

ADOPTED RULES

For the
FLATHEAD CONSERVATION DISTRICT
to
Implement the Natural Streambed and Land
Preservation Act of 1975
Chapter No. 463, Montana Session Laws 1975;

MCA Title 75, Chapter 7,
Senate Bill 310, 1975 Legislature

Amended by 1977 Legislature
Amended by 1979 Legislature
Amended by 1987 Legislature
Amended by 1995 Legislature
Amended by 2003 Legislature

Compiled by
Flathead Conservation District
and
Montana Department of Natural Resources & Conservation
in consultation with
Montana Association of Conservation Districts

TABLE OF CONTENTS

	Page
CHAPTER 1	
Rule 1. Title.....	4
Rule 2. Policy.....	4
Rule 3. Purpose	4
Rule 4. Definitions.....	4
Rule 5. Applicability	9
Rule 6. Aquatic and Riparian Attributes – Exclusions.....	10
Rule 7. Forms.....	11
Rule 8. Project Review.....	11
Rule 9. Application Process.....	12
Rule 10. Decision	14
Rule 11. Public Participation	16
Rule 12. Project Construction	18
Rule 13. Dispute Resolution.....	20
Rule 14. Inspection of Projects - Project Follow-up	21
Rule 15. Emergencies	21
Rule 16. Compliance with Other Laws.....	23
Rule 17. Penalty-Restoration.....	23
Rule 18. Complaint Procedure	24
Rule 19. Orders on Violations.....	24
Rule 20. Declaratory Ruling	25
Rule 21. Process for Declaratory Ruling	26
Rule 22. Judicial Review for Declaratory Ruling.....	26
Rule 23. Surety	27
CHAPTER 2	
Construction Standards & Materials.....	28
Asphalt	30
Concrete.....	30
Fabrics.....	30
Foam Flotation Logs.....	30
Metal	31
Rock or Stone.....	31
Wood	31
Burning	32
Erosion, Sedimentation and Storm Runoff.....	32
Excavation or Filling of Materials	33

	Page
CHAPTER 3	
Bank Stabilization.....	34
Beavers	35
Boat Ramps and Boat Rail Systems	36
Boathouses, Boat Shelters and Shore Stations.....	37
Bridges.....	38
Culverts.....	39
Decks, Walkways, and Stairways.....	40
Docks, Wharves, Piers.....	41
Dredge, Filling, and Swim Beach Creation	43
Dwelling Units.....	44
Fences.....	45
Fish Passage at Road Crossing.....	45
Fuel Tanks	46
Marinas	47
Ponds	48
Sandbag Projects.....	48
Utility Lines (Electrical, Sewer Lines - Disposal Facilities, Utility Line Burial – Boring – Trenching, Waterlines, Wells and Cisterns.....	49
Appendix A. Determining Culvert Length	52

CHAPTER 1

RULE 1. TITLE

1. These rules may be cited as the Flathead Conservation District rules for implementation of the Natural Streambed and Land Preservation Act of 1975, as amended, commonly referred to as the 310 law.

RULE 2. POLICY

1. It is the policy of the Flathead Conservation District that the natural rivers and streams, and the lands and property immediately adjacent to them within the Flathead Conservation District, are to be protected and preserved to be available in their natural or existing state, and to prohibit unauthorized projects, and in so doing to keep soil erosion and sedimentation to a minimum, except as may be necessary and appropriate after due consideration of all factors involved.
2. Further, it is the policy of the Flathead Conservation District to recognize the needs of irrigation and agricultural use of the rivers and streams of the state of Montana and to protect the use of water for any useful or beneficial purpose as guaranteed by the constitution and laws of the State of Montana.
3. The legislature, mindful of its constitutional obligations under Article II, Section 3, and Article IX of the Montana constitution, has enacted the Natural Streambed and Land Preservation Act of 1975. In recognition of the legislature's intent, it is the district's intent that the requirements of this Act and implementing rules provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources.

RULE 3. PURPOSE

1. The purpose of these rules is to provide guidance to all concerned parties regarding the administration of the Natural Streambed and Land Preservation Act in the Flathead Conservation District and to specify procedures for compliance with the policy contained in Rule 2.

RULE 4. DEFINITIONS

Unless the context otherwise requires, the following definitions are applicable to these rules:

1. "Act" means The Natural Streambed and Land Preservation Act.

2. "Activity" or "activities" means a proposed physical alteration or modification to a natural perennial-flowing stream or river, its bed, or its immediate banks.
3. "Applicant" means any person presenting notice of a project to the supervisors.
4. "Application" means a notice of proposed project on a form provided under Rule 7, Forms, and containing all of the required information.
5. "Bed" means the channel occupied by a stream.
6. "Boathouse" means a shore based permanent structure that provides housing and shelter for boats and which has more than ten (10) percent of any side or end wall area enclosed.
7. "Boat Rail System" means a facility consisting of tracks extending from or across the stream bank into the stream, which is designed to facilitate launching or retrieving boats.
8. "Boat Ramp" means a facility consisting of a pad, driveway or roadway extending from or across the streambank into the stream, which is designed to facilitate launching or retrieving boats.
9. "Boat Shelter" means a structure that provides housing and shelter for boats and which has no more than ten (10) percent of any side or end wall area enclosed.
10. "Channel" means the area of a stream measured from mean high water mark to mean high water mark.
11. "Constructed Area" means the portion of a streambed or streambank impacted by the proposed construction of a project.
12. "Customary and historic maintenance and repair" means routine, seasonal work or upkeep to maintain or restore an existing project to sound condition by replacing component parts of the project utilizing the same or similar construction materials, and using the exact original project design, size and configuration.
13. "Debris" means any vegetation, refuse material, or in-stream sand and gravel, created by the development of the project.
14. "Department" means the Montana Department of Fish, Wildlife & Parks.
15. "District" means the Flathead Conservation District created under Title 76, Chapter 15, MCA, in which the project will take place.

16. "Directly affected person" means a person or government entity whose property or water rights are directly affected by the determination of applicability, interpretation, or implementation of the law or these rules.
17. "Docks, wharves, or piers" means a platform, either non-floating or floating, that extends into, over or across the water to provide for boat moorage, access to a moorage area, swimming facilities, or other related activities.
18. "Dredging" means the process of excavating material from the stream bottom or streambank and thereby lowering the elevation of the area of the stream or a portion of the streambank.
19. "Emergency" means an unforeseen event or combination of circumstances that call for immediate action to safeguard life, including human or animal, or property, including growing crops, without giving time for the deliberate exercise of judgment or discretion under the Act.
20. "Extreme Drought" means a prolonged period of less than normal precipitation such that the lack of water causes a hydrologic imbalance as designated by the National Oceanic and Atmospheric Administration as, at least, abnormally dry.
21. "Filling" means the process of discharging material into a stream or onto a streambank and thereby raising the elevation of a portion of the stream bottom or the streambank, including the elimination of an aquatic environment or a wetland environment by extending the dry land area into such aquatic or wetland area.
22. "Flood Plain" means the area adjoining the stream that would be covered by the floodwater of a flood of one-hundred (100) year frequency (Special Flood Hazard Area on Federal Emergency Management Agency flood maps), except for sheet flood areas that receive less than one (1) foot of water per occurrence and are considered "zone B" or a "shaded X zone" on the FEMA flood maps.
23. "Immediate banks" means the area above the mean high water mark and directly adjacent to the stream, which when physically altered or modified has the potential to affect the state of a stream.
24. "Impervious" means not permeable, impenetrable by water.
25. "Jetties" means structures that extend from the shoreline into the stream that are designed to confine or deflect the flow of water.
26. "Lagoons" means an artificial boat harbor created by excavating the shoreline, removing earth material and thereby extending an aquatic environment into a dry land area.
27. "Livestock grazing activities" means grazing animals.

28. "Maintenance" means repair, including, but not limited to, painting, staining, tightening, minor replacement of boards, shingles, broken or cracked windows, cleanup of debris, such as branches and leaves, and restacking fallen rock. The term does not include any dredging, filling or excavation even with the use of hand tools.
29. "Marina" means any waterfront facility that provides dock slips, moorage or dry dock storage for five (5) or more boats.
30. "Mean high water mark" means the line that water impresses on the land for sufficient periods to cause physical characteristics that distinguish the area below the line from above it. Characteristics of the area below the line include, when appropriate, deprivation of the soil of substantially all terrestrial vegetation and destruction of its agricultural value.
31. "Natural perennial-flowing stream" means a stream, which in the absence of diversion, impoundment, appropriation, or extreme drought, flows continuously at all seasons of the year and during dry as well as wet years.
32. "Permit" or "310 Permit" means the signed written consent of the supervisors authorizing a proposed project.
33. "Person" means any individual, corporation, firm, partnership, association, or other legal entity, not covered under 87-5-501, MCA.
34. "Physical alteration or modification" means human actions resulting in the placement, removal, or disturbance of materials of any nature or character.
35. "Plan of Operation" or "annual maintenance plan" means an annual plan for a project of recurring nature that, if approved by the supervisors, authorizes a specific activity for a period not to exceed (ten) 10 years.
36. "Pond":
 - "In-stream pond" means an impoundment of water located on the bed or immediate bank of a stream.
 - "Off-stream pond" means an impoundment of water located away from but connected to the bed or immediate banks of a stream by means of a ditch, pipeline, or conveyance system through which water is diverted from or into a stream.
37. "Project" means an activity that results in a change in the state of a natural, perennial-flowing stream or river, its bed, or its immediate banks.

