

An aerial photograph of a city, likely Richmond, Virginia, showing a river and a tunnel highlighted in blue. The tunnel runs through the city, crossing the river. The surrounding area is densely packed with buildings and greenery.

# **Midtown Tunnel MLK Extension/Downtown Tunnel**

**Virginia Ready-Mixed  
Concrete Association**

**September 22, 2009**

**Wade Watson  
SKANSKA**

Place holder for CJV video

**SKANSKA**

 **Kiewit**

 **WEEKS MARINE**

  
PR  
PACIFIC RIVER

# Project Procurement

- VDOT is procuring the Project under the provisions of Public Private Partnership (PPP) legislation to secure private sector funds and offset the need for any public allocations to fund the Work.
- PPP – Advantages of Design Build + more
- Future for PPP in Transportation

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# Team Members



## Project Sponsors (50/50 partners)

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Skanska Infrastructure Development  
Macquarie

## Construction Joint Venture

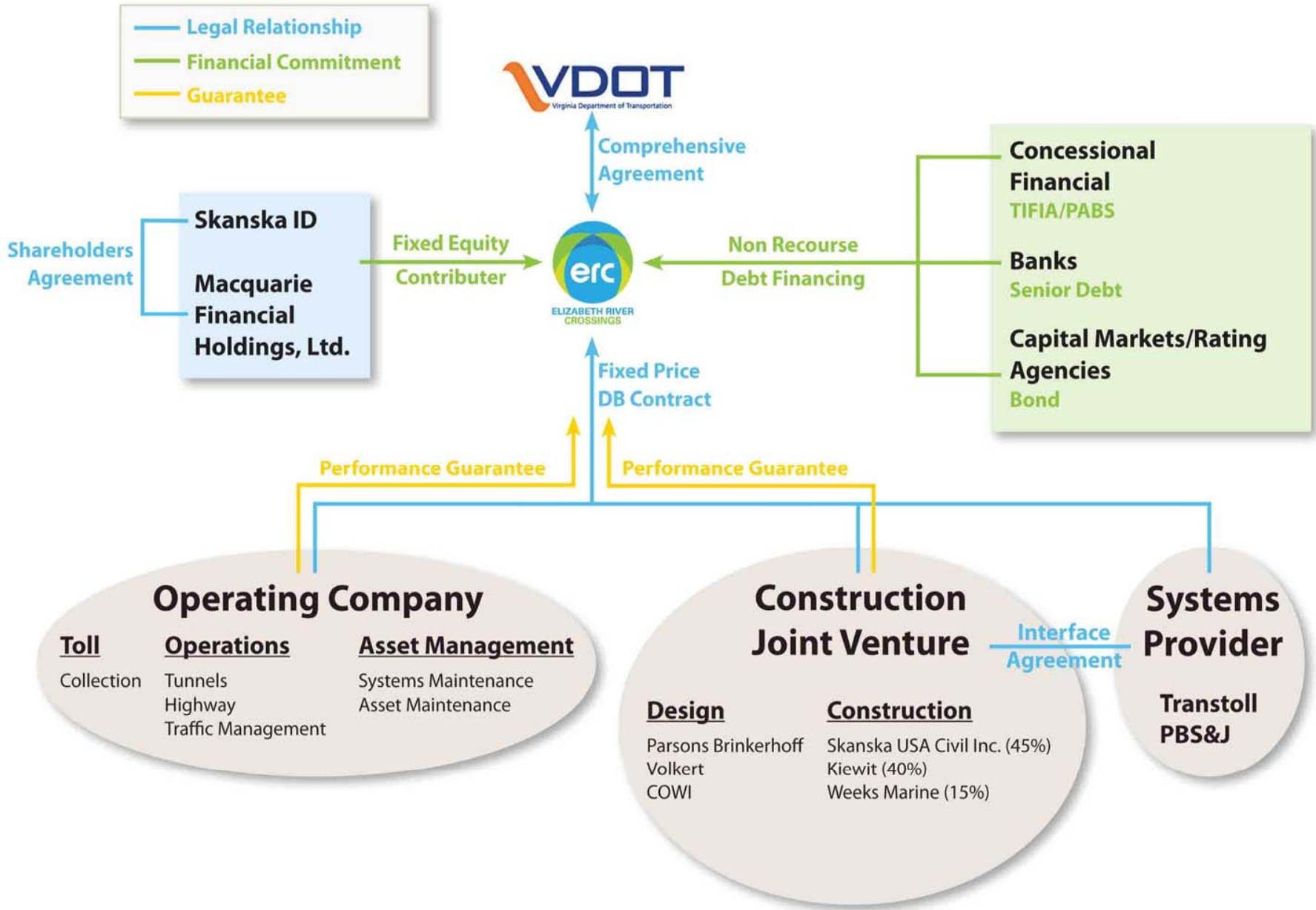
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Skanska Civil  
Kiewit Construction Co.  
Weeks Marine  
with support from:  
Parsons Brinkerhoff  
Volkert & Associates, Inc.  
Transdyn  
COWI

**SKANSKA**



# Contractual Structure



# Experienced Team

## Immersed Tube Tunnel Experience (Skanska and Kiewit)

- 52,500 feet in the US
- 19,700 feet in the Norfolk area
- Majority steel shelled tubes

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 **PR**  
150 YEARS

# Project Scope

**Concrete required 173,000 CY**

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# Schedule & Status

Solicitation for Conceptual Proposals (SFP)	April 30, 2008
Conceptual Proposal submitted	Sept 29, 2008
Complete IRP Process	June 10, 2009
Execute Interim Agreement	October, 2009

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# Anticipated Schedule

Feasibility Phase Complete	January, 2010
Financial Closing/Comprehensive Agreement	Mid, 2010
Begin Construction	Fall, 2010
Complete Construction	Fall, 2015

