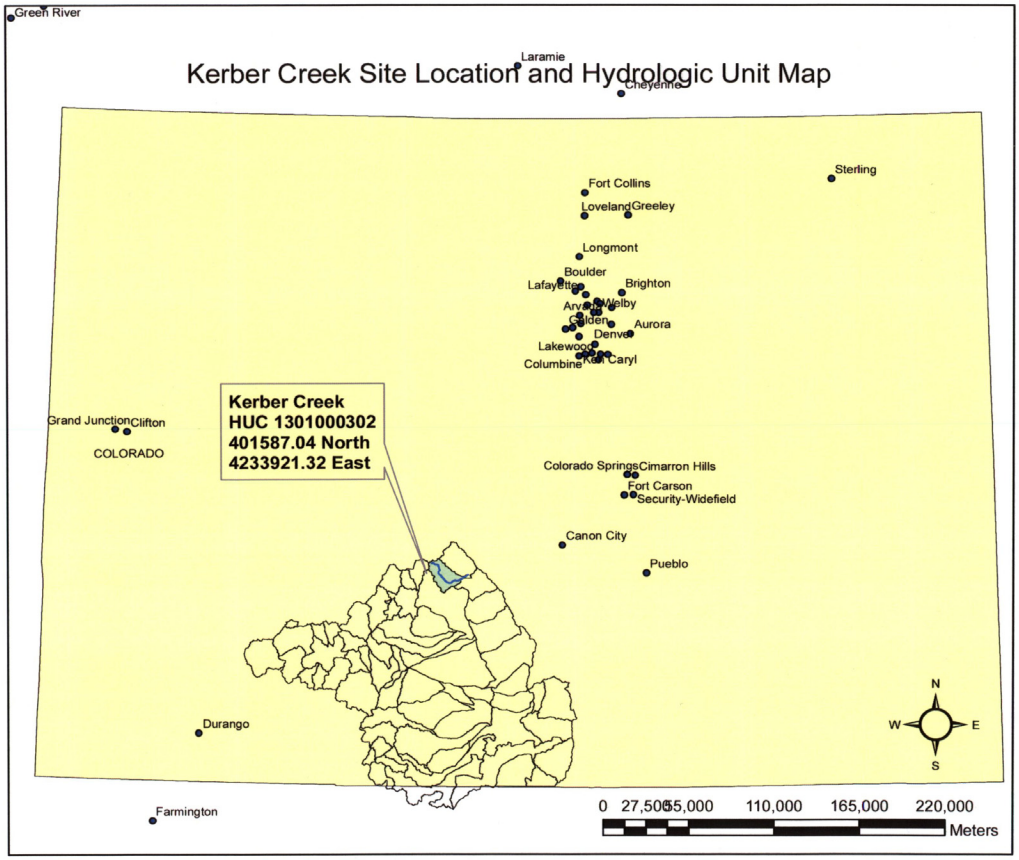
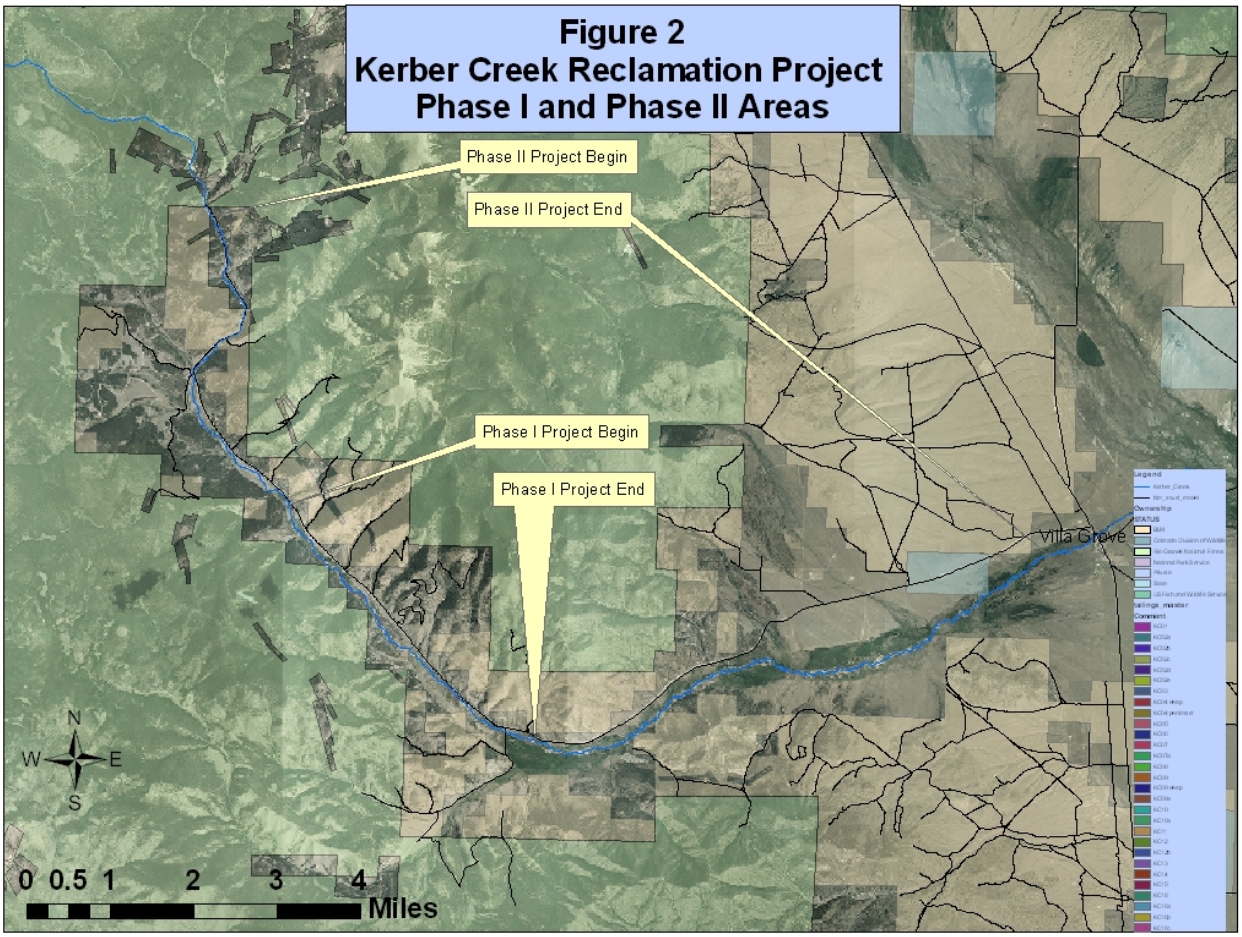
U.S. Army Corps of Engineers
Southern Colorado Regulatory Office
200 South Santa Fe Avenue
Pueblo, Colorado 81003-4270
(719) 543-6914
4/14/08
Web Page: https://www.nwo.usace.army.mil/html/od-tl/coloreg-home.htm

CHECKLIST OF INFORMATION REQUIRED TO COMPLETE APPLICATION FOR A NATIONWIDE GENERAL PERMIT VERIFICATION

The following information will assist the U.S. Army Corps of Engineers in reviewing your application for a Department of the Army Nationwide General Permit verification. Not all of the information is necessary or applicable to each project. Please provide the information appropriate to your proposed project. Supplying this information when you file your application could significantly reduce the processing time.

