Laws

- Section 10 of the Rivers and Harbors Act

  Regulation of the placement of any structure or work that takes place in, under, or over a navigable water affecting course, location, or condition of navigable capacity.

- Section 404 of the Clean Water Act

  Regulation of the discharge of dredged or fill material into all waters of the U.S., including wetlands

Types of Permits

- Currently 2 permitting instruments for impacts as a result of mining
  - Nationwide Permits- NWP 21, 49, 50
    * To use NWP's it's necessary to reach minimal impacts.
    * Timeline restrictions
  - Individual Permits
    * Bar is lower than NWP's
    * Must achieve Finding of No Significant Impacts (FONSI)
    * Can be authorized for life of mining impacts

Mitigation Plan

- On-site restoration, enhancement or creation.
- Off-site restoration, enhancement or creation
- Mitigation Bank
- In-Lieu Fee
- See 33 CFR 332.3 for particular orders

Mitigation

Can be based on functional replacement and/or linear footage/acreage. Need to utilize baseline assessment information (location, size, type, and existing conditions) to determine mitigation requirements.

Mitigation

- Provide measurable Goals and Objectives

Provide a discussion and objective statement on the functions and values of the resources to be impacted and compare that to the functions and values proposed in the mitigation.

Mitigation

Site Selection

Detail the factors considered in the site selection process. These could include factors such as watershed considerations/needs and practicability.

Mitigation

Time

Provide expected time of mitigation construction and monitoring commencement.

Mitigation
Work Plan

At a minimum the plan should consist of:

- Construction methods, timing and sequencing
- Boundaries of proposed mitigation site
- Elevations and slopes
- Hydrology and hydrologic source (watershed size, discharge, regional curves)
- Connectivity to other waters
- Proposed plantings
- Control of volunteer and invasive vegetation, and

Mitigation

Work Plan cont.

- Erosion control
- Geomorphology and special stream structures
- Site management, maintenance plan, and long term plan for the site.
- Stream dimensions including: bankfull width/depth, bank height ratios etc.

Mitigation

Proposed plantings should target hard mast species, but can be project dependent.

Contact local Corps office for detailed planting, monitoring, and success rates.

Mitigation
Planting requirements

Notes:

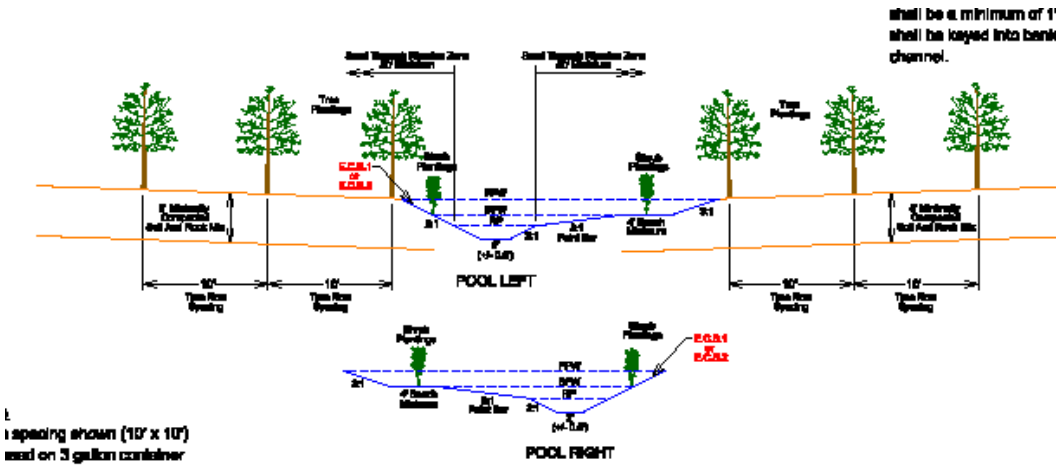
1 – All proposed planting lists must be resubmitted to the Corps for final approval prior to planting.

2 – Individual permit reviews may require that the vegetative mitigation zones be managed to provide 2 or 3 components. See project manager for specific criteria in those cases.

