

**I-405 Bellevue to Lynnwood  
Improvement Project Mitigation Sites  
(Yarrow Creek Farms, C28, and Sammamish River Mitigation Sites)**

**USACE NWS-2007-1711**

**Northwest Region**

**2014 MONITORING REPORT**

**Wetlands Program**

*Issued March 2015*



**Washington State  
Department of Transportation**

Environmental Services Office

**Author:**

Jennie Husby

**Editor:**

Tony Bush

**Contributors:**

Kristen Andrews and Tatiana Dreisbach

For additional information about this report or the WSDOT Wetlands Program, please contact:

Tony Bush, Wetlands Program  
WSDOT, Environmental Services Office  
P. O. Box 47332, Olympia, WA 98504  
Phone: 360-570-6640 E-mail: busht@wsdot.wa.gov

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# SR 405 Yarrow Creek, C28, and Sammamish River Mitigation Sites

## USACE NWS-2007-1711



General Site Information			
USACE NWS Number	2007-1711		
Mitigation Location	<b>Yarrow Creek:</b> East side of I-405 south of Bridle Trails State Park <b>C28:</b> Downstream of I-405 on an unnamed tributary to Juanita Creek <b>Sammamish River:</b> South bank of the Sammamish River, downstream of the confluence with Little Bear Creek, city of Bothell		
LLID Numbers	1221986476401		
Construction Date	2013		
Monitoring Period	2014-2018		
Year of Monitoring	1 of 5		
Mitigation Sites	Yarrow Creek	C28	Sammamish River
Area of Project Impact	0.21 acre	0.40 acre	0.12 acre
Type of Mitigation	Stream Buffer Enhancement		
Planned Area of Mitigation	0.65 acre	0.42 acre	0.10 acre

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## Summary of Monitoring Results and Management Activities (2014)

Performance Standards	2014 Results <sup>1</sup>	Management Activities
d50 and corresponding critical shear stress for appropriate flows in C28 and the Sammamish River verified	Heavy loose rip rap used in place of d50 round rock	
Inspection of logs and HEC-RAS or approved equal modeling to confirms that structures will withstand 100-year flows and substrate will remain in place at 15 year flows	Monitoring does not yet have this information.	
Minimal return of invasive species.	<p><b>Yarrow Creek:</b> Invasive cover is low</p> <p><b>C28:</b> Invasive cover is low</p> <p><b>Sammamish River:</b> Planting area is surrounded by invasive plant species</p>	<p>Weed control activities were performed on these dates in 2014-</p> <p><b>Yarrow Creek:</b> 1/14, 6/17, 6/18, and 7/10</p> <p><b>C28:</b> 6/17, 6/18, and 7/10</p> <p><b>Sammamish River:</b> 1/22, 6/17, 7/14, and 8/19</p>
At least 80% survival of planted tree and shrub species in the buffer enhancement areas of the mitigation sites for each of 2 years after the sites are planted.	<p><b>Yarrow Creek:</b> 99% survival (total count)</p> <p><b>C28:</b> 90% survival (CI<sub>80%</sub>=86-94%)</p> <p><b>Sammamish River:</b> 92% survival (CI<sub>80%</sub>= 87-97%)</p>	<p>Plants that died were replaced in 2014.</p> <p><b>Yarrow Creek:</b> 11 plants replaced</p> <p><b>C28:</b> 75 plants were replaced</p> <p><b>Sammamish River:</b> 245 plants replaced, including 97 willow (<i>Salix</i> species) which elevates the total</p>

## Report Introduction

This report summarizes first-year (Year-1) monitoring activities at the State Route (SR) 405 Yarrow Creek, C28, and Sammamish River Mitigation Sites. Included are a site description, the performance standards, an explanation of monitoring methods, and an evaluation of site development. Monitoring activities included vegetation surveys and photo-documentation on August 18 and 19, 2014.

<sup>1</sup> Estimated values are presented with their corresponding statistical confidence interval. For example, 90% survival (CI<sub>80%</sub> = 86-94%) means we are 80% confident that the true survival value is between 86% and 94%.

## What are the SR 405 Yarrow Creek, C28, and Sammamish River Mitigation Sites?

These 0.65-acre, 0.42-acre, and 0.10-acre mitigation sites (Figure 1) are stream buffer enhancement areas in the I (Interstate) 405 corridor at Yarrow Creek, stream C28, and the Sammamish River within Water Resource Inventory Area 8. These sites were created to compensate for the impact to 0.73 acre of stream buffer due to road construction and widening along I-405 between NE 6<sup>th</sup> Street in Bellevue and I-5 in Lynnwood. The three stream buffer areas are designed to provide mitigation for lost stream buffer functions including fish and wildlife habitat and biological support.

