



MEMO

Date: October 15, 2012

To: Thomas Hansen, Public Works Director
17301 133rd Avenue NE
Woodinville, WA 98072

From: Linda Howard, Environmental Planner
AECOM

Subject: Sammamish River Bridge and Road Project – MP 0.31 – MP 0.55
Addendum to the No Effect Letter and ECS with Supplemental Information
on: (1) Planting Plan and Maintenance Plan for On-Site Mitigation, (2)
Stormwater Management, and (3) Project Alignment Maps

EXHIBIT 12
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AECOM has prepared this memo on behalf of the City of Woodinville in response to a request from Trevin Taylor, WSDOT Highways and Local Programs, for additional information pertaining to the No Effect Letter and ECS for the Sammamish River Bridge and Road Project. This memo provides supplemental information regarding the proposed planting plan and maintenance plan for on-site mitigation beneath the new bridge structure, stormwater management plans, and a map showing the project alignment over the new bridge.

1. Conceptual Planting Plan and Maintenance Plan for the Proposed On-Site Mitigation:

Attached is a Conceptual Planting Plan (Attachment 1) for the proposed on-site mitigation that we described previously in a memo dated August 3, 2012 (also attached for reference - Attachment 2). The City of Woodinville or its contractor would be responsible for maintenance of the installed plant material. Maintenance activities would primarily involve: (1) weeding of invasive (e.g., Himalayan blackberry, reed canarygrass) or otherwise unwanted species around installed shrubs to the drip line on a regular basis using hand methods to reduce competition for the first 2 years or until plantings are well established; and (2) replacing all dead or diseased installed native plants observed during the first 2 years after implementation of the mitigation. Additional maintenance activities would include removing litter, and addressing any herbivory or vandalism issues as needed.

2. Description of the Proposed Stormwater Management Plans for the Project:

Existing Stormwater Management

Stormwater runoff from the majority of the existing roadway currently sheetflows to the edge of the roadway where it is intercepted by a curb or combined curb and gutter and directed into a closed stormwater system. This closed system is made up of a series of storm manholes or catch basins and pipes. The system conveys the stormwater to one of two outfalls that discharge directly into the Sammamish River (Attachment 3: *Project Alignment - Complete Alignment*).

The topography of the existing roadway rises to a high point near the railroad crossing on the east side of the bridge. Stormwater runoff east of this high point currently flows to a catch basin located approximately 200 feet east of the Sammamish River and is then piped to an outfall located on the east bank of the Sammamish River above the ordinary high water mark (OHWM) (Attachment 3: *Project Alignment - Complete Alignment*).

Stormwater runoff west of this high point flows to catch basins or storm manholes to the west that are piped to an outfall at the top of the west bank of the Sammamish River (Attachment 3: *Project Alignment - Complete Alignment*). Per the 2009 King County Surface Water Design Manual (KCSWDM), the Sammamish River is a flow control exempt waterbody. Direct discharge to the Sammamish River does not require retention or detention; therefore, the existing stormwater drainage system within the project area does not include any retention or detention facilities.

Proposed Stormwater Management

Under the proposed project, stormwater runoff to the east of the high point described above would continue to flow via curb and gutter and catch basins or storm manholes and pipes, into the existing stormwater drainage system and be discharged untreated into the Sammamish River via the existing outfall on the east bank of the river.

The KCSWDM allows for treatment of an equivalent area in lieu of treating the entire new roadway. To do this, stormwater runoff from both the existing and new roadway west of the high point will be intercepted by a curb and gutter, and a portion of the runoff will be conveyed through a curb inlet into a stormwater treatment bioretention system, such as the Filterra Bioretention System. The proposed project includes stormwater treatment bioretention systems in three locations west of the bridge (Attachment 3: *Project Alignment - Complete Alignment*). In the Filterra Bioretention System, stormwater runoff flows through a specially designed filter media mixture contained in a landscaped concrete container. The filter media capture and immobilize pollutants, which are then decomposed, volatilized, and incorporated into the biomass of the system's flora and fauna. The treated stormwater drains into an underdrain system at the bottom of the concrete container where it is then piped to an adjacent catch basin or manhole that ties into the existing stormwater drainage system.

The stormwater treatment bioretention systems for the project are designed to treat the "first flush" of stormwater runoff (equivalent to flow from a 2-year flood event) as this contains the most pollutants. Stormwater runoff beyond this level would flow through a high flow bypass at the top of the concrete box housing the bioretention system directly into the adjacent catch basin and existing stormwater drainage system and would not be treated.