(a) Project does not include:

- (i) an activity for which a plan of operation has been submitted to and approved by the district. Any modification to the plan must have prior approval of the district.
 - (ii) customary and historic maintenance and repair of existing irrigation facilities that do not significantly alter or modify the stream in violation of 75-7-102, MCA.
 - (iii) livestock grazing activities.
38. "Retaining wall" means any structure built essentially parallel and contiguous to the shoreline of a stream that is designed to protect the land mass inland from the structure from erosion or wave action, and protect the stream from siltation.
 39. "Riprap" means a layer, facing, or protective mound of stones, or rock or other materials placed to prevent erosion, scour, or sloughing of a structure or embankment.
 40. "Sewage Pump Out Facility" means a facility specifically provided to pump out and receive the contents of holding tanks on board boats, with holding tanks understood to mean any retention system on a boat that is designed to hold sewage, that must be emptied from time to time.
 41. "Shore Station" means a seasonal, portable, metal or wood frame carriage that is designed to hoist boats from the water and to store boats over the water.
 42. "Stream" means any natural perennial-flowing stream, or river, its bed and immediate banks, and its channels, and includes the entire stream from its mouth to its source even if portions go dry periodically. The term does not include a stream or river that has been designated by district rule as not having significant aquatic and riparian attributes in need of protection or preservation under 75-7-102, MCA.
 43. "Supervisors" means a board of supervisors of a conservation district, the directors of a grass conservation district, or the board of county commissioners where a proposed project is not within a district.
 44. "Team" means one representative of the supervisors, one representative of the department, and the applicant or the applicant's representative.
 45. "Water User" means a person having the right to appropriate, for beneficial use, water under the laws of the State of Montana or the United States, and any lessee, designee, agent, or employee of the water user.
 46. "Wetlands" means water-land interface areas that are inundated or saturated by surface and/or ground waters (hydrology) at a frequency and duration of time period sufficient to establish and, under natural conditions, support a prevalence of vegetation (hydrophytes) typically adapted for life in saturated soil conditions

(hydric soils). Wetlands generally include, but are not limited to: swamps, marshes, bogs, and similar areas. Wetland areas may be separated from the main body of water by either man-made barriers or natural berms.

47. "Written consent of the supervisors" means a written decision of the supervisors approving a project and specifying activities authorized to be performed in completing the project.

RULE 5. APPLICABILITY

1. The district will make determinations on the applicability of these rules, the Act, and the streams covered under the Act.
2. These rules apply to projects on a natural perennial-flowing stream, or portions thereof, including its bed, immediate banks, and channels, unless the stream has been designated as not having significant aquatic and riparian attributes in need of protection. The district considers a stream to flow perennially even if it dries up periodically due to man-made causes, or extreme drought.
3. A directly affected person may request a declaratory ruling under Rule 20 Declaratory Ruling. Prior to requesting a declaratory ruling, the directly affected person must (a) inquire as to whether the supervisors made a prior determination of the applicability, interpretation or implementation of the law, these rules, a written consent, or a designation of stream, or a portion of a stream: and (b) if the person disagrees with the supervisors prior determination, provide the supervisors with information supporting the person's opinion as to why the determination is in error. A person may not request a declaratory ruling under Rule 20 Declaratory Ruling, for a final action of the supervisors' approval, modification, or denial of a proposed project or an emergency action.
4. These rules do not apply to ditches, intermittent streams, or wetlands not associated with the bed or immediate banks of a stream.
5. In order for a stream to be covered under the Act, it must:
 - a. Be a natural waterway.
 - i. Natural rivers or streams that have been rechanneled for road construction, flood control, irrigation, or other public works are considered natural waterways.
 - ii. Natural rivers or streams that are used as part of an irrigation delivery system as allowed under 85-2-411, MCA, are considered a natural waterway, but only if those natural streams had perennial flow prior to diverting water through them.

- iii. Artificial or man-made waterways that have been constructed for the purposes of conveying water for any purpose are not considered a natural waterway.
 - iv. Flood channels, high water channels, and side channels of natural, perennial-flowing streams are considered part of a stream if water naturally enters the channels during high water or normal flow.
- b. Contain continuous natural flows.
 - i. Water diverted into a natural channel for the withdrawal or diversion downstream shall not be considered part of the natural flow of a stream;
 - ii. Water feeding a natural channel from any ground water source, tributary, springs, or other natural source, may be considered part of the natural flow.
 - iii. Water stored in a reservoir that maintains or raises the flow of a stream shall be considered natural flow.
 - iv. Streams that dry up because of diversion, impoundments, appropriation, or extreme drought shall be considered to have continuous natural flows.
6. The district may use, but is not limited to, the following information to make its determinations:
- a. USGS 7.5 minute quadrangle maps;
 - b. Water Resource Surveys;
 - c. Water rights records;
 - d. Landowner and resident interviews;
 - e. Hydrology reports;
 - f. On-site evaluations to gather information on geomorphology, vegetation, insects; past human activity;
 - g. Historical information;
 - h. Aerial photos;
 - i. Stream flow data; or
 - j. Any other relevant information.
7. The district, either on its own motion, or if petitioned to review the designation of a stream, will use the factors set forth in this rule to make a determination.

RULE 6. AQUATIC AND RIPARIAN ATTRIBUTES - EXCLUSIONS

- 1. This rule describes the process for excluding natural perennial-flowing streams from district jurisdiction where there is no need for protection under 75-7-102, MCA. The process for determining whether a stream is a natural perennial-flowing stream is described in Rule 5 Applicability.
- 2. Upon the district's motion or upon request of a person, the district may adopt a rule to exclude a stream or portion thereof from its jurisdiction upon finding that a

perennial-flowing stream does not have significant aquatic or riparian attributes in need of protection or preservation.

- a. In order to make a determination, the district shall hold a public meeting as outlined in Rule 11 Public Participation, to gather information relative to the aquatic or riparian attributes of a stream.
- b. If after a public meeting, the district determines that a stream has no aquatic or riparian attributes, the district may adopt its rule excluding the stream, or portion thereof, from its jurisdiction.

RULE 7. FORMS

1. The district and the applicant shall use the following forms.
 - a. Form 270 – Notice of Proposed Project is the application form to be submitted by the applicant to the supervisors for project review. The Joint Application for Proposed Work on Streams, Wetlands, Floodplains, and Other Water Bodies is considered Form 270.
 - b. Form 270a – Stream Work Authorization and Permission will be required to be completed if anyone except the landowner is responsible for work on the project.
 - c. Form 271 – Arbitration Agreement is to be used by team members who are requesting to resolve disputes through arbitration.
 - d. Form 272 – Team Member Report is for team members to submit project recommendations to the supervisors.
 - e. Form 273 – Supervisors’ Decision, or permit, is to convey district’s decision to the applicant and team members.
 - f. Form 274 – Official Complaint Form is for a person to notify the district of an activity taking place without written consent of the supervisors.
 - g. Form 275 – Emergency Report is for a person to notify the district of projects undertaken during an emergency to safeguard life, property, or growing crops.

RULE 8. PROJECT REVIEW

1. A person planning to engage in a project must receive a permit prior to undertaking the project. To receive a permit, a person must follow the application process.

2. The district shall review all projects to ensure they are achieved in a manner consistent with the policy set forth in the Act. The district in making its decision to deny, approve, or modify an application, shall determine the purpose of the project and whether the applicant is using a reasonable means of accomplishing the project. The application review and decision process is outlined in 75-7-112, MCA, and these rules.

RULE 9. APPLICATION PROCESS

1. The applicant is responsible for providing sufficient information for the supervisors to make a reasonable determination to approve, modify, or deny the application. Incomplete applications may not be accepted. To be complete, the information submitted must be credible and all of the necessary parts of the form filled in with the required information. Information to be provided by the applicant must include, but is not limited to:
 - a. The location of the project;
 - b. The purpose of the project;
 - c. A detailed description of how the project will be accomplished;
 - d. Project plans and drawings;
 - e. Maps of the project site;
 - f. Proposed dates of project development or construction;
 - g. Length of time to complete the project; and
 - h. If required by the district, engineering plans.
2. The supervisors may require an applicant to provide additional information for projects that appear, from a review of the application, to have the potential to impact the flow characteristics of the stream.
 - a. The following additional information may be required if requested by the district:
 - i. Names and addresses of landowners that may be potentially impacted by the proposed project;
 - ii. A description of the potential impacts to the stream from the project wherever they may reasonably be expected to occur;
 - iii. Design drawings(s) that clearly depict the plan, profile, and typical cross-section views of the proposed activity;
 - iv. Engineering designs;
 - v. Project alternatives considered; and
 - vi. Any other information needed to make an informed decision.
 - b. If required, the information in subsection 2.a.ii. must be developed with the assistance of a person with experience in identifying potential impacts to stream flow characteristics.

The information required in subsection 2.a.iii. must be developed with the assistance of a person with experience in the design or construction of projects.

Information required in subsections 2.a.ii. through iv. must be accompanied by a certified statement from the person who assisted with the development of the information documenting the person's engineering education and/or qualifications to provide assistance.

3. Notice of Proposed Project/Permit Application

- a. The notice of proposed project (permit application) shall be made on Form 270. The application may be hand delivered, mailed, emailed or faxed to the district office. The district accepts faxed, electronic, and photocopied signatures; and signatures of easement holders as authorized signatures.
 - i. Form 270 will be officially accepted by the district at its regularly scheduled board meeting if the application is complete and is for an activity that will alter or modify a stream. The time frame specified in these rules begins upon acceptance of the application.
- b. Plans of Operation. If a person is submitting an application for an activity that is conducted annually, such as maintenance of a bridge, culvert, or irrigation structure, the applicant may submit a plan of operation to the district. The district may approve the annual activity for a period of up to ten (10) years as described in Rule 10 Decision. Plans of operation that have been approved are subject to annual inspection by the district. In addition to indicating on Form 270 that the activity will be done on an annual basis, the applicant will provide the following information to the conservation district:
 - i. The reason for on-going activity and why it is necessary;
 - ii. Time of year -the dates for which the activity will start and be completed each year, including the number of days the activity will take place;
 - iii. Where the activity will take place;
 - iv. How often the activity will take place;
 - v. An explanation, in detail, of how the activity will take place; and
 - vi. An explanation of how the applicant will keep soil erosion and sedimentation to a minimum.
- c. The district or the district's representative shall, within ten (10) working days of accepting an application, send a copy of the application to the Department.
- d. Where a single land use activity, such as a timber sale, involves multiple locations of a single overall project, such as the placement of several culverts, application for all proposed stream alterations in conjunction with land use activity may be made on a single application. The application must include a map and legal description of all the multiple locations of the projects.