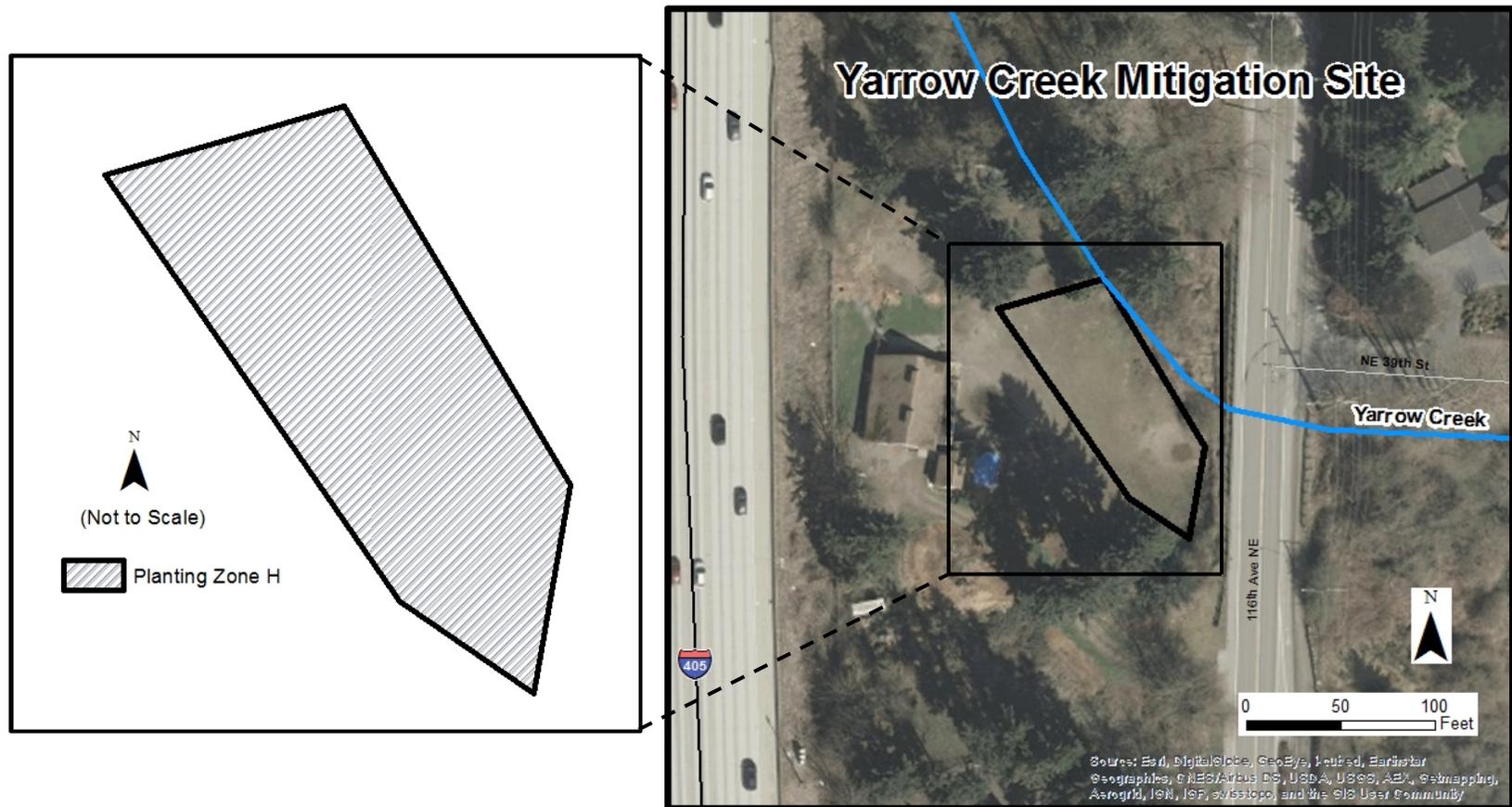
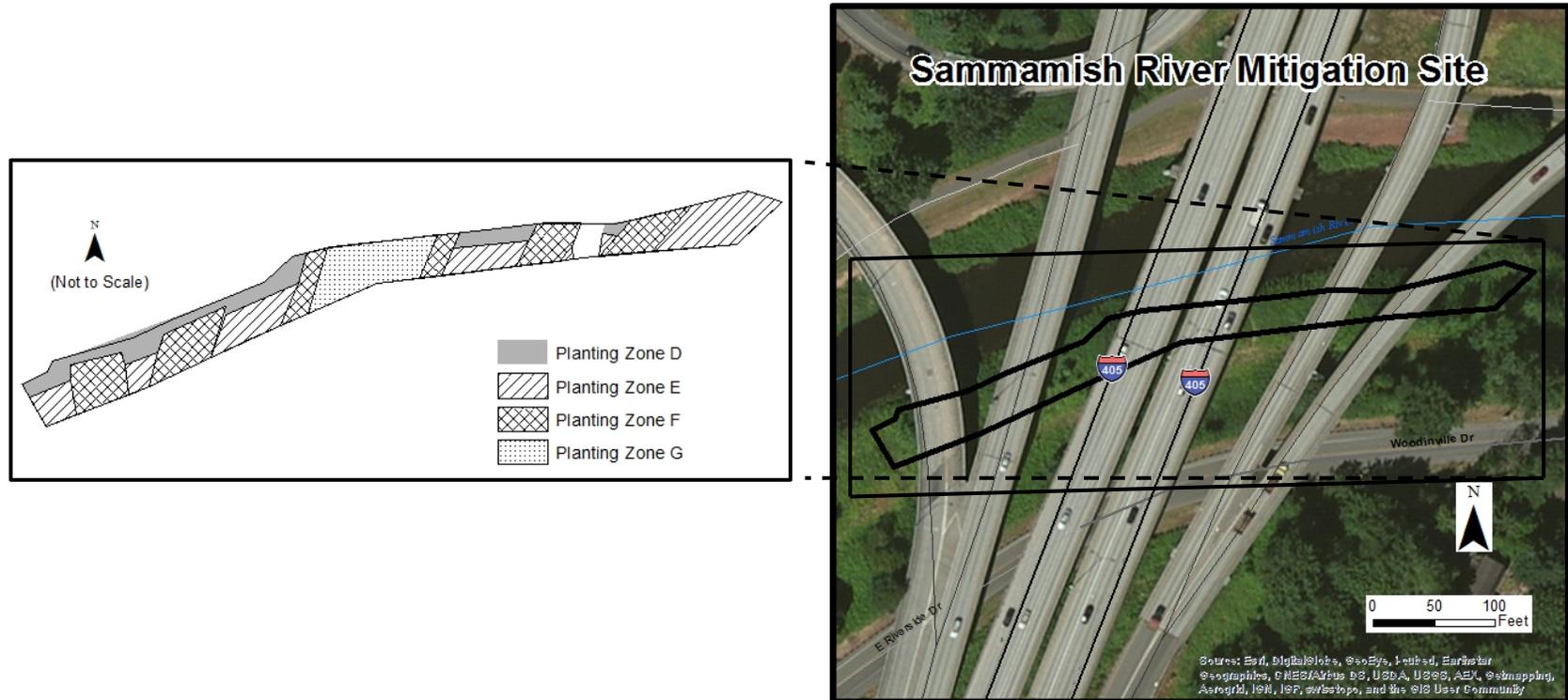


Figure 1 SR 405 Yarrow Creek Site Sketch



**Figure 2 SR 405 C28 Site Sketch**



**Figure 3 SR 405 Sammamish River Site Sketch**

The SR 405 Yarrow Creek, C28, and Sammamish River Mitigation Sites contain forested riparian areas alongside Yarrow Creek, stream C28, and the Sammamish River. Appendix 2 includes site directions.

## **What are the performance standards for these sites?**

### Performance Standard 1

Verify d50 and corresponding critical shear stress for appropriate flows in C28 and the Sammamish River.

### Performance Standard 2

HEC-RAS or approved equal modeling confirms that structures will withstand 100-year flows and substrate will remain in place at 15 year flows. WSDOT will inspect logs.

### Performance Standard 3

Control non-native invasive plant species. Mowing and applying herbicide to invasive vegetation from the site will allow planted native species to form stable communities. Monitoring shows minimal return of invasive species. Use additional mowing and/or use of approved herbicides to control invasive species.

### Performance Standard 4

Planted tree and shrub species in the buffer enhancement areas of the mitigation sites will achieve at least 80 percent survival for each of two years after the sites are planted.

Appendix 1 shows the planting plans (Award Copy) (WSDOT 2013).

