

The Elizabeth River Tunnels Project



Project Overview and MLK Presentation

March 18, 2014



The Design-Build Team



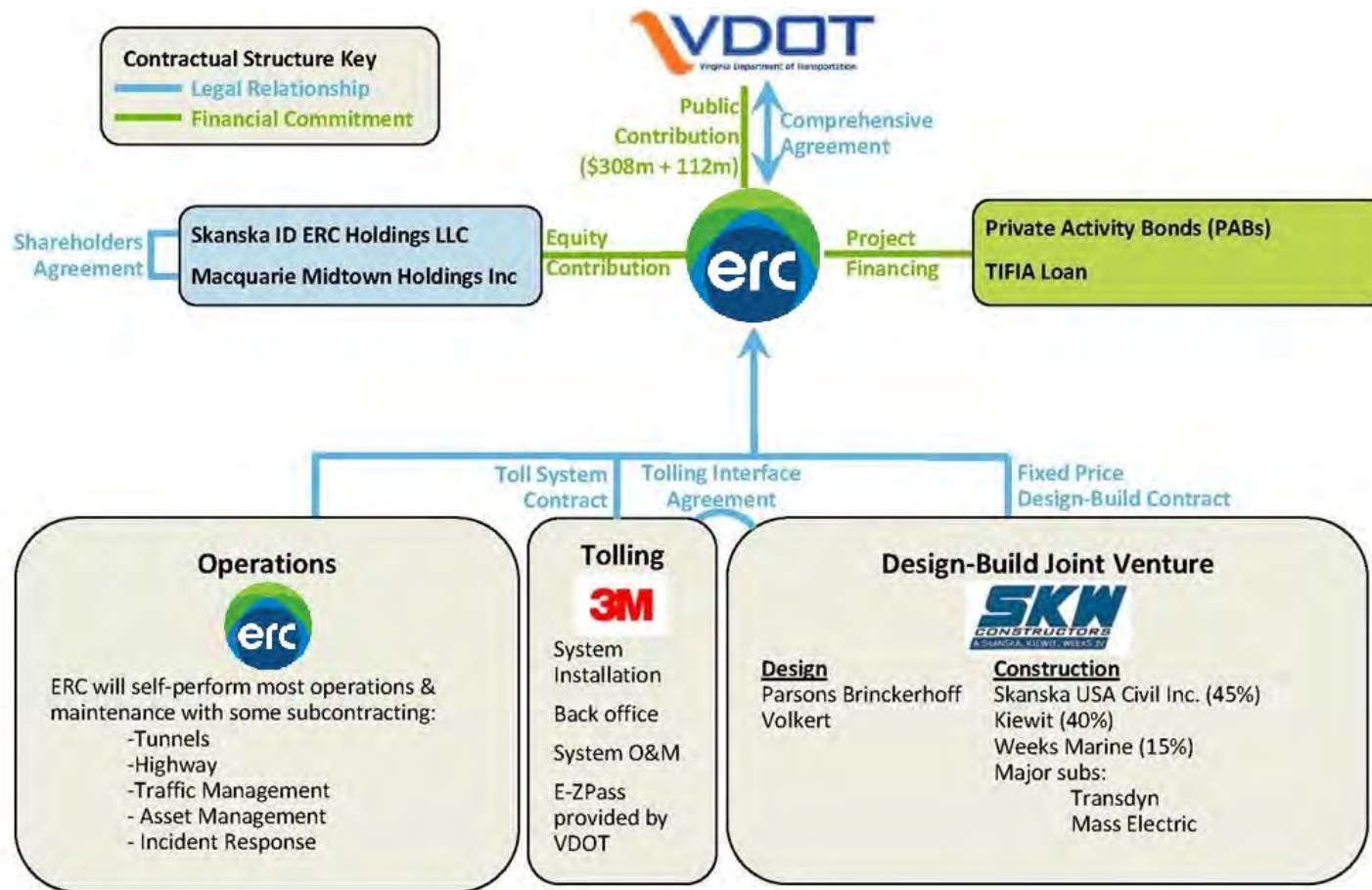
- Design-Build Joint Venture
 - Skanska USA Civil SE
 - Kiewit Infrastructure Company
 - Weeks Marine
- Design Team
 - Parsons Brinckerhoff
 - Volkert & Associates
- Immersed Tube Tunnel Experience:
 - Since 1964, installed 74% of the ITT's in the USA
 - Installed 52,500 feet in the USA
 - 19,700 feet of ITT in the Norfolk Area

