

BMP 11.00. Interception Ditch

DESIGN CONSIDERATIONS

Objectives

The purpose of an Interception Ditch is to intercept run-on and direct it to a stabilized area where it can be safely discharged.

Description

An Interception Ditch is a berm of compacted soil or an excavated swale, or combination berm and swale constructed across a slope.

Other Names

Interceptor Ditch, Crown Ditch, Interceptor Swale, Interceptor Dike, Water Bar.

Applicability

This measure should be used in construction areas where run-off can be intercepted and disposed of properly to control erosion, sedimentation, or flood damage. Interception Ditches may be either temporary or permanent and are used in variety of situations to provide storm water protection. When used above disturbed existing slopes or above cut or fill slopes, an Interception Ditch prevents run-off over the slope. Across unprotected slopes, it acts as slope breaks to reduce slope length. When used below slopes, it diverts excess run-off to stabilized outlets. It can also be used to divert sediment-laden water to sediment traps, to divert water around buildings or areas that are subject to damage from run-off, and at or near the perimeter of the construction area to prevent sediment from leaving the site. Prior to stabilization of disturbed areas, an Interception Ditch diverts water around the area to prevent erosion and maintain acceptable working conditions. Along paved surfaces, it conveys run-off to an appropriate discharge location.

Selection Considerations

- Berms to intercept and divert run-off should not be used where the drainage area exceeds 10 acres.
- Interception Ditches should be carefully designed where longitudinal ditch slopes are steeper than 10 percent.

- Provide check dams or riprap in ditches with steep slopes to decrease the velocity of stormwater.
- Provide energy dissipation measures at ditch outfalls.
- Ditches that become sediment laden may need supplemental BMPs, such as a sediment trap.
- The ditch must be sloped to provide positive drainage to the outlet.

Design

The location of the Interception Ditch should be determined by considering outlet conditions, topography, land use, soil type, and length of slope. The ditch should be designed for a minimum freeboard of 0.3 feet to one foot with the capacity of the 10-year peak run-off storm for a permanent structure and the 2-year, 24-hour peak run-off storm for a temporary structure.

Relationship to Other Erosion and Sediment Control Measures

Intercepted run-off should outlet to a stabilized area such as a sediment basin, detention or retention basin, or stabilized outlet, which should be established prior to introducing run-off from the Interception Ditch. An Interception Ditch can direct stormwater to a slope drain to convey water to a stabilized outlet. This measure is different from Temporary Diversion Conveyance because it is not for concentrated or stream flow.

Common Failures or Misuses

- Berm not properly compacted during construction, resulting in uneven settling.
- Ditch not properly sloped to the outlet.
- Construction traffic damage to the ditch.
- Sediment accumulation against berm/channel not removed periodically, resulting in berm not functioning properly.
- Excessively steep, unlined ditches resulting in erosion.

SPECIFICATIONS

Standard Specification

- 673 – Interception Ditch

Drawing

- BMP-11.00 Interception Ditch

INTERCEPTION DITCH NOTES:

MATERIALS

DITCH LINER: AS SPECIFIED IN THE PLANS OR USE PLASTIC LINING.

BERM: SANDBAGS, COMPACTED SOIL, OR EQUIVALENT MATERIAL.

ENERGY DISSIPATER: RIPRAP OR SANDBAGS.

INSTALLATION

1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, OR OTHER OBJECTIONABLE MATERIAL.
2. FILL AND COMPACT ALL DITCHES, SWALES, OR GULLIES THAT WILL BE CROSSED TO NATURAL GROUND LEVEL.
3. EXCAVATE, SHAPE, AND STABILIZE THE DITCH TO LINE, GRADE, AND CROSS SECTION AS REQUIRED IN THE PLANS.
4. COMPACT THE BERM TO PREVENT UNEQUAL SETTLEMENT AND TO PROVIDE STABILITY AGAINST SEEPAGE.
5. STABILIZE THE DITCH AND BERM AFTER INSTALLATION.
6. INSTALL ENERGY DISSIPATER.

INSPECTION

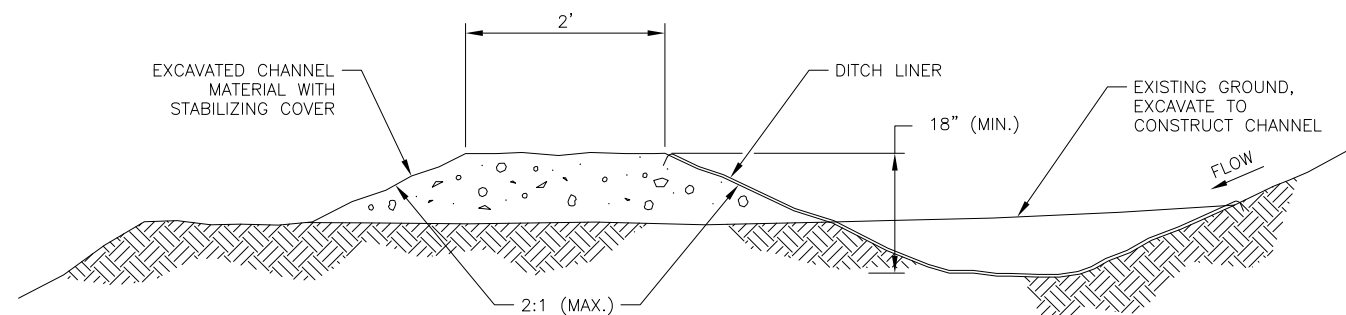
1. INSPECT DITCH FOR EROSION.
2. INSPECT DITCH FOR SEDIMENT ACCUMULATION AND DEBRIS.
3. INSPECT FOR WASHOUTS.

MAINTENANCE

1. REMOVE ANY SEDIMENT OR OTHER OBSTRUCTIONS FROM THE INTERCEPTION DITCH.
2. REPLACE RIPRAP AND DAMAGED LININGS AS NEEDED.
3. CHECK OUTLETS AND MAKE REPAIRS AS NECESSARY.

REMOVAL

1. AFTER DISTURBED AREA IS STABILIZED OR INTERCEPTION OF STORM WATER IS NO LONGER NEEDED, RESTORE THE DITCH TO EXISTING OR CONSTRUCTED GRADE FOR TEMPORARY INSTALLATIONS.
2. SEED AND MULCH DISTURBED AREA.



INTERCEPTION DITCH
NOT TO SCALE

REVISIONS		
Date	Description	By

State of Alaska DOT&PF

**INTERCEPTION
DITCH**

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P
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V
E
D

Date 12/2015 XX/XX/XX