## How were the performance standards evaluated?

D50 round rock was evaluated for flows in the C28 and Sammamish Rivers (Performance Standard 1). Monitoring has not yet received information on structure modeling and log inspections (Performance Standard 2).

Invasive species present were visually assessed at all three sites (Performance Standard 3).

To evaluate survival at the Yarrow Creek mitigation site, all live plantings were counted and divided by the number planted in year 0 (Performance Standard 4).

To evaluate survival at the C28 mitigation site, two segmented baselines were established, one along the northern edge of the site (50 meters), and the other along the southern edge of the site (40 meters) (Performance Standard 4) (Figure 4). Seven sampling transects were systematically placed on the north baseline and six sampling transects were systematically placed on the south baseline, all seven meters apart and perpendicular to the baselines. The unequal-belt-transect sampling method was used to estimate tree and shrub survival. Thirteen one-meter-wide sample units were positioned along the sampling transects in the riparian buffer.

To evaluate survival in at the Sammamish River mitigation site, a 172-meter baseline was established along the north-side of the site, parallel to the river bank (Performance Standard 4) (Figure 5). Fifteen sampling transects were systematically placed 12 meters apart perpendicular to the baseline. The

unequal-belt-transect sampling method was used to estimate tree and shrub survival.

For additional details on the methods, see the [WSDOT Wetland Mitigation Site Monitoring Methods Paper](#) (WSDOT 2008).

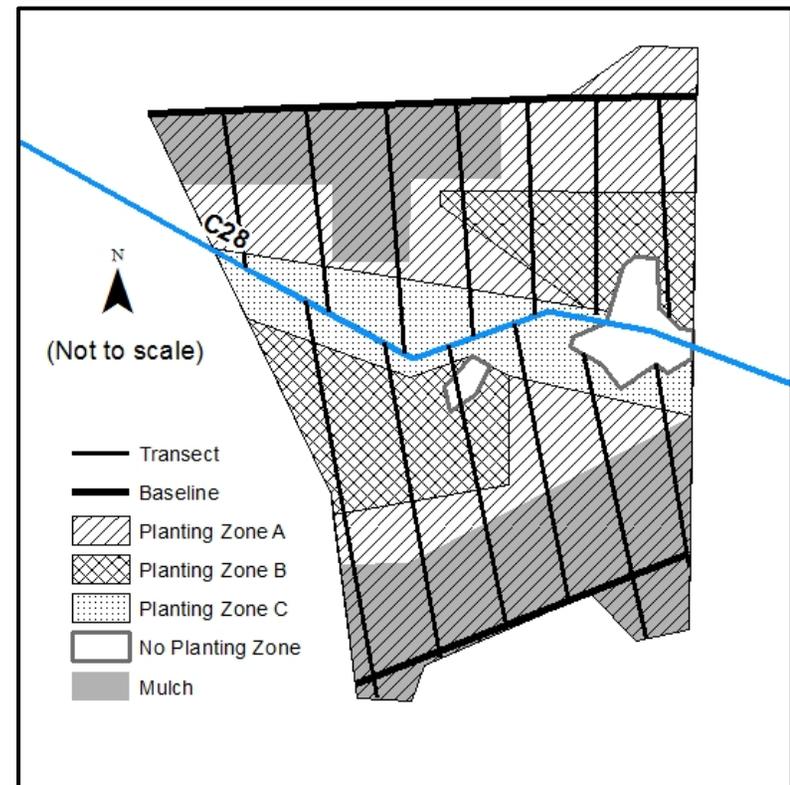


Figure 4 C 28 Site Sampling Design (2014)

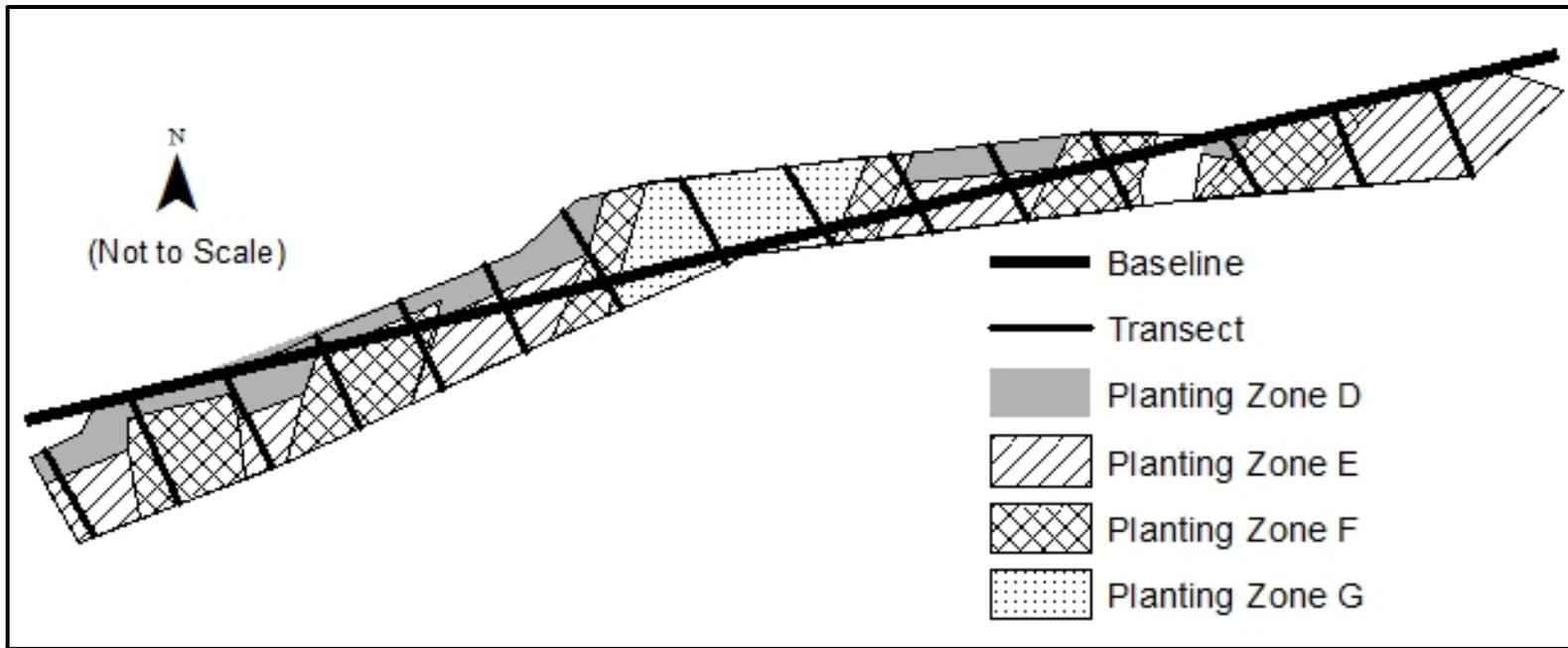


Figure 5 Sammamish River Site Sampling Design (2014)

## How are the sites developing?

The riparian areas at all three sites are developing as planned. Invasive species will spread into the planting areas and crowd out the native plants if not controlled on an ongoing basis.