Timeline for Development

Timetable

Call for conceptual proposals	May 2008
Conceptual proposal submittal	September 2008
Public Hearings – Independent Review Panel	March to June 2009
Positive CTB Recommendation	July 2009
Key business points presented to CTB	October 2009
Signature of Interim Agreement	January 2010
IA Phase 1 - Feasibility Stage	January 2010
IA Phase 2 - Development Stage	June 2010
Signature of Comprehensive Agreement	December 2011
Financial Close / Construction Start	April 2012

Contract Structure



Scope



New Midtown Tunnel

- Concrete shell, Immerse Tube Tunnel (ITT)
- West bound Tube connecting Norfolk to Portsmouth
- Two vehicular lanes and an egress corridor



New MTT – Tube Fabrication

- **Construction in Baltimore due to availability of dry docks**
- Trial Casting
 - Demonstrate techniques
 - Test thermal modeling
- Two Casting Cycles
 - CC 1 – 6 elements
 - CC 2 – 5 elements
- Dimensions (average)
 - 350' x 54' W x 28' T
 - 16,000 Tons each



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New MTT – Tube Fabrication



New MTT – Tube Fabrication

- Each Element constructed in Segments
 - Inverts (5 per element)
 - Interior Walls (5 per element)
 - Roof (Doghouse) (5 per element)
- Formwork Traveler
 - Progresses from segment to segment
 - Moving production line



