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**Parks and Recreation Department**  
**City of Bellingham**

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**MEMORANDUM**

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**To:** PARKS & RECREATION ADVISORY BOARD  
**From:** Nicole Oliver, Director  
**CC:** Management Team  
**Subject:** Interpretive Sign Approval and Outdoor Classroom Update  
**Date:** December 9, 2023

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Todd Elsworth, Executive Director of Recreation Northwest, will present the final draft of the graphics for the Native Plant and Invasive Species signs for Hundred Acre Woods.

The content for the Native Plant signs was drafted by Recreation Northwest staff using “Pojar & McKinnon” as the main text. As volunteers, Leslie Bryson provided editorial review (checking for syntax and punctuation) and Rae Edwards reviewed for academic accuracy. The content for the Invasive Species signs was drafted by Ryan Robie and parks staff and was reviewed by Public Works staff. Our graphic designer, Katrina Lyon, performed the service of making it all look nice.

Todd has reached out to Nooksack and Lummi Nations to confirm the sign content related to indigenous use.

As requested, for Parks & Recreation Advisory Board review and update is the Outdoor Classroom Project Overview, which also provides details about the Native Plant garden signs.

Materials included:

- Recreation Northwest Native Plant and Invasive Signs
- Outdoor Classroom Site Plan
- Fairhaven Outdoor Classroom Project Overview (provided separately)

## NATIVE PLANT

# Western Red Cedar *Thuja plicata*



## CHARACTERISTICS

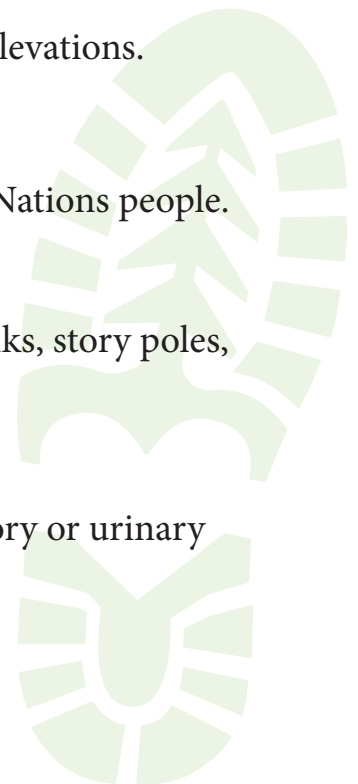
- Cedar may grow to 200-feet in height, and live for over 1,000 years.
- Bark is grey to reddish brown, in long, fibrous strips.
- Leaves are yellowish-green, flat, scale-like and strongly aromatic.
- Tiny cones, at the tips of the leaves, are green to yellow-green ripening in the fall to brown, woody, flower-like structures.

## HABITAT ECOLOGY

- Moist to wet soils in shaded forests at low to medium elevations.

## ETHNOBOTANY

- Cedar is known as the “Tree of Life” by Coastal Salish Nations people.
- Regarded to have healing and spiritual powers.
- Rot-resistant wood used for dugout canoes, house planks, story poles, paddles, and harpoon shafts.
- Bark used for baskets and clothing.
- Dry needles used as a tea or tincture for acute respiratory or urinary tract infections.