At the Yarrow Creek mitigation site, survival of plantings is high. Some of the salal (*Gaultheria shallon*) are struggling, but the overall health of the plantings is good. Total cover is qualitatively estimated at 40 percent consistently across the site. There is no erosion near the creek; the large woody debris is functioning. Minnows were observed in the creek.

The C28 mitigation site has some die-off of plantings including some of the western red cedar (*Thuja plicata*) plantings. Qualitatively, there is 25 percent cover in some areas and 10-15 percent cover of plantings overall. There was possible browse on some of the smaller plants, though no wildlife observed.

All of the species on the planting list were observed at the Sammamish River mitigation site, and survival is high across the site. Some herbicide damage to the plantings was observed. Mallard ducks and Canadian goose were seen along with small rodents and signs of browse.

Results for Performance Standard 1

(d50 for appropriate flows in C28 and Sammamish Rivers):

The Northwest Region Design-Build Team found d50 round rock to not be suitable in the streams because it would not have adequately dissipated the energy from the water. Heavy loose rip rap was used instead and monitoring and reporting on the rock is unnecessary. The Design-Build Team will include this change with the as-built submittal to the Corps next year.

Results for Performance Standard 2

(Structures will withstand 100-year flows and substrate will remain in place at 15 year flows. Logs inspected):

Monitoring does not yet have this information.

Results for Performance Standard 3

(Minimal return of invasive species):

**Yarrow Creek:** Invasive cover at this planting area is low. There are nonnative blackberries (*Rubus* species) encroaching and nightshade (*Solanum* species) near the creek. Outside of the planting area, but on the property, there is a large butterfly bush (*Buddleja davidii*) that will likely spread to the planting area if not removed.

**C28:** Overall, the invasive cover is low. There are patches of nonnative blackberry in the NW corner of the site, some Robert geranium (*Geranium robertianum*), and nightshade near the creek.

**Sammamish River:** The planting area is surrounded by encroaching invasive Japanese knotweed (*Reynoutria japonica*), and nonnative blackberry species. There is also some purple loosestrife (*Lythrum salicaria*) and thistle (*Cirsium* species) scattered on the site. The region has been notified and weed control activities have continued.

Results for Performance Standard 4

(At least 80% survival of planted tree and shrub species in the buffer enhancement area):

**Yarrow Creek:** Survival of tree and shrub species is 99 percent (Photo 1). This exceeds the performance standard. Salal (*Gaultheria* species) and salmonberry (*Rubus spectabilis*) dominate the community.

**C28:** Survival of tree and shrub species is 90 percent (CI<sub>80%</sub>=86-94%). This exceeds the performance standard. Salmonberry and snowberry (*Symphoricarpos albus*) dominate the community.

**Sammamish River:** Survival of tree and shrub species is 92 percent. This exceeds the performance standard. Snowberry and Nootka rose (*Rosa nutkana*) dominate this community with willow (*Salix* species) lining the river bank (Photo 2).

**What is planned for these sites?**

Weed control will continue.