Location: Kerber Creek Restoration Site: Latitude 40.15N, Longitude 42.33E near Villa Grove, Colorado. The USGS hydrologic unit code is 1301000302. See Figures 1 and 2.





Description of Proposed Project:

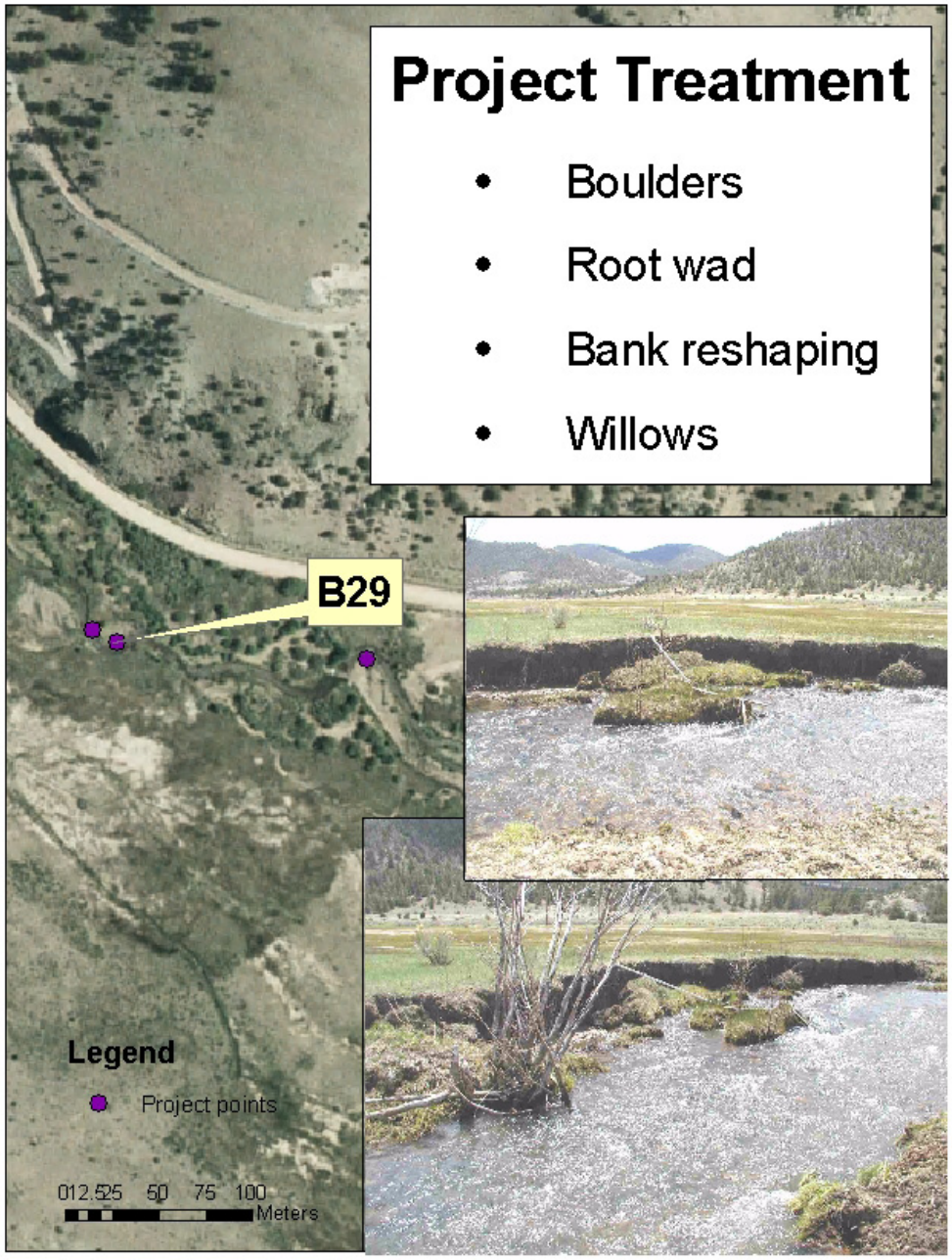
The Kerber Creek watershed restoration plan is for key areas impacted by historic mine tailings in the Kerber Creek Watershed. Kerber Creek is on the State of Colorado's Section 303(d) list for heavy metals left there nearly a century ago. The segment of the waterway that this proposal covers is listed for dissolved cadmium, copper, and zinc and is classified as Aquatic Life Cold 1, Recreation E, Water Supply, Agriculture /Use Protected. Kerber Creek is in the Rio Grande Basin and is listed as a top priority for funding. Colorado Department of Public Health and Environment (CDPHE) have recently completed a draft Total Maximum Daily Load Assessment (TMDL). The water quality goal for the 303(d) listed segments of Kerber Creek is attainment of the assigned use classifications for Segments 9a and 9b, specifically the assigned Water Supply Use classification for Segment 9a and the Aquatic Life Use classification for Segment 9b (segment where restoration project will occur). The endpoint of the TMDL would be an assessment that the assigned water quality standards for metals are being attained. Though some mine reclamation has already occurred in the watershed (described in Section 2.5), much still needs to be accomplished in order to meet the use classification goal and improve the Kerber Creek fishery.

CDPHE has collected and analyzed surface water samples since 1990 in this watershed. Results indicate zinc (120ug/l) and copper (13ug/l) have exceeded EPA Ambient Water Quality Criteria for aquatic life acute exposure (http://epa.gov/waterscience/criteria/nrwqc-2006.pdf). In June of 2007, CDPHE collected additional surface water samples and results indicate dissolved zinc concentrations of (71-6300 ug/l), dissolved copper (6-540 ug/l). In 2005- 2007 BLM characterized and analyzed surface and subsurface tailings. These tailings are impacting Kerber Creek and its associated riparian habitat by erosion and chemical processes. Additional information is in the Environmental Assessment for this work. Potential erosion areas will be in-stream, and to a minor degree, near access areas.