## NATIVE PLANT

# Red Alder *Alnus rubra*



## CHARACTERISTICS

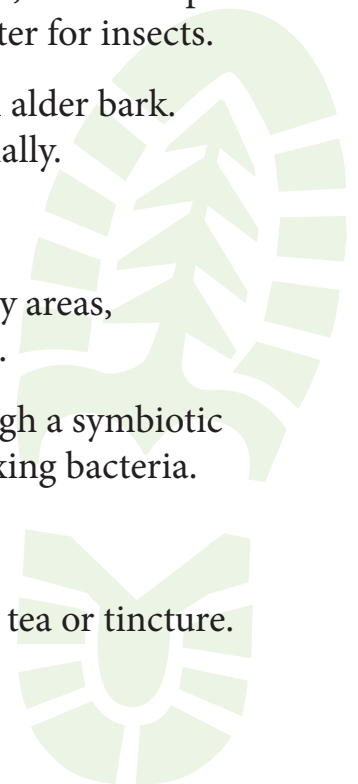
- Red alder may grow up to 80-feet in height, and live for 100 years.
- Bark is thin, grey, smooth, commonly with light-colored lichen patches.
- Leaves are 2-6 inches long, alternate, broadly elliptical, with coarse or blunt teeth around the edge, a rolled margin is visible on the underside.
- Male catkins, appear before leaves and dangle in clusters from stem tips that produce pollen. Female catkins appear on separate stems as tiny brown twigs, maturing into seed bearing, brownish, barrel-shaped 'strobile'. Strobile persist through winter providing shelter for insects.
- An ingredient, similar to aspirin, has been identified in alder bark. It reduces pain and inflammation internally and externally.

## HABITAT ECOLOGY

- Red alder is a fast-growing tree thriving in moist woody areas, stream banks, and floodplains, often in disturbed areas.
- Can improve soil by fixing atmospheric nitrogen through a symbiotic relationship between its root nodules and a nitrogen fixing bacteria.

## ETHNOBOTANY

- Some Coastal Salish Nations used dried alder bark as a tea or tincture.



## NATIVE PLANT

# Douglas-Fir *Pseudotsuga menziesii*



## CHARACTERISTICS

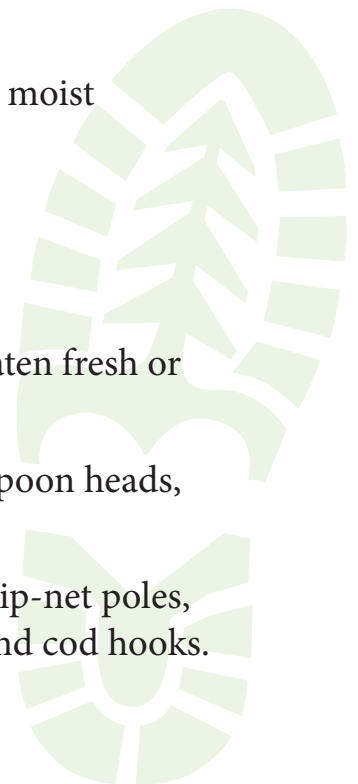
- Douglas-fir may grow to 260-feet in height, and live over 500 years.
- Brown or gray bark is very thick, fluted, ridged, and rough.
- Needles are flat yellowish-green about an inch long with two white bands called stomata on the underside.
- Cones are reddish-brown, 1-4 inches with 3 forked bracts extending beyond the scales.

## HABITAT ECOLOGY

- Its habitat ranges from extremely dry, low elevations to moist mountain sites.
- Bark withstands moderate surface fires.

## ETHNOBOTANY

- Spring needles, high in vitamin C, were traditionally eaten fresh or steeped in tea.
- Fir pitch was used medicinally for wounds, sealing harpoon heads, fish hooks, and caulking canoes.
- Wood was used to make items such as spear handles, dip-net poles, spoons, salmon weirs, caskets, fire tongs, and halibut and cod hooks.



## NATIVE PLANT

# Common Snowberry *Symphoricarpos albus*



## CHARACTERISTICS

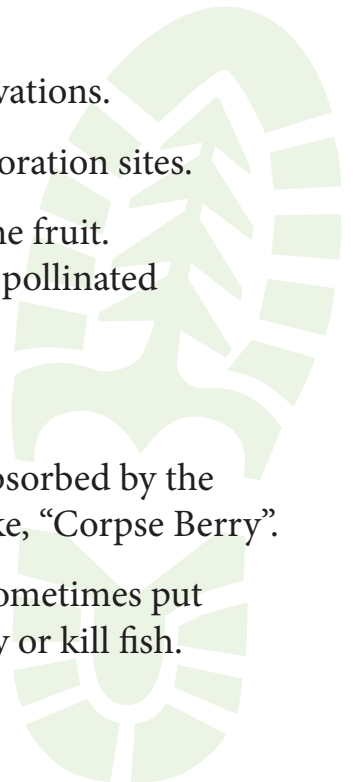
- Snowberry grow 2 to 5-feet tall by 4 to 6-feet wide.
- Leaves are oval, with a variety of margins from smooth to wavy-toothed, 1/2 -1 inch long.
- Flowers are pink to white, bell-shaped, and pea-sized.
- Fruit are white berry-like clusters, persistent through winter, and provide food for wildlife.