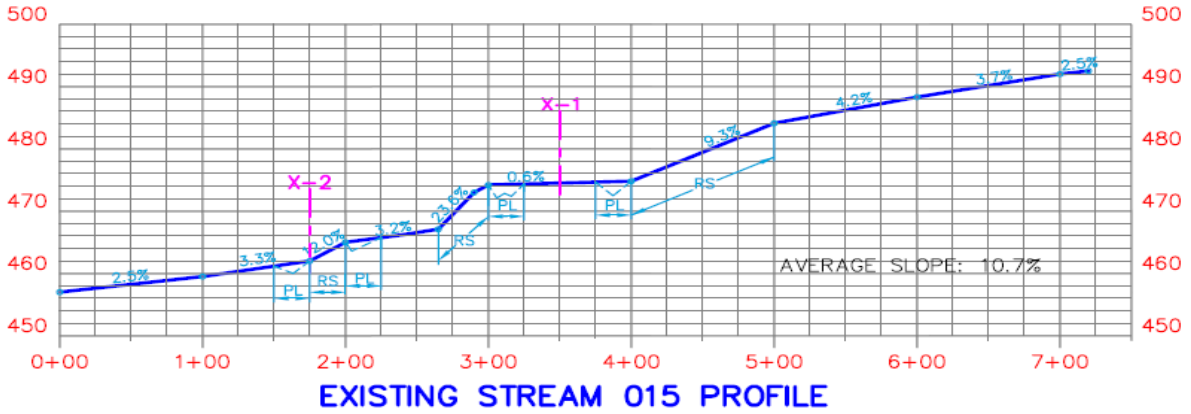
3 - These guidelines are subject to change according to permit needs and do not cover all mitigation monitoring and success requirements.

Mitigation

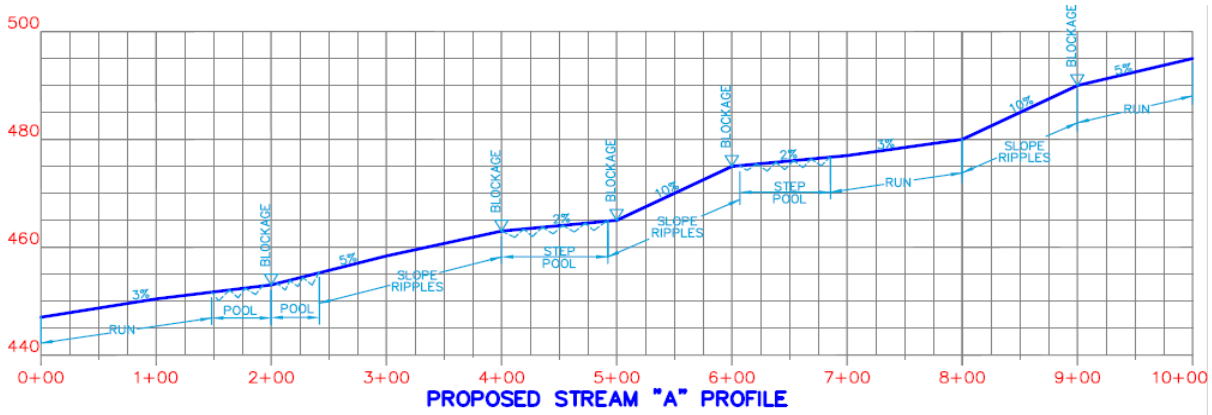
- Provide existing vs proposed pattern, profile and dimensions