New MTT – Tube Fabrication



Conventional Lay Barge and Screed Barge Methods



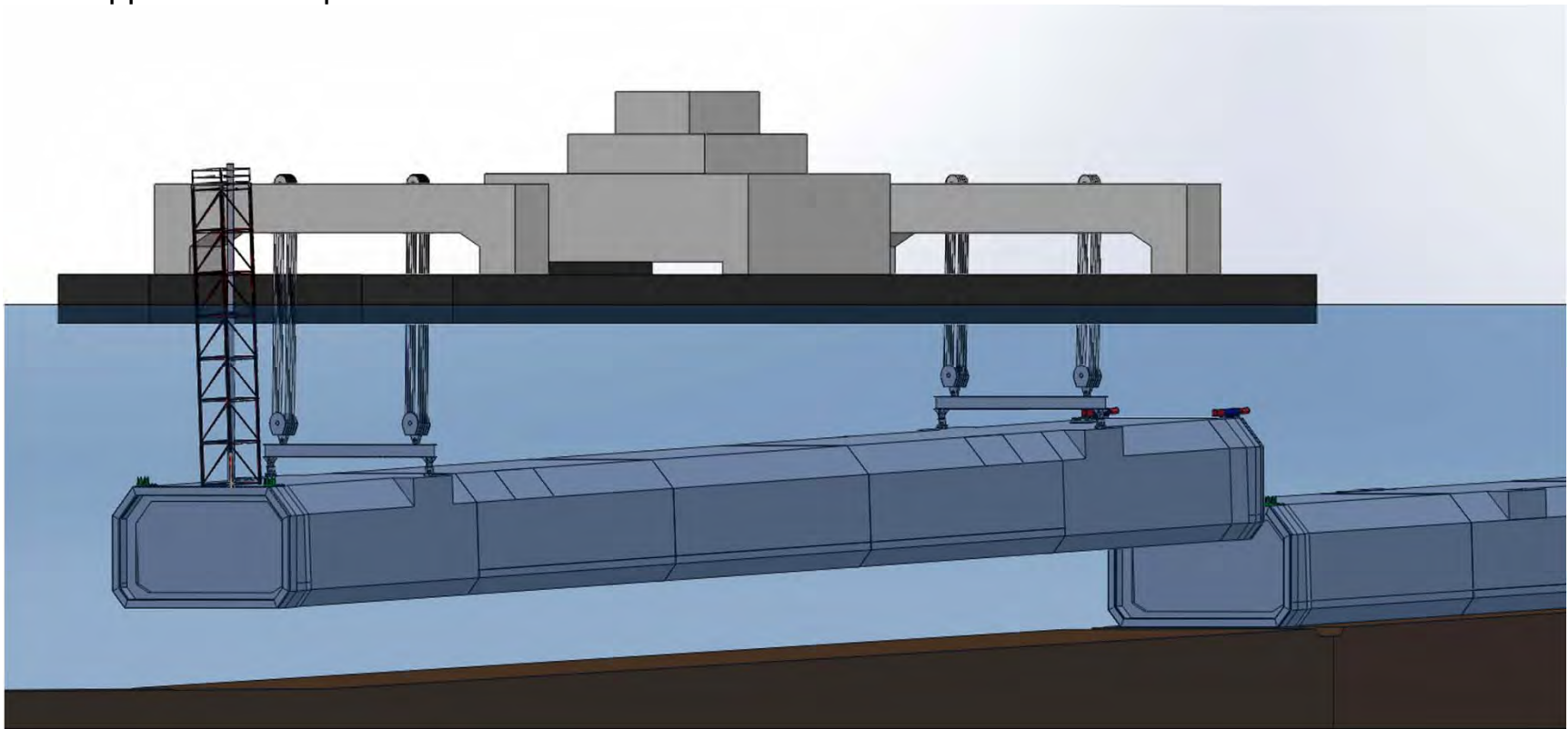
MTT Lay Barge



New ITT - Immersion

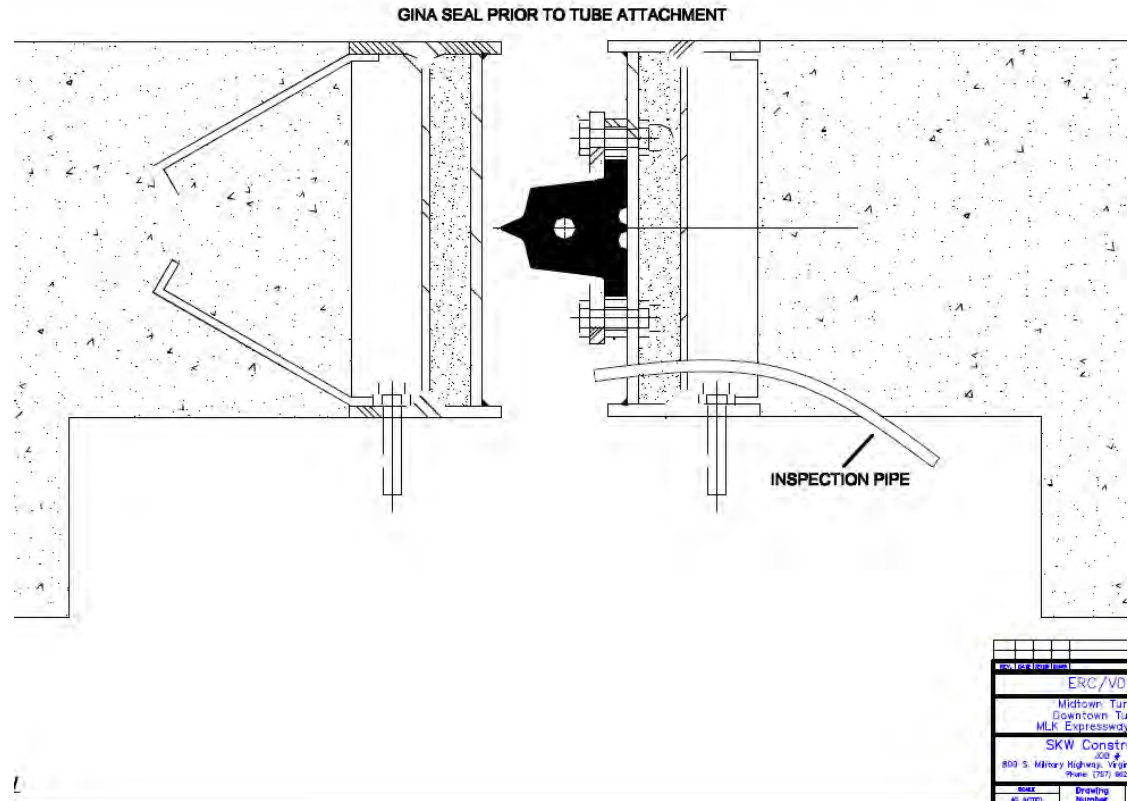
- Elements to be immersed into a dredged trench with a screeded gravel base

