IHB – Between MD 117 and In-Stream Stormwater Management Structure

Long Draught Branch Stream Restoration Project

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Origins

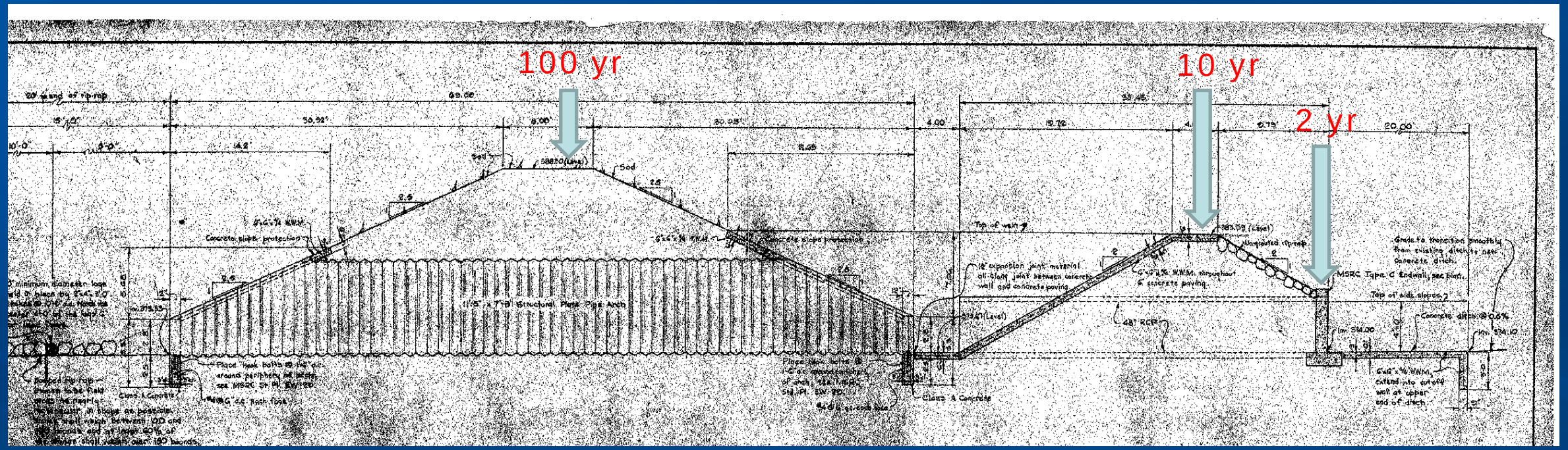
- Stream restoration in lieu of stormwater management for the widening of MD 117
  - The Robertson property was obtained in 2008 by the SHA in order to complete the stream rehabilitation
  - Original design rejected by regulatory agencies due to heavy tree impacts

