



# WASHINGTON STATE

## Joint Aquatic Resources Permit Application (JARPA) Form<sup>1,2</sup> [\[help\]](#)

USE BLACK OR BLUE INK TO ENTER ANSWERS IN THE WHITE SPACES BELOW.



US Army Corps  
of Engineers®  
Seattle District

AGENCY USE ONLY

Date received: \_\_\_\_\_

Agency reference #: \_\_\_\_\_

Tax Parcel #(s): \_\_\_\_\_

### Part 1–Project Identification

**1.** Project Name (A name for your project that you create. Examples: Smith's Dock or Seabrook Lane Development) [\[help\]](#)

West Taneum Road Bank Stabilization and Roadway Repair

### Part 2–Applicant

The person and/or organization responsible for the project. [\[help\]](#)

**2a.** Name (Last, First, Middle)

Huck, Lucas – Kittitas County Engineer

**2b.** Organization (If applicable)

Kittitas County Public Works

**2c.** Mailing Address (Street or PO Box)

411 N. Ruby St, Suite 1

**2d.** City, State, Zip

Ellensburg, WA

**2e.** Phone (1)

**2f.** Phone (2)

**2g.** Fax

**2h.** E-mail

509-962-7523

Lucas.huck@co.kittitas.wa.us

<sup>1</sup>Additional forms may be required for the following permits:

- If your project may qualify for Department of the Army authorization through a Regional General Permit (RGP), contact the U.S. Army Corps of Engineers for application information (206) 764-3495.
- If your project might affect species listed under the Endangered Species Act, you will need to fill out a Specific Project Information Form (SPIF) or prepare a Biological Evaluation. Forms can be found at <http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx>.
- Not all cities and counties accept the JARPA for their local Shoreline permits. If you need a Shoreline permit, contact the appropriate city or county government to make sure they accept the JARPA.

<sup>2</sup>To access an online JARPA form with [help] screens, go to [http://www.epermitting.wa.gov/site/alias\\_resourcecenter/jarpa\\_jarpa\\_form/9984/jarpa\\_form.aspx](http://www.epermitting.wa.gov/site/alias_resourcecenter/jarpa_jarpa_form/9984/jarpa_form.aspx).

For other help, contact the Governor's Office for Regulatory Innovation and Assistance at (800) 917-0043 or [help@oria.wa.gov](mailto:help@oria.wa.gov).

## Part 3—Authorized Agent or Contact

Person authorized to represent the applicant about the project. (Note: Authorized agent(s) must sign 11b of this application.) [\[help\]](#)

|                                               |                      |                |                            |
|-----------------------------------------------|----------------------|----------------|----------------------------|
| <b>3a.</b> Name (Last, First, Middle)         |                      |                |                            |
| Broadhead, Craig D.                           |                      |                |                            |
| <b>3b.</b> Organization (If applicable)       |                      |                |                            |
| Jacobs Engineering Group Inc.                 |                      |                |                            |
| <b>3c.</b> Mailing Address (Street or PO Box) |                      |                |                            |
| 32 North 3rd Street, Suite 304                |                      |                |                            |
| <b>3d.</b> City, State, Zip                   |                      |                |                            |
| Yakima, WA 98901                              |                      |                |                            |
| <b>3e.</b> Phone (1)                          | <b>3f.</b> Phone (2) | <b>3g.</b> Fax | <b>3h.</b> E-mail          |
| 509-312-0375                                  |                      |                | Craig.broadhead@jacobs.com |

## Part 4—Property Owner(s)

Contact information for people or organizations owning the property(ies) where the project will occur. Consider both **upland and aquatic** ownership because the upland owners may not own the adjacent aquatic land. [\[help\]](#)

- ☒ Same as applicant. (Skip to Part 5.)
- ☐ Repair or maintenance activities on existing rights-of-way or easements. (Skip to Part 5.)
- ☐ There are multiple upland property owners. Complete the section below and fill out [JARPA Attachment A](#) for each additional property owner.
- ☐ Your project is on Department of Natural Resources (DNR)-managed aquatic lands. If you don't know, contact the DNR at (360) 902-1100 to determine aquatic land ownership. If yes, complete [JARPA Attachment E](#) to apply for the Aquatic Use Authorization.

|                                               |                      |                |                   |
|-----------------------------------------------|----------------------|----------------|-------------------|
| <b>4a.</b> Name (Last, First, Middle)         |                      |                |                   |
|                                               |                      |                |                   |
| <b>4b.</b> Organization (If applicable)       |                      |                |                   |
|                                               |                      |                |                   |
| <b>4c.</b> Mailing Address (Street or PO Box) |                      |                |                   |
|                                               |                      |                |                   |
| <b>4d.</b> City, State, Zip                   |                      |                |                   |
|                                               |                      |                |                   |
| <b>4e.</b> Phone (1)                          | <b>4f.</b> Phone (2) | <b>4g.</b> Fax | <b>4h.</b> E-mail |
|                                               |                      |                |                   |

## Part 5–Project Location(s)

Identifying information about the property or properties where the project will occur. [\[help\]](#)

- ☐ There are multiple project locations (e.g. linear projects). Complete the section below and use [JARPA Attachment B](#) for each additional project location.

**5a.** Indicate the type of ownership of the property. (Check all that apply.) [\[help\]](#)

- ☐ Private
- ☐ Federal
- ☒ Publicly owned (state, county, city, special districts like schools, ports, etc.)
- ☐ Tribal
- ☐ Department of Natural Resources (DNR) – managed aquatic lands (Complete [JARPA Attachment E](#))

**5b.** Street Address (Cannot be a PO Box. If there is no address, provide other location information in 5p.) [\[help\]](#)

West Taneum Road, MP 3.9

**5c.** City, State, Zip (If the project is not in a city or town, provide the name of the nearest city or town.) [\[help\]](#)

Thorp, WA, 98946

**5d.** County [\[help\]](#)

Kittitas

**5e.** Provide the section, township, and range for the project location. [\[help\]](#)

| ¼ Section | Section | Township | Range |
|-----------|---------|----------|-------|
|           | 06      | 18N      | 17E   |

**5f.** Provide the latitude and longitude of the project location. [\[help\]](#)

- Example: 47.03922 N lat. / -122.89142 W long. (Use decimal degrees - NAD 83)

47.086500/-120.766427

**5g.** List the tax parcel number(s) for the project location. [\[help\]](#)

- The local county assessor's office can provide this information.

County right-of-way

**5h.** Contact information for all adjoining property owners. (If you need more space, use [JARPA Attachment C.](#)) [\[help\]](#)

| Name                   | Mailing Address                     | Tax Parcel # (if known)            |
|------------------------|-------------------------------------|------------------------------------|
| Terry Knudson, Trustee | 6132 Taneum Road<br>Thorp, WA 98946 | 18-17-06020-0010, 18-17-06020-0005 |
|                        |                                     |                                    |
|                        |                                     |                                    |
|                        |                                     |                                    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>5i.</b> List all wetlands on or adjacent to the project location. <a href="#">[help]</a>                                                                                                                                                                                                                                                                                                                                                                        |
| No wetlands are present within or adjacent to the project area.                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>5j.</b> List all waterbodies (other than wetlands) on or adjacent to the project location. <a href="#">[help]</a>                                                                                                                                                                                                                                                                                                                                               |
| Taneum Creek.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>5k.</b> Is any part of the project area within a 100-year floodplain? <a href="#">[help]</a>                                                                                                                                                                                                                                                                                                                                                                    |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know                                                                                                                                                                                                                                                                                                                                                            |
| <b>5l.</b> Briefly describe the vegetation and habitat conditions on the property. <a href="#">[help]</a>                                                                                                                                                                                                                                                                                                                                                          |
| The project will occur within County right-of-way on the embankment of Taneum Creek and West Taneum Road. Most of the vegetation in the stabilization area has been lost to erosion. The remaining riparian vegetation is mostly cottonwood, dogwood, and willow. North of the project area are open grass/basalt hillsides. South of the project area, on the other side of the Taneum Creek floodplain, are incised canyons with Douglas-fir and ponderosa pine. |
| <b>5m.</b> Describe how the property is currently used. <a href="#">[help]</a>                                                                                                                                                                                                                                                                                                                                                                                     |
| The property is currently used for right-of-way associated with West Taneum Road. The project area occupies the interface between the West Taneum Road embankment and the Taneum Creek Streambank. The project will replace the road prism that has been lost in flood events.                                                                                                                                                                                     |
| <b>5n.</b> Describe how the adjacent properties are currently used. <a href="#">[help]</a>                                                                                                                                                                                                                                                                                                                                                                         |
| Adjacent properties are used for rural residences, limited agriculture, and natural open space.                                                                                                                                                                                                                                                                                                                                                                    |
| <b>5o.</b> Describe the structures (above and below ground) on the property, including their purpose(s) and current condition. <a href="#">[help]</a>                                                                                                                                                                                                                                                                                                              |
| West Taneum Road, located on the north bank of Taneum Creek, is failing due to erosive flows. Portions of the paved surface of the road have been lost, and the driving surface is currently reduced to one lane with concrete barrier placement on the stream side as a safety precaution.                                                                                                                                                                        |
| <b>5p.</b> Provide driving directions from the closest highway to the project location, and attach a map. <a href="#">[help]</a>                                                                                                                                                                                                                                                                                                                                   |
| Exit Interstate 90 at Exit 101 (Thorp) and proceed south on Thorp Highway. Turn west on Thorp Cemetery Road. Continue West on West Taneum Road for about 1.1 miles. The site will be on the left where the creek encroaches on the road.                                                                                                                                                                                                                           |

## Part 6—Project Description

**6a.** Briefly summarize the overall project. You can provide more detail in 6b. [\[help\]](#)

Kittitas County (County) needs to repair an actively eroding bank on Taneum Creek that has caused ongoing loss of the traveled surface of West Taneum Road. The original roadway embankment was composed of a rock revetment that has been impacted by stream erosion. The bank repair project is located on West Taneum Road, just west of Interstate 90 (I-90) and the town of Thorp. The project will reconstruct the eroded creek bank, prevent further erosion and roadway loss, and increase aquatic habitat complexity by the placement of rock, large woody debris (LWD), and revegetation. The project design replaces the previous rock embankment with a design that incorporates flow deflection structures combined with a wood-studded rock revetment to reconstruct the road embankment, provide long-term protection of the roadway, increase channel complexity, and arrest further up- and downstream erosion. The revetment and suitable bank area will be planted with native riparian vegetation to replace lost riparian function and long-term roadway protection.