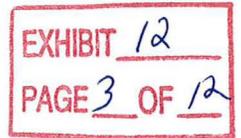
Stormwater from the portion of the road west of the high point, whether treated or not, would be piped to the existing outfall at the top of the west bank of the Sammamish River. As described above, the Sammamish River is a flow control exempt waterbody, and direct discharge to the Sammamish River does not require detention; therefore, the existing stormwater drainage system in the project area does not include any retention or detention facilities.

3. Project Alignment Maps:

Please see the Project Alignments maps in Attachment 3. The *Project Alignment - Complete Alignment* map shows the project alignment from the project start to the project end, along with many of the stormwater drainage features described for reference. The *Project Alignment - Bridge Alignment* map is a close-up of the project alignment, showing the start and end of the new bridge structure, and includes the proposed on-site planting area for reference.

Sammamish River Bridge and Road Project
Addendum to the No Effect Letter and ECS
October 15, 2012

Please don't hesitate to call me if you have questions or comments in response to this summary.



Sincerely,

A handwritten signature in black ink that reads "Linda M. Howard".

Linda Howard
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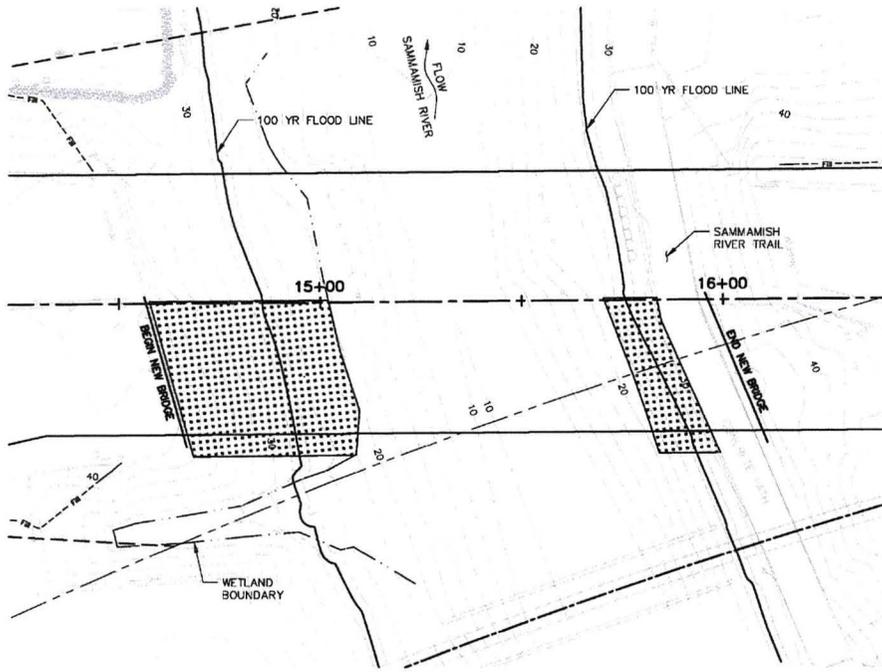
Attachments:

- Attachment 1: Conceptual Planting Plan
- Attachment 2: Memo dated August 3, 2012, Proposed On-Site Mitigation for Impacts to Riparian Vegetation Beneath and Adjacent to the New Bridge Structure
- Attachment 3: Project Alignment Maps



ATTACHMENT 1

Conceptual Planting Plan



SHRUBS & FERNS	QUANTITY per 900 SF	TOTAL QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NOTES
⊕	13	25	AF	ADIRYRUM FELIX-FEMINA	LADY FERN	1 GAL.	4' DC	CLUSTER CLOSESR TO RIVER
⊕	13	25	CS	CORNUS STOLONIFERA	RED-OSIER DOGWOOD	1 GAL.	4' DC	CLUSTER
⊕	13	25	SA	SYMPHORICARPOS ALBUS	INDIAN PLUM	1 GAL.	4' DC	
⊕	13	25	LI	LONICERA INVOLUCRATA	BLACK TWNBERRY	1 GAL.	4' DC	
⊕	13	25	RN	ROSA NUTKANA	HOOTKA ROSE / R. PISCOCARPA	1 GAL.	4' DC	CLUSTER
⊕	13	25	RS	RUBUS SPECTABILIS	SALMONBERRY	1 GAL.	4' DC	

