below. Call before you dig.

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NO.	DATE	BY	REVISION

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2303.0384.02

50% DESIGN

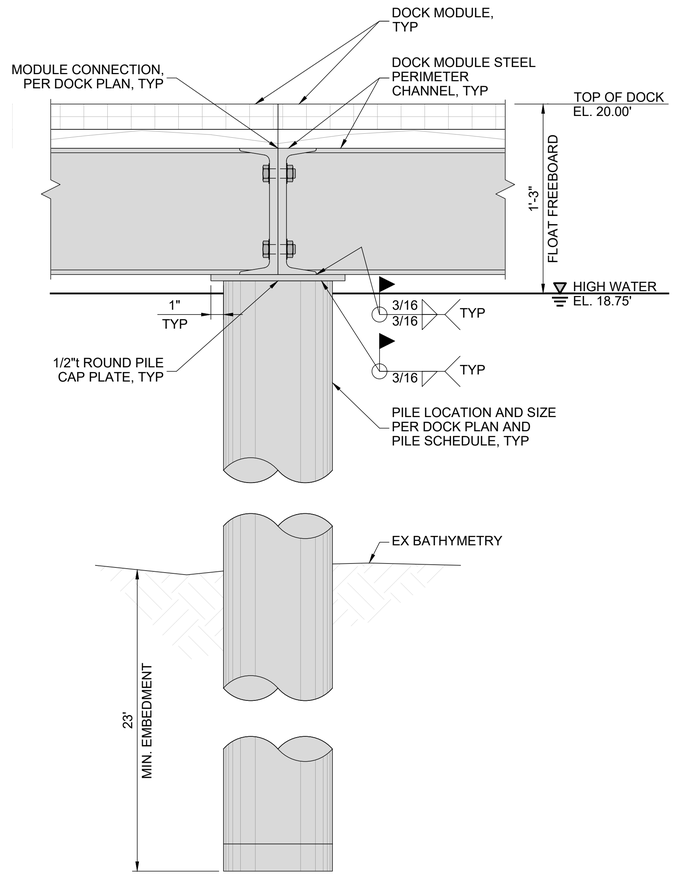
LAKEFRONT DOCK FOUNDATION PLAN

DATE: 10/7/2024
PLAN NUMBER: S105
SHEET 40 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\02303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\105.S105_DOCK PLANS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: SR PROJECT MANAGER: ED DESIGNED BY: DM DRAWN BY: NM CHECKED BY: DM