The design of the bank stabilization project utilizes bioengineered principles that are consistent with Washington Department of Fish and Wildlife (WDFW) Integrated Streambank Protection Guidelines. In addition, the incorporation of LWD and planting of riparian vegetation has been used on similar projects in the area, and when integrated as part of the design are considered self-mitigating project elements by the Services and WDFW.

The project is proposed for construction from August through November 2017.

**6b.** Describe the purpose of the project and why you want or need to perform it. [\[help\]](#)

The purpose of this project is to stop erosion on the north bank of Taneum Creek and prevent further loss of West Taneum Road, reconstruct the roadway embankment and driving surface, and provide a safer roadway for local and national forest access. West Taneum Road is a main arterial for access to National Forest, and is currently down to one lane, one-way alternating traffic with concrete barrier. The project will return the roadway to safety standards.

**6c.** Indicate the project category. (Check all that apply) [\[help\]](#)

- |                                      |                                                    |                                        |                                                    |                                       |
|--------------------------------------|----------------------------------------------------|----------------------------------------|----------------------------------------------------|---------------------------------------|
| <input type="checkbox"/> Commercial  | <input type="checkbox"/> Residential               | <input type="checkbox"/> Institutional | <input checked="" type="checkbox"/> Transportation | <input type="checkbox"/> Recreational |
| <input type="checkbox"/> Maintenance | <input type="checkbox"/> Environmental Enhancement |                                        |                                                    |                                       |

**6d.** Indicate the major elements of your project. (Check all that apply) [\[help\]](#)

- |                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Aquaculture<br><input checked="" type="checkbox"/> Bank Stabilization<br><input type="checkbox"/> Boat House<br><input type="checkbox"/> Boat Launch<br><input type="checkbox"/> Boat Lift<br><input type="checkbox"/> Bridge<br><input type="checkbox"/> Bulkhead<br><input type="checkbox"/> Buoy<br><input type="checkbox"/> Channel Modification | <input type="checkbox"/> Culvert<br><input type="checkbox"/> Dam / Weir<br><input type="checkbox"/> Dike / Levee / Jetty<br><input type="checkbox"/> Ditch<br><input type="checkbox"/> Dock / Pier<br><input type="checkbox"/> Dredging<br><input type="checkbox"/> Fence<br><input type="checkbox"/> Ferry Terminal<br><input type="checkbox"/> Fishway | <input type="checkbox"/> Float<br><input type="checkbox"/> Floating Home<br><input type="checkbox"/> Geotechnical Survey<br><input type="checkbox"/> Land Clearing<br><input type="checkbox"/> Marina / Moorage<br><input type="checkbox"/> Mining<br><input type="checkbox"/> Outfall Structure<br><input type="checkbox"/> Piling/Dolphin<br><input type="checkbox"/> Raft | <input type="checkbox"/> Retaining Wall (upland)<br><input checked="" type="checkbox"/> Road<br><input type="checkbox"/> Scientific Measurement Device<br><input type="checkbox"/> Stairs<br><input type="checkbox"/> Stormwater facility<br><input type="checkbox"/> Swimming Pool<br><input type="checkbox"/> Utility Line |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

☐ Other:

**6e.** Describe how you plan to construct each project element checked in 6d. Include specific construction methods and equipment to be used. [\[help\]](#)

- Identify where each element will occur in relation to the nearest waterbody.
- Indicate which activities are within the 100-year floodplain.

Project Summary:

The project includes the repair of approximately 300 linear feet of actively eroding creek bank by construction of a wood-studded revetment and flow deflection structures and reconstruction of lost roadway embankment. The creek bank/road prism prior to erosion loss was an approximate 2:1 slope with rock armoring. The mechanism of failure is lateral scour and bank erosion at the toe of the slope, which in turn has caused sloughing and failure of the roadway. The bed of Taneum Creek is located approximately 8 feet below (in elevation) West Taneum Road in this location. West Taneum Road is limited to a narrowed one lane condition with concrete barrier placement at the top of bank and a continually decreasing roadway width.

A wood-studded revetment and flow deflection structures will be constructed in Taneum Creek, matching the location of the previous toe of slope (see attached drawings). This design will maximize channel roughness and complexity, while dissipating energy and increasing the protection of downstream properties and the roadway. The adjacent downstream property owner experiences erosive flows during flood events, and the County is designing this repair to dissipate energy and reduce the potential of transferring the problem up- and downstream by utilizing a design that avoids or minimizes the erosion loss to the downstream property owner as a result of stabilizing this location.

The revetment will be constructed using a combination of large rock and wood. Rock will be used to establish a bank toe that incorporates and secures the LWD into the revetment. The wood and rock revetment will extend approximately 7 to 10 feet into the channel and will be built to a height above the 100-year water surface elevation. The revetment will extend the length of the erosion area (approximately 300 linear feet and up to 3,000 square feet [sf]). Approximately 160 cubic yards (cy) of fill will be required below the ordinary high water mark (OHWM) for the construction of the revetment.

Up to 8 rock barbs will be placed within the revetment. These barbs will be of varying lengths based on required deflection of flows, with the longest barb extending approximately 10 feet from the revetment. The footprint of the barbs will be approximately 500 sf. The area above the OHWM between the upper 2 to 3 barbs will be over-excavated such that rock armoring can be placed for additional bank protection below the existing grade. The barbs will require approximately 50 cy of fill below the OHWM. Total fill (revetment and barbs) below the OHWM will be approximately 210 cy. The total footprint below the OHWM for the revetment and barbs is approximately 3,500 sf.

Native plants, including willow (*Salix* spp.), dogwood (*Cornus sericea*), and cottonwood (*Populus balsamifera*) will be planted to restore and enhance riparian vegetation.

Project Timeline and Sequencing

The project will likely begin in August 2017 and will take up to 16 weeks to complete. Work below the OHWM will require approximately 4 weeks to complete, and will occur in September or October during low flows and within the approved in-water work window. **The WDFW identified in-water work window is July 16–September 30. However, to maximize flexibility, the County is requesting a 2-week extension on the work window, through October 15.** Jennifer Nelson with WDFW verbally approved this extension.

Project sequencing will likely be mobilization, staging, and traffic management; TESC and BMP installation; isolation and dewatering; revetment and barb construction; embankment reconstruction; roadway reconstruction; de-mobilization.

### Equipment

Equipment to be used will include, but is not limited to: excavators, mini-excavators, dump trucks, and front loaders. Pumps with dispersion and infiltration BMPs may be required to manage hyporheic flows or to dewater pools behind the diversion structure.

### Construction Access and Staging

Access for construction of the revetment will be from West Taneum Road. The roadway will be shifted slightly into the hillside to provide additional room for construction and minimize the repair encroachment into Taneum Creek. BMPs will be placed prior to any work on the roadway above Taneum Creek to ensure no material is discharged into any aquatic area.

West Taneum Road will remain open during construction, but will have modified traffic patterns and construction delays.

Staging of equipment and materials will occur within the project area on the existing roadway, isolated from traffic, and potentially within a widened driveway area near the project if the landowner allows. Existing County roads will be used to transport equipment and materials to the project site. If the Contractor chooses to utilize an area for staging outside of those described here, they will be responsible for obtaining permits and necessary clearances for the use of alternate sites.

### Work Area Isolation

The project will occur during low flow conditions. At low flow, the isolation area is relatively shallow (typically 6 to 12 inches deep). The construction area for the revetment below the OHWM will be isolated from the flows of Taneum Creek, to minimize the effects of turbidity and allow construction in isolation. Qualified biologists will first set block nets and seine the work area to remove fish. The upstream block net will be placed, and the downstream net will be used as a seine to herd fish from the work area without handling. When block nets are in place, the isolation structure will be constructed. The isolation structure is yet to be determined, but will consist of temporary BMP materials such as sandbags, super sacks, water bladders, or similar feature. For the purpose of permitting, it is assumed that the isolation BMP will consist of temporary fill, such as sandbags or super sack(s). The amount of temporary fill below the OHWM within the isolation structure is approximately 45 cy. The duration of use will be limited to the 4-week construction period where work will occur below the OHWM.

The isolation structure will be placed starting at the upstream bank tie-in location, and will be constructed in a horseshoe shape to isolate the work area before tying into a downstream bank location. The isolation structure may be placed using a thumb excavator or similarly capable piece of equipment. Plastic sheeting will likely be used in coordination with the isolation structure to more efficiently isolate flows.

As the isolation structure is constructed, qualified biologists will be on-site to monitor flows as they recede and remove any fish that become isolated behind the diversion. Though not anticipated due to shallow depths and gradient in the work area, small pumps may be used to completely dewater holding pools, if necessary, and manage any hyporheic flows that may continually be present behind the coffer. Once the isolation coffer is in place, block nets will be removed, and there will be no impacts to up or down stream movement of fish.

The isolated area will be the minimum size necessary to allow placement of the revetment. The total isolated footprint will be an area approximately 350 feet by 15 feet, or 5,250 sf. The approximate 3,500 sf of revetment and barbs will be constructed within this isolated area. When the revetment is completed, the isolation coffer will be removed slowly to reintroduce water to the work area and minimize downstream turbidity.

### Revetment, Barb, and LWD Construction

The revetment will replace the pre-existing 2:1 rock revetment and roadway slope, extending between 7 to 10 feet into the existing channel bed. The height of the rock revetment will be built to a final elevation above the 100-year water surface elevation. The revetment will extend the length of the erosion area (approximately 300 linear feet), and will tie into an area of currently armored stream bank on the downstream end. The upstream end of the revetment will taper with fill limits above the OHWM for protection between barbs.

The existing stream cobble beneath the toe of the revetment will be over-excavated to a depth of approximately 3 feet, and replaced with larger rock. This is intended to design the rock and wood revetment to account for anticipated scour at the rock toe. The approximate quantity of excavation below the OHWM is 151 cy. It is important to note this excavation and fill below the streambed elevation is replacing existing rock below the

OHW, and is not considered new fill.

Large rock will be used to create the 2:1 slope. The slope will be placed with a thumb excavator or similarly capable piece of equipment. Rock will be a mix of sizes to ensure proper protection of the roadway, with the largest rock placed at the toe of the revetment. Final hydraulic design will determine the amount, size, and placement of rock armoring.