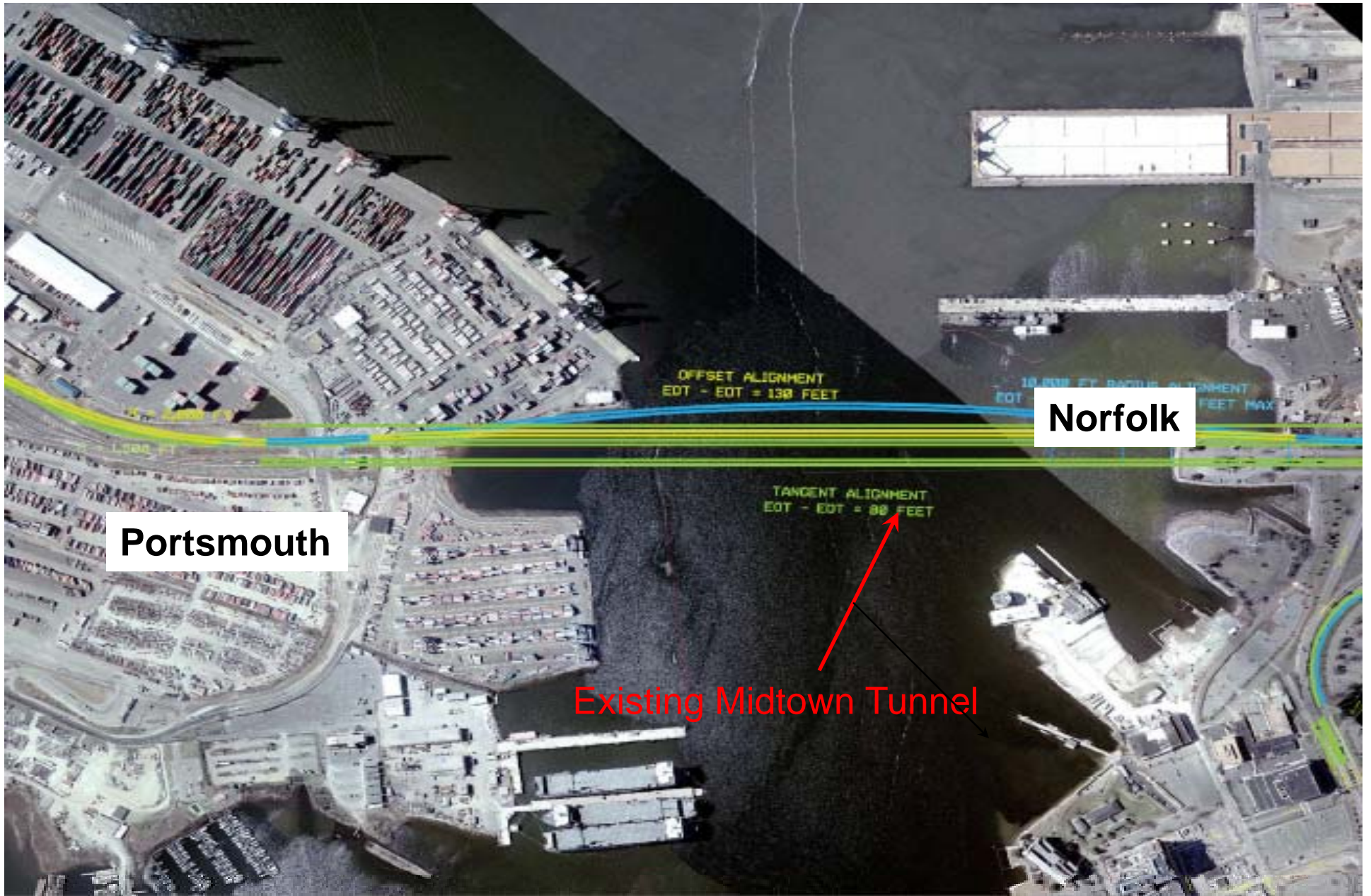
**SKANSKA**

 **Kiewit**

 **WEEKS MARINE**

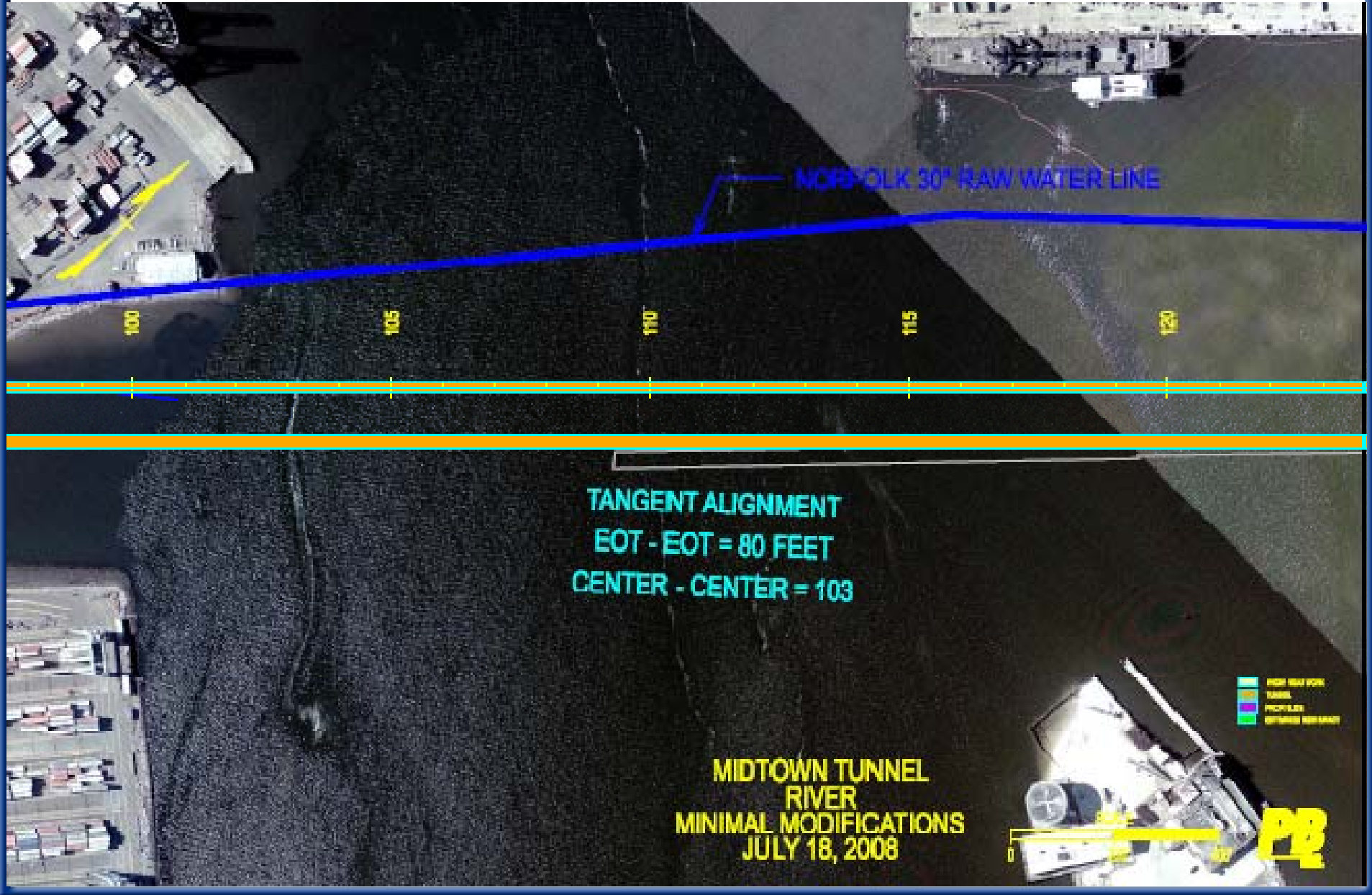
 **PR**





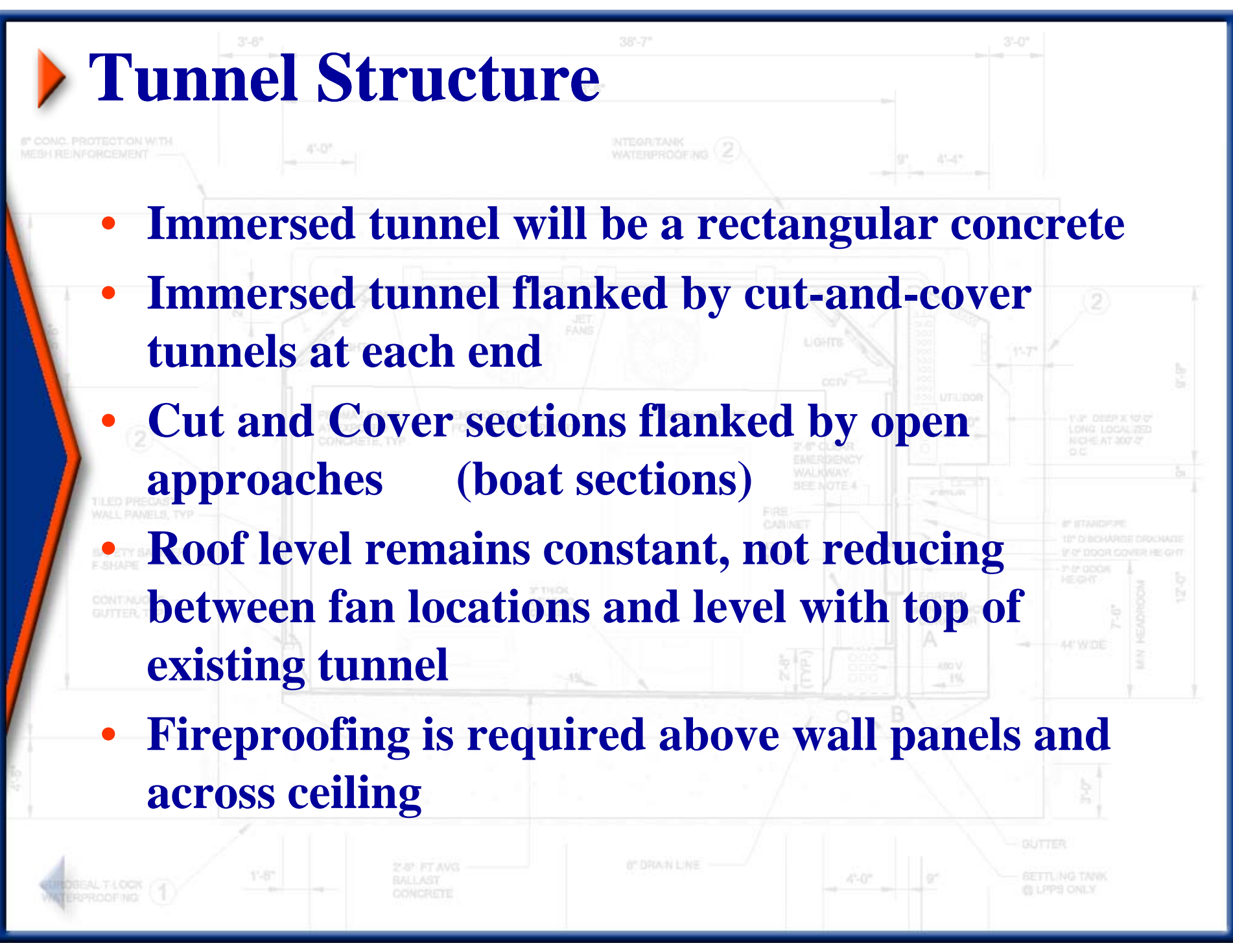
## Project Location

# ► Plan – Elizabeth