## HABITAT ECOLOGY

- Grows in dry woods and openings, generally at low elevations.
- Good erosion control on steep slopes often used in restoration sites.
- Robins, grouse, grosbeaks, thrushes, and bears all eat the fruit. The pink flowers attract hummingbirds, but are mostly pollinated by bees. Leaves are eaten by the Sphinx Moth larvae.

## ETHNOBOTANY

- White berries are high in saponins, which are poorly absorbed by the body. Considered poisonous, they were given names like, “Corpse Berry”.
- Saponins are much more toxic to fish. Hunting tribes sometimes put large quantities of snowberries in the streams to stupefy or kill fish.



## NATIVE PLANT

# Western Sword Fern *Polystichum munitum*



## CHARACTERISTICS

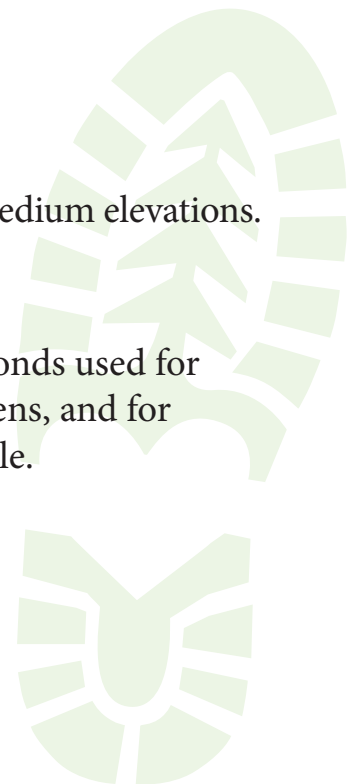
- Western sword fern may grow 3 to 5-feet in height.
- Green fronds rise from a center crown of rhizomes, a stem that grows underground.
- A frond's stem, rachis, has small pinna. Each pinna has a small hilt, hence the name sword fern.
- *Polystichum* is Latin for "many rows" describes the yellow spore cases found on the underside of the fronds.
- Spore cases contain many tiny spores.

## HABITAT ECOLOGY

- Western sword fern is found in moist forests at low to medium elevations.

## ETHNOBOTANY

- Western sword fern rhizomes were roasted for food, fronds used for lining baskets, bedding, as a protective cover for pit ovens, and for topical pain relief by some Coastal Salish Nations people.



## NATIVE PLANT

# Salmonberry *Rubus spectabilis*



## CHARACTERISTICS

- Salmonberry forms dense thickets up to 12-feet in height.
- Deciduous leaves with three leaflets, margins are double toothed.
- Stems are a distinctive copper color.
- Lower stems have numerous prickles.
- Showy flowers are pink to reddish-purple.
- Fruit is yellow to pink, with edible berries ripening in May to June.

## HABITAT ECOLOGY

- Grows in shady, moist to wet areas, along streams or creeks.

## ETHNOBOTANY

- Young salmonberry sprouts, with a sweet and spicy flavor, were peeled and eaten raw by some Coastal Salish Nations people.



## INVASIVE

# Himalayan Blackberry *Rubus armeniacus*



## HABITAT ECOLOGY

- Himalayan blackberry is native to the Armenia region (near Turkey & Iran). Likely introduced to North America in 1885 as a cultivated crop.
- A part of the Rose Family.
- Does well in a wide range of soil pH and textures.

