

# STANDARD OPERATING PROCEDURE (S.O.P.) FOR: STORMWATER BASIN INFILTRATION RATE TEST

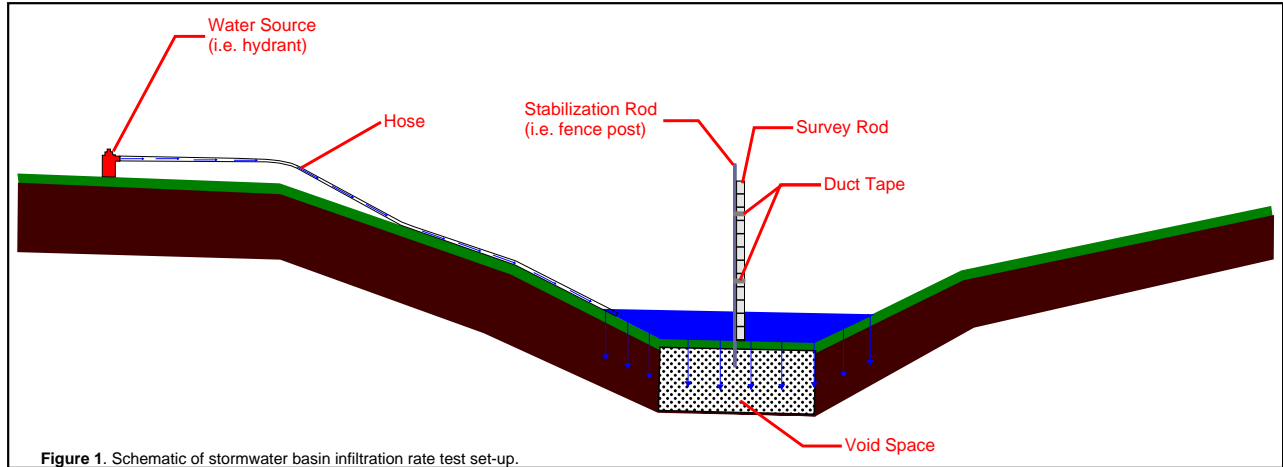


Figure 1. Schematic of stormwater basin infiltration rate test set-up.

The main conditions to be confirmed are:

1. The location and size of the stormwater basin is in agreement with the approved/permitted plan set.
2. Field calculated infiltration rate meets or exceeds the permitted infiltration rate in proposed documents.

**TEST SUPPLIES: 1.) Stabilization rod, 2.) Survey rod, 3.) Rubber mallet, 4.) Duct tape, 5.) Flow meter and hose (conditional)**

The following steps may be completed at multiple visits as a project progresses or in one final project approval inspection:

## Step 1: Procure water source

For this test, two water sources are generally used:

- 1.) *Fire hydrant.* The permittee will need to make arrangements with the local water utility for the use of a nearby fire hydrant. If the permittee uses a hydrant they may also need to procure a hose and flow meter for the test.
- 2.) *Water tanker.* A water tanker may also be used for smaller basins. The water tanker should be able to supply the hose and flow meter.

## Step 2: Compare site conditions with the approved Plan Set.

Make sure site conditions match these details:

- Size and location of stormwater basin match the approved/permitted plan set.
- Erosion Control measures, restoration plan, and planting/landscape schedule matches the plan set.
- The calculated infiltration rate (see Step 4) matches the design infiltration rate.

## Step 3: Position stabilization and survey rod

First position the stabilization rod into the bottom of the infiltration basin. One stabilization rod that is commonly used is a fence post. This is where a rubber mallet might be handy or you may have to dig a hole about 1-2 feet deep to position the rod.

When the stabilization rod is in position, secure a survey rod to the stabilization rod using duct tape or some other adhesive. You will need to position the survey rod so that it can be accurately read from outside of the basin. You will be filling the basin up with 1 to 2 feet of water, so this may be a large portion of your lower basin. See Figure 1 for details.

## Step 4: Fill basin with water and calculate infiltration rate

With the hose securely in position, begin to flood the basin. Fill the basin with 1 to 2 feet of water. Make sure the void area is fully saturated before the water is turned off. Calculate the infiltration rate and then convert the rate to inches/hour and compare to the documented infiltration rate.

If there is difficulty filling the basin to 1 or 2 feet, after it seems the void space is fully saturated, it can be determined that the infiltration basin is installed and functioning properly.

**NOTE:** Do not perform the infiltration test during a rain event, after a large rain event, or if standing water is observed.

INFILTRATION RATE CALCULATION	
ACTUAL	CALCULATED
1 MINUTE: ( ) INCHES x 60 = ( ) INCHES PER HOUR	
5 MINUTES: ( ) INCHES x 12 = ( ) INCHES PER HOUR	
15 MINUTES: ( ) INCHES x 4 = ( ) INCHES PER HOUR	
30 MINUTES: ( ) INCHES x 2 = ( ) INCHES PER HOUR	
60 MINUTES: ( ) INCHES x 1 = ( ) INCHES PER HOUR	

