

Memo

TO: Mr. Joe Bush – Ottawa County Water Resources Commissioner

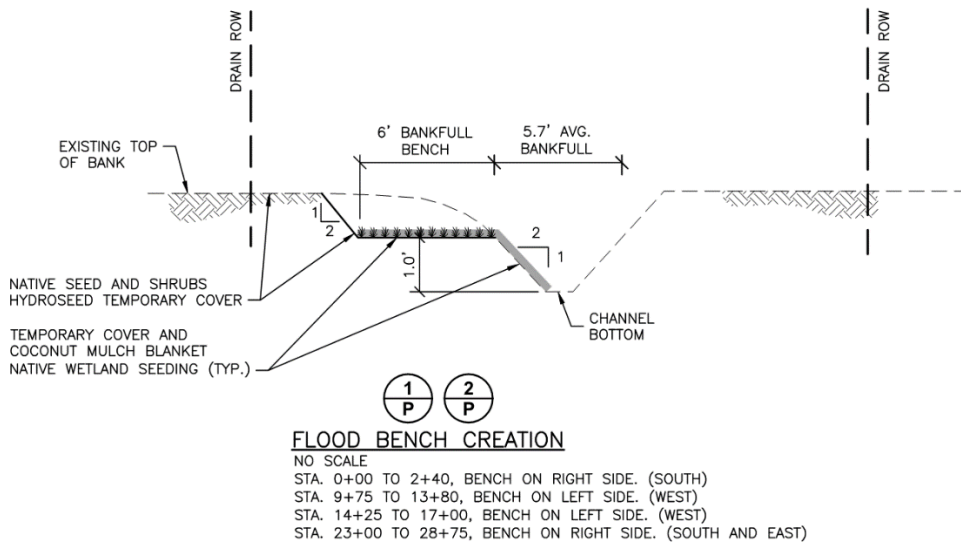
FROM: Cheryl L. Pitchford

DATE: September 30, 2020

PROJECT NO.: 181570

RE: Tulip Intercounty Drain – 319 NPS Grant
Flood bench Concept Talking Points

- Flood benches are proposed to reconnect floodplain areas with the stream channel.
- Benefits of Flood benches:
 - **Improve water quality** – wetland vegetation removes pollutants (phosphorus, nitrogen, sediment)
 - **Larger cross section** – lowers water surface – as water spreads out laterally rather than vertically
 - **Less flooding** due to larger channel cross section
 - **Reduced erosion** - bed and bank scour and erosion
 - **Reduced sheer stress** on toe of channel banks, resulting greater channel bank stability
 - **Captures sediment and silt** containing nutrients and pollutants
 - **Wildlife and aquatic habitat** foraging, shelter and resting areas
 - **Reduces maintenance** as a self-sustaining, natural system is achieved
- Flood benches will be planted with native vegetation.
- Tree removal will be minimized.
- No work outside drain easement area without resident authorization.



Sample flood bench detail – NOT associated with Tulip Drain



Before construction



One-year post construction