Purpose

Failing Dam

In Line Stream SWM Structure; A.K.A Dam

Attenuated the 2, 10, and 100 year storm events



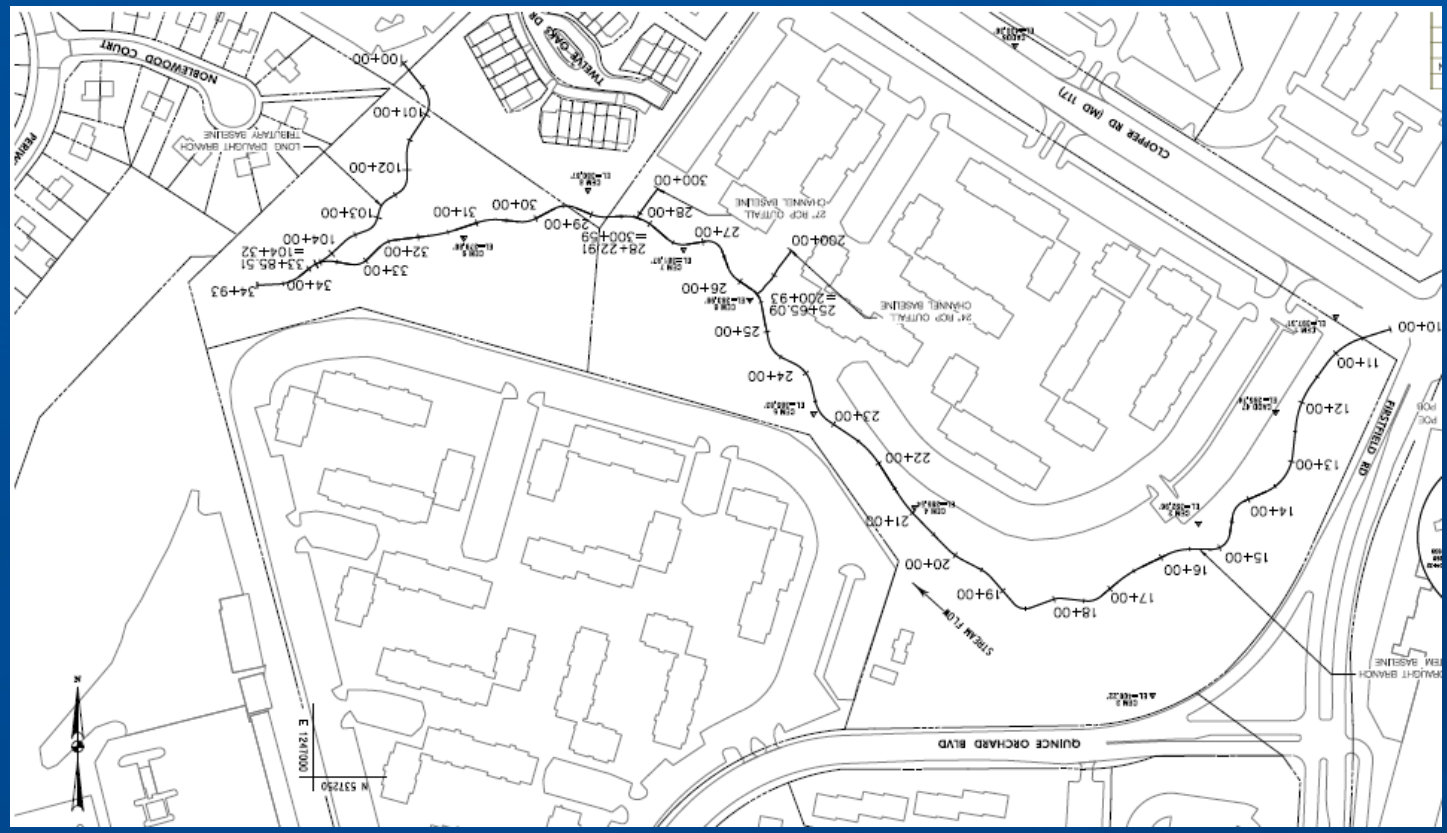
Project Description

- Stabilization of the stream banks
- Reduced nutrient loading
- Improved habitat
- Removal of the failing Dam

Project Location

Stream Geometry

2500 linear feet of stream work, not including the three contributing outfalls, will stabilize and improve the degraded section of Long Draught Branch Stream between Clopper Rd and the SWM dam.



Channel Stability

- Stabilizing the stream banks will reduce long term erosion.
- Neighboring properties will be protected.

- This picture was taken in 2011.
- As an example of how far the banks have eroded in some places, the light pole you see to the right of the channel is now collapsed into the stream.

Outfall Stabilization

- Pipe leaving the NEA property

Wetlands

- Current design reduces impacts to existing wetlands by 75% over the 2008 design

Dam Removal

- A series of riffle grade controls, vanes, and sills will bring the channel elevation upstream of the removed dam to the elevation of the bedrock downstream of the dam