— Approx. max depth of 95 feet



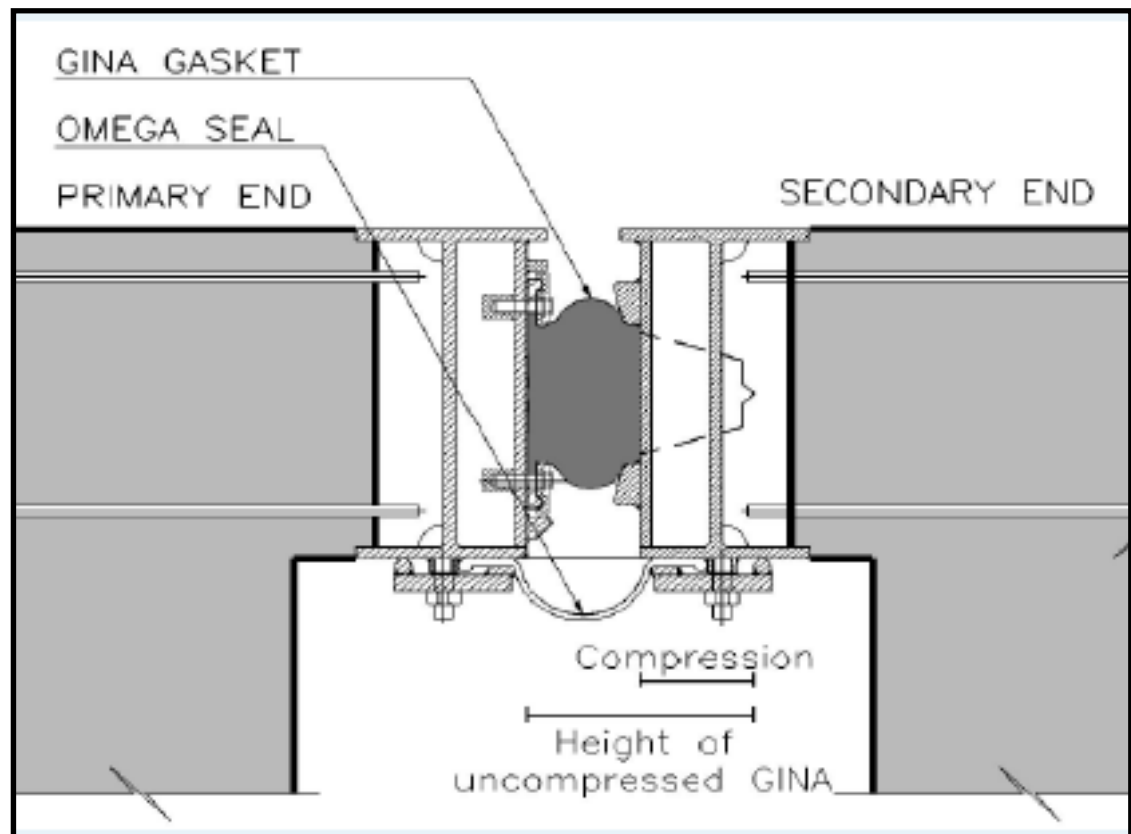
New ITT - Immersion

- Seals between Elements
 - Gina Joint (gasket type)
 - Omega Seal (inner connection)
- Elements to connect to Cast in Place Approach work



New ITT - Immersion

- Seals between Elements
 - Gina Joint (gasket type)
 - **Omega Seal (inner connection)**
- Elements to connect to Cast in Place Approach work



New MTT - Approaches