**Photo 1**  
**Cover in the buffer enhancement area at Yarrow Creek (August 2014)**

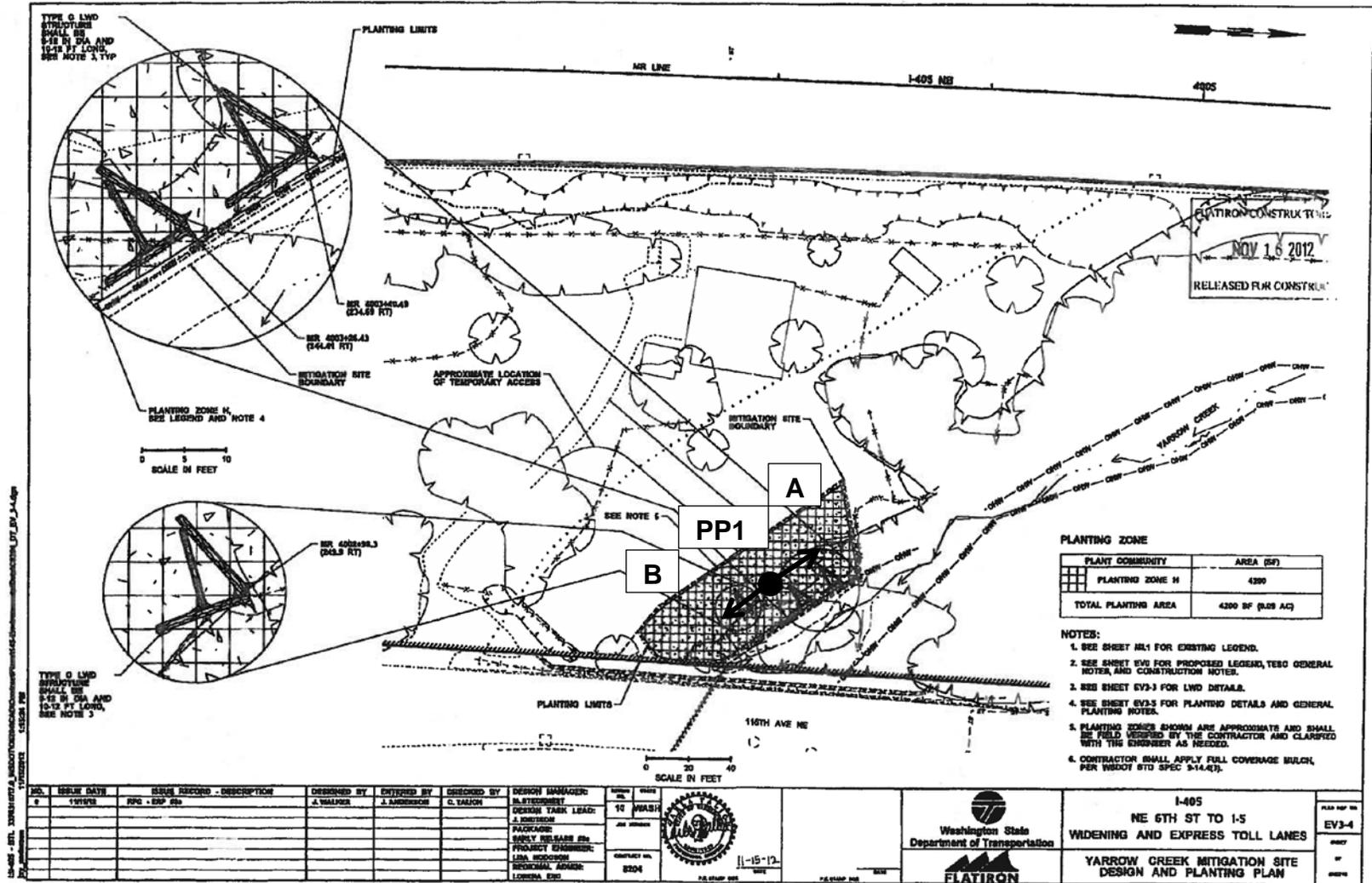


**Photo 2**  
**Volunteer willow along the Sammamish River (August 2014)**

# Appendix 1 – Planting Plans (Award Copies) with Photo Point Locations

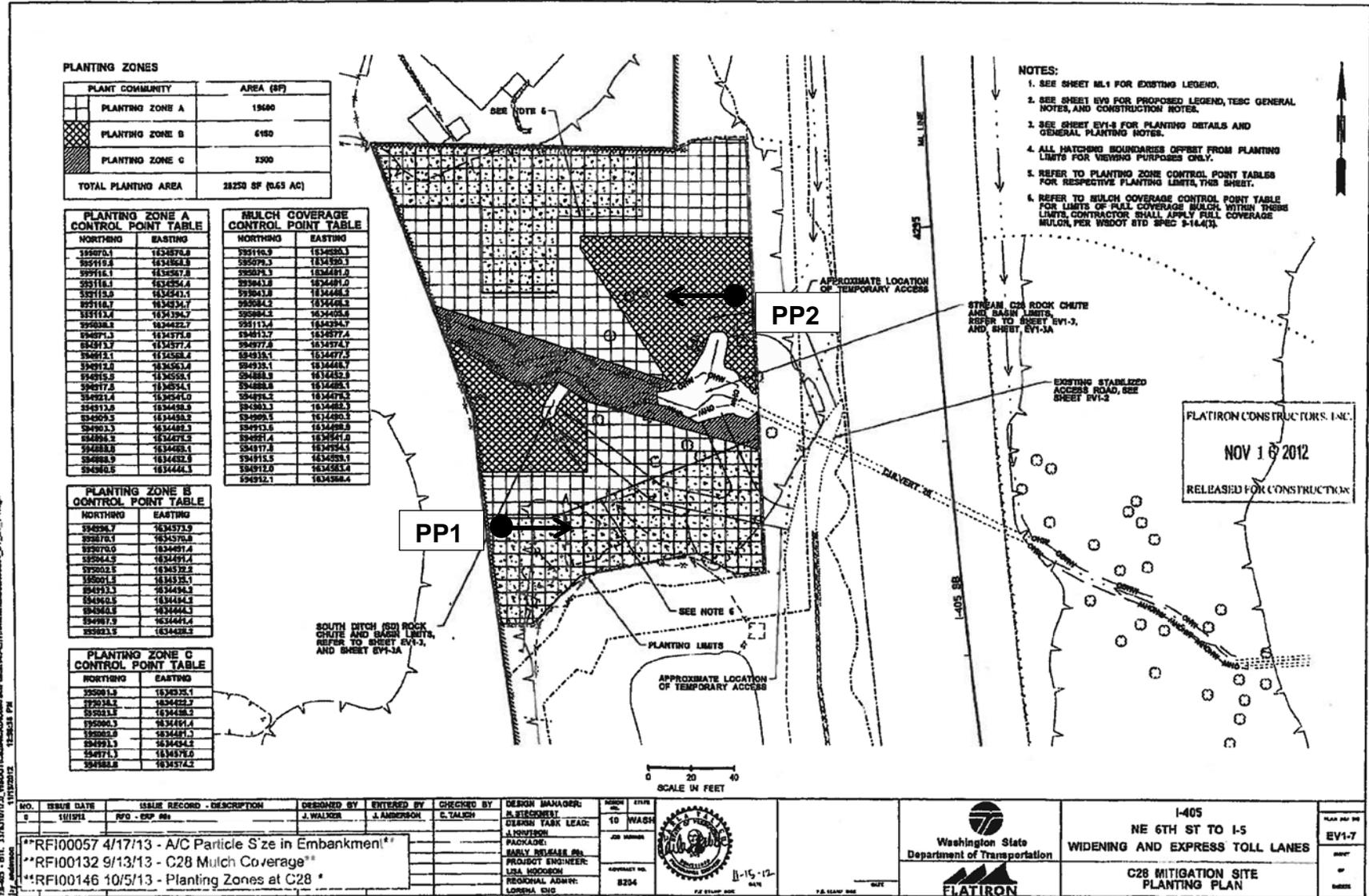
(from WSDOT 2013)

