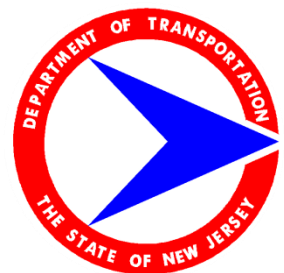


# RT 7 Hackensack River Wittpenn Bridge Contract 4



**Pre-Bid Meeting  
February 24, 2017**



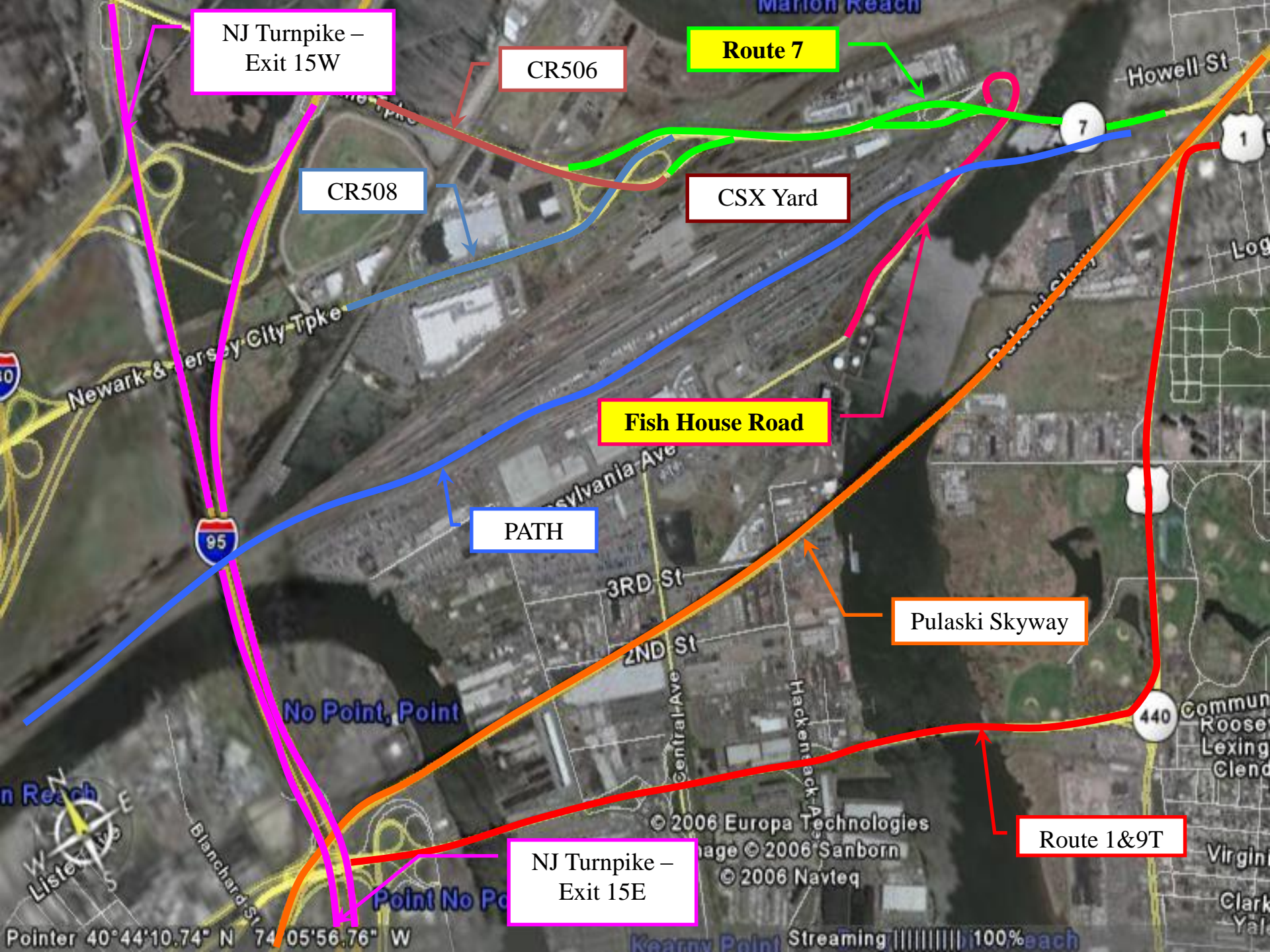
**Laine Rankin, Program Manager  
Mahesh Patel, Project Manager  
Javier Estrada, Deputy Project Manager  
Eric Neu, Field Manager**

**wittpenn**  
BRIDGE REPLACEMENT

## Presentation Topics

- Overview of Project/Coordination with Adjacent Projects
- Operation/Maintenance of Existing and New Wittpenn Bridge
- Drilled Shafts/Piers/Abutments
- Ground Improvements: VCC/Geofoam/LWA
- Five Structures
- Retaining Walls
- Sign Structures
- Roadway/MPT
- Underground/Aerial Utilities
- Contaminated Soil and Groundwater/Dewatering
- Coast Guard Coordination
- Environmental Permits
- Demolition of Existing Wittpenn Bridge





