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December 14, 2011

WSDOT Highways and Local Programs
310 Maple Park Avenue SE
PO Box 47390
Olympia, WA 98504-7390

Re: No Effect Letter, Sammamish River Bridge and Road (SR 202) Project

The City of Woodinville (the City) is proposing to widen the Sammamish River Bridge (Washington State Department of Transportation [WSDOT] Bridge #202/035) and Road (State Route [SR] 202) from the intersection of 131st Avenue NE (mile post [MP] 0.31) to Woodinville-Redmond Road NE (MP 0.55) in the City of Woodinville, in King County, Washington (Attachment 1: Figure 1 and Attachment 2: 30% Design Construction Drawings). The project includes the construction of a new bridge adjacent to the existing bridge crossing, and road widening and lane reconfiguration at both the east and west approaches to the bridge. The purpose of the Sammamish River Bridge and Road (SR 202) Project is to relieve congestion at the intersections on each end of the road, improve the level of safety for bicyclists and pedestrians, and increase traffic capacity. Widening the existing two-lane bridge crossing to accommodate a four-lane section would augment the proposed roadway channelization improvements at both ends of the project. A traffic study for the Sammamish Bridge and Road (SR 202) Project included modeling and analyses that predicted the roadway and bridge segment would reach capacity in 2017 (AECOM 2008).

We have prepared the assessment in this No Effect Letter in response to the current U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) Endangered Species Act (ESA) listings. We also evaluated effects on Essential Fish Habitat (EFH) as required by the Magnuson Stevens Fishery Conservation and Management Act (Magnuson Stevens Act). The federal nexus for this project is the partial funding by the Federal Highway Administration (FHWA) through a Federal Transportation Bill (Safe, Accountable, Flexible, Efficient, Transportation Equity Act - a Legacy for Users [SAFETEA-LU]), with WSDOT as the non-federal designee. WSDOT is responsible for the proper expenditure of FHWA funds on Local Agency projects. Thus, the project must comply with federal ESA requirements. The roadway and bridge construction has been designed to avoid wetlands and in-water work.

The USFWS and NMFS species lists were accessed from their websites throughout the planning and design of the proposed project, and were last accessed on September 6, 2011 (Attachment 3: Species Lists). These indicated the potential presence of species shown in Table 1.

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Table 1. USFWS and NMFS Listed Species and Critical Habitats Potentially Present in the Vicinity of the Sammamish River Bridge and Road (SR 202) Project.

Species	ESU/DPS	Status	Responsible Agency	Designated Critical Habitat (DCH)	DCH in Action Area
Bull Trout (*Salvelinus confluentus*)	Coastal Puget Sound	Threatened 11/1/1999 (64 FR 58910)	USFWS	Yes 10/18/10 (75 FR 63898)	No
Chinook Salmon (*Oncorhynchus tshawytscha*)	Puget Sound	Threatened 6/28/05 (70 FR 37160)	NMFS	Yes 9/2/05 (70 FR 52630)	No
Steelhead Trout (*O. mykiss*)	Puget Sound	Threatened 5/11/07 (72 FR 26722)	NMFS	Under development	NA

ESU = Evolutionarily Significant Unit; DPS = Distinct Population Segment; FR = Federal Register; NA = Not Applicable; DCH = Designated Critical Habitat.
Sources: NMFS 2011; USFWS 2011; WDFW 2011a, 2011b.

The proposed project is located in the southeast quarter of Section 9, Township 26 North, Range 5 East, Willamette Meridian, in the City of Woodinville, King County, Washington. The project is located in Water Resource Inventory Area (WRIA) 8, Cedar - Sammamish Basin. The project 6th Field Hydrologic Unit Code (HUC) is 171100120400 (Bear Creek - Sammamish River). Table 2 summarizes the major components of the project, which include improvements to the roadway segment from the intersection of the Woodinville-Redmond Road NE east to the proposed new bridge (West Roadway Segment), the new bridge (Sammamish River Bridge Segment), and from the new bridge to 131st Avenue NE (East Roadway Segment). Attachment 1: Figures 2, 3, 4, and 5 depict the proposed roadway alignment improvements. Attachment 1: Figure 6 includes photos of the Sammamish River Bridge.

Table 2. Project Segments.

Project Segments	Station	General Activities
West Roadway	10+00 to 14+25	Roadway widening, bike lanes, sidewalks.
Sammamish River Bridge	14+25 to 17+00	New bridge adjacent to existing bridge, bike lanes, sidewalks.
East Roadway	17+00 to 22+65	Roadway widening, bike lanes, sidewalks

Roadway

The roadway improvements include bike lanes and curb, gutter, and sidewalk, which would be installed on both sides of the road. At the Woodinville-Redmond Road NE intersection, an additional eastbound lane and a westbound right-turn pocket would be added to the existing layout (Attachment 1: Figure 3, West Roadway Segment). The existing span wire signal at the Woodinville-Redmond Road NE intersection would be upgraded with new signal poles. The existing railroad signals would be relocated, modified, and extended for the new roadway width.

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At the intersection of 131st Avenue NE, an additional westbound through lane would be added to the existing configuration (Attachment 1: Figure 5, East Roadway Segment).

Bridge

The existing bridge was built in 1963 with a 26-foot roadway (two 12-foot lanes with shoulders) and 3-foot sidewalks on either side (Attachment 1: Figure 6, Photos of the Sammamish River Bridge). Recently, WSDOT reduced the lane widths to provide for a 5-foot sidewalk with handicap ramps on the south side of the existing bridge. In addition, WSDOT added beam guardrails across both sides of the bridge, attached to the sidewalk with steel posts just inside the existing bridge rails and extending off both sides of the bridge to meet clear zone requirements. The bridge is approximately 158 feet long. The existing bridge deck results in approximately 2,400 square feet of over water coverage. The bridge deck is approximately 25 to 30 feet above the river. The bridge deck partially shades the Sammamish River during portions of the day.

The project proposes to widen the river crossing to four lanes by constructing a new two-lane bridge adjacent to and south of the existing bridge (Attachment 1: Figure 4, Sammamish River Bridge). To construct the necessary abutments to support the new bridge, six to eight shafts (three or four on each side of the river), 3.5 to 5 feet in diameter, would be drilled to a depth of approximately 50 to 100 feet. The shafts would be filled with concrete. The abutments and shafts would be constructed outside the Ordinary High Water Mark (OHWM) of the Sammamish River channel. The new bridge would be built adjacent to the existing bridge without substantially affecting traffic during the construction. Single lane or road closures may be required at night for certain project elements. For example, one lane may have to be closed while the girders are unloaded off a semi-truck. Two cranes would be required to place the precast concrete girders. These cranes would be located off of the existing road and behind the new abutments. Once the girders are in place, the new bridge deck would be installed. There would be no in-water work or work below the OHWM for the bridge and road construction. All bridge and road construction would occur on upland areas.

After the new bridge deck is installed, the existing curb, gutter, and sidewalk would be removed and graded to expand the roadway. A backhoe, grader, and dump trucks would be required for this work. Pavement, curb, and gutter and sidewalk would be installed using concrete trucks, paving machines, and dump trucks. Once the south side of SR 202 is constructed, traffic would be shifted to the new bridge to improve the north side roadway and to remove and replace the existing bridge barriers with new bridge rails and a wider sidewalk. In addition, 5-foot bike lanes and curb, gutter, and sidewalk would be installed on both sides of the road. The existing railroad signals would be relocated and modified for the new roadway width.

Erosion Control and Spill Prevention

During construction, best management practices (BMPs), including a temporary erosion and sediment control (TESC) plan and a spill prevention, control, and countermeasure (SPCC) plan, would be developed and implemented to contain sediments and pollutants that could potentially enter sensitive areas, such as wetlands or surface waters.

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Clearing and Grading

Clearing and grading would be done using construction equipment and would occur predominately in previously disturbed areas. The roadway approach on the west roadway segment would be built on existing gravel areas near McCorry's Restaurant. The roadway approach on the east roadway segment may disturb landscaped areas in Wilmot Gateway Park.

Stormwater Management

Topography of the roadway rises to a topographic break near the railroad crossing on the east roadway segment. Stormwater runoff east of this topographic break is captured in the roadway gutter drains located approximately 200 feet east of the Sammamish River. Stormwater is then piped to an outfall on the east bank of the Sammamish above the OHWM (Attachment 1: Figure 7). Stormwater runoff west of this railroad crossing is captured in gutter drains that are piped to an outfall at the top of the west bank of the Sammamish River. The outfall is surrounded by medium-sized 20-foot tall willows 30 feet upslope from the river (Attachment 1: Figure 7).

The construction of the bridge and roadway would increase the impervious surface from 2.07 to 2.44 acres. Based on the roadway design and existing drainage patterns, stormwater discharge within the project limits is concentrated into one Threshold Discharge Area (TDA) with the two outfalls that discharge eventually to the Sammamish River. The new bridge and roadway design incorporates drains, gutters, and curbs. Runoff from the bridge would drain to the west as sheetflow to the road margin, and be collected in one of two proposed stormwater treatment bioretention catch basins which would reduce the pollutant loading and concentrations discharging to the Sammamish River to below the pre-project condition and improve baseline water quality (Attachment 4: Dilution Modeling).

Utility Relocation

Aboveground utilities (power poles, aboveground power, communications vault) would likely be relocated. None of these utilities are located below the OHWM. Underground utilities will be identified and evaluated at later stages of project design.

Access and Staging

A staging area will need to be established in the project vicinity, with the specific location determined later in the design process. The staging area likely will be located in a previously disturbed area with a gravel or paved surface. Prior to staging, high visibility fencing will be installed around all sensitive areas. Access will occur on existing roads and disturbed rights-of-way where possible. Project equipment storage, if necessary, will occur outside of environmentally sensitive areas.

Excavation and Fill Placement

Contractors would place approximately 2,000 cubic yards of fill during the widening of SR 202. Any excavated material from the project site suitable for use would be reused as fill onsite and any remaining material would be disposed of by the contractor at a permitted disposal site.

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Buffer Impacts

Approximately 13,000 square feet of wetland/stream buffer vegetation would be permanently displaced by the project. The majority of this buffer is previously disturbed and is mostly gravel. However, the Woodinville Municipal Code (WMC) requires replacement or enhancement when a stream or buffer is altered. Wetland/stream buffer vegetation permanently displaced by the project will be compensated for by replacing or enhancing riparian buffer habitat at a 1:1 ratio at a nearby off-site mitigation site on Little Bear Creek.

WDFW Requirements

WDFW requirements/provisions to be incorporated into the Hydraulic Project Approval (HPA) for this project include the removal of invasive vegetation species and planting the banks with native species.

Description of Project Sequencing and Timeline

Construction is expected to start in March 2013 and last for approximately 9 months. Initial work will include all clearing, excavation, grading, and erosion control necessary to construct the new bridge. The new bridge will be built adjacent to the existing bridge without substantially affecting traffic, although occasional single lane or road closures may be required at night for certain project elements. Once the south side of SR 202 is constructed, traffic will be shifted to the new bridge to allow the north side to be widened and to remove and replace the existing bridge barriers with new bridge rails and widened sidewalk. The final stage will include landscaping, final clean-up, laying asphalt, and striping. Signal replacements for the Woodinville-Redmond Road NE intersection and the two railroad crossings will happen concurrently with the other improvements.

Action Area

The Action Area for this analysis includes all areas affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 Code of Federal Regulations [CFR] § 402.02). Delineation and evaluation of the Action Area included the farthest reaching physical, chemical, and biotic effects of the action on the environment. Sources of disturbance that could potentially influence listed or proposed species or suitable habitat outside of the project area include terrestrial noise.

Construction equipment operation including grader, auger drill rig, and excavator is modeled to attenuate to below ambient noise within 1,600 feet of the project footprint (WSDOT 2011). Although the farthest extent of construction noise is modeled at 1,600 feet, this boundary was truncated to the west at a topography break near a forested ridgeline (1,000 feet) and to the north by SR 522 (1,000 feet), which generates constant traffic noise. Therefore, the Action Area boundary extends from 1,000 to 1,600 feet from the construction activity (Attachment 1: Figure 1, Vicinity Map).

AECOM biologists visited the Action Area on September 16, 2010, November 23, 2010, April 28, 2011, September 19, 2011, and October 25, 2011 to determine the status and availability of suitable habitat for listed species, and to evaluate the potential impacts of the project. Information on listed species and the environmental setting of the Action Area is provided in Attachment 5.

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The project will have **No Effect** on the Coastal-Puget Sound DPS of bull trout, or Puget Sound Chinook Salmon or Steelhead.

A No Effect determination is warranted based on the following:

- Bull trout occurrence in the Action Area is expected to be extremely unlikely. Spawners have not been confirmed within the Sammamish River-Issaquah Creek subpopulation (WDFW 1998), and only two bull trout have been observed in the system within the last 10 years (King County 2002).
- There are few documented occurrences of Chinook or steelhead in the Sammamish River (PSTRT 2005, Shared Strategy for Puget Sound 2007).
- The proposed project will not directly modify migratory, spawning, or rearing habitat within the Sammamish River.
- No in-water work is planned for construction of the bridge and roadway.
- By treating all new pollution-generating impervious surface, the project will reduce the pollutant loading and concentrations discharging to the Sammamish River compared to the pre-project condition, improving the baseline water quality.
- The project will create additional shading over the Sammamish River. However, the bridge height, limited ambush cover, and preference for listed juvenile salmonid species to quickly move downstream and into Lake Washington to avoid higher temperatures in the Sammamish River, combine to aid predator avoidance. As a result, the new bridge deck would not likely increase predation on juvenile salmonids above baseline conditions.

Table 3 summarizes the potential listed species, their nearest known occurrence, the effect determination, and the rational for the determination.

Table 3. Effect Determinations and Rationale for the Sammamish River Bridge and Road (SR 202) Project.

Listed Species	Jurisdictional Agency	Nearest Suitable Habitat	Effect Determination	Effect Determination Rationale
Bull Trout (*Salvelinus confluentus*)	USFWS	Sammamish River	No Effect	No in-water work, no impact on wetlands, and the project will not degrade water quality.
Chinook Salmon (*Oncorhynchus tshawytscha*)	NMFS	Sammamish River	No Effect	No in-water work, no impacts on wetlands, and the project will not degrade water quality.
Steelhead Trout (*O. mykiss*)	NMFS	Sammamish River	No Effect	No in-water work, no impact on wetlands, and the project will not degrade water quality.

The Magnuson Stevens Act requires federal agencies to consult with NMFS on activities that may adversely affect EFH. The Pacific Fishery Management Council (PFMC) has designated EFH for the Pacific salmon fishery, federally managed ground fishes, and coastal pelagic fisheries. The Action Area includes the Pacific salmon fishery, which contains Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and pink salmon (*O. gorbuscha*) in its designation. Of these, Chinook and coho are documented as present in the Action Area in the Sammamish River (WDFW 2011b). The project will **Not Adversely Affect** Chinook or coho salmon EFH based on the following: the project will not modify EFH, the project does not

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include in-water work, the project will not impact wetlands or site hydrology, and the project will not degrade water quality.

This assessment satisfies City of Woodinville and WSDOT's responsibilities under Section 7(c) of the Endangered Species Act and the Magnuson-Stevens Act at this time. We are sending you this copy of our assessment for your files. We will continue to remain aware of any change in status of these species and will be prepared to reevaluate potential project impacts if necessary.

Please contact me at 206-267-7741 or via email at glen.mejia@aecom.com if you have questions or need additional information.

Sincerely,

Glen Mejia
Biologist
AECOM
710 Second Avenue, Suite 1000
Seattle, WA 98104

ATTACHMENTS

Attachment 1: Figures
- Figure 1. Vicinity Map
- Figure 2. Project Area Alignment Segments
- Figure 3. West Roadway Segment
- Figure 4. Sammamish River Bridge
- Figure 5. East Roadway Segment
- Figure 6. Photos of the Sammamish River Bridge (SR 202)
- Figure 7. Outfalls to the Sammamish River

Attachment 2: 30% Design Construction Drawings
Attachment 3: Species Lists
Attachment 4: Highway Runoff Dilution Summary Results
Attachment 5: Listed Species and Environmental Setting

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References

AECOM. 2008. SR 202 Traffic Analysis Report. Sammamish Bridge and Road (SR 202) Project. NE 177th Place to 127th Place NE. Prepared for the City of Woodinville. By DMJM Harris | AECOM and Transportation Engineering Northwest, LLC.

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PSTRT (Puget Sound Technical Recovery Team). 2005. Independent Populations of Chinook Salmon in Puget Sound. Draft report available from the Northwest Fisheries Science Center; Seattle, Washington.

Shared Strategy for Puget Sound. 2007. Puget Sound Salmon Recovery Plan. Plan adopted by National Marine Fisheries January 19, 2007. Seattle, WA.

USFWS (U.S. Fish and Wildlife Service). 2011. Listed and proposed endangered and threatened species and critical habitat; candidate species; and species of concern in western Washington as prepared by the U.S. Fish and Wildlife Service, Western Washington Fish and Wildlife Office (Revised August 1, 2011). For King County. Available online at URL http://www.fws.gov/wafwo/speciesmap/KingCounty080111.pdf.

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WDFW. 2011b. SalmonScape Interactive Mapping. Map and Data Products Query = Stream Attributes, Fish Distribution, Fish Barriers, Hydro (24K). Generated online at URL = http://wdfw.wa.gov/mapping/salmonscape/index.html.

WSDOT (Washington State Department of Transportation). 2011. Advanced Training Manual – Biological Assessment Preparation for Transportation Projects (revised 2/2011) WSDOT, Olympia, WA.