## SR 405 Yarrow Creek Mitigation Site





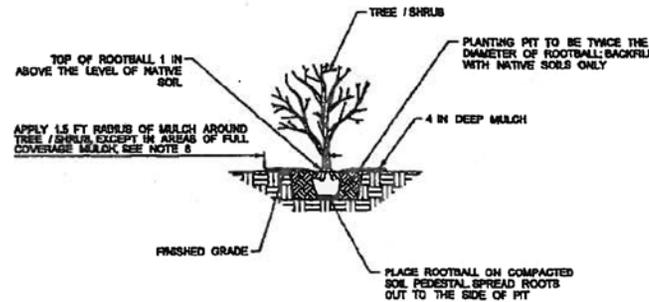
# SR 405 C28 Mitigation Site



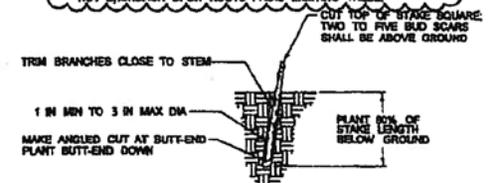
COMMON NAME	SCIENTIFIC NAME	SIZE	SPACING	QUANTITY	NOTES
<b>PLANTING ZONE A</b>					
WESTERN REDCEDAR	THUJA PLICATA	1 GALLON	18'	30	DO NOT PLANT WITHIN 10 FEET OF BASE OF EXISTING LARGE TREES
WESTERN HEMLOCK	TSUGA HETEROPHYLLA	1 GALLON	18'	30	DO NOT PLANT WITHIN 10 FEET OF BASE OF EXISTING LARGE TREES
VINE MAPLE	ACER CIRCINATUM	1 GALLON	6'	40	
LOW CREOSOTE	Berberis nervosa	1 GALLON	6'	100	
PACIFIC DOGWOOD	CORNUS NUTTALLII	1 GALLON	6'	40	
WESTERN HAZEL	CORYLUS CORNUTA	1 GALLON	6'	60	
INDIAN PLUM	OEMLERIA CERASIFORMIS	1 GALLON	6'	40	
CASCARA	RHAMNUS PURSHIANA	1 GALLON	6'	40	
RED ELDERBERRY	SAMBUCUS RACEMOSA	1 GALLON	6'	40	
COMMON SNOWBERRY	SYMPHORICARPOS ALBUS	1 GALLON	6'	125	
<b>PLANTING ZONE B</b>					
WESTERN REDCEDAR	THUJA PLICATA	1 GALLON	18'	20	ONLY PLANT IN WESTERN PART OF PLANTING ZONE
ELDERBERRY	HOLDOBSOHN DISCOLOR	1 GALLON	6'	10	PLANT OPPORTUNISTICALLY BETWEEN EXISTING VEGETATION
WESTERN HAZEL	CORYLUS CORNUTA	1 GALLON	6'	10	PLANT OPPORTUNISTICALLY BETWEEN EXISTING VEGETATION
INDIAN PLUM	OEMLERIA CERASIFORMIS	1 GALLON	6'	10	PLANT OPPORTUNISTICALLY BETWEEN EXISTING VEGETATION
BALDOP ROSE	ROSA GYMNOCARPA	1 GALLON	6'	25	PLANT OPPORTUNISTICALLY BETWEEN EXISTING VEGETATION
COMMON SNOWBERRY	SYMPHORICARPOS ALBUS	1 GALLON	6'	25	PLANT OPPORTUNISTICALLY BETWEEN EXISTING VEGETATION
<b>PLANTING ZONE C</b>					
BALDOP ROSE	ROSA GYMNOCARPA	1 GALLON	6'	10	PLANT OPPORTUNISTICALLY BETWEEN EXISTING VEGETATION, IN GREY SPOTS
ELDERBERRY	RUBUS SPECTABILIS	1 GALLON	6'	10	PLANT OPPORTUNISTICALLY BETWEEN EXISTING VEGETATION, IN GREY SPOTS
COMMON SNOWBERRY	SYMPHORICARPOS ALBUS	1 GALLON	6'	10	PLANT OPPORTUNISTICALLY BETWEEN EXISTING VEGETATION, IN GREY SPOTS
RED-OBER DOGWOOD	CORNUS SERICEA	3 STAKES	2'	20	PLANT IN CLUSTERS OF 3 TO 5, BELOW OR JUST ABOVE CHWLINE, SPREAD ALONG C28 STREAM
STIVA WILLOW	SALIX SITCHENSIS	3 STAKES	2'	20	PLANT IN CLUSTERS OF 3 TO 5, BELOW OR JUST ABOVE CHWLINE, SPREAD ALONG C28 STREAM

**GENERAL PLANTING NOTES:**

1. PLANT INSTALLATION ACTIVITIES SHALL BE IN ACCORDANCE WITH WSDOT STD SPEC 8-02. IN PARTICULAR STD SPEC 8-02.1(4) SHALL BE FOLLOWED FOR PLANTING LAYOUT AND STD SPEC 8-02.1(5), 8-02.1(6) AND 8-02.1(7) FOR INSTALLATION, AND STD SPEC 8-02.1(13) FOR ESTABLISHMENT.
2. ALL PLANTING MATERIAL SHALL BE NURSERY-GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO OR HARDER THAN THOSE AT THE SITE AND COMPLY WITH WSDOT STD SPEC 9-14.6.
3. PLANTS SHALL BE HEALTHY, VIGOROUS AND WELL-FORMED, WITH WELL-DEVELOPED FIBROUS ROOT SYSTEMS FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY.
4. PLANT NAMES SHALL CONFORM TO FLORA OF PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1971.
5. PROTECT PLANTS AT ALL TIMES DURING PLANTING OPERATION TO PREVENT ROOTS FROM DRYING OUT.
6. DO NOT INSTALL PLANT MATERIAL WHEN AMBIENT TEMPERATURE MAY DROP BELOW 33 DEGREES OR ABOVE 80 DEGREES. DO NOT INSTALL PLANTS WHEN WIND VELOCITY EXCEEDS 30MPH.
7. DO NOT PLANT SHRUB SPECIES WITHIN 6 FEET OF EXISTING TREES.
8. MULCH SHALL BE WOOD CHIPS COMPOSED OF GROUND FIR OR HEMLOCK PER STD SPEC 9-14.6.6. SEE SHEET EV-7 FOR AREAS OF FULL COVERAGE MULCH. SEE TREE / SHRUB PLANTING DETAIL THIS SHEET FOR MULCH COVERAGE AROUND TREE / SHRUBS. TAPE MULCH AWAY FROM STEMS OF PLANTS.
9. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST SHALL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE ENGINEER, PER WSDOT STD SPEC 9-14.6(9).
10. PLANTING ZONES SHALL BE IRRIGATED AS NEEDED FOR THE FIRST 3 YEARS AFTER PLANT ACCEPTANCE.
11. IN PLANTING ZONE A AVERAGE SPACING FOR SHRUBS IS 6 FT ON CENTER. HOWEVER, IN AREAS WITH LITTLE UNDERSTORY SHRUBS MAY BE PLANTED AT A 7 FT ON CENTER.
12. WITHIN THE LIMITS OF THE TEMPORARY ACCESS ROAD, PLANTING PIT WIDTHS SHALL BE TWICE THE DIAMETER OF THE ROOTBALL PLUS 6 INCHES PERMITTING THAT THE ADDITIONAL 6 INCHES DO NOT BRANCH UPON ROOTS FROM EXISTING TREES.



