

Environmental Quality Incentives Program

2013 EQIP Signup

Minnesota Supplement for:
Practice Standard 580 – Streambank and Shoreline Protection

Supplemental Criteria

1. No special provisions.

Scenarios

1. Stream Barb

This scenario uses stream barbs to protect the banks of streams or excavated channels against scour and erosion.

The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment costs include shaping the bank and placing a rock stream barb, 50 cubic yards is used for estimation purposes. The bank around the barb will be graded to a stable slope.

Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.

Associated Practices include: 342 - Critical Area Planting; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management

2. Bioengineered

Protection of streambanks consisting of a bioengineered technique comprised of non-structural measures such as earth revetments and benches with vegetative measures to stabilize and protect the streambank against scour and erosion. Soil bioengineering is a system of living plant materials used as structural components. Adapted types of woody vegetation (shrubs and trees) are initially installed in specified configurations that offer immediate soil protection and reinforcement. In addition, soil bioengineering systems create resistance to sliding or shear displacement in a streambank as they develop roots or fibrous inclusions. Environmental benefits derived from woody vegetation include diverse and productive riparian habitats, shade, organic additions to the stream, cover for fish, and improvements in aesthetic value and water quality.

Under certain conditions, soil bioengineering installations work well in conjunction with structures to provide more permanent protection and healthy function, enhance aesthetics, and create a more environmentally acceptable product. Soil bioengineering systems normally use unrooted plant parts in the form of cut branches and rooted plants. For streambanks, living systems include brush mattresses, live stakes, joint plantings, vegetated geogrids, branchpacking, and live fascines.

The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank, critical area vegetation, live stakes, rootwads and revetments: a 6-foot high bank at 3(H):1(V) slope for 500 linear feet (0.23 acres) is used for estimation purposes.

Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.

Associated Practices include: 342 - Critical Area Planting; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management

3. Riprap on bank less than 4 ft high measure from bank top to toe of slope

Protection of streambanks using structural measures such as riprap, concrete block, gabions, etc. to stabilize and protect banks of streams or excavated channels against scour and erosion.

The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank and rock rip rap; a 3-foot high bank at 2(H):1(V) slope for 500 linear feet is used for estimation purposes. The rock toe will be 1.5' thick and 3' high. The bank above the riprap will be graded to a stable slope.

Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.

Associated Practices include: 342 - Critical Area Planting; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management

4. Riprap on bank 4 ft to 7 ft high measure from bank top to toe of slope

Protection of streambanks using structural measures such as riprap, concrete block, gabions, etc. to stabilize and protect banks of streams or excavated channels against scour and erosion.

The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank and rock rip rap; a 6-foot high bank at 2(H):1(V) slope for 500 linear feet is used for estimation purposes. The rock toe will be 1.5' thick and 4' high. The bank above the riprap will be graded to a stable slope.

Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.

Associated Practices include: 342 - Critical Area Planting; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management

5. Riprap on bank over 7 ft high measure from bank top to toe of slope

Protection of streambanks using structural measures such as riprap, concrete block, gabions, etc. to stabilize and protect banks of streams or excavated channels against scour and erosion.

The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank and rock rip rap; a 8-foot high bank at 2(H):1(V) slope for 500 linear feet is used for estimation purposes. The rock toe will be 2' thick and 6' high. The bank above the riprap will be graded to a stable slope.

Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.

Associated Practices include: 342 - Critical Area Planting; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management

6. Riprap in remote area, long access to site, long haul from quarry

Protection of streambanks using structural measures such as riprap, concrete block, gabions, etc. to stabilize and protect banks of streams or excavated channels against scour and erosion. Rock source is greater than 50 miles from job site.

The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank, geotextile, and rock rip rap; a 6-foot high bank at 3(H):1(V) slope for 300 linear feet is used for estimation purposes. The rock toe will be 2' thick and 5' high. The bank above the riprap will be graded to a stable slope and revegetated.

Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.

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7. Cable concrete or precast concrete block

This scenario uses structural measures such as precast concrete block or cabled concrete to stabilize and protect banks of streams or excavated channels against scour and erosion.

The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank and concrete block; a 6-foot high bank at 3(H):1(V) slope for 500 linear feet is used for estimation purposes. The cable concrete will be 16' wide including key. The bank above the concrete blocks will be graded to a stable slope.

Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.

Associated Practices include: 342 - Critical Area Planting; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management