

## 5.14 SEDIMENT BASIN

**1. DESCRIPTION** - A basin created by building an earth dam across a waterway or low drainage area and/or by excavation. The basin temporarily detains sediment laden runoff and releases it at a reduced rate normally through a perforated corrugated metal riser and barrel assembly.

**2. PURPOSE** - To detain the sediment laden runoff long enough to allow the sediment to settle from the stormwater and become trapped in the basin. Prevents sedimentation in off-site streams, lakes and drainageways.

**3. APPLICATIONS** - The device is one of the most effective BMPs available for sedimentation control, but due to the area required for storage and the cost of construction it is usually used on larger projects with drainage areas greater than 5 acres. This application works particularly well where larger disturbed areas naturally drain toward one outlet point.

**4. LIMITATIONS** - Limitations on the use of this device include:

- The drainage area to any one basin shall not exceed 100 acres.
- Do not locate basin storage area in areas planned for future construction (i.e. buildings, pavements, structures, etc.)
- If excessive erosion occurs in area draining to the basin, the cleanup, disposal and stabilization of sediment from the basin can become a very costly operation.
- Access must be provided for heavy equipment to perform cleanout and removal operations.
- Do not locate in live streams or within 100-year floodplains.

**5. DESIGN CRITERIA** -

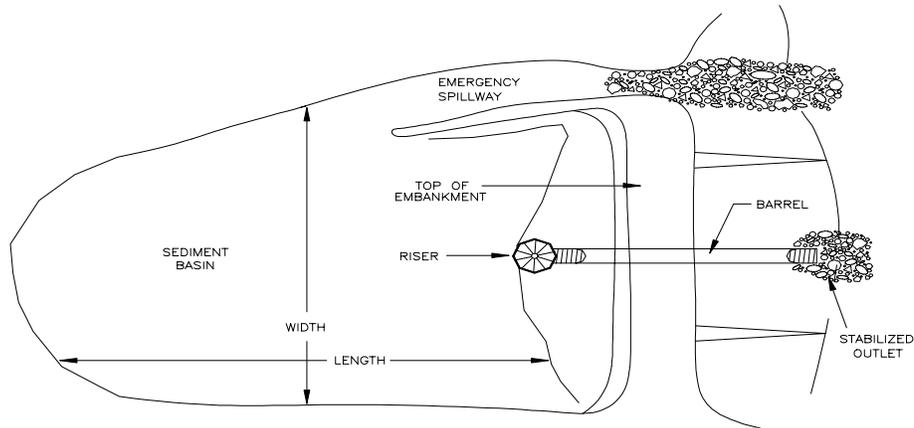
- A. Drainage Area - Less than 100 acres.
- B. Storage Volume - 1800 cubic feet per disturbed acre draining to basin.
- C. Length/Width Ratio - 2:1
- D. Surface Area - 1% of drainage area to basin.
- E. Dam Height - 6 feet (Max.)
- F. Embankment Slopes - 3H:1V or flatter on downstream face.  
2H:1V or flatter on upstream face.
- G. Top of Dam Width - 6 feet (Min.)
- H. Riser/Barrel Capacity - Peak runoff from 10-year storm event.
- I. Side Channel Overflow Capacity - Peak runoff from 100-year storm event.
- J. Basin Dewatering - ½" diameter holes spaced 10"-12" horizontally and 8" vertically from bottom of riser up to ½ of riser height. Place 1-1/2" filter stone around the outside of the riser to a height 6" above top row of ½" holes.

**6. MATERIAL SPECIFICATIONS** -

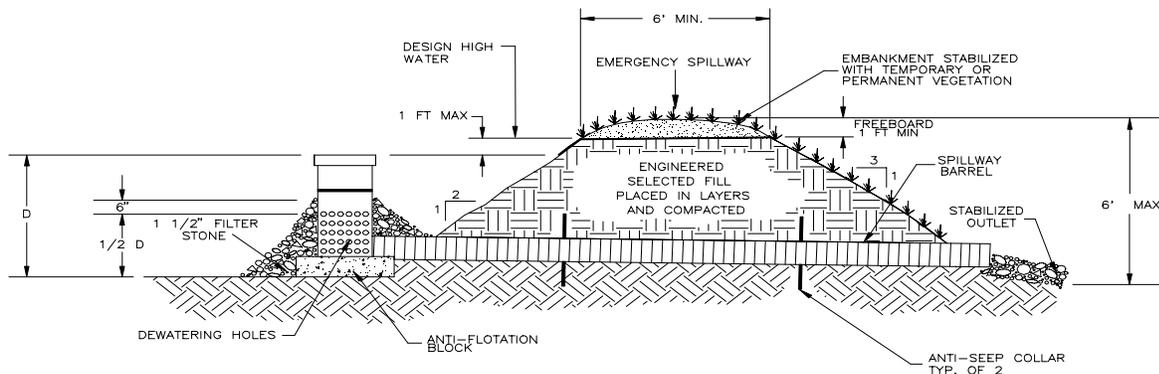
- A. Riser/Barrel - NCTCOG Specification 2.12.16.
- B. Filter Stone - NCTCOG Specification 2.1.8.(e).
- C. Concrete - NCTCOG Specification 2.2., Class B.

**D. Stone Rip-Rap** - Natural stone or re-cycled concrete meeting the gradation requirements of NCTCOG Specification Item 2.1.8.(d).

**7. MAINTENANCE REQUIREMENTS** - Periodically inspect sediment basin to ensure that facility is functioning properly. Clean out sediment and dispose of properly when the sediment storage volume is 1/2 full. Clean or replace filter stone when stone becomes clogged with sediment or facility will no longer drain properly. Check outlet of spillway barrel and downstream toe of dam to ensure that water is not flowing under the dam or along the outside edge of the spillway pipe. Check downstream channel and overflow channel for erosion and gullies and repair as needed



PLAN



SECTION

SEDIMENT BASIN/POND

N.T.S.

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