PILE SCHEDULE						
PILE	SIZE	STATION, OFFSET	NORTHING, EASTING	BATHYMETRY	SUPPLY	LOAD COMPRESSION
PA1	10"Øx0.5"t	0+00.83', 14.17' L	277947.62', 1285987.91'	+19.58'	TBD	TBD
PA2	10"Øx0.5"t	0+00.83', 5.83' L	277942.66', 1285981.22'	+19.72'	TBD	TBD
PB1	10"Øx0.5"t	0+16.67', 14.17' L	277934.90', 1285997.34'	+16.86'	TBD	TBD
PB2	10"Øx0.5"t	0+16.67', 5.83' L	277929.94', 1285990.64'	+16.99'	TBD	TBD
PC1	10"Øx0.5"t	0+33.33', 14.17' L	277921.51', 1286007.26'	+16.68'	TBD	TBD
PC2	10"Øx0.5"t	0+33.33', 5.83' L	277916.55', 1286000.57'	+16.84'	TBD	TBD
PD1	10"Øx0.5"t	0+50.00', 14.17' L	277908.12', 1286017.19'	+16.77'	TBD	TBD
PD2	10"Øx0.5"t	0+50.00', 5.83' L	277903.16', 1286010.49'	+16.89'	TBD	TBD
PD3	10"Øx0.5"t	0+48.03', 1.33' L	277902.06', 1286005.70'	+16.93'	TBD	TBD
PD4	10"Øx0.5"t	0+41.95', 9.21' R	277900.67', 1285993.61'	+17.11'	TBD	TBD
PD5	10"Øx0.5"t	0+48.16', 12.79' R	277893.55', 1285994.43'	+17.11'	TBD	TBD
PE1	10"Øx0.5"t	0+66.67', 14.17' L	277894.73', 1286027.11'	+16.52'	TBD	TBD
PE2	10"Øx0.5"t	0+66.67', 5.83' L	277889.77', 1286020.42'	+16.74'	TBD	TBD
PE3	10"Øx0.5"t	0+60.44', 5.84' R	277887.82', 1286007.34'	+17.06'	TBD	TBD
PE4	10"Øx0.5"t	0+54.36', 16.38' R	277886.43', 1285995.25'	+17.19'	TBD	TBD
PF1	10"Øx0.5"t	0+82.98', 24.04' L	277887.50', 1286044.76'	+15.79'	TBD	TBD
PF2	10"Øx0.5"t	0+83.33', 14.17' L	277881.34', 1286037.04'	+16.13'	TBD	TBD
PF3	10"Øx0.5"t	0+83.33', 5.83' L	277876.38', 1286030.34'	+16.38'	TBD	TBD
PG1	10"Øx0.5"t	0+98.16', 32.79' L	277880.53', 1286060.83'	+15.11'	TBD	TBD
PG2	10"Øx0.5"t	0+91.95', 29.21' L	277883.38', 1286054.26'	+15.33'	TBD	TBD
PG3	10"Øx0.5"t	0+98.03', 18.67' L	277872.22', 1286049.41'	+15.49'	TBD	TBD
PG4	10"Øx0.5"t	1+00.00', 14.17' L	277867.95', 1286046.96'	+15.62'	TBD	TBD
PG5	10"Øx0.5"t	1+00.00', 5.83' L	277862.99', 1286040.27'	+16.00'	TBD	TBD
PG6	10"Øx0.5"t	1+05.83', 5.00' L	277857.81', 1286043.07'	+15.82'	TBD	TBD
PG7	10"Øx0.5"t	1+12.22', 5.84' R	277846.22', 1286038.17'	+16.01'	TBD	TBD
PG8	10"Øx0.5"t	1+18.31', 16.38' R	277835.06', 1286033.33'	+15.97'	TBD	TBD
PG9	10"Øx0.5"t	1+24.51', 12.79' R	277832.21', 1286039.90'	+15.63'	TBD	TBD
PH1	10"Øx0.5"t	1+04.36', 36.38' L	277877.68', 1286067.41'	+14.85'	TBD	TBD
PH2	10"Øx0.5"t	1+10.44', 25.84' L	277866.52', 1286062.56'	+14.80'	TBD	TBD
PH3	10"Øx0.5"t	1+16.67', 14.17' L	277854.56', 1286056.89'	+15.06'	TBD	TBD
PH4	10"Øx0.5"t	1+16.67', 5.83' L	277849.60', 1286050.19'	+15.40'	TBD	TBD
PH5	10"Øx0.5"t	1+24.63', 1.33' L	277840.52', 1286051.32'	+15.27'	TBD	TBD
PH6	10"Øx0.5"t	1+30.72', 9.21' R	277829.35', 1286046.48'	+15.33'	TBD	TBD
PI1	10"Øx0.5"t	1+33.33', 14.17' L	277841.18', 1286066.81'	+14.47'	TBD	TBD
PI2	10"Øx0.5"t	1+33.33', 5.83' L	277836.21', 1286060.12'	+14.75'	TBD	TBD
PJ1	10"Øx0.5"t	1+50.83', 35.67' L	277839.92', 1286094.51'	+14.02'	TBD	TBD
PJ2	10"Øx0.5"t	1+50.00', 14.17' L	277827.79', 1286076.74'	+14.19'	TBD	TBD
PJ3	10"Øx0.5"t	1+50.00', 5.83' L	277822.82', 1286070.04'	+14.24'	TBD	TBD
PK1	10"Øx0.5"t	1+59.17', 35.67' L	277833.23', 1286099.47'	+13.71'	TBD	TBD
PK2	10"Øx0.5"t	1+59.17', 15.00' L	277820.92', 1286082.87'	+13.90'	TBD	TBD
PK3	10"Øx0.5"t	1+66.67', 14.17' L	277814.40', 1286086.66'	+13.73'	TBD	TBD
PK4	10"Øx0.5"t	1+66.67', 5.83' L	277809.43', 1286079.97'	+13.78'	TBD	TBD
PL1	10"Øx0.5"t	1+80.83', 44.17' L	277820.88', 1286119.20'	+11.68'	TBD	TBD
PL2	10"Øx0.5"t	1+80.83', 30.00' L	277812.44', 1286107.82'	+12.75'	TBD	TBD
PL3	10"Øx0.5"t	1+83.33', 14.17' L	277801.01', 1286096.59'	+13.07'	TBD	TBD
PL4	10"Øx0.5"t	1+83.33', 5.83' L	277796.04', 1286089.89'	+13.18'	TBD	TBD

PILE SCHEDULE						
PILE	SIZE	STATION, OFFSET	NORTHING, EASTING	BATHYMETRY	SUPPLY	LOAD COMPRESSION
PM1	10"Øx0.5"t	1+89.17', 44.17' L	277814.19', 1286124.16'	+10.98'	TBD	TBD
PM2	10"Øx0.5"t	1+89.17', 30.00' L	277805.75', 1286112.78'	+11.88'	TBD	TBD
PM3	10"Øx0.5"t	1+89.17', 15.00' L	277796.82', 1286100.73'	+12.74'	TBD	TBD
PM4	10"Øx0.5"t	1+99.17', 14.17' L	277788.29', 1286106.02'	+11.79'	TBD	TBD
PM5	10"Øx0.5"t	1+99.17', 5.83' L	277783.33', 1286099.32'	+12.16'	TBD	TBD
PS1	10"Øx0.5"t	0+80.83', 102.67' L	277936.05', 1286106.65'	+14.93'	TBD	TBD
PS2	10"Øx0.5"t	0+80.83', 85.83' L	277926.03', 1286093.12'	+14.95'	TBD	TBD
PS3	10"Øx0.5"t	0+91.67', 102.67' L	277927.35', 1286113.10'	+14.61'	TBD	TBD
PS4	10"Øx0.5"t	0+91.67', 85.83' L	277917.33', 1286099.58'	+14.98'	TBD	TBD



A S106 DOCK PILE

SCALE: 1" = 6"

TRI-FRAME PILE CONNECTION SIMILAR. NOTE PILE CUTOFF ELEVATION SHIFT DUE TO MEMBER DEPTH.