1 RESTORATION ZONE PLANTING SCHEDULE

SCALE: 1/8"=1'-0" DT-PLNT-TEMPLATE-FRST-ENHANCED.dwg

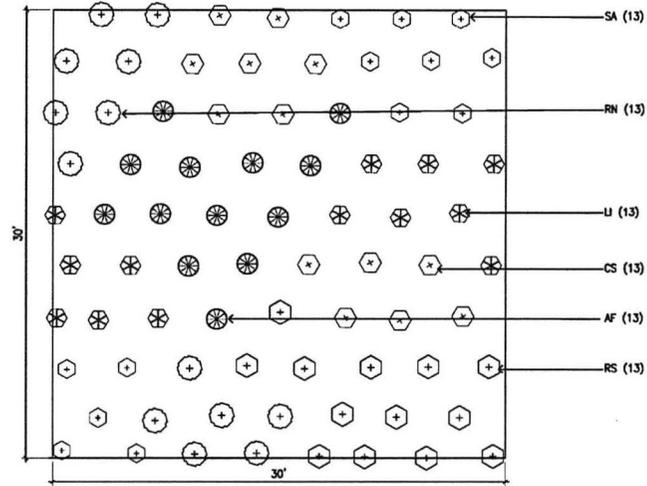
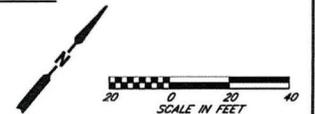


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- NOTES:
- LAYOUT TO BE VERIFIED ON SITE DUE TO VARYING FIELD CONDITIONS AND PLANT DENSITIES.
 - REFER TO RESTORATION PLANT SCHEDULE FOR PLANT QUANTITIES
 - PLANTING WITHIN CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES TO BE LIMITED TO 1 GAL. POTS OR SMALLER, PLANT LAYOUT TO BE VERIFIED BY OWNER'S REPRESENTATIVE.

2 RESTORATION ZONE PLANTING TEMPLATE - 900 SF

SCALE: 1/8"=1'-0" DT-PLNT-TEMPLATE-FRST-ENHANCED.dwg



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 AECOM

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 SEATTLE, WASHINGTON 98104
 PHONE: (206) 574-4200
 FAX: (206) 574-4242

NO.	REVISION	DATE	BY	OK



CITY OF WOODINVILLE
 17301 133rd AVE NE
 WOODINVILLE, WA 98072
 PHONE: (425) 489-2700
 FAX: (425) 489-2705

PROJECT INFORMATION
SAMMAMISH BRIDGE (NO. 202/35) REPLACEMENT PROJECT

SHEET TITLE:
LANDSCAPE PLAN

DATE: 03-15-2012	CHECKED BY: AL
DESIGNED BY: B.M.	PROJECT NO.:
DRAWN BY: YD	SCALE: 1"=10'
SHEET OF	
DRAWING NO.: LS2	



ATTACHMENT 2

Memo dated August 3, 2012 regarding
The Sammamish River Bridge and Road Project: Proposed On-Site
Mitigation for Impacts to Riparian Vegetation Beneath and Adjacent to the
New Bridge Structure

Date: August 3, 2012

To: Rachel Speer, P.E. – Assistant Public Works Director
17301 133rd Avenue NE
Woodinville, WA 98072

From: Linda Howard, Environmental Planner
AECOM

Subject: Sammamish River Bridge and Road Project – MP 0.31 – MP 0.55
Proposed On-Site Mitigation for Impacts to Riparian Vegetation Beneath and
Adjacent to the New Bridge Structure



Existing vegetation on the left bank (facing downstream) of the Sammamish River within the project right-of-way includes several small big leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), and Douglas-fir (*Pseudotsuga menziesii*) trees located at the top of bank; and native shrubs, including: Nootka rose (*Rosa nutkana*), oceanspray (*Holodiscus discolor*), red elderberry (*Sambucus racemosa*), salmonberry (*Rubus spectabilis*), and snowberry (*Symphoricarpos albus*) spanning the width of the bank from the top of bank to edge of ordinary high water. The entire vegetation community in this location is overgrown with dense Himalayan blackberry (*Rubus armeniacus*) (photos). Nootka rose, oceanspray, and salmonberry also occur in shade beneath the existing bridge span.