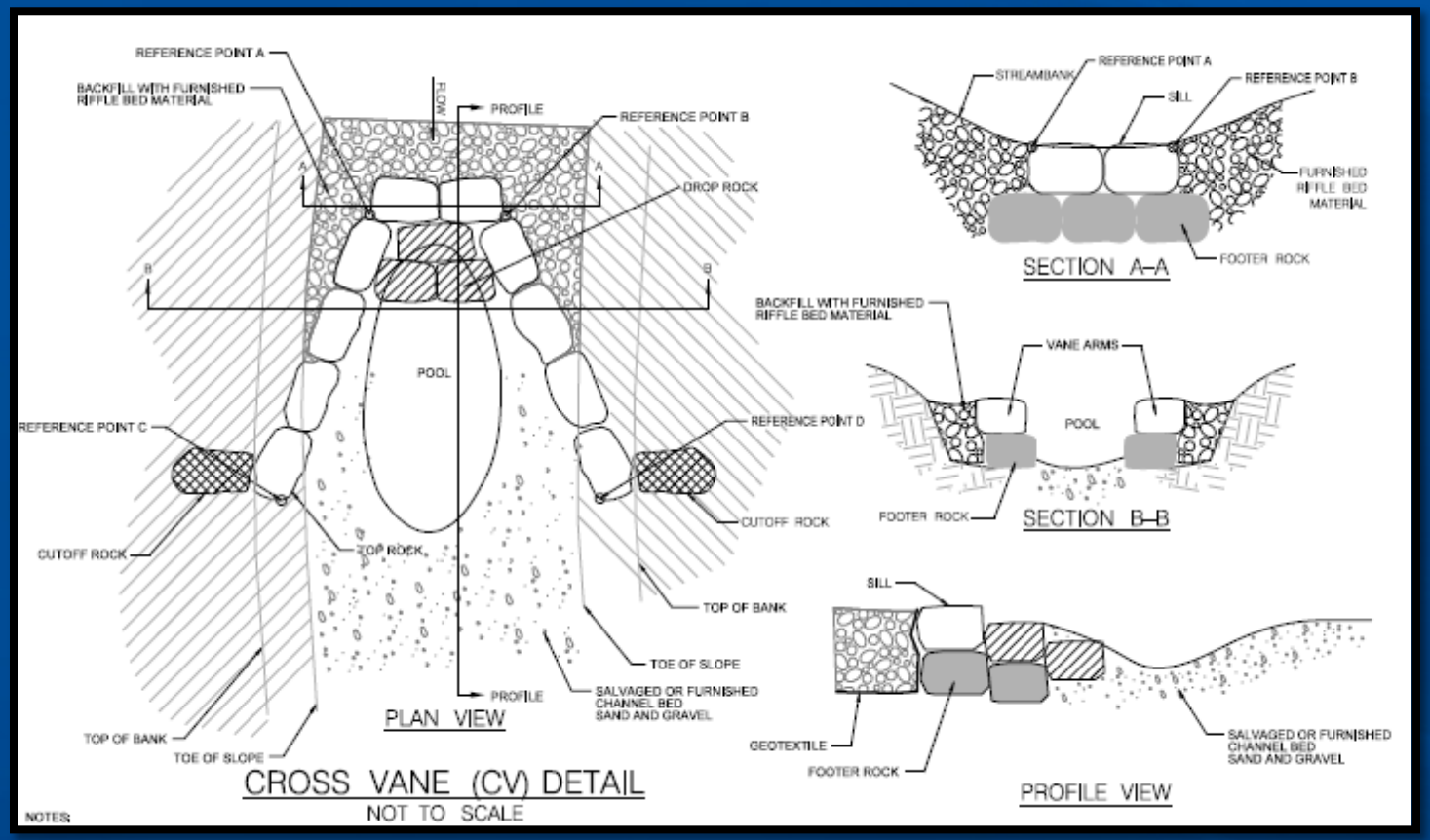
Joint separation within the 10 year spillway

Design Highlights

- Why did we design the features that we are using on this project the way we did?
  - Natural Channel design