Lands within the watershed are managed by Bureau of Land Management (BLM), USDA Forest Service (FS), and private citizens. Tailings deposits were discharged into Kerber Creek by pre-1930s milling from several mills in the Bonanza Mining District and were transported and re-deposited downstream. Some voluntary cleanup actions in the watershed have occurred. Over $10 million in response actions were undertaken by BLM, American Smelting and Refining Company (ASARCO, Inc.), CDPHE, and FS. Although the general tailings removal action objectives were met in this earlier work, some tailings are still present and degraded stream channel conditions over a distance of 17 miles. Degraded stream banks and riparian areas are limiting access to the floodplain, hyporheic flow, and sustaining flows during low precipitation periods or promoting protective vegetative recruitment and establishment. Conversely, high flows can scour a stream bank, which affects the natural colonization of riparian plant species.

There is tremendous local support for this effort with the landowners located along Kerber Creek and its tributaries have formed the Bonanza Stakeholders Group (BSG). BSG is dedicated to providing coordination and assistance to this project and has over currently has over 20 local land owners and 40 members. BSG and other local land owners will be contributing over $220,000 of in-kind match to the restoration project. This project has many partners including Trout Unlimited (TU), Natural Resource Conservation Service (NRCS), Colorado Division of Wildlife, Saguache Methodist AmeriCorps, U.S. Fish and Wildlife Service, Rio Grande Division 3 Water Resources, Colorado Department of Public Health Environment, Western Hardrock Watershed Team, AmeriCorps*VISTA, Colorado Watershed Assembly, Department of Reclamation, Mining and Safety, Office of Surface Mining, Environmental Protection Agency Additionally, the Collegiate Peaks Chapter of Trout Unlimited is based in Salida and has a history of working on river restoration projects in the San Luis Valley. The chapter and other partners will be contributing volunteer labor for restoration and re-vegetation, and financial support. We will plan four community meetings in Villa Grove over the two-year project and provide regular project updates to interested community members. The AmeriCorps VISTA volunteer will help coordinate the stakeholders with guidance from Trout Unlimited Watershed Restoration Coordinator. We also plan to celebrate and share our successes with an annual potluck barbeque at a local landowner's ranch. Additionally, both Trout Unlimited and the BLM will have Kerber Creek restoration information on their websites.

Typical Boulder Project



- The stream name is Kerber Creek and the dimensions of the creek below the average high water mark are; length is approximately 90,000 linear feet (although only portions of this distance will be treated), width is approximately 10 feet, and depth is approximately 2 feet.
- Wetlands – not applicable in project area (n/a)
- Work location: T46N R08E Sections 7, 8, 16, 17, 18, 20, 21, 22, 23, 24, 26, 27, 28, 24; T46N R07E Section 1, 12; T46N R09E Section 15, 16, 17, 19, 20, 21 ; and T47N R07E Sections 35 and 36.
- The purpose and need of the project is to remove mine tailings along Kerber Creek, stabilize the channel, restore and preserve the riparian system, and re-establish fisheries. The project would consist of removing tailings adjacent to Kerber Creek, stabilizing stream banks using rock and native vegetation, J-hook vanes with supporting bank rip rap to deflect flow away from stream banks, and re-establish riparian habitat. Figure 3 depicts an example of a boulder project. If the project does not occur, than mine tailings will continue to leach into Kerber Creek, bank erosion will continue, riparian and fisheries habitat will not be re-established. Rosgen structures will be utilized to increase fish habitat and Figures 3 and 4 are examples of the in-stream structures to be placed in Kerber Creek.
- Active restoration will necessitate use of a track hoe and dump truck to remove mine tailings, re-shape stream banks, placement of rip rap and in-channel structures in Kerber Creek. The Best Management Practices (BMPs) associated with this work are included in the NPDES Storm Water Management Plan and BLM/USFS Environmental Assessment. Re-vegetation of the upland and riparian zones will be done using volunteers from the community and weed free seed and native vegetation. Construction activities will occur beginning the summer of 2008 and end September 2010.
- Erosion will be minimized by conducting work during dry periods, using silt fences during construction activities, establishing vegetation, and a person on-site to monitor work.
- The quantity of fill or excavation is approximately 40,000 cubic yards of material over the life of the project, which will include removal of mine tailings, re-shaping stream banks, and placement of rock.
- The location of disposal sites will be above the 100-year floodplain and on suitable flat sites near where the excavation of tailings will occur to minimize disturbance.
- A programmatic biological assessment and biological evaluation was completed for both FS and BLM listed species. It determined that the selected actions will have *No Effect* on Uncompahgre Fritillary Butterfly, and May Effect, But *Not Likely to Adversely Affect* Bald eagle, Canada Lynx, Mexican Spotted owl, and Southwestern Willow Flycatcher. A wildlife Biological Evaluation determined that the selected alternative would have No Impact on the majority of the Forest's sensitive species and May Impact individuals of some species but are not likely to cause a trend towards Federal listing or a loss in viability.

- No direct or indirect adverse environmental impacts are likely. During the two-year project, it is expected that minor quantities of sediment are likely to be discharged into Kerber Creek, but are mitigated by the BMP's described in the Storm Water Management Plan and Environmental Assessment. It is also expected that the sediment discharges from lack of current remedial responses will be lessened when the BMP's are implemented. Following completion of the project, erosion and delivery of metals (through mine tailings) will be reduced, while water quality, riparian and fisheries habitat will be greatly improved.

Specific objectives and tasks to be completed through an approved Section 319 grant from EPA and Water Quality Control Division are described below:

Objective 1: Develop watershed plan

Task 1: Assemble all relevant information into formal watershed plan
Task 2: Share watershed plan with BSG for feedback and input
Task 3: Submit final plan to CDPHE

Objective 2: Relocate high metal concentration tailings from streamside

Task 1: Characterize tailings chemistry, contaminant, and mobility
Task 2: Select relocation sites and obtain covenant agreements with landowners
Task 3: Conduct removal activities
Task 4: Restore compacted soils at all temporary haul roads

Objective 3: Initiate phytostablilization at lower metal concentration tailings

Task 1: Prepare sedimentation and erosion barriers
Task 2: Reconstruct berms/old beaver terraces to 3:1 slope
Task 3: Mix "A" horizon soils and add amendments as prescribed in the BLM Environmental Assessment.