50% PROGRESS SET
NOT FOR PERMIT

811 Know what's below. Call before you dig.

NO.	DATE	BY	REVISION

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LAKE FOREST PARK LAKEFRONT IMPROVEMENTS
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2303.0384.02

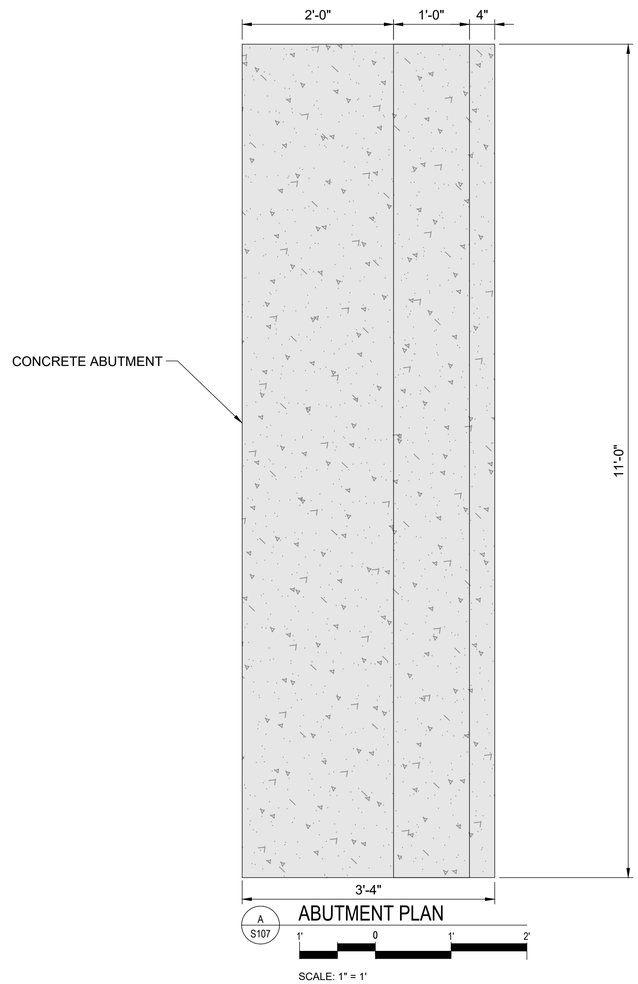
50% DESIGN

LAKEFRONT DOCK FOUNDATION DETAILS

DATE: 10/7/2024

PLAN NUMBER:
S106
SHEET 41 OF 46

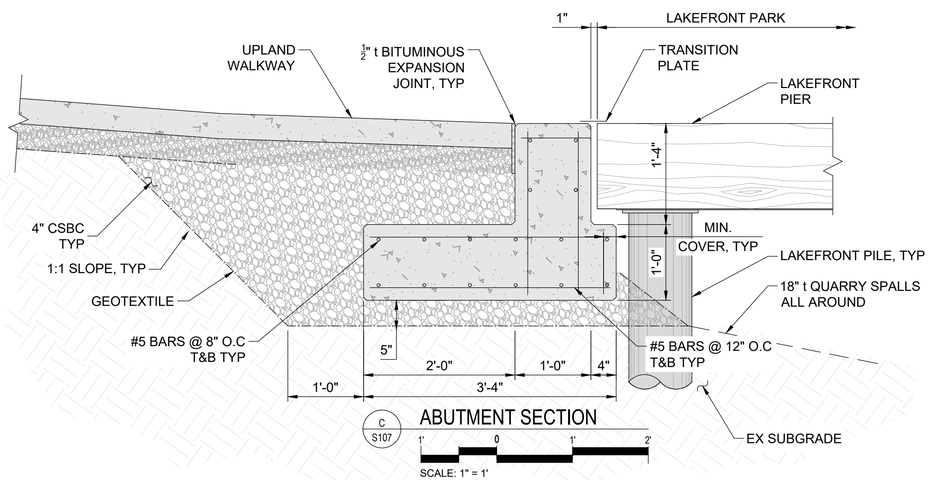
FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\10-S106_DOCK PLANS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: SR PROJECT MANAGER: ED DESIGNED BY: DM DRAWN BY: NM CHECKED BY: DM



A S107 ABUTMENT PLAN

1' 0 1' 2'

SCALE: 1" = 1'



C S107 ABUTMENT SECTION

1' 0 1' 2'

SCALE: 1" = 1'

