

General Permit Worksheet Culvert Placement on Navigable Waterways

This worksheet should be completed and accompany all application materials (Waterway General Permit Application and Approval - Form 3500-108) and any other additional support documents.

Project Start Date (mm/dd/yy): _____

Be aware of the construction season prohibitions:
(A construction waiver must be approved by the local fisheries biologist)

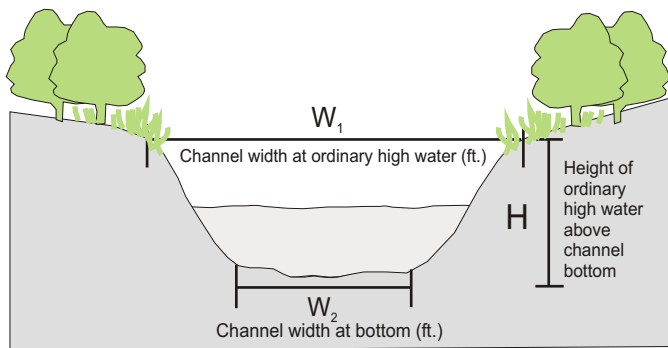
Trout waters and their tributaries: 9/15 - 5/15
Warmwater streams North of Hwy 29: 4/1 - 6/1
Warmwater streams South of Hwy 29: 3/15 - 5/15

Will the proposed project affect the navigational use of the waterbody? Yes No

If "Yes", the following portage will be provided (describe portage): _____

CULVERT SIZING

To be eligible for a general permit without a professionally engineered culvert design, the required culvert area may not exceed 20 square feet. To be eligible for a general permit with a professionally engineered culvert design, the required culvert area may not exceed 40 square feet.



Calculating Culvert area

To determine the required culvert area, 3 measurements should be made: channel width of the stream in feet at the ordinary high water mark (W_1), channel width of the stream in feet at the stream bottom (W_2), and the height in feet of the ordinary high water above the stream bottom (H) (see diagram). These 3 measurements are made at each of 3 locations or transects along the stream: the location of the proposed crossing, 100 feet upstream from the crossing, and 100 feet downstream from the crossing. The individual measurements of W_1 , W_2 and H are averaged to derive the final W_1 , W_2 and H values. The required culvert area is then calculated with the following equation:

Required Culvert area (square feet) = $H \times (W_1 + W_2)$

Height: * W_1 + W_2 = Culvert Area (square feet)

Culvert area and corresponding round culvert size

Culvert area (sq ft)	Culvert diameter (in.)	Culvert area (sq ft)	Culvert diameter (in.)
1.80	18	3.10	24
4.90	30	7.10	36
9.60	42	12.60	48
15.90	54	19.60	60
23.80	66		

The following erosion control measures will be employed:

- Silt fence Erosion Mat Other _____
- Seeding/Mulch Riprap _____