Storm Water Detention Basin

- **Purpose** – To reduce the volume, intensity, and sediment load of storm water runoff.

- **Justification** – Storm water flows are often so intense that they overwhelm on-farm drainage systems and flood into public ditches, drains and roads. These high flows of water remove large amounts of soil which increase flooding potential and decrease farming potential.

- **Objective** – Slow the water down, allow more water to infiltrate, drop out most of the sediment load and cause water leaving the field to be cleaner, slower, and lower volume.

NRCS Engineer observes weir flow in a storm water detention basin.

The Resource Conservation Districts and the USDA Natural Resources Conservation Service can advise farmers and ranchers on alternatives for runoff management and soil erosion control.

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Storm Water & Sediment Control

Storm water and Sediment!
Have you ever wondered
how to manage it?

Trap it, keep it,
temporarily store it,
detain it.

But why?

This pamphlet describes structures that can be placed on farms to control storm water runoff. No portion of this pamphlet is engineered, designed or to scale. Please see the accompanying brochure entitled “In-Field Runoff Detention in the Salinas Valley Eastside” for more information.

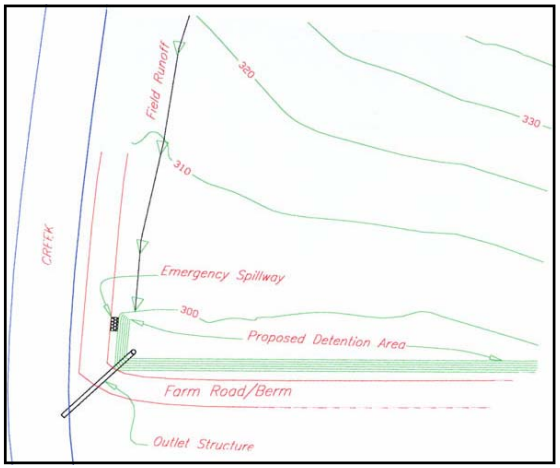
An elevated berm will hold water in this field when a cash crop is not present.

An anti-seep collar (pictured above) is made of concrete or sheet metal with mastic coating. This prevents seepage from degrading the compacted fill surrounding the outlet pipe. If anti-seep collar is not installed, saturated conditions will gradually cause the berm to fail.

Key Components of an In-Field Storm Water Detention System

- ***Berm*** **-** The road around the low corner of the field was built up with soil. The sides of the berm or embankment are most effective if covered with vegetation.
- ***Berm height*** **-** Should be one foot higher in elevation than the top of the inlet pipe.
- ***Emergency spillway*** **-** A portion of the berm that is lower than the majority of the berm. Under maximum runoff conditions, water will exit through the secondary or emergency spillway rather than over the top of the berm.
- ***Outlet pipe*** **-** Can be slotted or flash board. In the drawing, it is the field area contributing runoff to all furrows and ditches leading into the low portion of the detention area.
- ***Slope***– As the length and steepness of slope increase the volume and intensity of flow increase.
- ***Slotted pipe riser***– The purpose of a slotted pipe riser is to provide a controlled outlet for storm water. Under light runoff conditions, the water is allowed to gradually exit the basin through slots in the side of the pipe. If runoff increases then the water exits through the top of the pipe.
- ***Soil cover***– A watershed that is predominantly covered by grass will allow less runoff than a parking lot covered with asphalt.
- ***Watershed***– Funnel type area that will contribute run off water to the basin. Volume depends on the size of the watershed.

Slotted Riser with six inch base set in concrete.



Plan view of detention area.

Water entering slotted pipe riser.