Attachment 1: Figures

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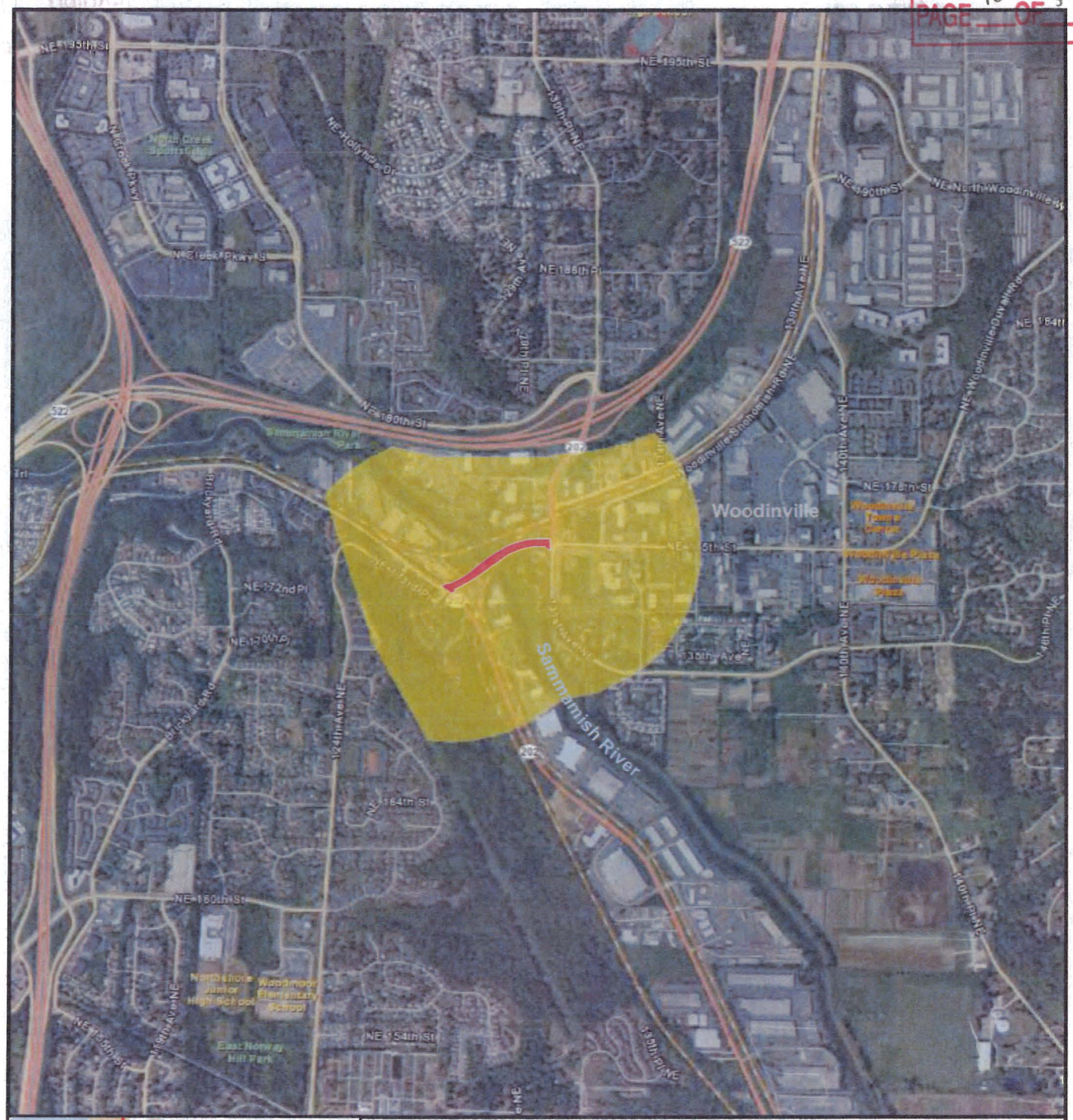
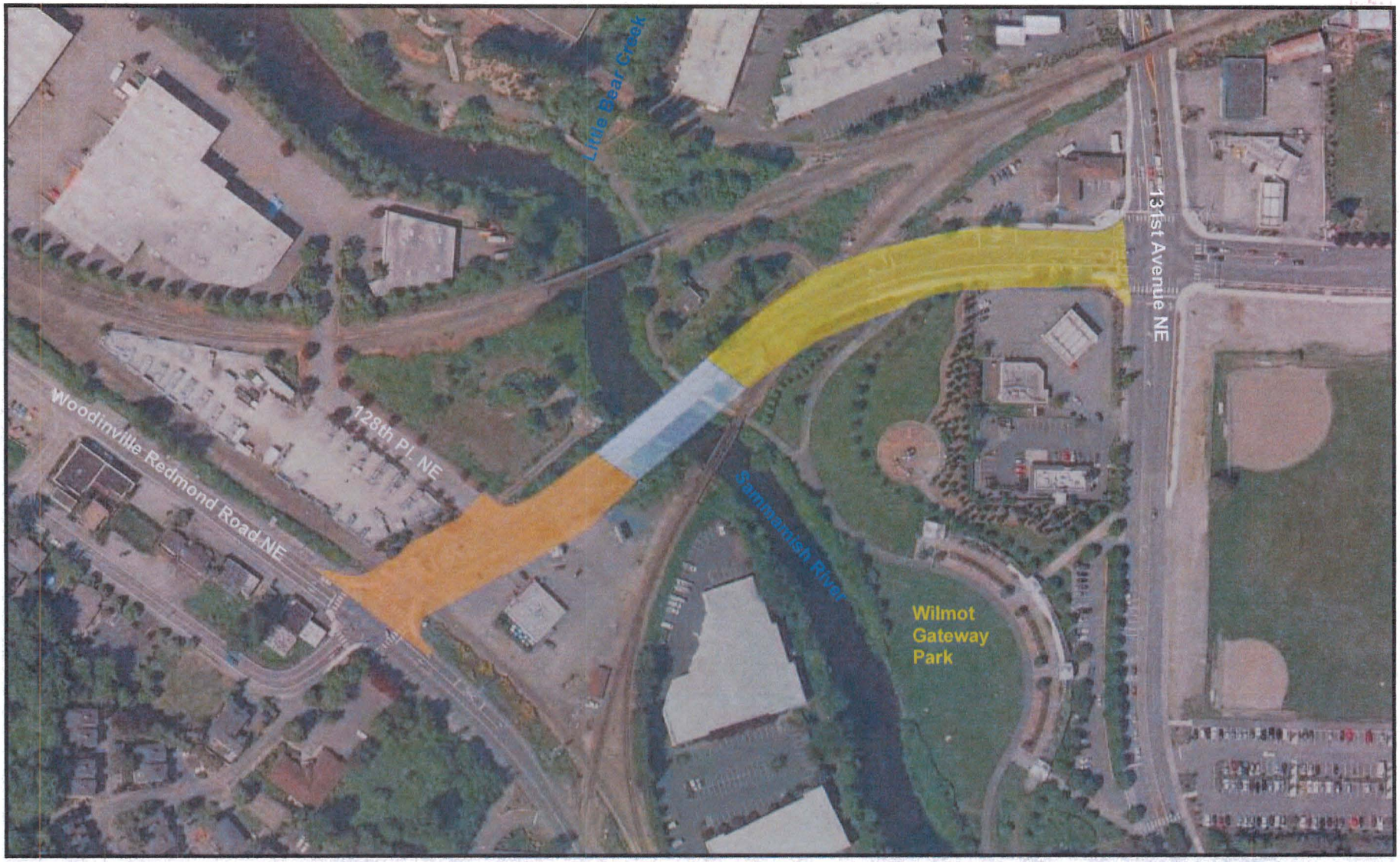


Figure 1. Vicinity Map
Sammamish River Bridge and Road (SR 202) Project
City of Woodinville, Washington



Project Segments

- East Roadway Segment
- Sammamish River Bridge
- West Roadway Segment

0 50 100 200 Feet

1 inch = 200 feet

N

Figure 2. Project Area Alignment Segments
Sammamish River Bridge and Road (SR 202) Project
City of Woodinville, Washington

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N

0 25 50 100 Feet

1 inch = 50 feet

Figure 3. West Roadway Segment
Sammamish River Bridge and Road (SR 202) Project
City of Woodinville, Washington

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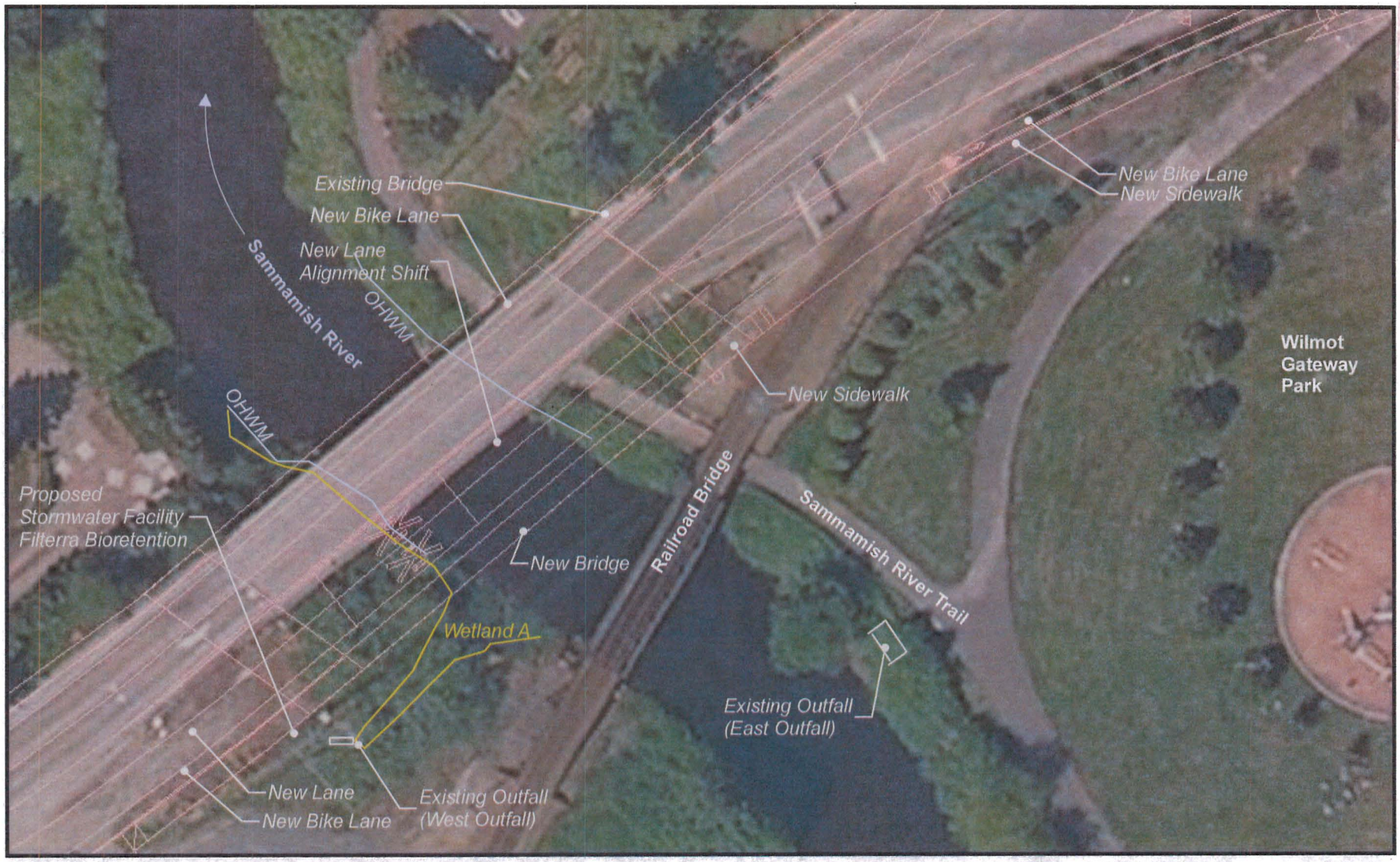

0 25 50 100 Feet

1 inch = 50 feet

N

Figure 4. Sammamish River Bridge
Sammamish River Bridge and Road (SR 202) Project
City of Woodinville, Washington

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EXHIBIT
PAGE 10

N

0 25 50 100 Feet

1 inch = 50 feet

Figure 5. East Roadway Segment
Sammamish River Bridge and Road (SR 202) Project
City of Woodinville, Washington

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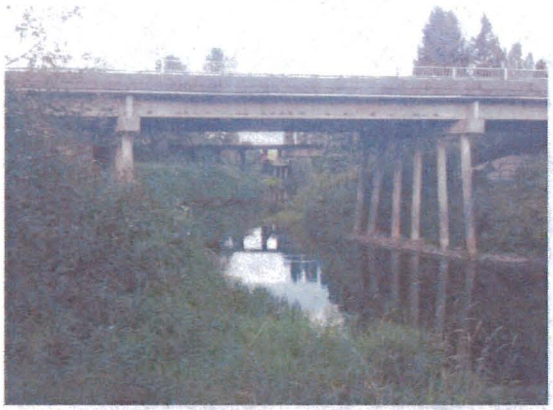
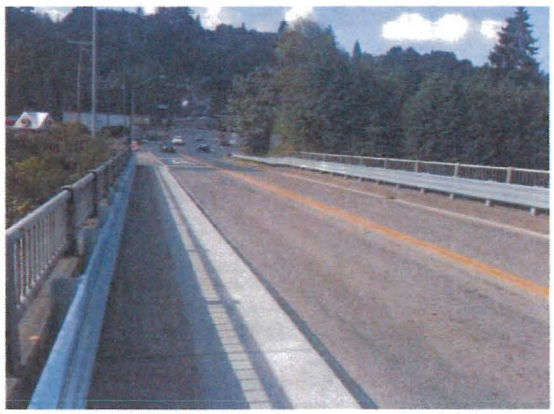


View north (downstream) of Sammamish River Bridge (SR 202), in foreground showing intermediate piers, railroad bridge in background, and blackberry along banks.

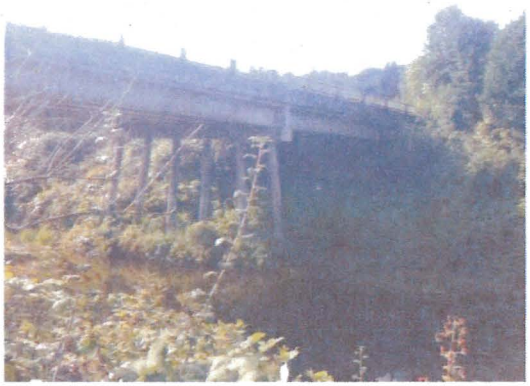
View west from the Sammamish River Trail under the Sammamish River Bridge (SR 202).

View east from top of bridge deck. Proposed widening to the right (south).



View west from top of bridge deck. Proposed widening to the left (south).

View northeast of bridge from west bank.



View southwest of bridge from trail on east bank.

Figure 6. Photos of the Sammamish River Bridge (SR 202).

East outfall with surrounding plantings and installed back stabilization.

West outfall at the top of the bank in the middle of willows.

Figure 7. Outfalls to the Sammamish River.

Attachment 2: 30% Design Construction Drawings

Note: At the request of King County, the design of the Sammamish River Trail in the project area is being modified to increase vertical clearance and improve sight distance; trail modifications are not reflected in the 30% Design Construction Drawings. Any trail widening will occur on the upslope/northeast side of the trail (not the waterward side).

30% DESIGN

CITY OF WOODINVILLE

SAMMAMISH BRIDGE AND ROAD (SR202) PROJECT

SHEET INDEX		
SHEET NO.	DRAWING NO.	SHEET TITLE & DESCRIPTION
1	CV1	COVER SHEET
2	G01	LEGEND
3-4	RS1-RS2	ROADWAY TYPICAL SECTIONS
5-7	PP1-PP3	ROADWAY PLAN & PROFILE
8-9	IP1-IP2	INTERSECTION PLAN
10-12	DU1-DU3	DRAINAGE AND UTILITY PLAN & PROFILE
13-15	CH1-CH3	ROADWAY CHANNELIZATION PLAN
16	BR1	BRIDGE LAYOUT PLAN
17	BR2	BRIDGE FOUNDATION PLAN

CITY OF WOODINVILLE

MAYOR
CHUCK PRICE

DEPUTY MAYOR
BERNIE TALMAS

COUNCIL MEMBERS
JEFF GLICKMAN
PAULETTE BAUMAN
SCOTT HAGEMAN
SUSAN BOUNDY-SANDERS
LIZ ASPEN

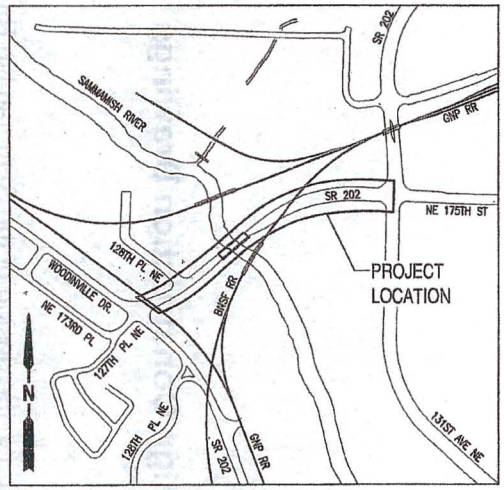
CITY MANAGER
RICHARD LEAHY

PUBLIC WORKS DIRECTOR
TOM HANSEN, P.E.

ASSISTANT PUBLIC WORKS DIRECTOR
RACHEL SPEER, P.E.

PROJECT MANAGER
RACHEL SPEER, P.E.

GENERAL SITE DESCRIPTION:
S.E. 1/4 OF SECTION 9, T. 26 N., R 5 E, W. M.



VICINITY MAP
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BRYAN J. MUSCHKA
STATE OF WASHINGTON
36659
REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK

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

PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

SHEET TITLE:
COVER SHEET

DATE: XX-XX-XXXX	CHECKED BY: XX
DESIGNED BY: XX	PROJECT NO.: XX
DRAWN BY: XX	SCALE: NONE
SHEET XX OF XX	
DRAWING NO.: CV1	

cl. 5, 10 - 8:22 AM Dormoverr R:\60020199 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\CV1.dwg

30% DESIGN

CITY OF WOODINVILLE

SYMBOL AND LINETYPE LEGEND

UTILITY SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		CAP/PLUG
G/P	G/P	GUARD POST
		THRUST BLOCK
	(GREEN)	WATER METER
		FIRE HYDRANT
		WATER VALVE
	(GREEN)	GAS METER
	(GREEN)	GAS VALVE
		PAD MOUNTED TRANSFORMER
		TRANSMISSION TOWER
		UTILITY POLE
		UTILITY POLE ANCHOR
		TELEPHONE RISER
JB	JB	TELEPHONE JUNCTION BOX
		UTILITY VAULT
		SAN. SEWER CLEAN OUT
		SAN. SEWER MANHOLE
		STORM DRAIN CB TYPE 1
		STORM DRAIN CB TYPE 2
		STORM DRAIN (SIZED) CB TYPE 2
		GUY POLE

SURFACE FEATURE/LANDSCAPE

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
(EXTEND TO CATCH)	(WHITE)	EMBANKMENT
		MAIL BOX
		SIGN
(DRAW TO SCALE)		RIP RAP
		BOULDER
		SHRUB
		TREE (Conifer)
		TREE (Deciduous)
		STUMP
		YARD LIGHT
	(GREEN)	WELL (Potable Water)
(Draw to Scale)		PILE
		ROCKERY
		RETAINING WALL

SIGNALIZATION SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		DIPOLE DETECTOR (TYPE 2 LOOP)
		QUADRAPOLE DETECTOR (TYPE 1 LOOP)
		BICYCLE DETECTOR
		OPTICOM SENSOR
		JUNCTION BOXES (TYPE I, II, III)
		SIGNAL CONTROLLER
		ELECTRICAL SERVICE CABINET
		PEDESTRIAN POLE AND FOUNDATION
(DRAW MAST ARMS TO SCALE)		TRAFFIC SIGNAL POLE
		TRAFFIC SIGNAL POLE W/ TERMINAL CABINET
(SHOW ON MAST ARM)		TRAFFIC SIGNAL POLE LUMINAIRE
		STREET LIGHT ASSEMBLY
		PEDESTRIAN SIGNAL HEAD
		VEHICLE SIGNAL HEAD
		VEHICLE SIGNAL HEAD W/ARROW INDICATOR
(MAST ARM)	(MAST ARM)	STREET NAME SIGN
(MAST ARM)	(MAST ARM)	LANE USE CONTROL SIGN
(DRAW ARM TO SCALE)		R/R CROSSING GATE
		R/R CROSSING SIGNAL
1	1	WIRE NOTE
1	1	POLE NOTE
		VIDEO CAMERA
(COLOR B)	(COLOR B)	VIDEO DETECTION ZONE
BPS	BPS	BACKUP POWER SUPPLY
		DECORATIVE STREET LIGHT POLE
		METAL LUMINAIRE POLE

GEO-TECHNICAL SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		SOIL BORING
		TEST WELL
		TEST PIT

CHANNELIZATION SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		BIKE PATH
		HANDICAP SYMBOL
RR	RR	RAILROAD CROSSING
		LANE CONTROL ARROWS: STRAIGHT ARROW
		LT.RT.STR.ARROW
		LEFT-RIGHT ARROW
		2-WAY LEFT TURN
		LEFT TURN ARROW
		RIGHT TURN ARROW
		LEFT-STRAIGHT ARROW
		RIGHT-STRAIGHT ARROW
		RAISED MARKERS: LANE MARKERS TYPE I
		LANE MARKERS TYPE II
		RUMBLE BARS
X		CHANNELIZATION PLAN LANE CALLOUT
X_X		CHANNELIZATION PLAN LANE CALLOUT

EROSION CONTROL SYMBOLS

SYMBOL	LABEL	HATCH PATTERN* (OR BLOCK NAME)	DESCRIPTION
	CE	GRAVEL, 0', 0.3	INSTALL "STABILIZED" CONSTRUCTION ENTRANCE
	IP		INSTALL FILTER FABRIC INLET PROTECTION
	SB	ANSI 31, 45', 0.5	INSTALL SAND BAGS (NOT IN STREAM/WETLAND)
	BCS	DOTS, 0', 0.35	BASE COURSE SUBGRADE (CSBC)
	GFB	ANSI 31, 90', 0.5	GRAVEL FILTER BERM
	CFB	EARTH, 0', 0.3	COMPOST FILTER BERM
	TAD		TEMPORARY ASPHALT DIKE
	SP		SEDIMENTATION POND
		EOWT	EXIST. WATER (IN/OUT)
		MARSH, 0', 0.3	EXIST. WETLAND

SURVEY SYMBOLS

FIELD/MONUMENTATION

SYMBOL FOUND (SET)	SYMBOL CALC'D (HOLD)	SYMBOL PROP.	DESCRIPTION
		N/A	PK/HUB & TACK
		N/A	BENCH MARK
		N/A	IRON PIPE/OR OTHER MAT'L (SPECIFY)
		N/A	REBAR
		N/A	SURFACE BRASS CAP
			CONC. MONUMENT
			MONUMENT IN CASE
		N/A	TRAVERSE POINT
N/A	N/A		SPOT ELEVATION
N/A	N/A		SUPER-NET GPS POINT
N/A	N/A		SNOCO PRIMARY GPS POINT

SECTION/OWNERSHIP:

SYMBOL FOUND (SET)	SYMBOL CALC'D (HOLD)	SYMBOL PROP.	DESCRIPTION
N/A	16	N/A	SECTION CENTER
		N/A	SECTION CORNER
		N/A	QUARTER CORNER
		N/A	SIXTEENTH CORNER
		N/A	CLOSING CORNER
MC		MC	MEANDER CORNER
WC		WC	WITNESS CORNER
N/A	-XXX	N/A	TAX LOT / PARCEL NUMBER
N/A		N/A	OWNERSHIP TIE

BRIDGE SYMBOLS

SECTION, VIEW OR DETAIL (X/XX)

