



Reference: 021184

Date: May 8, 2023

Pat McDonald
Pacific Builders
880 L St.
Arcata, CA 95521



Subject: Paye Wetland Buffer Replanting Plan

Dear Pat,

To minimize the impacts to wetlands as a result of the proposed project and reduced wetland buffer, a native vegetation screen is proposed within the wetland buffer and the portion of the project immediately adjacent to the wetland buffer. The native vegetation screening area covers an approximately 3,000 sqft area. The planting area includes a ten-foot-wide space between the proposed buildings and the property line that extends for 176 feet, which increases to a 15-foot width for an additional 80 feet, for a total planting area of approximately 3,000 sqft. This area will also have a rock gabion retaining wall with an average height of 10 feet and a length of 216 feet. This adds additional planting surface area and will include its own list of plants suitable for vertical or near vertical planting surface (see Table 1). The entire planting area will be planted with native plant species to improve habitat quality within the wetland buffer area and to create a visual barrier between the proposed development and the wetlands. A large percentage of the planting area will be shaded as a result of the proposed buildings and adjacent coast redwood (*Sequoia sempervirens*) canopy. As such, all plants to be installed within this area will be native shade-tolerant species. Plants will be installed with tight spacing to maximize native plant cover and the visual barrier and to reduce the likelihood that invasive species will become established within the planting area. Species to be planted within the planting area are recorded in Table 1, which includes: spacing, container size, and number of individuals needed, as well as a general planting location. Portions of the planting area with more sun will utilize species that require more sunlight and are recorded in Table 1. Plants should be installed randomly throughout the planting area within the general areas that they are most suited as shown in Table 1. A total of 240 plants should be installed within the Hilfiker wall, 196 plants should be installed within the shaded portions of the planting area, and 132 plants should be planted within the partial shade to sunny portions of the planting area as described in Table 1, for a total of 568 plants. This will create a robust visual screen that may reduce the likelihood of invasive species dominance. Plants should be planted with three-foot spacing and large shrubs and trees should be planted with a minimum of 10-foot spacing, with herbaceous or other smaller woody species between. Random spacing is encouraged to create a natural appearance to the planting area. All plants except for those planted in the Hilfiker wall should be planted in holes that are triple the volume of the container the trees have been growing in and have a 2-inch layer of mulch applied around the base of each plant.



Irrigation

Plants should be irrigated for a minimum of one year following installation. This can be accomplished using temporary overhead sprinklers or drip lines with emitters at each plant. Regular watering once weekly will increase survival of plants and minimize the need for costly replanting efforts.

Invasive Species

Invasive species are likely to become established within the planting area due to disturbance related to the project and the existence of extensive populations of invasive species within the vicinity of the project. Invasive species likely to become a problem within this location are English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus armeniacus*). Yearly monitoring is recommended to document invasive species and will provide methods for their control.

Performance Standards

Successful revegetation will be defined as 85% survival of planted materials, including those from natural recruitment, resulting in a minimum of 483 surviving plants after a period of three to five years. Plants should be healthy and showing signs of robust growth. Invasive species recruitment and cover should remain below or comparable to the levels observed in the undisturbed wetlands and forested area adjacent to the planting area. A specific reduction goal is not stated on account of the difficulty and uncertainty of invasive species removal and the high level of invasive species cover in surrounding areas.

Success criteria for the revegetation area includes:

- 85% survival of plants, including natural recruits, for a minimum total of 483 native plants after a period of 3 to 5 years,
- Increasing native species cover across the entire visual screen planting area between the property line and proposed buildings, and
- cover by invasive species is less than or equal to the cover found in adjacent undisturbed areas after three to five years of monitoring.

A specific monitoring plan, if required, will be developed following installation of the plants and will be included in the As-Planted Report.

Table 1. Wetland Buffer Planting Area Plant List

Latin Name	Common Name	Method of Planting	Number of Individuals	Location	Notes
Revegetation Species Hilfiker Wall					
<i>Asarum caudatum</i>	wild ginger	Rooted individuals in soil into spaces between rock in Hilfiker wall.	40	in upper half of Hilfiker wall.	Trailing and spreading. Grows well in dry shaded areas.
<i>Dryopteris expansa</i>	wood fern	Rooted individuals in soil into spaces between rock in Hilfiker wall.	25	in Hilfiker wall at base	Well adapted to deep shade.