Objective 4: Re-vegetate phytostabilization sites

Task 1: Re-vegetate tailings sites with native vegetation
Task 2: Drill or broadcast seed on soil
Task 3: Plant trees where appropriate

Objective 5: Stabilize stream banks at up to 140 sites

Task 1: Install root wads where prescribed
Task 2: Install willow fascines where prescribed
Task 3: Install engineered rock weirs
Task 4: Plant sedge mats, willow, and cottonwood where prescribed

Objective 6: Install fish habitat structures

Task 1: Place boulder clusters where prescribed

Objective 7: Install stream bank monitoring stations

Task 1: Install cross and longitudinal section transects for documenting stream channel morphology changes

Objective 8: Monitor riparian and upland projects

Task 1: Task 1: Establish and monitor long term transects/points for quantifiable changes in soil chemistry and site stability
Task 2: Establish photo points to monitor vegetation changes
Task 3: Conduct macroinvertebrate surveys
Task 4: Conduct fish shocking/surveys
Task 3: Propose amendments for inadequate or failed treatment sites as appropriate

Objective 9: Celebrate and share successes

Task 1: Hold 4 community meetings to report progress and successes
Task 2: Share project information at appropriate conferences/meeting
Task 3: Hold yearly celebration potluck with BSG

Objective 10: Adhere to all 319 reporting requirements

Applicant Information

☐ Contact's name, if corporation or agency, include contact name: Steve Sanchez or Andrew Archuleta.

☐ The applicant is the responsible party: Yes

☐ Mailing Address

Bureau of Land management
P.O. Box 67 [46525 Highway 114]
Saguache, CO 81149

☐ Telephone Number during business hours: (719) 655-2547

☐ Fax number and e-mail address: (719) 655-2502. steve_sanchez@co.blm.gov

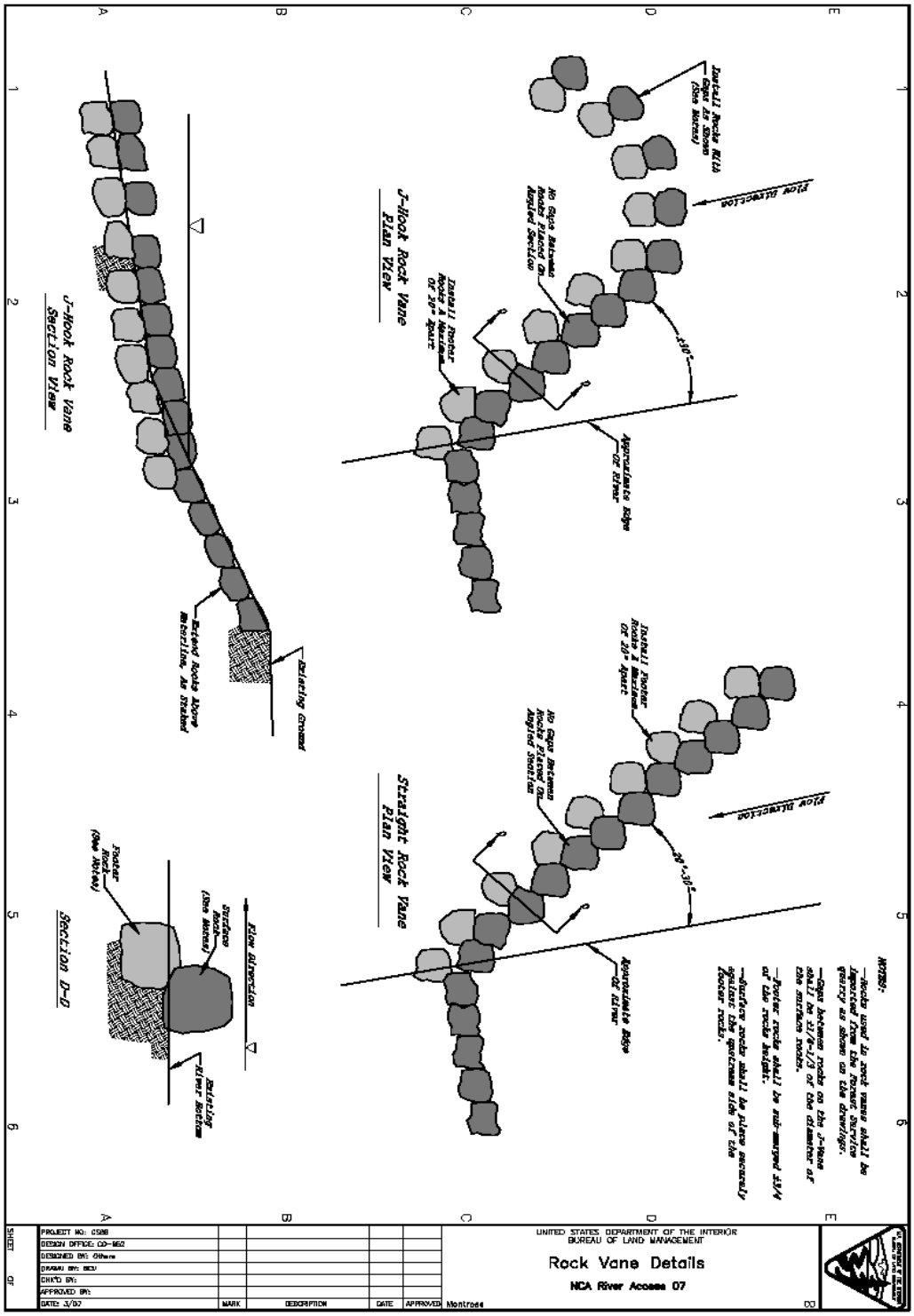


Figure 3. Specifications for J-hook vane structures (From: The Cross-Vane, W-Weir and J-Hook Vane Structures…Their Description, Design and Application for Stream Stabilization and River Restoration, D. L. Rosgen, P.H.)