River Crossing



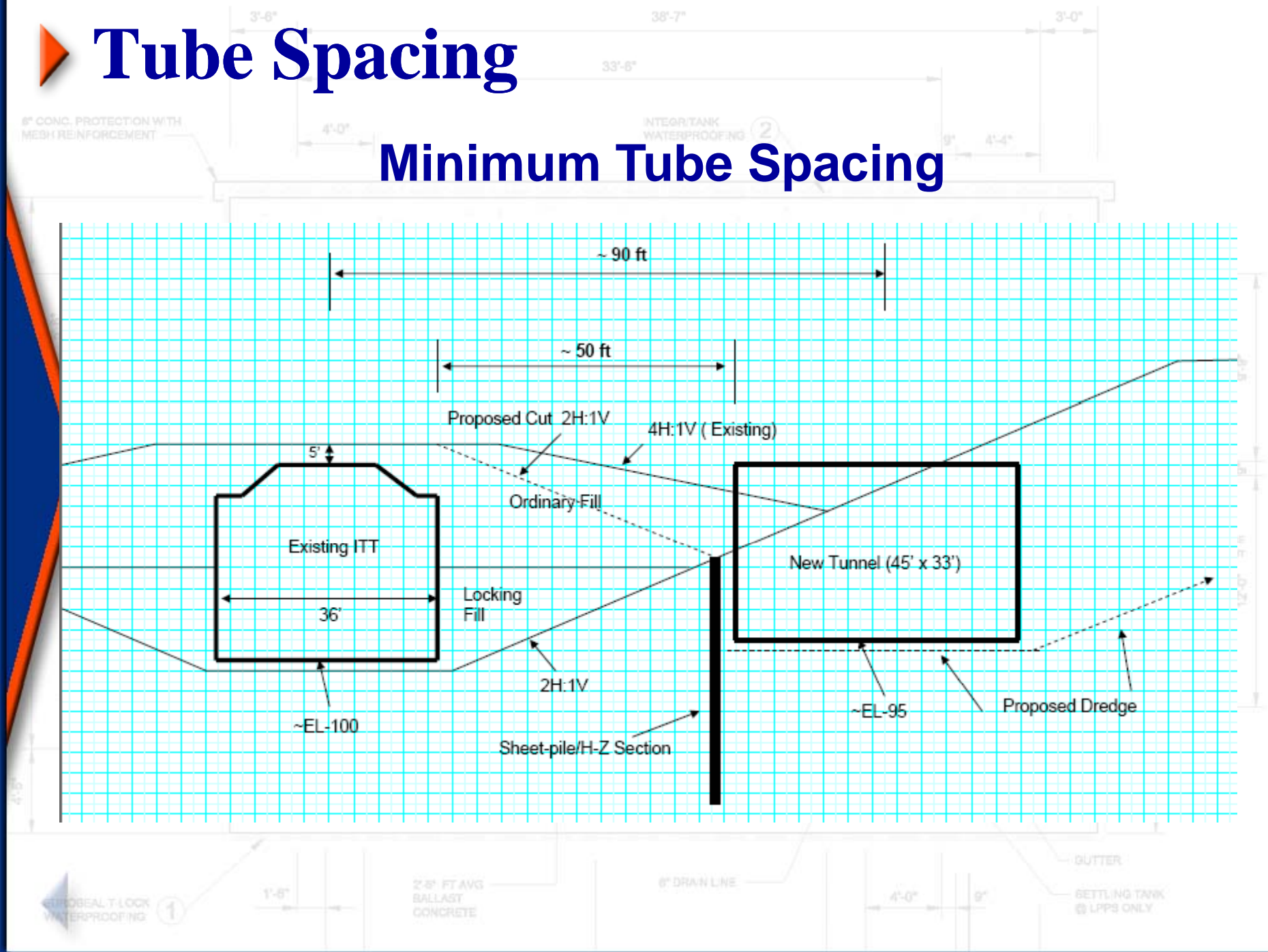
# Tunnel Structure

- Immersed tunnel will be a rectangular concrete
- Immersed tunnel flanked by cut-and-cover tunnels at each end
- Cut and Cover sections flanked by open approaches (boat sections)
- Roof level remains constant, not reducing between fan locations and level with top of existing tunnel
- Fireproofing is required above wall panels and across ceiling



