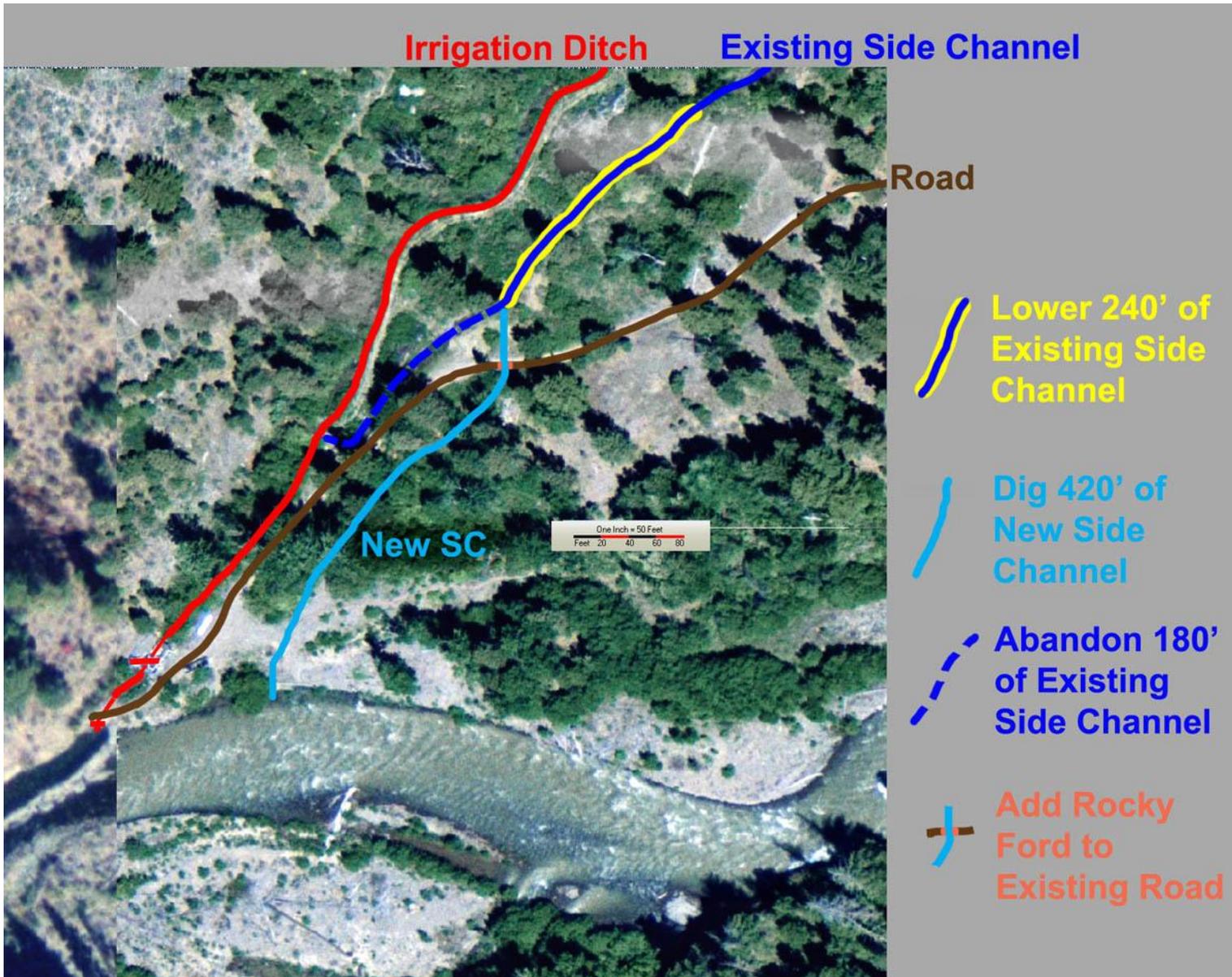


**Rattlesnake Creek Side Channel
Project Update
4-9-2012**

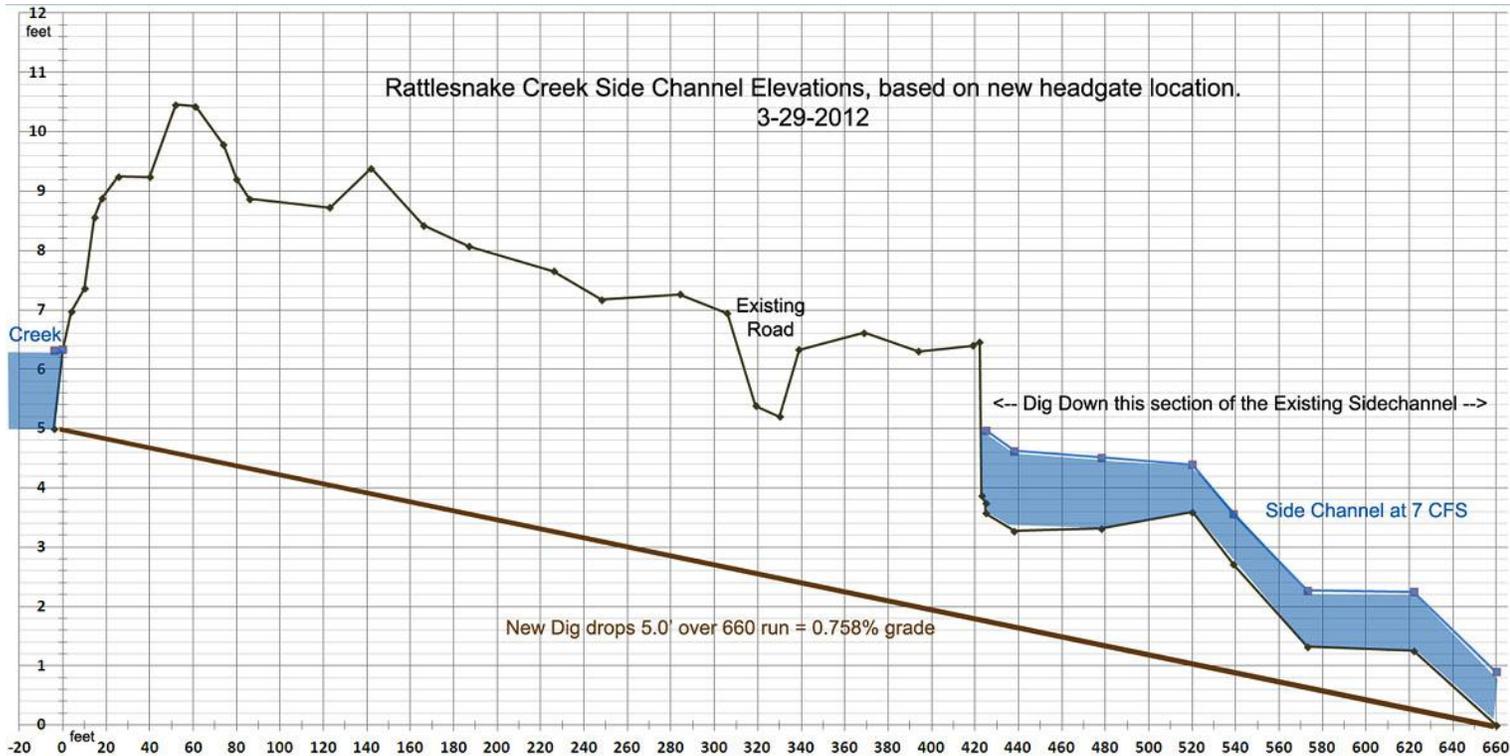
As previously mentioned, this project plan has been modified to completely separate the side channel from the irrigation ditch. More recently, based on additional surveying and input from a hydraulics engineer we have been able to add more detail to the modified plan:



The point of diversion on Rattlesnake Creek, where the new side channel segment will begin, is moved about 40' downstream to the location shown above. By also lowering 240' of the existing side channel, the average grade (a 5' drop over 660') becomes 0.76%. This makes it possible to delete the wing dam from this plan because normal creek flows are predicted to provide sufficient inflow without building an in-stream structure.

180' of the existing side channel, which now connects it to the irrigation ditch, will be plugged and abandoned. There will no longer be any connection between the side channel and the irrigation ditch.

This chart shows the existing ground elevations and the proposed excavation grade:



At the creek diversion point a headgate will regulate inflow of water into a culvert, leading to the new side channel segment. The culvert will be 4' to 5' diameter, formed to a squashed shape, 40' long, and set partly below grade. The headgate will be submerged during flood stage to minimize disruption to creek flow patterns.

The typical cross section of the new side channel segment will average 5 to 6 feet wide, with sides sloping up at 1:1. Actual construction will deviate to accommodate existing trees and provide variation. One design intent is to keep water velocities up to transport sand until it reaches an area where deposit is beneficial.

Excavated material will be used to raise the north creek bank in a stretch about 80' long, starting at the new culvert location and going upstream. This will protect against annual flood waters migrating into the new side channel.

The existing clump of riparian alder, just upstream from the new diversion point, is already buttressed by some large rock to form the fish screen's bypass return pool. The protection for the alder roots will be increased with additional rock, to help prevent washout by fast flood waters, and to increase the shelter effect at the new diversion point.

A calibrated ramp flume has been custom designed for the anticipated range of flows and to facilitate fish passage. It will be placed in the new side channel segment to measure the flow, so the headgate can be set to keep CFS within the permitted water right. It is plumbed to connect a stilling well for recording flow:



The locations for side channel excavation and lowering are flagged and ready to begin digging once permits are issued. The majority of the dig will be on dry land; timing for the remainder may be subject to fish windows.

The archaeological site review was completed April 1st. The written report is expected by mid-April. The archaeologist did not find any points of interest which would affect this project.

Next steps: I'm looking for a local supplier for culvert; then I'll finalize the headgate design, begin headgate fabrication and seek bids on the excavation. Meanwhile, Jen will be working on permits.