



Chelan County Natural Resource Department

316 Washington Street, Suite 401, Wenatchee, WA 98801

Phone (509) 667-6567 Fax (509) 667-6527

Coulter Creek Fish Barrier Replacement

PROJECT FINAL REPORT

**Respectfully Submitted by: Alan Schmidt
January 15, 2015**

Project Summary

The objective of the Coulter Creek Barrier Replacement project is to replace an existing fish passage barrier culvert at RM 0.4 with a squash culvert pipe structure. The goal of this action is to increase access to spawning and rearing habitat for steelhead. This project will complement the larger Nason Creek Lower White Pine (LWP) Reconnection that included the reestablishment of hydraulic connectivity between the Coulter Creek drainage and Nason Creek. The replacement of the barrier culverts with a squash culvert pipe structure improves salmonid access to .32 square miles of wetland rearing habitat and 1.6 miles of stream. Nason Creek, a Category 2 watershed in the Wenatchee Subbasin, contains major spawning areas for ESA-listed spring Chinook salmon and steelhead and is a bull trout core area. The Nason Creek intrinsic potential map shows suitable steelhead habitat above the barrier. The Coulter Creek Barrier has been identified as a barrier(s) in both the USFS Barrier Inventory (2000) and Chelan County Barrier Inventory (2000). While this barrier has not been identified as a top priority in the past, the low ranking was partially due to the diminished hydraulic connection from to the BNFS railroad prism that was removed by construction of a new railway bridge in 2013.

Project Partners

- Bureau of Reclamation (BOR) provided design and funding to complete landowner coordination, permitting and project management. The BOR design engineer Colin Forsyth attended several on site meetings with WDFW and provided complete construction drawings and specifications.
- Recreation Conservation Office (RCO)– Provided project funding for contract documents and construction.
- (TRIB Committee) Provided the match project funding for contract documents and construction.
- Chelan County Natural Resources Department (CCNRD) – Provided project management, permitting, landowner coordination and construction management.

Challenges

The project is located where Dardanelle Road crosses Coulter Creek. Dardanelle Road is a private road serving as access to a number of single family residences. One way access was required during construction to minimize disturbance.

Utility locate revealed that underground power and phone were located within the project area. Chelan County PUD has adopted a full recovery policy which required a new line to be installed between existing junction boxes. This added a significant cost to the project.

Permitting and weather issues delayed the start of construction until mid-November. WDFW and ACOE were flexible enough to allow for construction outside of standard in-water work windows. Freezing temperatures hampered de-watering and backfill compaction. Final site cleanup and planting will be completed in spring of 2015.

After review by WDFW engineer and biologist the culvert size was increased from 9' span to a 13'6" span. This change resulted in increased construction costs.

Suggestions to the Committee

Funding requests are based on the design engineer's estimate. After review with permitting agencies design changes often increase the estimated construction costs. Some flexibility that allow for these changes would allow for a more efficient project completion. Relocating the buried power lines resulted in an upgrade to the existing line. Some cost share with Chelan County PUD would allow for project estimating and construction to be more predictable.

Project Construction

The Chelan County Natural Resources Department (CCNRD) advertised for bids and conducted a pre-bid project walkthrough with prospective construction contractors on September 26th. Bids were opened on October 6th with Olin Excavation LLC submitting the low bid. In order to reduce project costs and ensure that the replacement culvert would be delivered on time the Natural Resource Department purchased the replacement culvert from Northwest Construction Supply. Delivery was completed October 23rd. Work began on November 12th. De-fishing and a creek bypass system were installed. Construction continued with the contractor working 10 hour days and on Saturdays during freezing temperatures. Olin installed new underground power and phone conduit as required by Chelan County PUD. This work included new conduit from the junction box north of the project site to the junction box located approximately 400 feet south of the project site. Work was substantially completed on November 21st, 2014.

Final Work Products

As-Builts

See construction as-built drawings below:

NOTES:

1. Compact fill adjacent to culvert by working parallel, not against the culvert.
2. Culvert bedding shall be in 6-inch maximum lifts. Backfill shall proceed evenly on both sides of pipe. Special attention shall be paid to maintaining the pipe rise and dimensions.
3. Special attention shall be paid to compaction of material under the haunches of the pipe. Culvert bedding shall be shaped to approximate the culvert bottom prior to placement of culvert. A 2-inch bedding blanket of loose fill shall be shaped to the bottom of the pipe prior to placement of the pipe.
4. Channel reshaping to be field directed by Contracting Officer and may vary slightly in width, depth, and slope from final shown.