50% PROGRESS SET
NOT FOR PERMIT

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2303.0384.02

50% DESIGN

LAKEFRONT DOCK ABUTMENT

DATE: 10/7/2024
PLAN NUMBER:
S107
SHEET 42 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\103-S106_DOCK PLANS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
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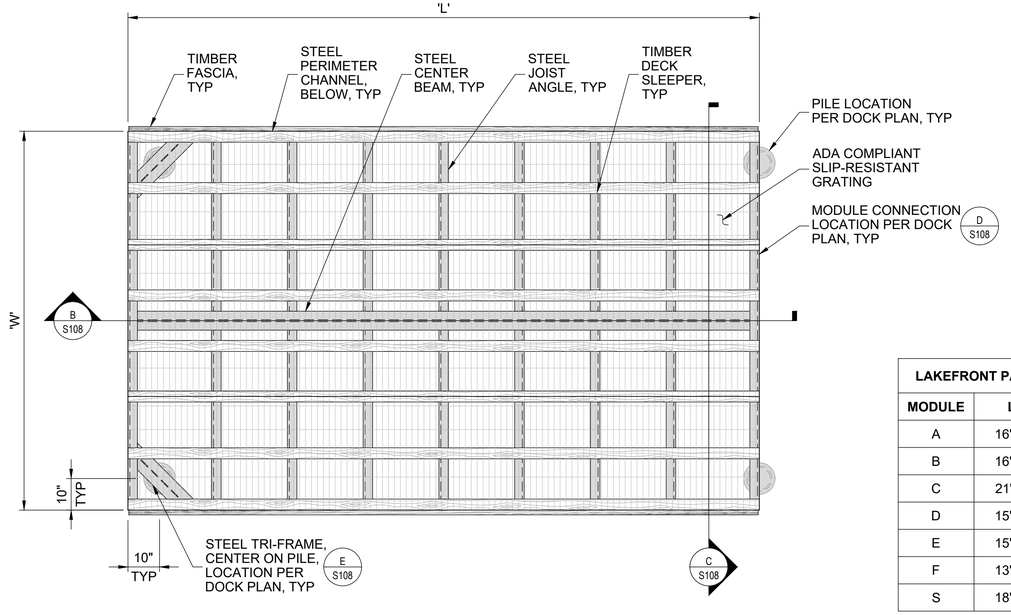
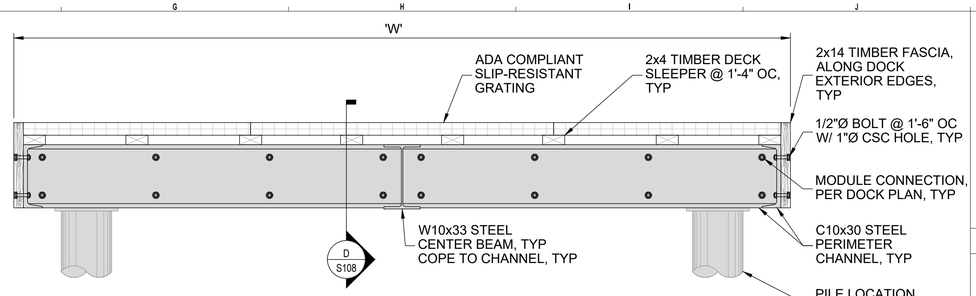
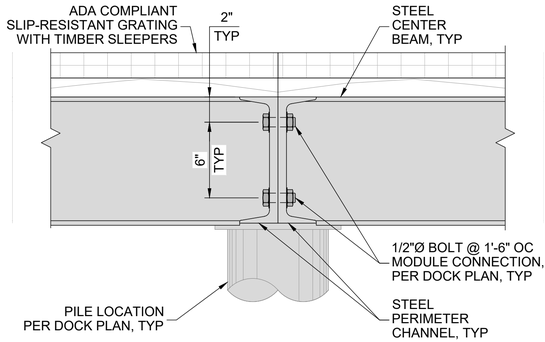


LAKEFRONT PARK MODULES		
MODULE	L	W
A	16'-8"	10'-0"
B	16'-8"	10'-0"
C	21'-6"	10'-0"
D	15'-0"	10'-0"
E	15'-0"	10'-0"
F	13'-0"	16'-0"
S	18'-6"	12'-6"



C S108 TYPICAL MODULE SECTION — MODULE TYPE A SHOWN MODULE TYPE B, C, D, E, F, AND S SIMILAR

SCALE: 1" = 1'

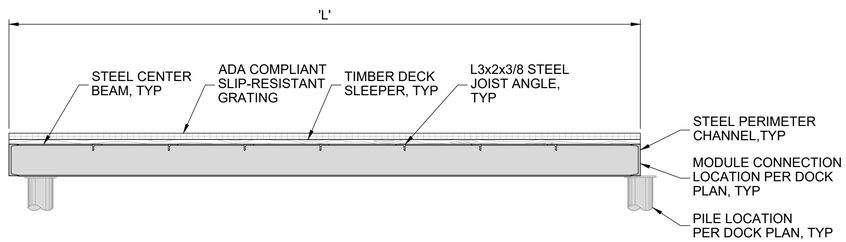


D S108 MODULE CONNECTION

SCALE: 1" = 6"

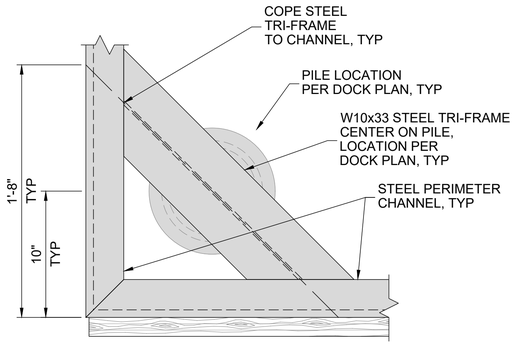
A S108 TYPICAL MODULE PLAN — MODULE TYPE A SHOWN MODULE TYPE B, C, D, E, F, AND S SIMILAR

SCALE: 1" = 2'



B S108 TYPICAL MODULE SECTION — MODULE TYPE A SHOWN MODULE TYPE B, C, D, E, F, AND S SIMILAR

SCALE: 1" = 2'



E S108 MODULE TRI-FRAME

SCALE: 1" = 6"

50% PROGRESS SET
NOT FOR PERMIT

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LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

LAKEFRONT DOCK TYPICAL MODULE DETAILS

DATE: 10/7/2024
PLAN NUMBER:
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SHEET 43 OF 46