## CHARACTERISTICS

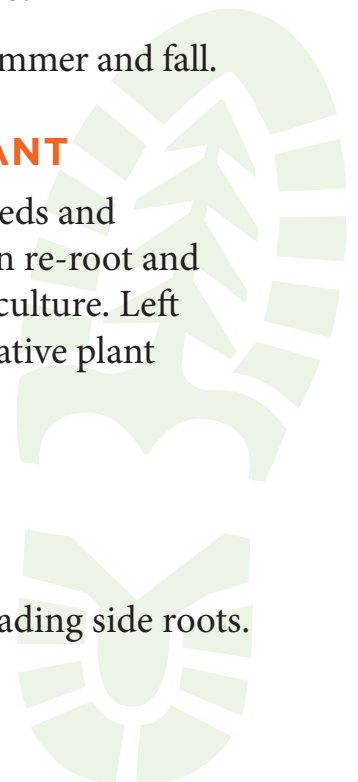
- Round to oblong leaves with toothed edges — usually grow in clusters of 3-5 leaflets. Evergreen.
- Stems (canes) have edges. Stems can be green, red, or purple-colored, and can grow up to 40 feet long.
- Thorns grow on canes, leaves, and leaf stalks.
- White to pinkish 5-petal flowers grow in clusters of 5-20.
- Flowers form edible blackberries, ripen between mid-summer and fall.

## REASONS TO REMOVE THIS INVASIVE PLANT

Himalayan blackberry aggressively reproduces through seeds and vegetation, displacing many of our native plants. Stems can re-root and sprout when their tips touch the ground, creating a monoculture. Left unchecked, it shades out smaller native plants, reducing native plant and wildlife diversity.

## HOW TO REMOVE

- Cut stem down to knee-height.
- Dig out all roots, including the main root ball and spreading side roots.
- Monitor area for resprouts.





## INVASIVE

# English Ivy *Hedera helix*



## HABITAT ECOLOGY

- English ivy is native to Europe. Introduced to North America in colonial times as a landscape plant.
- Grows well in most soil types and in sun and shade. Drought tolerant.

## CHARACTERISTICS

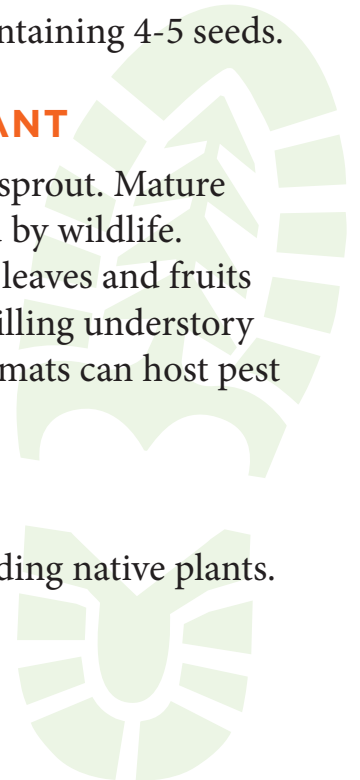
- Evergreen, woody, climbing vine that uses adventitious roots on stems (vines) to climb 90-feet up vertical surfaces or along the ground.
- Leaves have two forms: Juvenile — 3 to 5 deep lobes, and Mature — unlobed, egg-diamond-shaped.
- Mature (10+ year-old) plants produce small, greenish-white flowers in umbrella-like clusters in the fall.
- Fruits are dark blue-black and mature in the spring, containing 4-5 seeds.

## REASONS TO REMOVE THIS INVASIVE PLANT

English ivy spreads easily. Stem and root fragments can resprout. Mature ivy plants produce fruits that are readily eaten and spread by wildlife. Dangerous sap from stems can cause skin rashes. If eaten, leaves and fruits can be toxic. English Ivy outcompetes native vegetation, killing understory plants and overstory trees by shading them out. Thick ivy mats can host pest animals like rats.

## HOW TO REMOVE

- Spray white vinegar on the ivy vines, avoiding surrounding native plants.
- After a week has passed, remove the dead vines.
- Repeat as needed.



## INVASIVE

# English Holly *Ilex aquifolium*



## HABITAT ECOLOGY

- English holly is native to Europe and introduced to North America in the late 1800's as an ornamental plant.
- Tolerant of a wide range of soil, moisture, and light conditions.