- e. If, at any time during the review process, the supervisors determine that the proposal is not a project or that these rules are otherwise inapplicable to the activity, the applicant will be notified in writing that written consent of the supervisors is not necessary.

4. Formation of a Team

- a. The department shall, within five (5) working days of receipt of the application, inform the supervisors whether the Department requests an on-site inspection by a team.
- b. The supervisors shall call a team together within twenty (20) days of receipt of the request of the department for an on-site inspection. A member of the team shall notify the supervisors in writing within five (5) working days of the notice of inspection, if the team member waives participation in the inspection.
 - i. If the Department does not request an on-site inspection within the time specified in the subsection, the supervisors may approve, modify, or deny the project.
- c. Each member of the team shall recommend, within thirty (30) days of the date of inspection approval, modification, or denial of the project to the supervisors, using the Team Member Report Form 272.
 - i. The applicant may waive participation in this recommendation. A non-response is considered a waiver.
 - ii. A Team Member Report must be submitted to the district office before a 310 permit letter is mailed to the applicant.
 - iii. For a project that has several phases, the Team Member Report must be updated for each phase.
- d. The supervisors may extend, at the request of any team member, the time limits provided in this rule, when, in their determination, the time provided is not sufficient to carry out the purposes of the Act and these rules. The time extension may not exceed one year from the date of acceptance of the application. The applicant must be notified of the initial time extension within sixty (60) days of the date of acceptance of the application and must be notified within seven (7) working days of the supervisors' action granting the extension.

RULE 10. DECISION

- 1. The supervisors shall review the proposed project and affirm, overrule, or modify the individual team recommendations and notify the applicant and team members within sixty (60) days of the date of application, of their decision. A permit must be provided on the Supervisors' Decision Form 273.

2. The team, in making its recommendation, and the supervisors, in denying, approving, or modifying a project, shall determine:
 - a. the purpose of the project; and
 - b. whether the project is a reasonable means of accomplishing the purpose of the proposed project. To determine if the project is reasonable, the following must be considered:
 - i. the effects of soil erosion and sedimentation, considering the methods available to complete the project and the nature and economics of the various alternatives;
 - ii. whether there are modifications or alternative solutions that are reasonably practical that would reduce the disturbance to the stream and its environment and better accomplish the purpose of the proposed project;
 - iii. whether the proposed project will create harmful flooding or erosion problems upstream or downstream;
 - iv. the effects on stream channel alteration;
 - v. the effects on stream flow, turbidity, and water quality caused by materials used or by removal of ground cover; and,
 - vi. the effect on fish and aquatic habitat.
3. If the supervisors determine that a proposed project or part of a proposed project should be modified, they may condition their approval upon the modification.
4. The supervisors may modify a project that has several phases to provide that a team inspection be made for each phase and the Team Member Report be updated for each phase.
5. The supervisors may not approve or modify a proposed project unless the supervisors determine that the purpose of the proposed project will be accomplished by reasonable means.
6. Decisions to approve, modify, or deny an application must be made by a concurrence of a majority of the supervisors.
7. The applicant must sign and return Form 273, the "310 Permit Supervisors Decision" form, within fifteen (15) days of receipt of the form if the applicant wishes to proceed with the project in accordance with the permit. No work may begin on a project before the end of the fifteen-day waiting period unless all team members and the district give written permission.
8. Unless otherwise stated, the term of a permit is one year from the date of the supervisor's decision. An applicant may request, and the district may approve, a

one-year extension if for any reason the project could not be completed within the initial term of the permit.

9. A plan of operation may be approved for activities of a recurring nature for a period not to exceed ten (10) years. In order to qualify for an approved plan of operation, the activities must occur in the same location and in the same manner on an annual basis. No time extensions will be given on annual maintenance permits. When the term of a permit for an annual maintenance permit has expired, a person must submit a new application.

RULE 11. PUBLIC PARTICIPATION

1. All business of the supervisors shall be conducted in an open meeting after reasonable notice has been given as required in 2-3-103, MCA.
2. A team inspection is not a meeting of the supervisors. The public may participate in a team inspection if the landowner has given permission. The district is not responsible for securing this permission or providing transportation to the site.
3. Unless privacy interests of an individual, including legitimate trade secrets, proprietary information, matters involving litigation, safety or security interest, outweigh the public's right to know, all district records are available to the public as provided in 2-6-102, MCA. The district shall make determinations regarding privacy issues in accordance with applicable statutes.
 - a. District records are available to the public for inspection and copying during normal, non-holiday office hours (8:00 A.M to 4:30 P.M, Monday through Friday) as provided in 2-6-102, 2-6-104, 2-16-117, MCA; Article 11, Section 9, Montana Constitution. A district staff person must be present/available during the examination and/or copying of original documents.
 - b. Information requested by the public will be provided within a reasonable time frame. Because of limited staffing, persons requesting inspection of information or copying of documents should schedule an appointment with district staff. The failure to schedule an appointment may affect the ability of staff to provide information in a reasonable time frame. For information requests exceeding three (3) items, the request must be made in writing.
 - c. A per page fee, published annually by the district, will be charged for copying or duplication of materials. Other charges include cost of any electronic media; staff time after one-half hour of service has been provided; and any expenses associated with retrieval or production of electronic email as provided in 2-6-110, MCA.

4. The district chair may close a meeting during the time of a meeting that the discussion relates to a matter of individual privacy, and then only if the district chair determines that the demands of individual privacy clearly exceed the merit of public disclosure. The individual, about whom the discussion pertains, may waive the right to privacy. In that event, the meeting remains open.
5. The district shall keep minutes of its meetings and decisions under these rules.
6. Conduct of Regular Meetings/Public Information Meetings
 - a. Before a meeting is held to take final action on a notice of proposed project, the supervisors shall give reasonable notice to the applicant and other persons who may be directly affected by the decision.
 - i. Notice of regular and public information meetings shall be given a minimum of five (5) days in advance of the meeting by posting the notice in five (5) conspicuous places; or by advertising in the local media, by a news story, or by posting a notice on the district's website. Special meeting notices shall be given seventy-two (72) hours in advance in the same manner as publication of notice of regular and public information meetings.
 - ii. The district may require the applicant to give written notice to any person the district determines may be directly affected by a proposed project.
 - b. Meetings must be conducted using normal meeting procedure. All directly affected persons, including the applicant, shall be provided an opportunity to state their case and to present relevant evidence supporting their positions.
7. Meeting agendas are posted on the district website and at the district office the Friday prior to the meeting. The agenda for a meeting must include matters to be deliberated upon by the board at the meeting. The district will not take action on any matter discussed unless specific notice of that matter is included on an agenda, and public comment has been allowed on that matter.
 - a. Permit applications must be received by the Monday (or seven (7) days) prior to the 310-meeting to be included on the next meeting agenda. A complaint form may be submitted up until the Thursday (or four (4) days) before a meeting to be placed on the upcoming Monday meeting agenda.
 - b. Any public matter that is not on the agenda of the meeting, and that is within the jurisdiction of the district, will be heard during the public comment period of the meeting. Public comment received at a meeting will be incorporated into the official meeting minutes.

8. The district may hold a public informational meeting when the supervisors determine a proposed project to be controversial, or where additional information is desired prior to final action by the supervisors. If the matter is of significant interest to the public, members of the public shall be given the opportunity to comment on the proposed project prior to final action by the supervisors.
9. The district may hold a public hearing to gather information relative to making an initial designation of a perennial-flowing stream.
10. Adopting Rule Changes/Public Hearings to Remove Perennial Streams
 - a. The district shall conduct a public hearing before adopting any major changes in these rules.
 - b. The district shall conduct a public hearing, if petitioned, to gather information about whether a natural perennial-flowing stream has significant aquatic and riparian attributes in need of protection or preservation under 75-7-102, MCA.
 - c. Notice of public hearing to be conducted under 10.a. and b. must be given by publication of a notice in a newspaper of general circulation in the area at least twice with an interval of at least fourteen (14) days between the two publication dates. The first notice must be published at least twenty-eight (28) days prior to the hearing.
11. Hearings for Declaratory Rulings.
 - a. Hearings for declaratory rulings must be conducted in accordance with the Act and Rule 20 Declaratory Ruling.
 - b. Notice of hearing for declaratory rulings must be given as described in 10.c. of this rule.

RULE 12. PROJECT CONSTRUCTION

The following standards shall apply to all projects:

1. Projects must be designed and constructed using methods that minimize:
 - a. adverse impacts, both upstream and downstream;
 - b. future disturbance to the stream.
2. All disturbed areas must be managed during construction and reclaimed after construction to minimize erosion.