SECTION, VIEW OR DETAIL TITLE TEXT

SECTION, VIEW OR DETAIL TITLE INDICATOR

XXX	MARK NUMBER BUBBLE REINFORCING STEEL INDICATOR
E	EPOXY COATED REINFORCEMENT INDICATOR
G	GALVANIZED COATED INDICATOR
	CUT SECTION OR VIEW DIRECTION INDICATOR
X/XX	SECTION, VIEW OR DETAIL INDICATOR
X/XX	SECTION, VIEW OR DETAIL INDICATOR
X/XX	SECTION, VIEW OR DETAIL INDICATOR
X/XX	SECTION, VIEW OR DETAIL INDICATOR

CONSTRUCTION NOTES

1. TEXT 11 (ROMANS)
2. TEXT 11
3. TEXT 11

LINETYPE

LINETYPE	DESCRIPTION
	SURFACE FEATURES:
	EDGE OF PAVEMENT (EXISTING)
	BRIDGE
	BRIDGE (PROP.)
	BUILDING LINE (EXISTING)
	BUILDING LINE (PROPOSED)
	BUILDING OVERHANG
	CREEK EDGE
	CURB/CONCRETE (EXIST.)
	CURB/CONC./PAVEMENT (PROP)
	DITCH CENTERLINE (EXIST.)
	DITCH CENTERLINE (PROP.)
	FENCE (EXISTING)
	FENCE (PROPOSED)
	GRAVEL (EXIST.)
	GRAVEL (PROP)
	GUARDRAIL (EXISTING)
	GUARDRAIL (PROPOSED)
	GUTTER LINE
	JERSEY BARRIER (EXISTING)
	JERSEY BARRIER (PROPOSED)
	LAKE/POND WATER EDGE
	PLANTER
	RAILROAD
	REBAR
	RETAINING WALL (EXISTING)
	RETAINING WALL (PROPOSED)
	RIVERBANK/SHORELINE
	ROCKERY (EXISTING)
	ROCKERY (PROPOSED)
	VEGETATION LINE
	WETLAND/SIGNAP PERIMETER
	EROSION CONTROL (PROPOSED):
OB	ORANGE BARRIER FENCE
SF	SILT FENCE
HVF	HIGH VISIBILITY FENCE
	DESIGN CENTERLINES (PROPOSED):
	CONST. CENTERLINE ON CHAN. PLAN
	CENTERLINE (PROPOSED)
	SURVEY LINES:
	CONTOUR (DEPRESSION)
	CONTOUR (MINOR-OBSCURED)
	CONTOUR (MAJOR-OBSCURED)
	CONTOUR (MINOR-EXISTING)
	CONTOUR (MAJOR-EXISTING)
	CONTOUR (MINOR-PROPOSED)
	CONTOUR (MAJOR-PROPOSED)
	DONATION LAND CLAIM (EXIST.)
	EASEMENT (PROPOSED)
	EASEMENT (EXISTING)
	MEANDER LINE
	PROPERTY LINE
	PROPERTY LINE (EX. HISTORICAL)
	OWNERSHIP LINE
	RESERVATION/PARK/FOREST (EX)

LINETYPE (cont.)	DESCRIPTION
	SURVEY LINES cont:
(RIGHT OF WAY & CONSTRUCTION PLANS)	RIGHT-OF-WAY ℄ (EXISTING)
(RIGHT OF WAY)	RIGHT-OF-WAY (EXISTING)
(RIGHT OF WAY)	RIGHT-OF-WAY (EXISTING USED)
(RIGHT OF WAY PLANS)	RIGHT-OF-WAY (PROPOSED)
(CONSTRUCTION PLANS)	RIGHT-OF-WAY (NEWLY ACQUIRED)
(RIGHT OF WAY PLANS)	RIGHT-OF-WAY (EX. HISTORICAL)
	RIGHT-OF-WAY (LIMITED ACCESS)
	RIGHT-OF-WAY (LIMITED ACCESS)
	SECTION LINE
	QUARTER SECTION LINE
	SIXTEENTH SECTION LINE
	STATE/COUNTY/CORPORATE LIMIT
	RANGE/TOWNSHIP LINE
	EXISTING CROWN OF ROAD
	TOP OF BANK/SLOPE
	TOE OF BANK/SLOPE
OHW OHW	ORDINARY HIGH WATER MARK
THW THW	THALWEG LINE
	DAYLIGHT
Cut Cut	CUT LINE
Fill Fill	FILL LINE
UT UT	UTILITIES (PROPOSED): MAIN LINE (LIST TYPE, SIZE, ETC.)
	STORM DRAIN (.05" PLINE)
	CULVERT (.05" PLINE)
UT UT	SERVICE (LIST TYPE, SIZE, ETC.)
SC SC	TRAFFIC SIGNAL CONDUIT LINE
S S	SANITARY SEWER
FM FM	SANITARY SEWER (FORCE MAIN)
	WATER
	UTILITIES (EXISTING):
TV	CABLE TELEVISION (AERIAL)
TV	CABLE TELEVISION (BURIED)
FO	FIBER OPTIC LINE (AERIAL)
FO	FIBER OPTIC LINE (BURIED)
DF DF	DRAIN FIELD
G G	GAS
O O	OIL
P	POWER (AERIAL)
P	POWER (BURIED)
S S	SANITARY SEWER
FM FM	SANITARY SEWER (FORCE MAIN)
STE STE	STEAM
SD	STORM DRAINAGE (STR TO STR)
T	TELEPHONE (AERIAL)
T	TELEPHONE (BURIED)
SC SC	TRAFFIC SIGNAL CONDUIT LINE
UT es	UTILITY (AERIAL)
UT es	UTILITY (BURIED)
	WATER
	CULVERT (WIDTH TO SCALE)

** - INDICATE UTILITY TYPE USING APPROPRIATE TEXT LAYER (FO, TL, TV, FO, ETC.)

SURFACE WATER SYMBOLS

SYMBOL	DESCRIPTION
	TEMPORARY DIVERSION PUMP
	TEMPORARY SEDIMENT TRAP
	TEMPORARY COFFER DAM

REFERENCE SYMBOLS

20 0 20 40
SCALE IN FEET

DATUM

NAVD 88

X/Y DRAINAGE STRUCTURE NOTE
X = STRUCTURE NO.
Y = ROADWAY DWG. NO.

GENERAL NOTES

NOTES:
1. SEE PEN/COLOR/TEXT STANDARD FOR COLOR LINEWEIGHT DEFINITIONS.
2. LINETYPES ARE LOADED FROM THE ID-2 LEGEND.DWG. LIN LINETYPE FILE.
3. DITCH LINETYPE FLOW DIRECTION ARROW MUST BE INSERTED AT ENDS OF DASHED LINES AS SHOWN (BLOCK NAME IS "FL").
4. ROMANS SHOULD BE RESIDENT IN THE DRAWING BEFORE LOADING LINETYPES THAT CONTAINS A "SYMBOL" OR LETTER.
5. STRUCTURAL BRIDGE PLANS SHALL USE "BRIDGETECH."
6. TEXT WIDTH FACTOR SHALL BE 0.9" MIN. TO 1.0" MAX. FOR ALL PS&E PLAN SETS.

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FAX: (425) 454-0220

BRIAN J. HUSCHKA, STATE OF WASHINGTON, 28869, REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK

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PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

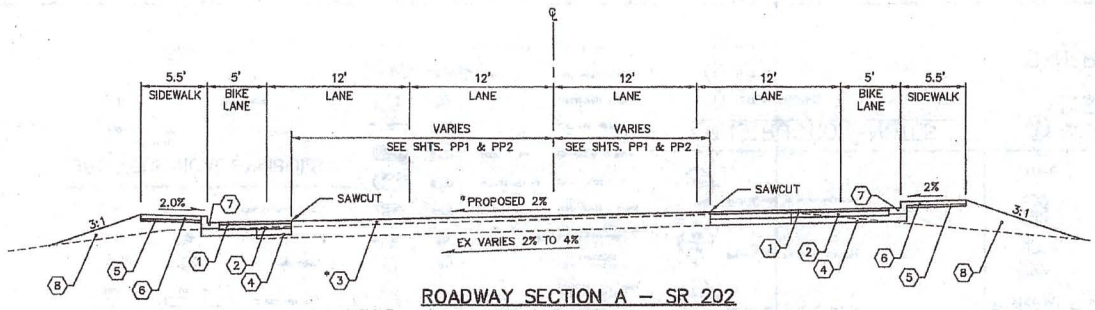
SHEET TITLE:
LEGEND

DATE: XX-XX-XXXX	CHECKED BY: XX
DESIGNED BY: XX	PROJECT NO.: XX
DRAWN BY: XX	SCALE: NONE
SHEET XX OF XX	
DRAWING NO.: G01	

EXHIBIT 11
PAGE 19 OF 51

cl. 5, 10 - 8:28 AM Darmanoy R:\60220199 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\G01.dwg

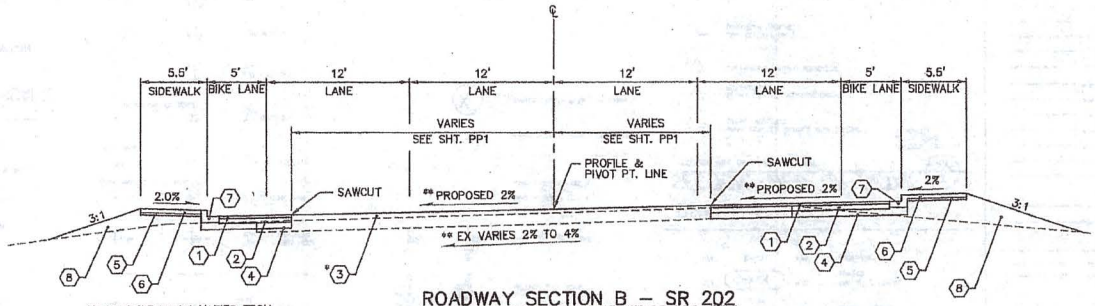
30% DESIGN



*GRIND & OVERLAY 0.2' AND MATCH EXISTING SLOPE:
STA 10+26.00 TO 10+78.07
STA 10+87.26 TO 11+13.85

ROADWAY SECTION A – SR 202

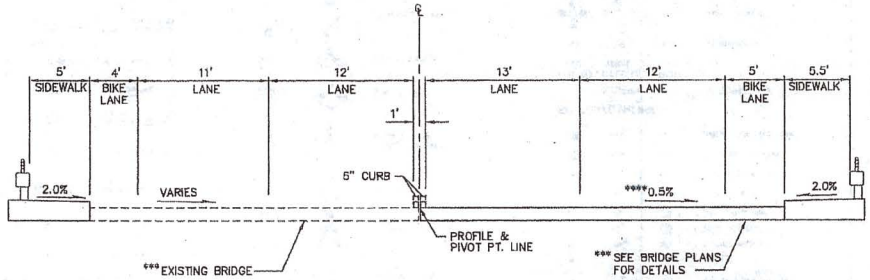
STA 10+28.02 TO STA 12+00



**SUPERELEVATION VARIES FROM
STA 13+69.33 TO 14+31.83
FROM 2% TO 0.1%, SEE SHTS. PP1 & PP2 FOR SUPERELEVATION DIAGRAM

ROADWAY SECTION B – SR 202

STA 12+00 TO STA 14+31.83



***APPROACH SLAB
STA 14+31.83 TO 14+56.83
STA 16+16.35 TO 16+41.35

ROADWAY SECTION C – SR 202

STA 14+31.83 TO STA 16+41.35

****SUPERELEVATION VARIES FROM
STA 14+31.83 TO 14+56.83
FROM 0.1% TO 0.5%, SEE SHT. PP2 FOR SUPERELEVATION DIAGRAM

SURFACING LEGEND

1. 0.2' DEPTH HMA CL. 1/2 IN. PG 64-22
2. 0.4' DEPTH HMA CL. 1/2 IN. PG 64-22
3. 0.3' AVG. DEPTH HMA CL. 1/2 IN. PG 64-22
4. 0.5' CRUSHED SURFACING BASE COURSE
5. 0.17' CRUSHED SURFACING TOP COURSE
6. CEMENT CONCRETE SIDEWALK PER WSDOT STANDARD PLAN F-30.10-01.
7. CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER WSDOT STANDARD PLAN F-10.12-01.
8. GRAVEL BORROW INCLUDING HAUL

NOTE: ALL DEPTHS ARE COMPACTED DEPTHS.

EXHIBIT 11
PAGE 26 OF 51

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20869
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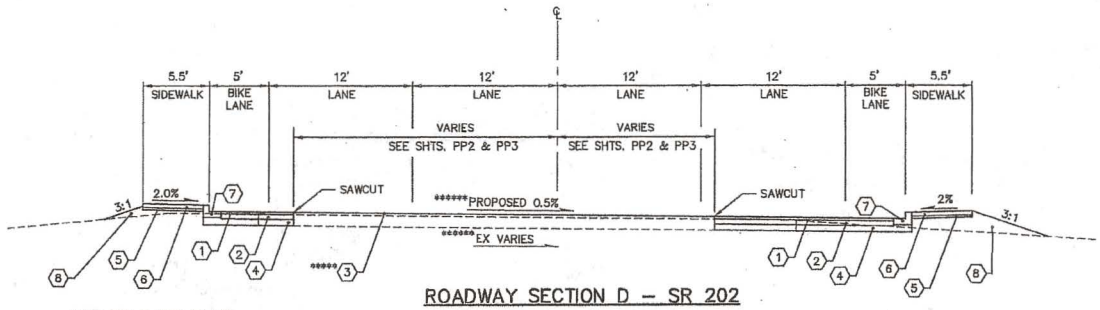
PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

SHEET TITLE:
ROADWAY SECTIONS

DATE: XX-XX-XXXX	CHECKED BY: XX
DESIGNED BY: XX	PROJECT NO.: XX
DRAWN BY: XX	SCALE: NONE
SHEET XX OF XX	
DRAWING NO.: RS1	

Oct. 5, 10 - 7:28 AM huschkab R:\60020139 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\RS1.dwg

30% DESIGN

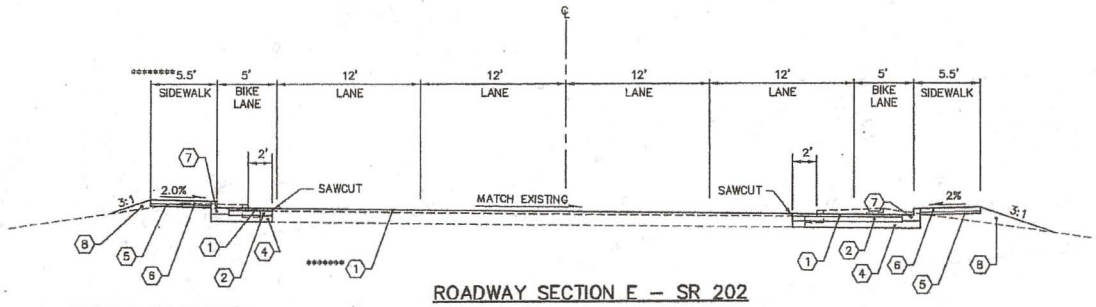


ROADWAY SECTION D – SR 202

STA 16+41.35 TO STA 19+00

***** GRIND & OVERLAY 0.2':
STA 16+41.35 TO 17+98.60
STA 18+08.42 TO 18+63.69

****** SUPERELEVATION VARIES FROM STA 14+31.83 TO 14+56.83 FROM 0.5% TO 0.1%, SEE SHT. PP2 FOR SUPERELEVATION DIAGRAM



ROADWAY SECTION E – SR 202

STA 19+00 TO STA 22+65

******* GRIND & OVERLAY 0.2':
STA 21+73.08 TO 22+65

******** END CURB, GUTTER & SIDEWALK AT STA 21+73.00 LT MATCH EXISTING

SURFACING LEGEND

1. 0.2' DEPTH HMA CL. 1/2 IN. PG 64-22
2. 0.4' DEPTH HMA CL. 1/2 IN. PG 64-22
3. 0.3' AVG. DEPTH HMA CL. 1/2 IN. PG 64-22
4. 0.5' CRUSHED SURFACING BASE COURSE
5. 0.17' CRUSHED SURFACING TOP COURSE
6. CEMENT CONCRETE SIDEWALK PER WSDOT STANDARD PLAN F-30.10-01.
7. CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER WSDOT STANDARD PLAN F-10.12-01.
8. GRAVEL BORROW INCLUDING HAUL

NOTE: ALL DEPTHS ARE COMPACTED DEPTHS.

EXHIBIT 11
PAGE 21 OF 51

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26652
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PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

SHEET TITLE:
ROADWAY SECTIONS

DATE: XX-XX-XXXX	CHECKED BY: XX
DESIGNED BY: XX	PROJECT NO.: XX
DRAWN BY: XX	SCALE: NONE
SHEET XX OF XX	
DRAWING NO.: RS2	

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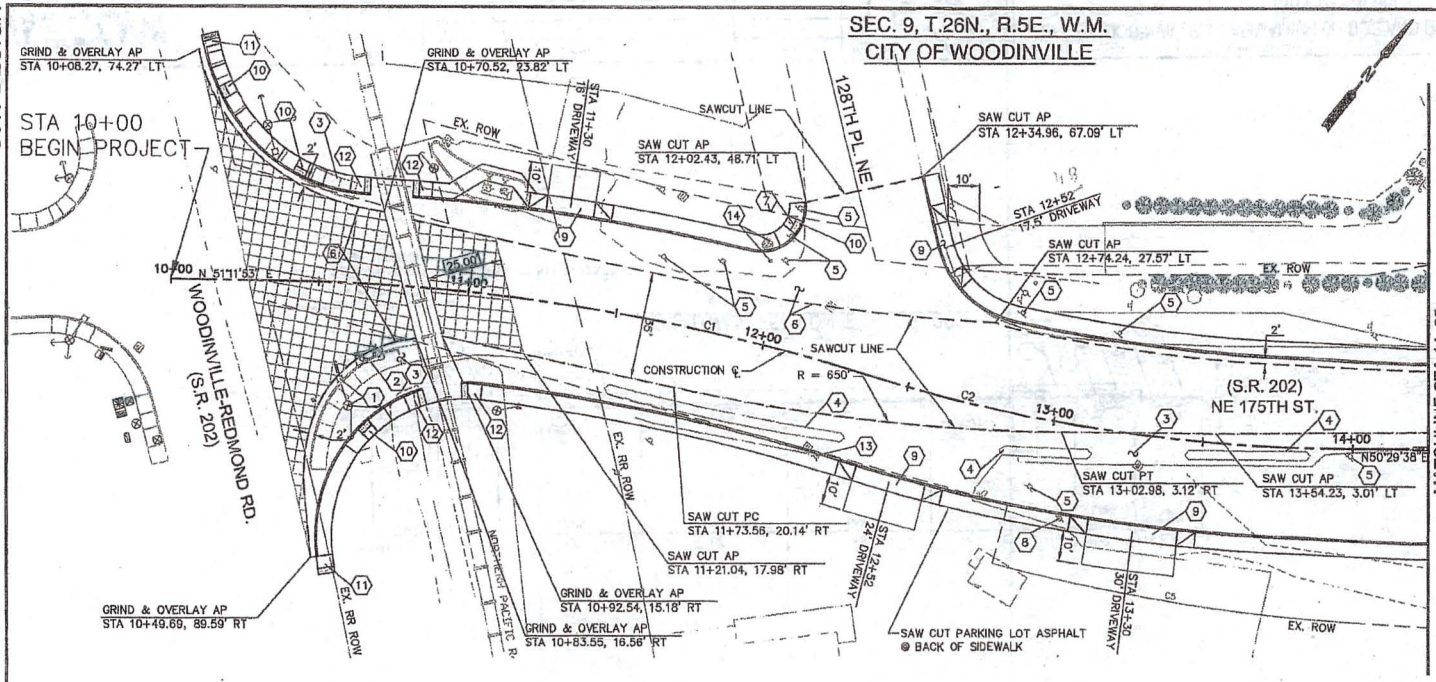
5, 10 – 7:28 AM

30% DESIGN

SEC. 9, T.26N., R.5E., W.M.
CITY OF WOODINVILLE

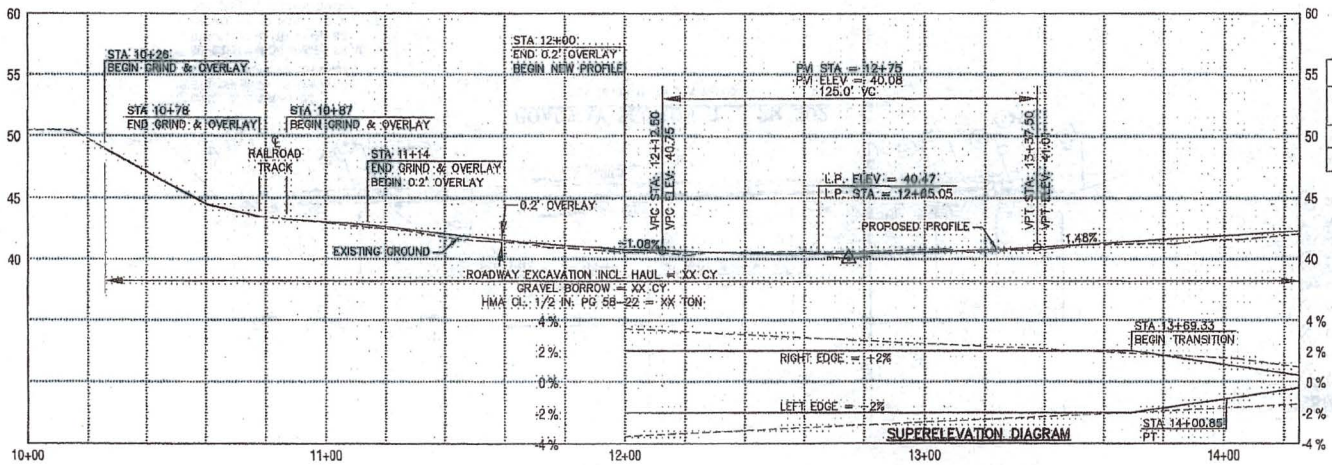


CONSTRUCTION NOTES

1. RELOCATE SIGNAL POLE & JUNCTION BOX. SEE SIGNAL PLANS.
2. RELOCATE RAILROAD SIGNAL (BY OTHER).
3. REMOVE CURB, GUTTER & SIDEWALK.
4. REMOVE CONCRETE TRAFFIC ISLAND.
5. RELOCATE/REMOVE TRAFFIC SIGN, SEE SIGNING PLANS.
6. SAWCUT & REMOVE EXISTING PAVEMENT.
7. RELOCATE BUSINESS SIGN.
8. RELOCATE POWER POLE (BY OTHERS).
9. INSTALL CONCRETE DRIVEWAY TYPE 1 PER CITY OF WOODINVILLE STD. PLAN 322.
10. INSTALL PARALLEL CURB RAMP TYPE A PER WSDOT STD. PLAN F-40.12-01.
11. INSTALL ASPHALT CURB RAMP PER DETAIL ON SHEET ___
12. INSTALL SINGLE DIRECTION CURB RAMP TYPE A PER WSDOT STD. PLAN F-40.16-01.
13. RELOCATE STREET LIGHT, SEE ILLUMINATION PLANS.
14. REMOVE BOLLARD.