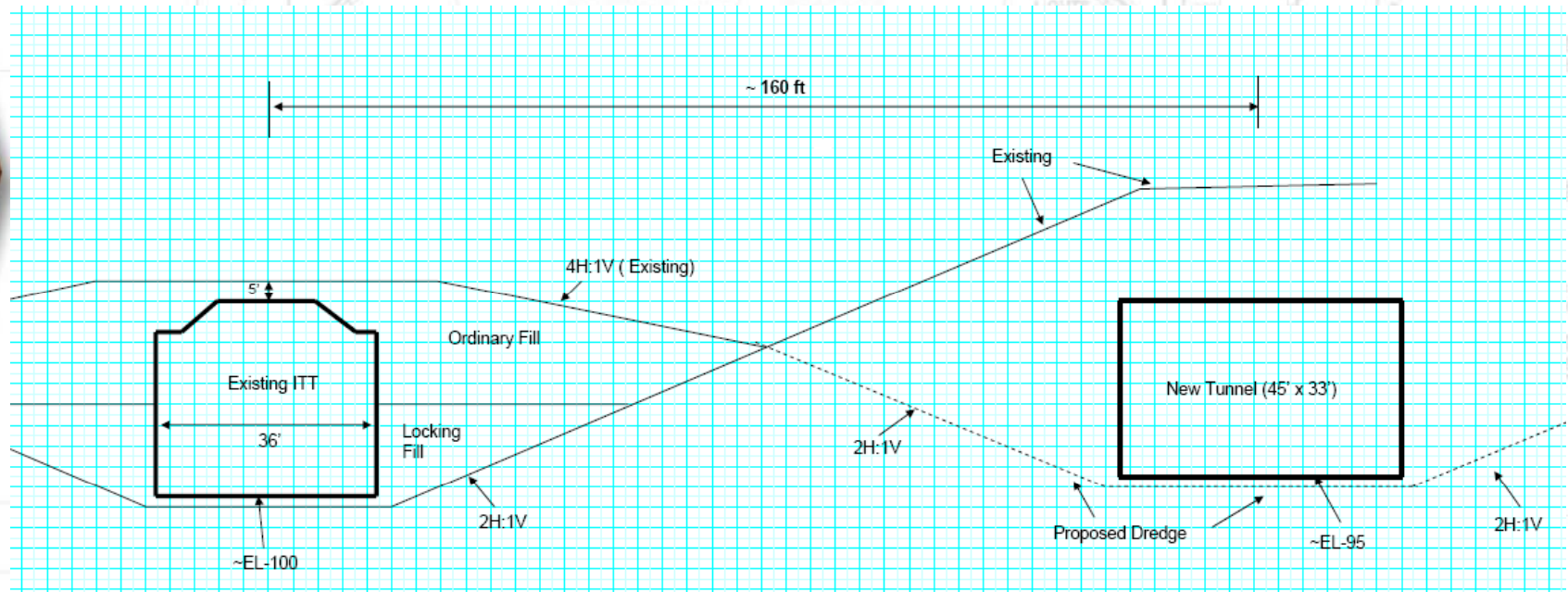
# ▶ Tube Spacing

## Minimum Tube Spacing



# ▶ Tube Spacing

## Optimal Tube Spacing



IDEAL T LOCK WATERPROOFING ①

1'-6"

2'-8" FT AVG BALLAST CONCRETE

6" DRAIN LINE

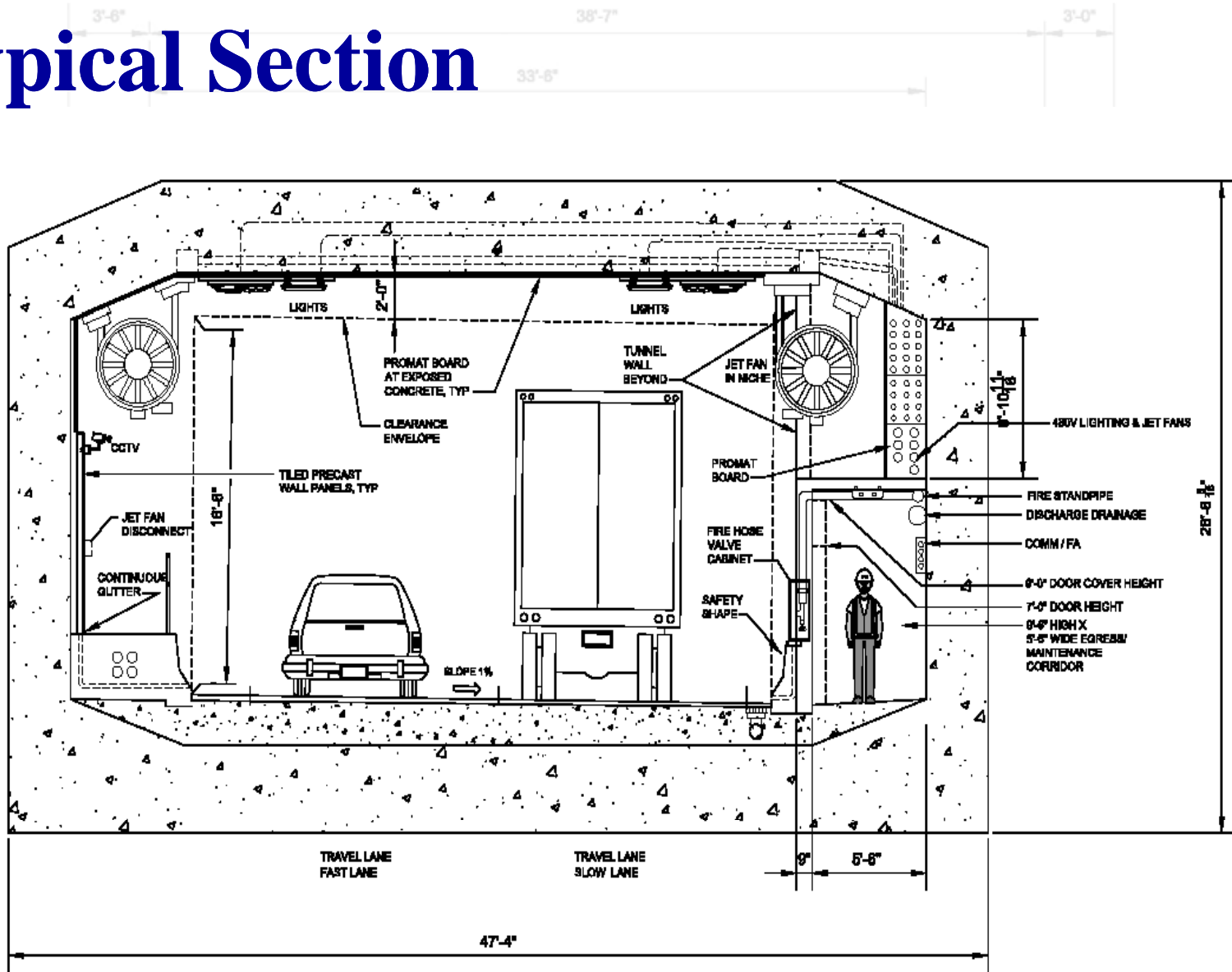
4'-0" 9"

