Practice Title

Concrete or sheet piling

Photo(s)




Summary of Practice

Concrete wall or sheet piling is a method often used in flood and erosion control where there is not enough space to slope the bank. In the case of sheet piling, interlocking steel sheet piles are driven into the ground, side by side, creating a vertical wall on the bank. Similarly, concrete can be poured to create the same effect, and usually uses steel reinforcement bars to increase the wall's strength.

Impact on Stream and Floodplain Processes and Functions

The concrete or metal wall acts to limit the stream's access to its floodplain and often lead to down-cutting into the channel bed. High velocities and erosion damage may occur downstream since the walled section often has a firehouse effect, increasing the water's velocity. Vertical walls also create barriers to the movement of wildlife such as turtles, frogs, and salamanders**.**

Impact on your Property

Concrete or sheet piling is often only a temporary remedy to flooding and erosion. The structures often must be repaired, making it a costly flood-prevention measure. These measures also often make it difficult to access the stream due to their steepness.

Impact on Neighbor's Property

Similarly to channelizing, concrete or sheet piling creates a smooth channel with no resistance to stream flow. The velocity of the stream increases and can cause erosion problems for downstream neighbors.

Recommended Use

Retaining walls are commonly used for streambank protection, particularly when there is not sufficient space for a sloping bank that is connected with its floodplain. Sheet piling stabilization is a very expensive method of streambank protection and is sometimes only a temporary measure. Proper design is necessary to protect against erosion. This method is generally recommended only when other options are not available. Please contact info@catskillstreams.org to schedule a site visit from a local resource professional that can advise on the best options for your streamside.

Permits Needed

In-stream work will require a DEC Article 15 Stream Disturbance Permit. An ACOE permit is required when more than 25 cubic yards of fill material will be used below the "ordinary high water mark" (the approximate yearly flood level); the DEC can advise you about determining these limits. Please contact info@catskillstreams.org to schedule a site visit from a local resource professional that can advise on the best options for your streamside.

Resources (Links, Articles, etc.)

http://www.dnr.state.oh.us/water/pubs/fs_st/streamfs.htm

http://www.anr.state.vt.us/dec/waterq/rivers.htm

Text Sources

Thigpen, Janet. 2006. Stream Processes: A Guide to Living In Harmony with Streams. Chemung County Soil & Water Conservation District. Available of web: http://www.chemungcountyswcd.com/homepage.html.

Photo Sources

Mark Watts, Chemung County Soil and Water Conservation District