LEGEND:

GRIND & OVERLAY



CURVE TABLE

CURVE NO.	RADIUS	DELTA	LENGTH	P.C. STA.	P.I. STA.	P.T. STA.
C1	700'	16°12'20"	197.99'	10+37.59	11+37.25	12+35.58 **
C2	560'	16°54'35"	165.27'	12+35.58 **	13+18.62	14+00.85

** NOTE: STATION IS A PRC.

EXHIBIT 11
PAGE 22 OF 51

SCALE IN FEET: 20 0 20 40

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BRIAN J. HUCHKA — STATE OF WASHINGTON — 28659 — REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK

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PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

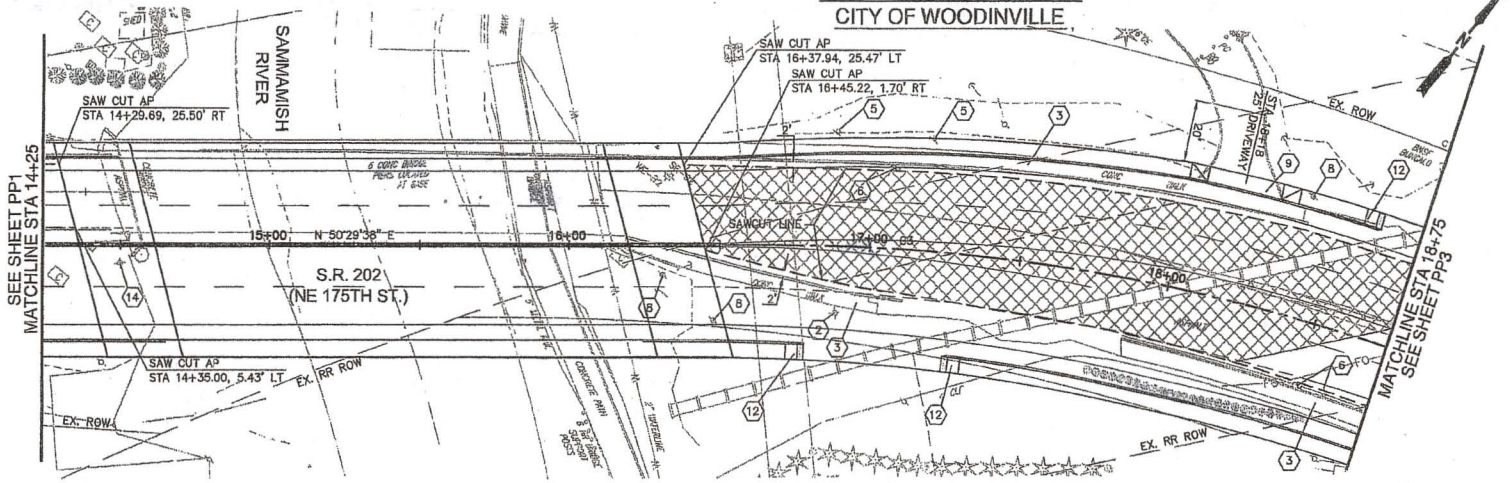
SHEET TITLE:
ROADWAY PLAN & PROFILE

DATE: 10-05-2010	CHECKED BY: AL
DESIGNED BY: BJH	PROJECT NO.: XX
DRAWN BY: YD	SCALE: 1"=20'
SHEET XX OF XX	
DRAWING NO.: PP1	

Oct. 5, 10 - 4:43 PM Dormoreort R:\60202195 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\PP1.dwg

30% DESIGN

SEC. 9, T.26N., R.5E., W.M.
CITY OF WOODINVILLE

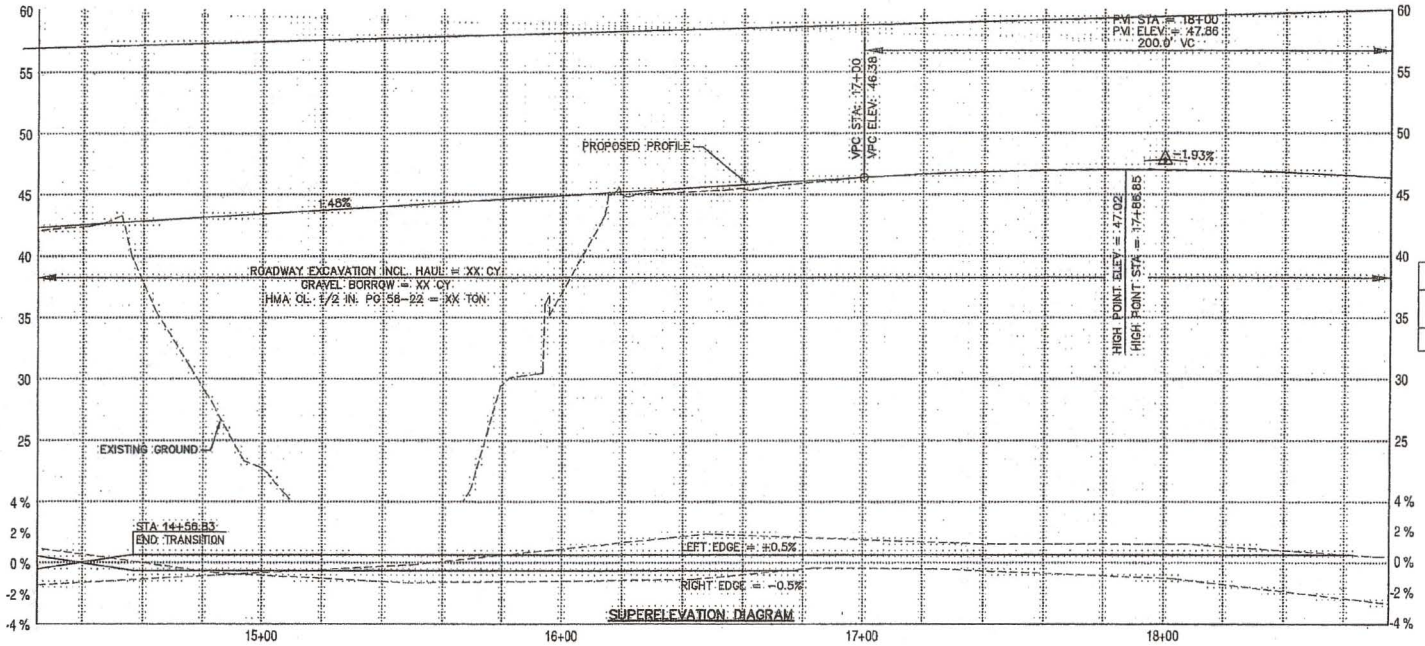


CONSTRUCTION NOTES

2. RELOCATE RAILROAD SIGNAL (BY OTHER).
3. REMOVE CURB, GUTTER & SIDEWALK.
5. RELOCATE/REMOVE TRAFFIC SIGN, SEE SIGNING PLANS.
6. SAWCUT & REMOVE EXISTING PAVEMENT.
8. RELOCATE POWER POLE (BY OTHERS).
9. INSTALL CONCRETE DRIVEWAY TYPE 1 PER CITY OF WOODINVILLE STD. PLAN 322.
12. INSTALL SINGLE DIRECTION CURB RAMP TYPE A PER WSDOT STD. PLAN F-40.16-01.

LEGEND:

GRIND & OVERLAY



CURVE TABLE

CURVE NO.	RADIUS	DELTA	LENGTH	P.C. STA.	P.I. STA.	P.T. STA.
C3	650'	41°55'44"	475.67'	16+68.69	19+17.74	21+44.36

EXHIBIT 11
PAGE 23 OF 51

SCALE IN FEET

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BRYAN J. HUSCINKA
STATE OF WASHINGTON
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PROFESSIONAL ENGINEER

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PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD
(SR 202) PROJECT

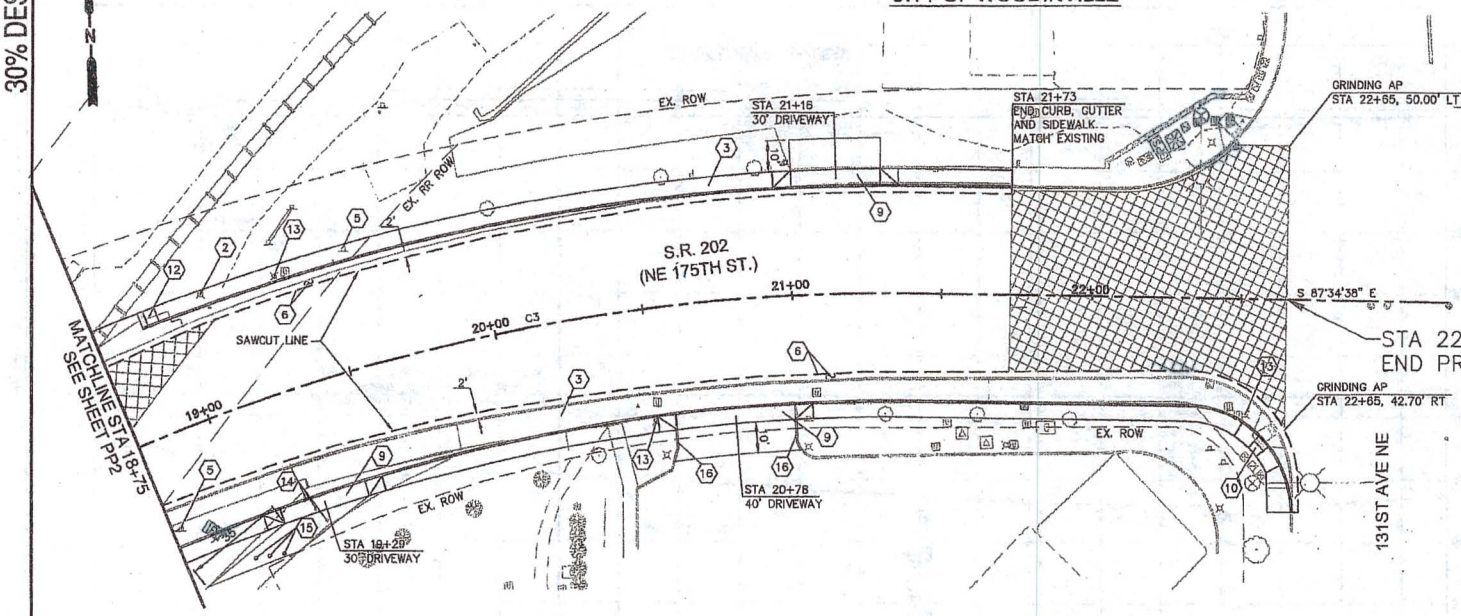
SHEET TITLE:
ROADWAY PLAN & PROFILE

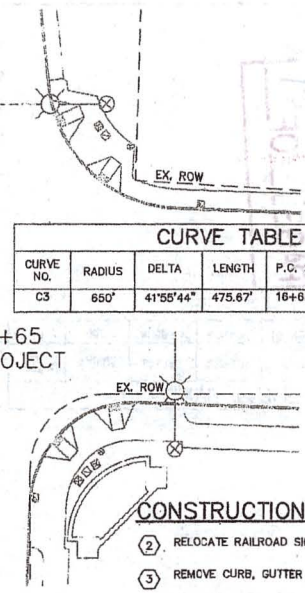
DATE: 10-05-2010	CHECKED BY: AL
DESIGNED BY: BJH	PROJECT NO.: XX
DRAWN BY: YD	SCALE: 1"=20'
SHEET XX OF XX	
DRAWING NO.: PP2	

Oct. 5, 10 - 5:04 PM Dennisw/f R:\0020109 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\PP2.dwg

30% DESIGN

SEC. 9, T.26N., R.5E., W.M.
CITY OF WOODINVILLE



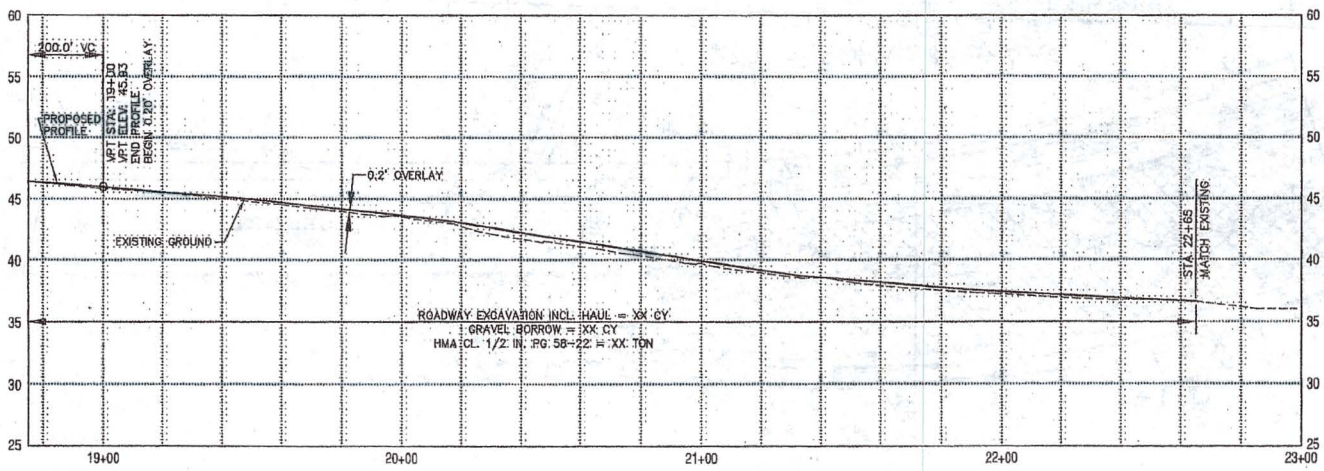


CURVE TABLE

CURVE NO.	RADIUS	DELTA	LENGTH	P.C. STA.	P.I. STA.	P.T. STA.
C3	650'	41°55'44"	475.67'	16+68.69	19+17.74	21+44.36

CONSTRUCTION NOTES

2. RELOCATE RAILROAD SIGNAL (BY OTHER).
3. REMOVE CURB, GUTTER & SIDEWALK.
5. RELOCATE/REMOVE TRAFFIC SIGN, SEE SIGNING PLANS.
6. SAWCUT & REMOVE EXISTING PAVEMENT.
9. INSTALL CONCRETE DRIVEWAY TYPE 1 PER CITY OF WOODINVILLE STD. PLAN 322.
10. INSTALL PARALLEL CURB RAMP TYPE A PER WSDOT STD. PLAN F-40.12-01.
13. RELOCATE STREET LIGHT, SEE ILLUMINATION PLANS.
14. REMOVE BOLLARD.
15. INSTALL BOLLARD PER CITY OF WOODINVILLE STD. PLAN345A.
16. REMOVE & REPLACE EXTRUDED CURB.



LEGEND:

GRIND & OVERLAY

20 0 20 40
SCALE IN FEET

AECOM
10900 NE 8TH STREET, SUITE 750
BELLEVUE, WASHINGTON 98004
PHONE: (425) 454-5890
FAX: (425) 454-0220

BRYAN J. HUSCHKA
STATE OF WASHINGTON
23859
REGISTERED
PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK

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

PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD
(SR 202) PROJECT

SHEET TITLE:
ROADWAY PLAN & PROFILE

DATE: 10-05-2010	CHECKED BY: AL
DESIGNED BY: BJH	PROJECT NO.: XX
DRAWN BY: YD	SCALE: 1"=20'
SHEET XX OF XX.	
DRAWING NO.: PP3	

EXHIBIT 11
PAGE 24 OF 51

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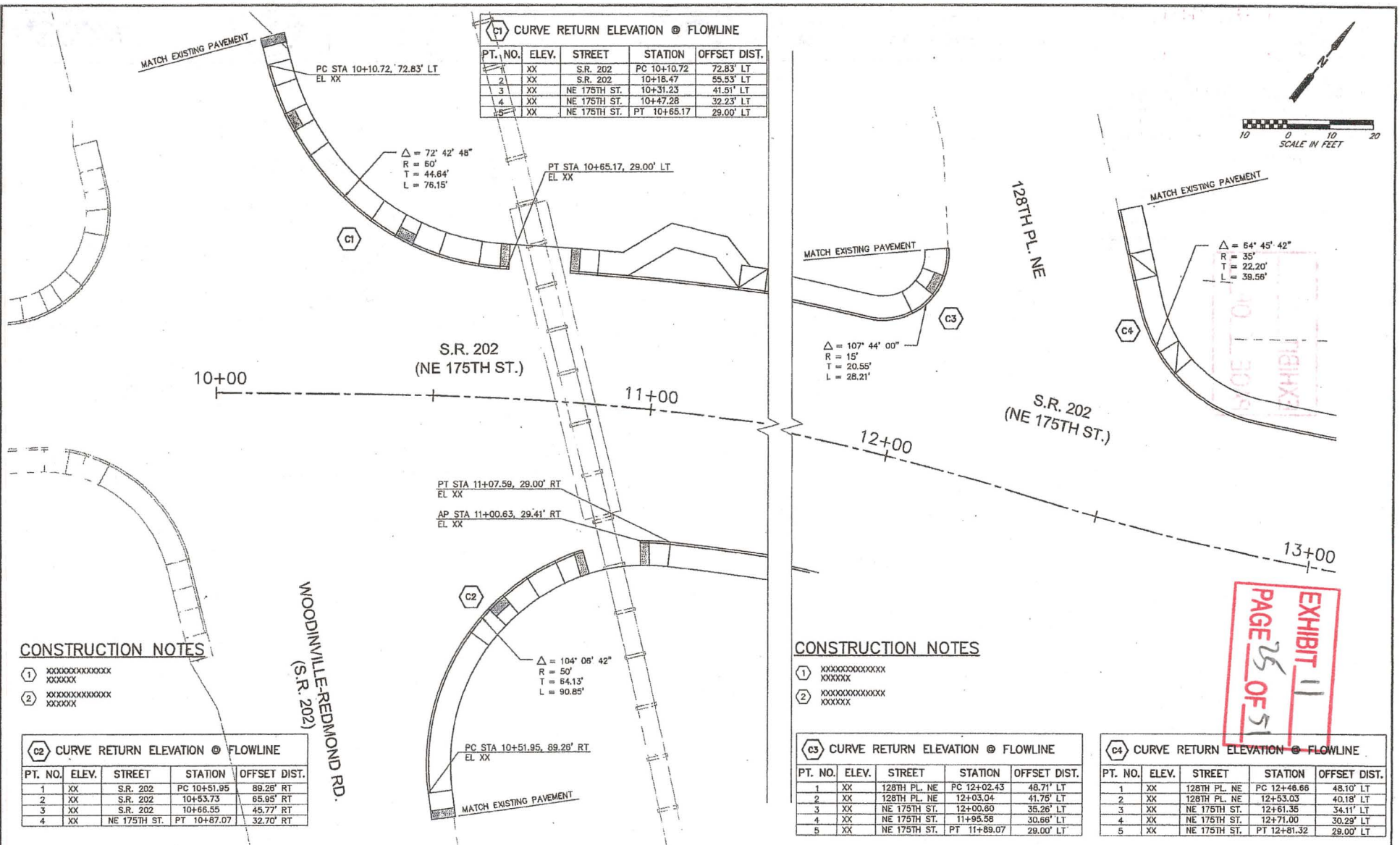
30% DESIGN