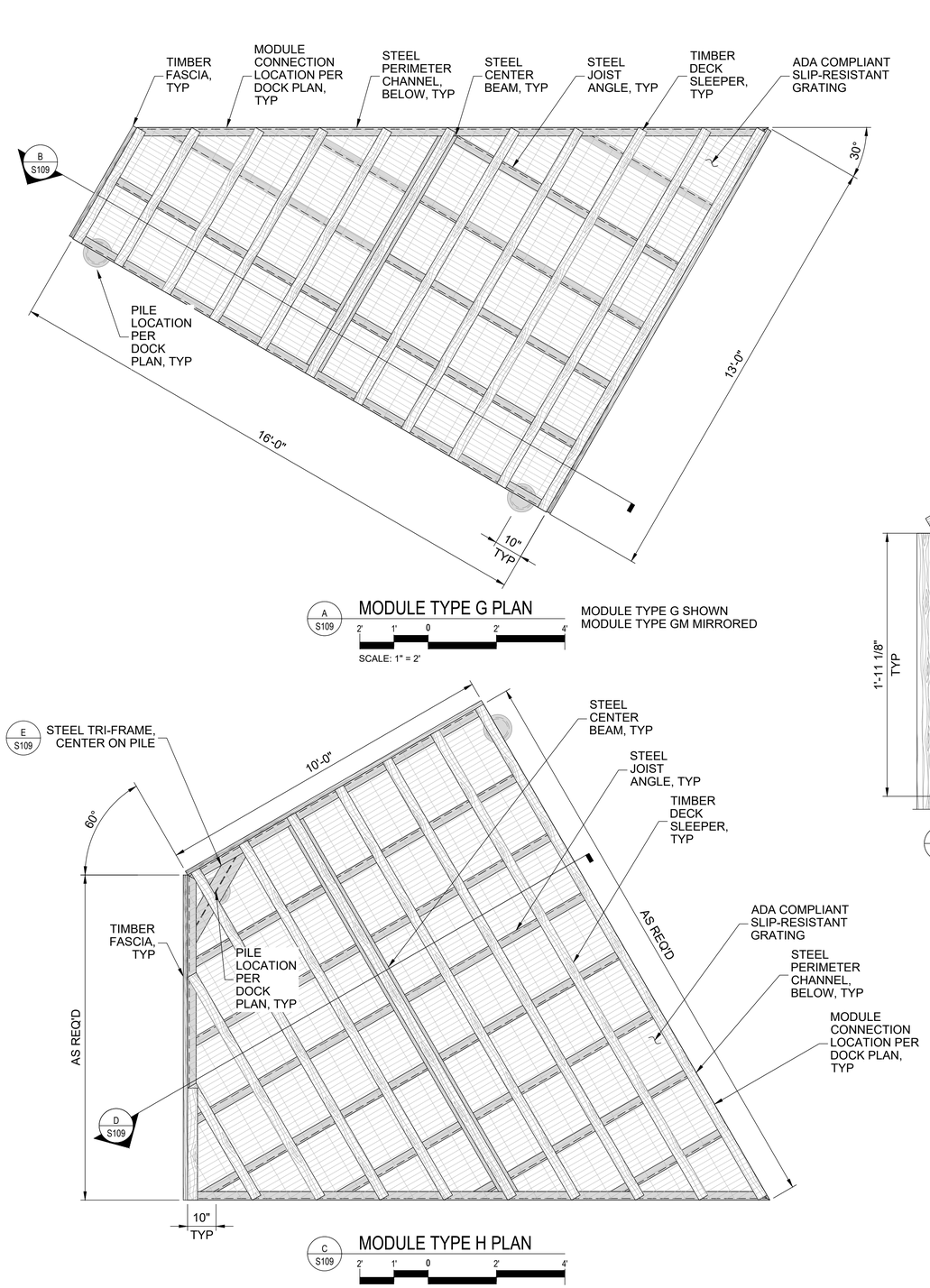
FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\107-S110_DOCK DETAILS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: SR PROJECT MANAGER: ED DESIGNED BY: DM DRAWN BY: NM CHECKED BY: DM

A S109 **MODULE TYPE G PLAN**

MODULE TYPE G SHOWN
MODULE TYPE GM MIRRORED

2' 1' 0 2' 4'

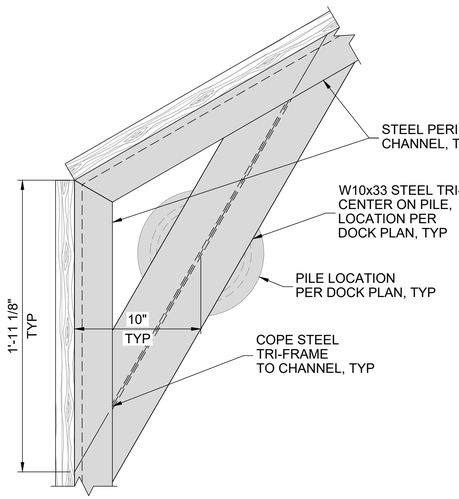
SCALE: 1" = 2'



C S109 **MODULE TYPE H PLAN**

2' 1' 0 2' 4'