**TREE / SHRUB PLANTING**  
MTS



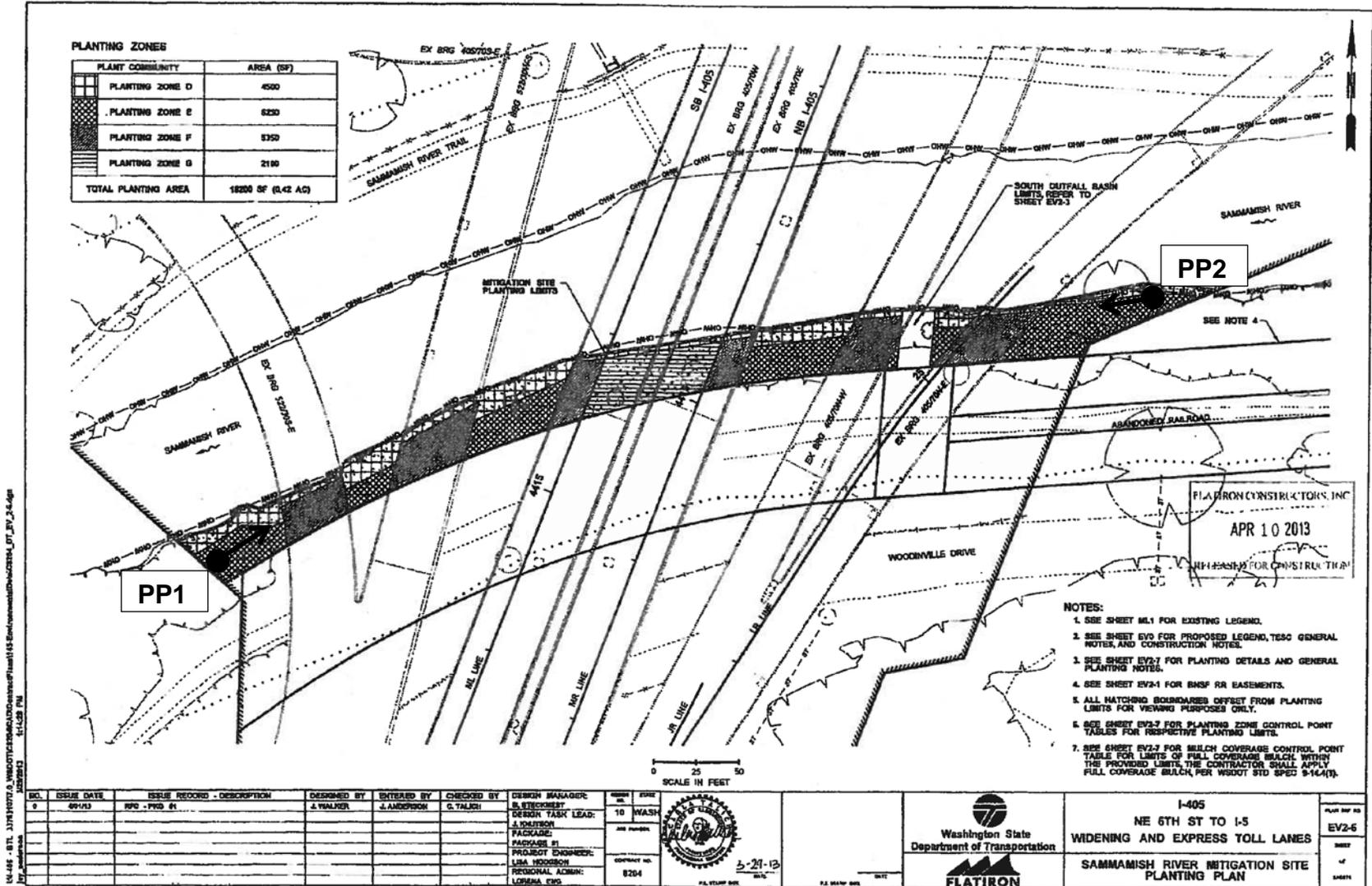
**NOTES:**

1. MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT ENDS DURING INSTALLATION. USE PILE BAR IN FRONT OF STAKE.
2. SOAK CUTTINGS CONTINUOUSLY PRIOR TO INSTALLATION.
3. TAMP THE SOIL AROUND THE STAKE.
4. ONLY NURSERY GROWN STOCK SHALL BE USED. HARVESTING OF WILD PLANTS IS NOT ACCEPTABLE.
5. PLANT WITHIN 72 HOURS OF HARVESTING.
6. IF THE SOIL CONDITIONS DO NOT ALLOW FOR 80% THEN AT A MINIMUM ONE-HALF THEIR LENGTH WILL BE IN THE SOIL.

**STAKE PLANTING**  
MTS

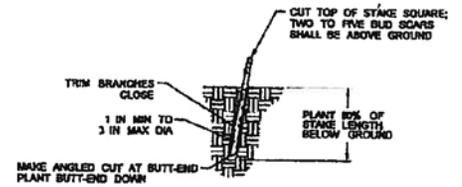
NO.	ISSUE DATE	ISSUE RECORD - DESCRIPTION	DESIGNED BY	ENTERED BY	CHECKED BY	DESIGN MANAGER:	DESIGN TASK LEAD:	PROJECT ENGINEER:	REGIONAL ADMIN:	DATE	PLANTING DETAIL AND NOTES
1	10/15/13	POC28/11	J. WILSON	J. ANDERSON	C. TALKER	J. ANDERSON	C. TALKER	LIBA HODSON	LORRINA ENG	10/15/13	1-405 NE 6TH ST TO I-5 WIDENING AND EXPRESS TOLL LANES C28 MITIGATION SITE PLANTING DETAILS AND NOTES
2	10/15/13	R/S - ESP #66	J. WILSON	J. ANDERSON	C. TALKER	J. ANDERSON	C. TALKER	LIBA HODSON	LORRINA ENG	10/15/13	EV1-3
<p>**RF100057 4/17/13 - A/C Particle Size in Embankment**  **RF100132 9/13/13 - C28 Mulch Coverage**  **RF100146 10/5/13 - Planting Zones at C28**</p>											

# SR 405 Sammamish River Mitigation Site



COMMON NAME	SCIENTIFIC NAME	SIZE	SPACING	QUANTITY	NOTES
<b>PLANTING ZONE D</b>					
PACIFIC WILLOW	SALIX LASIANDRA	3' STAKES	2'	250	INSTALL 80% OF STAKE BELOW GROUND
SCULLER WILLOW	SALIX SCOLEPRAHA	3' STAKES	2'	250	INSTALL 80% OF STAKE BELOW GROUND
SIKA WILLOW	SALIX STICHENSIS	3' STAKES	2'	250	INSTALL 80% OF STAKE BELOW GROUND
<b>PLANTING ZONE E</b>					
VINE MAPLE	ACER CIRCINATUM	1 GALLON	4'	50	
SERVICE BERRY	AMELANCHER ALNIFOLIA	1 GALLON	4'	40	
TALL OREGONGRAPE	BERBERIS AQUIFOLIUM	1 GALLON	4'	50	
MOJO ORANGE	PHILADELPHUS LEWISII	1 GALLON	4'	40	
RED-FLAMINGO CURRANT	RIBES SANGUINEUM	1 GALLON	4'	50	
NOOTKA ROSE	ROSA NUTKANA	1 GALLON	4'	50	PLANTINGS MAY BE CLUSTERED
RED ELDERBERRY	SAMBELICUS RACEMOSA	1 GALLON	4'	50	
<b>PLANTING ZONE F (UNDER OVERPASS)</b>					
OCEAN BERRY	HOLODUSCUS DISCOLOR	1 GALLON	4'	50	
NOOTKA ROSE	ROSA NUTKANA	1 GALLON	4'	50	PLANTINGS MAY BE CLUSTERED
THIMBLE BERRY	RUBUS PARVIFLORUS	1 GALLON	4'	50	
RED ELDERBERRY	SAMBELICUS RACEMOSA	1 GALLON	4'	50	
COMMON HONEYSUCKLE	SYMPHYCARPOS ALBUS	1 GALLON	4'	50	PLANTINGS MAY BE CLUSTERED
<b>PLANTING ZONE G (UNDER LARGEST OVERPASS)</b>					
COMMON HONEYSUCKLE	SYMPHYCARPOS ALBUS	1 GALLON	4'	50	PLANTINGS MAY BE CLUSTERED
OCEAN BERRY	HOLODUSCUS DISCOLOR	1 GALLON	4'	50	