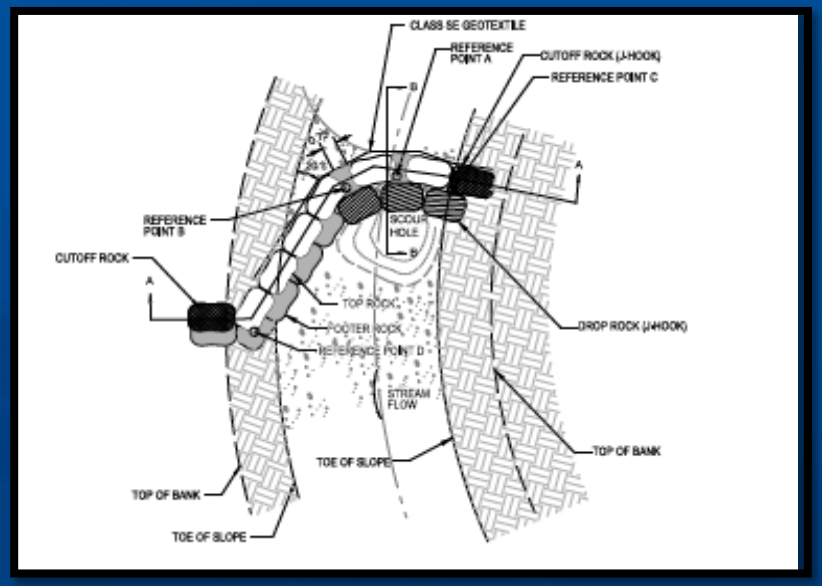
Cross Vane

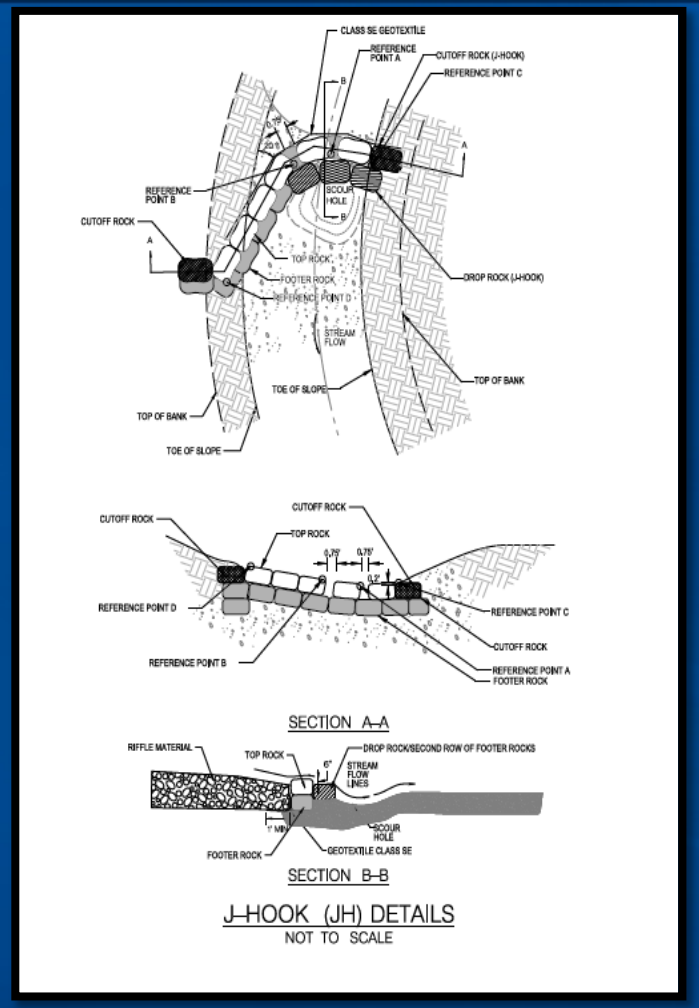
- Stone structure that steps down the channel elevation
- Provides a natural sorting of bed material
- Provides instream cover/habitat