C1 CURVE RETURN ELEVATION @ FLOWLINE

PT. NO.	ELEV.	STREET	STATION	OFFSET DIST.
1	XX	S.R. 202	PC 10+10.72	72.83' LT
2	XX	S.R. 202	10+18.47	55.53' LT
3	XX	NE 175TH ST.	10+31.23	41.51' LT
4	XX	NE 175TH ST.	10+47.28	32.23' LT
5	XX	NE 175TH ST.	PT 10+65.17	29.00' LT

CONSTRUCTION NOTES

1. XXXXXXXXXXXXXX XXXXXX
2. XXXXXXXXXXXXXX XXXXXX

C2 CURVE RETURN ELEVATION @ FLOWLINE

PT. NO.	ELEV.	STREET	STATION	OFFSET DIST.
1	XX	S.R. 202	PC 10+51.95	89.26' RT
2	XX	S.R. 202	10+53.73	65.95' RT
3	XX	S.R. 202	10+66.55	45.77' RT
4	XX	NE 175TH ST.	PT 10+87.07	32.70' RT

CONSTRUCTION NOTES

1. XXXXXXXXXXXXXX XXXXXX
2. XXXXXXXXXXXXXX XXXXXX

C3 CURVE RETURN ELEVATION @ FLOWLINE

PT. NO.	ELEV.	STREET	STATION	OFFSET DIST.
1	XX	128TH PL. NE	PC 12+02.43	48.71' LT
2	XX	128TH PL. NE	12+03.04	41.75' LT
3	XX	NE 175TH ST.	12+00.60	35.26' LT
4	XX	NE 175TH ST.	11+95.58	30.66' LT
5	XX	NE 175TH ST.	PT 11+89.07	29.00' LT

C4 CURVE RETURN ELEVATION @ FLOWLINE

PT. NO.	ELEV.	STREET	STATION	OFFSET DIST.
1	XX	128TH PL. NE	PC 12+46.66	48.10' LT
2	XX	128TH PL. NE	12+53.03	40.18' LT
3	XX	NE 175TH ST.	12+61.35	34.11' LT
4	XX	NE 175TH ST.	12+71.00	30.29' LT
5	XX	NE 175TH ST.	PT 12+81.32	29.00' LT

EXHIBIT 11
PAGE 25 OF 51

AECOM
10900 NE 8TH STREET, SUITE 750
BELLEVUE, WASHINGTON 98004
PHONE: (425) 454-5900
FAX: (425) 454-8220

BRIAN J. BUSCKA
STATE OF WASHINGTON
28859
REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK

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

PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD
(SR 202) PROJECT

SHEET TITLE:
INTERSECTION PLAN

DATE: 10-05-2010	CHECKED BY: AL
DESIGNED BY: BJH	PROJECT NO.: XX
DRAWN BY: YD	SCALE: 1"=10'
SHEET XX OF XX	
DRAWING NO.: IP1	

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30% DESIGN

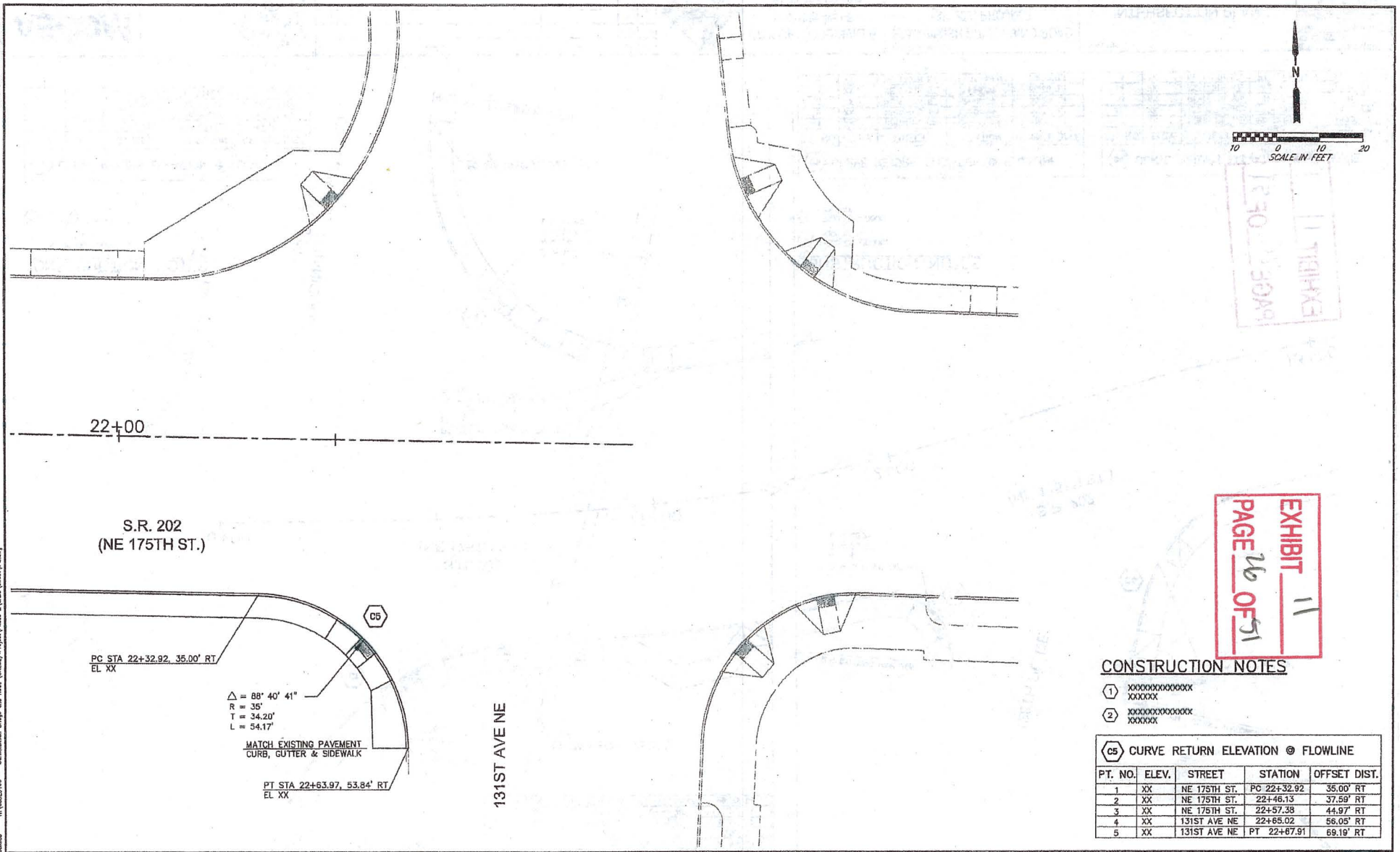


EXHIBIT 11
PAGE 26 OF 51

CONSTRUCTION NOTES

1. XXXXXXXXXXXXX XXXXXX
2. XXXXXXXXXXXXX XXXXXX

C5 CURVE RETURN ELEVATION @ FLOWLINE

PT. NO.	ELEV.	STREET	STATION	OFFSET DIST.
1	XX	NE 175TH ST.	PC 22+32.92	35.00' RT
2	XX	NE 175TH ST.	22+46.13	37.59' RT
3	XX	NE 175TH ST.	22+57.38	44.97' RT
4	XX	131ST AVE NE	22+65.02	56.05' RT
5	XX	131ST AVE NE	PT 22+67.91	69.19' RT

AECOM
10900 NE 8TH STREET, SUITE 750
BELLEVUE, WASHINGTON 98004
PHONE: (425) 454-5900
FAX: (425) 454-0220

BRIAN J. HISCHLA
STATE OF WASHINGTON
29659
REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK

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

PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD
(SR 202) PROJECT

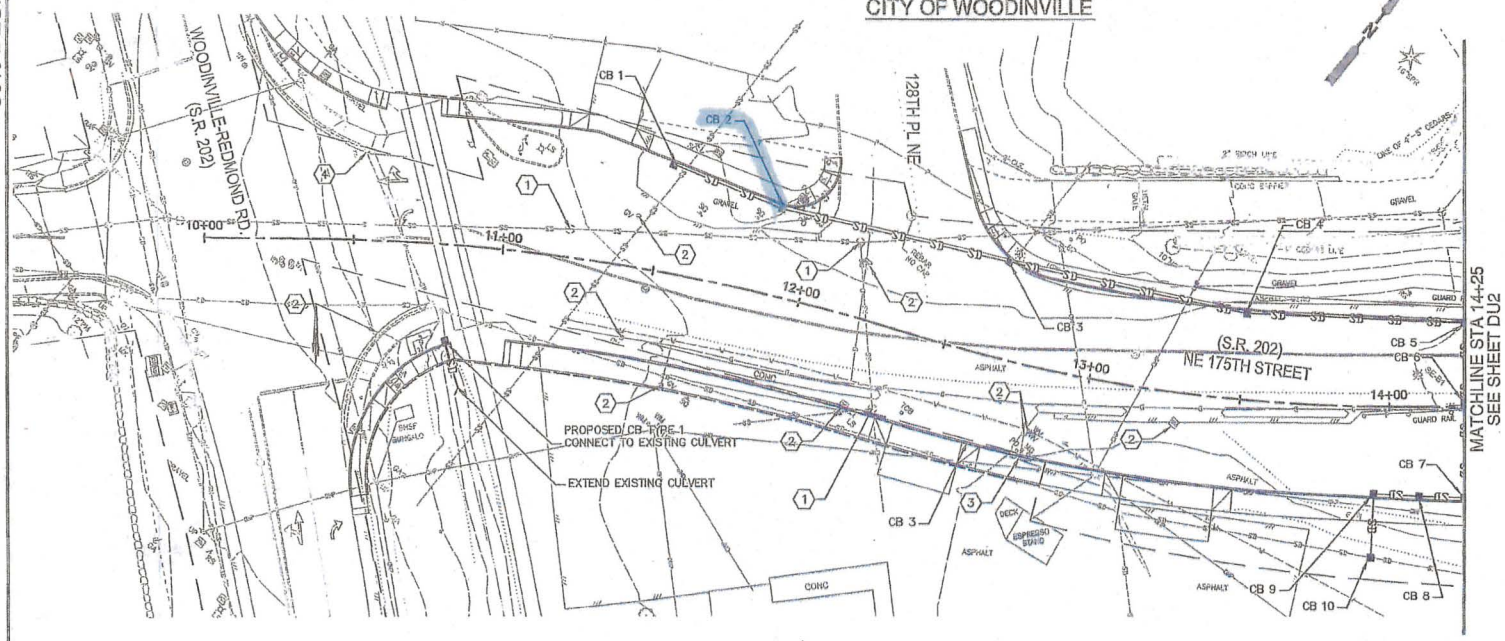
SHEET TITLE:
INTERSECTION PLAN

DATE: 10-05-2010	CHECKED BY: AL
DESIGNED BY: BJH	PROJECT NO.: XX
DRAWN BY: YD	SCALE: 1"=10'
SHEET XX OF XX	
DRAWING NO.: IP2	

5, 10 - 2:43 PM hucchub K:\60120199 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\IP2.dwg

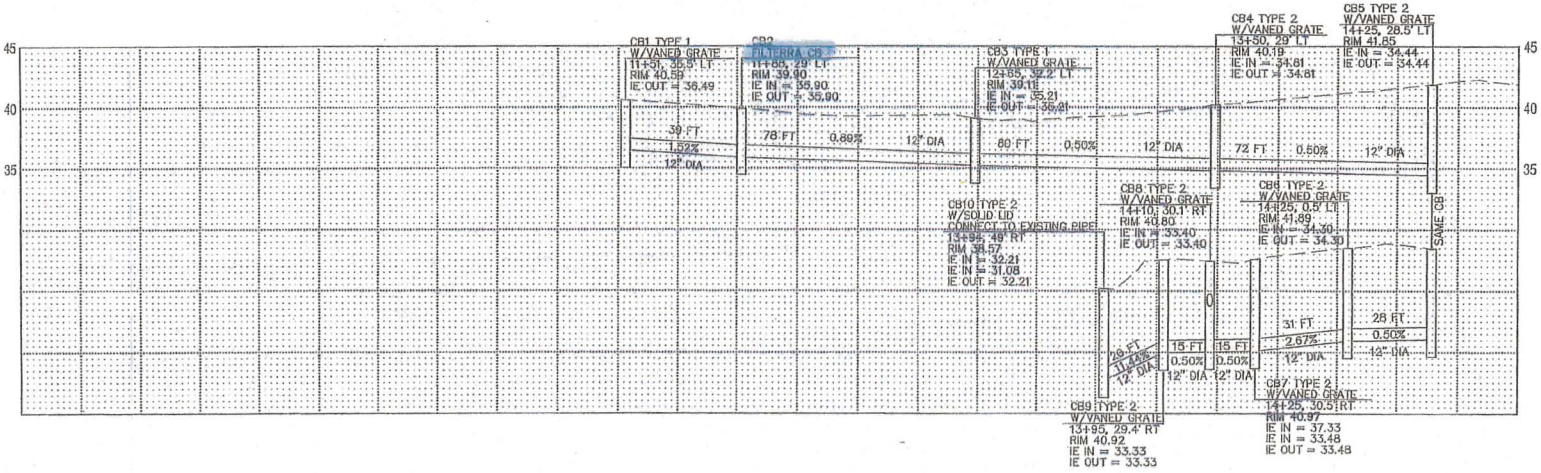
30% DESIGN

SEC. 9, T.26N., R.5E., W.M.
CITY OF WOODINVILLE



CONSTRUCTION NOTES

1. ADJUST MANHOLE TO GRADE.
2. ADJUST VALVE BOX TO GRADE.
3. MOVE EXISTING HYDRANT.
4. ADJUST EXISTING CATCH BASIN TO GRADE.



20 0 20 40
SCALE IN FEET

EXHIBIT 11
PAGE 27 OF 51

AECOM
701 5TH AVENUE, SUITE 1100
SEATTLE, WASHINGTON 98104
PHONE: (206) 674-4200
FAX: (206) 674-4242

BRYAN J. HUSCHKA
STATE OF WASHINGTON
25859
REGISTERED
PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK
1	REVISION 1	00/00/10	XXX	XXX
2				
3				
4				
5				

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

PROJECT INFORMATION
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

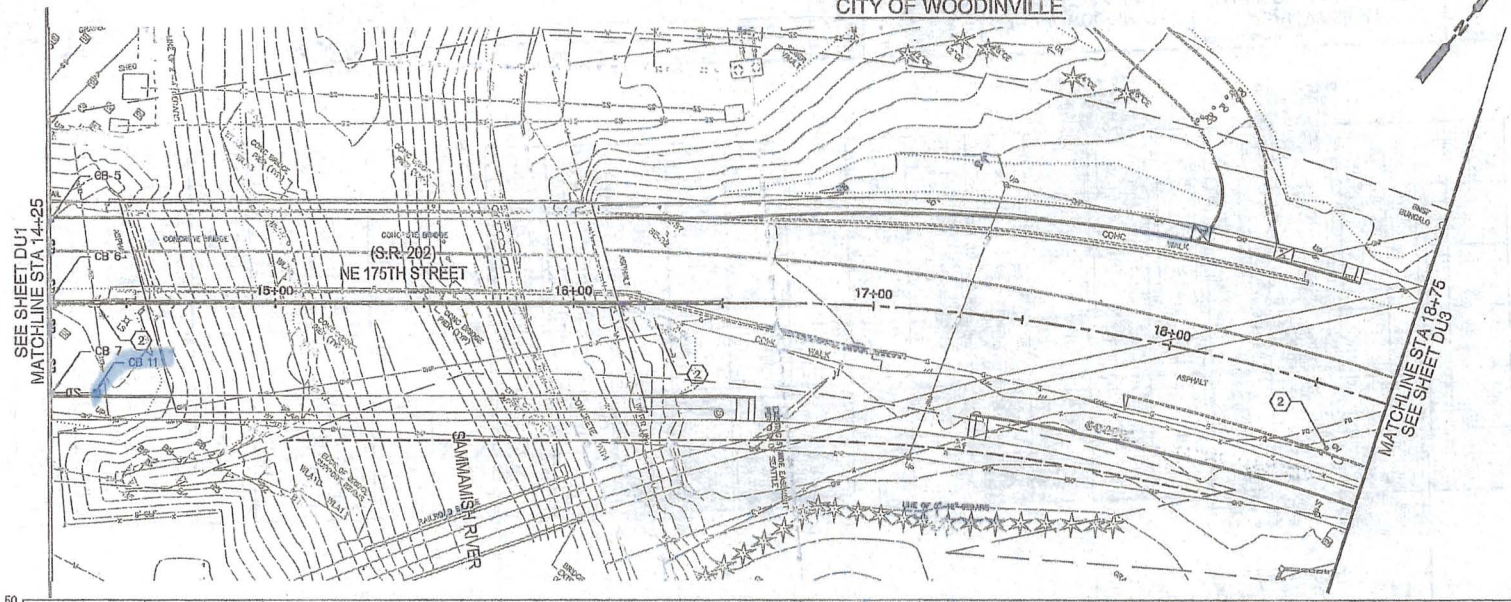
SHEET TITLE:
DRAINAGE AND UTILITY PLAN & PROFILE

DATE: XX-XX-XXXX	CHECKED BY: XX
DESIGNED BY: XX	PROJECT NO.: XX
DRAWN BY: XX	SCALE: 1"=20'
SHEET XX OF XX	
DRAWING NO.: DU1	

Dec. 2, 10 - 2:55 PM OBrienR R:\60020189 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\DU1.dwg

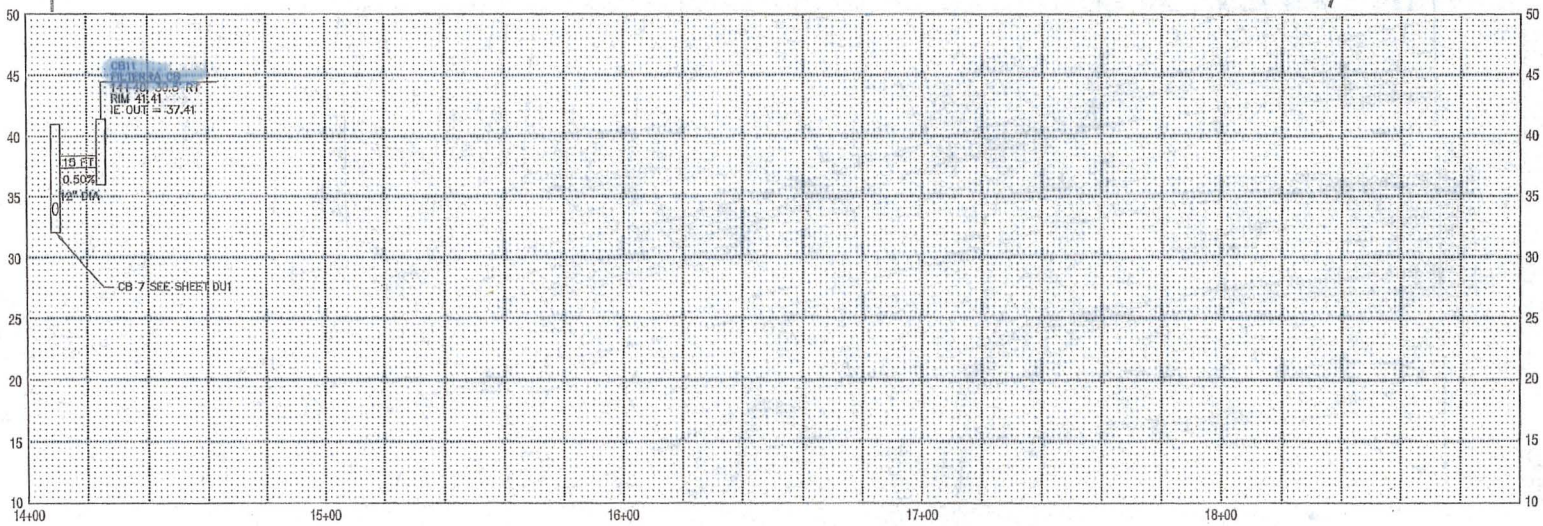
30% DESIGN

SEC. 9, T.26N., R.5E., W.M.
CITY OF WOODINVILLE



CONSTRUCTION NOTES

1. ADJUST MANHOLE TO GRADE.
2. ADJUST VALVE BOX TO GRADE.
3. MOVE EXISTING HYDRANT.



SCALE IN FEET 20 0 20 40

EXHIBIT 11
PAGE 28 OF 51

AECOM							
701 5TH AVENUE, SUITE 1100 SEATTLE, WASHINGTON 98104 PHONE: (206) 674-4200 FAX: (206) 674-4242		NO.	REVISION	DATE	BY	CK	
		1	REVISION 1	00/00/10	XXX	XXX	
		2					
		3					
		4					
		5					