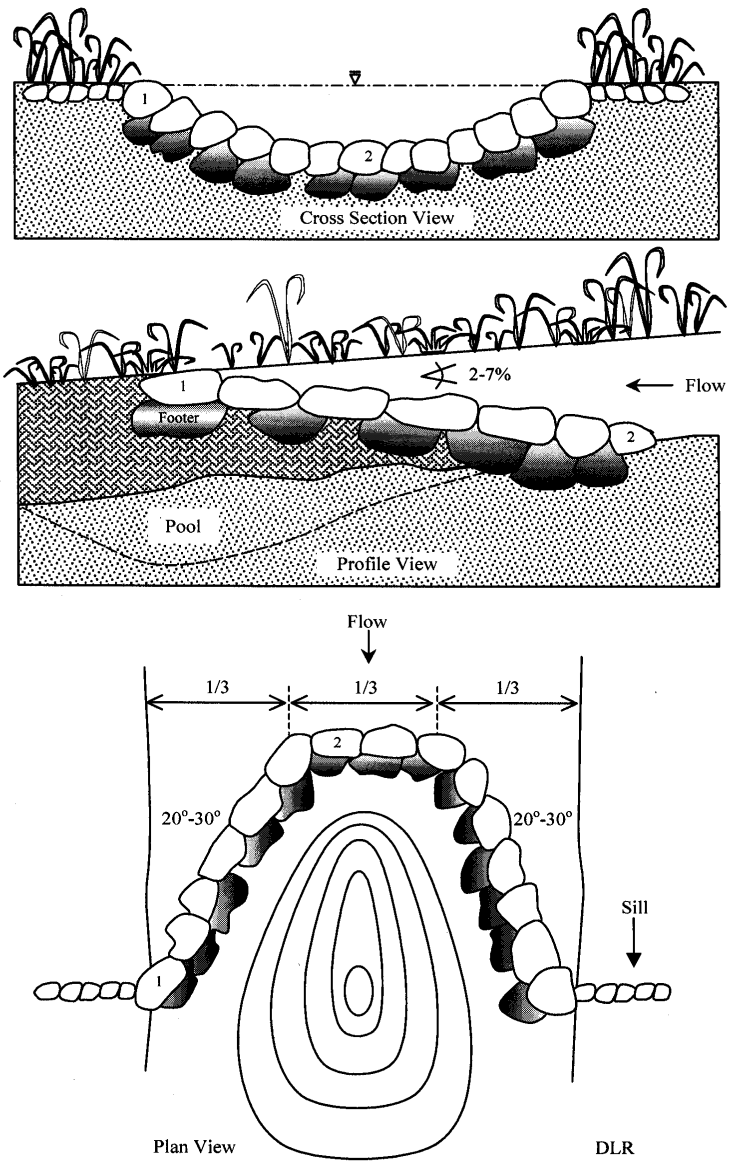
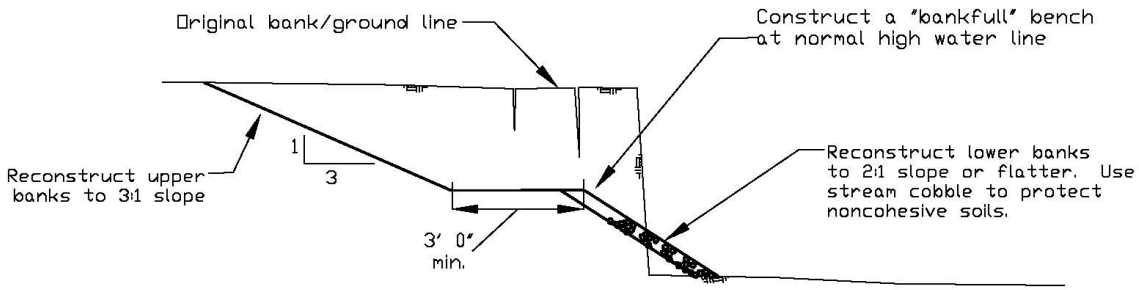
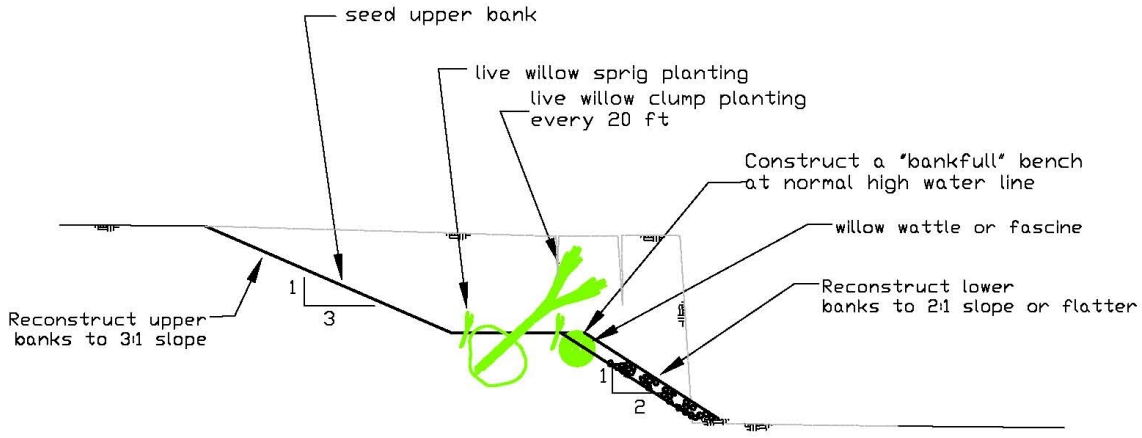


Figure 3. Cross section, profile and plan view of a Cross-Vane

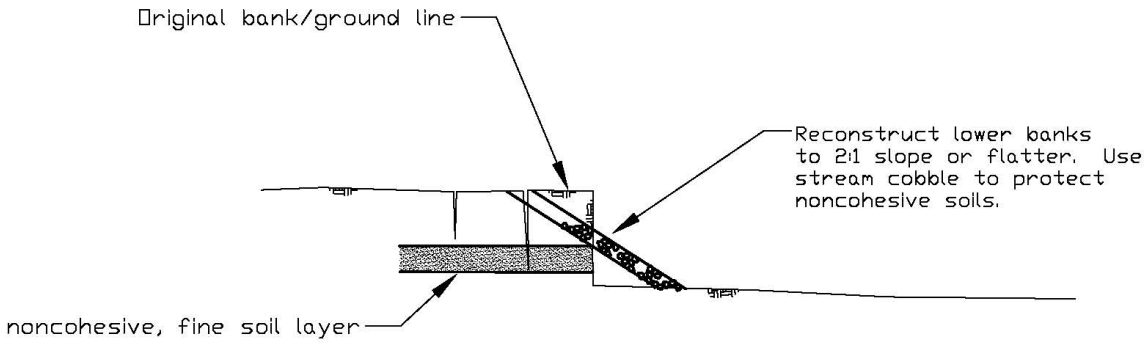
Figure 4. Specification for cross vane structures (From: The Cross-Vane, W-Weir and J-Hook Vane Structures…Their Description, Design and Application for Stream Stabilization and River Restoration, D. L. Rosgen, P.H.)



