

## Stone Check Dam- Supplemental to Conveyance BMP's

**Description:** Check dams are barriers placed perpendicular to flow in a conveyance channel to reduce velocity and promote pooling and infiltration thereby providing retention.



### **WQV /Supplemental Disconnection Credit**

Runoff Retention Credit: % of WQV retained

Treatment Credit: 0%

Disconnection Credit: % of WQV retained

### **Design Criteria**

Side Slopes: 2:1 or flatter

Maximum Height above ground: 18"

Soils: Must be suitable to support infiltration

Stone size: No. 3

Extend stone 18 inches beyond ditch bank to prevent cutting around dam.

Center of check dam: 6" lower than outer edge to promote weir effect.

Additional Stability: Key in bottom to prevent undermining. 6" deep x 12" wide cutoff trench.

### **Limitations**

Check dams in grass channels may inhibit vegetation from excessive ponding/sediment.

Potential to breach during excessive flows.

### **Maintenance Requirements**

Frequent inspections and repair as needed.

Access for maintenance should be part of design.

Remove sediment (when ½ dam height).

### **Cost Considerations:**

Capital Cost: Low

O&M Cost: Low

### **Notes:**

Check dams (multiple) can be installed within grass swales, infiltration trenches and water quality swales.

Tail water is acceptable on the upstream check dam provided that the check dams are routinely inspected for damage and repaired a necessary.

The upstream face of the check dam should consists of smaller stone (No. 8) to decrease flow rate through stone. The small rocks ensures longer ponding times, which maximizes infiltration.

Geotextile can be placed between the stone and soil if necessary.

References:

2004 Connecticut Stormwater Quality Manual - <http://www.ct.gov/deep/cwp/view.asp?a=2721&q=325704>

Massachusetts Stormwater Handbook - <https://www.mass.gov/files/documents/2016/08/qj/v2c2.pdf>

New Jersey Stormwater BMP Manual - [http://www.njstormwater.org/bmp\\_manual2.htm](http://www.njstormwater.org/bmp_manual2.htm)

Virginia Stormwater BMP Clearinghouse - <http://www.vwrrc.vt.edu/swc/NonProprietaryBMPs.html>

Washington State DOT Highway Runoff Manual - <https://www.wsdot.wa.gov/publications/manuals/fulltext/M31-16/highwayrunoff.pdf>