Mitigation



EXISTING STREAM 015 PROFILE



PROPOSED STREAM "A" PROFILE

Pattern

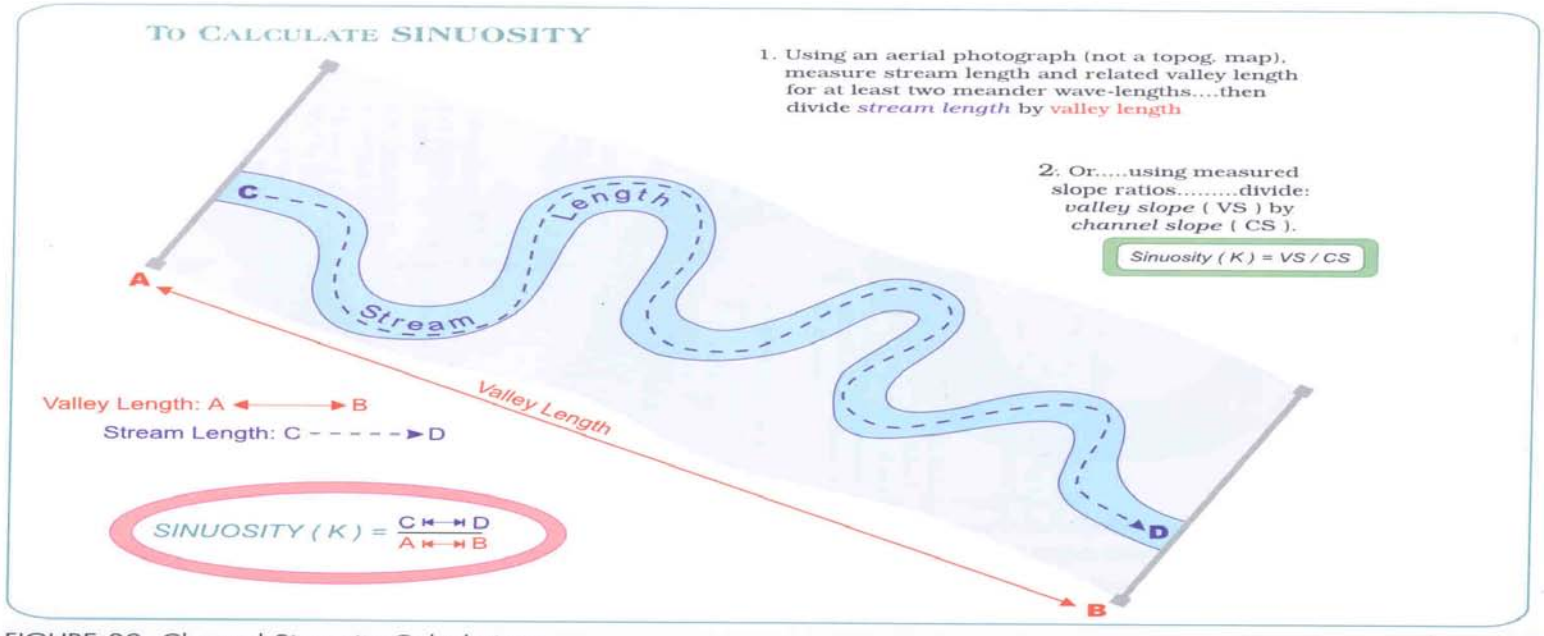
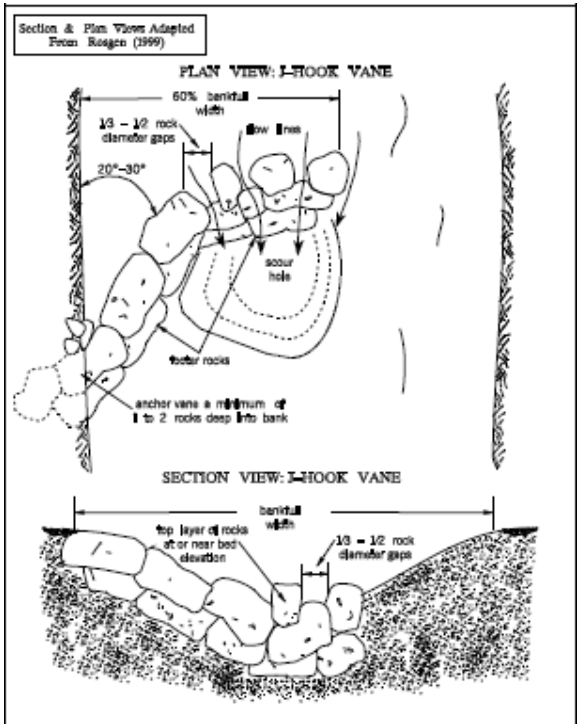
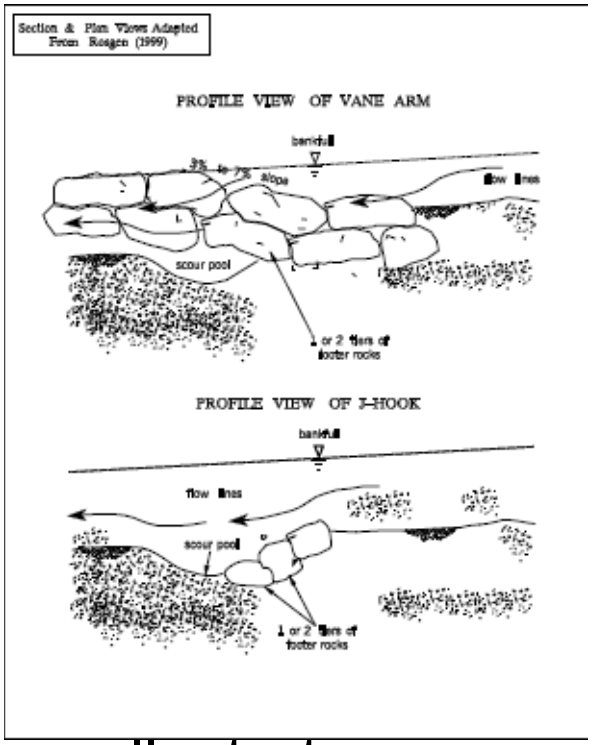