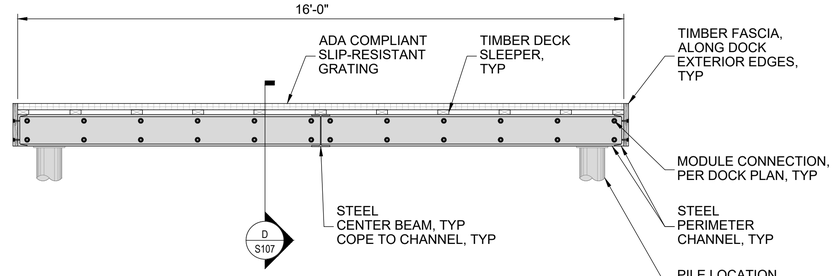
SCALE: 1" = 2'



E S109 **MODULE TRI-FRAME**

6" 0 6" 1'

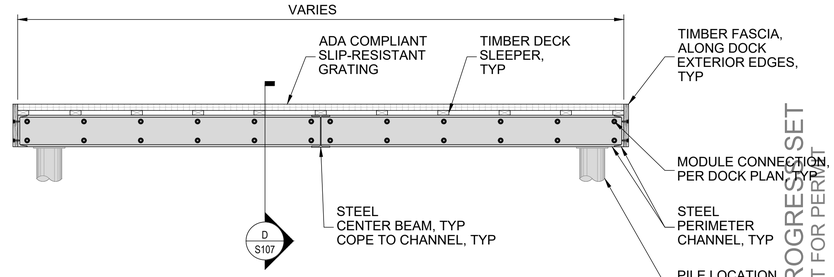
SCALE: 1" = 6"



B S109 **MODULE TYPE G SECTION**

2' 1' 0 2' 4'

SCALE: 1" = 2'



D S109 **MODULE TYPE H SECTION**

2' 1' 0 2' 4'

SCALE: 1" = 2'

50% PROGRESS SET
NOT FOR PERMIT

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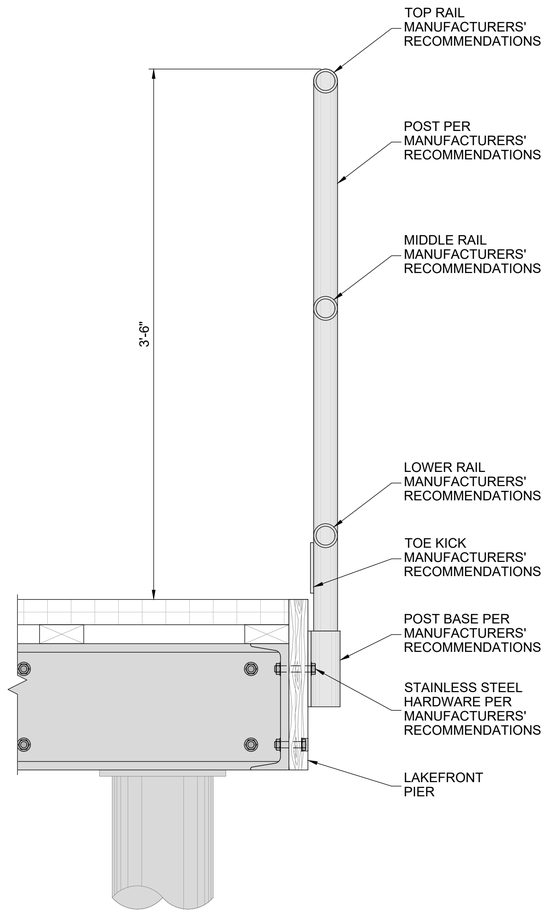
LAKEFRONT DOCK MODULE G AND H DETAILS

DATE: 10/7/2024

PLAN NUMBER:
S109
SHEET 44 OF 46

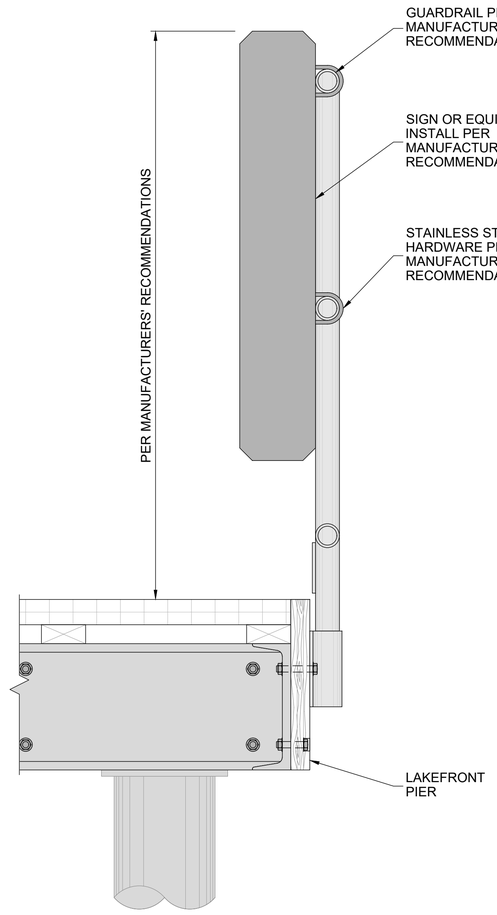
FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\107-S110_DOCK DETAILS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SANELLI
PRINCIPAL: SR PROJECT MANAGER: ED DESIGNED BY: DM DRAWN BY: NM CHECKED BY: DM



A S110 TYPICAL GUARDRAIL

2' 1' 0 2' 4'

SCALE: 1" = 2'



B S110 TYPICAL EQUIPMENT

2' 1' 0 2' 4'