- GENERAL PLANTING NOTES:**
- PLANT INSTALLATION ACTIVITIES SHALL BE IN ACCORDANCE WITH WSDOT STD SPEC 8-02.10 PARTICULARLY 8-02.10(1) SHALL BE FOLLOWED FOR PLANTING LAYOUT AND STD SPEC 8-02.10(2), 8-02.10(3) AND 8-02.10(4) FOR INSTALLATION AND STD SPEC 8-02.10(5) FOR ESTABLISHMENT.
  - ALL PLANTING MATERIAL SHALL BE NURSERY-GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO OR HARDER THAN THOSE AT THE SITES AND COMPLY WITH WSDOT STD SPEC 8-04.6.
  - PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED FIBRILUS ROOT SYSTEMS. FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGES CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY.
  - PLANT NAMES SHALL CONFORM TO FLORA OF PACIFIC NORTHWEST BY HYDROCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1971.
  - PROTECT PLANTS AT ALL TIMES DURING PLANTING OPERATION TO PREVENT ROOTS FROM DRYING OUT.
  - DO NOT INSTALL PLANT MATERIAL WHICH AMBIENT TEMPERATURE MAY DROP BELOW 35 DEGREES OR ABOVE 80 DEGREES. DO NOT INSTALL PLANTS WHEN WIND VELOCITY EXCEEDS 20MPH.
  - MULCH SHALL BE WOOD CHIPS COMPOSED OF GROUND FIR OR HEMLOCK PER STD SPEC 8-14.03. MULCH SHALL BE INSTALLED FULL COVERAGE ACROSS ENTIRE SITE. SEE SHRUB PLANTING DETAILS SHEET FOR MULCH COVERAGE AROUND SHRUBS. TAPER MULCH AWAY FROM STEMS OF PLANTS.
  - SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST SHALL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE ENGINEER PER WSDOT STD SPEC 8-14.06.
  - PLANTING ZONES SHALL BE IRRIGATED AS NEEDED FOR THE FIRST 3 YEARS AFTER PLANT ACCEPTANCE.



- NOTES:**
- MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT ENDS DURING INSTALLATION. USE PLOTT BAR IN FIRM SOILS.
  - SOAK CUTTINGS CONTINUOUSLY PRIOR TO INSTALLATION.
  - TAMP THE SOIL AROUND THE STAKE.
  - ONLY NURSERY-GROWN STOCK SHALL BE USED. HARVESTING OF WILD PLANTS IS NOT ACCEPTABLE.
  - PLANT WITHIN 72 HOURS OF HARVESTING.
  - IF THE SOIL CONDITIONS DO NOT ALLOW FOR 80% THEN AT A MINIMUM ONE-HALF THEIR LENGTH WILL BE IN THE SOIL.

**STAKE PLANTING**  
NTS

FLATIRON CONSTRUCTORS, INC.  
APR 10 2013  
RELEASED FOR CONSTRUCTION

**PLANTING ZONE D CONTROL POINT TABLE**

NORTHING	EASTING
609918.3	163925.3
609920.3	163926.2
609922.7	163926.8
609925.7	163927.1
609927.4	163927.6
609929.3	163928.2
609931.3	163928.9
609934.9	163929.6
609937.9	163930.4
609941.9	163931.4
609945.7	163932.4
609949.7	163933.4
609953.9	163934.4
609958.3	163935.4
609962.7	163936.4
609967.3	163937.4
609971.9	163938.4
609976.7	163939.4
609981.5	163940.4
609986.3	163941.4
609991.1	163942.4
609995.9	163943.4
609999.9	163944.4
610003.9	163945.4
610007.9	163946.4
610011.9	163947.4
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611187.9	1

## Appendix 2 – Photo Points

The photographs below were taken from permanent photo-points on August 18, 2014 and document current site development.



**Yarrow Creek Photo Point 1a**



**Yarrow Creek Photo Point 1b**



**C28 Photo Point 1**



**C28 Photo Point 2**



**Sammamish River Photo Point 1**



**Sammamish River Photo Point 2**

### **Driving Directions:**

**Yarrow Creek Mitigation Site:** From I-5, merge onto I-405 South. Take exit 17 toward Northeast 70<sup>th</sup> Place. Turn right onto Northeast 72<sup>nd</sup> Place and continue onto Northeast 70<sup>th</sup> Place. Turn right on 116<sup>th</sup> Avenue Northeast and continue 1.6 miles to the intersection of 116<sup>th</sup> Avenue Northeast and Northeast 39<sup>th</sup> Street. The site will be on the right (west) side of 116<sup>th</sup> Avenue Northeast at this intersection.

**C28 Mitigation Site:** From I-5, merge onto I-405 South. The site is on the west side of the interstate at milepost 21.3.

**Sammamish River Mitigation Site:** From I-5, take exit 154 to merge onto I-405 North. Take exit 22 for Northeast 160<sup>th</sup> Street. Turn right on Northeast 160<sup>th</sup> Street/Juanita Woodinville Way NE. Turn left on Northeast Woodinville Drive and follow it under the I-405 overpass. The site will be on the right (north) side of Northeast Woodinville Drive along the Sammamish River, beneath the I-405 overpass.

## Literature Cited

1. [USACE] US Army Corps of Engineers. 2012. Department of the Army Individual Permit Number NWS-2007-1711.
2. [WSDOT] Washington State Department of Transportation. 2013. Stream Mitigation Report I-405, Bellevue to Lynnwood Improvement Project. Seattle (WA): Washington State Department of Transportation, Northwest Region.
3. [WSDOT] Washington State Department of Transportation. 2013. I-405 NE 6<sup>th</sup> St to I-5 Widening and Express Toll Lanes. Award Copy Planting Plan.
4. [WSDOT] Washington State Department of Transportation. 2008. WSDOT Wetland Mitigation Site Monitoring Methods. <http://www.wsdot.wa.gov/NR/rdonlyres/C211AB59-D5A2-4AA2-8A76-3D9A77E01203/0/MethodsWhitePaper052004.pdf>