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Latin Name	Common Name	Method of Planting	Number of Individuals	Location	Notes
<i>Polypodium glycyrrhiza</i>	licorice fern	Plant sections of rhizome in soil into spaces between rock in Hilfiker wall	105	in Hilfiker wall at all elevations	Drought deciduous and drought tolerant. Grows well in vertical areas with minimal soil and shade.
<i>Ribes laxiflorum</i>	trailing black currant	Rooted cuttings with soil into spaces between rock in Hilfiker wall	25	in Hilfiker wall at all elevations	Trailing and climbing. Grows well on vertical surfaces and in moist shaded locations.
<i>Tolmiea diplomenziesii</i>	pig-a-back plant	Rooted individuals in soil into spaces between rock in Hilfiker wall.	45	in lower half of Hilfiker wall	Does well in moist cool shaded areas. Can grow on vertical surfaces.
Revegetation Species Shaded Areas					
<i>Maianthemum dilatatum</i>	may lily	quart	34	Ground cover in shaded portions of the replanting area, top and bottom of wall.	Ground cover adapted to shade and forested conditions. Summer dormant.
<i>Menziesia ferruginea</i>	mock azalea	1-gallon/deep pot	18	Scattered throughout shaded areas at base of Hilfiker wall.	Shade-adapted shrub, requires moist soil such as at the base of the Hilfiker wall.
<i>Polystichum munitum</i>	sword fern	1-gallon/deep pot/quart	50	Scattered throughout shaded areas, top of wall.	Drought tolerant and shade-adapted herbaceous species.
<i>Rhododendron macrophyllum</i>	Pacific rhododendron	1-gallon/deep pot	15	Scattered throughout shaded area, top of wall.	Moderate drought and shade-adapted shrub.
<i>Rubus spectabilis</i>	salmon berry	1-gallon/deep pot/quart	30	Dense plantings along the edge of the shaded areas, top and bottom of wall.	Shade adapted. Good barrier species. Does best in moist soils.
<i>Sambucus racemosa</i> var. <i>racemosa</i>	red elderberry	1-gallon/deep pot	12	Scattered throughout shaded area, top of wall.	Drought tolerant and partial shade adapted. Does well in dry locations.



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Latin Name	Common Name	Method of Planting	Number of Individuals	Location	Notes
<i>Vaccinium ovatum</i>	evergreen huckleberry	1-gallon/deep pot/quart	25	Scattered throughout shaded area, top of wall.	Drought tolerant and shade adapted.
<i>Vaccinium parvifolium</i>	red huckleberry	1-gallon/deep pot/quart	12	Scattered throughout shaded area, top of wall.	Drought tolerant and shade adapted.
Revegetation Species Less Shaded Areas					
<i>Frangula purshiana</i> ssp. <i>purshiana</i>	casacara	1-gallon/deep pot	15	Edge of areas with more sun	Partial shade to full sun. Does best with moist soils.
<i>Malus fusca</i>	wild apple	1-gallon/deep pot	8	Base of wall, with access to some sun	Partial shade to full sun. Requires moist soils.
<i>Morella californica</i>	wax myrtle	1-gallon/deep pot	30	Full sun, top of wall.	Full sun, soil moisture preferred.
<i>Sequoia sempervirens</i>	coast redwood	1-gallon/deep pot	5	Full sun with space for tree growth.	Full sun, drought tolerant. Needs space for growth.
<i>Iris douglasii</i>	Douglas iris	1-gallon/deep pot/quart	30	Full sun, top of wall.	Full sun, drought tolerant herbaceous species.
<i>Gaultheria shallon</i>	salal	1-gallon/deep pot	44	Full sun, top of wall.	Full sun, drought tolerant.
Total Revegetation Plants			568		

If you have any questions or comments, please call me at 707-822-5785.

Sincerely,

SHN



Joseph Saler
 Senior Ecologist

JLS:cet