LAYOUT POINTS

| POINT # | Easting | Northing | LEV | DESCRIPTION |
|---------|---------|----------|--------|-----------------------|
| 101 | 5071.4 | 4885.9 | 4885.2 | CULVERT INLET MARKER |
| 102 | 5080.2 | 4886.8 | 4886.2 | CULVERT OUTLET MARKER |
| 103 | 5058.0 | 4886.8 | 4886.2 | CL. STA 1+70 |
| 104 | 5037.6 | 4887.7 | 4888.0 | CL. STA 1+80 |
| 105 | 4929.4 | 4875.9 | 4875.2 | CL. STA 2+00 |

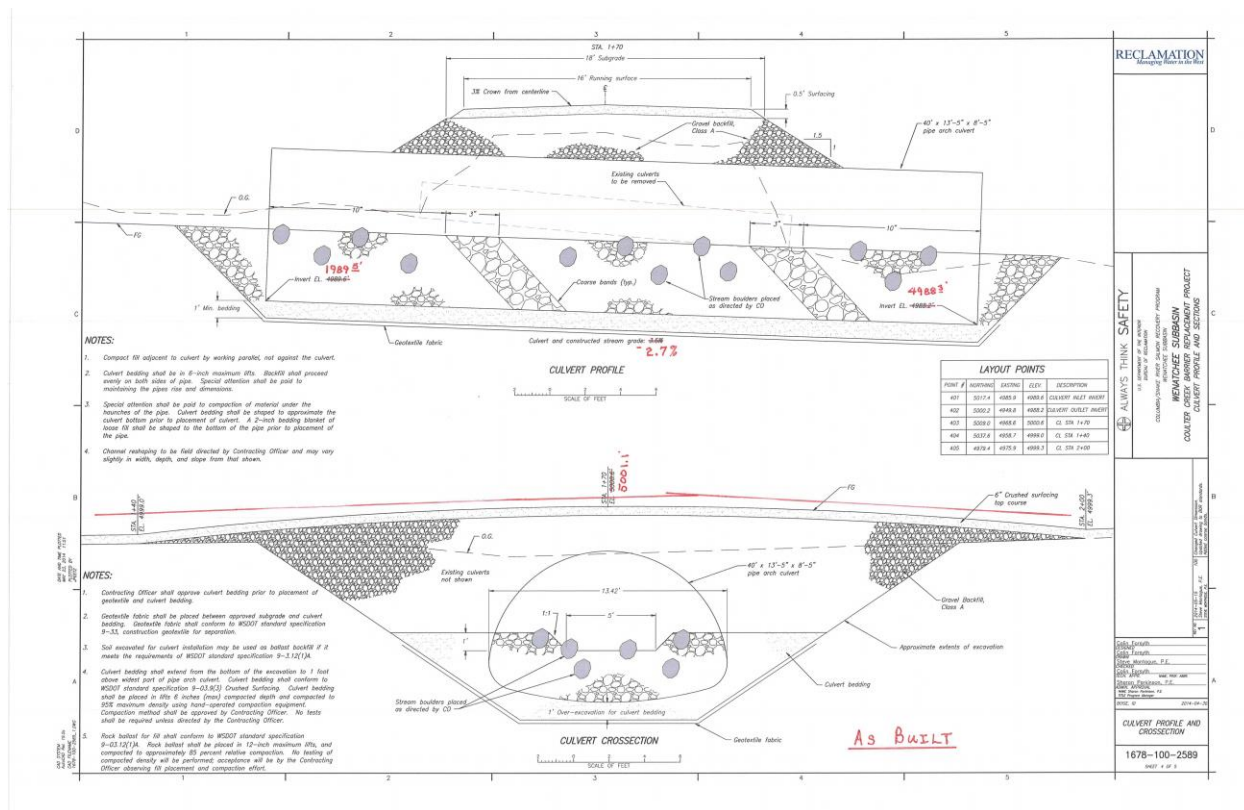
CULVERT PROFILE

SCALE OF FEET

CULVERT CROSSSECTION

SCALE OF FEET

As BUILT



Photos



Delivery of replacement squash pipe.



Olin Clearing and Grubbing vegetation.



Stream bypass pump operated non-stop.



Freezing temperatures during construction.



James Olin and Colin Forsyth (BOR design engineer) discussing progress and installation of second half.



Contractor installing Engineered Streambed Material and Rock Bands.



Chelan County PUD technician at junction box.



New powerline conduit.



Inlet of pipes pre-costruction.



Outlet of pipes pre-construction.



Inlet of replacement pipe.



Outlet of replacement pipe.