The Douglas-fir trees and native shrubs were apparently installed as mitigation for a scour repair project implemented by WSDOT in 2003, the *Sammamish River Bridges 202/35 & 202/38 Scour Repair Project* and documented in the construction drawings dated 04/07/2003. WSDOT's mitigation project included planting areas on both the left and right banks of the river (facing downstream) both up- and downstream of the existing bridge (see attached Sheet 11 of the project plan sheets illustrating the mitigation planting plan). While the planting plan WSDOT provided us indicates that Pacific (*Salix lucida*) and Sitka willow (*S. sitchensis*) live stakes were installed along the edge of the ordinary high water line of the river (Areas S1 and S2 on the WSDOT planting plan), these species currently appear to be completely absent along the edge of water on the left bank. There are currently no trees or large shrubs on the lower portion of the left bank overhanging the water and providing shade. A few big leaf maple, red alder, and Douglas-fir are present at the top of the bank, providing a very minor contribution to riparian function at this location. The majority of vegetation present in the T3 area shown on the WSDOT planting plan includes the shrubs previously installed as part of the 2003 WSDOT Mitigation Project (Nootka rose, oceanspray, red elderberry, salmonberry, and snowberry). These are all extensively overgrown with Himalayan blackberry.

Existing vegetation on the right bank (facing downstream) of the Sammamish River within the project right-of-way was apparently planted with a similar native tree and shrub community. However, that area is so overgrown with Himalayan blackberry at this time (photos) that little evidence of the native shrubs is visible from above. Some native plantings may still be present beneath the blackberry vines.

Clearing of existing vegetation within the project right-of-way will be limited to that necessary to install the drilled shafts and abutments for the proposed bridge, and will be limited to areas beneath the new bridge structure. Our proposed plan involves removing the Himalayan blackberry and any other invasive plants encountered during construction, and replanting the areas beneath the new bridge structure with a

native shrub community using the species currently thriving in shade under the existing bridge. We propose to hand clear the invasive plants while salvaging and/or reusing existing established natives. The areas beneath the new bridge structure would be replanted with native shrubs and ferns, including native shrubs salvaged from the site. Proposed plantings include: Nootka rose, snowberry, red-osier dogwood (*Cornus sericea*), black twinberry (*Lonicera involucrata*), salmonberry, and lady fern (*Athyrium filix-femina*). Jute mat would be installed as needed. Below is a summary list of the proposed actions.

1. Hand clear dense blackberry
2. Protect any native shrubs surviving from previous WSDOT restoration plantings and volunteers
3. Install/supplement bare areas with appropriate native shrubs
4. Install other erosion control materials such as jute matting as necessary



Photos of Blackberry: left bank upstream of bridge



Photos of Blackberry: right bank upstream of bridge

Please don't hesitate to call me if you have questions or comments in response to this summary.

Best Regards,

A handwritten signature in cursive script that reads "Linda M. Howard".