NJ Turnpike –  
Exit 15W

CR506

Route 7

CR508

CSX Yard

Fish House Road

PATH

Pulaski Skyway

Route 1&9T

NJ Turnpike –  
Exit 15E



Pointer 40°44'10.74" N 74°05'56.76" W

© 2006 Europa Technologies  
© 2006 Sanborn  
© 2006 Navteq

Streaming 100% each

NJTransit  
Lower Hack  
Drawbridge

Route 7 –  
Wittpenn Bridge

Terminal Ventures

Fish House Road

PATH Bridge

CSX Bridge



© 2006 Navteq

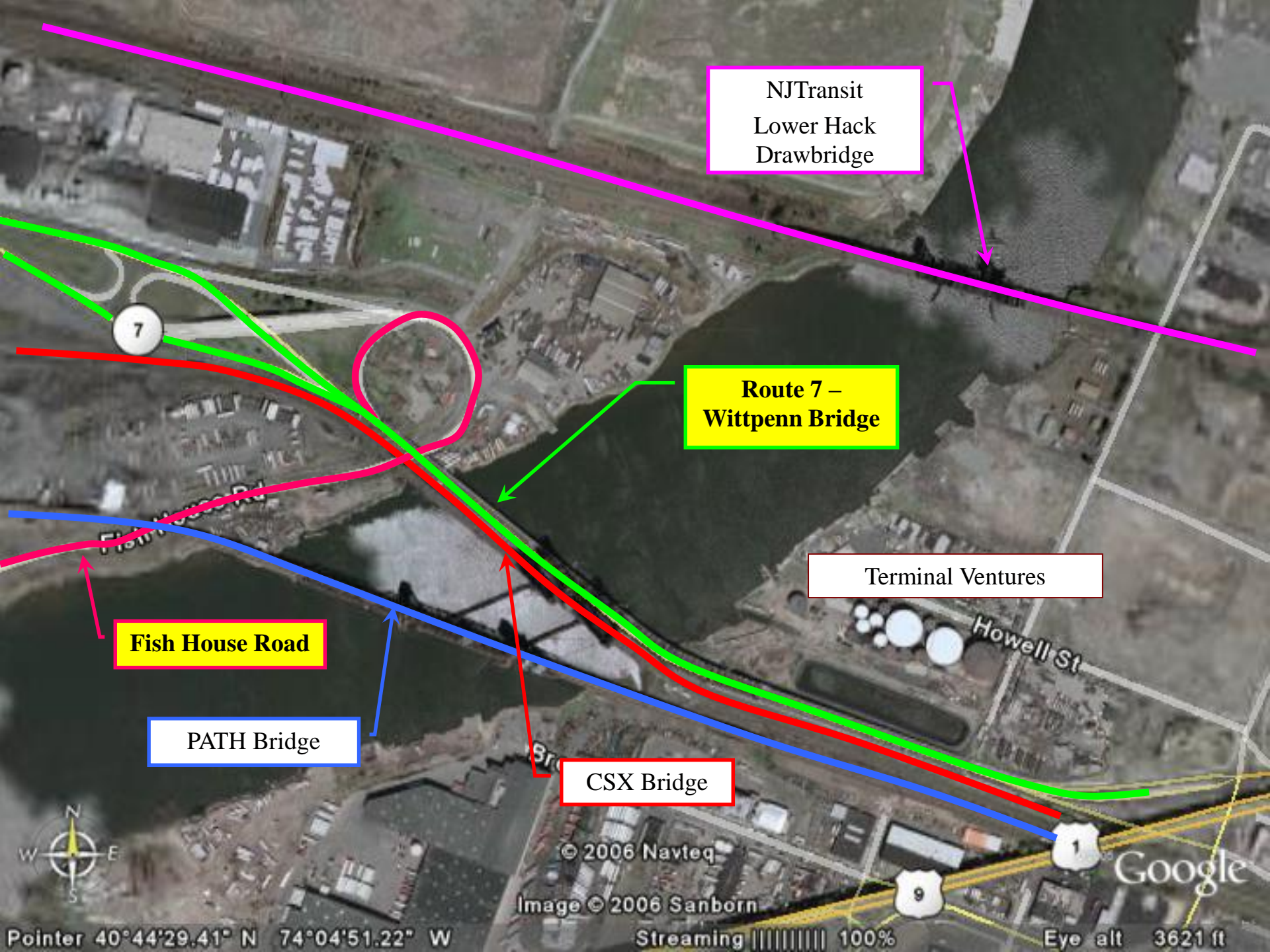
Image © 2006 Sanborn

Google

Pointer 40°44'29.41" N 74°04'51.22" W

Streaming 100%

Eye alt 3621 ft

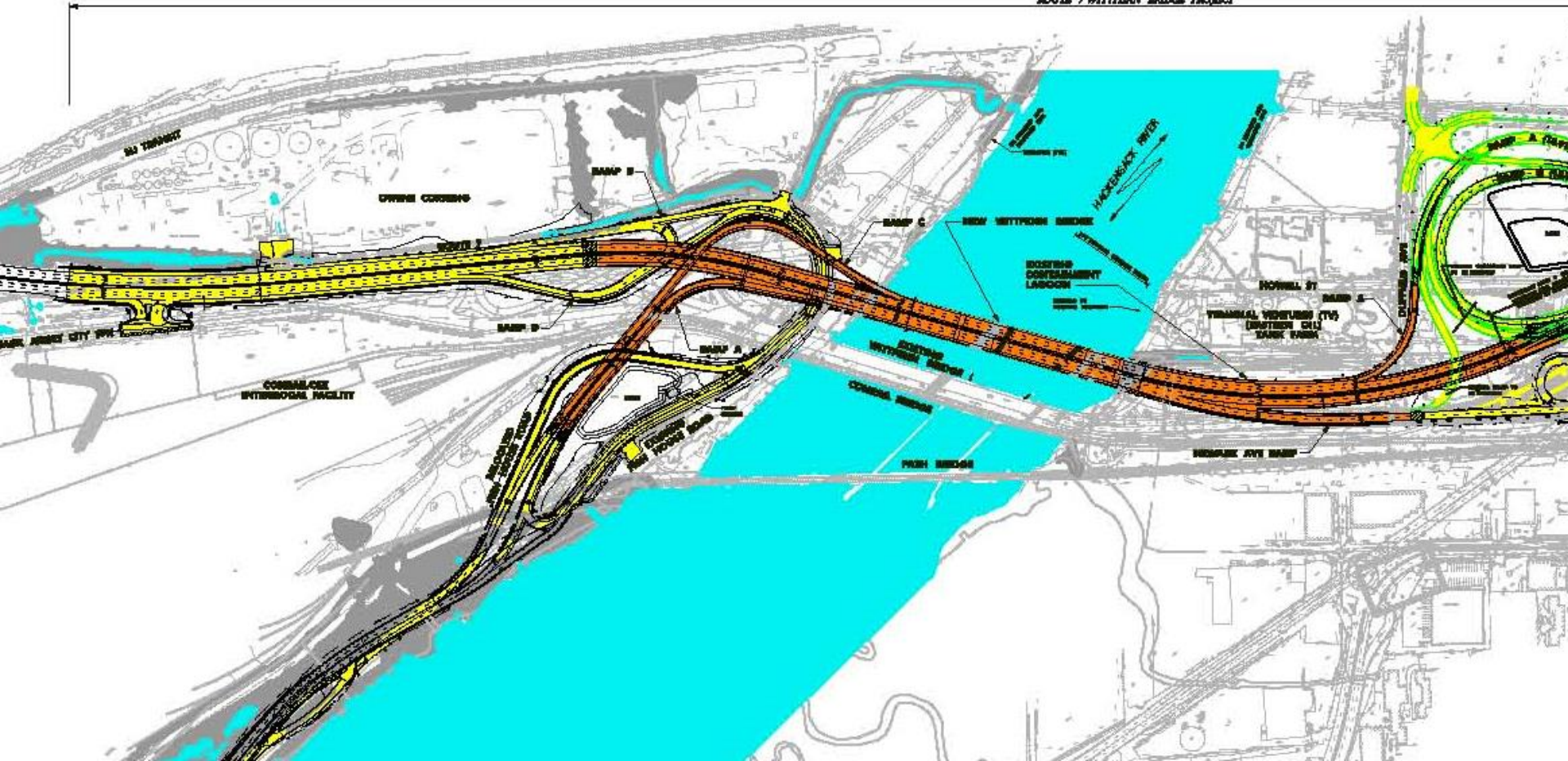


# WITTPENN BRIDGE

TOWN OF BRADY

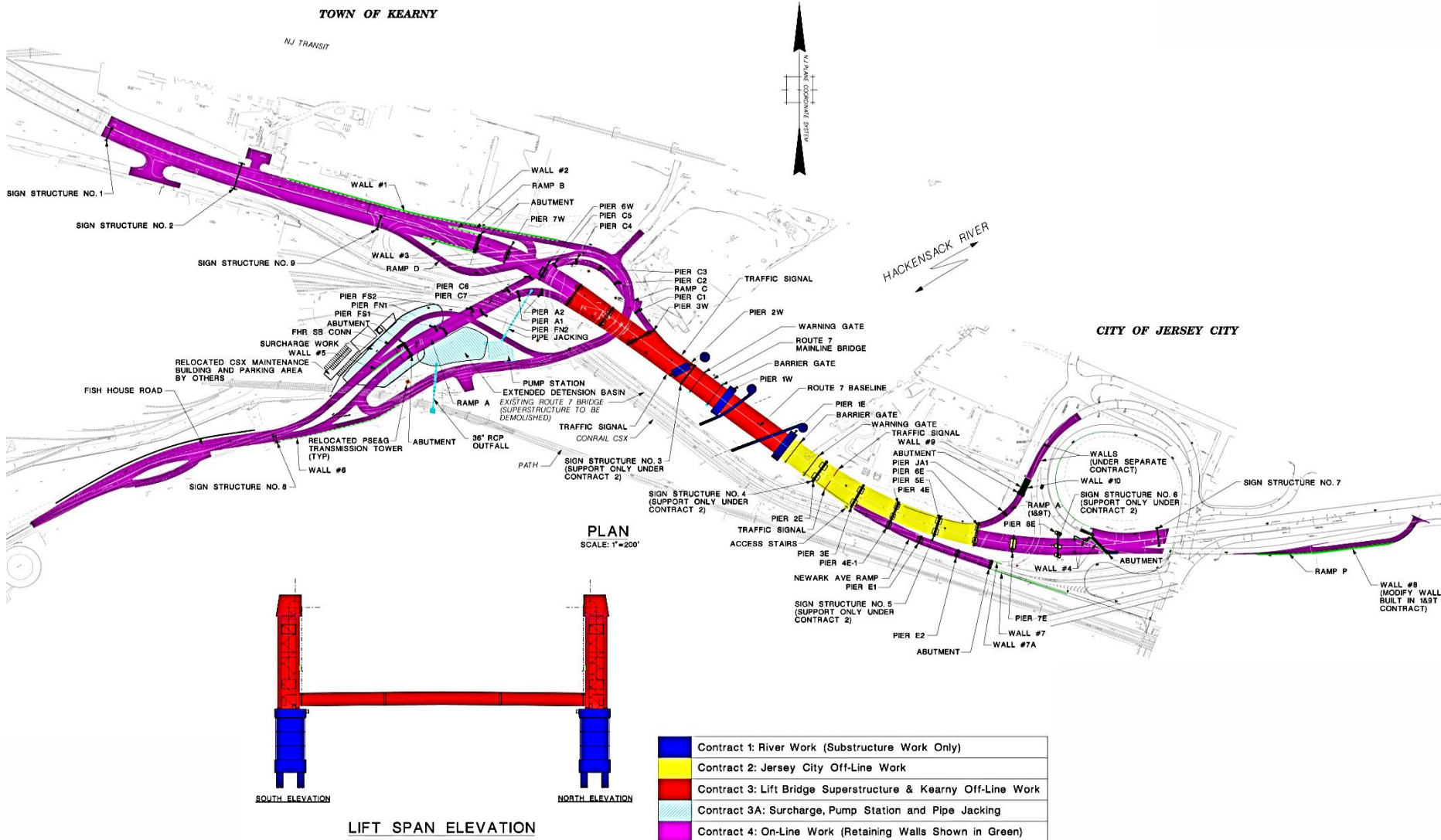
CITY OF

ROUTE 5 WITTPENN BRIDGE PROJECT



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Overview of Project



# RT 7 Hackensack River Wittpenn Bridge Contract 4



**EXISTING**



**PROPOSED**



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Existing Bridge

- **Built in 1930**
- **2,169' Long**
- **14 Deck Girder Spans**