Up to 8 rock barbs will be constructed within the erosion repair area. These barbs will be of varying lengths to deflect flows, dissipate energy, and provide quieter habitat in combination with LWD structures. The barbs measure approximately 10 feet wide at the base, and will taper to approximately 3 feet wide at the end. The height of the barbs will be approximately the 2-year flood elevation to provide more conveyance area during flood events. The longest barb will extend approximately 10 feet into the channel. The barbs will be incorporated into the rock revetment to prevent flanking.

In conjunction with the revetment and flow deflection structures, LWD will be incorporated into the revetment to increase channel roughness and habitat complexity. LWD pieces will be placed singly or in groups throughout the repair area. LWD will be composed of coniferous logs with attached rootwad, with an average 10-foot-long stem that is 10 to 16 inches in diameter and a rootwad diameter averaging 3 feet. The attached drawings provide approximate number and locations, but final placement and grouping will be done during construction. The project will incorporate 1 piece of LWD for every 15 to 20 linear feet of bank repair. LWD incorporated at this frequency and in this manner has been used successfully on similar bank repair projects in the County.

The upstream barbs and LWD may be constructed in actively flowing water, depending on the transitional area where the revetment will only be placed above the OHW and the need to determine hydraulic effects. If this is the case, block nets will be used to exclude fish before and during construction. Barbs will be constructed of clean rock that will be slowly placed one at a time with a thumb excavator, not end-dumped. Placing the rock in this manner will minimize turbidity and allow escapement if any fish are present within the isolated area. The isolated area would also be smaller if the upper barbs and LWD are placed in flowing water.

Total fill below the OHW will be approximately 210 cy, most of which is replacing the previous road embankment. The total footprint below the OHW for the revetment and barbs is approximately 3,500 sf. Total excavation below the OHW is approximately 151 cy.

#### Planting and Site Restoration

Native riparian vegetation (willow, dogwood, and cottonwood) will be incorporated within the rock revetment, on the impacted banks, and within the barbs where possible. Willow cuttings will provide the best likelihood for success, with dogwood and cottonwood also planted where suitable saturation occurs during the growing season. Plants will be harvested from a local source or purchased from a native plant nursery. Cuttings will be installed in all areas that are impacted and replacing all areas where vegetation has been lost to erosion.

Roadside and embankment areas not rock will be seeded with a native roadside and erosion control mix and stabilized with mulch cover prior to project completion

#### Roadway Reconstruction and De-mobilization

When the revetment is completed to an elevation above the 100-year water surface elevation, the roadway embankment will be constructed of suitable fill material at a minimum 2:1 slope to match the previous roadway embankment. Embankment material will be placed from above.

The roadway will be repaved, striped, and signage placed as the last order of work before completion. BMPs will be placed to prevent any discharge during paving activities.

**6f.** What are the anticipated start and end dates for project construction? (Month/Year) [\[help\]](#)

- If the project will be constructed in phases or stages, use [JARPA Attachment D](#) to list the start and end dates of each phase or stage.

Start Date: August 1, 2017

End Date: November 30, 2017

☐ See JARPA Attachment D

**6g.** Fair market value of the project, including materials, labor, machine rentals, etc. [\[help\]](#)

\$500,000

**6h.** Will any portion of the project receive federal funding? [\[help\]](#)

- If **yes**, list each agency providing funds.

☐ Yes ☒ No ☐ Don't know

## Part 7–Wetlands: Impacts and Mitigation

☐ Check here if there are wetlands or wetland buffers on or adjacent to the project area.

(If there are none, skip to Part 8.) [\[help\]](#)

**7a.** Describe how the project has been designed to avoid and minimize adverse impacts to wetlands. [\[help\]](#)

☒ Not applicable

There are no impacts to wetlands or wetland buffers. The project area was evaluated by qualified biologists and no wetlands are present.

**7b.** Will the project impact wetlands? [\[help\]](#)

☐ Yes ☒ No ☐ Don't know

**7c.** Will the project impact wetland buffers? [\[help\]](#)

☐ Yes ☒ No ☐ Don't know

**7d.** Has a wetland delineation report been prepared? [\[help\]](#)

- If **Yes**, submit the report, including data sheets, with the JARPA package.

☐ Yes ☒ No

**7e.** Have the wetlands been rated using the Western Washington or Eastern Washington Wetland Rating System? [\[help\]](#)

- If **Yes**, submit the wetland rating forms and figures with the JARPA package.

☐ Yes ☒ No ☐ Don't know N/A

**7f.** Have you prepared a mitigation plan to compensate for any adverse impacts to wetlands? [\[help\]](#)

- If **Yes**, submit the plan with the JARPA package and answer 7g.
- If **No**, or **Not applicable**, explain below why a mitigation plan should not be required.

☐ Yes ☒ No ☐ Don't know

**7g.** Summarize what the mitigation plan is meant to accomplish, and describe how a watershed approach was used to design the plan. [\[help\]](#)

N/A

**7h.** Use the table below to list the type and rating of each wetland impacted, the extent and duration of the impact, and the type and amount of mitigation proposed. Or if you are submitting a mitigation plan with a similar table, you can state (below) where we can find this information in the plan. [\[help\]](#)

| Activity (fill, drain, excavate, flood, etc.) | Wetland Name <sup>1</sup> | Wetland type and rating category <sup>2</sup> | Impact area (sq. ft. or Acres) | Duration of impact <sup>3</sup> | Proposed mitigation type <sup>4</sup> | Wetland mitigation area (sq. ft. or acres) |
|-----------------------------------------------|---------------------------|-----------------------------------------------|--------------------------------|---------------------------------|---------------------------------------|--------------------------------------------|
| N/A                                           |                           |                                               |                                |                                 |                                       |                                            |
|                                               |                           |                                               |                                |                                 |                                       |                                            |
|                                               |                           |                                               |                                |                                 |                                       |                                            |

|  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

<sup>1</sup> If no official name for the wetland exists, create a unique name (such as "Wetland 1"). The name should be consistent with other project documents, such as a wetland delineation report.

<sup>2</sup> Ecology wetland category based on current Western Washington or Eastern Washington Wetland Rating System. Provide the wetland rating forms with the JARPA package.

<sup>3</sup> Indicate the days, months or years the wetland will be measurably impacted by the activity. Enter "permanent" if applicable.

<sup>4</sup> Creation (C), Re-establishment/Rehabilitation (R), Enhancement (E), Preservation (P), Mitigation Bank/In-lieu fee (B)

Page number(s) for similar information in the mitigation plan, if available: \_\_\_\_\_

**7i.** For all filling activities identified in 7h, describe the source and nature of the fill material, the amount in cubic yards that will be used, and how and where it will be placed into the wetland. [\[help\]](#)

N/A

**7j.** For all excavating activities identified in 7h, describe the excavation method, type and amount of material in cubic yards you will remove, and where the material will be disposed. [\[help\]](#)

N/A

## Part 8–Waterbodies (other than wetlands): Impacts and Mitigation

In Part 8, "waterbodies" refers to non-wetland waterbodies. (See Part 7 for information related to wetlands.) [\[help\]](#)

☒ Check here if there are waterbodies on or adjacent to the project area. (If there are none, skip to Part 9.)

**8a.** Describe how the project is designed to avoid and minimize adverse impacts to the aquatic environment. [\[help\]](#)

☐ Not applicable

Work below the OHWM will be completed during September and October, the lowest flow time of the year. Water quality will be maintained at all times within the Washington State Department of Ecology guidelines in Washington Administrative Code (WAC) 173-201A. Minimization measures that will further minimize or prevent impacts are below:

- MM 1 – Work on the revetment below the OHWM will occur in a mostly dry condition, after isolation is in place. Use of pumps is anticipated to maintain the isolation and proposed condition of the work zone.
- MM 2 – Work below the OHWM will be conducted during the approved in-water work window to remain protective of aquatic species.
- MM 3 – The revetment will be built by accessing from the impacted footprint and roadside. Equipment will avoid working from the waterward side of the revetment.
- MM 4 – All equipment will be inspected for leaks prior to work each day.
- MM 5 – Staging and fueling of equipment will occur more than 50 feet from the OHWM of Taneum Creek.
- MM 6 – Large rock and LWD used for the revetment and barbs will be clean and free of any debris.
- MM 7 – Fish exclusion will be conducted by qualified biologists in accordance with the WSDOT fish removal protocols.
- MM 8 – Electrofishing will not be used.
- MM 9 – If small pumps are used to dewater holding pools or hyporheic flows, they will be screened to National Marine Fisheries Service (NMFS) criteria.
- MM 10 – BMPs such as wattles or silt fence will be used to prevent the discharge from the bank of any material into flowing water.

MM 11 – Vegetation removal required for access that is not part of the permanent impact limits will be cut but not grubbed to allow natural regeneration.

MM12 – Post construction LWD, revegetation, and barbs will improve habitat complexity and reduce erosion and sedimentation.

**8b.** Will your project impact a waterbody or the area around a waterbody? [\[help\]](#)

☒ Yes    ☐ No

**8c.** Have you prepared a mitigation plan to compensate for the project's adverse impacts to non-wetland waterbodies? [\[help\]](#)

- If **Yes**, submit the plan with the JARPA package and answer 8d.
- If **No**, or **Not applicable**, explain below why a mitigation plan should not be required.

☐ Yes    ☒ No    ☐ Don't know

The design of the bank stabilization project utilizes bioengineered principles that are consistent with WDFW Integrated Streambank Protection Guidelines. In addition, the incorporation of LWD and planting of riparian vegetation has been used on similar projects in the area, and when integrated as part of the design are considered self-mitigating project elements by the Services and WDFW.

**8d.** Summarize what the mitigation plan is meant to accomplish. Describe how a watershed approach was used to design the plan.

- If you already completed 7g you do not need to restate your answer here. [\[help\]](#)

The beneficial effects of the project mitigate for the short-term, temporary effects to Taneum Creek. The rock and LWD revetment is intended to provide increased channel complexity and roughness features where the current project area has none. Replanting vegetation that was lost to erosion will improve functional riparian habitat long term, and in-stream flow deflection structures will decrease energy, slow water velocity, and increase the habitat value in the current straightened, high velocity reach.