FIGURE 30. Channel Sinuosity Calculations

Submit a typical existing and proposed pattern.

Typical Stream Restoration/Creation

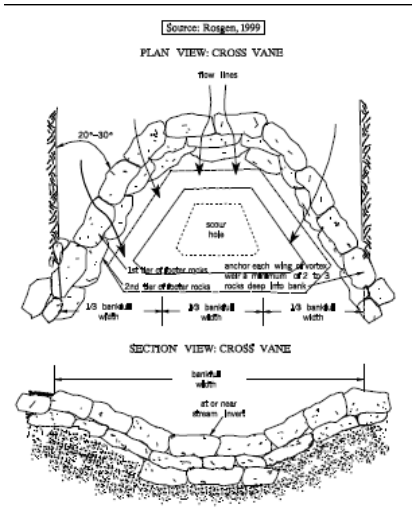


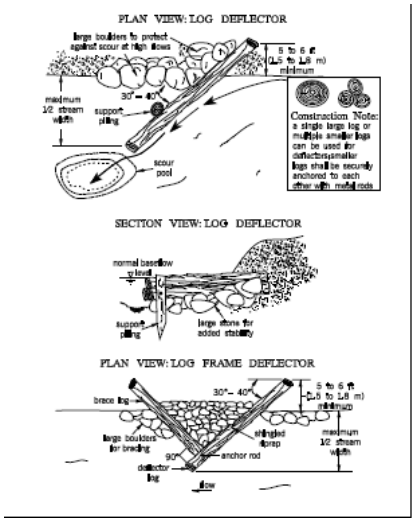


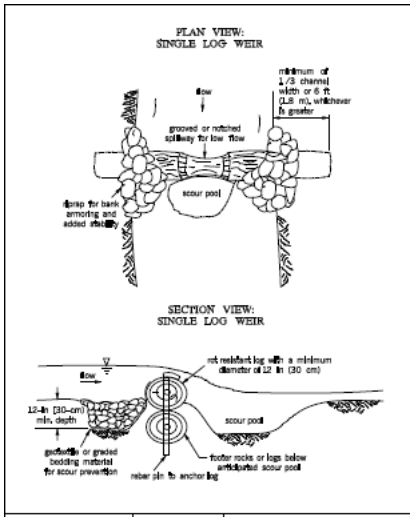
Provide typical design plans illustrating proposed structures to be utilized. These structures can be used to provide functional replacement and enhancement.

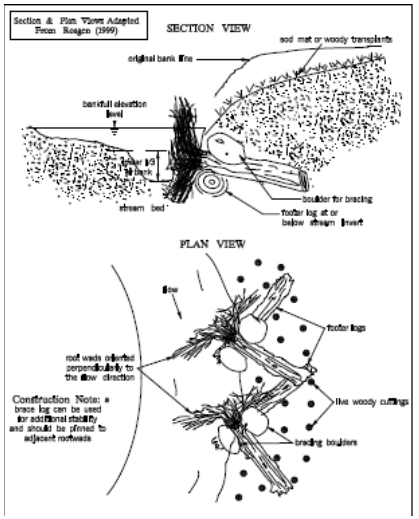
Typical Stream Restoration/Creation

Utilize what is available.