## CHARACTERISTICS

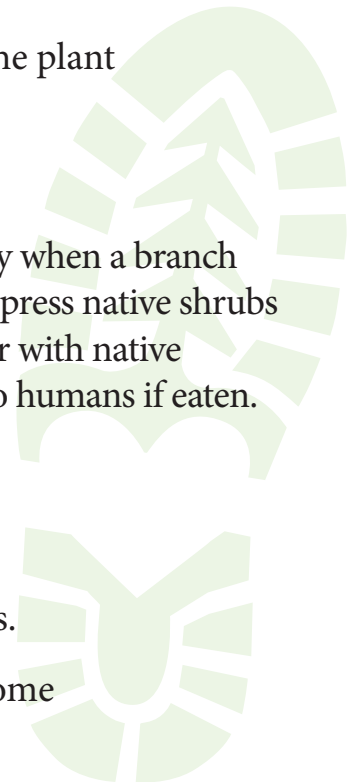
- Slow-growing evergreen shrub/small tree. Can grow up to 50-feet tall.
- Leaves, arranged alternately along stem, are dark green, thick, waxy & shiny, with spines along edges. Older leaves may have smooth edges.
- Young Holly bark is green, old bark is smooth and silver-gray in color.
- Flowers are small, white, and sweet-smelling. Flowers appear early to mid-summer.
- Bright red fruit ripens in late fall, often remaining on the plant throughout winter.

## REASONS TO REMOVE THIS INVASIVE

English holly spreads easily via seed dispersal and vegetatively when a branch touches the ground and re-roots. Dense thickets that can suppress native shrubs and young trees from sunlight. Competes for space and water with native plants. All parts of the plant, especially berries, can be toxic to humans if eaten.

## HOW TO REMOVE

- Cut down the bush.
- Locate roots and remove dirt. Remove stump and roots.
- Smaller growths may be hand plucked before they become well-established.



LAND DISTURBANCE	
TOTAL PROJECT AREA	- 3804 SF
FLAGSTONE - IMPERVIOUS	490 SF
GRAVEL - IMPERVIOUS	375 SF

**STORMWATER POLLUTION PREVENTION PLAN**

PREVENT DISCHARGE OF SEDIMENT AND OTHER POLLUTANTS TO THE MAXIMUM EXTENT PRACTICABLE.

PLAN AND IMPLEMENT PROPER CLEARING AND GRADING OF THE SITE. CLEAR ONLY AS MUCH AS NEEDED TO PERFORM THE WORK IN THIS DESIGN. PHASE LAND DISTURBANCE WORK SO ONLY ACTIVE AREAS ARE UNCOVERED.

SOILS SHALL BE MANAGED IN A MANNER THAT DOES NOT PERMANENTLY COMPACT OR DETERIORATE THE FINAL SOIL AND LANDSCAPE SYSTEM. IF DISTURBANCE AND/OR COMPACTION OCCUR, THE IMPACT MUST BE CORRECTED AT THE END OF CONSTRUCTION ACTIVITY. THIS SHALL INCLUDE RESTORATION OF SOIL DEPTH, SOIL QUALITY, PERMEABILITY, AND ORGANIC MATTER. CONSTRUCTION PRACTICES MUST NOT CAUSE DAMAGE TO OR COMPROMISE THE DEPTH OF PERMANENT LANDSCAPE OR INFILTRATION AREAS.

LOCATE ANY SOIL PILES AWAY FROM DRAINAGE SYSTEMS. SOIL PILES SHALL BE TARPED OR MULCHED UNTIL THE SOIL IS EITHER USED OR REMOVED. PILES SHALL BE SITUATED SUCH THAT SEDIMENT CANNOT RUN OFF ANY PORTION OF THE PROJECT SITE.

BACKFILL FOUNDATIONS WALLS AS SOON AS POSSIBLE AFTER THE WORK IS COMPLETE.