3. Temporary structures used during construction must be designed to handle high flows reasonably anticipated during the project construction period. Temporary structures must be completely removed from the stream channel at the conclusion of construction and the area must be restored to a natural and stable condition.
4. Channel alterations must be designed to retain original stream length or otherwise provide hydrologic stability.
5. Streambank vegetation must be protected except where removal is necessary for completion of a project. When removal of vegetation is necessary, it must be kept to a minimum and revegetated as soon as possible.
6. Riprap, rock, or other material used in a project must be of adequate size, shape, and must be properly placed to protect the stream bank from erosion.
7. The district may:
 - a. limit the time and duration of construction to minimize impacts to the stream or associated aquatic life;
 - b. require the applicant to submit engineering designs; when in the district's judgment, the project's complexity requires greater assurance of project stability to minimize impacts to the stream;
 - c. require the applicant to provide project completion documentation, which may include photographs.
8. A person shall not place road fill material in a stream unless permitted.
9. A person shall not place debris or other materials in a stream where it can erode or float back into the stream.
10. Projects must not permanently prevent fish migration
11. For streambank stabilization projects, the district encourages the use of methods that preserve or enhance natural stream habitat and function.
 - a. Applications proposing the use of riprap or other hard streambank stabilization methods must include information establishing that due consideration has been given to methods that use organic materials (e.g., root wads, riparian vegetation, biodegradable geotextile fabrics, tree revetments) as the primary means of stabilization and that such methods are not practicable because:
 - i. Sufficient long term durability would not be achievable;

- ii. Hydrodynamic considerations make it likely that the project would not meet its intended purpose;
 - iii. The project would result in the same or greater impact on channel stability, flooding, erosion, and/or aquatic habitat; or
 - iv. Economical considerations prevent the use of such methods.
- b. Live vegetation used in a project must remain viable and functional for two (2) years after completion of the project. The district may perform follow-up inspections of projects involving live vegetation and may require that dead vegetation be replaced.

RULE 13. DISPUTE RESOLUTION

1. Any permit decision or decision regarding an emergency may be reviewed by an arbitration panel or by judicial review in the district court in the county where the project is located. Judicial review of an arbitration panel's decision may be made under the provisions of MCA, Title 27, Chapter 5, Part 3 of the uniform arbitration act and must be brought in the county where the action is proposed to occur.
2. The applicant may request arbitration as the method to resolve disputes by signing an arbitration agreement either before the application review process or within fifteen (15) days of receipt of the supervisors' decision.
 - a. If an applicant signs an arbitration agreement prior to the application review process, the applicant waives their right to judicial review.
3. The applicant may request judicial review of the supervisors' decision by filing a petition in district court within fifteen (15) days of receipt of the supervisors' decision.
4. Any other team members may seek formal dispute resolution only through arbitration by signing an arbitration agreement within five (5) working days of receipt of the supervisors' decision.
5. The arbitration agreement is outlined on Form 271 and contains provisions for the appointment of arbitrators; the exercise of power by the arbitrators; the hearing process; and fees and expenses of arbitration.
6. An applicant's choice of the judicial review remedy prevails over any other team member's request for arbitration.
7. Subsection 1. does not preclude more informal means of dispute resolution. A meeting or meetings, to include, at a minimum, all of the team members and the supervisors, may be scheduled, at the discretion of the supervisors, at any time in order to discuss and attempt to resolve disputes. This subsection does not relieve

the team member(s) wishing to dispute a permit decision of the duty to submit a request for arbitration or file a petition for a judicial review in district court in compliance with subsection 4. or any party from any other provision of the statute.

8. An appeal of the determination made by judicial review may be made to the Montana Supreme Court as provided in Rule 22. 2. Judicial Review of Declaratory Ruling.

RULE 14. INSPECTION OF PROJECTS - PROJECT FOLLOW-UP

1. The supervisors, team members, or their designated representative may inspect any project during or after construction to insure that the conditions of the permit were followed and to provide technical assistance to the applicant.
2. By signing an application, the landowner agrees to allow the inspection of the project. The district shall make a concerted effort to notify the landowner prior to entering land to inspect a project, either orally or in writing. If the landowner did not sign the application, the district shall require the applicant, as a condition of the permit, to acquire the necessary landowner consent for the district to inspect the project.
3. The district may require the applicant to provide photo documentation of the project.
4. If the project is not constructed as permitted, the procedure outlined in Rule 18. 3. Complaint Procedure, will be followed.

RULE 15. EMERGENCIES

1. Except as provided in this rule, the provisions of these rules do not apply to those actions that are necessary to safeguard life or property, including growing crops, during periods of emergency. The district recommends the applicant/landowner call the district office before emergency work is undertaken to request a supervisor view the site. The person responsible for taking action under this rule shall notify the supervisors in writing within fifteen (15) days of the action taken as a result of an emergency.
2. The emergency notice given under subsection 1. must be provided on Form 275 and must contain the following information;
 - a. the location of the action taken;
 - b. a general description of the action taken;

- c. the date on which the action was taken; and
 - d. an explanation of the emergency causing the need for the action taken.
3. The supervisors shall determine if the action taken meets the definition of emergency as defined in Rule 19 Definitions. Violations of the emergency procedures are subject to provisions of Rule 17 Penalty-Restoration.
4. If the supervisors determine that the action taken meets the definition of a project, the district shall send one copy of the notice within five (5) working days of its receipt to the department.
5. A team, called together as described in Rule 9.4. Formation of a Team, shall make an on-site inspection within twenty (20) days of receipt of the emergency notice.
6. Each member of the team shall recommend in writing, within thirty (30) days of the date of the emergency notice, approval, modification or denial of the project.
7. The supervisors shall review the emergency project and affirm, overrule, or modify the individual team recommendations and notify the applicant and team members of their decision within sixty (60) days of receipt of the emergency notice.
 - a. If an emergency project is approved no further action is necessary on the part of the district or the applicant.
 - b. In an emergency action that must be modified, the applicant shall submit written notice on Form 270 to mitigate possible damages to the stream caused by the emergency action, and to achieve a long-term solution, if feasible. Notice under this subsection must be filed within ninety (90) days after the supervisors' decision.
 - c. A person who has undertaken an emergency action that is denied shall submit written notice on Form 270 to obtain approval to remove the project to avoid further damages to the stream caused by the emergency action and to achieve a long-term solution, if feasible. Notice under this subsection must be filed within ninety (90) days after the supervisors' decision.
8. Disagreements with the supervisors' decision must be formally resolved according to Rule 13 Dispute Resolution.
9. The failure of a person to perform the following subjects the person to civil and criminal penalties:
 - a. failure to provide emergency notice under subsection 1.;
 - b. failure to submit a notice of the project under subsection 7.b. and 7.c.; or

- c. failure to implement the terms of a supervisors' decision for the purpose of mitigating the damage to the stream caused by the emergency action and of achieving a permanent solution, if feasible.

RULE 16. COMPLIANCE WITH OTHER LAWS

1. The issuance of written consent of the supervisors does not relieve the applicant of the responsibility to obtain other local, state, or federal permits, authorizations, certifications, licenses or easements, or landowner permissions that may be necessary to undertake a project.
2. These rules must not impair, diminish, divest, or control any existing or vested water rights under the laws of the state of Montana or the United States.

RULE 17. PENALTY - RESTORATION

1. Except for emergency action, a project engaged in by any person without prior approval, or an activity performed outside the scope of written consent of the supervisors, is a public nuisance and subject to proceedings for immediate abatement.
2. A person who initiates a project without the written consent of the supervisors, performs activities outside the scope of written consent of the supervisors, violates the emergency procedures of Rule 15 Emergencies, or the Act, is:
 - a. guilty of a misdemeanor and upon conviction, the person shall be punished by a fine not to exceed the statutory limits provided in 75-7-123, MCA; or
 - b. subject to a civil penalty not to exceed the statutory limits provided in 75-7-123, MCA for each day that person continues to be in violation.
3. Each day of a continuing violation constitutes a separate violation. The maximum civil penalty is the jurisdictional amount for purposes of 3-10-301, MCA. A conservation district may work with a person who is subject to a civil penalty to resolve the amount of the penalty prior to initiating an enforcement action in justice's court to collect a civil penalty.
4. In addition to the criminal fine or civil penalty provided in subsection 2., the person:
 - a. shall restore, at the direction of the court, the damaged stream, as recommended by the supervisors, to as near its prior condition as possible, or:

- b. is civilly liable for the amount necessary to restore the stream. The amount of the liability may be collected in an action instituted pursuant to 3-10-301, MCA, if the amount of liability does not exceed the statutory limits provided in 75-7-123, MCA. If the amount of liability for restoration exceeds the statutory limits provided in 75-7-123, MCA, then the action must be brought in district court.
5. Any person may report a violation of these rules or of the Act to the county attorney or to the supervisors.

RULE 18. COMPLAINT PROCEDURE

When a conservation district receives a complaint alleging a violation, the conservation district shall follow the steps below:

1. Request that the complainant submit a written complaint on Form 274. The complaint must specify the nature of the alleged violation, who is involved, where it is taking place, and when it occurred.
2. After receiving a completed Form 274, the district shall contact the alleged violator by certified letter and advise the person of the complaint and give the alleged violator 15 days to respond. Once a response has been received, an on-site must be scheduled to conduct a field investigation, collect evidence, and document the time, date, location, nature of activity, and the person(s) involved in activity. The district shall acquire information to confirm or deny that the complaint was valid and whether there is a violation of the Act. If the field investigation does not verify a violation, the district shall notify the complainant and the alleged violator, in writing, of the districts findings.
3. After a field investigation affirms a violation, the district shall send a letter certified with return-receipt requested, setting forth the results of investigation, the course of action required to rectify the violation, and a deadline date for taking the corrective action. If the violator acknowledges the district's request and is willing to work with the supervisors to correct the violation, the supervisors may postpone issuing an order assessing a civil penalty or forwarding the complaint to the county attorney. If the violator is not responsive to the letter and is not cooperative in correcting the violation, the supervisors shall proceed with the violation in accordance with 75-7-123, MCA, and may issue a cease and desist order.

RULE 19. ORDERS ON VIOLATIONS

1. If the district determines that issuance of an order is appropriate, the district shall send a letter to the violator, enclosing an order assessing a civil penalty not to exceed the statutory amount provided by statute per violation per day. The letter must identify the specific violation, the district finding on noncompliance, the

required corrective action and time frames for compliance, the date the civil penalty commences, and the district's intent to seek judicial enforcement of the civil penalty if it is not paid. If the violator takes corrective action within the required time frame, the district may waive the order for civil penalty.

