

Water and Sediment Control Basin

Conservation Practice Job Sheet

638



Definition

A water and sediment control basin (WASCOB) is an earth embankment or combination ridge and channel constructed across the slope of minor water courses to form a sediment trap and water detention basin.

Purpose

The purpose of this practice is to improve farmability of sloping land, reduce erosion, trap sediment and reduce and manage runoff. WASCOBs are constructed across small drainageways where they intercept runoff. The runoff is detained in the basin where sediment is allowed to settle out. The runoff is slowly released through an outlet. WASCOBs generally use an underground outlet that carries the runoff in a pipe to a receiving stream or ditch.

Where used

This practice is used on cropland sites where:

- The topography is generally irregular.
- Water concentrates and causes gullies to form.

- Sheet and rill erosion is controlled by other conservation practices.
- Runoff and sediment are causing damage.
- Adequate outlets can be provided.

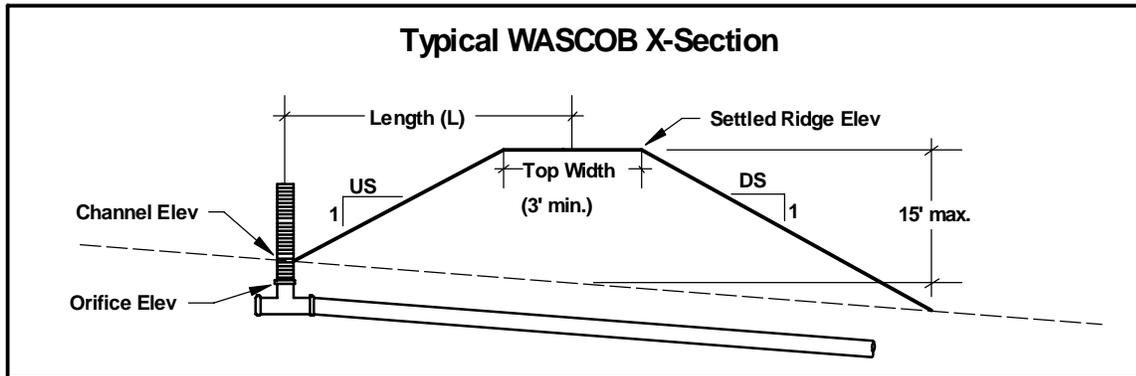
WASCOBs alone may not be sufficient to control sheet and rill erosion. For this reason, additional practices may be needed to adequately protect sloping upland areas from erosion.

Conservation management system

Crop rotations and residue management that leave the crop residues on the soil surface are commonly used in conjunction with this practice to reduce sheet and rill erosion. On fields where contouring is not practical, farming across the slope will help to reduce the velocity of runoff water.

Underground outlets from WASCOBs can provide a direct conduit to receiving waters for contaminated runoff from crop land. Install WASCOBs as part of resource management plan that addresses issues such as nutrient and pest management, residue

management and filter areas.



Earth Embankment

Construct embankments at least 5% higher than design height to allow for settlement. WASCOBs should not exceed 15 feet in height. The embankment slopes must be no steeper than 2 horizontal to 1 vertical. The sum of the horizontal components of the upstream and downstream slopes of the embankment must be 5 or greater. All slopes that will be farmed must be no steeper than those on which farm equipment can operate safely.

Minimum Top Width of Embankments

Fill Height (feet)	Top Width (feet)
0 – 5	3
5 - 10	6
10 –15	8

Basin Capacity

As a minimum, the WASCOB must have sufficient capacity to control the runoff from a 10-year frequency, 24-hour duration storm. In addition the WASCOB must have the capacity to store at least the anticipated 10-year sediment accumulation, or it must be cleaned on a regular basis to maintain the required capacity.

Outlets

A WASCOB must have an adequate outlet. The outlet must convey runoff water to a point where it will not cause damage. Outlets are usually underground outlets but other types of outlets such as pipe drop structures, soil infiltration, stabilized channels or a combination of outlet types are acceptable. The outlet should remove the water quickly enough so that crops are not injured but slowly enough to allow sediment to settle out.

Topsoil

Where necessary to restore or maintain productivity, spread topsoil over areas disturbed by construction. Topsoil can be salvaged and stockpiled from the site of the WASCOB prior to construction.

Operation and maintenance

Conduct the following operation and maintenance activities to ensure the practice works properly.

- Conduct periodic inspections, especially immediately following significant runoff events.
- Promptly repair or replace any damaged components.
- Maintain the basin ridge height and outlet elevations.
- Remove sediment that has accumulated in the basin to maintain capacity and grade.
- Regularly clean inlets for underground outlets.
- Repair or replace inlets damaged by farm equipment.
- Remove sediment around inlets to ensure that the inlet remains the lowest spot in the basin.

See site specific O&M requirements on page 3.

Specifications

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See practice standard Water and Sediment Control Basin (638).

Water and Sediment Control Basin – Job Sheet

Landowner _____ Field number _____

Purpose (check all that apply)	
<input type="checkbox"/> Convey concentrated flow runoff	<input type="checkbox"/> Other (specify):
<input type="checkbox"/> Reduce gully erosion	
<input type="checkbox"/> Protect/improve water quality	

WASCOB	1	2	3
Settled Ridge (Elev)			
Settlement Allowance (FT)			
Channel Inlet Elev			
L			
Upstream slope ratio			
Topwidth			
Downstream slope ratio			
Orifice Plate Elev			
Orifice Plate Dia (in)			
Seeding area (acres)			
Estimated fill yardage			

Main Drain Line			
Elevation			
Diameter (in)			
Grade (%)			

Site Preparation
<i>Add site specific details for site preparation</i>

Embankment Construction
<i>Add site specific details for embankment construction</i>

Underground Outlet
<i>Add site specific details for underground outlet installation</i>

Operation and Maintenance
<i>Add site specific details O&M</i>

Water and Sediment Control Basin – Job Sheet

Plan view or aerial photograph WASCOB installation site shown below.

Scale 1"=_____ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")



Additional Specifications and Notes:

Water and Sediment Control Basin – Job Sheet

As – Built Measurements

WASCOB	1	2	3
Settled Ridge (Elev)			
Channel Inlet Elev			
Upstream slope ratio			
Topwidth			
Downstream slope ratio			
Orifice Plate Elev			
Orifice Plate Dia (in)			
Seeding area (acres)			
Main Drain Line			
Diameter (in)			
Grade (%)			

CHECK OUT:

Amount Completed: _____ number. Mark As-Built location on plan map

Remarks _____

Checked by: _____ Date: _____

Approved by: _____ Date: _____

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