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## **PROJECT DESCRIPTION:**

### **Pipeline Exposure**

In November 2006 the NWP crossing at Woodard Creek became exposed during the heavy rain and flooding. Head-cut erosion moving upstream through the creek channel resulted in a five to six foot drop in elevation over the pipeline at the stream crossing. The exposed pipeline was at risk of being damaged by large bedload cobbles and boulders moving down the stream. Due to continued head-cut erosion the pipeline was at risk of further exposure to cobbles and boulders as vertical undercutting continued. Without erosion protection more of the pipeline would become exposed, increasing the risk of damage.

### **Emergency Repair**

In August 2007 repair of the exposed pipeline included the installation of a permanent rock grade control structure along the downstream side of the exposed pipeline. The grade-control structure extends across the width of the active channel area, and is keyed a minimum of 10-ft into the channel side banks. The grade-control structure is constructed approximately 20-feet downstream of the pipeline; staying within the NWP right-of-way (ROW) boundaries. The upstream top elevation of the structure is constructed to match the top of the pipeline. The structure transitions from the top pipe elevation down to match the existing channel bottom elevation, and is keyed into below the channel bottom to address future scour and erosion. The grade-control structure is constructed of angular rock riprap materials. Pipeline supports, abrasion protection covers, and padding protects the exposed pipeline. As recommended by the US Forest Service hydrologist all spoil material which was displaced by riprap was graded into the project area. The details of the as built design are shown in the attached drawings.

### **Future Mitigation**

Mitigation will consist of one or more engineered log jam structures downstream, some bank stabilization and planting of native vegetation within the affected riparian area as recommended by US Forest Service. These mitigation measures will enhance fish habitat structure and shade within the creek. To further enhance the repair, as required by both federal and state agencies, Northwest Pipeline will construct a downstream grade control structure(s) in 2008. In coordination with the US Forest Service (Chuti Fiedler), Douglas fir trees were removed the along the access road to the site for the engineered log jams to be constructed in 2008. The design of this structure(s) is undetermined at this time but is being evaluated by Northwest's contractor, ENTRIX. Northwest will continue to coordinate with the appropriate state and federal authorities in the development and implementation of this design through its proposed construction in summer 2008 and will be included in a second application at that time.

Permits and authorizations received for this project from the US Corps of Engineers, US Forest Service, and Washington Department of Fish and Wildlife are attached for your review. Coordination was also conducted with the SHPO and CRGNSA Forest Service archaeologist (see attached consultations and report prepared by AINW). An after-the-fact Biological Assessment is being prepared and will be filed with the US Army Corps of Engineers and the National Marine Fisheries Service before 31 December 2007 (a copy will be provided to the US Forest Service). Northwest will continue to consult with the US Forest Service (Chuti Fiedler) regarding design, application and timing for the in-stream work during the 2008 work window.

**Application Checklist: the following is required to complete your application:**

- Application form completed and signed
- Site Plan
- Key viewing areas checklist (attached)
- Names and addresses of adjacent property owners within 200 feet of parcel
- Any additional information as required:

**KEY VIEWING AREAS:** Key viewing areas are important public viewpoints and areas that afford opportunities to view the Gorge scenery. Key viewing areas are listed below. Please check those sites which can be seen from your property.

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|--|--|
| <input type="checkbox"/> Historic Columbia River Highway             | <input type="checkbox"/> Washington State Route 14             |
| <input type="checkbox"/> Sandy River                                 | <input type="checkbox"/> Washington State Route 142            |
| <input type="checkbox"/> Portland Women's Forum State Park           | <input type="checkbox"/> Washington State Route 141            |
| <input type="checkbox"/> Crown Point                                 | <input type="checkbox"/> Cook-Underwood Road                   |
| <input type="checkbox"/> Rooster Rock State Park                     | <input type="checkbox"/> Dog Mountain Trail                    |
| <input type="checkbox"/> Multnomah Falls                             | <input type="checkbox"/> Beacon Rock                           |
| <input type="checkbox"/> Larch Mountain                              | <input type="checkbox"/> Cape Horn                             |
| <input type="checkbox"/> Highway I-84, including rest stops          | <input type="checkbox"/> Columbia River                        |
| <input type="checkbox"/> Bonneville Dam Visitor Centers              | <input type="checkbox"/> Pacific Crest Trail Oregon Highway 35 |
| <input type="checkbox"/> Sherrard Point on Larch Mountain            |  |
| <input type="checkbox"/> Rowena Plateau/Nature Conservancy Viewpoint |  |
| <input type="checkbox"/> Larch Mountain Road                         |  |
| <input type="checkbox"/> Wyeth Bench Road                            |  |
| <input type="checkbox"/> County Road 1230 (Old WA St. Route 14)      |  |

**PROJECT SITE PLAN:** A plan drawn in black ink at a scale of about 1 inch equal to 200 feet (1:2400) or at a scale providing greater detail must be included with the application.

If the parcel is very large, you may show the project on the portion of the parcel affected by the proposed use. Be sure, however, to show enough of the parcel or some adjacent features, such as roads, so that the reviewers can orient themselves on your map. A small vicinity map showing the subject parcel and surrounding parcels may help.