2. If a violator fails to respond to the order, or to take corrective action, the district may seek judicial enforcement by turning the matter over to the county attorney or other legal service provider for the district.

RULE 20. DECLARATORY RULING

1. A person who is directly affected by the supervisors' determination of applicability, interpretation, or implementation of the law; these rules; a written consent; or a designation of a stream, including a portion of a stream; and who disagrees with a determination, may petition the supervisors for a declaratory ruling.
2. Upon receipt of the petition, the supervisors' shall determine whether the matter constitutes significant public interest.
3. If the issue raised in the petition for a declaratory ruling is of significant interest to the public, the supervisors shall provide a reasonable opportunity for interested persons and the petitioner to submit data, information, or arguments, orally or in written form, prior to making a ruling.
4. If the issue raised in the petition for a declaratory ruling is not of significant interest to the public, the supervisors shall provide a reasonable opportunity for the petitioner to submit data, information, or arguments, orally or in written form, prior to making a ruling.
5. Data and information may be submitted at a hearing before the supervisors. Data and information submitted to the supervisors outside of the hearing process must be made available for public review prior to the hearing being conducted before the supervisors.
6. A proceeding held under this section is not a contested case proceeding. A declaratory ruling under this section is not subject to the provisions of the Montana Administrative Procedures Act. No party may cross examine any party submitting data and information to the supervisors, but all data and information must be verified by the party submitting it.
7. This rule may not be interpreted or construed to allow a person to petition for a declaratory ruling under this section for an administrative review of a decision of the supervisors to grant, deny, or condition a written consent for a project or a project undertaken during an emergency. Review of these decisions is exclusively provided for in 75-7-121, MCA, as it pertains to arbitration or judicial review.

RULE 21. PROCESS FOR DECLARATORY RULING

1. A directly affected person must submit a petition that states how and why the person is directly affected by the district's action and the specific question or initial determination made by the district to be addressed in the declaratory ruling.
2. Within thirty (30) days of the filing of a petition, the district shall appoint a hearing officer, who may be a supervisor, to conduct the declaratory ruling hearing. The hearing officer shall regulate the course of the hearing, and with a concurrence of the district, set the time, place and date of the hearing.
3. Within thirty (30) days of appointment of a hearings officer, the district shall set a date for a hearing to gather information and data, allow public comment, and allow the public to submit written comment. The hearing may be continued if necessary. The district shall provide notice of the hearings as described in Rule 11 Public Participation. A quorum of the supervisors must be present at the hearing. The district shall maintain a record of the petition, notices, all information and data gathered, any proposed findings of fact and conclusions of law.
4. The hearing officer shall make a recommendation to the supervisors for their approval and adoption within sixty (60) days of the conclusion of the hearings process. The district may extend this time frame if necessary.
5. The hearing officer and the supervisors shall consider the totality of all the circumstances based on all information presented in the hearing process.
6. A declaratory ruling, consisting of findings of fact and conclusions of law, must be made by a concurrence of a majority of the board. Only those supervisors present during the hearing can participate in the decision.

RULE 22. JUDICIAL REVIEW OF DECLARATORY RULING

1. A directly affected person or an interested person dissatisfied with a declaratory ruling may seek judicial review in district court by filing a petition for judicial review within thirty (30) days after the date of service of the declaratory ruling. The district court review shall be only on information and data established on record before the district. A district determination may be reversed or modified if the declaratory ruling is:
 - a. in violation of a constitutional or statutory provision;
 - b. in excess of the statutory authority of the supervisors;

- c. affected by error of law; or
 - d. arbitrary or capricious, characterized by abuse of discretion, or a clearly unwarranted exercise of discretion.
2. Any aggrieved person who was a party to the declaratory ruling proceedings who is dissatisfied with the district court determination may seek judicial review by an appeal to the Montana Supreme Court within sixty (60) days after entry of judgment in the district court.

RULE 23. SURETY

1. The supervisors may require the applicant or the applicant's contractor to furnish, prior to the commencement of a project and as a condition of the written consent of the supervisors, a sufficient surety. This surety must be approved by the supervisors, conditioned upon the proper completion of the project under the terms of the permit, or the proper reclamation of the streambed and land involved in the project.
2. Once an applicant has posted a sufficient surety and prior to the release of that surety, the supervisors shall inspect the completed project for compliance with the terms and conditions of the permit. If the project passes inspection, the supervisors shall release the surety.
3. If the project is not properly completed under the terms of the permit or properly reclaimed, and the applicant refuses after receiving a written warning containing notice of all deficiencies to properly complete the project or properly reclaim the area in question, the supervisors shall, after granting the applicant an opportunity for a hearing before them, refuse to release said surety and shall take such legal action as is necessary to use it to the extent required to have the project properly completed or reclaimed. If the surety is not sufficient to cover the cost of completion or reclamation, the applicant or its contractor shall have continuing liability under 75-7-122, and -123, MCA, to restore the damaged stream, its beds and/or its immediate banks as recommended by the supervisors.
4. Surety may be in the form of cash, a cashier's check, a certified check, a bank money order, a certificate of deposit, a money market certificate, or a bank draft. The surety must be:
 - a. drawn and issued by a federally chartered or state-chartered bank or savings and loan association that is insured by or for which insurance is administered by the federal deposit insurance corporation; or
 - b. drawn and issued by a credit union insured by the national credit union share insurance fund; or a bond or bonds executed by a surety company authorized to do business in the state of Montana.

CHAPTER 2

CONSTRUCTION STANDARDS & MATERIALS

Findings

The 310 Law's purpose is to fulfill the constitutional directive to prevent unreasonable depletion and degradation of natural resources. The 310 Law and the construction standards and building materials are intended to provide direction to the district and the applicant in the development of authorized projects and, in so doing, to keep soil erosion and sedimentation to a minimum in furtherance of a policy that recognizes the needs of irrigation and agricultural use of Montana's rivers and streams and protects the use of water for any useful or beneficial purpose as guaranteed by Montana's constitution.

The following standards apply to all projects:

A. CONSTRUCTION STANDARDS

1. Projects must be designed and constructed using methods that minimize:
 - a. Adverse impacts, both upstream and downstream.
 - b. Future disturbance to the stream.
2. All disturbed areas must be managed during construction and reclaimed after construction to minimize erosion and sedimentation. Weed control must be undertaken and maintained on any disturbed areas.
3. Temporary structures used during construction must be designed to handle high flows reasonably anticipated during the project construction period. Temporary structures must be completely removed from the stream channel at the conclusion of construction and the area must be restored to a natural and stable condition.
4. Channel alterations must be designed to retain original stream length or otherwise provide hydrologic stability.
5. Riprap, rock, or other material used in a project must be of adequate size, shape, and must be properly placed to protect the streambank from erosion.
6. The District may:
 - a. Limit the time and duration of construction to minimize impacts to the stream or associated aquatic life;

- b. Require the applicant to submit engineering designs, when in the District's judgment, the project's complexity requires greater assurance of project stability to minimize impacts to the stream;
 - c. Require the applicant to provide project completion documentation that may include photographs.
7. The following activities are discouraged but may be authorized:
- a. Placement of road fill material in a stream;
 - b. Placement of debris or other materials in a stream where it can erode or float back into the stream;
 - c. Projects that permanently prevent fish migration;
 - d. Operation of construction equipment in a stream;
 - e. Excavation of streambed gravels.
8. Equipment must not be operated below the existing water surface without specific approval from the District. Forging the stream at one location will be permitted only on a case-by-case basis.
9. Care must be taken to cause only the minimum necessary disturbance to the natural appearance of the area. Stream bank vegetation must be protected except where its removal is absolutely necessary for completion of the work. Any vegetation, debris, or other material removed during construction must be disposed of at some location out of the flood plain where it cannot re-enter the channel during high stream flows. All new cut or fill slopes must be immediately seeded, vegetated, or otherwise protected to prevent erosion.

B. CONSTRUCTION MATERIALS

1. Findings

Building material should be stable and free of silts, sands, clays, chemical preservatives, grease, oil or any surface application that could degrade or contaminate water quality.

2. Standards

a. Asphalt

Asphalt or similar petroleum based products intended for use as a travel or walking surface are prohibited.

b. Concrete

1. Wet concrete must not be poured into or allowed to come in contact with the water. Concrete poured within water-tight forms may be approved.
2. Concrete is not allowed for bank stabilization unless the provisions established by the Montana Department of Environmental Quality are met. When an applicant presents information to the Supervisors that the DEQ has certified that concrete may be used for bank stabilization, concrete will be allowed if the use of concrete is a reasonable means of accomplishing the purpose of the proposed project.

c. Fabrics

All erosion control blanket or fabric used in or adjacent to streams must be composed of degradable material to ensure decomposition. Plastic, stabilized netting or stabilized open mesh is prohibited, as these products take a long time to degrade and they can trap small animals, birds, amphibians, and fish. This prohibition on plastic also applies to mesh materials used for wattles, rolled materials, and bank wraps.

d. Foam flotation logs

1. Styrofoam logs, as a method of flotation, are prohibited. Extruded polystyrene (blue logs) or similar single cell foam is allowed. Composite or plastic materials may be allowed.
2. All foam flotation logs must be completely encased in solid wood (excluding particle board, plywood, or other commercially produced building materials using wood) or in metal. Drain holes or spaces between wood boards (maximum of one-half (1/2) inch between) are allowed.

e. Metal

1. Any metal may be painted or coated with an inert metal sealant (i.e. paint, plastic, rubber, enamel, etc.) that has thoroughly dried/cured prior to its use.
2. Minimal lubrication of critical metal components may be used where necessary for movement.
3. No metal used in the project area may contain deposits or a surface application of any of the following:
 - a. Grease or oil
 - b. Paint, varnish or coatings that have not thoroughly cured or dried;
or
 - c. Any chemical or substance that will wash off or dissolve when in contact with water.

f. Rock or stone

1. Rock or stone is a preferred natural material for construction.
2. All rock or stone that will come in contact with the stream must be free of silts, sands and clays.

g. Wood

1. Pressure treated wood, as allowed by current EPA rules, is permitted. All other wood must be untreated.
2. The prohibition in 2.g.1. does not prohibit the application of paint or stain located landward of the mean high water line under a permit or plan of operation.
3. Where wood is used for any project that would at some time be in, or over the water, use only solid wood. This specifically excludes plywood, particleboard, chipboard, or other building material commercially produced using wood.