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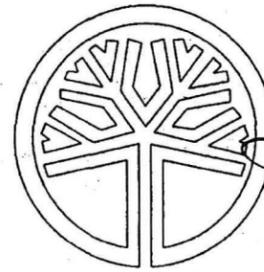
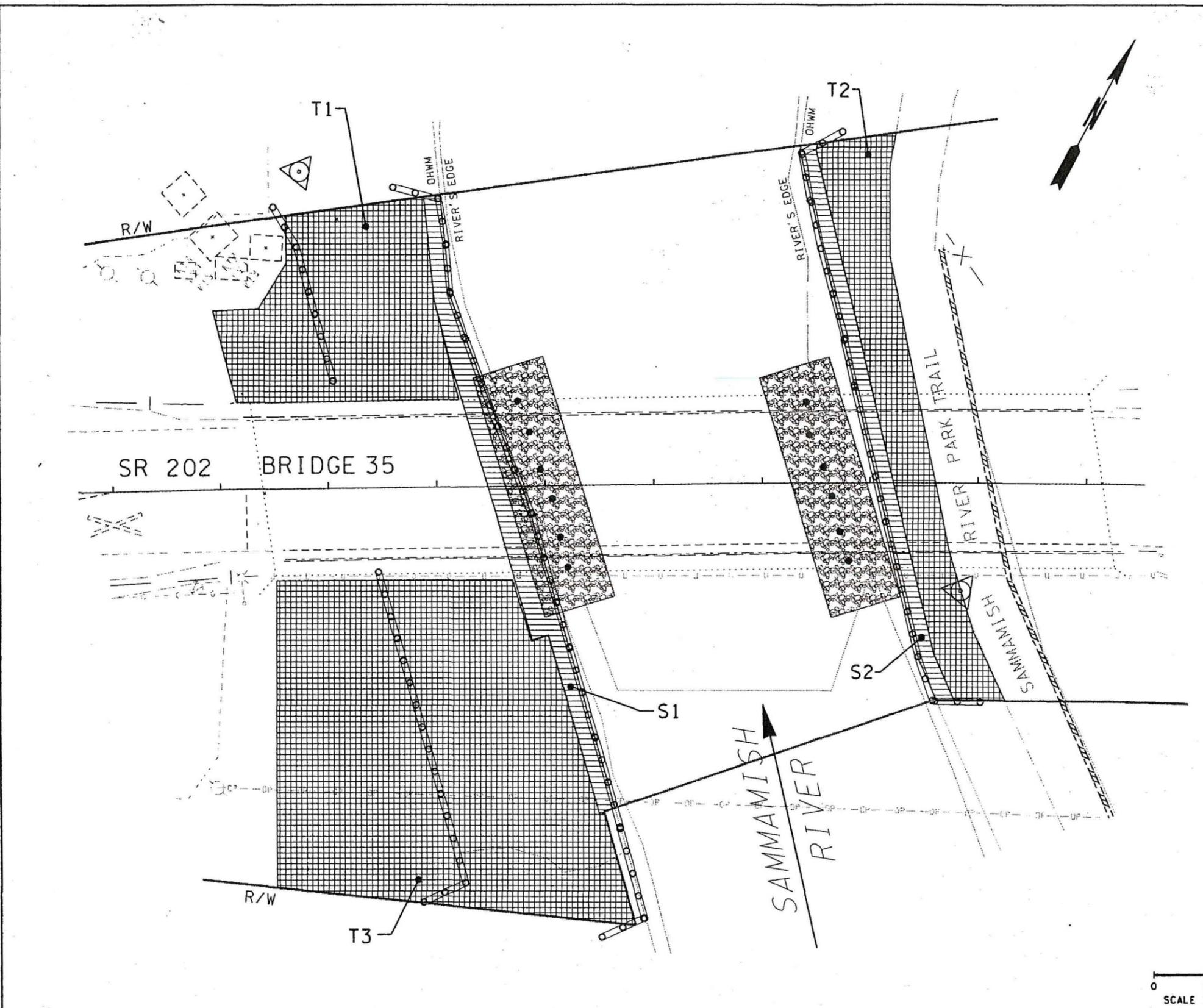
QUANTITY TABS - THIS SHEET ONLY						
SYMBOL	ITEM	QUANTITIES				
		S1	S2	T1	T2	T3
PLANT SPACING - 3 FEET O.C.						
	PACIFIC WILLOW (LIVE STAKE)	32	24			
	SITKA WILLOW (LIVE STAKE)	32	24			
PLANT SPACING - 3 FEET O.C.						
	DOUGLAS FIR *			5	3	27
	NOOTKA ROSE			38	36	100
	OCEANSPRAY			30	29	81
	RED ELDERBERRY			15	14	20
	SALMONBERRY			30	29	80
	SNOWBERRY			30	29	80
	COMPOST TYPE			4	4	10
	BARK OR WOOD CHIP MULCH			12	12	32

*NOTE: TREES SHALL BE PLANTED AT 9 FEET O.C. AND SET BACK A MINIMUM OF 20 FEET FROM BRIDGES.

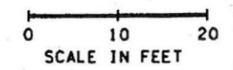
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LEGEND

	BRIDGE
	BRIDGE COLUMNS
	QUARRY SPALLS
	SERVICE CABINET
	COMPOST WATTLE



STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
Sally A. Anderson
SALLY A. ANDERSON
CERTIFICATE NO. 372
DATE: 4-7-03