- **3 Through Truss Spans**
- **2 Truss Tower Spans**
- **209' Vertical Lift Truss Span**
- **Shared Foundations with CSX**
- **Shared Continuous Fender System with PATH and CSX**



**Major Rehab in 1957**

**Smaller Repair Contracts 2009-2011 - Contracts 10M & 3.7M**

**Maintenance Work Ongoing**





# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Overview of Project



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Operation/Maintenance of Existing and New Wittpenn Bridge

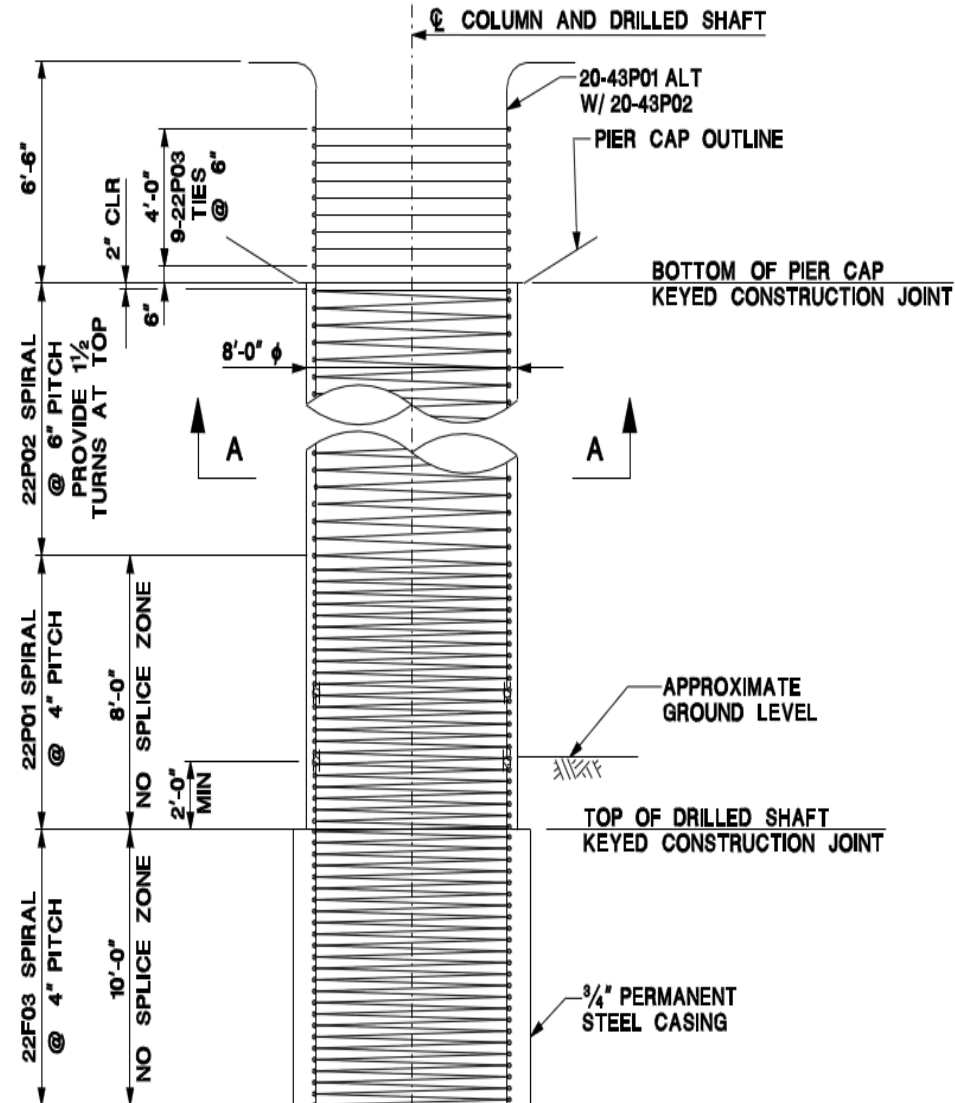
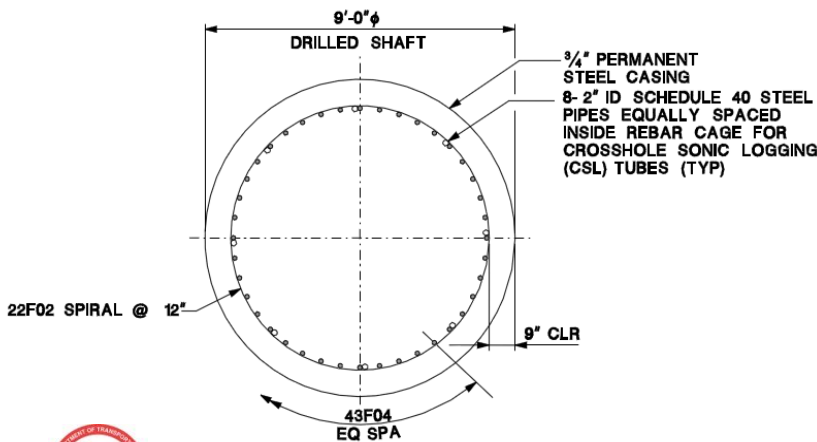
- Contractor will operate and maintain the existing and new bridge until final acceptance by NJDOT.
- Do not use the existing and new bridge deck as a staging area for construction activities.
- Contractor shall maintain bridge access for operators at all times.
- Vibration Monitoring Program for duration of contract to address impact of all construction operations of adjacent utilities and structures



