Environmental Quality Incentives Program
2013 EQIP Signup

Minnesota Supplement for:
Practice Standard 587 – Structure for Water Control

Supplemental Criteria

1. Structure for Water Control- drainage water management system is eligible on new tile installations or where an existing drainage system is in place and is modified for drainage water management.
2. For drainage water management structures, the minimum impacted area shall be 10 acres per structure. Usually land slope will need to be ½ % or less to achieve this.
3. Payment rate includes the water control structure, fittings, piping and anti-seep diaphragms, and couplings needed to attach the control structure to the existing tile.
4. Technical assistance for Structure for Water Control- drainage water management system may be provided by NRCS or a TSP.

Scenarios

1. Inlet Flashboard Riser, Metal

A flashboard riser fabricated of metal and used in a water management system that maintains a desired water surface elevation, controls the direction or rate of flow, or conveys water to address the resource concerns: Inadequate Water - Inefficient use of Irrigation Water and Inadequate habitat for fish and wildlife. The water surface elevation is controlled by addition or removal of slats or "stoplogs". This scenario is applicable to variable crest weir structures where the elevation is controlled at the inlet (half-rounds). They are often fabricated from half pipes (i.e. half-rounds) or sheet steel in a box shape. Payment rate is based upon the flashboard weir length in inches multiplied by the outlet length in feet (Inch-Foot). Cost estimate is based on a "half-round" flashboard riser shop fabricated using a longitudinal cut 36" smooth steel pipe, a 50' long - 30" outlet pipe passing through an embankment.

2. Inline Flashboard Riser, Metal

A flashboard riser fabricated of metal and used in a water management system that maintains a desired water surface elevation, controls the direction or rate of flow, or conveys water to address the resource concerns: Inadequate Water - Inefficient use of irrigation water and Inadequate habitat for fish and wildlife. The water surface elevation is controlled by addition or removal of slats or "stoplogs". This scenario is applicable to variable crest weir structures where the elevation is controlled at the embankment. They are often fabricated from vertical pipes with the stoplogs are located in the middle (i.e. full-rounds) or sheet steel in a box shape. Payment rate is based upon the flashboard weir length in inches multiplied by the outlet length in feet (Inch-Foot). Cost estimate is based on a "half-round" flashboard riser shop fabricated using a

longitudinal cut 36" smooth steel pipe, a 50' long - 30" outlet pipe passing through an embankment.

3. Commercial Inline Flashboard Riser

An Inline Water Control Structure (WCS) composed of plastic that maintains a desired water surface elevation, controls the direction or rate of flow, or conveys water to address the resource concern: Inadequate habitat for fish and wildlife. The water surface elevation is controlled by addition or removal of slats or "stoplogs". This scenario is applicable to variable crest weir structures where the elevation is controlled at point along a pipe extending through an embankment, providing ease of access to the structure and provide better protection against beaver activity. Commercially available models composed of plastic are commonly used when the width of the structure is 24" or less. Payment rate is based upon the flashboard weir length in inches multiplied by the outlet length in feet (inch-foot). Cost estimate is based on using such a commercial product. The typical scenario is an inline structure with a width of 20", height of six feet. The pipe is 50' of 15" SCH 40 PVC (inlet and outlet combined).

4. Culvert <30 inches HDPE

Install a new HDPE culvert under 30 inches in diameter to convey water under roads or other barriers. A typical scenario would be an 24 inch diameter pipe, 40 feet in length. Work includes site preparation, acquiring and installing culvert pipe with gravel bedding and fill (compacted), and riprap protection of side slopes. Use (396) Aquatic Organism Passage when the primary intent is biological concerns, not hydrologic. Use (578) Stream Crossing for culverts ≥ 30 inches or perennial flow.