GUTTER

SETTLING TANK @ LPPS ONLY

# Typical Section

6" CONC. FR  
MESH REINF



## TUNNEL CROSS SECTION

SECTION TAKEN LOOKING IN THE DIRECTION OF TRAVEL

PARSONS BRINCKERHOFF

May 28, 2008



# Cut and Cover Section

6" CONC. PROTECTION WITH MESH REINFORCEMENT

INTEGRITANK

2  
TILED PRECA WALL PANEL  
SAFETY BARR F-SHAPE  
CONTINUOUS GUTTER, TYP

WATERPROOFING & PROTECTION BOARD

CUT & COVER TUNNEL

DYNAMIC ENVELOPE

EXIT

DRAIN TO LPPS

DRAIN TO SWPS

STORM WATER PUMP STATION

STORM WATER DISCHARGE

SUMP

WATERTIGHT HATCH

ACCESS DOOR FR EGRESS STAIRWA BEYOND

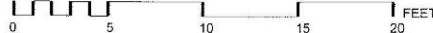
1'-3" DEEP X 10'-0" LONG LOCALIZED NICHE AT 300'-0" O.C.

7" STANDPIPE  
12" O BARGE DRAINAGE  
1'-0" DOOR COVER HEIGHT  
1'-0" DOOR HEIGHT

4' WIDE  
7'-0" MIN HEADROOM  
12'-0"

## TUNNEL CROSS SECTION

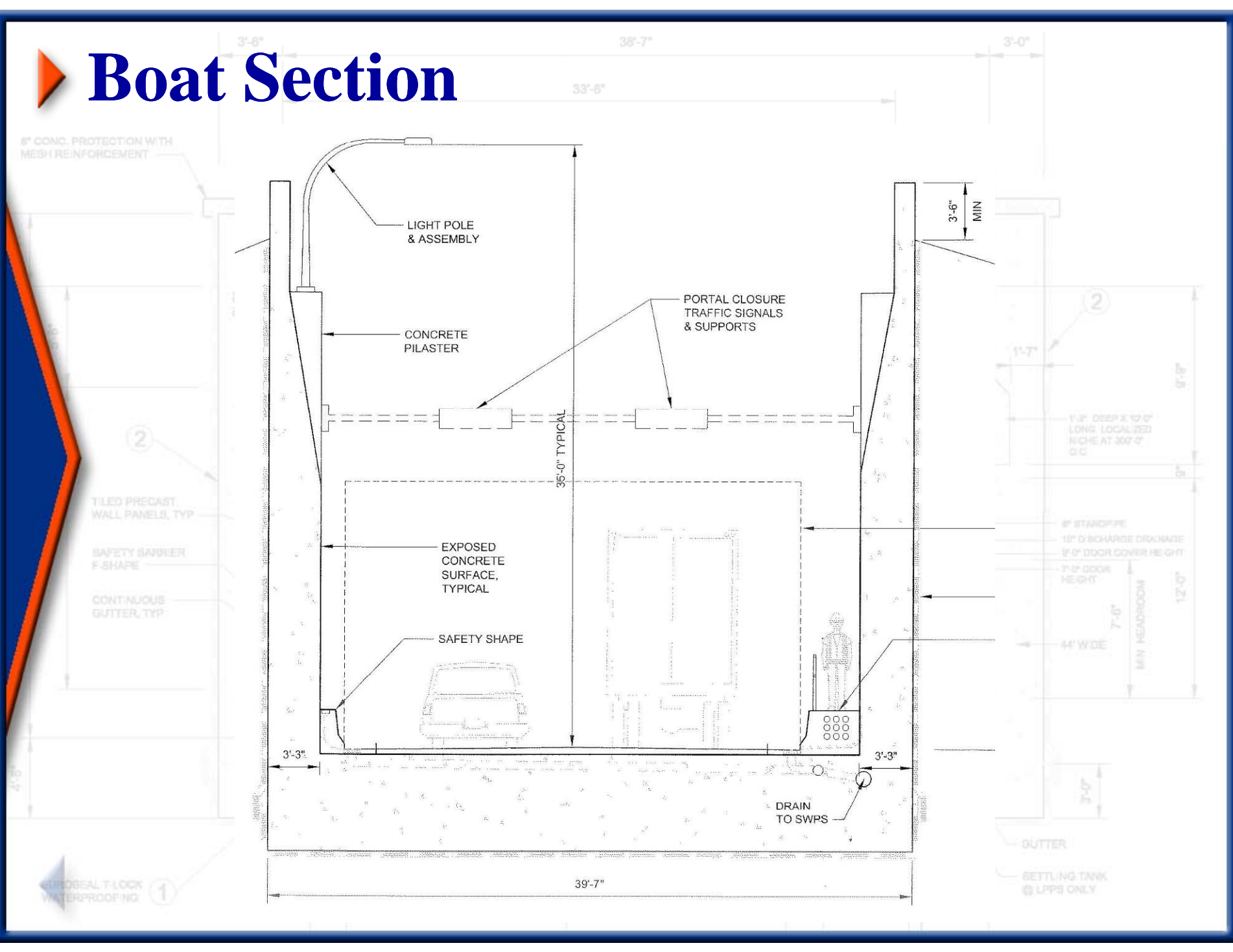
SECTION TAKEN AT PORTAL STORM WATER PUMP STATION