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Drilled Shafts

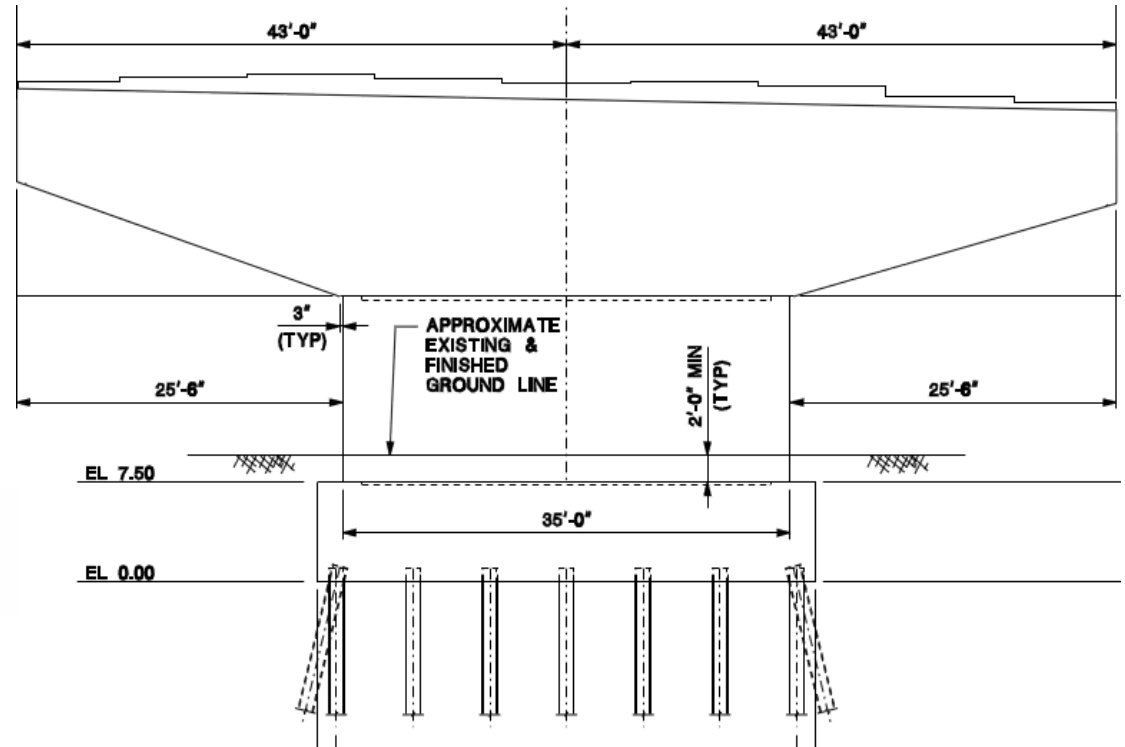
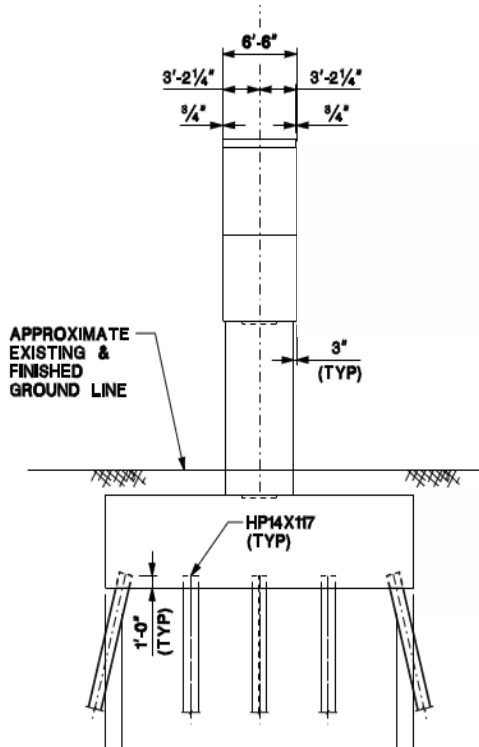
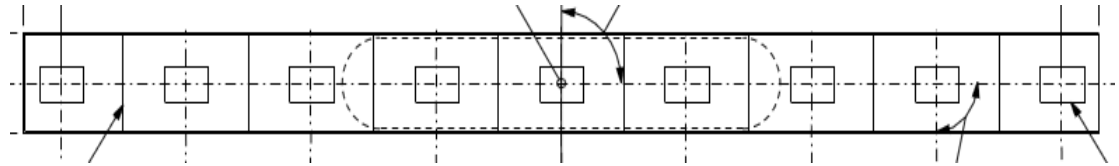
- Rel. FHR NB/Ramp A:
  - 4 Drilled Shafts
  - 1 Demo. Drilled Shaft
- Rel. FHR SB/Ramp C:
  - 9 Drilled Shafts
- 3/4" Permanent Steel Casing
- Approx. 1,750 LF Total



# RT 7 Hackensack River Wittpenn Bridge Contract 4

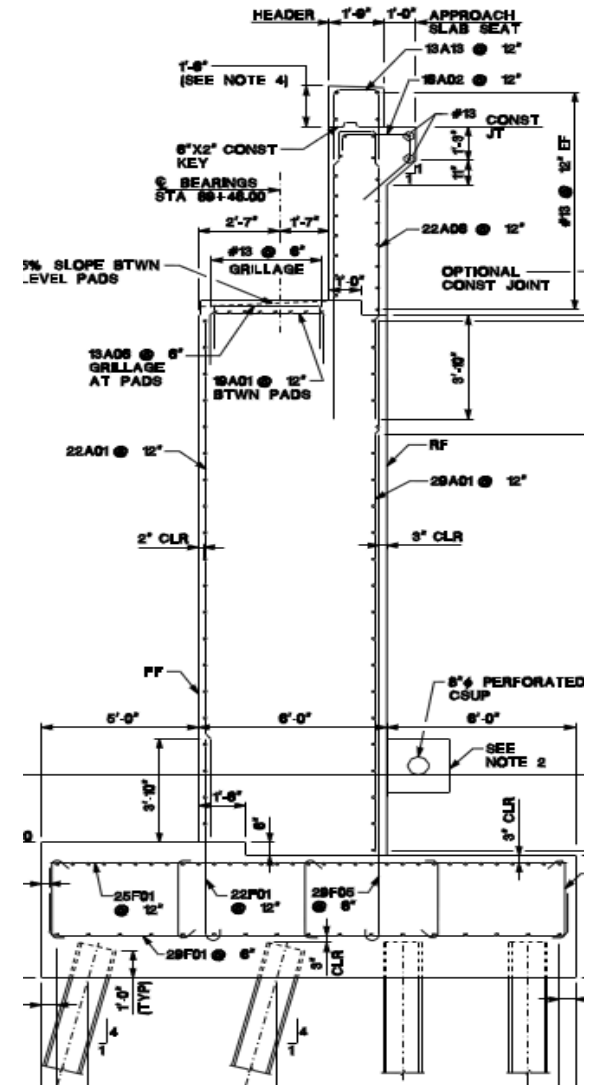
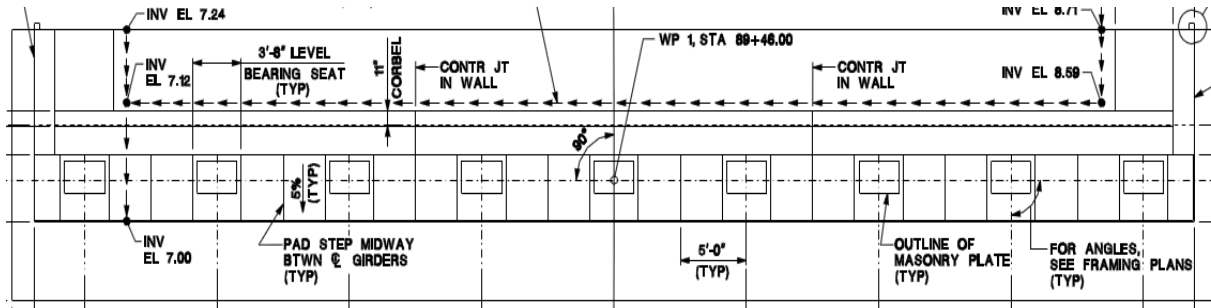
## Piers

