DESIGN-BUILD OF THE INDIAN RIVER INLET CABLE STAYED BRIDGE

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DelDOT Winter Workshop  
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Presentation Overview

- Construction Update
- Design Considerations/Challenges
- Updated Construction Schedule
- Questions
Our Goal…
Site Tour Facts

You may be missing out:

- 1,000 students from all over the state.
  - 20 school groups
  - 14 colleges
- Over 240 DelDOT employees from 13 different sections.
- We have gone to 8 different schools to date.
  - By years end we will have presented to approximately 1,500 students state wide.
- Secretary of Transportation
- Countless Representatives
- The Press
- And some others…
Our friends the whales
This tour took a long time…
Work in Progress...
Aerial December 2010
Here is what has been constructed…

- Piles
- Footings/Substructure
- Pylons
- Falsework
- Superstructure (Not completed)
To Do List

Remaining Tasks

☐ Superstructure (on form traveler)

☐ Form Traveler

☐ Cable Stay System
Form Traveler

**Form Traveler - Typical Erection Sequence**

**Phase 1**
Launch Form Traveler.

**Phase 2**
Connect Stay Cable to Front Anchor of Form Traveler. Partially Stress Stay Cable.

**Phase 3**
Install Rebar Cage, Pour Concrete.
When Concrete Has Reached a Minimum Strength of 4000 PSI:
- Stress P.T. Tendons in Floor Beam.
- Re-stress Stay Cables.
Form Traveler Construction
Form Traveler Relocation
Form Traveler Relocation
Form Traveler Lift Operation
Form Traveler Lift Operation
Form Traveler At End Of Bridge
Form Traveler DeckPour
Bridge Features

Cable Stay System
Cable Stay System

111-017, May 25-2009, Rev.0
DU_13 Cable Stay System, FINAL, Cycle 3

Indian River Inlet Bridge Design-Build
Winter Workshop - February 18, 2010
Doug Robb, DelDOT Project Manager
Cable Stay System

- **Strands**
  - 0.62” Diameter
  - Coextruded HDPE Sheathing
  - Wax Filled

- **External HDPE Stay Pipe (Blue)**

- Strands are non bonded and parallel

- Strands are individually stressed
Cable Stay System
Gotta love Duct Tape!
Cable Stay System
Cable Stay System
Foundation Piles Installed – 293 Precast Concrete Piles (36” x 36” x 100’ long)

Cast-in-place Concrete Poured – 20,600 of 36,000+ Cubic Yards

Reinforcing Steel Placed – 7 of 12 Million Pounds

Concrete Testing Cylinders (DelDOT) – 2000+ collected and tested

Stay Cables Completed – 60 of 152

Stay Strand Installed – 50 of 350 miles
Precast Floorbeams – 76 of 76 cast and set
Bulb-Tees Girders (100+ feet long) - 75 of 75 cast and set
U of D Instruments Installed - 56 of 84 embedded (125 total)
U of D Fiber Optic Cable – 1 mile
Form Traveler Weight – 300 tons Each
Pieces of Correspondence Logged – 22,000 +
Budget – Tracking $500k below $150M budget
Anticipated Availability to Traffic – End of 2011.
Officially awarded to George and Lynch
  Bid Amount = $11,625,940.29
Construction of new Indian River Inlet Bridge roadway approaches.
  Utilizing lightweight foam concrete for embankments
  Install new sand bypass system
  Construct new dune on northeast side of inlet
  Demolish existing bridge
Estimated start = March 2011
Phase 1 = Construction of temporary crossovers (March 2011- Memorial Day 2011)

Phase 2 = Lightweight foam concrete placement and SR-1 approach roadway construction and shift traffic onto new bridge (Memorial Day 2011-December 2011)

Phase 3 = Construction of access roads, park entrances, dune construction and existing bridge demolition. (December 2011-May 2013)
Are you done yet?
Temporary Stay
Temporary Stay
Questions and Comments?