C. BURNING

1. Findings

Burning of materials on the streambed or banks will cause a degradation of water quality.

2. Standards

Burning of weeds, grass, shrubs, brush, trees, old construction materials, debris from new construction or similar materials below the mean high water line is discouraged, but may be authorized.

D. EROSION, SEDIMENTATION AND STORM RUNOFF

1. Findings

- a. Any construction activity that will affect the streambank should incorporate all necessary means to minimize pollution of the stream, including erosion, sediment, and storm runoff controls.
- b. The proposed activity should minimize increased sedimentation, an increase in suspended sediments, or an increased discharge of nutrients into the stream either during its construction or utilization.

2. Standards

- a. Unless otherwise specified in these rules, the interface of fill materials, such as riprap, with the stream water must be sloped at a maximum 1.5:1 ratio in order to dissipate wave and stream flow energy. The face of the slope must be covered with suitable materials to prevent soil erosion and slumping of banks.
- b. The natural protective armament of the stream and streambank must be preserved.
- c. Natural vegetation must be preserved wherever possible and as specified in the rules adopted under the Montana Streamside Management Zone Law.
- d. Use of vegetation must be considered as a means of stabilizing erosive areas.

- e. Mechanized equipment is prohibited, except to the extent mechanized equipment is allowed under the Montana Streamside Management Zone Law, 77-5-301, MCA, or as authorized.

E. EXCAVATION OR FILLING OF MATERIALS

1. Findings

- a. The stream should be preserved in its natural condition to the greatest extent possible, in order to protect fish and wildlife habitat and water quality.
- b. Increased sedimentation in the stream should be minimized to the greatest extent possible, as a protection for fish habitat and water quality.

2. Standards

- a. Any material that is excavated from the streambed or banks must be removed entirely from the stream and flood plain and deposited in such a manner so as to prevent re-entry of the material into the stream.
- b. Temporary stockpiling of excavated materials anywhere in the flood plain is prohibited.

CHAPTER 3

PROJECT STANDARDS

Any proposed project must meet the following standards:

A. BANK STABILIZATION

1. Findings

- a. Retaining walls, riprap, and other bank stabilization methods significantly alter wave actions, currents, beach dynamics, bank erosion patterns, and may affect neighboring property and alter the stream channel on neighboring properties.
- b. Retaining walls that extend land area into a stream have an increased potential to significantly alter wave actions, currents, beach dynamics, bank erosion patterns, and alter the stream channel on neighboring properties.
- c. Alternatives exist to retaining walls which do not significantly alter wave actions, currents, beach dynamics, bank erosion patterns, or alter the stream channel on neighboring properties.
- d. In determining a reasonable means for bank stabilization, consideration must be given to materials and method of placement.

2. Standards

- a. The use of retaining walls solely for landscaping is prohibited.
- b. Retaining walls designed to extend the land area into the stream are prohibited.
- c. Retaining walls must be built at or landward of the mean annual high water elevation and must conform to the contours of the existing shoreline.
- d. Riprap is the primary retaining wall method. Riprap retaining wall standards are as follows:
 - i. Riprap rock must be angular and sized properly for the specific task unless otherwise specified.
 - ii. All riprap rock must be free of silts, sands or clays.

- iii. Rock may be handpicked from the immediate stream bank, but removal of said rock is allowed only if a solid armament of rock remains in place. The removal of any rock that exposes silts, sands or clays is prohibited.
 - iv. Unless otherwise specified, riprap rock must be toed-in below the bottom of the stream and be placed at a maximum slope of 1.5:1.
 - v. Prior to the placement of riprap, filter fabric may be required to be placed along the stream bank and incorporated into the riprap design to inhibit erosion and the washing of sand, silt, and clay through the riprap.
 - vi. Use of concrete is not allowed for bank stabilization unless the provisions of the DEQ are followed.
- e. Concrete and other structure type retaining wall standards are as follows:
- i. The landward side of the retaining wall must extend at least two (2) inches but not more than eight (8) inches above the level of backfill to inhibit surface water runoff that may carry sediments to the stream.
 - ii. Within five (5) feet landward of any retaining wall, backfill must consist of easily drained gravel, rock, stone, sand or a combination of the above. Drain or weep holes should be provided for in any walls. Do not attempt to establish grass or a yard immediately behind a wall unless a silt barrier is included in the construction design.
 - iii. All suitable free draining material as described in e.ii above, excavated for placement of the footings, may be used as backfill behind the wall or else must be deposited outside of the flood plain.
 - iv. Backfill is limited to that amount necessary to re-establish the pre-existing slope and contours of the landward side.
 - v. If an existing wall has to be replaced, it must be completely removed from the flood plain and the replacement wall must be constructed in essentially the same location as the existing wall. If removal of the wall is unfeasible, or will cause environmental hazards (through sedimentation and erosion), the Board will consider an alternative method.

B. BEAVERS

1. Findings

Beaver activity may cause safety hazards or damage that requires management and/or removal.

2. Standards

- a. If beaver problems involve removal of part or all of a beaver dam, the landowner must obtain a 310 Permit.
- b. Landowner must undertake some control of beaver numbers in the permit area.
- c. For beaver control and trapping permits, contact Montana Fish, Wildlife & Parks.
- d. In an emergency, as defined under Rule 4.18. Definitions, the emergency procedure set forth in Rule 15 Emergencies, must be followed.

C. BOAT RAMPS AND BOAT RAIL SYSTEMS

1. Findings

- a. Boat ramps have a potential to increase sedimentation in the stream, and diminish water quality.
- b. Boat rail systems may have a lower potential to increase sedimentation in the stream or to diminish water quality.
- c. Facilities designed for removal of boats from a stream, such as rail systems, are preferred to attempting to build a dock, shore station, or boat shelter for protection of boats, as the overall impacts tend to be less adverse.

2. Standards

- a. Footings and/or the base of the boat ramp must be constructed below the pre-existing grade of the streambank.
- b. All material excavated from the stream to construct the boat ramp and not used as the ramp foundation material must be immediately and completely removed from the flood plain and deposited in such a manner as to prohibit its re-entry into the stream.
- c. Boat ramps must be of the same elevation as the pre-construction stream bed and banks.
- d. Maximum grade must not exceed fifteen (15) percent.

- e. All ramps must be finished with non-skid surface to ensure maximum traction for vehicles launching and retrieving boats.
- f. Concrete boat ramp edges must be thickened to a minimum of twice the average thickness of the ramp in order to prevent erosive undercutting or breaking of ramp edges.
- g. Launching rails must be securely anchored to the stream bottom.
- h. The rails of the rail launching system must not exceed four (4) inches in height and the rail system must lie on and follow the grade of the existing stream bed and banks. No portion of the rail system can extend more than eighteen (18) inches above the immediately adjacent land.
- i. Only one boat ramp per waterfront property is allowed.
- j. Ramps must have a maximum width of twelve (12) feet.
- k. Linked concrete planks are preferred to poured slabs for their durability and natural sediment trapping ability.
- l. The immediate upstream and downstream banks require bank stabilization to ensure long term stability of the ramp and immediate shoreline.

D. BOATHOUSES, BOAT SHELTERS AND SHORE STATIONS

1. Findings

These structures have a high potential to significantly alter the natural characteristics of the shoreline and diminish water quality.

2. Standards

- a. The streambed and bank must not be excavated or dredged in order to provide channels and suitable water depth for boating access to a structure.
- b. Concentration of runoff into the stream during construction is prohibited. The design plan must demonstrate that construction activities will not result in the concentration of run-off.
- c. Roof decks or other elevated decks are prohibited on boathouses, boat shelters and shore stations.

- d. Boat shelters and shore stations must not be longer than the dock length at that location.
- e. Boathouses, boat shelters, and shore stations must be constructed with non-reflective materials and designed, constructed and placed to be compatible with adjacent surroundings.
- f. Any roofing material containing asphalt is prohibited.
- g. Toxic chemicals and pollutants such as petroleum products must not be stored over water.

E. BRIDGES

1. Findings

- a. In determining reasonable means of constructing bridges, consideration must be given to timing during low flows, materials, equipment, post-construction erosion control, slope, and construction methodology.
- b. Consideration must be given to proper location of the crossing, protection of the natural channel width and provide for high flow flood events.

2. Standards

- a. All work must be completed in as expeditious a manner as possible and must take place during low flow periods.
- b. Work must be conducted to minimize impact on the stream and immediate vicinity, with use of machinery in stream only when absolutely necessary. To prevent leaks of petroleum products into the waterway, defective equipment must not be operated in areas capable of contributing surface flows to the waterway.
- c. Any excess material generated from a project must be disposed of out of the flood plain and not in an area classified as a wetland.
- d. All disturbed areas (including any spoils or excess material) must be shaped, seeded to grass, and lightly mulched to control erosion and prevent the infestation of noxious weeds. Existing vegetation must be preserved wherever possible. Revegetation with trees and shrubs is encouraged.

- e. Bridges must be installed so that the low point in the road grade is not over the stream crossing. If this is not possible, construct water bars or cross drains in the road grade above the stream crossing.
- f. Drain holes must be put in concrete and steel bridge abutments and wing walls.
- g. Stringers for bridges must conform to a load carrying capacity of Highway Standard-20 (HS20).
- h. Old log bridges are to be removed and not left in stream.
- i. Bridge abutments must not constrict natural channel width.