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

PROJECT INFORMATION
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

SHEET TITLE:
DRAINAGE AND UTILITY PLAN & PROFILE

DATE: XX-XX-XXXX	CHECKED BY: XX
DESIGNED BY: XX	PROJECT NO.: XX
DRAWN BY: XX	SCALE: 1"=20'
SHEET XX OF XX	
DRAWING NO.: DU2	

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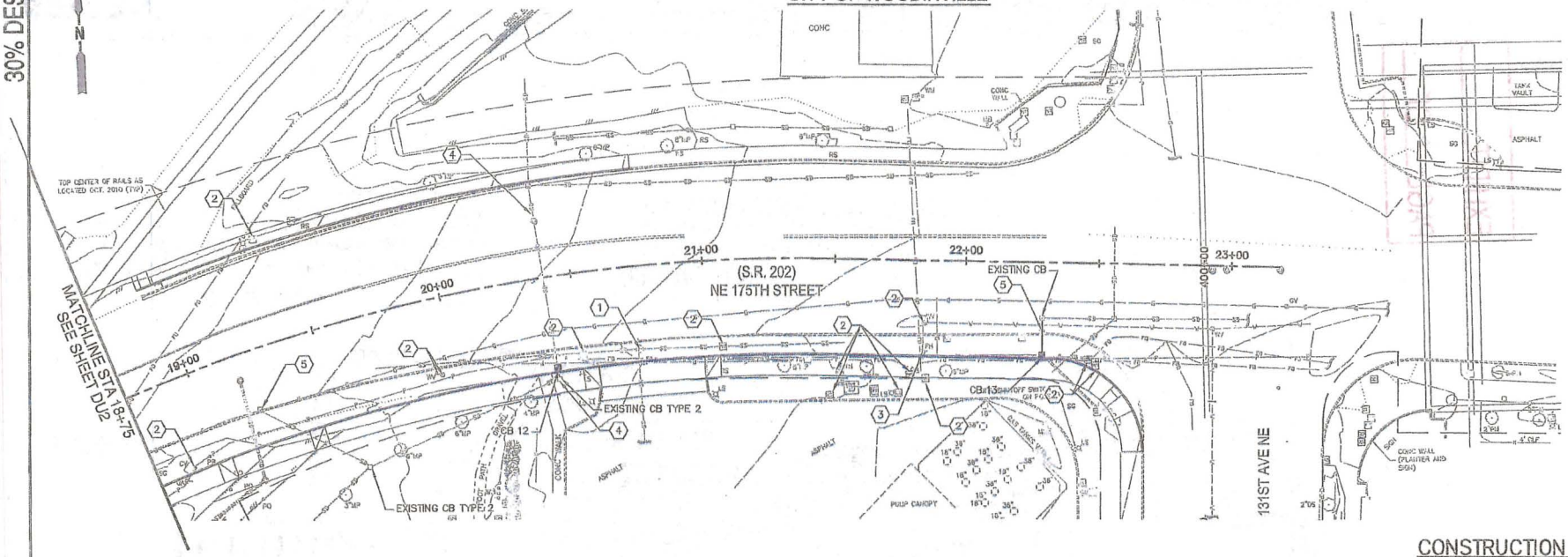
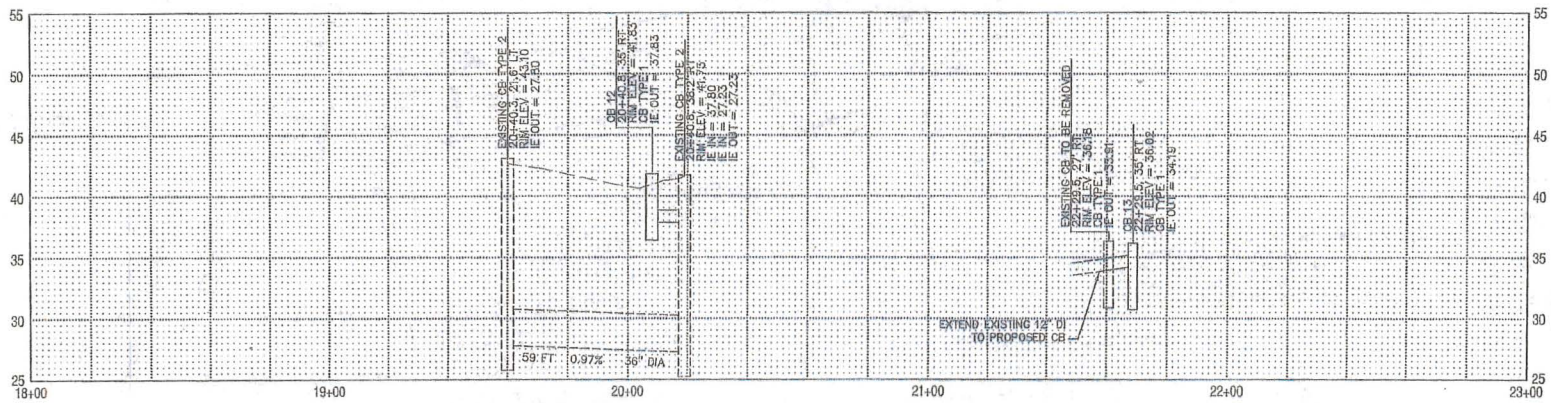
30% DESIGN

SEC. 9, T.26N., R.5E., W.M.
CITY OF WOODINVILLE



CONSTRUCTION NOTES

1. ADJUST MANHOLE TO GRADE.
2. ADJUST VALVE BOX TO GRADE.
3. MOVE EXISTING HYDRANT.
4. ADJUST CATCH BASIN TO GRADE.
5. REMOVE EXISTING DRAINAGE STRUCTURE.



20 0 20 40
SCALE IN FEET

EXHIBIT 11
PAGE 29 OF 51

AECOM
701 5TH AVENUE, SUITE 1100
SEATTLE, WASHINGTON 98104
PHONE: (206) 674-4200
FAX: (206) 674-4242

BRIAN J. HUSKA
STATE OF WASHINGTON
38659
REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK
1	REVISION 1	00/00/10	XXX	XXX
2				
3				
4				
5				

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

PROJECT INFORMATION
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

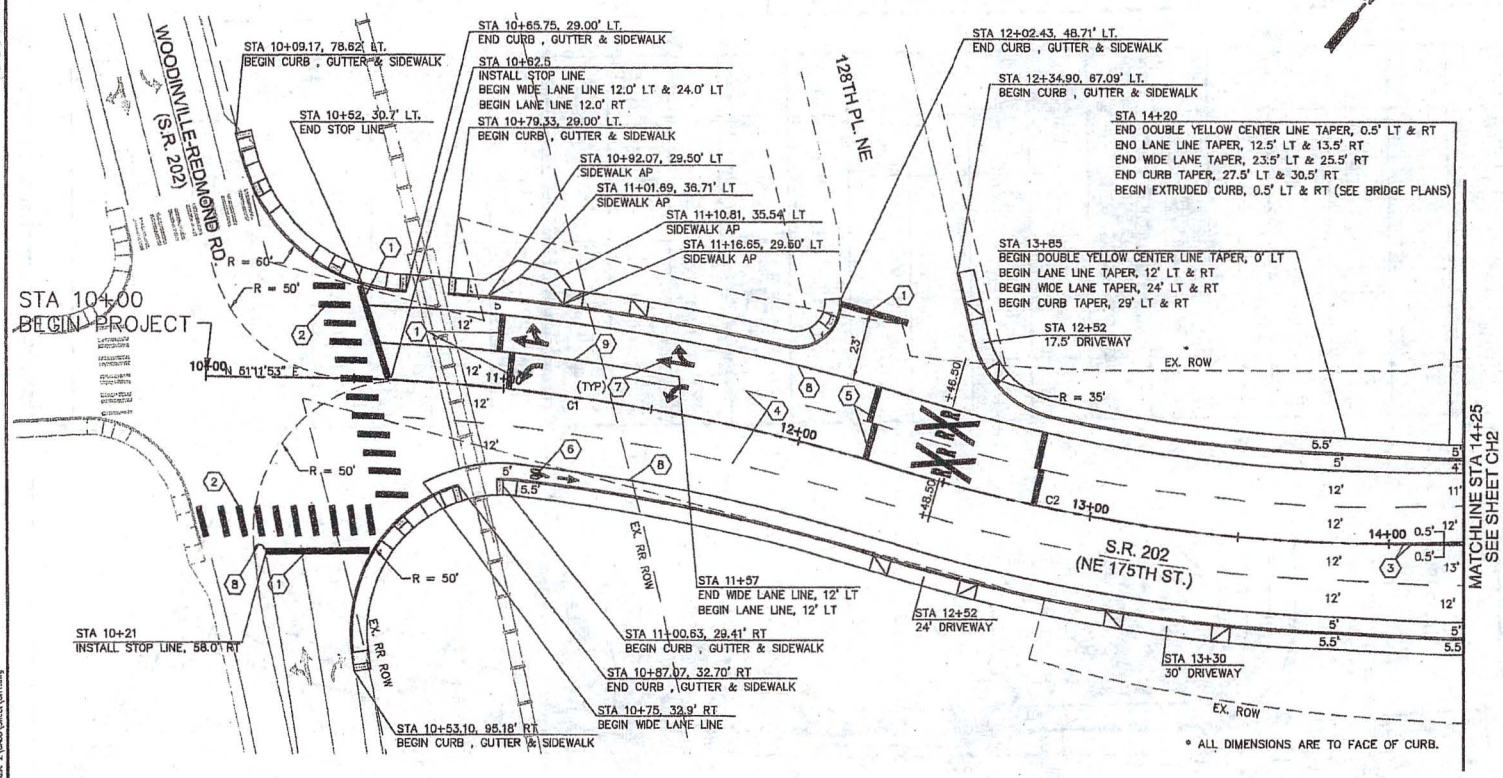
SHEET TITLE:
DRAINAGE AND UTILITY PLAN & PROFILE

DATE: XX-XX-XXXX	CHECKED BY: XX
DESIGNED BY: XX	PROJECT NO.: XX
DRAWN BY: XX	SCALE: 1"=20'
SHEET XX OF XX	
DRAWING NO.: DU3	

Dec. 2, 10 - 2:51 PM OBiterR R:\60202159 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\DU3.dwg

30% DESIGN

SEC. 9, T.26N., R.5E., W.M.
CITY OF WOODINVILLE



CHANNELIZATION NOTES

1. INSTALL PLASTIC STOP LINE PER WSDOT STD PLAN M-24.60-02.
2. INSTALL PLASTIC CROSSWALK LINE PER WSDOT STD PLAN M-15.10-01.
3. INSTALL DOUBLE YELLOW CENTER LINE PER WSDOT STD PLAN M-20.50-01.
4. INSTALL PAINTED LANE LINE PER WSDOT STD PLAN M-20.10-01.
5. INSTALL PLASTIC RAILROAD CROSSING SYMBOL PER WSDOT STD PLAN M-11.10-01.
6. INSTALL PLASTIC BICYCLE LANE SYMBOL PER WSDOT STD PLAN M-9.50-01.
7. INSTALL PLASTIC TRAFFIC ARROW PER WSDOT STD PLAN M-24.40-01.
8. INSTALL PAINTED WIDE LANE LINE PER WSDOT STD PLAN M-20.10-01.
9. INSTALL PLASTIC WIDE LANE LINE PER WSDOT STD PLAN M-20.10-01.
10. INSTALL PLASTIC DOTTED EXTENSION LINE PER WSDOT STD PLAN M-20.10-01.

EXHIBIT 11
PAGE 36 OF 51

CURVE TABLE

CURVE NO.	RADIUS	DELTA	LENGTH	P.C. STA.	P.I. STA.	P.T. STA.
C1	700'	16°12'20"	197.99'	10+37.59	11+37.25	12+35.58 **
C2	560'	16°54'35"	165.27'	12+35.58 **	13+18.82	14+00.85

** NOTE: STATION IS A PRC.

GENERAL NOTES

1.) TAPER RATES PER WSDOT STD. PLAN M-3.20-01.

2.) ALL LONGITUDINAL MARKINGS SHALL BE SUPPLEMENTED WITH RAISED PAVEMENT MARKERS PER WSDOT STD. PLAN M-20.30-02 & M-20.40-01.

20 0 20 40
SCALE IN FEET

AECOM
10900 NE 8TH STREET, SUITE 750
BELLEVUE, WASHINGTON 98004
PHONE: (425) 454-5600
FAX: (425) 454-6229

BRYAN J. HUSCHKA
STATE OF WASHINGTON
PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK

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

PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

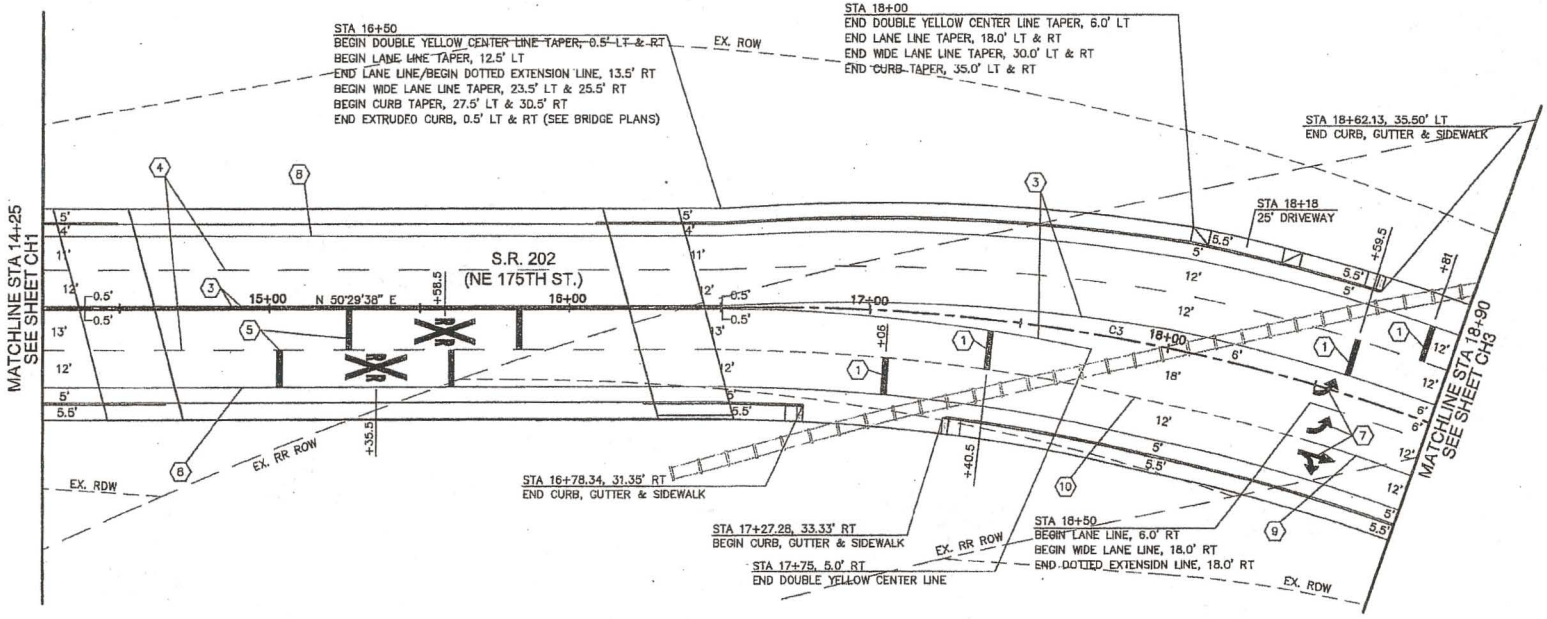
SHEET TITLE:
CHANNELIZATION PLAN

DATE: 10-05-2010	CHECKED BY: AL
DESIGNED BY: BJH	PROJECT NO.: XX
DRAWN BY: YD	SCALE: 1"=20'
SHEET XX OF XX	
DRAWING NO.: CH1	

J. 5, 10 - 5:02 PM Darmarcel7 R:\60020199 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\CH1.dwg

30% DESIGN

SEC. 9, T.26N., R.5E., W.M.
CITY OF WOODINVILLE



CHANNELIZATION NOTES

1. INSTALL PLASTIC STOP LINE PER WSDOT STD PLAN M-24.60-02.
2. INSTALL PLASTIC CROSSWALK LINE PER WSDOT STD PLAN M-15.10-01.
3. INSTALL DOUBLE YELLOW CENTER LINE PER WSDOT STD PLAN M-20.50-01.
4. INSTALL PAINTED LANE LINE PER WSDOT STD PLAN M-20.10-01.
5. INSTALL PLASTIC RAILROAD CROSSING SYMBOL PER WSDOT STD PLAN M-11.10-01.
6. INSTALL PLASTIC BICYCLE LANE SYMBOL PER WSDOT STD PLAN M-9.50-01.
7. INSTALL PLASTIC TRAFFIC ARROW PER WSDOT STD PLAN M-24.40-01.
8. INSTALL PAINTED WIDE LANE LINE PER WSDOT STD PLAN M-20.10-01.
9. INSTALL PLASTIC WIDE LANE LINE PER WSDOT STD PLAN M-20.10-01.
10. INSTALL PLASTIC DOTTED EXTENSION LINE PER WSDOT STD PLAN M-20.10-01.

CURVE TABLE

CURVE NO.	RADIUS	DELTA	LENGTH	P.C. STA.	P.I. STA.	P.T. STA.
C3	650'	41°55'44"	475.67'	16+68.69	19+17.74	21+44.36

GENERAL NOTES

1.) TAPER RATES PER WSDOT STD. PLAN M-3.20-01.

2.) ALL LONGITUDINAL MARKINGS SHALL BE SUPPLEMENTED WITH RAISED PAVEMENT MARKERS PER WSDOT STD. PLAN M-20.30-02 & M-20.40-01.

* ALL DIMENSIONS ARE TO FACE OF CURB.

EXHIBIT 11
PAGE 31 OF 51

20 0 20 40
SCALE IN FEET

AECOM
10900 NE 8TH STREET, SUITE 750
BELLEVUE, WASHINGTON 98004
PHONE: (425) 454-9800
FAX: (425) 454-9220

NO.	REVISION	DATE	BY	CK

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

PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

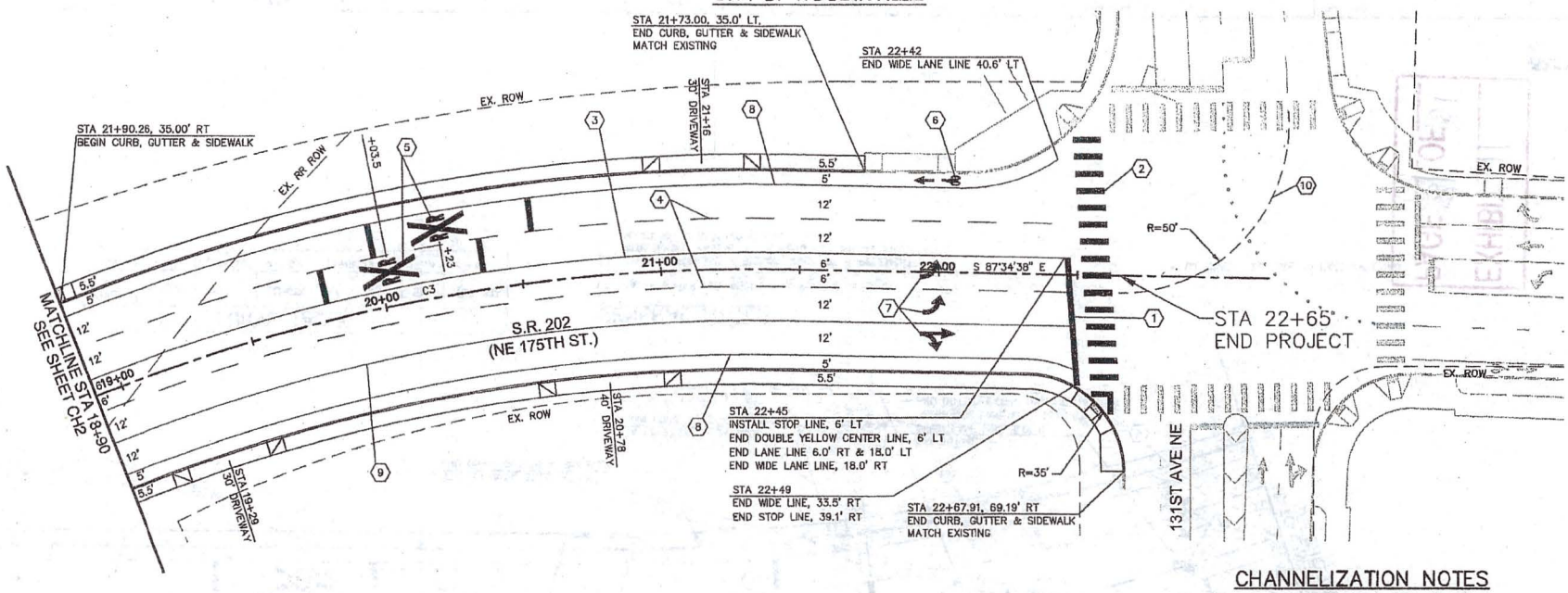
SHEET TITLE:
CHANNELIZATION PLAN

DATE: 10-05-2010	CHECKED BY: AL
DESIGNED BY: BJH	PROJECT NO.: XX
DRAWN BY: YD	SCALE: 1"=20'
SHEET XX OF XX	
DRAWING NO.: CH2	

5. 10 - 3:24 PM Dormowsky R:\60020199 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\CH2.dwg

30% DESIGN

SEC. 9, T.26N., R.5E., W.M.
CITY OF WOODINVILLE



CURVE TABLE						
CURVE NO.	RADIUS	DELTA	LENGTH	P.C. STA.	P.I. STA.	P.T. STA.
C3	650'	41°55'44"	475.67'	16+68.69	19+17.74	21+44.36

GENERAL NOTES

1.) TAPER RATES PER WSDOT STD. PLAN M-3.20-01.

