Stream crossings

What permits are required for gaining temporary access, permanent access and installing utility lines across a stream, or wetland.

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Types of permits required

General permits: GP-7, GP-8, GP-5
General Permit 7- Minor Road Crossings
- Used for permanent access to a property
- Can be used when there is < 1 sq. mile or less watershed draining to crossing.
- Can also be used to remove an existing bridge or culvert.
- Cannot be used in EV (exceptional value waters)
- Cannot be used for stream enclosures
- Can be used to cross wetlands with the following conditions:
  - Length of crossing is less than 100 feet
  - Total wetland area is less than .1 acre
Conditions of the GP-7

- must be completed within 3 years of permit issuance
- No additional fill should be placed in the floodway which includes the approaches to the crossing. Approaches should be constructed at original grade.
- Bridge and culverts should have an opening to adequately pass a “bank full flow” of the stream.
- Headwalls and endwalls should be installed to prevent an instable situation.
- Bridge abutments should be set well into the banks of stream as to prevent obstructions.
- Culverts shall be installed with an invert 6” below the natural stream bed.
- Spacing of culverts and bedding requirements shall be in accordance with manufacturer’s specification of the pipe.
- Depth of fill over the pipe should “not exceed” the minimum required by the manufacturer.
Common culvert and bridge projects that require GP-7
GP-8 Temporary road Crossings
pipe and timber mat bridge use
GP-8 conditions

- Crossings can be installed and left in place for 1 full year. (can be extended by DEP or Conservation district.
- Not to be installed during Stocked trout streams from March 1 through June 15.
- Cross at right angle to stream.
- Culvert must provide sufficient flow for normal conditions.
- Culvert must be installed to allow for overtopping within the confines of the stream channel. (a dip with minimal fill over pipe to allow for flood flows.
- Culvert should be as large as possible as to minimize fill placement.
- Multiple pipes can also be used if 1 large pipe cannot be used.
An 8" thick layer of AASHTO #1 stone shall be maintained for a minimum distance of 50' from top of bank on both sides of stream channel.
Problems with crossings

1. Fill over pipes is too high (4-5 feet)
2. Fill is not Clean Rock
3. Pipes are directing flow into stream bank causing erosion
4. Crossing is not depressed as to allow overflow of water
Multiple pipes are used to carry normal flow

Keep 1-1.5 feet of clean rock fill over pipes
Timber mats are used for wetland crossings, temporary bridge use, and crossing soft areas.
Stream crossing methods with utility lines GP-5
Crossing Guidelines

- Utility lines should be 3 ft under bed of stream
- Completed in low flow when possible
- Should be at Right angle to bank
- Supervisor for foreman must notify Fish commission 10 days Prior to start.
Pipes must be 3’ under the bed of stream. If solid rock is encountered, pipe can be installed on top, but cannot protrude above bottom of stream Bottom.
Construction Methods

- By-pass Pump around
- Pipe Fluming of stream
- Coffer Dam
By-pass Pump
Around detail
Installing a pump bypass system to do bridge and culvert work
First is to install the pump in the location, set up hoses in the intake and outfall locations.

Intake side near sandbag dam
2. The intake hoses are placed in stream

3. Sandbags are placed above work areas
Work area is fairly dry. Sandbags are also wrapped in plastic for a uniform seal.
Discharge hose needs to be placed in a stable rock area or plastic sheeting
Pumping the dirty water
Dirty water must be pumped into a geotextile Filter bag with a separate pump.
Make sure hose is Connected well

Bags must be installed in thick Vegetation or on a bed of Stone That drains to a stable area
The filter bag can be set near the stream bank
As long as there is a strip of fabric under bag and
Over stream bank to stream.
Please do not lay filter bag in a flowing Stream!

This is an obstruction and If bag rips open, a major sediment Pollution problem!
Clean water hose

Geotextile placed to prevent washout from Pump water

Filter Bag On vegetated area

Pump By-pass method for pipe installation
This would not be a good alternative for a filter bag!
What not to do:

Pumping water into a pit is not acceptable means to filter sediment!
Flume installation
Bridge re-construction project
Using flumes to by-pass stream
Bridge replacement with major Stream to bypass
Make sure that the sandbags direct the water into the flume.
Coffer Dam installation
Coffer Dam standard DEP details
Jersey barriers must be wrapped in plastic and sandbags used to seal off Sections.
Stabilizing the stream banks after installation
Blankets can be used in lieu of Riprap near HQ/EV
Straw blankets can be used with riprap placed at the toe of the bank.
Using R-3 rock is too small, it washes away easily. R-4 is a minimum, but engineer should size properly.
There is a little too much rock placed on the bottom which could obstruct the stream flow