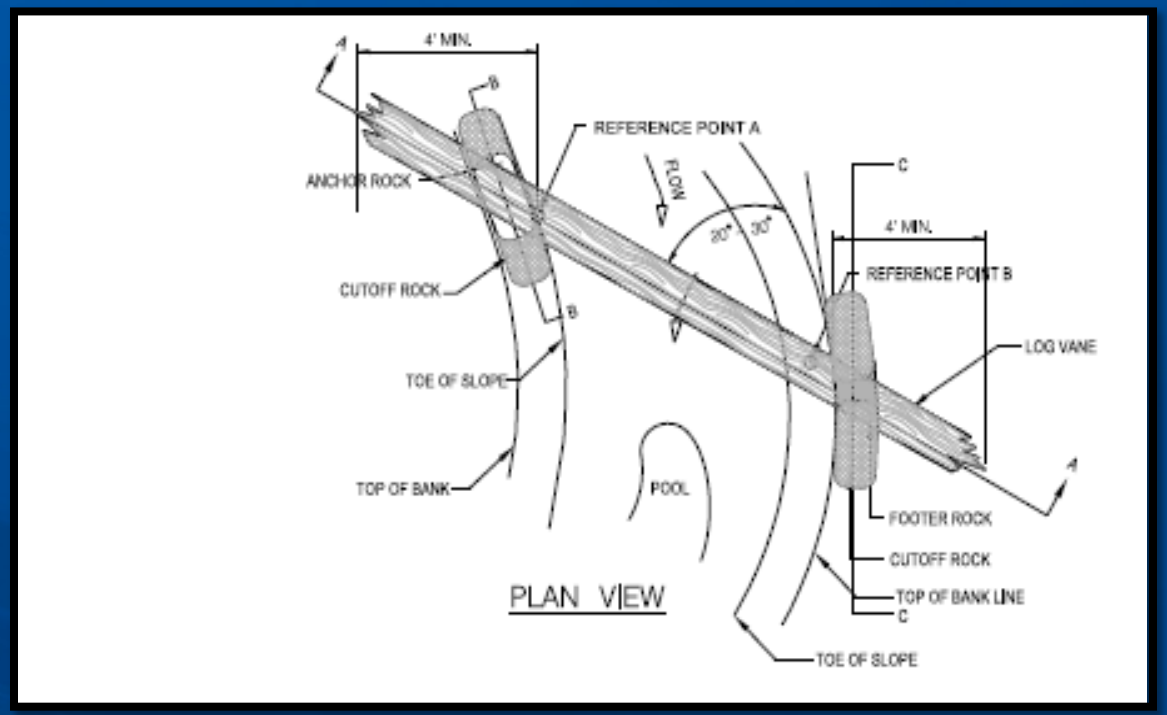
J-Hook

- The J- portion of the hook is set within the main channel of the stream
- Redirects velocities away from the bank
- Creates a ‘holding’ zone for fish
- Portions of it stabilize the bank

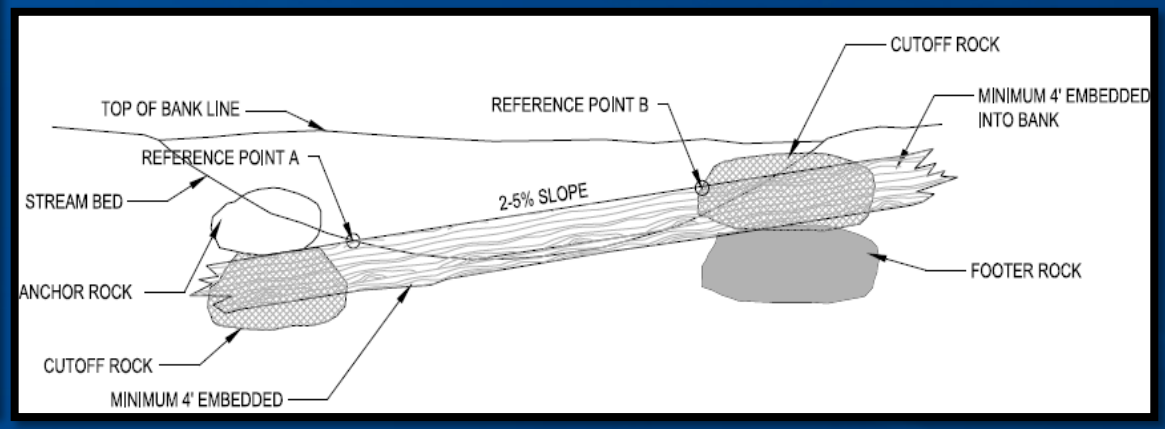




Log Vane



- Hard wood log, set at an angle to the flow of water
- Meant to tumble and turn the water
- Decreases stress on the bank
- Provides habitat



Overall Project Benefits

- Remove the failing SWM dam
- Improve Water Quality
- Stabilize the existing infrastructure
- Increase habitat
- Enhance the aesthetic value of the stream corridor

SHA State Highway Administration
Maryland Department of Transportation

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THANK YOU!