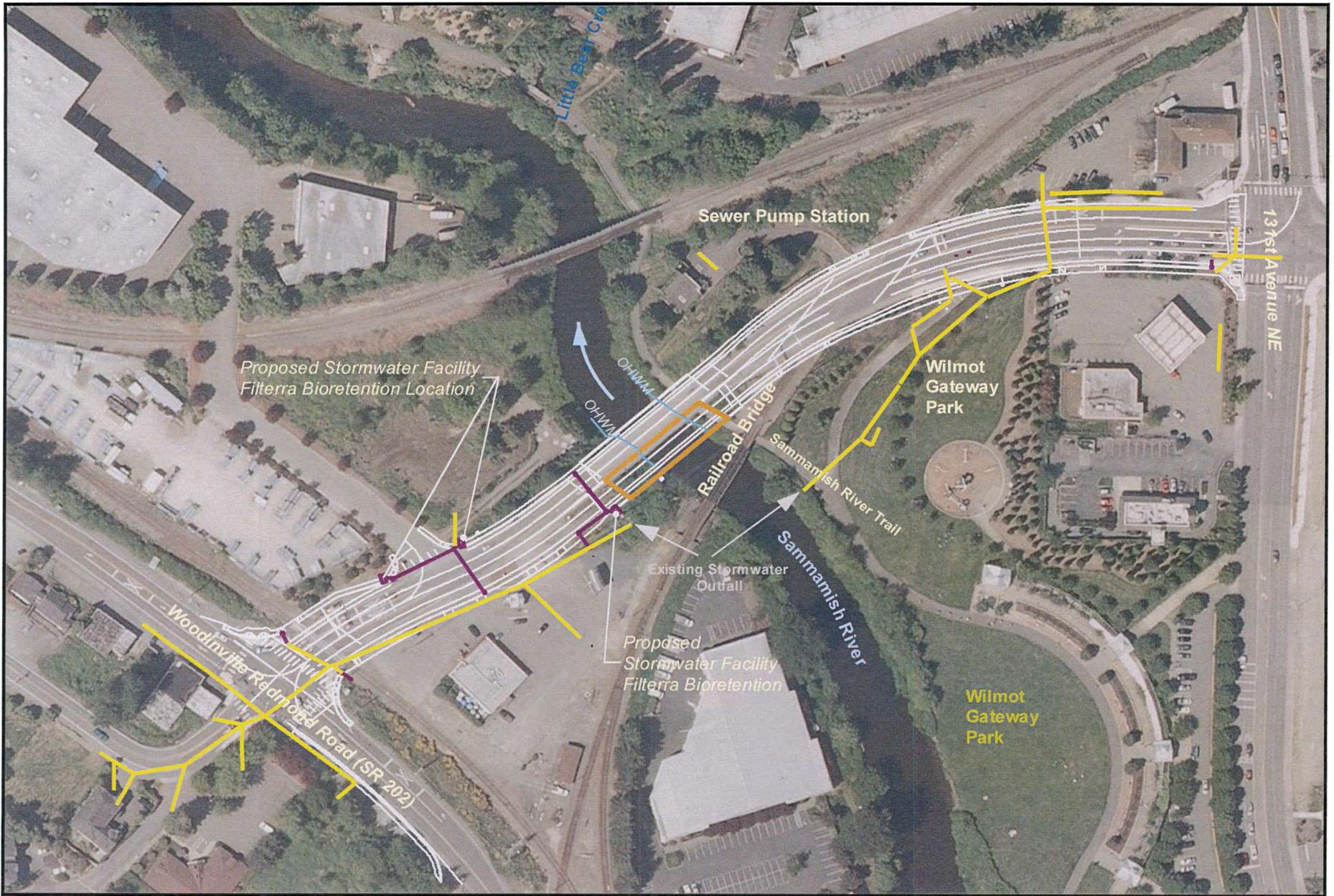


FILE NAME s:\412006\XLI499\QU-SP.dgn	TIME 03:18:45 PM	DATE 04/07/2003	DESIGNED BY I. ARLENE	ENTERED BY A. STYERS	CHECKED BY B. MacLAREN	PROJ. ENGR. J. LAVASSAR	REGIONAL ADM. L. ENG	REVISION	DATE	BY	REGION NO. 10	STATE WASH	FED. AID PROJ. NO. BH-0202(035)	LOCATION NO.	DATE	P.E. STAMP BOX	DATE	P.E. STAMP BOX	Washington State Department of Transportation	SAMMAMISH RIVER BRIDGES 20235 & 20238 SCOUR	PLANTING PLAN - BRIDGE 20235	PLOT 24 PL1 SHEET 11 OF 15 SHEETS
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ATTACHMENT 3

Project Alignment Maps



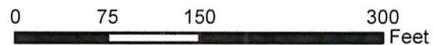


Legend

- Existing Stormwater Facility
- Proposed Stormwater Facility
- Proposed Bridge Deck