**8e.** Summarize impact(s) to each waterbody in the table below. [\[help\]](#)

| Activity (clear, dredge, fill, pile drive, etc.) | Waterbody name <sup>1</sup> | Impact location <sup>2</sup> | Duration of impact <sup>3</sup>                 | Amount of material (cubic yards) to be placed in or removed from waterbody | Area (sq. ft. or linear ft.) of waterbody directly affected |
|--------------------------------------------------|-----------------------------|------------------------------|-------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------|
| Fill                                             | Taneum Creek                | Below OHWM                   | Permanent                                       | Appx. 210 cubic yards                                                      | 300 linear feet                                             |
| Fill                                             | Taneum Creek                | Below OHWM                   | Temporary                                       | Appx.45 cubic yards within the isolation Supersacks, if used.              | 1,200 square feet                                           |
| Excavation                                       | Taneum Creek                | Below OHWM                   | Permanent (river cobble replaced w/ large rock) | 151 cubic yards (REPLACES EXISTING ROCK – NOT NEW FILL)                    | 3,000 square feet                                           |
|                                                  |                             |                              |                                                 |                                                                            |                                                             |
|                                                  |                             |                              |                                                 |                                                                            |                                                             |

<sup>1</sup> If no official name for the waterbody exists, create a unique name (such as "Stream 1") The name should be consistent with other documents provided.

<sup>2</sup> Indicate whether the impact will occur in or adjacent to the waterbody. If adjacent, provide the distance between the impact and the waterbody and indicate whether the impact will occur within the 100-year flood plain.

<sup>3</sup> Indicate the days, months or years the waterbody will be measurably impacted by the work. Enter "permanent" if applicable.

**8f.** For all activities identified in 8e, describe the source and nature of the fill material, amount (in cubic yards) you will use, and how and where it will be placed into the waterbody. [\[help\]](#)

Fill will be medium to large angular rock sized depending on hydraulic analysis. Rock may be end dumped in the dry area behind the diversion and placed and shaped with a thumbed excavator. If rock is placed in actively flowing water, it will be placed individually with a thumbed excavator with no end dumping allowed. Rock will be placed in the bank stabilization area and extending into the channel for the flow diversion structures (rock barbs).

If filled sandbags or supersacks are used for the isolation structure, approximately 45 cy will be considered fill below the OHWM. This fill material will be clean sand or pea gravel to minimize leaching.

**8g.** For all excavating or dredging activities identified in 8e, describe the method for excavating or dredging, type and amount of material you will remove, and where the material will be disposed. [\[help\]](#)

The existing stream cobble beneath the revetment footprint will be over-excavated to a depth of approximately 3 feet, and replaced with larger rock. This is intended to design the rock and wood revetment to account for anticipated scour at the rock toe. This activity is not considered fill, as it is excavating and replacing the smaller, rounded river cobble with larger angular rock to prevent scour. If room allows, the river cobble may be pulled back and incorporated into the revetment beneath the larger angular rock.

## Part 9—Additional Information

Any additional information you can provide helps the reviewer(s) understand your project. Complete as much of this section as you can. It is ok if you cannot answer a question.

**9a.** If you have already worked with any government agencies on this project, list them below. [\[help\]](#)

| Agency Name     | Contact Name    | Phone                | Most Recent Date of Contact |
|-----------------|-----------------|----------------------|-----------------------------|
| WDFW            | Jennifer Nelson | 509.925.1013         | March 29, 2017              |
| NMFS            | Sean Gross      | 509.962.8911 ext 225 | March 8, 2017               |
| Kittitas County | Dan Carlson     | 509-962-7506         | April 14, 2017              |

**9b.** Are any of the wetlands or waterbodies identified in Part 7 or Part 8 of this JARPA on the Washington Department of Ecology's 303(d) List? [\[help\]](#)

- If **Yes**, list the parameter(s) below.
- If you don't know, use Washington Department of Ecology's Water Quality Assessment tools at: <http://www.ecy.wa.gov/programs/wq/303d/>.

☒ Yes   ☐ No

Taneum Creek (Listing ID:79000) is assessed as a Category 5 – 303(d) water for temperature

**9c.** What U.S. Geological Survey Hydrological Unit Code (HUC) is the project in? [\[help\]](#)

- Go to <http://cfpub.epa.gov/surf/locate/index.cfm> to help identify the HUC.

170300010504 – Taneum Creek

**9d.** What Water Resource Inventory Area Number (WRIA #) is the project in? [\[help\]](#)

- Go to <http://www.ecy.wa.gov/water/wria/index.html> to find the WRIA #.

39 – Upper Yakima

**9e.** Will the in-water construction work comply with the State of Washington water quality standards for turbidity? [\[help\]](#)

- Go to <http://www.ecy.wa.gov/programs/wq/swqs/criteria.html> for the standards.

☒ Yes   ☐ No   ☐ Not applicable

**9f.** If the project is within the jurisdiction of the Shoreline Management Act, what is the local shoreline environment designation? [\[help\]](#)

- If you don't know, contact the local planning department.
- For more information, go to: [http://www.ecy.wa.gov/programs/sea/sma/laws\\_rules/173-26/211\\_designations.html](http://www.ecy.wa.gov/programs/sea/sma/laws_rules/173-26/211_designations.html).

|                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Urban <input type="checkbox"/> Natural <input type="checkbox"/> Aquatic <input checked="" type="checkbox"/> Conservancy <input type="checkbox"/> Other: <u>Rural conservancy</u>                                                                                                                        |
| <b>9g.</b> What is the Washington Department of Natural Resources Water Type? <a href="#">[help]</a> <ul style="list-style-type: none"> <li>Go to <a href="http://www.dnr.wa.gov/forest-practices-water-typing">http://www.dnr.wa.gov/forest-practices-water-typing</a> for the Forest Practices Water Typing System.</li> </ul> |
| <input checked="" type="checkbox"/> Shoreline <input type="checkbox"/> Fish <input type="checkbox"/> Non-Fish Perennial <input type="checkbox"/> Non-Fish Seasonal                                                                                                                                                               |
| <b>9h.</b> Will this project be designed to meet the Washington Department of Ecology's most current stormwater manual? <a href="#">[help]</a> <ul style="list-style-type: none"> <li><b>If No</b>, provide the name of the manual your project is designed to meet.</li> </ul>                                                  |
| <input type="checkbox"/> Yes <input type="checkbox"/> No N/A – no change in impervious surface or stormwater.                                                                                                                                                                                                                    |
| Name of manual: <u>N/A</u>                                                                                                                                                                                                                                                                                                       |
| <b>9i.</b> Does the project site have known contaminated sediment? <a href="#">[help]</a> <ul style="list-style-type: none"> <li><b>If Yes</b>, please describe below.</li> </ul>                                                                                                                                                |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                  |
| <b>9j.</b> If you know what the property was used for in the past, describe below. <a href="#">[help]</a>                                                                                                                                                                                                                        |
| The project site is and has been County right-of-way for West Taneum Road.                                                                                                                                                                                                                                                       |
| <b>9k.</b> Has a cultural resource (archaeological) survey been performed on the project area? <a href="#">[help]</a> <ul style="list-style-type: none"> <li><b>If Yes</b>, attach it to your JARPA package.</li> </ul>                                                                                                          |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ( <b>See attached report</b> )                                                                                                                                                                                                                               |

**9l.** Name each species listed under the federal Endangered Species Act that occurs in the vicinity of the project area or might be affected by the proposed work. [\[help\]](#)

Columbia River DPS bull trout

Middle Columbia River summer-run DPS steelhead

Designated Critical Habitat for bull trout and steelhead

Section 7 consultation is underway with NMFS and U.S. Fish and Wildlife Service.

**9m.** Name each species or habitat on the Washington Department of Fish and Wildlife's Priority Habitats and Species List that might be affected by the proposed work. [\[help\]](#)

The project will not affect any Priority Habitats and Species species.

## Part 10–SEPA Compliance and Permits

Use the resources and checklist below to identify the permits you are applying for.

- Online Project Questionnaire at <http://apps.oria.wa.gov/opas/>.
- Governor's Office for Regulatory Innovation and Assistance at (800) 917-0043 or [help@oria.wa.gov](mailto:help@oria.wa.gov).
- For a list of addresses to send your JARPA to, click on [agency addresses for completed JARPA](#).

**10a.** Compliance with the State Environmental Policy Act (SEPA). (Check all that apply.) [\[help\]](#)

- For more information about SEPA, go to [www.ecy.wa.gov/programs/sea/sepa/e-review.html](http://www.ecy.wa.gov/programs/sea/sepa/e-review.html).

☐ A copy of the SEPA determination or letter of exemption is included with this application.  
SEPA exemption letter is pending with Kittitas County.

☐ A SEPA determination is pending with \_\_\_\_\_ (lead agency). The expected decision date is \_\_\_\_\_.

☐ I am applying for a Fish Habitat Enhancement Exemption. (Check the box below in 10b.) [\[help\]](#)

☒ This project is exempt (choose type of exemption below).

☒ Categorical Exemption. Under what section of the SEPA administrative code (WAC) is it exempt?  
WAC 197-11-800(3), Repair and Maintenance Activities

☐ Other: \_\_\_\_\_

☐ SEPA is pre-empted by federal law.

**10b.** Indicate the permits you are applying for. (Check all that apply.) [\[help\]](#)

**LOCAL GOVERNMENT**

**Local Government Shoreline permits:**

- ☐ Substantial Development    ☐ Conditional Use    ☐ Variance  
☒ Shoreline Exemption Type (explain): WAC 173-27-040(2)(b) – Normal maintenance or repair

**Other City/County permits:**

- ☒ Floodplain Development Permit    ☒ Critical Areas Ordinance

**STATE GOVERNMENT**

**Washington Department of Fish and Wildlife:**

- ☒ Hydraulic Project Approval (HPA)    ☐ Fish Habitat Enhancement Exemption – [Attach Exemption Form](#)

You must submit a check for \$150 to Washington Department of Fish and Wildlife, unless your project qualifies for an exemption or alternative payment method below. **Do not send cash.**

**Check the appropriate boxes**

- ☐ \$150 check enclosed. Check # \_\_\_\_\_  
Attach check made payable to Washington Department of Fish and Wildlife.
- ☐ My project is exempt from the application fee. (Check appropriate exemption):
- ☐ HPA processing is conducted by applicant funded WDFW staff.  
Agreement # \_\_\_\_\_
  - ☐ Mineral prospecting and mining
  - ☐ Project occurs on farm and agricultural land.  
(Attach a copy of current land use classification recorded with the county auditor, or other proof of current land use)
  - ☐ Project is modification of an existing HPA originally applied for, prior to July 10, 2012.  
HPA # \_\_\_\_\_

**Washington Department of Natural Resources:**

- ☐ Aquatic Use Authorization  
Complete [JARPA Attachment E](#) and submit a check for \$25 payable to the Washington Department of Natural Resources.  
**Do not send cash.**

**Washington Department of Ecology:**

- ☒ Section 401 Water Quality Certification

Letter of Verification anticipated for NWP 13

**FEDERAL GOVERNMENT**

**United States Department of the Army permits (U.S. Army Corps of Engineers):**

- ☒ Section 404 (discharges into waters of the U.S.) NWP 13 Bank Stabilization anticipated    ☐ Section 10 (work in navigable waters)

**United States Coast Guard permits:**

- ☐ Private Aids to Navigation (for non-bridge projects)

## Part 11—Authorizing Signatures

Signatures are required before submitting the JARPA package. The JARPA package includes the JARPA form, project plans, photos, etc. [\[help\]](#)

### 11a. Applicant Signature (required) [\[help\]](#)

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities, and I agree to start work only after I have received all necessary permits.