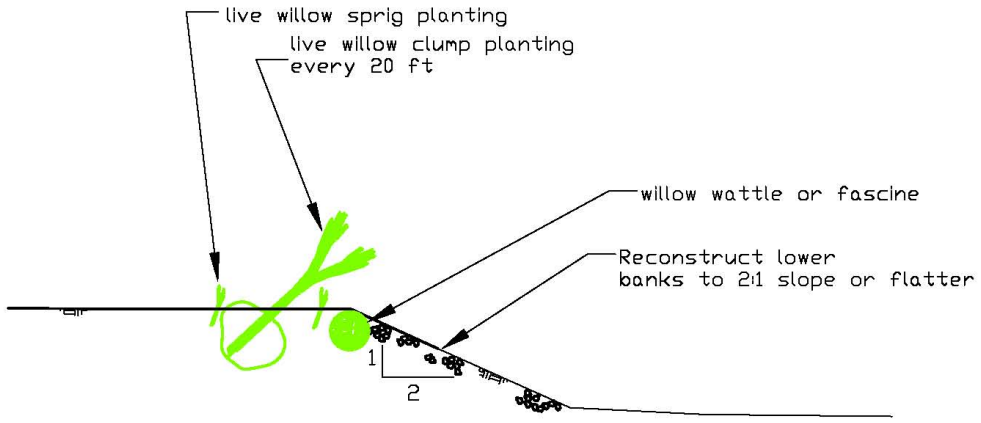
TYPICAL HIGH BANK SECTION VIEW



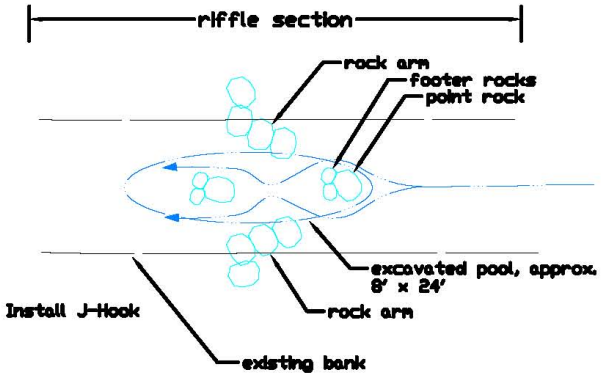
TYPICAL HIGH BANK SECTION VIEW



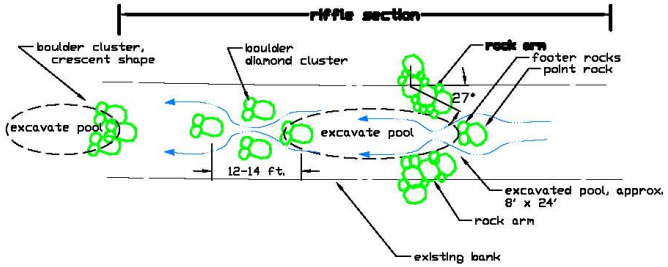
TYPICAL LOW BANK SECTION VIEW



TYPICAL LOW BANK SECTION VIEW



PLAN VIEW
POINT NO. 121
no scale



PLAN VIEW
STANDARD ROCK CONFIGURATIONS
no scale

CONSTRUCTION NOTES:
1 - Any rock arm shall always point upstream, 20-30 degrees from the bank.

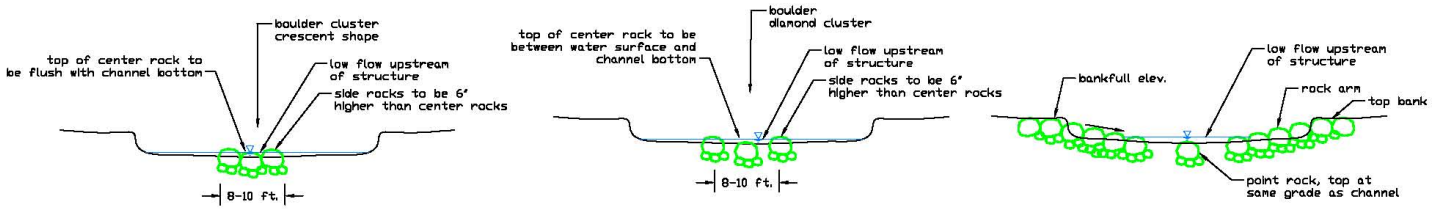
2 - Any boulder configuration shall be in the middle third of the creek unless adjacent bank protection is installed with the boulders.

3 - Footer rocks shall be used with every rock structure unless insitu material is 12 inch diameter or greater.

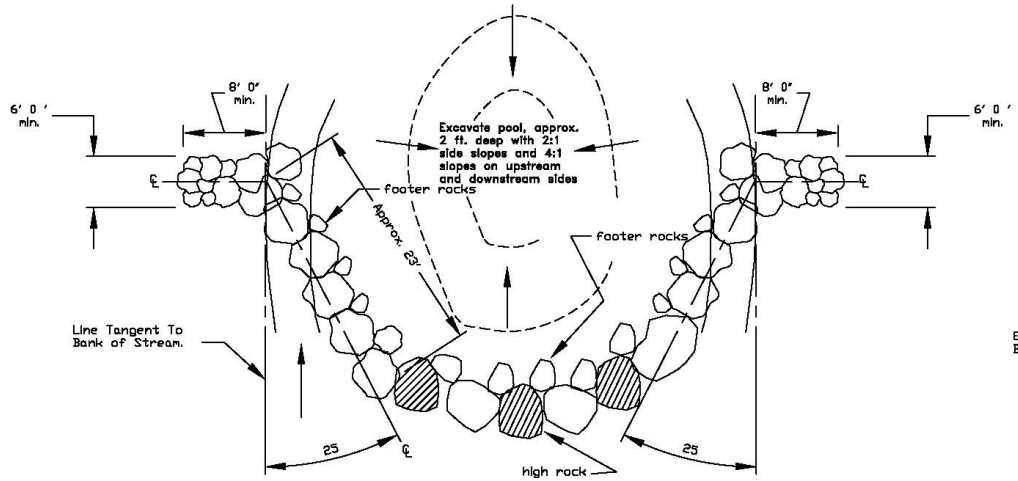
4 - Boulder configurations shall not contain rocks that are 6 inches higher than the low water level.

5 - Pools shall be excavated adjacent to the downstream side of every rock structure as shown on the drawings.

6 - Whenever possible, install willow clumps along the bank, adjacent to rock structures.