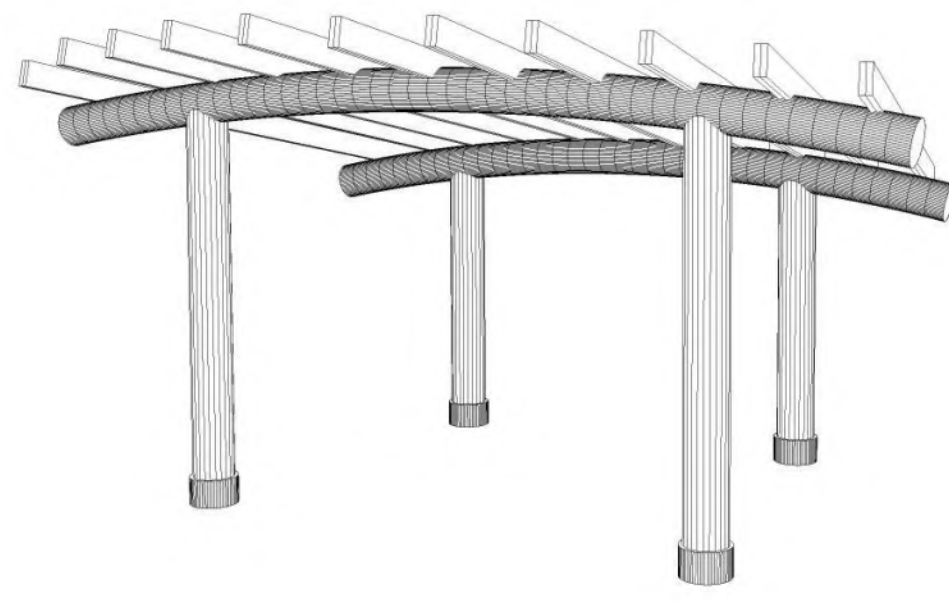
THE CONSTRUCTION ENTRANCE SHALL BE STABILIZED WHERE TRAFFIC WILL BE LEAVING THE WORK SITE TO TRAVEL ON PUBLIC ROADWAYS.

PROVIDE IMMEDIATE STREET SWEEPING TO REMOVE ANY SEDIMENT THAT MAY HAVE BEEN TRACKED OUT. SEDIMENT SHOULD BE REMOVED FROM PUBLIC ROADWAYS BY SHOVEL AND BROOM AS NEEDED. SEDIMENT REMOVED SHALL BE PLACED ONSITE IN AN AREA WHERE IT CANNOT BE TRACKED OUT OR ERODED. STREET WASHING IS PROHIBITED WITHOUT PERMISSION FROM THE STORMWATER UTILITY WITH JURISDICTION WHERE THE WORK IS TAKING PLACE.

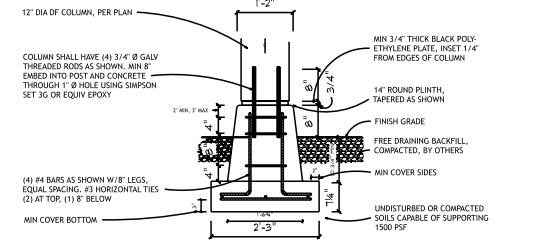
INSTALL PERMANENT STORMWATER MANAGEMENT SYSTEM AS SOON AS PRACTICABLE DURING THE WORK.

THIS PROJECT SHALL USE:

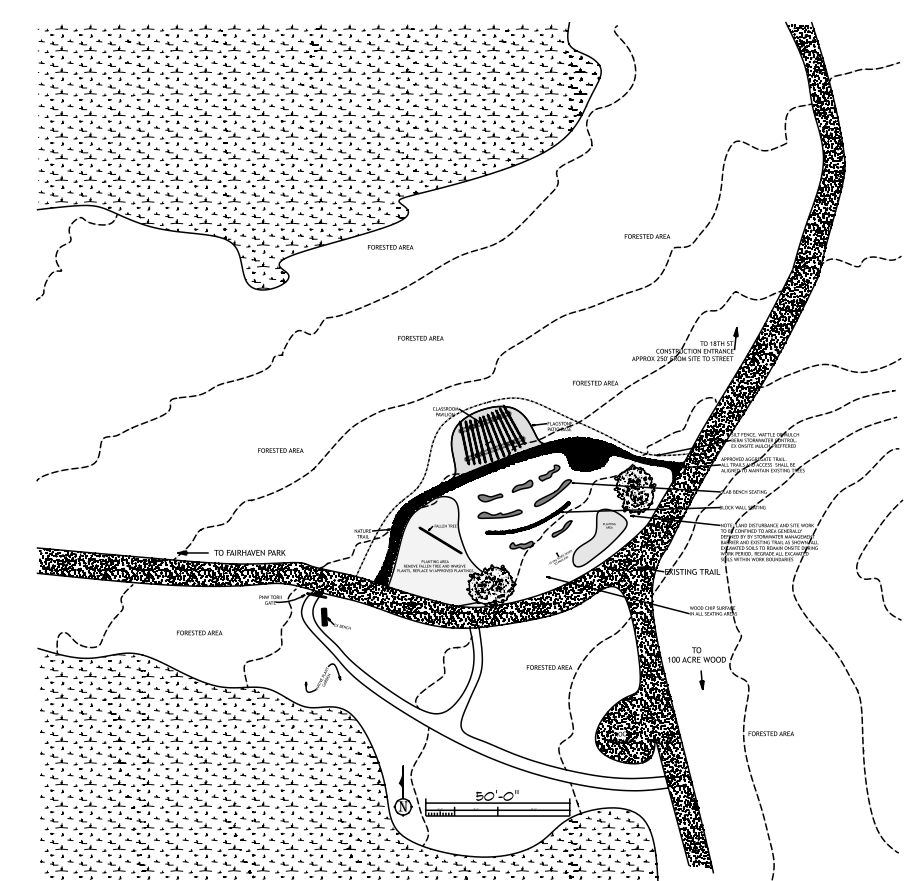
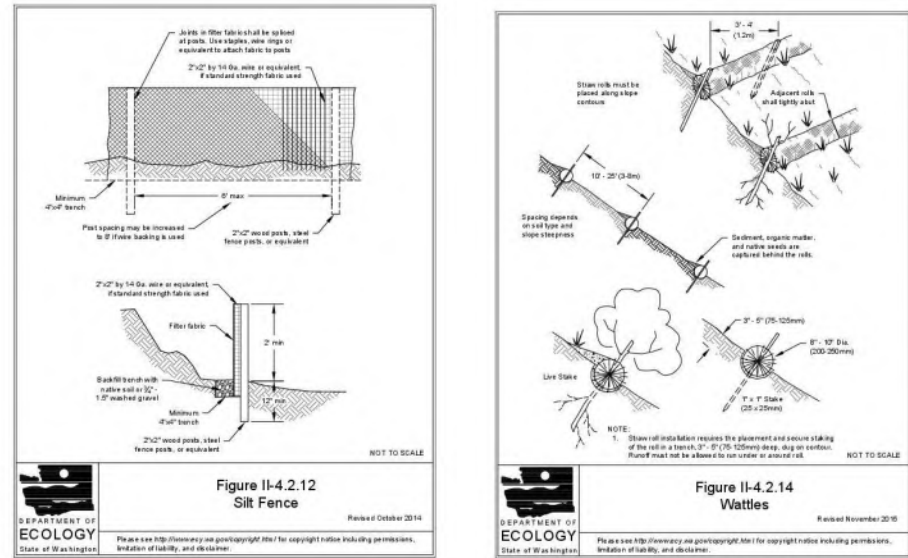
SILT FENCE OR WATTLE MULCH BERM IF AVAILABLE