5. Culvert <30 inches CMP

Install a new corrugated metal pipe (CMP) culvert under 30 inches in diameter to convey water under roads or other barriers. A typical scenario would be a 24 inch diameter pipe, 40 feet in length. Work includes site preparation, acquiring and installing culvert pipe with gravel bedding and fill (compacted), and riprap protection of side slopes. Use (396) Aquatic Organism Passage when the primary intent is biological concerns, not hydrologic. Use (578) Stream Crossing instead for culverts ≥ 30 inches or perennial flow

6. Flap gate structure

This scenario is the installation of a permanent flap gate structure to control the direction of flow resulting from high water or back-flow from flooding. The typical size is a 2' diameter opening. It is made of steel and operates automatically. The flap gate is installed on a conduit. This scenario assists in addressing the resource concerns: water management. Conservation practices that may be associated are: Critical Area Planting (342), Grade Stabilization Structure (410), Water and Sediment Control Basin (638).

7. Rock Checks for Water Surface Profile

Typical setting is in a stream that has become incised and is therefore disconnected from the floodplain. Typical installation consists of installing a "vee" shaped rock structures with points facing upstream for the purpose of raising the water surface profile. Cost estimate is for three check dams with a top width of 3', max height of 6', min height of 3', and 28' length; containing

an average of 58 cubic yards or 29 tons of rock for a total of 87 tons. The check dams are underlain with geotextile fabric. Disturbed areas are protected with permanent vegetative cover.
Resource concerns: water quality degradation and soil erosion-concentrated flow erosion.
Associated Practices: 580 Streambank and Shoreline Protection

8. Aquaculture Pond Outlet Structure Only

An existing or proposed aquaculture pond which requires an outlet structure to manage water levels and drain water from the pond and allow fish to move from the pond to a harvest kettle area. The typical practice is a tapered reinforced concrete outlet structure with a 7.5ft back wall and side walls tapering down to the pond floor. The structure is made up of reinforced concrete walls and floor with a footprint of approximately 290 sq ft and concrete stairs along one side for a total of 17 cy of concrete. A guardrail is placed around the perimeter of the structure with an additional handrail on the stairs. A slide gate with extended stem is attached to the back concrete wall and an outlet pipe going thru the back wall of the structure to a harvest kettle. Costs include all equipment necessary to install a reinforced concrete structure for water control, aquaculture pond not included. Use Underground Outlet (620) for outlet pipe.

9. Outlet Structure and External Harvest kettle for an Existing Aquaculture Pond

An existing aquaculture pond which requires an outlet structure and harvest kettle to manage water levels and drain water from the pond and allow fish to move from the pond to a harvest kettle area where the fish are removed from the water. The typical outlet structure is a tapered reinforced concrete outlet structure with a 7.5ft back wall and side walls tapering down to the pond floor. The structure is made up of reinforced concrete walls (1ft thick) and floor with a footprint of approximately 290 sq ft and concrete stairs along one side for a total of 17 cy of concrete. A guardrail is placed around the perimeter of the structure with handrail on the stairs. A slide gate with extended stem is attached to the back concrete wall and an outlet pipe going thru the back wall of the structure to a harvest kettle. The typical harvest kettle is a specialized reinforced concrete structure with dimensions of 4 ft deep over a 14 ft x 16ft area (with 8 in thick walls). Costs include all equipment necessary to install a reinforced concrete structure for water control, aquaculture pond not included. Use Underground Outlet (620) for outlet pipe from the outlet structure and from the harvest kettle.

10. Drainage Water Management

A subsurface drainage system on a field with a fairly flat slope (less than 1% and preferably less than 0.5%) outlets through a control structure which is operated with stoplogs. This allows the operator to keep the water in the soil profile when it is not critical to dry the soil. This retention time reduces the volume of water discharged and thereby the quantity of nutrients lost. A single stoplog structure may have its influence extended by buried float-activated structures which can be counted as structures also for a separate payment.
Resource Concerns: Water Quality Degradation (Nutrients).
Associated Practices: 606 - Subsurface Drain; 554 - Drainage Water Management