2.) ALL LONGITUDINAL MARKINGS SHALL BE SUPPLEMENTED WITH RAISED PAVEMENT MARKERS PER WSDOT STD. PLAN M-20.30-02 & M-20.40-01.

CHANNELIZATION NOTES

1. INSTALL PLASTIC STOP LINE PER WSDOT STD PLAN M-24.60-02.
2. INSTALL PLASTIC CROSSWALK LINE PER WSDOT STD PLAN M-15.10-01.
3. INSTALL DOUBLE YELLOW CENTER LINE PER WSDOT STD PLAN M-20.50-01.
4. INSTALL PAINTED LANE LINE PER WSDOT STD PLAN M-20.10-01.
5. INSTALL PLASTIC RAILROAD CROSSING SYMBOL PER WSDOT STD PLAN M-11.10-01.
6. INSTALL PLASTIC BICYCLE LANE SYMBOL PER WSDOT STD PLAN M-9.50-01.
7. INSTALL PLASTIC TRAFFIC ARROW PER WSDOT STD PLAN M-24.40-01.
8. INSTALL PAINTED WIDE LANE LINE PER WSDOT STD PLAN M-20.10-01.
9. INSTALL PLASTIC WIDE LANE LINE PER WSDOT STD PLAN M-20.10-01.
10. INSTALL PLASTIC DOTTED EXTENSION LINE PER WSDOT STD PLAN M-20.10-01.

EXHIBIT 11
PAGE 32 OF 51

* ALL DIMENSIONS ARE TO FACE OF CURB.

20 0 20 40
SCALE IN FEET

AECOM
10900 NE 8TH STREET, SUITE 750
BELLEVUE, WASHINGTON 98004
PHONE: (425) 454-5600
FAX: (425) 454-0220

BRYAN J. HUCHKA
STATE OF WASHINGTON
24600
PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK
1	REVISION 1	00/00/10	XXX	XXX
2				
3				
4				
5				

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

PROJECT INFORMATION
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

SHEET TITLE:
CHANNELIZATION PLAN

DATE: 10-05-2010	CHECKED BY: AL
DESIGNED BY: BJH	PROJECT NO.: XX
DRAWN BY: YD	SCALE: 1"=20'
SHEET XX OF XX	
DRAWING NO.: CH3	

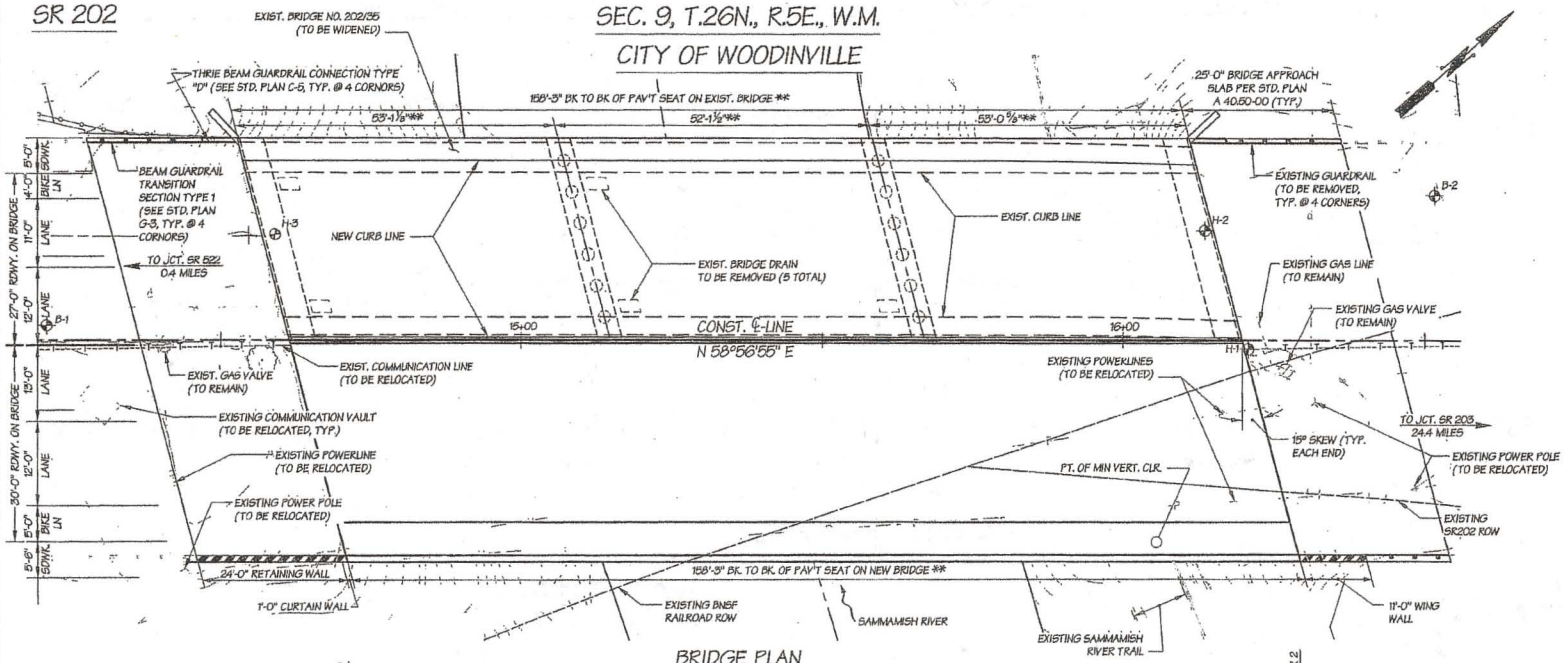
Oct. 20, 10 - 10:11 AM huschkab R:\60239160 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Sheet\CH3.dwg

30% DESIGN

SR 202

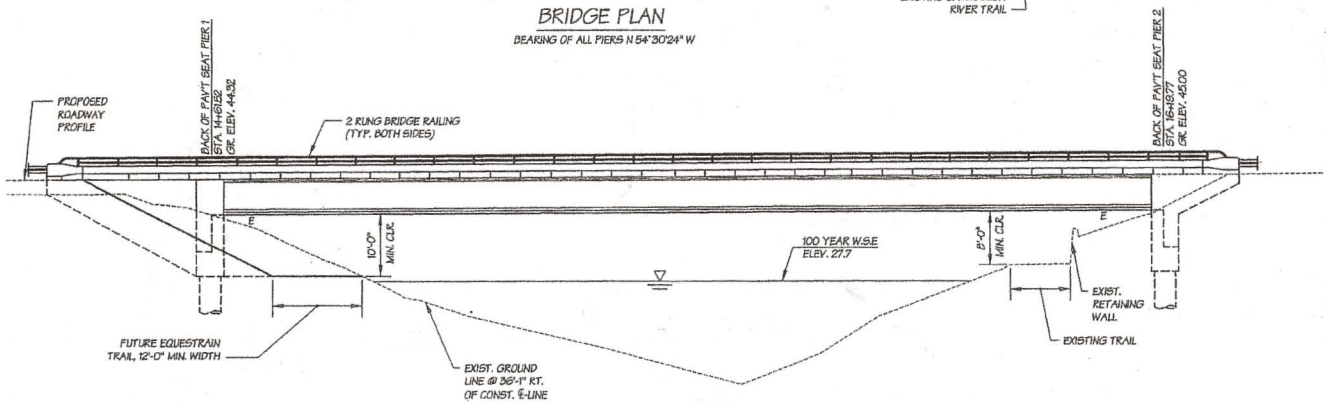
SEC. 9, T.26N., R.5E., W.M.

CITY OF WOODINVILLE



BRIDGE PLAN

BEARING OF ALL PIERS N 54°30'24" W



BRIDGE ELEVATION

REFERENCE LINE ELEVATION 0.00

FOR EMBANKMENT DETAILS AT THE ENDS OF THE NEW BRIDGE, SEE STD. PLAN A-60.40-00.
GRADE ELEVATIONS ARE FINISH GRADES AT TOP OF DECK ON CONST. ℄-LINE AND ARE EQUAL TO PROFILE GRADE.

DATUM

N.A.V.D. OF 1988

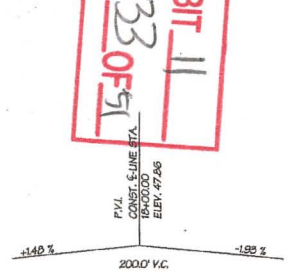
BRIDGE LEGEND:

- A / BR01 — IDENTIFIES SECTION, VIEW OR DETAIL; TAKEN OR SHOWN ON DRAWING BR01
- A / - — DASH INDICATES SECTION, VIEW OR DETAIL IS TAKEN AND SHOWN ON THE SAME SHEET
- B-1 — GEOTECHNICAL BORINGS

PROPOSED		EXISTING
W	WATER MAIN	
G	GAS LINE	
S	SANITARY SEWER	
P	OVERHEAD POWER LINE	
IR	IRRAGATION	
SD	STORM DRAIN	
T	TELEPHONE	
FM	FORCE MAIN SEWER	

** CONTRACTOR SHALL VERIFY PRIOR TO BEGINNING CONSTRUCTION. THE DIMENSION FROM BK. TO BK. OF PAV'T SEAT ON THE NEW BRIDGE SHALL MATCH THE EXISTING BRIGDE AT THE CONST. ℄-LINE.

EXHIBIT 11
PAGE 33 OF 51



CONST. ℄ PROFILE

P.C. GIRDERS (WF58G)
LOADING: HL-93

BRIDGE WITH APPROACH FILLS
PRECAST PRESTRESSED WF58G GIRDERS
DECK PROTECTIVE SYSTEM 1 (EPOXY COATED REBARS)
CAST-IN-PLACE CONCRETE STRENGTH SHALL BE 4000 PSI

JOB NO. 60104017
10 - 1:53 PM estrbob
R:\60103199 - Sammamish Bridge and Road (SR202) Project\Plans X\CADD\Struct\Sheet\BR-01.dwg

PT. OF MIN VERT. CLR. XXX' STA. XX+XX.XX (XX RT.)

AECOM
10900 NE 8TH STREET, SUITE 750
BELLEVUE, WASHINGTON 98004
PHONE: (425) 454-3600

NO.	REVISION	DATE	BY	CK

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

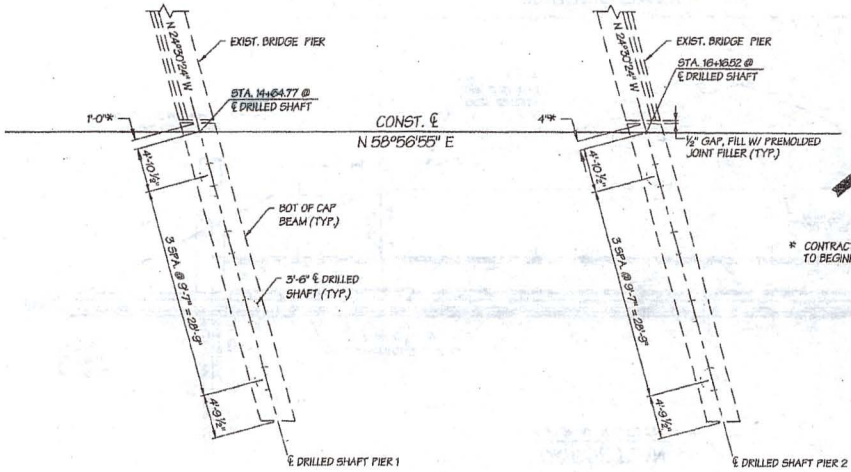
PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

SHEET TITLE:
BRIDGE LAYOUT

DATE: 10-05-2010	CHECKED BY: XX
DESIGNED BY: K. LINTS	PROJECT NO.: XX
DRAWN BY: B. ESTRELLA	SCALE: NONE
SHEET XX OF XX	
DRAWING NO.: BR01	

C:\5.170 - PROJ. NO. XXXXXX - NW REGION - NE WOODINVILLE DR. TO 131ST AVE. NE - SR. 202 - SAMMAMISH RIVER. BRIDGE NO.202/35

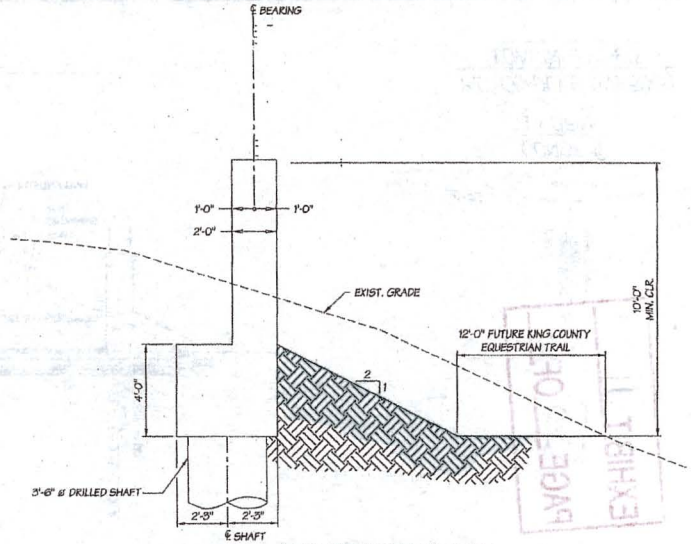
30% DESIGN



* CONTRACTOR TO FIELD VERIFY PRIOR TO BEGINNING CONSTRUCTION.

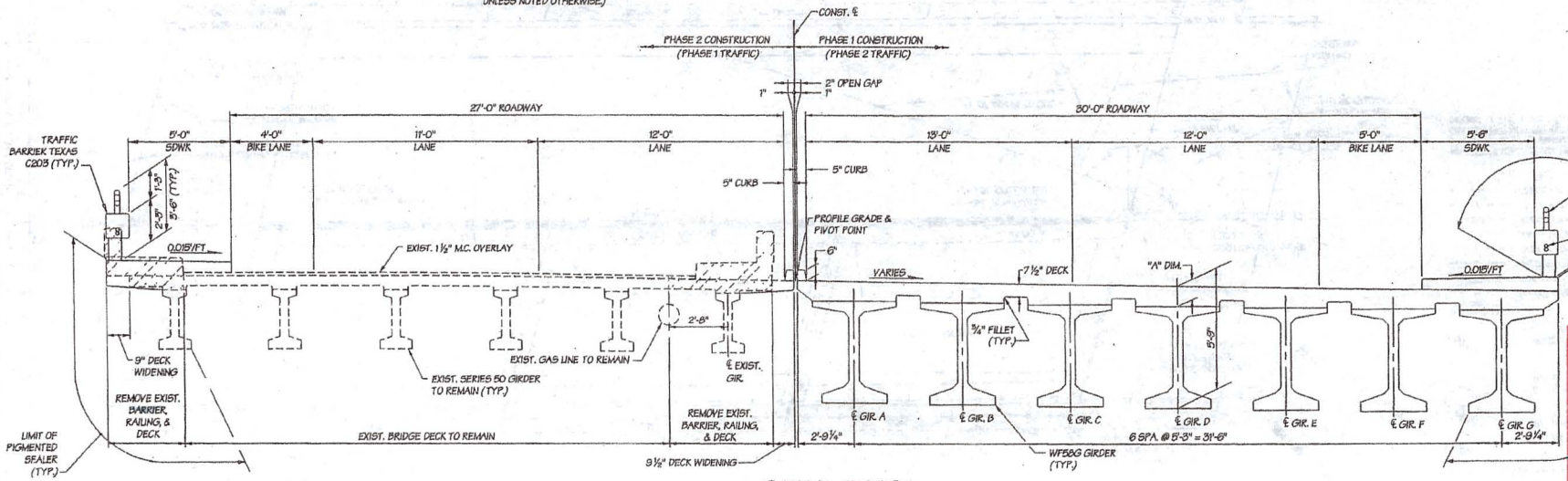
FOUNDATION LAYOUT

(ALL DIMENSIONS ARE ALONG ℄ OF DRILLED SHAFT UNLESS NOTED OTHERWISE.)



TYPICAL SECTION PIER 1

(PIER 2 SIM.)



TYPICAL SECTION

EXHIBIT 11
PAGE 34 OF 5

AECOM
10800 NE 8TH STREET, SUITE 750
BELLEVUE, WASHINGTON 98004
PHONE: (425) 454-5600
FAX: (425) 454-0820

KYLE LINTS STATE OF WASHINGTON 39970 PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY	CK

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

PROJECT INFORMATION:
SAMMAMISH BRIDGE AND ROAD (SR 202) PROJECT

SHEET TITLE:
FOUNDATION LAYOUT, PIER & BRIDGE TYPICAL SECTION

DATE: 10-05-2010	CHECKED BY: XX
DESIGNED BY: B. ESTRELLA	PROJECT NO.: XX
DRAWN BY: B. ESTRELLA	SCALE: NONE

SHEET XX OF XX

5. 10 - 3:52 PM estrdab R:\60201199 - Sammamish Bridge and Road (SR202) Project\Phase 2\CADD\Struct\Sheet\BR-02.dwg

PID - PROJ. NO. XXXXXX - NW REGION - NE WOODINVILLE DR. TO 196ST AVE NE - SR 202 - SAMMAMISH RIVER BRIDGE NO.202/295

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Attachment 3: Species Lists

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT; CANDIDATE SPECIES; AND SPECIES OF CONCERN
IN KING COUNTY
AS PREPARED BY
THE U.S. FISH AND WILDLIFE SERVICE
WASHINGTON FISH AND WILDLIFE OFFICE

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(Revised August 1, 2011)

LISTED

Bull trout *(Salvelinus confluentus)* – Coastal-Puget Sound DPS
Canada lynx *(Lynx canadensis)*
Gray wolf *(Canis lupus)*
Grizzly bear *(Ursus arctos = U. a. horribilis)*
Marbled murrelet *(Brachyramphus marmoratus)*
Northern spotted owl *(Strix occidentalis caurina)*

Major concerns that should be addressed in your Biological Assessment of project impacts to listed animal species include:

1. Level of use of the project area by listed species.

2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.

3. Impacts from project activities and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to listed species and/or their avoidance of the project area.