I hereby authorize the agent named in Part 3 of this application to act on my behalf in matters related to this application. GA (initial)

By initialing here, I state that I have the authority to grant access to the property. I also give my consent to the permitting agencies entering the property where the project is located to inspect the project site or any work related to the project. GA (initial)

G. Lucas Huck Applicant Printed Name      G. Lucas Huck Applicant Signature      4/18/17 Date

### 11b. Authorized Agent Signature [\[help\]](#)

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities and I agree to start work only after all necessary permits have been issued.

Craig Broadhead Authorized Agent Printed Name      Craig Broadhead Authorized Agent Signature      4/18/17 Date

### 11c. Property Owner Signature (if not applicant) [\[help\]](#)

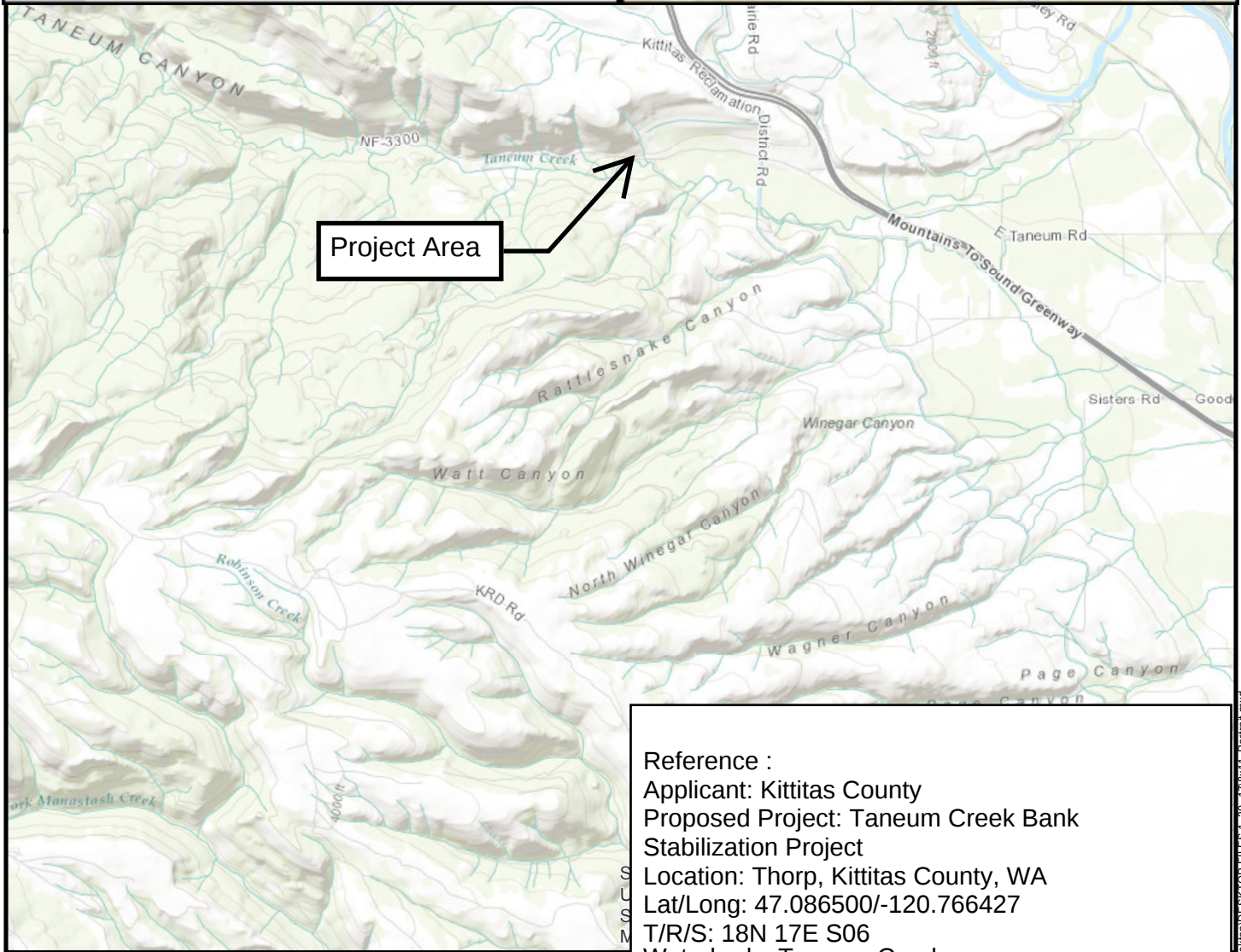
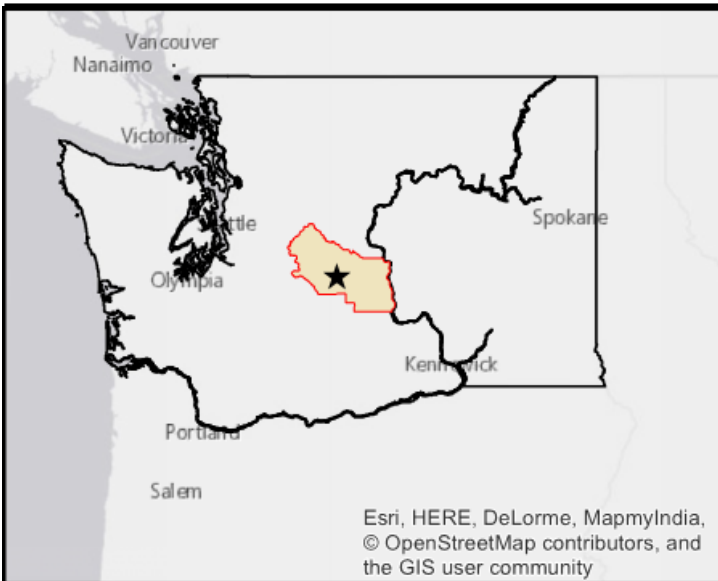
Not required if project is on existing rights-of-way or easements (provide copy of easement with JARPA).

I consent to the permitting agencies entering the property where the project is located to inspect the project site or any work. These inspections shall occur at reasonable times and, if practical, with prior notice to the landowner.

\_\_\_\_\_  
Property Owner Printed Name      Property Owner Signature      Date

18 U.S.C §1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than 5 years or both.

If you require this document in another format, contact the Governor's Office for Regulatory Innovation and Assistance (ORIA) at (800) 917-0043. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call (877) 833-6341. ORIA publication number: ORIA-16-011 rev. 09/2016

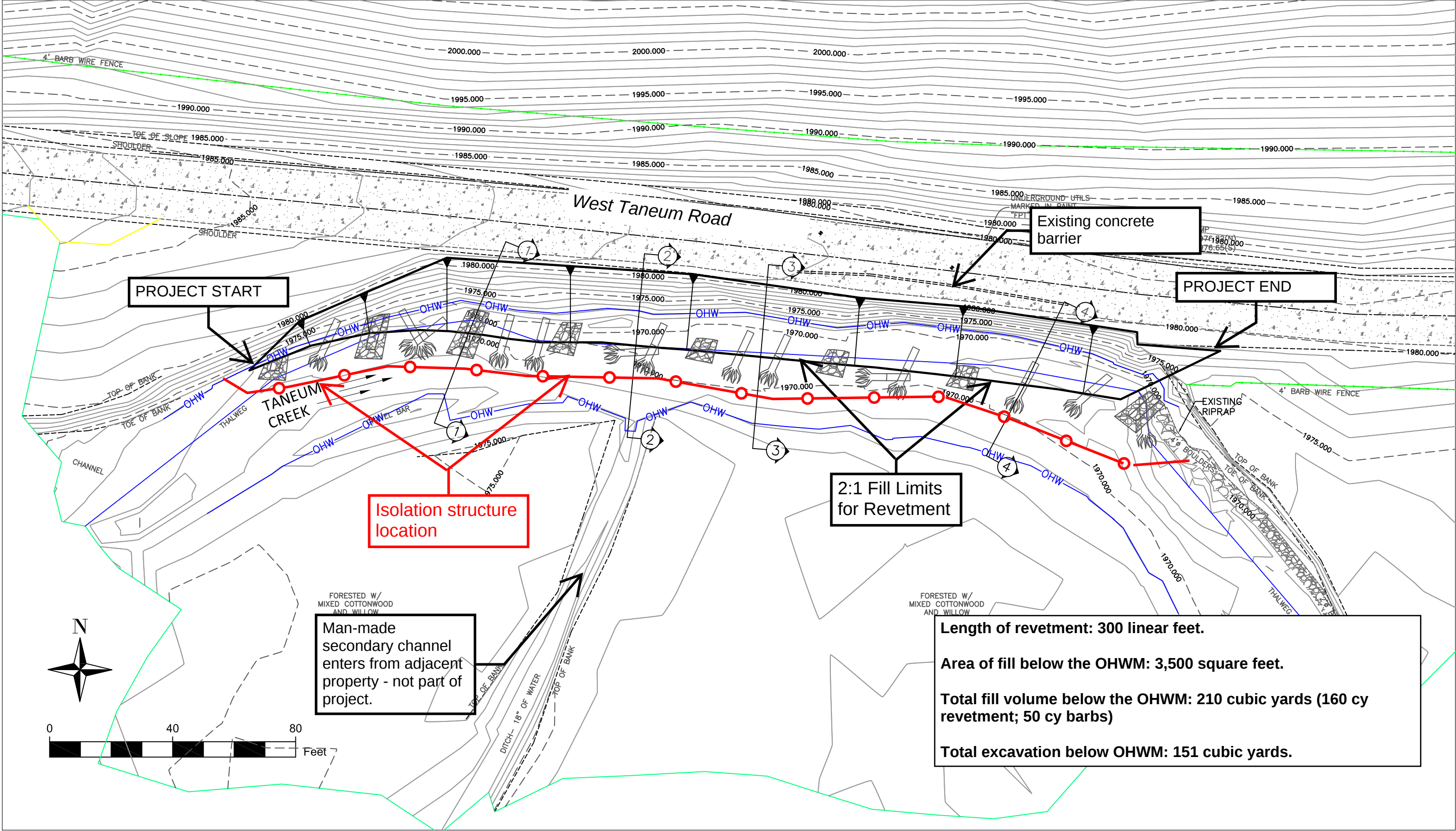


Reference :  
 Applicant: Kittitas County  
 Proposed Project: Taneum Creek Bank Stabilization Project  
 Location: Thorp, Kittitas County, WA  
 Lat/Long: 47.086500/-120.766427  
 T/R/S: 18N 17E S06  
 Waterbody: Taneum Creek