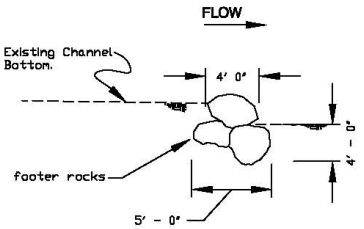
SECTION VIEWS
STANDARD ROCK CONFIGURATIONS
no scale



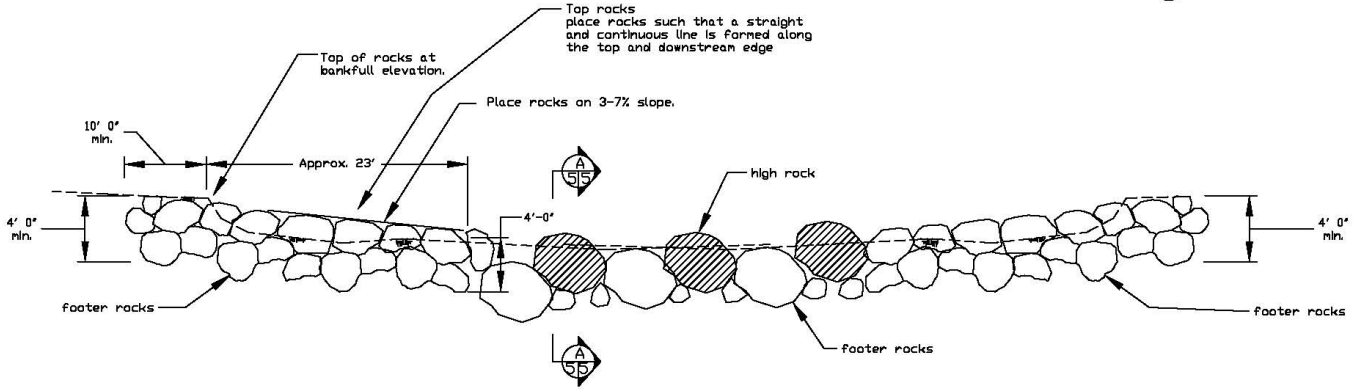
PLAN VIEW
no scale

ROCK GRADATION
STREAM BARB

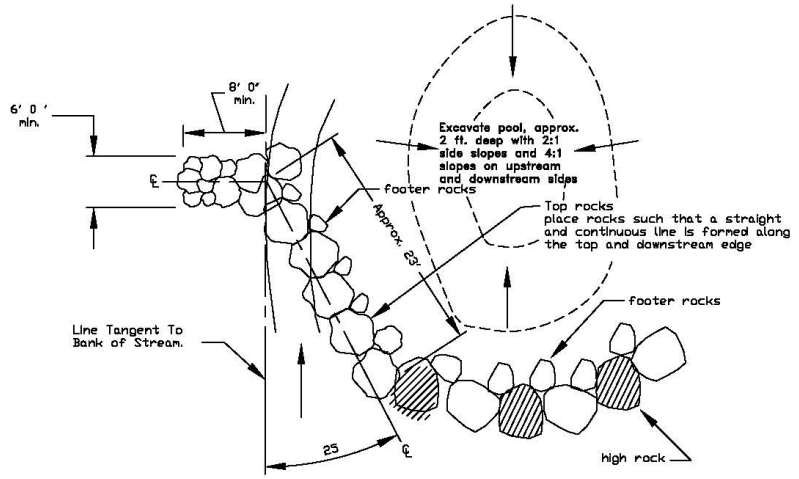
Size Opening (inches)	% Smaller Dry Wt. Basis
60	100
36	60 – 100
18	40 – 75
12	0 – 40



SECTION A 5/5



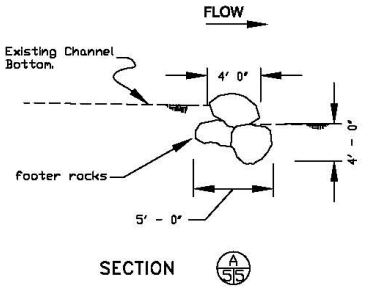
PROFILE ALONG ℄ OF STREAM
no scale



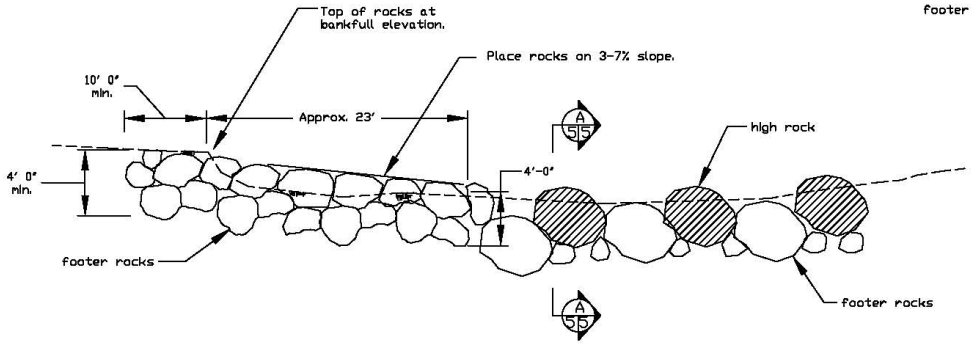
PLAN VIEW
no scale

ROCK GRADATION
STREAM BARB

Size Opening (inches)	% Smaller Dry Wt. Basis
60	100
36	60 – 100
18	40 – 75
12	0 – 40