- 6 Hammerhead Piers
- Founded on Piles
- Permanent Sheeting
- Approx. 2,200 CY of Concrete



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Abutments

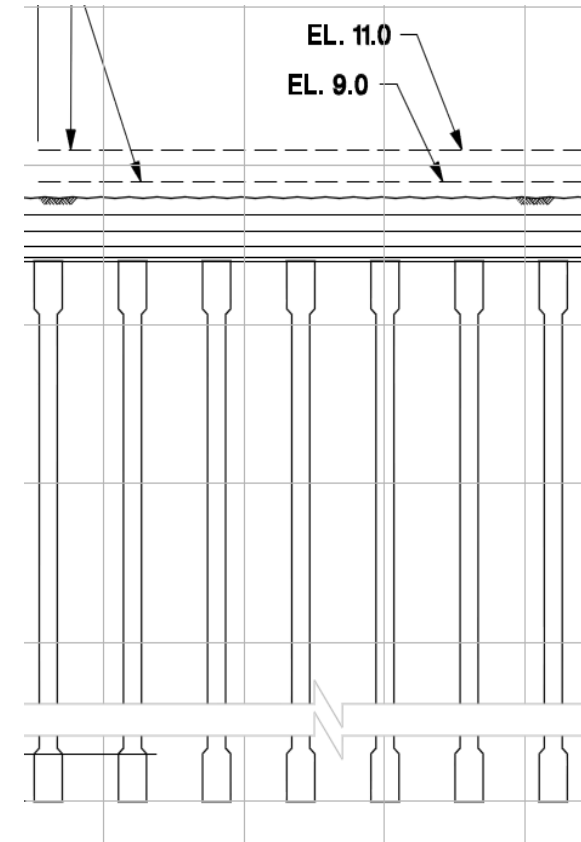
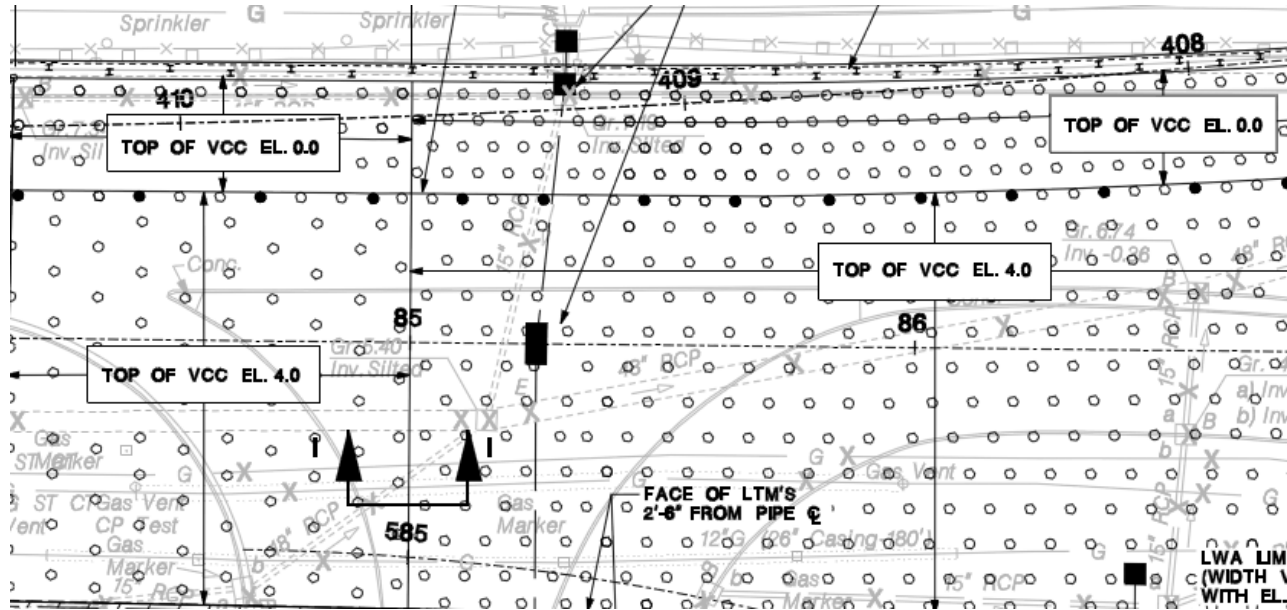


- 6 Abutments Total
  - Route 7 Mainline: 2 Abutments
  - Ramps: 1 Abutment per Ramp
- Founded on Piles
- Route 7 Mainline East Abutment Connects to Route 1&9T



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Ground Improvements: Vibro Concrete Columns (VCC)



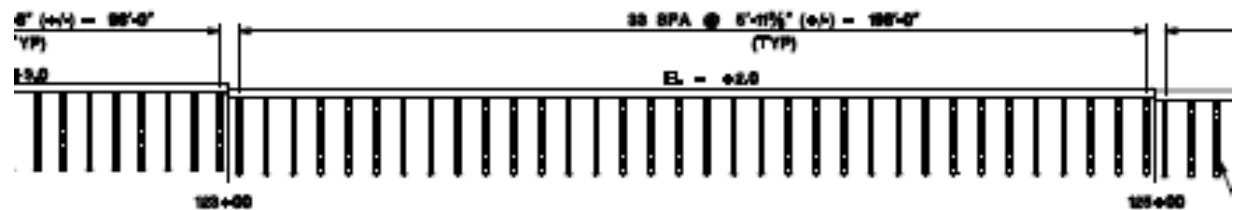
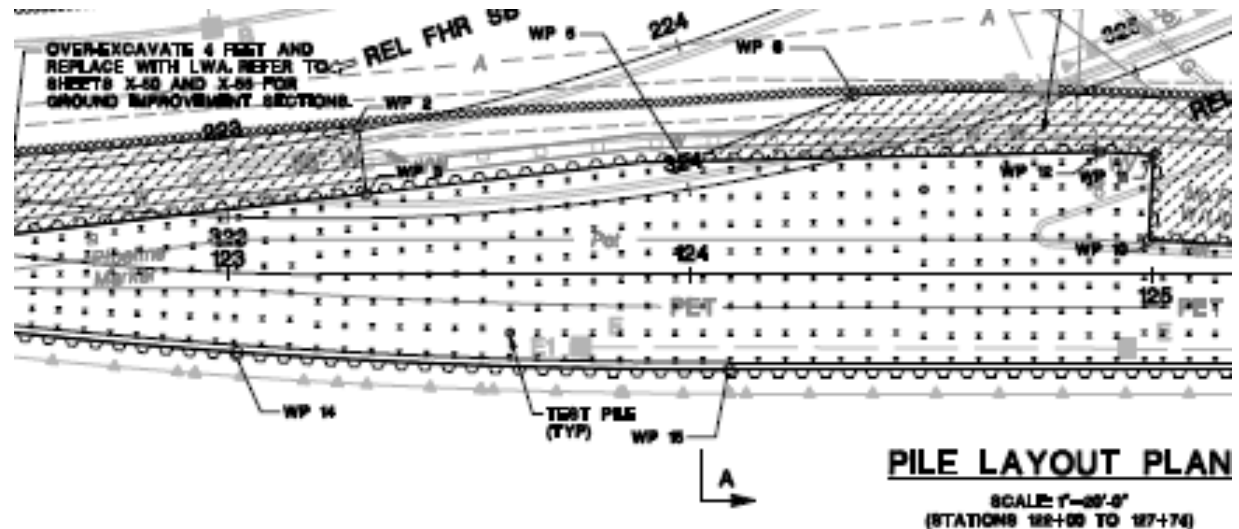
- Over 2000 VCCs (CMC's) (> 165,000 lf)
- 18" Nominal Diameter
- 6 Sacrificial VCC Tests
- 6' to 10' Spacing
- Installed into Dense S&G/Till



