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May 22, 2019

Elizabeth Torrey
Assistant Regional Habitat Program Manager
State of Washington Department of Fish and Wildlife
South Central Region, Region 3
1701 South 24th Avenue
Yakima, WA 98902-5720

Dear Ms. Torrey,

Thank you for the review and comments that you provided for the "Weihl Road Improvement" project (SE -19-00007). As the engineering design Consultant under contract with the County, I am responding to your letter on their behalf. Below is a summary of responses to your questions and comments:

1. The attachment "PW Culvert Clarification Email, Taylor Gustafson" states that only one culvert will be replaced in this project. However, a review of the 90% submittal plan set indicates otherwise. On sheet 6, three culverts are slated for removal; on sheet 8, nine culverts are indicated for installation. Please clarify.

   Response: Yes, the observed number of culvert removals and installations noted in Comment No. 1 is correct. As a further clarification, two additional proposed culverts have been added in response to Comment No. 2 below. There are now eleven culverts proposed for installation.

2. WDFW concurs that the installation of the nine culverts shown in the plan set are exempt from Hydraulic Project Approval regulation. However, we would like to offer the recommendation that you consider upsizing all culverts involved, most especially the culverts which run east-west under Weihl Road, as shown on sheet 8-11. On April 29, 2019, the single existing east-west culvert was measured as being 24" diameter. However, plan sheet shows that the new culverts will be 18" CMP pipes, which means that the one existing pipe will be downsized. Although the number of culverts is increasing, WDFW has firsthand knowledge of the hydrology which can flow downhill towards Red Bridge Road (See Images 1-6). This information should be considered when designing and implementing the Weihl Road project.

   Response: Thank you for providing the historical hydrology information and photos for this location. We were aware of significant runoff in this area, but we revisited our assumptions as a result of your comment, and have made the following changes to the proposed drainage facilities:

   - *Remove existing 24" east-west culvers near station 3+50 and replace with seven 18" regularly spaced culverts along the project alignment.* ***Revision: Increase to nine 18" regularly spaced culverts.***

- *Provide a new formal ditch on the uphill side (east) of Weihl Road to replace the intermittent and failing existing ditch.* ***Revision: line ditch with quarry spalls to minimize potential erosion during high flow events.***
- *Replace existing 48" culvert that serves the abandoned irrigation canal at approximate station 0+75 with a new 48" culvert with beveled ends.* ***Revision: remove existing debris and formalize the ditch upstream and downstream of the new culvert (within the limits of the existing County right of way)***
- *Replace existing 8" driveway culvert near station 1+00 with one 18" culvert.* ***No change.***

3. We recommend that you utilize biotechnical soil stabilization techniques at the base of the east-west culverts where they emerge from the welded wire wall. Then flow which will empty from these culverts has the potential to erode the ground at the base of the proposed wall. On sheet 5, under "Culvert Detail", quarry spalls are shown for placement beneath the installed culverts. However, we recommend placing a geotextile fabric square, covered with rounded cobbles and planted with willow or dogwood stakes, beneath the outfall of the culverts (see Image 7). This technique has been used to great success in preventing erosion on slopes which are subject to overland, non-channelized flow.

   Response: In response to comment number three, we have made the following changes to the culvert outfall details:
   - ***Revised to add geotextile to the outfall detail as recommended***
   - ***Revised to add plantings to further protect the slope and secure the material around the outfall as recommended.***

4. Thank you for including the silt fence detail on sheet 5. Please ensure that this silt fence is in place and maintained so as to protect the unnamed tributary prior to and during project activities.

   Response: This comment has been noted and we will ensure that the silt fence and other temporary erosion control measures are in place and functional during construction.

5. The project boundary terminates immediately east of the culvert which carries the unnamed tributary beneath Loping Lane. However, we observe that this culvert is undersized (3' diameter culvert in a 6' bank full width channel) and perched with a plunge pool on the downstream end. This culvert should be considered for future correction.

   Response: This comment has been noted and the culvert in question will be considered for correction if future improvements are made to Loping Lane.

6. The plan set indicates places of "ditch area/restoration area". However, beyond hydro seeding, no additional information on restoration is provided. WDFW would like to request that you utilize appropriate native seeds from species such as Bluebunch wheatgrass, Sandberg bluegrass, and others. Installing native shrubs will also assist with restoration and soil cohesion. We would be happy to provide planting recommendations if more information is desired.

Response: Thank you for the comment and subsequent information that you provided in your email exchange with Emily Logan (KPG, Inc.) on May 21, 2019. We have reviewed our specification for seeding and modified as recommended. We have also expanded the scope of the project to include a planting schedule for native shrubs as recommended.

Thank you again for the review. We appreciate your time and effort, and look forward to the successful completion of this project.

Sincerely,

Josh Fedora, P.E.
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