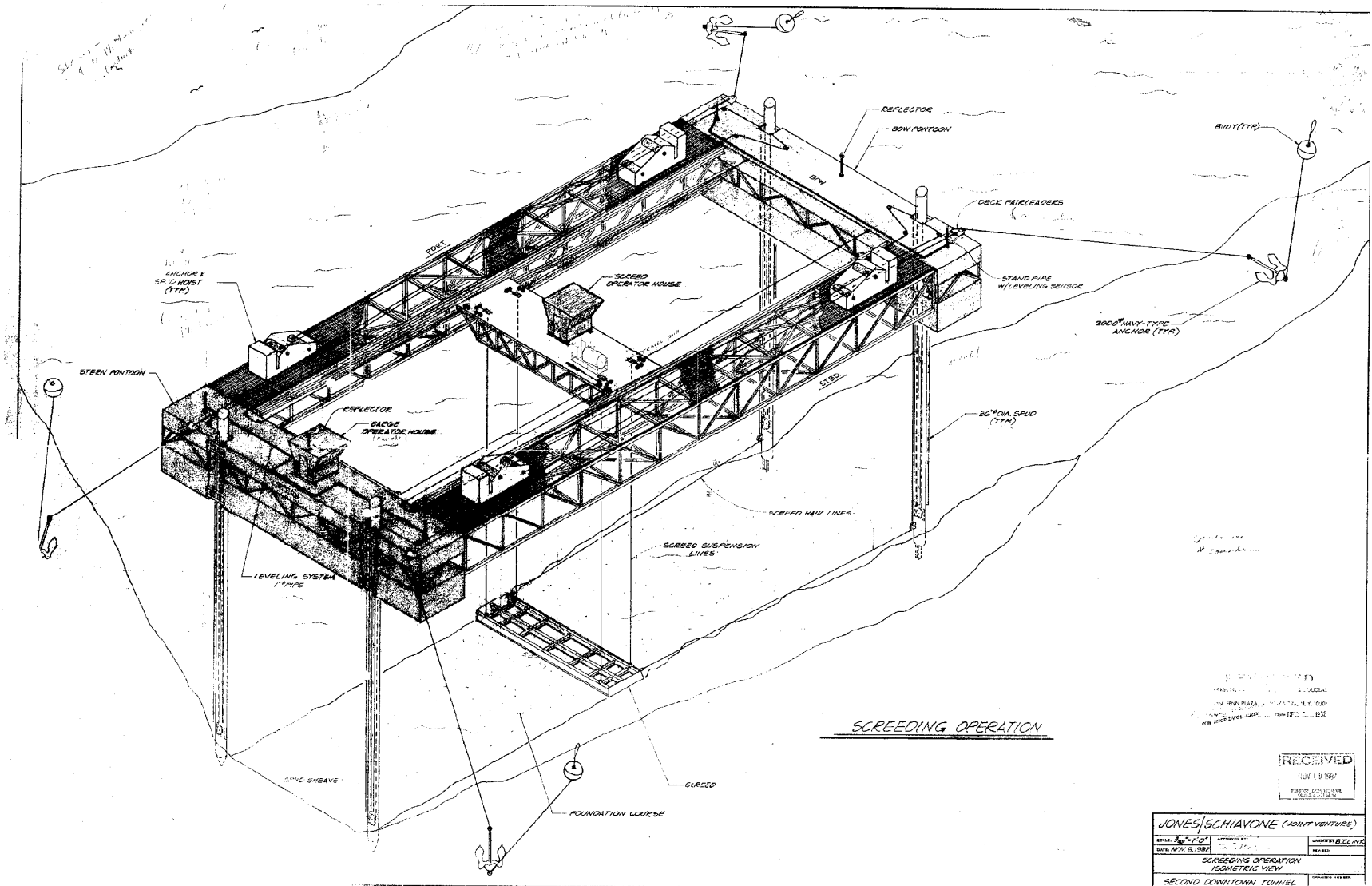
INTEGRITANK ONLY



# ▶ Boat Section



# Screedbarge Downtown Tunnel ( 1982 )



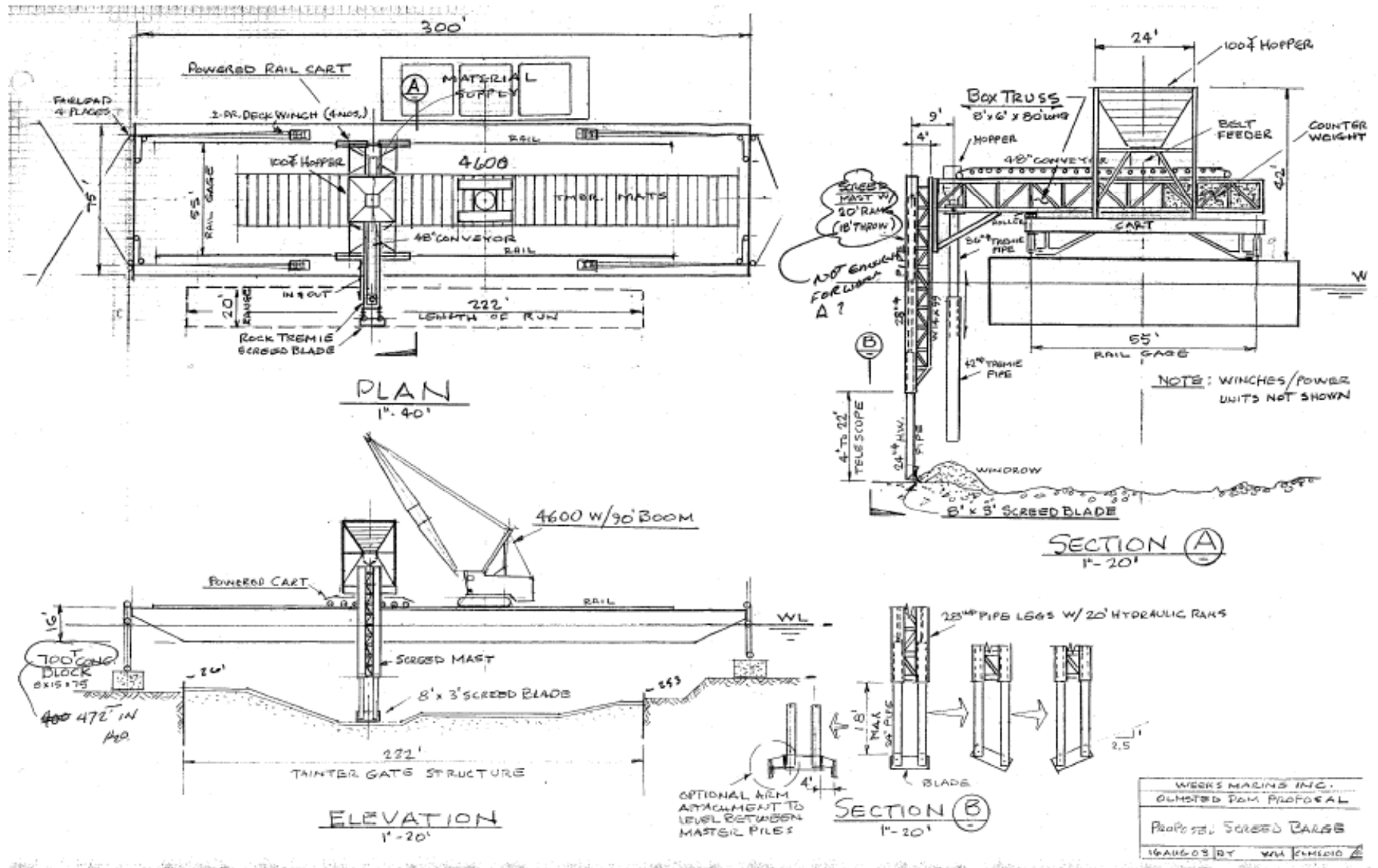
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**PKS Kiewit**