Date: 4/14/17

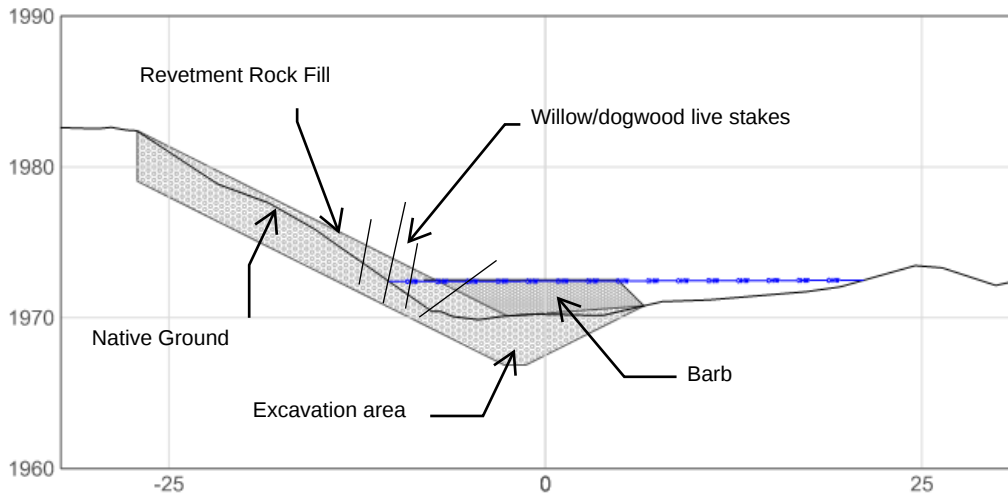
Sheet 1 of 4



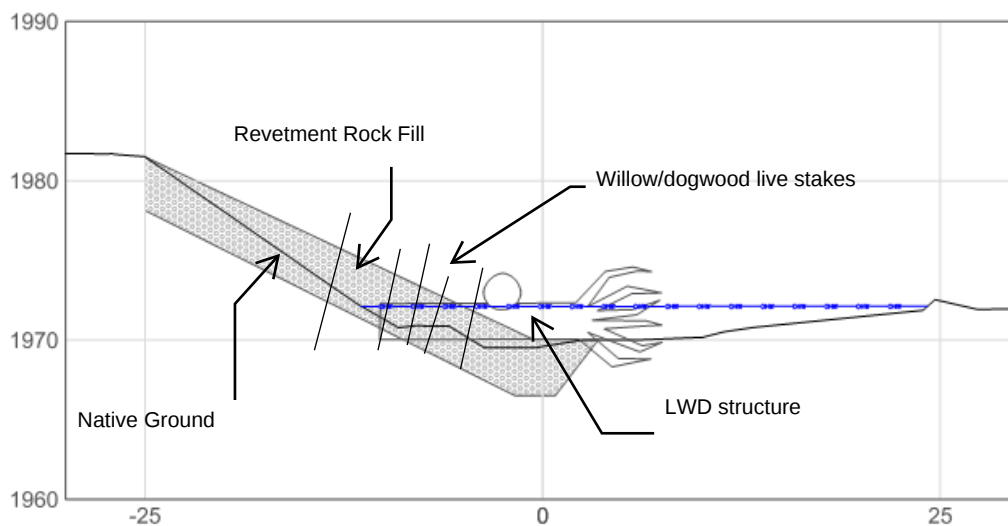


Reference #  
 Applicant: Kittitas County  
 Proposed Project: Taneum Creek Bank  
 Stabilization Project  
 Location: 47.086500/-120.766427  
 Sheet 3 of 4  
 Date: 4/14/17

## SECTION 1-1

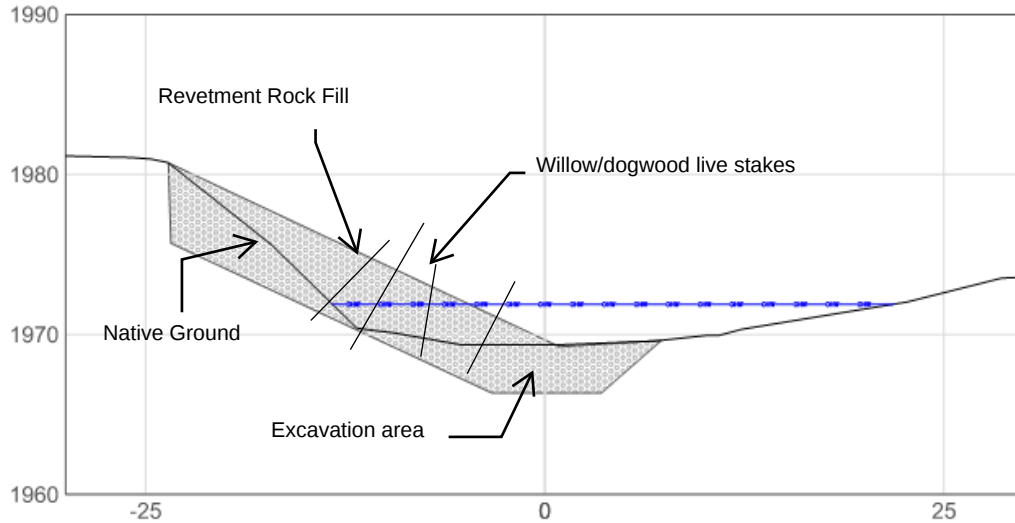


## SECTION 2-2

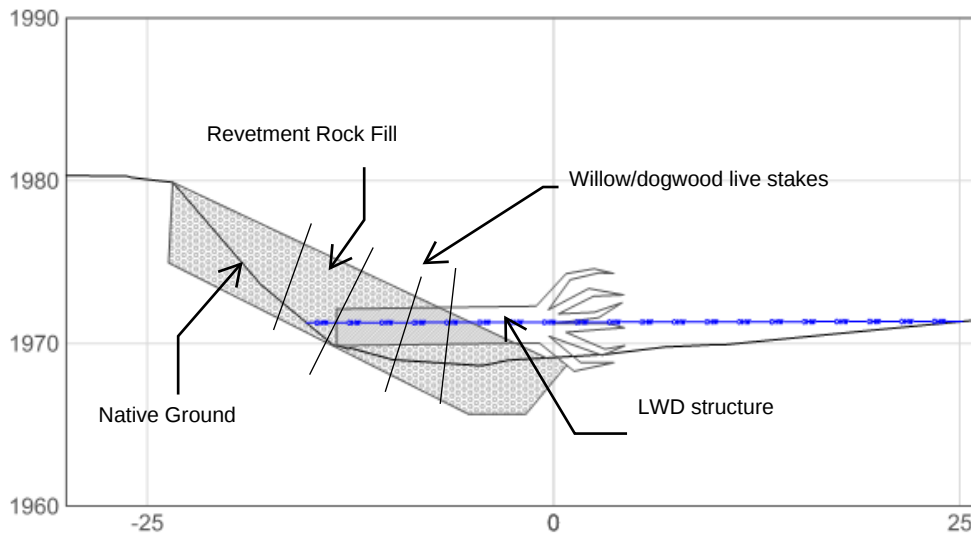


Length of revetment: 300 linear feet.  
 Area of fill below the OHWM: 3,500 square feet.  
 Total fill volume below the OHWM: 210 cubic yards (160 cy revetment; 50 cy barbs)  
 Total excavation below OHWM: 151 cubic yards

## SECTION 3-3



## SECTION 4-4



Length of revetment: 300 linear feet.  
 Area of fill below the OHWM: 3,500 square feet.  
 Total fill volume below the OHWM: 210 cubic yards (160 cy revetment; 50 cy barbs)  
 Total excavation below OHWM: 151 cubic yards.



1



2

Photo 1: West Taneum Road in the project area.

Photo 2: Bank Stabilization area. Note active erosion. Flows in this picture are typical of what to expect during construction.

*Project Photographs*  
*W. Taneum Rd. Bank Stabilization Project*

*Biological Assessment*

*April 2017*



3



4

Photo 3: North of the project area. The roadway will be temporarily shifted into the hillside during construction.

Photo 4: Undercut cottonwood trees to be removed.

*Project Photographs*  
*W. Taneum Rd. Bank Stabilization Project*

*Biological Assessment*

*April 2017*



5



6

Photo 5: View downstream at the upstream end of revetment. Shrubs to the left will be removed.  
 Photo 6: View upstream at the downstream end of the revetment. Note existing large rock armoring on adjacent property.

*Project Photographs*  
*W. Taneum Rd. Bank Stabilization Project*

*Biological Assessment*

*April 2017*

# CULTURAL RESOURCES REPORT COVER SHEET

Author: Bumback, Stacy L.

Title of Report: Cultural Resources Assessment for the Taneum Bank Road Repair/Redirect Project

Date of Report: April 17, 2017

County(ies): Kittitas Section: 06 Township: 18N Range: 17E E/W

Quad: Anacortes South Acres: 1.80

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- Submission of PDFs is required.
- Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one single PDF file.
- Please check that the PDF displays correctly when opened.