EXHIBIT 12
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1 inch = 150 feet



Project Alignment - Complete Alignment

Sammamish River Bridge and Road (SR 202) Project
 City of Woodinville, Washington

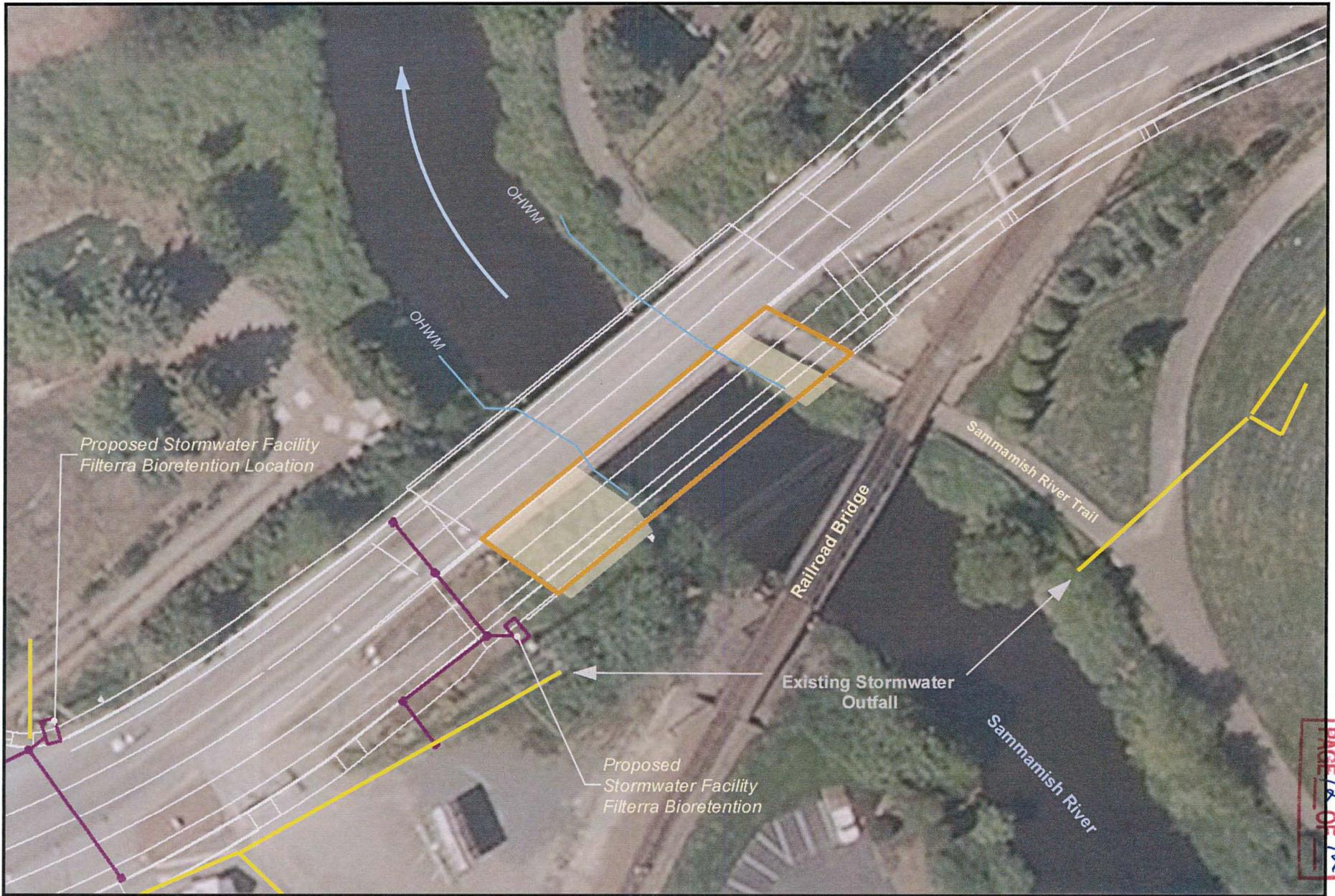


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Legend

- Existing Stormwater Facility
- Proposed Stormwater Facility
- Mitigation Planting Area
- Proposed Bridge Deck

1 inch = 50 feet



Project Alignment - Bridge Alignment

Sammamish River Bridge and Road (SR 202) Project
 City of Woodinville, Washington