**WEEKS MARINE**

**PR**

# Screed - "Scradeway" method



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**PKS** Kiewit

WEEKS MARINE

PR  
1500  
1500

**Tube**  
**Placement**  
**Methods**

**Traditional**  
**U.S.**  
**Lay Barge**



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# Operations & Maintenance

- **O&M Scope:**
  - 50 year concession
  - Operation and tolling of existing and new tunnels
- **Personnel:**
  - Potential Transfer of 140+ VDOT staff
- **Tolling:**
  - All Electronic Tolling (Open Road)



**SKANSKA**

**PKS Kiewit**

**WEEKS MARINE**

**PR**

An aerial photograph of a city, likely New York City, showing a large body of water (the Hudson River) and a network of roads and buildings. A prominent blue line, representing a proposed or highlighted route, winds through the city and along the river. The word "QUESTIONS?" is overlaid in large, bold, black capital letters across the center of the image.

**QUESTIONS?**

**SKANSKA**



**SKANSKA**





## Main activities

### Dredging



22.02.2008

**SKANSKA**

 **bam**



Volker Stevin  
Construction  
Europe bv



## Main activities

### Immersion of elements



22.02.2008

**SKANSKA**

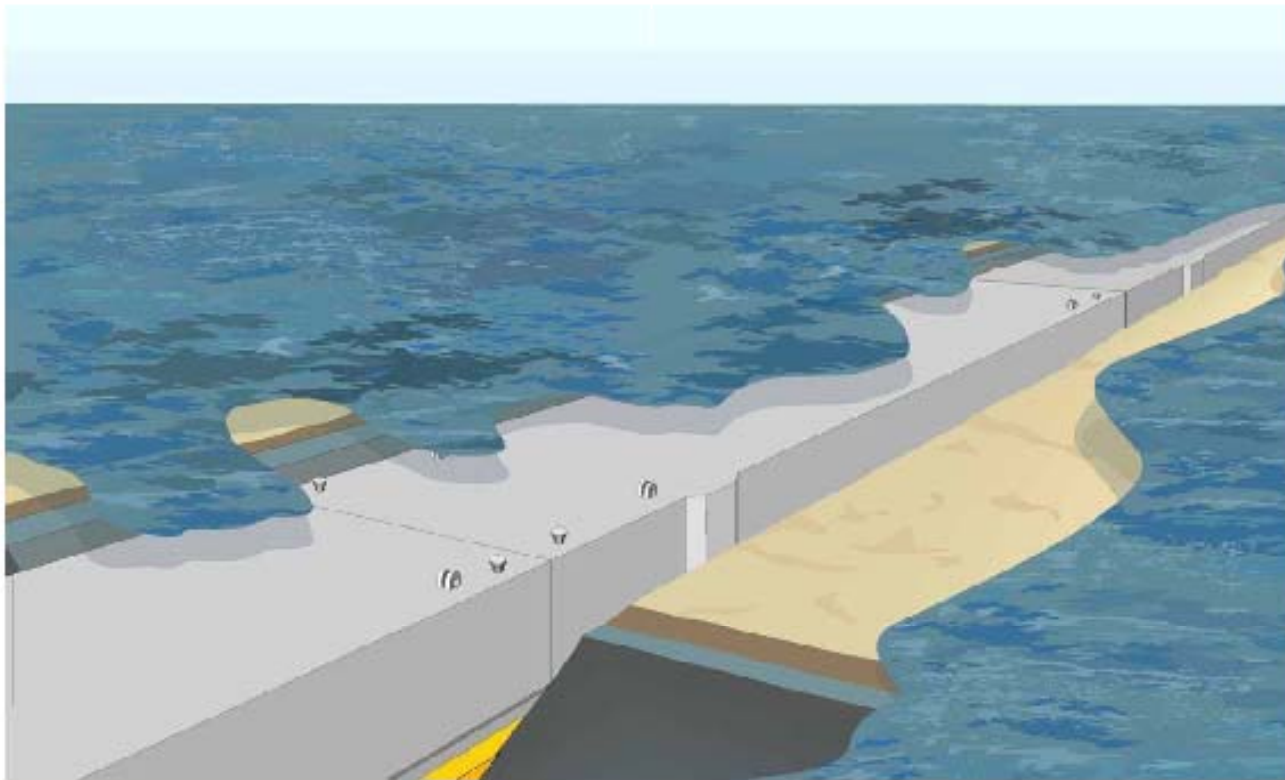
 **bam**



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## Main activities

### Assembling the elements



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## Main activities

### Backfilling



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Statens vegvesen

22.02.2008

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