## Technical Memorandum

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**Date** April 18, 2017

**To** Sara Folk, Kittitas County Public Works

**From** Stacy Bumback, Senior Archaeologist

**Subject** **Cultural Resources Assessment for the Taneum Bank Road Repair/Redirect Project – Kittitas County, WA**

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## INTRODUCTION

Jacobs Engineering Group Inc. (Jacobs) was hired by Kittitas County (County) to prepare and submit a Joint Aquatic Resource Permit Application (JARPA) to the U.S. Army Corps of Engineers (Corps). The project is considered a federal undertaking because it requires approval by the Corps. Therefore, the project is subject to the provisions of Section 106 of the National Historic Preservation Act (NHPA) and associated implementing regulations (36 Code of Federal Regulations [CFR] 800).

This technical memorandum summarizes the previous relevant archaeological studies, documents the findings from the current study, and assesses the potential for intact archaeological resources to be present on the property. This memorandum includes the results from the April 6, 2017, field visit.

## Project Description

The Project is located approximately 12 miles northwest of Ellensburg in Kittitas County, Washington (Township 18N, Range 17E, Section 06, Willamette Meridian; Figure 1). The project includes repairing approximately 300 linear feet of actively eroding creek bank by construction of a wood-studded revetment and flow deflection structures and replacing lost roadway embankment. Prior to erosion, the creek bank/roadside was an approximate 2:1 slope with rock armoring. The mechanism of failure is lateral scour and bank erosion at the toe of the slope, which in turn has caused sloughing and failure of the roadway. The bed of Taneum Creek is located approximately 8 feet below (in elevation) Taneum Road in this location. Taneum Road is limited to a narrowed condition with concrete barrier placement at the top of bank and a continually decreasing roadway width.

A wood-studded revetment and flow deflection structures will be constructed in Taneum Creek, matching the location of the previous toe of slope. This design will maximize channel roughness and complexity, while increasing the protection of downstream properties and the roadway. The adjacent downstream property owner experiences erosive flows during flood events, and the County is designing this repair to help avoid or minimize the erosion loss to the downstream property owner.

The revetment will be constructed using a combination of large rock and wood. Rock will be used to establish a bank toe that incorporates large woody debris (LWD) into the revetment and secured in place. The wood and rock revetment will extend approximately 7 to 10 feet into the channel and will be built to a height above the 100-year water surface elevation. The revetment will extend the length of the erosion area (approximately 300 linear feet). Approximately 160 cubic yards (cy) of fill will be required below the ordinary high water mark (OHWM) for the construction of the revetment.

Up to 8 rock barbs will be placed within the revetment. These barbs will be of varying lengths based on required deflection of flows, with the longest barb extending approximately 10 feet from the revetment. The area above the OHWM between the upper 2 to 3 barbs will be over-excavated and rock armoring will be placed for additional bank protection. The barbs will require approximately 50 cy of fill below the OHWM. Total fill below the OHWM will be approximately 210 cy. The total footprint below the OHWM for the revetment and barbs is approximately 3,100 square feet (sf).

The roadway will be temporarily shifted to the hillside to provide room for construction access. The temporary shift in the roadway will require excavation into the hillside. Native plants, including willow and dogwood, will be planted to restore and enhance riparian vegetation.

## **Proposed Area of Potential Effects**

The proposed Area of Potential Effects (APE) depicted in Figure 1 includes the excavation footprint for the temporary road realignment, the road and fill material, as well as staging areas. The APE is approximately 1.79 acres in size. The proposed APE includes all locations potentially subject to project-related, ground-disturbing activities including the disturbance footprint and the limits for the proposed restoration and mitigation. The entire APE was assessed to determine the level of disturbance that has previously occurred and the potential for previously undocumented cultural resources to be located within the proposed APE.

## CULTURAL SETTING

This section provides an overview of the cultural setting for the Columbia Plateau region. The regional cultural background has been divided into two general contexts, comprised of the Prehistoric and Historic periods. The Prehistoric period dates from around 14,000 to 250 years before present (BP) and is based largely on the archaeological record. The Historic period dates from 250 to 50 BP and was derived primarily from historical records. The information discussed in this section has been adapted from Cultural Resources Survey reports prepared by Camuso and Lally (2014), Doncaster (2017), and Woody (2009).

The cultural chronology was adapted from Ames et al. (1998), Kopperl et al. (2015), and Nelson (1969), and divided into seven temporal units (Table 1). The prehistoric chronological sequence is based on a combination of geologic and paleoenvironmental data, and archaeological patterns of human settlement, subsistence, and lithic technology through time and space. The Protohistoric period is marked with the arrival of the first Europeans to the region around 250 BP. Documentation of early Euro-American exchanges with Native American societies has also been referred to as the ethnographic context. The Historic period extends from around 150–100 BP to the mid-twentieth century (50 BP).

| <b>Table 1. Cultural Chronology for the Columbia Plateau.</b> |                   |                                    |
|---------------------------------------------------------------|-------------------|------------------------------------|
| <b>Geologic Timeframe</b>                                     | <b>Years B.P.</b> | <b>Cultural Phases and Periods</b> |
| Late Holocene                                                 | 250–50            | Protohistoric-Historic Period      |
|                                                               | 2,500–250         | Cayuse Phase                       |
|                                                               | 4,500–2,500       | Frenchman Springs Phase            |
| Middle Holocene                                               | 8,000–4,500       | Vantage Phase                      |
| Early Holocene                                                | 10,500–8,000      | Windust Phase                      |
| Late Pleistocene- Holocene Transition                         | 12,000–10,500     | Clovis Period                      |
|                                                               | 14,000–12,000     | Paleoarchaic Period                |

### Prehistoric Context

The classification system for prehistoric cultures is based largely on divergent lithic procurement/manufacture, subsistence, and settlement patterns observed in the archaeological record. The patterns manifested in the material assemblages found at hunter-gatherer sites are thought to reflect behavioral responses to a host of dynamic socio-environmental conditions (Smith and Winterhalter 1992). The adaptive behaviors archaeologists glean from material assemblages contribute to a nomenclature, which is based on intervals or “phases” that display discrete patterns in the material cultures. This naming system is critical to communicating the often subtle differences between highly-mobile groups occupying a vast geographic range over the course of several millennia.

## *The Late Pleistocene-Holocene Transition (14,000 to 10,500 BP)*

Archaeological sites that date to the Late Pleistocene-Holocene (LPH) transition have been attributed to the Paleoarchaic or Pre-Clovis period (14,000–12,000 BP), and the Paleoindian or Clovis period (12,000–10,500 BP). According to Kopperl et al. (2015), the only well-stratified site from the LPH transition is Bear Creek (45KI839), located in the Puget Lowlands. Diagnostic lithic artifacts from this period share affinities with western North American Paleoindian and Paleoarchaic, including concave-based and stemmed points (Davis et al. 2012; Jenkins et al. 2012). At Bear Creek the two components are delineated by horizontally discrete concentrations of debitage and other lithic artifacts, suggesting repeated occupation by small groups of people using a variety of lithic raw materials (Kopperl et al. 2015). Based on their investigations at Paisley Caves in Oregon, Jenkins et al. (2012) contend that Clovis and Western Stemmed projectile points are distinct technologies with parallel developments, and not the product of a unilineal technological evolution. Findings such as those at Bear Creek and Paisley Caves have extended back significantly the timing of a human presence in both the interior and coastal margins of the Pacific Northwest. However, sites containing a Paleoarchaic component are notoriously lacking in the region.

## *The Early Holocene (10,500 to 8,000 BP)*

The terminus of the LPH transition is thought to overlap with a dramatic cooling interval known as the Younger Dryas (Meltzer and Holliday 2010). This climatic event likely opened up a broad range of subsistence resources for Clovis people occupying riverine and upland environments during the Early Holocene. Although Clovis-age sites are particularly rare in Washington, intact deposits from this period are found at Ricky-Roberts Clovis Cache and Cle Elum Lake, located on the Columbia Plateau. Clovis sites are characterized as small ephemeral encampments with low artifact densities that are found primarily along upland plateaus. The large lanceolate-shaped and fluted Clovis projectile points are diagnostic to the period. As with the LPH transition, population densities at the beginning of the Holocene are believed to have been considerably low.

In general, the Early Holocene was a period marked by sea level rise driven by glacial meltwater and the breaking up of coastal ice streams (Smith et al. 2011). The ensuing physiographic changes to the environment likely influenced rates and patterns of human migrations, subsistence behaviors, and cultural change. These variations are manifested archaeologically in the exploitation of a wide range of resources, a seasonal settlement system, and the production of large stemmed and lanceolate projectile points diagnostic to the Windust phase (10,500–8,000 BP). Other lithic artifacts from this interval include microblades, utilized flakes, core tools, bone awls, atlatl and net weights, and Olivella shell beads (Nelson 1969).

## *The Middle Holocene (8,000 to 4,500 BP)*

The mobile lifeways of Early Holocene hunter-gatherers is thought to have increased during the Middle Holocene. During this interval, subsistence economies focused primarily on opportunistic foraging in riverine environments and an increased reliance on fish. Middle Holocene sites found on the southcentral portion of the Columbia Plateau are attributed to the Vantage phase,

which is represented archaeologically in the diagnostic leaf-shaped projectile point known as Cascade. The morphologies of Cascade points vary considerably from the much larger lanceolate and shouldered points of the Windust phase. This along with other fishing tools (e.g., net weights) at Vantage phase sites suggests a specialized subsistence economy adapted for hunting aquatic species and smaller mammals.

### *The Prehistoric Late Holocene (4,500 to 250 BP)*

The onset of the Late Holocene marks the transition towards a more sedentary lifeway. This is evidenced in the construction of pithouses with food storage features during the Frenchman Springs phase (4,500–2500 BP). Settlement patterns during this interval consist of seasonal occupation of upland and riverine environments. Ames et al. (1998) noted that seasonal winter to early spring villages were settled in canyons, whereas upland areas were utilized during the summer and fall seasons. In addition to permanent dwellings, temporary encampments for hunting and plant-processing are common.

A variety of projectile points are attributed to the Frenchman Springs phase, including leaf-shaped points, contracting stemmed Rabbit Island points, lanceolate points, and triangular points. Other artifact types consist of bifacial knives, unifacial scrapers, graters, microblades and microcores, drills, flake tools, twined basketry, bone needles, decorated bone objects, and Olivella shell artifacts (Nelson 1969). The apparent diversity of artifact assemblages is likely the product of subsistence diversification, population growth, and increased interaction with neighboring cultural groups—a trend that proliferated during the Cayuse phase (2,500–250 BP).

