

## SECTION 01571

# TEMPORARY ENVIRONMENTAL CONTROLS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Requirements for controlling surface environmental conditions at the construction site, and related areas under the Contractor's control.
- B. Coordinating temporary erosion control measures.

#### 1.2 RELATED SECTIONS

- A. Section 01574: Environmental Control Supervisor
- B. Section 02061: Select Aggregate
- C. Section 02373: Riprap
- D. Section 02610: Pipe Culverts
- E. Section 02613: Culvert End Sections
- F. Section 02922: Seed, Turf Seed, and Turf Sod

#### 1.3 REFERENCES

- A. AASHTO M 288: Geotextile Specifications for Highway Applications.
- B. Storm Water Pollution Prevention Plan (SWPPP)

#### 1.4 TYPES

- A. Check Dam:
  - 1. Intercepts and ponds sediment-laden ditch flows.
  - 2. Ponding the water reduces the velocity of the incoming flow and allows most of the suspended sediment to settle out.
  - 3. Water exits the check dam by flowing over the top.

4. Types:
  - a. Straw or Hay Bale
  - b. Stone
  
- B. Silt Fence Slope Barrier:
  1. Intercepts and ponds sediment-laden sheet flow runoff from slopes.
  2. Ponding the water reduces the velocity of the incoming flow and allows most of the suspended sediment to settle out.
  3. Water exits by percolating through the silt fence.
  
- C. Slope Drain:
  1. Collects and transports storm runoff down the face of a slope.
  2. Consists of a berm at the top of the slope, a pipe culvert with end sections and outlet protection.
  3. Used until permanent facilities are installed or until vegetation growth is adequate.
  
- D. Drop-inlet Barrier:
  1. Intercepts and ponds sediment-laden runoff.
  2. Ponding the water reduces the velocity of the incoming flow and allows most of the suspended sediment to settle out.
  3. When pond height reaches the top of the barrier, water flows over the bales or stones and into the drop-inlet. If a silt-fence barrier is used, the ponded water percolates through the silt-fence fabric and into the drop-inlet.
  4. Types:
    - a. Straw or Hay Bale Drop-inlet Barrier
    - b. Stone Drop-inlet Barrier
    - c. Silt-Fence Drop-Inlet Barrier
  
- E. Sediment Trap:
  1. Intercepts and ponds sediment-laden concentrated flows.
  2. Ponding the water reduces the velocity of the incoming flow and allows most of the suspended sediment to settle out.
  
- F. Temporary Berm:
  1. Diverts storm runoff from a recently constructed slope to a controlled release point.
  2. Ridge of compacted soil, with or without shallow ditch.
  
- G. Curb Inlet Barrier:
  1. Intercepts Sediment-laden runoff.
  2. Minor ponding may occur.

## **PART 2     PRODUCTS**

### **2.1     MATERIALS**

- A.    Check dams:
  - 1.    Straw or hay bale:
    - a.    Twine bound hay or straw bales free from weeds declared noxious by the UDA
    - b.    Hardwood stakes: 2 inch square (nominal) by 4 feet
    - c.    Filter Fabric: AASHTO M 288
  - 2.    Stone: Well graded within 0.5 inch to 1.5 inch
  
- B.    Silt Fence:
  - 1.    Hardwood Post: 2 inch square (nominal) by 4 feet in length
  - 2.    Free Draining Granular Backfill Borrow: Refer to Section 02061
  - 3.    Filter Fabric: Synthetic, pervious sheet of propylene, nylon, polyester, or ethylene yarn. AASHTO M 288
    - a.    Allows a flow rate of 0.067 gal/yd<sup>2</sup>/min
    - b.    Filter efficiency of 97 percent
    - c.    With ultraviolet ray inhibitors and stabilizers
    - d.    Provide a minimum of 6 months of expected usable construction life at a temperature range of 0 degrees F to 120 degrees F
  - 4.    Fasteners: Staples, wire, zip ties, or nails
  
- C.    Slope Drain:
  - 1.    Pipe Culverts: Refer to Section 02610.
  - 2.    End Section: Refer to Section 02613.
  - 3.    Riprap or Rock Lining: Refer to Section 02373. Fifty percent of the riprap to be between 6 inches and 12 inches with a maximum size of 12 inches and a minimum size of 4 inches.
  - 4.    Hay or straw bales and hardwood stakes: Refer to this Section, article 2.1, Materials, paragraph A, Check Dams.
  
- D.    Drop-Inlet Barriers:
  - 1.    Straw or Hay Bale: Refer to this Section, article 2.1, Materials, paragraph A, Check Dams.
  - 2.    Stone: Refer to this Section, article 2.1, Materials, paragraph A2, Check Dams, Stone.
  - 3.    Silt-fence: Refer to this Section, article 2.1, Materials, paragraph B, Silt Fence.
  
- E.    Sediment Trap:
  - 1.    Free draining granular backfill borrow: Refer to Section 02061.

2. Riprap or Rock Lining: Refer to Section 02373, and this Section, article 2.1, Materials, paragraph C, Slope Drain.
- F. Temporary Berm: Existing Soil.
- G. Curb Inlet Barrier:
1. Concrete Building Blocks.
  2. Stone: Refer to this Section, article 2.1, Materials, paragraph A2, Check Dams, Stone.
  3. Wire Mesh: 0.5 inch by 0.5 inch.

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

- A. Follow the Storm Water Pollution Prevention Plan (SWPPP) in the plan.
1. Address in the SWPPP all disturbed areas on a project including staging areas, haul roads, borrow sites, stockpiles, and disposal areas.
  2. If SWPPP is not provided in the plans, create and submit a plan to the Engineer for approval.
  3. Obtain written approval from the Engineer to change the SWPPP.
- B. Designate an Environmental Control Supervisor (ECS) who will:
1. Work directly with the Department SWPPP coordinator designated by the Engineer.
  2. Be available as needed to coordinate the SWPPP, inspect and maintain sediment control devices, and resolve other issues.
- C. Do not start earth-disturbing work until SWPPP is approved, and appropriate temporary erosion and sediment control measures are in place.
- D. Use the most restrictive requirement if a conflict occurs between erosion and sediment control specifications and federal, State, or local agency's laws, rules, or regulations.

### **3.2 INSTALLATION**

- A. Provide or construct measures such as check dams, silt fence, slope drains, drop-in inlet barriers, sediment traps, and other erosion control devices or methods to prevent erosion and sedimentation during construction and/or shutdown periods.
- B. Follow installation procedures outlined in the Standard Drawings.

### **3.3 INSPECTIONS**

- A. Inspect all denuded areas during construction to determine potential erosion problems. Pro-actively apply corrective measures in a timely manner as required.
- B. Inspect all sediment retention structures. Refer to Section 01574.

### **3.4 MAINTENANCE**

- A. Maintain temporary sediment control devices to ensure they function properly until all disturbed areas draining to them are stabilized.
- B. Remove and properly dispose of sediment when it has accumulated half way up the height or it interferes with the performance of the structure.
- C. Dispose of sediment removed from erosion control structures in a manner acceptable to the Engineer.

### **3.5 REMOVAL**

- A. After all seeding and mulching has been placed and just before final closeout of the project, remove any remaining sediment from behind and around erosion control features and remove all temporary erosion control features unless directed differently by the Engineer.
- B. Seed areas where the sediment was removed following Section 02922.

END OF SECTION