**PROPOSED CLASSROOM PAVILION**

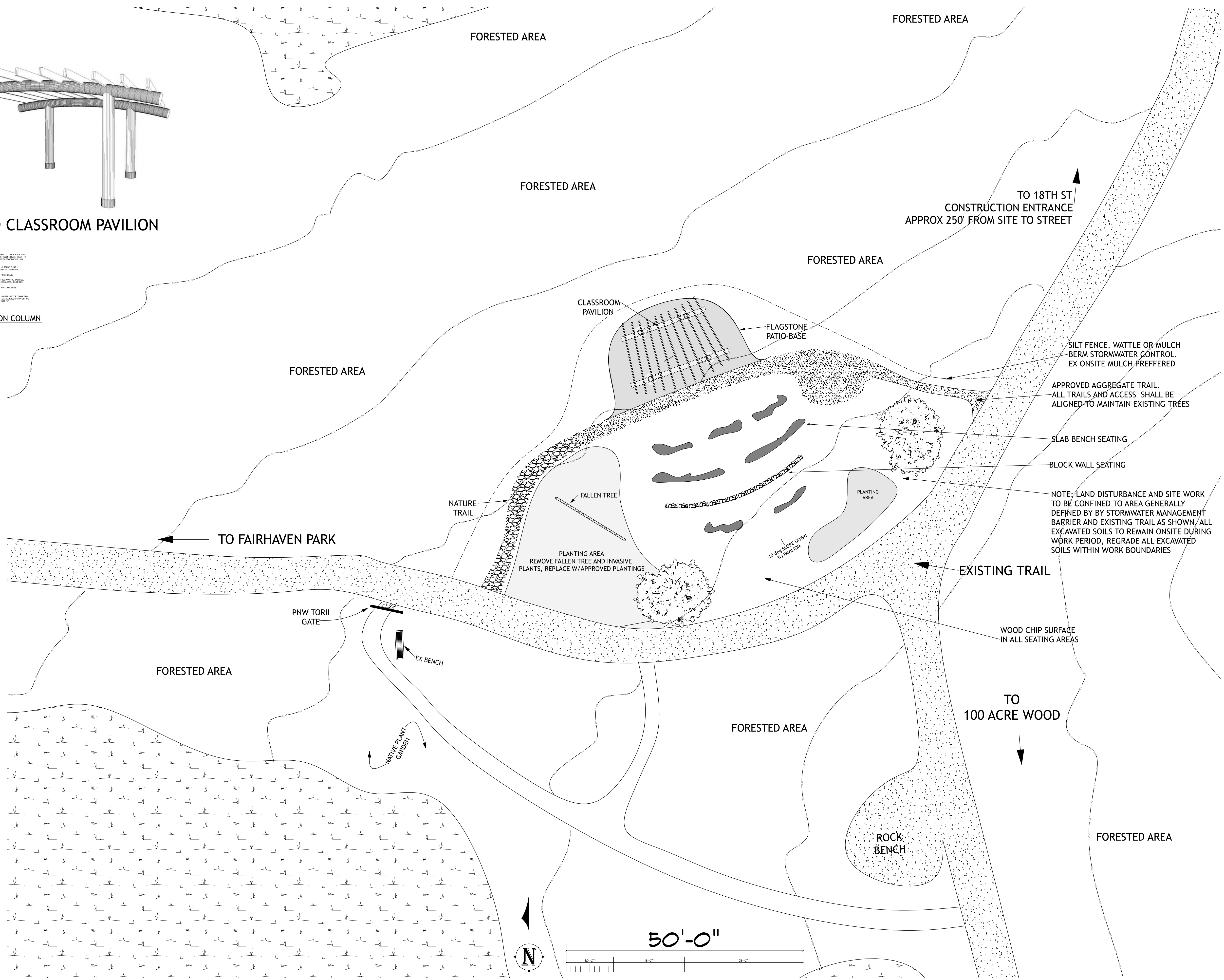


**FOOTING - PAVILION COLUMN**  
SCALE: 1/4" = 1'-0"



**FULL SITE**  
SCALE: .1

**PAVILION AREA**  
SCALE: 1" = 10'-0"



**FRHVN OUTDOOR CLASSROOM**

PHONE: 98225  
FAX:  
MOBILE:

**McAuley Design Works**  
2827 Sunset Dr  
Bellingham  
Washington  
98225  
PHONE: 360-389-3539  
mcauleydesignworks@gmail.com  
https://mcauleydesign.works/

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