# RT 7 Hackensack River Wittpenn Bridge Contract 4

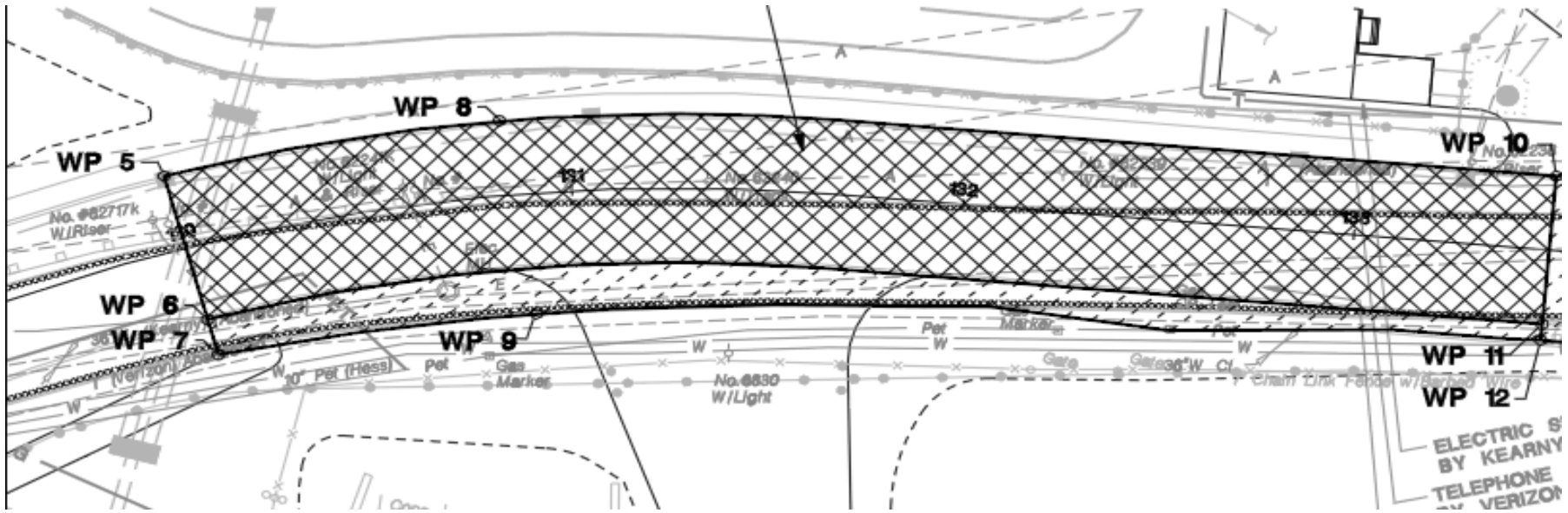
## Ground Improvements: H-Pile Supported LTM

- 620 HP 14x63 Piles Along FHR
- Prebore to get through upper fill
- Support 2 ft thick LTM
- 6' max pile spacing
- Installed into Dense S&G/Till

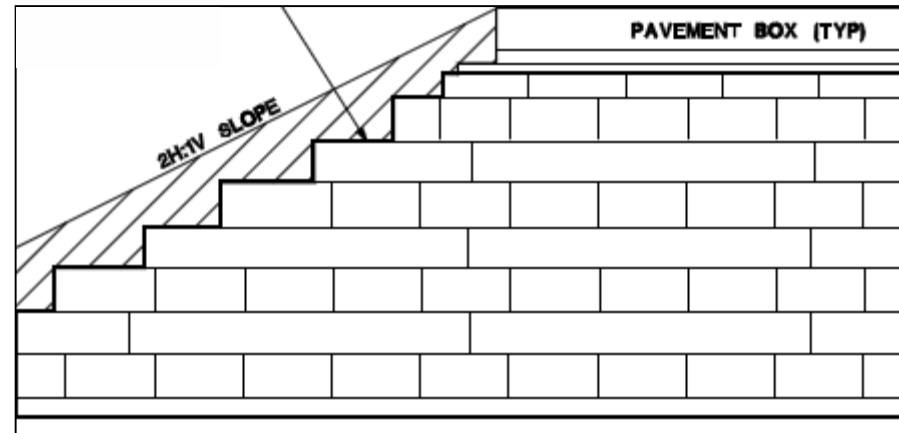


# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Ground Improvements: Geofoam



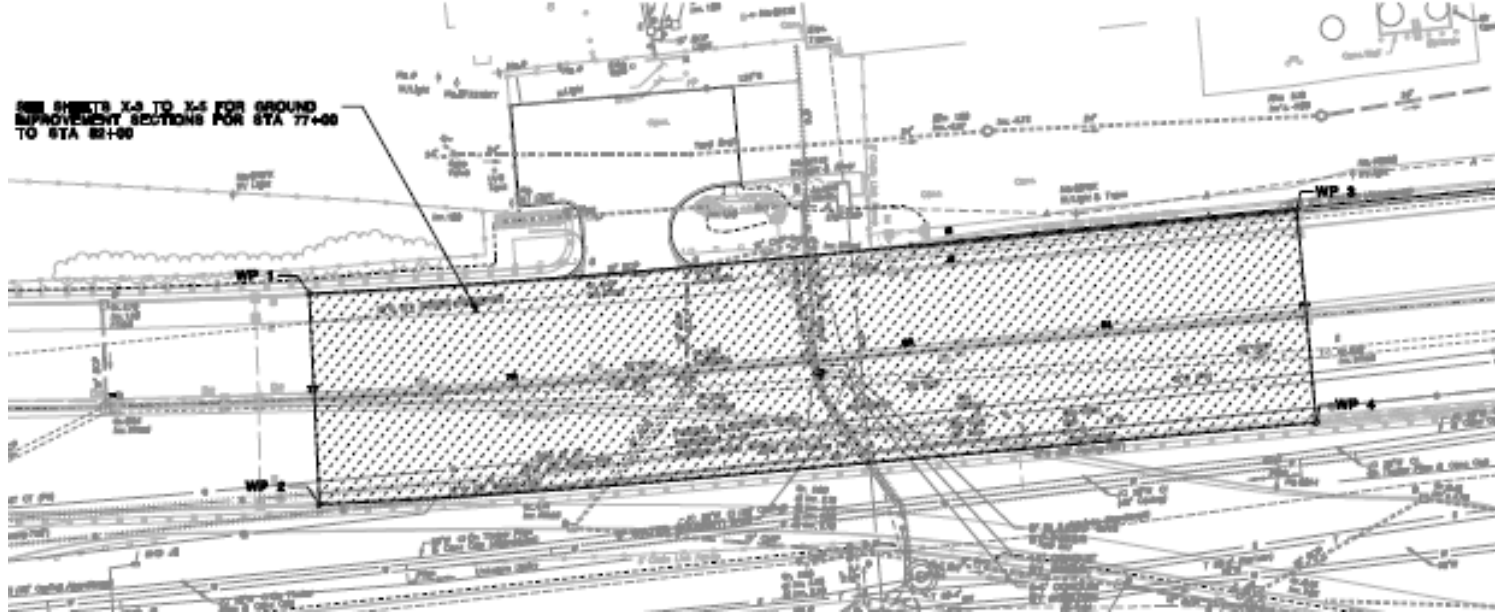
- Over 26,500 cy Geofoam
- Wrapped in Geomembrane
- Covered with 4" concrete slab
- Staged Construction Required along FHR Sta 130 to 133+50 to maintain traffic





# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Ground Improvements: Lightweight Aggregate (LWA)