## **Historic Context**

In addition to the archaeological record, much of our current understanding of Columbia Plateau indigenous societies comes from Euroamerican accounts during the Protohistoric and Historic periods.

The Protohistoric period is marked by the first contact between indigenous groups and European explorers. Native populations during this interval continued to inhabit major waterways such as the Columbia, Yakima, and Snake Rivers, and the tributaries and headwaters extending into mountainous regions. However, the cultural lifeways of indigenous peoples were forever changed by the introduction of Euroamerican technology. In addition to changes in settlement patterns brought about by the much-improved ability to hunt and travel by horseback, the lifeways of native peoples were radically altered by the diseases, government, and ideologies of European settlers. Surviving indigenous groups occupied their traditional lands until many were relocated to reservations beginning around the mid-nineteenth century (100 BP).

The discovery of gold in portions of the Kittitas Valley in 1873 brought an influx of mining companies who hired Chinese laborers to work deposits along the Columbia River (Camuso

and Lally 2012). White cattlemen also flocked to the region during the mid- to late-nineteenth century given the suitability of the lush grasslands for ranching. By the 1880s, cattle overgrazing had decimated the landscape in the Yakima and Kittitas Valleys. This and severe winters that killed large herds of cattle resulted in setbacks for early ranchers, leaving only enough grassland to support seasonal rounds of grazing sheep (Herbal and Bowden 2005). Sheep herders in the region would winter their flocks near the Columbia River, herd them through the North Cascades to graze in the summer months, and then return to the Kittitas Valley for fall grazing (Shaw 1941).

The utilization of local waterways by Euroamerican fur traders also proved viable for the growing logging industry of the late 1870s. The Kittitas Valley afforded this industry large supplies of timber and by 1880, several thousand feet of lumber was floated down the Yakima River to the Columbia River (Holstine 1994). The success of the local lumber industry led to numerous sawmills and the construction of railroads, which were used to transport timber by land when river routes were closed by dam and irrigation projects.

Construction of the first major railroad through the region, the Northern Pacific Railroad, was completed in 1884. Land along the right-of-way (ROW) that was granted to Northern Pacific Railroad by the federal government was leased to newly arriving settlers and prospectors while non-granted land remained open for homesteading (Meinig 1968). Although many settlers wagered heavily that an economic boom would follow completion of the railroad, this did not occur. In addition, severe drought at the turn of the century along with the hardships of the Great Depression forced many homesteaders to sell their land, which was purchased by a few successful ranching families (Owens 2005).

Although gold mining operations of the late-nineteenth century were relatively short-lived given the lack of significant deposits in the region (Owens 2005), the early-twentieth century saw success in mining silica from areas within the Kittitas Valley. The earliest of these operations began in 1915 with the Great Western Silica Company and the American-Japanese Silica Company (Camuso and Lally 2012). Other mining companies such as The Inland Empire Silica Production Company and the Kittitas Diatomite Company began operations in 1919 and 1939, respectively. Silica mining in this region came to an end in the 1950s. Telltale remnants of these operations are observed in open trenches and scattered historic debris at the abandoned mines (Camuso and Lally 2012).

## **METHODS**

Extensive background research and a field visit were conducted to determine the extent of historic and modern landform modifications within the proposed APE and if the area has the potential to contain cultural resources. This assessment was conducted to provide the Corps with recommendations regarding the potential for the project to encounter buried intact archaeological deposits based on the identification and delineation of disturbance (e.g.,



previously cut, graded, or mechanically altered areas) and the likelihood that intact archaeological deposits will be encountered by the project.

### **Previous Studies**

Jacobs archaeologist Sarah Meyer conducted a records search for previously documented historic and archaeological resources within a one-mile radius of the proposed APE using the Washington Information System for Architectural and Archaeological Records Database (WISAARD). WISAARD contains all cultural resource documents submitted to the Washington State Department of Archaeology and Historic Preservation (DAHP) since 1995. The results are presented in Table 2 and Table 3.

No previously recorded archaeological sites are located within the proposed APE, though several historic and prehistoric sites have been identified within a one-mile radius. The record search also revealed that there have been no archaeological inventory efforts within the proposed APE, though several studies have been conducted within a one-mile radius.

| <b>Table 2. Previously Recorded Archaeological Sites within a One-mile radius of APE.</b> |                                                                                                                                                                     |                         |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Trinomial</b>                                                                          | <b>Description</b>                                                                                                                                                  | <b>NRHP Eligibility</b> |
| 45-KT-1398                                                                                | Historic homestead, including collapsed log structure, fruit trees, old road, cellar, and a possible grave; also includes two prehistoric flakes and one flake tool | Unevaluated             |
| 45-KT-2177H                                                                               | Single ponderosa pine tree with a blaze mark, historic axe mark                                                                                                     | Unevaluated             |
| 45-KT-1222                                                                                | Two chert flakes and a chert core                                                                                                                                   | Unevaluated             |
| 45-KT-1223H                                                                               | One hole-in-cap solder-sealed can                                                                                                                                   | Unevaluated             |
| 45-KT-524H                                                                                | Refuse deposit with farm implements, tin cans, glass sherds                                                                                                         | Unevaluated             |
| Source: WISAARD 2017                                                                      |                                                                                                                                                                     |                         |

| <b>Table 3. Cultural Resources Studies within a One-mile radius of APE.</b> |                      |                                                                                                                                 |                                      |                                                                                                          |
|-----------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>NADB#</b>                                                                | <b>Author (Year)</b> | <b>Report Title</b>                                                                                                             | <b>Description</b>                   | <b>Cultural Resources</b>                                                                                |
| 1688229                                                                     | Weaver (2016)        | Cultural Resources Survey for the Heart K Ranch Elk Exclosure Fencing Project                                                   | Pedestrian survey, shovel probes     | None                                                                                                     |
| 1681085                                                                     | Steinkraus (2011)    | 3-Bar-G Archaeological Inventory                                                                                                | Pedestrian survey, shovel probes.    | None                                                                                                     |
| 1354661                                                                     | Landreau (2010)      | Addendum to Archaeological Review and Inventory of the Taneum Creek Fish Passage Project                                        | Pedestrian survey, one shovel probe. | None                                                                                                     |
| 1354576                                                                     | Landreau (2010)      | Archaeological Review and Inventory of the Taneum Creek Fish Passage Project                                                    | Survey.                              | Historic dam that was deemed “likely ineligible”                                                         |
| 1342156                                                                     | Miller (1997)        | Cultural Resources Survey Report, Overpass Timber Sale File #55373, FPA 2700364                                                 | Survey.                              | Homestead recorded as KT01398.                                                                           |
| 1340274                                                                     | Fagan et al. (2000)  | Cultural Resources Survey of Route Modifications and Shovel Testing of Sites for Fiber Optic Cable Seattle to Boise, Addendum 2 |                                      | Historic farmstead, abandoned farm buildings, irrigation ditches, cabin and privy, prehistoric isolates. |
| 1340270                                                                     | Fagan (1999)         | Cultural Resources Survey of Level 3s Proposed Fiber Optic Line from Seattle to Boise: Washington Segment, Non-Federal Lands    | Survey                               | Numerous historic structures, prehistoric isolates.                                                      |
| NADB = National Archaeological Database                                     |                      |                                                                                                                                 |                                      | Source = WISAARD                                                                                         |

## EXPECTATIONS

Expectations for where archaeological sites could potentially be located are based upon environmental data and the relationship of that data to our understanding of human behavior. Precontact human habitation was dependent on the availability of water and the ease with which resources could be transported. Consequently, many habitation areas were likely located along river and lake margins. Landscape modification methods, including the removal of sediment and filling of topographical depressions, have a unique effect on archaeological site preservation and visibility. By understanding these effects, expectations about archaeological potential can be generated and then used to inform archaeological investigation strategies to identify where intact archaeological deposits are most likely to be present.

The proposed APE is a diverse and rich environment with an abundance of resources. However, the landform located in the proposed APE includes a steep hillside that would not have been suitable for human habitation. Construction of the roadway and installation of utilities within the roadway ROW caused previous disturbance. The extreme steepness of the terrain in the proposed APE and the previous disturbance within and adjacent to the road ROW indicates that there is limited potential for the project to encounter previously unidentified intact archaeological sites. Based on the known types of disturbance and background research, the following expectations have been developed for the proposed APE:

- Isolated prehistoric and historic artifacts have limited potential to be present within the proposed APE.
- Historic and modern ground-disturbing activities would have disturbed precontact and historic period intact archaeological deposits that may have been present.
- The surface within the proposed APE was heavily disturbed by previous road construction and utility installation.

## RESULTS

The purpose of this study was to characterize the landscape for its potential to contain intact archaeological deposits. No cultural resources, including archaeological sites and historic resources, were identified.

Jacobs Senior Archaeologist, Stacy Bumback, conducted a field visit on April 6, 2017. The field visit determined that the visibility throughout much of the APE was excellent (75–100 percent). Sediments, including the exposed sediments in the eroded bank, were examined for their potential to contain cultural resources. The proposed project will be constructed within an area that has been subject to previous ground disturbance. Previous ground disturbance included cutting and grading for the construction of the current road alignment, as well as installation and maintenance of utilities. Field conditions were noted and photographs taken to document the variable conditions (Attachment A).

There is no evidence of archaeological deposits in the proposed APE. Based on the presence of extensive historic and modern landscape modifications in the proposed APE, there is a limited potential for intact archaeological sites in this area.

## CONCLUSIONS AND RECOMMENDATIONS

The cultural resources assessment did not result in the identification of any intact cultural resources, including archaeological deposits or historic resources. No buildings or structures eligible for listing in the National Register of Historic Places (NRHP) were observed within the proposed APE. Therefore, a finding of “**no effect on historic properties**” is recommended for this undertaking. No further actions are recommended at this time.

In the event that archaeological materials are discovered during construction, the project proponent and/or contractor will be required to halt excavations in the vicinity of the find, have a qualified archaeologist assess the significance of the archaeological deposits discovered during construction, and contact the County and DAHP. If human skeletal remains are discovered, the County Sheriff and DAHP must be notified immediately.

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**ATTACHMENT A**  
**Photographs**

APE Overview, View to the West



## Overview of the Northern Portion of the APE Where the Hillside will be Cut for Temporary Road Realignment



Overview of APE, View to the West



Southern Portion of the APE, View to the Northwest



Close-Up of Bank Erosion, View to the Southwest



Overview of APE, View to the Southeast



Close-Up of Utility Sign Indicating Previous Disturbance

