

## Arizona State Standard 5-96

### Example for Determination of Wash or Drainage Easement Natural Erosion Protection Minimum Setback Distance

Natural erosion protection will be evaluated based the Arizona State Standard 5-96 recommended setback to a watercourse utilizing the minimum 25' setback or recommended setback to a watercourse, whichever distance is greater.

For watercourses which have drainage areas of less than 30 square miles, the recommended setback allowances are as follows:

for straight channel reaches or reaches with minor curvature:      setback =  $1.0(Q_{100})^{0.5}$

for channels with obvious curvature or channel bend:      setback =  $2.5(Q_{100})^{0.5}$

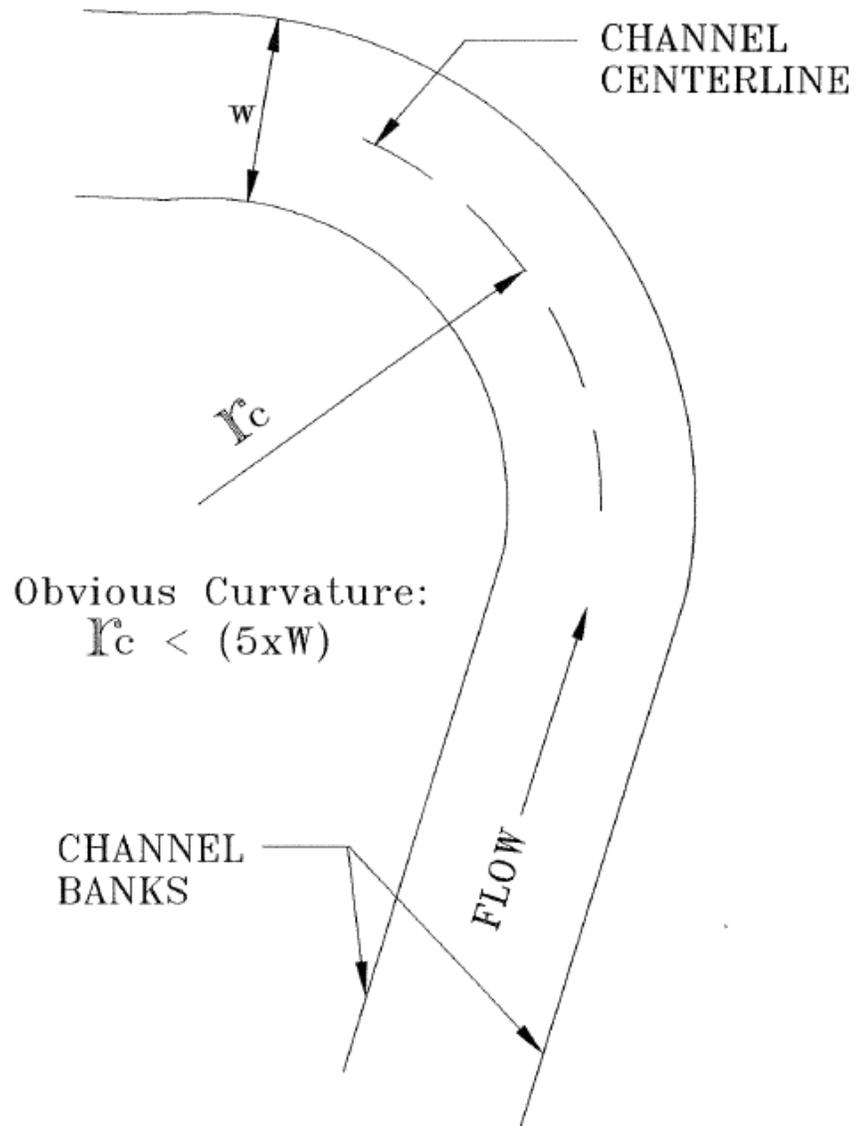
where setback is in feet and  $Q_{100}$  is in cubic feet per second.

#### Examples:

“Straight Channel” Wash $Q_{100} = 125$ cfs	$1.0(125)^{0.5} = 11.2'$	Use 25' minimum setback distance
“Straight Channel” Wash $Q_{100} = 750$ cfs	$1.0(750)^{0.5} = 27.4'$	Use 50' minimum setback distance
“Channel Bend” Wash $Q_{100} = 80$ cfs	$2.5(80)^{0.5} = 22.4'$	Use 25' minimum setback distance
“Channel Bend” Wash $Q_{100} = 125$ cfs	$2.5(125)^{0.5} = 28'$	Use 50' minimum setback distance

Obvious curvature is defined as a channel centerline with a radius of curvature less than 5 times the channel top width.

A sketch is provided below to help differentiate between minor curvature and obvious curvature.



### CHANNEL CURVATURE

#### Examples:

$r_c = 25'$	$w = 8'$	$5 \times 8' = 40'$	Obvious Curvature
$r_c = 25'$	$w = 4'$	$5 \times 4' = 20'$	Minor Curvature