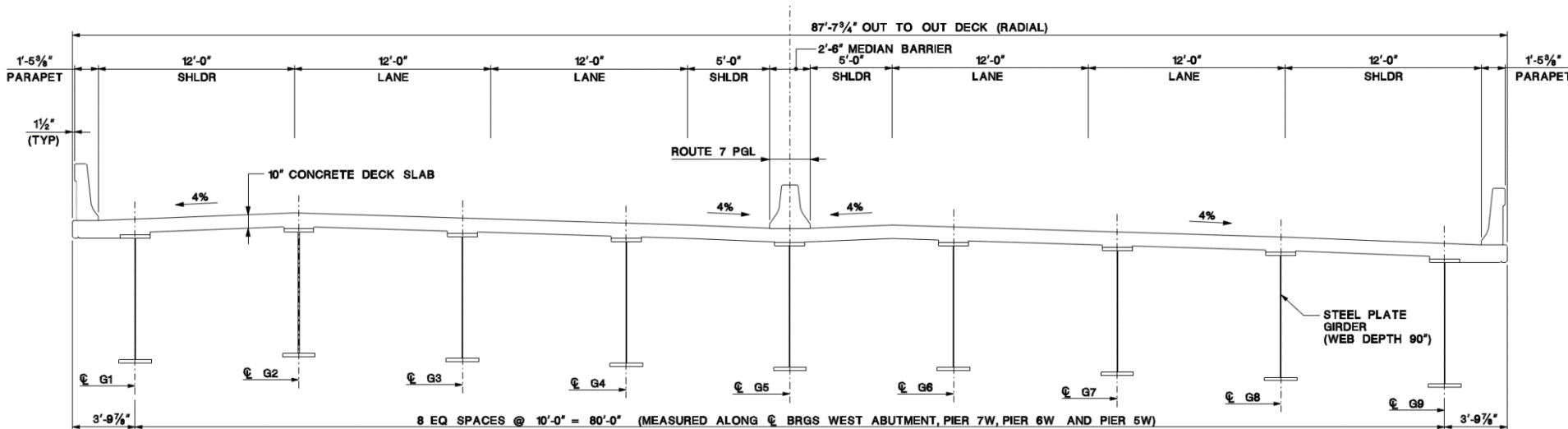
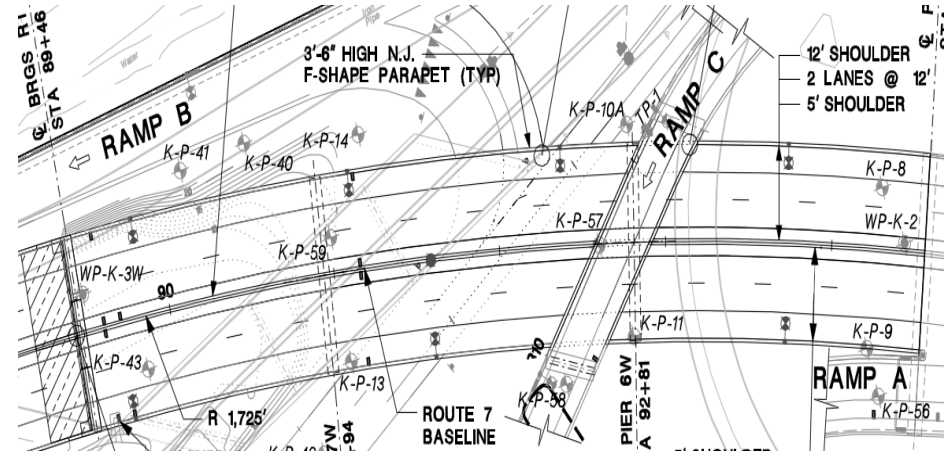
- 38,500 cy LWA
- Use Geotextile at base of LWA
- Over-excavation required prior to placing LWA
- Dewatering required during earthwork



# RT 7 Hackensack River Wittpenn Bridge Contract 4

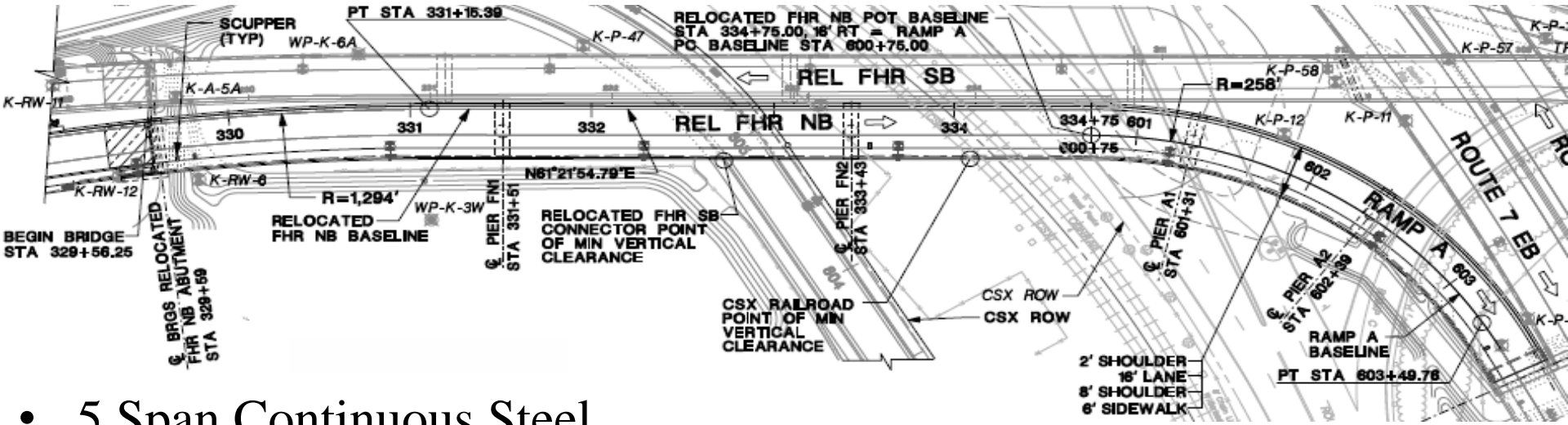
## Route 7 Mainline

- 3 Superstructure Units
- Steel Plate Curved Girders
  - Unit #1 – 3 Span Continuous
  - Unit #5 – Simple Span
  - Unit #7 – 3 Span Continuous

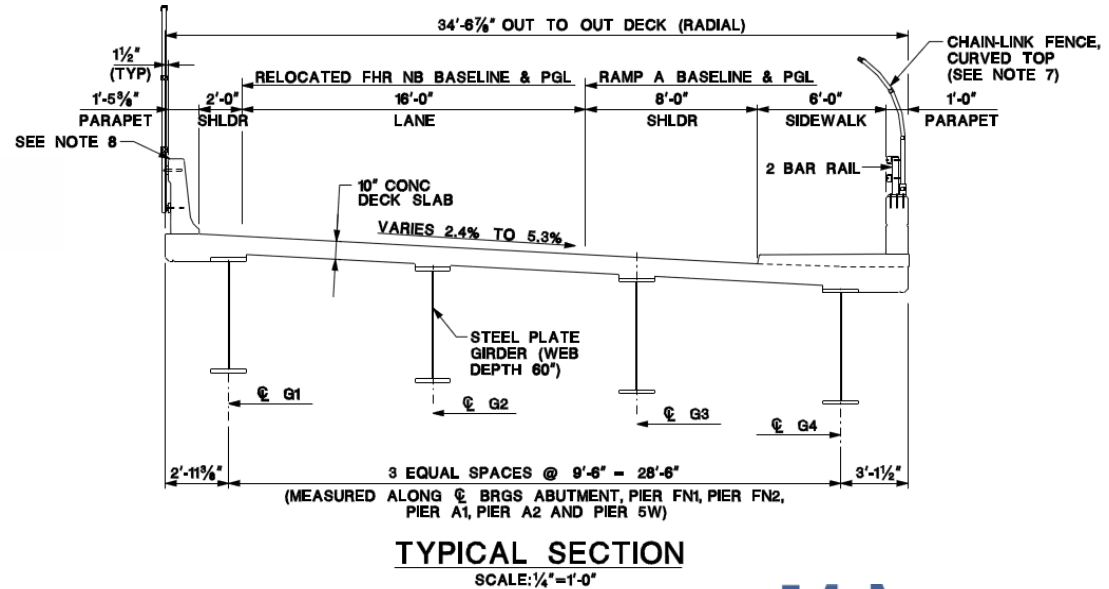


# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Relocated Fish House Road Northbound/ Ramp A

