AASHTO Subcommittee on Construction Conference

Minimizing The Environmental Impact Of Bridge construction Over Wetlands And Rivers

New Top-Down Bridge Construction

Washington Bypass US 17

Chicago, Illinois
August 4th 2009

FLATIRON/UNITED, JV.

EARTH TECH | AECOM
Project Team

- Project Owner: North Carolina DOT
- Design-build Team: Flatiron/United JV
- Engineer Of Record: Earth Tech / AECOM
Tar River Bridge

- 3 Miles Long Bridge 72’ wide for typical span
- Over Wetlands and the Tar River
- Precast Concrete 30” Square Hollow Piles
- Precast Match Cast Segmental Pier Cap
- Precast Concrete Girders Mod 72” Bulb T, 120’ Spans
- Cast-in-Place Deck with Stay-In-Place Forms
- Top-Down Bridge Construction Without Trestles or Cranes
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Construction Methods

FLATIRON/UNITED, JV.
Bridge 2
US 17 Over Tar River
1) A pile is delivered to the Overhead Truss and positioned in the pile driving lead.
2) The pile is rotated in the lead.
Pile Driving

3) The pile driving lead is tilted and the pile is positioned on location.
4) The pile is driven using the hammer mounted to the fixed tilting lead.
5) The remaining piles are driven while the previous span deck SIP panels and rebar are being installed.
6) The precast bent shell sections are positioned and secured to the piles.
7) The previous span deck is poured and the Launching Truss is prepared to move to the next span.
8) The girder is erected and secured using the two overhead trolleys.
Girder Erection

9) The remaining girders are being erected and secured
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Construction Methodology: Pile Tilting