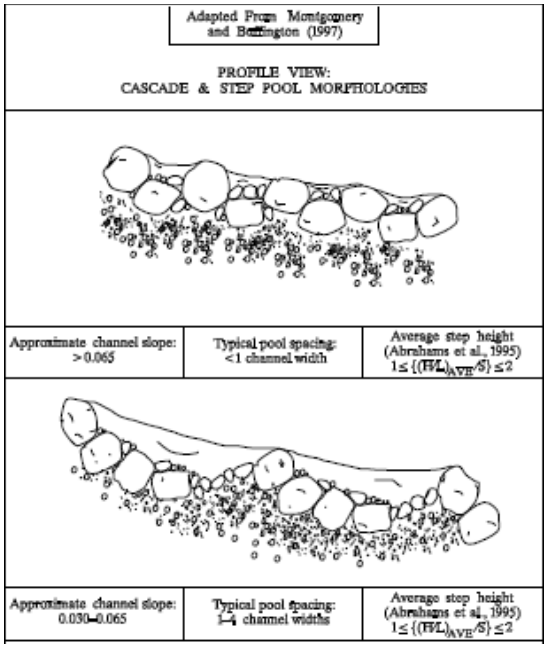


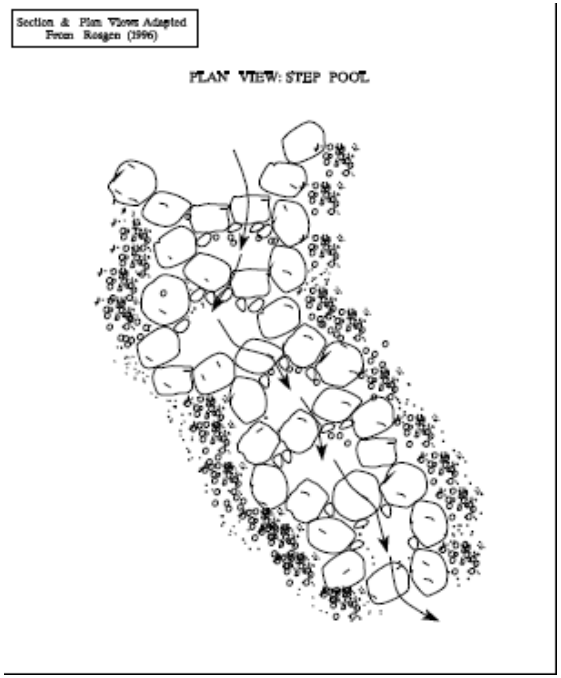






Typical Stream Restoration/Creation





Instead of utilizing uniform rip rap lined chutes/channels, design a stable channel to achieve a higher mitigation credit and a more stable site.

Wetlands

Provide existing wetland data such as a map showing delineation data collection points, source of hydrology and connectivity.

Wetland Design

Provide design information illustrating how wetland mitigation would be constructed. Avoid over designing a project with features (water control structures) that require long term management. Design mitigation to be self sustaining.

Contingency Plan

- Reporting Protocol:

  If a success criterion is not met for all or any portion of the compensatory mitigation project in any year, and/or if the success criteria are not satisfied, the permittee shall prepare an analysis of the cause(s) of failure and, if determined necessary by the Corps, propose remedial action for pre-approval.

- Response to unsuccessful remediation:

  Indicate course of action to be taken in the event that the Corps determines the compensatory mitigation cannot be successfully achieved at the intended site.

Other Required Info

- Description of the physical and chemical properties of the geologic strata that will be used for reclamation at the mitigation site (i.e. stream substrate and overburden).
- Pre and post mine land use information (i.e. text and map).

Mitigation Success

Mitigation Success

Mitigation Success

Mitigation Success

Mitigation Success

Mitigation Issues

Mitigation Issues

Mitigation Issues

Mitigation Issues

Mitigation Issues

- Mitigation Success

Current Stream Conditions

Mitigation Success

Mitigation Success