**At a minimum, you must show the following features:**

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Applicant(s) name

Location and width of existing and proposed roads, driveways, and trails

Scale and north arrow

Location and size of existing and proposed structures

Boundaries of parcel with dimensions and size

Location of existing and proposed services including wells or other water supplies, structures, power and telephone poles and lines and outdoor lighting.

Significant terrain features or landforms

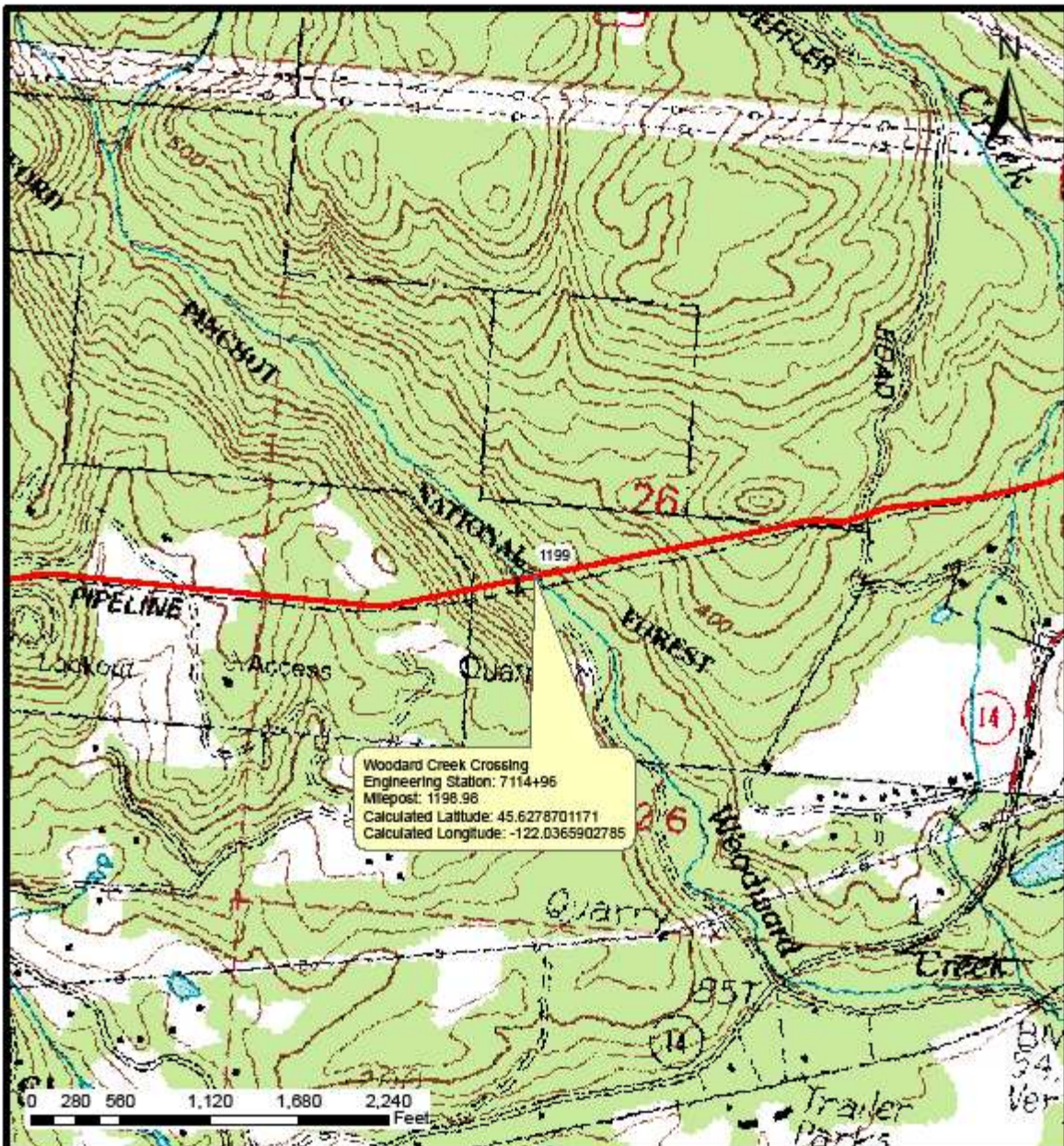
Location and depth of all proposed grading and ditching


Groupings and species of trees or other vegetation on the parcel

Location and species of vegetation that would be removed or planted

Water courses and bodies of water





DRAWING NO.		REFERENCE TITLE		<b>NORTHWEST PIPELINE CORPORATION</b> <b>LOCATION MAP</b> <b>WOODARD CREEK CROSSING</b> <b>STATION 7114+96, M.P. 1198.98</b> <b>T-2-N, R-6-E, SECTION 26</b> <b>SKAMANIA COUNTY, WASHINGTON</b>				 GAS PIPELINE		
NO.	DATE	BY	REVISION NUMBER	W.O. NO.	CHK.	APP.	DWG. BY: CCS	DATE: 6/22/07	ISSUED FOR BID:	SCALE: 1:10,000
							CHK BY:	DATE:	ISSUED FOR CONTS:	
							APPR. BY:	DATE:	DRAWING NUMBER: 1400.XX-XXXX	SHEET 1
									K:\WoodardCreekCrossing\2007\Mapping\ArcGIS\TopoMap.mxd	OF 1