SECTION A 55



PROFILE ALONG ℄ OF STREAM
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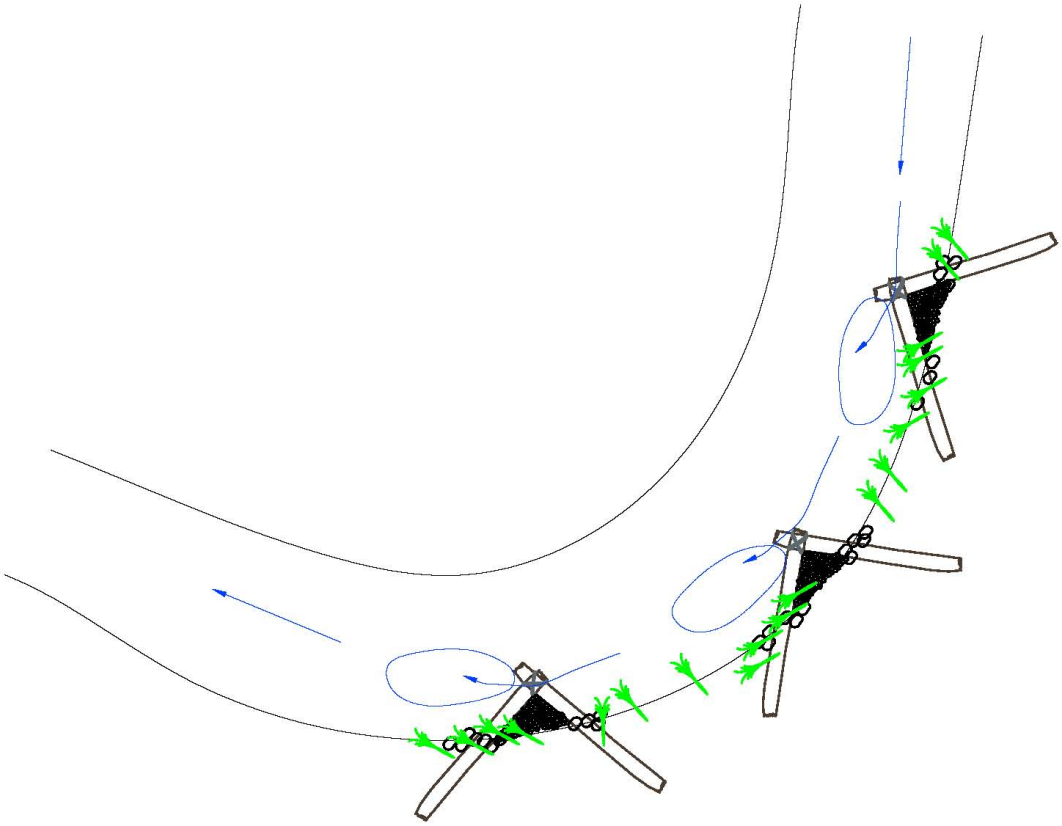
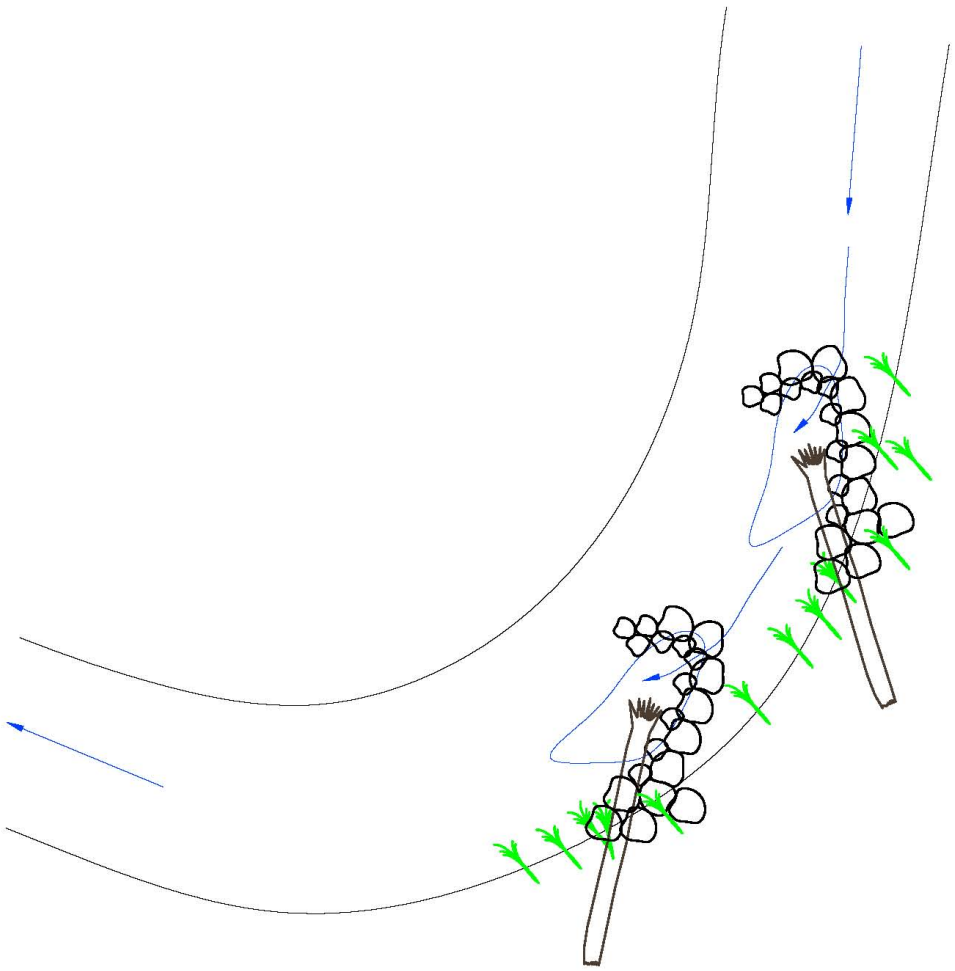
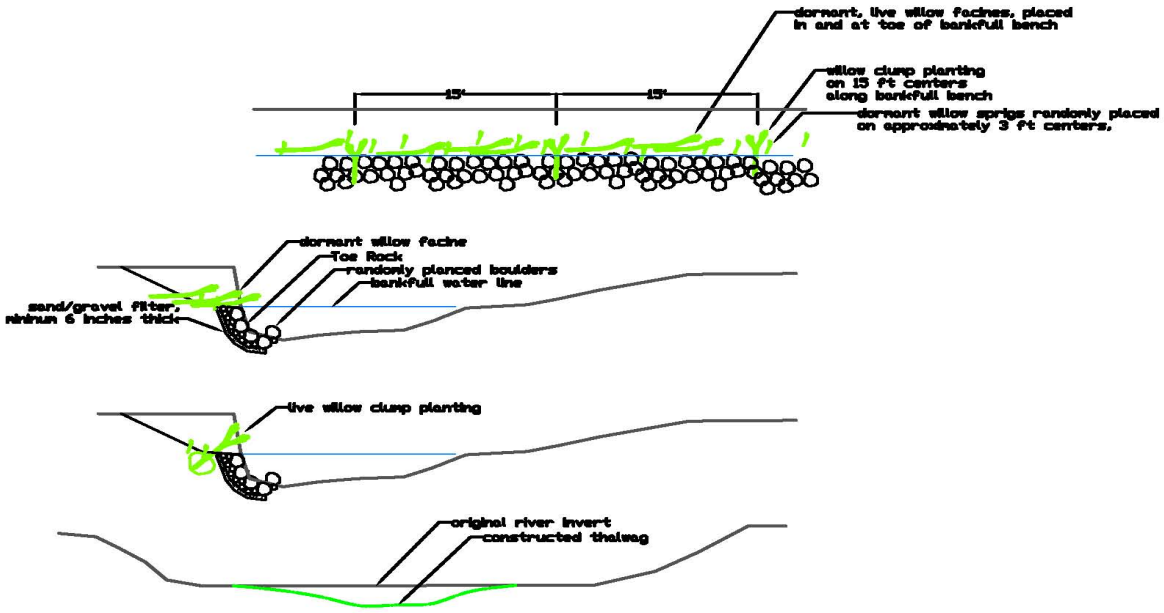


PLAN VIEW
TYPICAL LOG DEFLECTORS



PLAN VIEW
TYPICAL ROCK STRUCTURE
AND ROOT WAD COMBINATION



Please call if you have any questions.

Sincerely,

Andrew Archuleta