12 Mile Road over the Charlotte River

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Ice is a terrible bridge building material
12 Mile Road over the Charlotte River
Project Facts

• Original Structure – two 8’ diameter steel pipes, 30’ long, 5’ space between pipes
• New Structure – 30’ span, 30’ length
• Carries two lanes of traffic
• Earth moved – 4,000 cyd
• Three week road closure
• Total construction time – approx 1 month
• Total cost (less failed attempt in 2016), $350k
Why is this project unique?

Structure Type – First pre-stressed, post tensioned, “clamshell” type structure in North America

Multiple stakeholders – CCRC, UP Conc. Pipe, Lake Superior Watershed group, Bruce Township

Small Scale “modified” design-build method, use CCRC forces for most site work, assembly directed by UP Pipe

Toothpaste consistency clay soil, site prone to flooding, organic material in bottom of excavation
Overview of Site
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CCRC’s Role

- Survey Data Collection
- Site Design
- Permit acquisition
- Dewatering
- All excavating and provide labor for assembly
- Coordinate shut down of overhead transmission line

UPCP’s Role

- Precast Design (Salmons)
- Foundation Design (Gregg Kingstrom, UPEA)
- Manufacture Precast
- Transport precast to site, guide assembly
2016 failed attempt
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Why not a conventional bridge?
2017 Construction
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