Castilleja levisecta (golden paintbrush) [historic]

Major concerns that should be addressed in your Biological Assessment of project impacts to listed plant species include:

1. Distribution of taxon in project vicinity.

2. Disturbance (trampling, uprooting, collecting, etc.) of individual plants and loss of habitat.

1. Changes in hydrology where taxon is found.

DESIGNATED

Critical habitat for bull trout
Critical habitat for the marbled murrelet
Critical habitat for the northern spotted owl

PROPOSED

None

CANDIDATE

Fisher *(Martes pennanti)* – West Coast DPS
North American wolverine *(Gulo gulo luteus)* – contiguous U.S. DPS
Oregon spotted frog *(Rana pretiosa)* [historic]
Yellow-billed cuckoo *(Coccyzus americanus)*
Whitebark pine *(Pinus albicaulis)*

SPECIES OF CONCERN

Bald eagle *(Haliaeetus leucocephalus)*
Beller's ground beetle *(Agonum belleri)*
Cascades frog *(Rana cascadae)*
Hatch's click beetle *(Eanus hatchi)*
Larch Mountain salamander *(Plethodon larselli)*
Long-eared myotis *(Myotis evotis)*
Long-legged myotis *(Myotis volans)*
Northern goshawk *(Accipiter gentilis)*
Northern sea otter *(Enhydra lutris kenyoni)*
Northwestern pond turtle *(Emys (= Clemmys) marmorata marmorata)*
Olive-sided flycatcher *(Contopus cooperi)*
Pacific lamprey *(Lampetra tridentata)*
Pacific Townsend's big-eared bat *(Corynorhinus townsendii townsendii)*
Peregrine falcon *(Falco peregrinus)*
River lamprey *(Lampetra ayresi)*
Tailed frog *(Ascaphus truei)*
Valley silverspot *(Speyeria zerene bremeri)*
Western toad *(Bufo boreas)*
Aster curtus (white-top aster)
Botrychium pedunculosum (stalked moonwort)
Cimicifuga elata (tall bugbane)

Endangered Species Act Status of West Coast Salmon & Steelhead

(Updated Aug. 11, 2011)

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Species[1]			Current Endangered Species Act Listing Status[2]	ESA Listing Actions Under Review
Sockeye Salmon (*Oncorhynchus nerka*)	1	Snake River	Endangered	
	2	Ozette Lake	Threatened	
	3	Baker River	Not Warranted	
	4	Okanogan River	Not Warranted	
	5	Lake Wenatchee	Not Warranted	
	6	Quinalt Lake	Not Warranted	
	7	Lake Pleasant	Not Warranted	
Chinook Salmon (*O. tshawytscha*)	8	Sacramento River Winter-run	Endangered	
	9	Upper Columbia River Spring-run	Endangered	
	10	Snake River Spring/Summer-run	Threatened	
	11	Snake River Fall-run	Threatened	
	12	Puget Sound	Threatened	
	13	Lower Columbia River	Threatened	
	14	Upper Willamette River	Threatened	
	15	Central Valley Spring-run	Threatened	
	16	California Coastal	Threatened	
	17	Central Valley Fall and Late Fall-run	Species of Concern	
	18	Upper Klamath-Trinity Rivers	Not Warranted	
	19	Oregon Coast	Not Warranted	
	20	Washington Coast	Not Warranted	
	21	Middle Columbia River spring-run	Not Warranted	
	22	Upper Columbia River summer/fall-run	Not Warranted	
	23	Southern Oregon and Northern California Coast	Not Warranted	
	24	Deschutes River summer/fall-run	Not Warranted	
Coho Salmon (*O. kisutch*)	25	Central California Coast	Endangered	
	26	Southern Oregon/Northern California	Threatened	
	27	Lower Columbia River	Threatened	• Critical habitat
	28	Oregon Coast	Threatened	
	29	Southwest Washington	Undetermined	
	30	Puget Sound/Strait of Georgia	Species of Concern	
	31	Olympic Peninsula	Not Warranted	
Chum Salmon (*O. keta*)	32	Hood Canal Summer-run	Threatened	
	33	Columbia River	Threatened	
	34	Puget Sound/Strait of Georgia	Not Warranted	
	35	Pacific Coast	Not Warranted	
Steelhead (*O. mykiss*)	36	Southern California	Endangered	
	37	Upper Columbia River	Threatened	
	38	Central California Coast	Threatened	
	39	South Central California Coast	Threatened	
	40	Snake River Basin	Threatened	
	41	Lower Columbia River	Threatened	
	42	California Central Valley	Threatened	
	43	Upper Willamette River	Threatened	
	44	Middle Columbia River	Threatened	
	45	Northern California	Threatened	
	46	Oregon Coast	Species of Concern	
	47	Southwest Washington	Not Warranted	
	48	Olympic Peninsula	Not Warranted	
	49	Puget Sound	Threatened	• Critical habitat
	50	Klamath Mountains Province	Not Warranted	
Pink Salmon (*O. gorbuscha*)	51	Even-year	Not Warranted	
	52	Odd-year	Not Warranted	

1 The ESA defines a "species" to include any distinct population segment of any species of vertebrate fish or wildlife. For Pacific salmon, NOAA Fisheries Service considers an evolutionarily significant unit, or "ESU," a "species" under the ESA. For Pacific steelhead, NOAA Fisheries Service has delineated distinct population segments (DPSs) for consideration as "species" under the ESA.

Species Lists

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ESA-Listed Pacific Salmon *(PDF 50KB)*

ESA-Listed Marine Mammals

ESA-Listed Other Marine Species

ESA-Listed Marine Turtles

Section 7 of the Endangered Species Act (ESA) directs all federal agencies to conserve species listed as threatened and endangered. Those agencies, in consultation with NOAA Fisheries Service and the U.S. Fish & Wildlife Service, must ensure that their actions will not jeopardize the continued existence of any ESA-listed species. Before starting an action, a federal action agency planning an activity obtains a list of threatened, endangered, proposed and candidate species that may be present in the project action area. The links to the left provide species lists for the Northwest Region.

Search

Search NOAA Fisheries

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Biological Opinions

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7600 Sand Point Way NE, Seattle, WA 98115-0070
Regional Receptionist: 503-230-5400
Email: Content Manager

Page last updated: June 15, 2010

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Attachment 4: Highway Runoff Dilution Summary Results

Highway Runoff Dilution Summary Results

Project: Sammamish River Bridge (202)
Precipitation Series: Puget West 48
Description: Dates June 2010 to May 2011
Dissolved Zinc and Copper from 2007 (last data available)
Flow data from USGS River Gage 12125200

Background Concentrations (mg/L)
Dissolved Copper: 1.0987
Dissolved Zinc: 2.3833

Baseline Conditions: 0.983 acres
No Treatment Infiltration 0% - 0.983 acres

Proposed Conditions: 1.054 acres
Enhanced Treatment Infiltration 0% - 1.054 acres

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Depth (ft)		15	13	13.5	13.3	11.8	11.4	12	11.1	11.7	12.6	14.1	15.6
Velocity (fps)		1.23	1.05	1.15	1.13	0.8	0.66	0.34	0.17	0.19	0.27	0.52	1.06
Width (ft)		86	73	78	76	69	68	69	66	69	72	82	88
Manning Roughness		0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
Discharge Distance (ft)		0	0	0	0	0	0	0	0	0	0	0	0
Distance Downstream in feet to Meet Biological Threshold													
Dissolved Copper	Baseline	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
	Proposed	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Dissolved Zinc	Baseline	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
	Proposed	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

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Attachment 5: List Species and Environmental Setting

Status and Presence of Listed Species Occurrence in the Action Area

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Coastal-Puget Sound Bull Trout

Listing, Spatial Structure, and Diversity. The Coastal-Puget Sound DPS of bull trout is listed as threatened by the USFWS (64 Federal Register [FR] 58910). The USFWS has identified core areas important to the recovery of bull trout. A core area represents the closest approximation of a biologically functioning unit for bull trout. A core area is a combination of core habitat (i.e., habitat with all necessary components for spawning, rearing, foraging, migrating, and overwintering) and a core population. The designation of core areas is an update from the classification of subpopulations that was used by the USFWS in the 1999 listing information. The only likely viable bull trout subpopulation in the Lake Washington watershed is the Chester Morse Reservoir subpopulation (USFWS 2004). High summer water temperatures and anoxic conditions would likely deter bull trout from residing in Lake Sammamish. The Action Area is within the Sammamish River-Issaquah Creek subpopulation, where spawning has not been confirmed (WDFW 1998), and only two bull trout have been observed in the system within the last 10 years. The Action Area is located outside of the eight bull trout core areas identified within the Puget Sound Management Unit (Shared Strategy for Puget Sound 2007).

Life History. Bull trout exhibit both resident and migratory life history strategies. Both resident and migratory forms may be found together, and either form may produce offspring exhibiting either resident or migratory behavior (Rieman and McIntyre 1993). Resident bull trout complete their entire life cycle in the tributary (or nearby) streams in which they spawn and rear. The resident form tends to be smaller than the migratory form at maturity and also produces fewer eggs (Fraley and Shepard 1989; Goetz 1989). Migratory bull trout spawn in tributary streams where juvenile fish rear 1 to 4 years before migrating to either a lake (adfluvial form), river (fluvial form) (Fraley and Shepard 1989; Goetz 1989), or saltwater (anadromous form) to rear as subadults and to live as adults (Cavender 1978; McPhail and Baxter 1996; WDFW et al. 1997). Bull trout typically spawn from August to November during periods of increasing flows and decreasing water temperatures. Depending on water temperature, incubation is normally 100 to 145 days (Pratt 1992). Fry normally emerge from early April through May, depending on water temperatures and increasing stream flows (Pratt 1992).

Abundance and Productivity. The stock status for bull trout in the Lake Washington basin is largely unknown and information on their abundance is extremely limited (King County 2002). A few stray individuals have been observed in scattered locations in the Lake Washington watershed. It is possible that the headwaters of Issaquah and Bear creeks could provide suitable habitat for bull trout. However, it is unlikely that bull trout are present in the Sammamish River because of elevated water temperatures.

Critical Habitat. PS bull trout critical habitat does not occur in the Action Area, which is in Unit 2, Puget Sound, Sub-unit: Lake Washington. The closest designated critical habitat is located in Lake Washington (70 FR 56309).

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Puget Sound Chinook

Listing, Spatial Structure, and Diversity. The Puget Sound Evolutionarily Significant Unit (ESU) of Chinook salmon is listed as threatened by NMFS. The Puget Sound ESU is a composite of many individual populations of naturally spawning Chinook salmon and a number of hatchery stocks (64 FR 14308, 3/24/99). The Puget Sound Technical Recovery Team (PSTRT) analyzed the Chinook populations of Puget Sound and identified 22 independent populations of Chinook salmon (PSTRT 2005). The Action Area is within the Sammamish population. Based on the four Viable Salmon Population (VSP) parameters, few of the Chinook salmon populations in Puget Sound are considered to be viable.

Life History. Adult Chinook salmon return to natal streams from July through October, with the peak in mid-August through September. Juvenile Chinook salmon emigrate from their natal streams as fry from early January through March. Juvenile Chinook salmon spend a few months in freshwater before migrating to saltwater in May or June (Shared Strategy for Puget Sound 2007).

Abundance and Productivity. Overall abundance of this ESU has declined substantially from historical levels, and many populations are small enough that genetic and demographic risks are likely to be relatively high (63 FR 11494, March 9, 1998). Status reviews have identified a number of factors for decline, including habitat conditions, artificial propagation, and harvest of the species. Table 3 contains information on the contribution of hatchery-origin to natural spawning Chinook in the Sammamish population.

Table 3. Spawning Abundance of the PS Chinook Sammamish Population.

	1986–1990			1994–1998			2000–2004	
Population	Geometric Mean	Hatchery Contribution	Productivity	Geometric Mean	Hatchery Contribution	Productivity	Geometric Mean	Hatchery Contribution
Sammamish	388	41%	0.28	145	74%	2.72	243	69%

Source: Shared Strategy for Puget Sound 2007.

Critical Habitat. PS Chinook critical habitat does not occur in the Action Area. The closest designated critical habitat is located in Lake Washington (70 FR 52630).

Puget Sound Steelhead

Listing, Spatial Structure, and Diversity. The NMFS designated PS steelhead as threatened under the ESA on June 11, 2007 (72 FR 26722). Puget Sound steelhead are found in all accessible large tributaries to Puget Sound and the eastern Strait of Juan de Fuca (WDFG 1932). Nehlsen et al. (1991) identified nine PS steelhead stocks at some degree of risk or concern. However, the Sammamish River stocks are not currently at risk or concern. The Cedar-Sammamish Watershed winter steelhead stock has been characterized as "depressed" (Kerwin 2001). WDF and WWTIT (1993) identified 53 stocks within the Distinct Population Segment (DPS), of which 31 were considered to be of native origin and predominantly natural production. Of the 31 stocks, they rated 11 as healthy, three as depressed, one as critical, and 16 as unknown. Since 1992 there has been a general downward trend in steelhead populations in this DPS. Busby et al. (1996) reviewed the 21 populations in the Puget Sound DPS and found that 17 had declining trends and four had increasing trends. Marked declines in natural run size are evident in all areas of the DPS. Even sharper declines are observed in southern Puget Sound and in Hood Canal.

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Throughout the DPS, natural steelhead production has shown a weak response to reduced harvest since the mid 1990s. Median population growth rates were estimated for several populations in the DPS, using the 4-year running sums method (Holmes 2001; Holmes and Fagan 2002). They estimated that the growth rate was less than 1% for most populations in the DPS.

Life History. PS steelhead typically spend 2 to 3 years in freshwater before migrating downstream into marine waters. Once the juveniles emigrate, they move rapidly through Puget Sound into the north Pacific Ocean where they reside for several years before returning to spawn in their natal streams. Unlike other species of *Oncorhynchus*, *O. mykiss* are capable of repeat spawning. There are two types of steelhead, winter steelhead and summer steelhead. Winter steelhead become sexually mature during their ocean phase and spawn soon after arriving at their spawning grounds. Adult summer steelhead enter their natal streams and spend several months holding and maturing in freshwater before spawning. Winter run, or ocean-maturing, steelhead enter freshwater between November and April at an advanced stage of maturation and spawn, usually from March through June. Summer run, or stream maturing, steelhead enter freshwater in a sexually immature condition, usually between May and October. These summer run steelhead remain in freshwater for several months before reaching maturity and spawning between January and April.

Abundance and Productivity. The PS steelhead DPS is composed primarily of winter-run populations. No abundance estimates exist for most of the summer-run populations; all are low, most averaging less than 200 spawners annually. Summer-run populations are concentrated in northern Puget Sound and Hood Canal; only the Elwha River and Canyon Creek support summer-run steelhead in the rest of the DPS. Steelhead are most abundant in northern Puget Sound, with winter-run steelhead in the Skagit and Snohomish rivers supporting the two largest populations (approximately 3,000 and 5,000, respectively).

Critical Habitat. PS steelhead critical habitat has not been designated and is currently under development (NMFS 2011).

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Environmental Setting

Regulations implementing the ESA (50 CFR 402.02) define the environmental baseline as the past and present impacts of all federal, state, or private actions and other human activities in the Action Area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the Action Area that have undergone Section 7 consultation, and the impacts of state and private actions that are contemporaneous with the consultation in progress.

Habitat Conditions in Action Area

The Sammamish River basin drains a watershed of approximately 153,600 acres that includes 62,080 acres in the Lake Sammamish basin, 32,000 acres in the Bear Creek basin, and 42,880 acres that are the combined Little Bear, Swamp, and North creek basins. The remaining 16,640 acres comprise the Sammamish River subbasin.

Historically, the Sammamish River was somewhat longer than it is today with abundant "swampy" areas comprised of peat and diatomaceous earth. In 1891, the USACE reported that the river was 17 miles long. The river corridor was heavily logged from the 1870s through the early 20th century. Throughout the 20th century, the river experienced dramatic changes that reduced the complexity of the floodplain including the lowering of the Lake Washington, the channelization of the river, and the construction of drainage ditches in the river valley. The elevation of Lake Washington was lowered about 9 feet with the opening of the Chittenden Locks in 1916, and this elevation change drained much of the swampy Sammamish River corridor. Around the same time period, farmers in the Sammamish River valley formed a drainage district that began to straighten the upper reach of the river dramatically. In 1962, the USACE began to systematically dredge the river, primarily as a flood control project, thus deepening the river 5 feet throughout most its length, hardening the river's banks, and dramatically decreasing its remaining connection with the floodplain and cutting off most of the smaller tributaries to the river. The USACE project also included the construction of a weir at the Lake Sammamish outlet. Overall, this project practically eliminated flooding in the Sammamish River valley and reduced the maximum flood elevations and seasonal water surface elevations in Lake Sammamish.

The Sammamish River is now about 13.5 miles long. The Sammamish watershed is part of the greater Lake Washington - Cedar River drainage, encompassing the land area draining to Lake Sammamish, the Sammamish River, and into Lake Washington. The mainstem Sammamish River between lakes Sammamish and Washington is monotypic, containing 98% glide habitat (Jeanes and Hilgert 1999). Riffles make up 1.4% of the habitat, and there are 29 pools (Fresh et al. 1999). Dominant substrates are silt and clay (70–90%) mixed with sand (10–30%) with some cobble and large gravel.

Land use in this upper reach includes open space and recreational areas at Marymoor Park, urban commercial and residential development in the City of Redmond, the Willows Run Golf Course, the Sammamish Valley Agricultural Production District, and urban development in the City of Woodinville. The lower reach extends from Woodinville to the mouth of the river at Lake Washington. This reach has a much narrower drainage area, which includes the downtown cores of Bothell and Kenmore but also some open space areas, including the Wayne and Inglemoor Country Club golf courses, Bothell parkland along the Sammamish River Trail, and King County-owned parcels at the mouth of Swamp Creek and the

mouth of the river. A major King County sewer line runs underneath the Sammamish River Trail, which is adjacent to most of the river.

Chinook, coho (*Oncorhynchus kisutch*), sockeye (*O. nerka*), kokanee (*O. nerka*), steelhead (*O. mykiss*), and coastal cutthroat (*O. clarki clarki*) are known salmonid species to currently inhabit the Sammamish River system (Kerwin 2001). Largemouth bass (*Micropterus salmoides*) and rainbow trout (*O. mykiss*) are included in the WDFW Priority Habitats and Species (PHS) data (WDFW 2011a).Volunteers with the Salmon Watcher Program have been making observations at various locations within the Sammamish River basin since 1997. Two salmon-bearing tributary systems are located in the upper reach: Bear Creek and Little Bear Creek. The lower reach includes two large salmon-bearing tributaries: Swamp Creek and North Creek (Kerwin 2001).

Water quality in the Sammamish River is poor (King County 2002). The river is on the Washington State Department of Ecology's (Ecology) 2008 303(d) list for temperature, fecal coliform, and dissolved oxygen (Ecology 2008). Water temperatures as high as 80°F have been measured in late July (Martz et al. 1999); this is well above the lethal limits for salmon and above the 50–57°F temperature identified in the NMFS temperature guidelines for properly functioning conditions for salmonids (NMFS 1996). King County conducted an assessment of sediment and water quality in the river to determine the presence and extent of chemical contaminants and condition of the benthic community. Overall, no contaminants were measured at concentrations that would lead to adverse effects on aquatic life. The benthic community throughout the river is stressed and degraded. Diversity is low, and the community is dominated by a relatively low number of tolerant organisms (King County 2005). Table 4 summarizes instream habitat conditions as assessed using the Matrix Pathways and Indicators developed by NMFS.

The project area is located along the middle Sammamish River near river mile (RM) 5. Several tributaries enter the river in the general vicinity of the project area. The closest tributary is Little Bear Creek, approximately 300 feet downstream of the project area. Aquatic habitats in the project area include the Sammamish River and an 872 square-foot palustrine emergent/riverine wetland (Wetland A) on the south bank of the river within the floodway (Shannon and Wilson 2007) (Figure 4). The Sammamish River Bridge reach (project reach) includes glide habitat upstream and a single 150-foot riffle north of the bridge and downstream of Little Bear Creek (Figure 6, Photos of the Sammamish River Bridge). The wetted channel width of the project reach varies from 66 feet (in summer) to 88 feet (in winter). The banks of the Sammamish River in the project area are relatively steep. In 2003, WSDOT installed riprap to address scouring around the intermediate piers of the existing bridge (Shannon and Wilson 2007).

Wetland A was delineated by Shannon and Wilson in 2007. The wetland is located below and southeast of the existing bridge (Figure 4), and vegetation consists of plant species typical of disturbed wet areas such as climbing nightshade (*Solanum dulcamara*), reed canarygrass (*Phalaris arundinacea*), marsh speedwell (*Veronica scutellata*), and creeping buttercup (*Ranunculus repens*). Small-fruited bulrush (*Scirpus microcarpus*) was also documented. The wetland receives untreated stormwater from adjacent uplands and overbank flooding from the Sammamish River (Shannon and Wilson 2007). The wetland does not have special habitat features; due to the low frequency of overbank flooding from the Sammamish River, most of the wetland does not provide fish habitat. A narrow fringe of small-fruited bulrush may provide limited cover for juvenile salmonids.

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Table 4. Matrix of Pathways and Indicators.

PATHWAY	INDICATORS	BASELINE CONDITIONS	EFFECT OF THE ACTIONS
Water Quality	Temperature	Not Properly Functioning	Maintain
	Sediment	At Risk	Maintain
	Chemical Contamination & Nutrients	Not Properly Functioning	Maintain
Habitat Access	Physical Barriers	Properly Functioning	Maintain
Habitat Elements	Substrate	Not Properly Functioning	Maintain
	Large Woody Debris	At Risk	Maintain
	Pool Frequency	At Risk	Maintain
	Pool Quality/Depth	At Risk	Maintain
	Off-Channel Habitat	At Risk	Maintain
	Refugia	At Risk	Maintain
Channel Conditions and Dynamics	Width/Depth Ratio	Not Properly Functioning	Maintain
	Stream Bank Condition	At Risk	Maintain
	Floodplain Connectivity	At Risk	Maintain
Flow/Hydrology	Change in Peak/Base Flows	Not Properly Functioning	Maintain
	Increase in Drainage Network	Not Properly Functioning	Maintain
Watershed Conditions	Road Density and Location	Not Properly Functioning	Maintain
	Disturbance History	Not Properly Functioning	Maintain
	Riparian Reserve	At Risk	Maintain

Source: NMFS 1996.

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