F. CULVERTS

1. Findings

- a. Culverts may create adverse hydrologic conditions, such as drops at inlet or outlet, high velocities and turbulence, and inadequate depths that prevent fish from moving upstream.
- b. In determining a reasonable means of constructing culverts, consideration must be given to timing during low flows, materials, equipment, post-construction erosion control, slope, and construction methodology.

2. Standards

- a. All work must be completed in an expeditious manner and must take place during low flow periods.
- b. Work must be conducted to minimize impact on the stream and immediate vicinity, with use of machinery in stream only when absolutely necessary. To prevent leaks of petroleum products into the waterway, defective equipment must not be operated in areas capable of contributing surface flows to the waterway.
- c. Any excess material generated from a project must be disposed of out of the flood plain and not in an area classified as a wetland.
- d. All disturbed area (including any spoils or excess material) must be shaped, seeded to grass, and lightly mulched to control erosion and prevent the infestation of noxious weeds. Existing vegetation must be preserved wherever possible.

- e. The fill slope of the crossing must be at a maximum grade of 1.5:1.
- f. The culvert must be properly bedded in gravel and must be on grade with the pre-existing slope of the stream, or buried one (1) inch below the existing gradient, unless otherwise specified.
- g. Both the upper and lower ends of the culvert must be armored with oversize rock to control erosion and piping around the culvert, unless otherwise specified.
- h. Culverts must have a fill depth over the top of the culvert of one-third (1/3) the diameter of the culvert, but no less than one (1) foot.
- i. Culverts must be installed so that the low point in the road grade is not over the stream crossing. If this is not possible, construct water bars or cross drains in the road grade above the stream crossing.
- j. Dewatering may be required to reduce sedimentation and/or to improve the culvert installation process. This will be determined on a site by site basis.
- k. The most accurate method of obtaining the proper culvert length is provided in Appendix A, Determining Culvert Length.

G. DECKS, WALKWAYS, AND STAIRWAYS

1. Findings

- a. Decks, walkways and stairways are all structures that are located landward of high water and are considered constructed surfaces.
- b. If properly placed and constructed these structures typically have minimal impact on the streambank and, in some cases, help to protect the fragile shoreline from foot traffic.

2. Standards

- a. Structures must be constructed on the existing terrain. Stones, gravel or wood are recommended travel surfaces as opposed to concrete.
- b. In determining a reasonable means of constructing decks, structures and stairways, consideration must be given to bank configuration, bank slope, soil stability, and site specific effects.

H. DOCKS, WHARVES, PIERS (considered synonyms)

1. Findings

- a. Open and floating docks are encouraged as they allow complete water transfer beneath them. Such docks with large free water transfer areas do not impede current flows and, therefore, do not create stagnant water conditions.
- b. Partially open docks, those constructed of closely spaced piling or-planks, allow restricted water transfer but do not completely impede current flows and, consequently, do not create stagnant water conditions.
- c. Solid docks or structures block the transfer of water, thereby impeding current flows.
- d. Docks, wharves, and piers have a high potential to interfere with public navigation and public recreation.
- e. Common streambank dock facilities, shared by more than one owner, reduce the overall environmental impacts on the streambed and bank and ease navigational congestion on the stream.
- f. In determining a reasonable means of constructing docks, wharves and piers, consideration must be given to length, width, materials, proximity, and anchoring structures.

2. Standards

- a. Docks must not exceed twenty (20) feet in length, not to include the ramp (gangway).
- b. Where the depth of the water, at the end of a twenty (20) foot dock on Flathead River, and on Swan River is less than five (5) feet, additional length may be allowed if the dock cannot be moved laterally to achieve the five (5) foot depth.
- c. The maximum length of the wing section on a dock, whether a T, F, 4 or L shaped dock, must not exceed the lesser of thirty (30) feet or thirty (30) percent of the lot frontage (See Figure 2. Dock Dimensions).

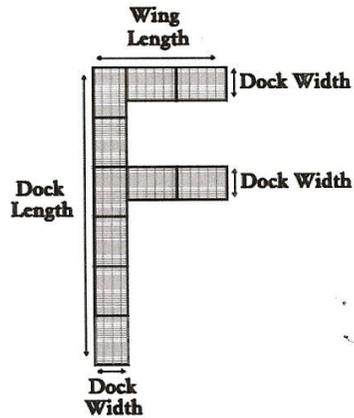


Figure 2. Dock Dimensions

- d. The width of the deck on a dock must not be greater than six (6) feet, except on a floating dock, width may be increased to eight (8) feet for greater stability.
- e. If foam or similar easily damaged flotation systems are incorporated into the dock design, the material must be completely encased in solid wood or a suitable impervious, non-corrosive material such as aluminum or galvanized sheet metal so as to avoid the breakup or scattering of materials. Plywood, particle board, etc., must not be used. Boards may be spaced up to one-half inch apart on the bottom or drain holes may be incorporated into other materials to aid in drainage.
- f. All floating docks must be suitably anchored to the river bottom or bank to avoid drift. Anchoring methods are limited to cable; galvanized chain or nylon or polypropylene rope attached to a suitable clean weight such as solid clean concrete, rock or steel blocks or a temporary pipe and post system which allows the dock sections to slide up and down. In addition, the end of the floating dock may be secured by cable, anchor, or post to keep the end of the dock stable.
- g. Only one (1) dock is allowed per waterfront property ownership. This includes multiple contiguous lots under one family or related ownership, unless an individual dwelling or condominium type structure is constructed on each separate and legally defined lot, in which case more than one (1) dock may be allowed.
- h. Docks which have deteriorated to the extent that they could contaminate the river, such as having exposed white Styrofoam, must be immediately repaired to eliminate the risk of contamination or must be removed entirely from the water.

- i. It is a violation of these regulations to abandon docks or to otherwise allow docks or dock remnants to float out into the river unsecured.
- j. Floating docks should be removed from the water by December 1 and anchored securely above the high water line.

I. DREDGE, FILLING, AND SWIM BEACH CREATION

1. Findings

- a. In determining a reasonable means of dredging, consideration must be given to the fact that dredging of a streambed or bank could have adverse effects due to suspension of fine materials, re-suspension of nutrients and toxic materials, exposure of stable streambed sediments to unstable conditions, removal of stream bed armament and creation of steep bench areas.
- b. Filling of wetlands creates adverse effects due to destruction of the aquatic environment, loss of habitat for fish and aquatic wildlife, loss of water storage capacity, loss of the natural storm runoff cleansing functions, and the loss of natural nutrient entrapment functions of wetlands.
- c. Cutthroat and Rainbow trout spawning takes place in April and May and the fry emerge from the gravel from mid-June to mid-July. Brook and Bull trout spawn from mid-September to the end of November and the fry emerge from the gravel in March and April.

2. Standards

- a. The streambanks must not be undercut or damaged.
- b. Stream bank vegetation must not be damaged.
- c. Fuel or lubricants must not be allowed to enter the stream; if this happens all operations are to be stopped and remedial efforts are to begin immediately.
- d. The dredge must only be operated during daylight hours unless authorized.
- e. Dredging and/or filling is only permitted at the time of year specified on the permit. The dredge must only be operated between July 15 and September 15 to protect the fish that are developing in the gravels.

- f. Discharge of fill material into the stream may be prohibited.
- g. If allowed, dredged areas must be stabilized with a protective armament as soon as possible after excavation. In areas where there is a rock layer on the surface of the streambed or bank, such rock may be removed and set aside, but then must be replaced as a protective layer subsequent to the excavation.
- h. Dredging for the purpose of creating, enlarging, or improving an artificial harbor, lagoon, or in-stream pond is prohibited.
- i. Filling for the purpose of expanding existing land areas is prohibited.
- j. Filling of wetlands is prohibited.
- k. Filling for the purpose of creating a swimming beach may be allowed. All fill must be clean, washed material, free of silt or clays.
- 1. If dredging outside the wetted channel, effluent from the dredge must be run over a gravel bar or through a settling pond to remove suspended solids.
- m. Pits created by dredging must be filled at the conclusion of the operation.

J. DWELLING UNITS

1. Findings

Buildings represent concentrations of human activities. Such activities are essentially land based with people entering the aquatic environment only for relatively short periods of time for recreational purposes. Buildings are potentially harmful through creation of impervious surfaces, increasing surface storm runoff into the stream and possible sewer leakage.

2. Standards

Buildings or portions thereof, over the bed or immediate banks of a stream, are prohibited. This includes roof overhangs, drip lines, balconies, bay windows, and chimneys. The district recommends structures be set at least twenty (20) feet back from the immediate (highest) bank of the stream (not the high water mark).

K. FENCES

1. Findings

- a. Fences along streams restrict livestock and equipment movement near the stream, thereby minimizing bank damage and preserving water quality.
- b. If streams, ponds and wetlands are fenced, livestock can obtain water from fenced stream crossings and access ramps, and troughs to which water is diverted. Water Gaps (breaks in the fence where livestock can access the stream) provide access to required water while limiting streambank disturbance to a small portion of the stream. Providing stable access points with rock, gravel, or geoweb matting will encourage livestock to use the area, while reducing soil erosion.
- c. Fences across streams are a navigational hazard, alter stream currents, and trap debris.

2. Standards

- a. Install pasture gates away from riparian areas, unless the gate is to access a fenced riparian area.
- b. Livestock watering access approaches must have gradual ascent and descent grades and be of suitable material to withstand repeated and long term use.
- c. Cross-stream fencing must be accomplished with breakaway wire, swinging floodgates, hanging electrified chain or other devices to allow the passage of floodwater debris during high flows.

L. FISH PASSAGE AT ROAD CROSSINGS

1. Findings

- a. Road crossings may create adverse hydrologic conditions, high velocities, turbulence, and inadequate depths that prevent fish from moving upstream.
- b. Preventing fish passage blocks spawning migrations and use of upstream habitats, negatively impacting juvenile and adult fish.
- c. Projects that permanently prevent fish migration are prohibited. Rule 12.10. Project Construction.