SCALE: 1" = 2'

50% PROGRESS SET
NOT FOR PERMIT

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2303.0384.02

50% DESIGN

LAKEFRONT DOCK DETAILS PLACEHOLDER

DATE: 10/7/2024
PLAN NUMBER:
S110
SHEET 45 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2023201.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILES\07-S110_DOCK DETAILS.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES) - LAST MODIFIED BY: AMANDA SAHELLI
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LAKEFRONT DOCK
DETAILS
PLACEHOLDER

DATE: 10/7/2024
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SHEET 45 OF 45

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APPENDIX B: USFWS Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405

In Reply Refer To: 12/22/2024 19:56:59 UTC
Project Code: 2024-0119870
Project Name: Lake Forest Park Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

PROJECT SUMMARY

Project Code: 2024-0119870
Project Name: Lake Forest Park Improvements
Project Type: Government / Municipal (Non-Military) Construction
Project Description: The project, known formally as “Lakefront Improvements Design, Engineering, Environmental, and Permitting,” encompasses three lakefront parcels in Lake Forest Park, including two former residential properties at 17345 and 17347 Beach Dr NE (parcels 4030100035, 0040) and an existing public preserve called Lyon Creek Waterfront Preserve. The project is intended to improve public waterfront access by providing a place for passive recreation and gathering activities.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@47.753232350000005,-122.27489592335893,14z

Counties: King County, Washington

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

FISHES

NAME	STATUS
Bull Trout *Salvelinus confluentus* Population: U.S.A., coterminous, lower 48 states There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8212	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Bull Trout *Salvelinus confluentus* https://ecos.fws.gov/ecp/species/8212#crithab	Final

IPAC USER CONTACT INFORMATION

Agency: Lake Forest Park city
Name: Tami Camper
Address: 12525 Moffat Rd
City: Spokane
State: WA
Zip: 99217
Email tcamper@facetnw.com
Phone: 5092060653

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Housing and Urban Development

APPENDIX C: Mitigation Plan

LEGEND

- LIMIT OF WORK
- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT-DELINEATED)
- ORDINARY HIGH WATER MARK (OHWM)
- COMBINED CRITICAL AREA BUFFER
- 50' LAKE WASHINGTON SHORELINE SETBACK
- WETLAND MITIGATION AREA (1,130 SF)
- WETLAND BUFFER MITIGATION AREA (2,861 SF)
- EXISTING BUFFER IMPACT TO BE RESTORED (4,050 SF)
- EXISTING CRITICAL AREA IMPACT TO BE REMOVED (2,335 SF)
- TEMPORARY BUFFER IMPACT TO BE RESTORED WITH NATIVE PLANTINGS (10,825 SF)
- TEMPORARILY IMPACTED LAWN RESTORED TO ENGINEERED WOOD CHIPS (2,535 SF)

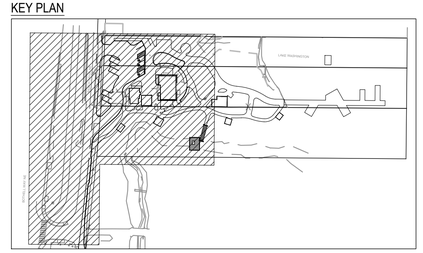
CANDIDATE PLANT LIST

TREES:	PINUS CONTORTA / SHORE PINE
	PSEUDOTSUGA MENZIESII / DOUGLAS-FIR
	THUJA PLICATA / WESTERN REDCEDAR
SHRUBS:	ACER CIRCINATUM / VINE MAPLE
	CORNUS SERICEA / RED OSIER DOGWOOD
	CORYLUS CORNUTA / BEAKED HAZELNUT
	LONICERA INVOLUCRATA / TWINBERRY
	MAHONIA AQUIFOLIUM / TALL OREGON GRAPE
	MYRICA CALIFORNICA / PACIFIC WAX MYRTLE
	OEMLERIA CERASIFORMIS / OSOBERRY
	PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK
	RUBUS PARVIFORUS / THIMBLEBERRY
	RUBUS SPECTABILIS / SALMONBERRY
	SYMPHORICARPUS ALBUS / SNOWBERRY
	VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY
GROUNDCOVERS:	ASTER SUBSPICATUS / DOUGLAS ASTER
	BLECHNUM SPICANT / DEER FERN
	GAULTHERIA SHALLON / SALAL
	MAHONIA NERVOSA / DULL OREGON GRAPE
	OXALIS OREGANA / WOOD SORREL
	POLYSTICHUM MINITUM / WESTERN SWORD FERN

NOTES

1 CRITICAL AREAS WERE DELINEATED BY FACET ON OCTOBER 9 AND 31, 2023.

KEY PLAN



20' 10' 0 20' 40'

SCALE: 1" = 20'

Know what's **below.** **Call** before you dig.

50% PROGRESS SET
NOT FOR PERMIT

NO.	DATE	BY	REVISION

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DOG/WATERSHED CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, AND ALL OTHER EXISTING FEATURES AND CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN AND/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DOG/WATERSHED PRIOR TO CONSTRUCTION.

FACET
750 Sixth Street South
Kirkland, WA 98033
P: 425.822.5242
F: 425.827.8136
www.facetnw.com
FEDERAL WAY | KIRKLAND | MOUNT VERNON | SEATTLE | SPOKANE | WHIDBEY ISLAND

STATE OF WASHINGTON
AMBER V. MIKKUCAH
No. 3176 EXP. 12/10/25
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY

CALL 811
2 BUSINESS DAYS BEFORE YOU DIG
(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

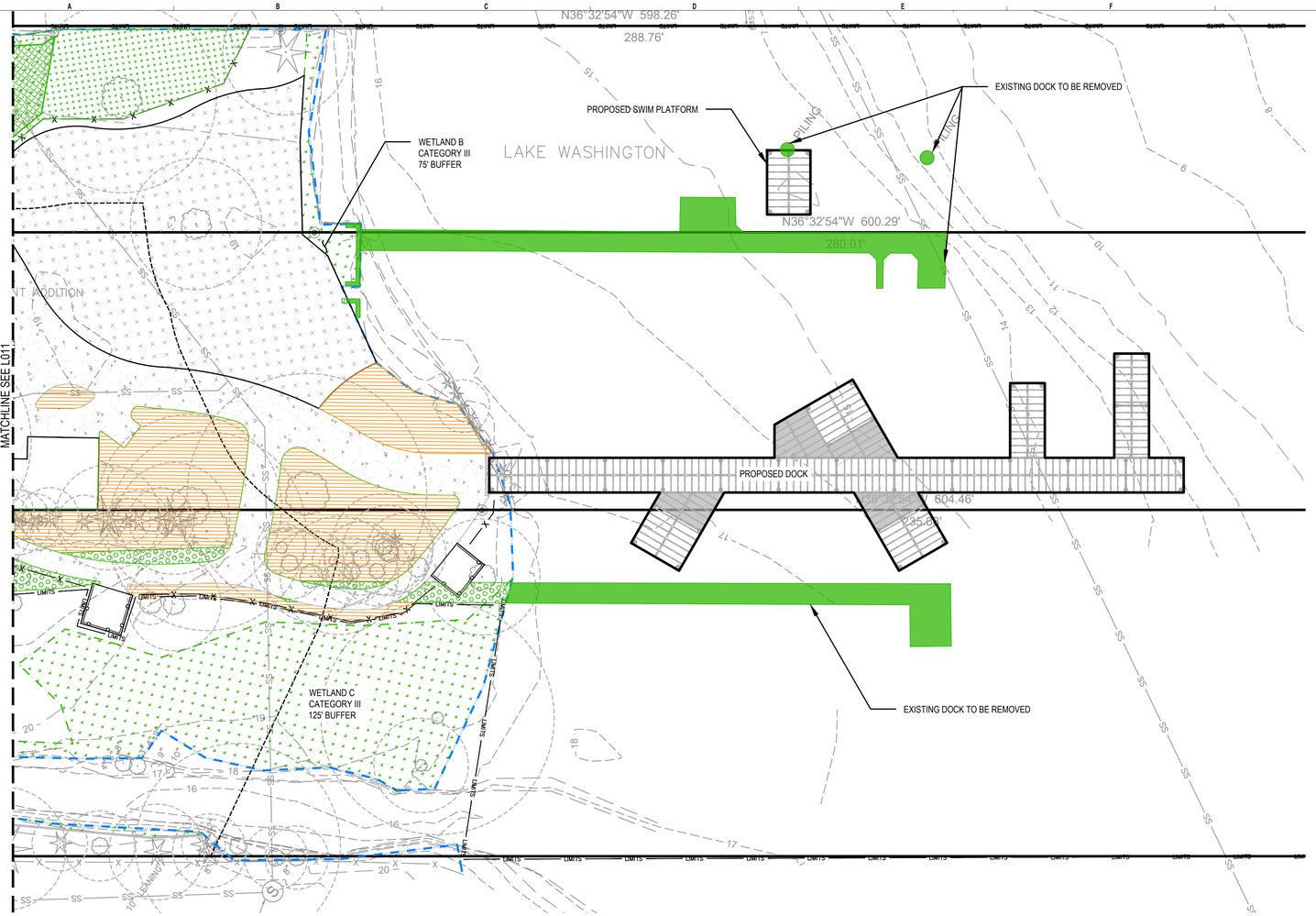
LAKE FOREST PARK LAKEFRONT IMPROVEMENTS
17337, 17345, & 17347 BEACH DR NE
LAKE FOREST PARK, WA 98155
2303.0384.02

50% DESIGN

MITIGATION PLAN

DATE: 10/7/2024
PLAN NUMBER: **L011**
SHEET 13 OF 46

FILE LOCATION: Z:\SHARED\PROJECTS\ACTIVE\2023\2303.0384.02 - LFP LAKEFRONT PARK PH 2\DRAWINGS\CAD-REVIT\ACTIVEFILE\L011-L015_MITIGATION PLAN.DWG - ORIGINAL SHEET SIZE: ARCH FULL BLEED D (36.00 X 24.00 INCHES)
PRINCIPAL: ED PROJECT MANAGER: ED DESIGNED BY: JL DRAWN BY: MH CHECKED BY: ED



LEGEND

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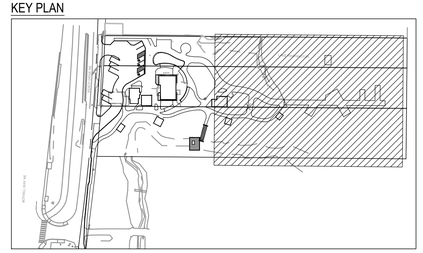

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