- d. There are many factors which affect fish passage. Each site is unique and therefore requirements for fish passage may vary.

2. Standards

- a. In determining a reasonable means of constructing a fish passage, consideration must be given to the uniqueness of the site, fish species, size and age of fish, discharge and gradient of the stream, size and type of a fish passage, such as a culvert, and inlet and outlet conditions that prohibit using a single set of specifications to assure passage.
- b. Bridges are the best structures in providing fish passage, followed by bottomless culverts, imbedded culverts, and non-embedded culverts in descending order of their ability to pass fish. Dependent on site characteristics, a non-embedded round culvert may not provide passage and one of the above options may be required.
- c. Place culvert on the grade of the stream. Locate the culvert in a straight reach so it does not direct flow against the bank. Do not perch or bury culvert ends.
- d. If possible, oversize the culvert to accommodate partial filling with streambed material and set the culvert below the level of the bed. On small streams, culvert width should be equal to or greater than the average bank full channel width to reduce velocities in the culvert during high flows.

M. FUEL TANKS

1. Findings

- a. Fuel spills into the stream seriously effect water quality, and impair fish and aquatic habitat.
- b. In determining a reasonable means of constructing fuel tanks, consideration must be given to the prevention of fuel spills and leakages.

2. Standards

- a. Bulk fuel tanks must not be placed over or under a stream or its immediate banks.
- b. If a tank is located near a stream and the line goes under, through, or over a stream, a pressure shut-off valve must be located next to the bulk tank on the line, between the tank and the stream.

N. MARINAS

1. Findings

- a. A marina, because of its size, has a high potential to impact the stream and the streambank.
- b. Water quality is an important factor in the permitting of a marina.
- c. Fish and aquatic habitat is an important factor in the permitting of a marina.
- d. It is recognized that navigation can be affected by the permitting of a marina.
- e. It is recognized that safety of neighboring landowners and recreational users of the stream can be affected by the permitting of a marina.
- f. In determining a reasonable means of constructing a marina, consideration must be given to current, water depth, stream width, stream configuration, soils, and bank configuration.

2. Standards

- a. The following may be considered:
 - i. Current;
 - ii. Water depth;
 - iii. Stream width;
 - iv. Stream configuration;
 - v. Soils;
 - vi. Bank Configuration; and
 - vii. The design of the marina and its docks must accommodate the anticipated sizing and capacity needs of the proposed project.
- b. The streambed and bank must not be excavated or dredged in order to provide channels and suitable water depth for boating access into the marina.

O. PONDS

1. Findings

- a. In-stream ponds change streambanks and stream hydrology, which can cause erosion and adversely affect water quality, aquatic habitat, and fish populations.
- b. Off-stream ponds that discharge back to streams can cause adverse/harmful stream channel changes.
- c. Off-stream ponds that discharge back to streams can raise water temperature and cause other adverse water quality changes.
- d. Fish migrate from an off-stream pond that is connected to a stream, which can cause adverse impacts to fish and aquatic habitat.

2. Standards

- a. In-stream ponds are prohibited.
- b. Off-stream ponds that are connected to a natural stream channel are discouraged.
- c. Diversion to and from an off-stream pond must be connected to the stream by means of a buried pipeline fitted with inlet and outlet controls.

P. SANDBAG PROJECTS

1. Findings

The placement and the removal of sandbags on the immediate banks of a perennial-flowing stream or river is an activity that may result in a change of the state of a stream. Sandbagging in or near a stream is usually associated with flooding and is meant to be a temporary remedy for the protection of life and property.

2. Standards

- a. Sandbagging on the bed or immediate banks of a stream is a project requiring a 310 permit.
- b. If sandbagging is to be undertaken prior to the threat of high water, a 310 permit is required.

- c. A plan of operation may be submitted pursuant to Rule 9.3.b. Notice of Proposed Project/Permit Application, if sandbagging is to be conducted annually.
- d. Description of the placement of the sandbags, length of project, distance from riverbed, height of project, and plan for the removal of the sandbags after the high water subsides, are required.
- e. In an emergency, as defined under Rule 4.18. Definitions, the emergency procedure set forth in Rule 15 Emergencies, must be followed.
- f. A person sandbagging on the bed or immediate banks of a stream, during an emergency, shall notify the district in writing within fifteen (15) days of the action taken, on Form 275.
- g. A person who fails to submit either a 310 application or an emergency notice is in violation of the 310 Law and is subject to the penalties provided in 75-7-123, MCA.

Q. UTILITY LINES (ELECTRICAL, SEWER LINES – DISPOSAL FACILITIES, UTILITY LINE BURIAL – BORING - TRENCHING, WATERLINES, WELLS AND CISTERNS)

1. Findings

- a. The improper placement of wells and utility lines has significant effects on streams due to disturbances of streambeds and banks.
- b. In determining a reasonable means for development of utility lines, consideration must be given to the prevention of leakage, spillage, flotation or snagging, flow of salt laden water into a stream, and the maintenance of the streambed and bank to as near its prior condition as possible.

2. Standards

a. Sewer lines/Disposal facilities:

Streamside sewage pump out facilities may be placed in public or private marinas or public parks.

- i. Such facilities must include equipment to pump or otherwise receive and transfer contents of vessel holding tanks into a sewage retention and/or disposal system located outside the flood plain.
 - ii. Such facilities must include in the design appropriate plans to prevent all spillage or leakage from entering the stream.
- b. **Utility Line Burial:**
- i. **Boring**
 - 1. The proposed activity may be determined by the board, after reviewing the application, to not be a project requiring a permit if utility line boring takes place a minimum of twenty (20) feet away from the top of the highest bench of the bank, and takes place a minimum of five (5) feet below the lowest part of the stream.
 - 2. No discharged material from the drilling process can enter into the stream and its' immediate banks.
 - 3. This rule can only be used if the Flathead Conservation District office is notified ten (10) days before the proposed project is to begin and standards i.1. and i.2. are met.
 - ii. **Trenching**
 - 1. Only the minimum amount of material necessary to lay the line can be removed from the trench.
 - 2. All material excavated from the trench must be replaced back into the trench as backfill. Any material that is not replaced back into the trench must be completely removed from the floodplain.
 - 3. In areas where there is a rock layer on the surface of the stream bed or bank, such rock must be removed and set aside, then replaced as a protective layer subsequent to the excavation.
 - 4. In areas where no rock layer exists, the replaced dirt must be compacted and consolidated in order to prevent erosion. Additional cover, such as gravel, a rock layer or vegetation, may also be required.
 - 5. Following installation, the streambed or bank must be returned to its condition prior to construction, and/or revegetated.

c. **Waterlines:**

That portion of the waterline that is not buried and does lie exposed on the bottom of the streambed or bank must be weighted to prevent flotation or snagging.

d. **Wells and Cisterns:**

- i. A well or cistern must not be drilled or developed in the stream.
- ii. For wells or cisterns located on the immediate bank of a stream, when originally developing and pumping the well, the silt laden water must not be allowed to flow into the stream.

Appendix A

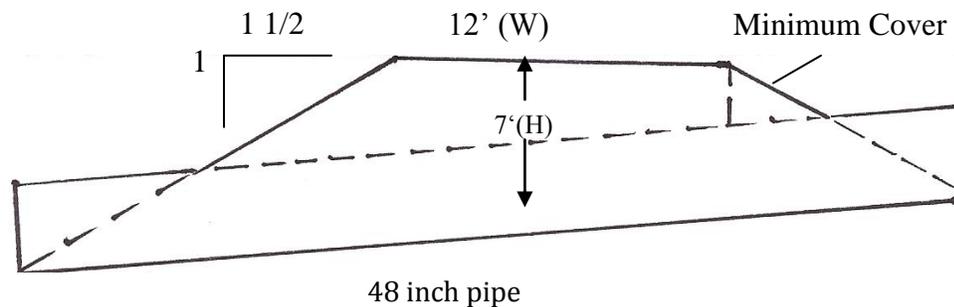
Determining Culvert Length

The length of the culvert depends on the width of the road surface, the average height of the fill measured from the bottom of the culvert, the fill slopes, and the gradient or percent slope of the culvert.

To prevent crushing by traffic loads, use a one (1) foot minimum cover for culverts eighteen (18) to thirty-six (36) inches in diameter, and a cover of one-third the culvert diameter for larger culverts. This minimum cover is measured at the upslope shoulder of the road, or minimum fill height.

The most accurate method of obtaining the proper culvert length is to measure it in the field after the site is slope staked. This accounts for any skew angle of the culvert to the centerline of the road, actual fill height and fill ratio, as well as the gradient or slope of the pipe. Once the pipe length is measured using the construction stakes, or catch points for inlet and outlet, be sure to add two (2) feet to account for fill settlement and raveling. If the measurement results in an odd number then round up to the next even number as culverts are ordered in two (2) foot multiples.

EXAMPLE: Determining the length of a culvert without the benefit of construction stakes and assuming no angle of skew to the road centerline:



$$L = W + 2SH + 2$$

48 inch pipe

L = Length of Culvert

W = Width of the road (shoulder to shoulder)

S = Horizontal component of the fill slope ratio (in a 1 1/2 horizontal to one 1 vertical, S = 1.5)

H = Fill height at the centerline of the road, from the bottom of the pipe.

The 2 at the end of the equation is to account for fill settlement and raveling.

If the calculated number is odd, then round up to the nearest even number.

In this example: $L = 12(\text{Width of road}) + 2(1.5 (\text{Horizontal slope}))(7 (\text{Fill height})) + 2$ which equals 35 ft. Because this is an odd number it needs to be rounded up to 36 ft. to account for pipes coming in 2 foot multiples.

Finally, be sure to check the minimum cover at the upstream road shoulder. In this example, a 48 inch pipe requires 1/3 the diameter of the pipe, or 16 inches.