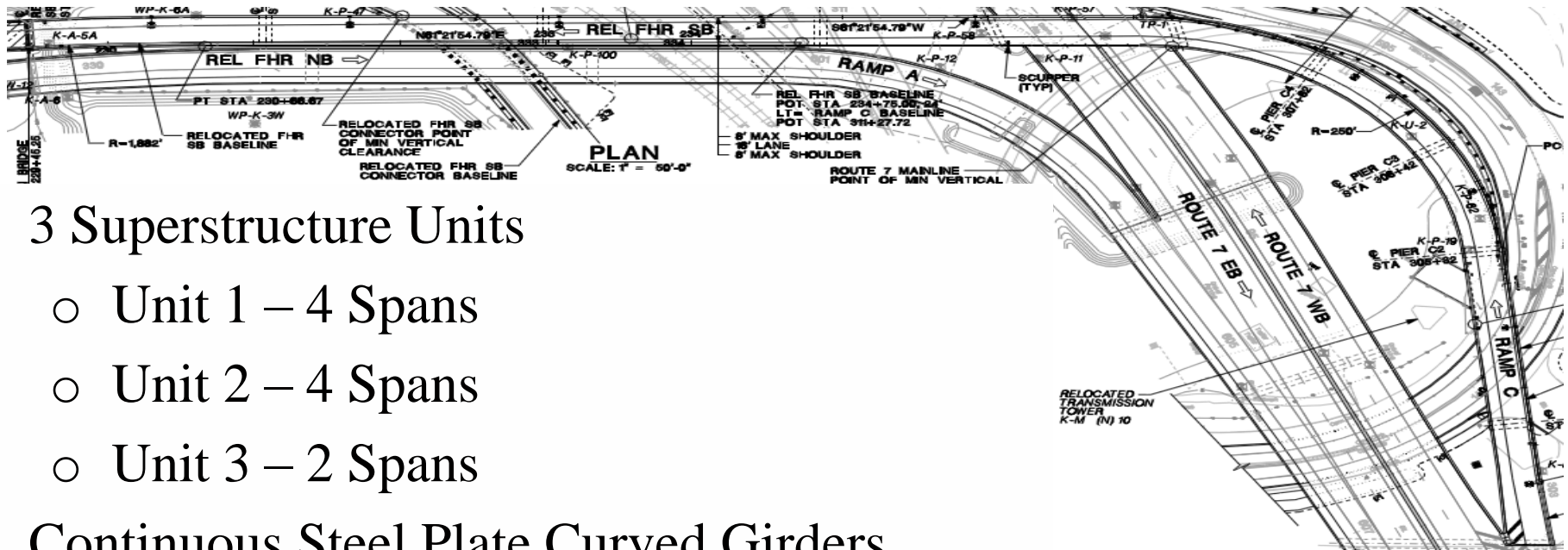


- 5 Span Continuous Steel Plate Curved Girders
- Approx. 800 LF
- 4 Piers on Drilled Shafts
- 1 Abutment on Piles
- Connects to Route 7 EB at existing Pier 5W

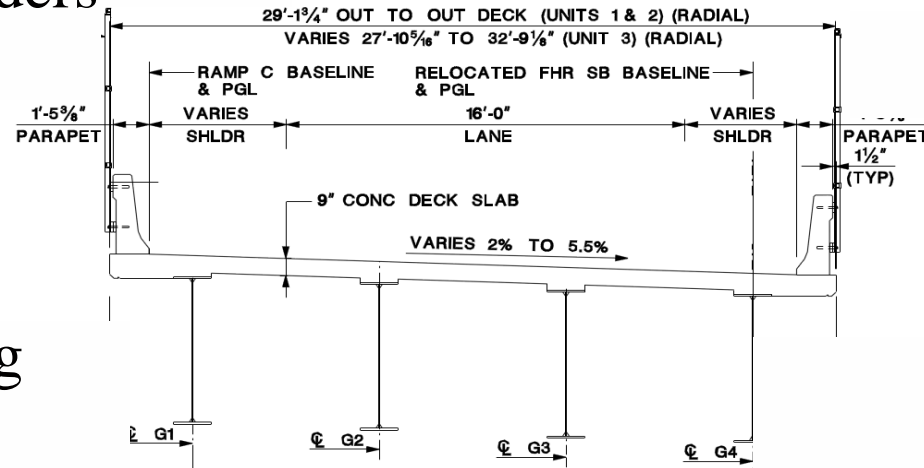


# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Relocated Fish House Road Southbound/ Ramp C

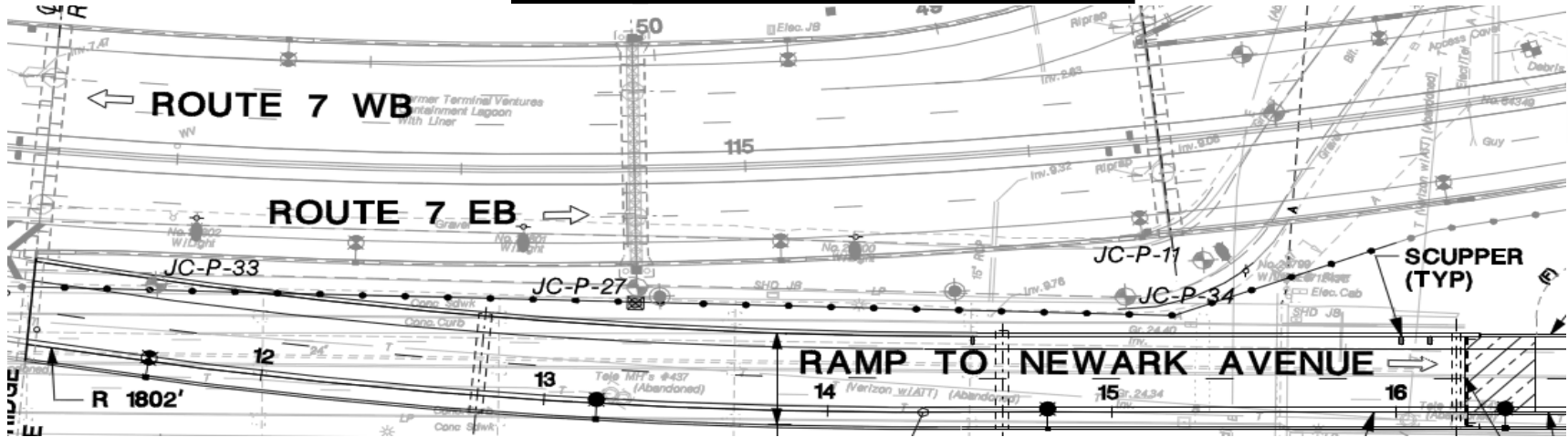


- 3 Superstructure Units
  - Unit 1 – 4 Spans
  - Unit 2 – 4 Spans
  - Unit 3 – 2 Spans
- Continuous Steel Plate Curved Girders
- Approx. 1400 LF
- 9 Piers on Drilled Shafts
- 1 Abutment on Piles
- Connects to Route 7 WB at existing Pier 3W

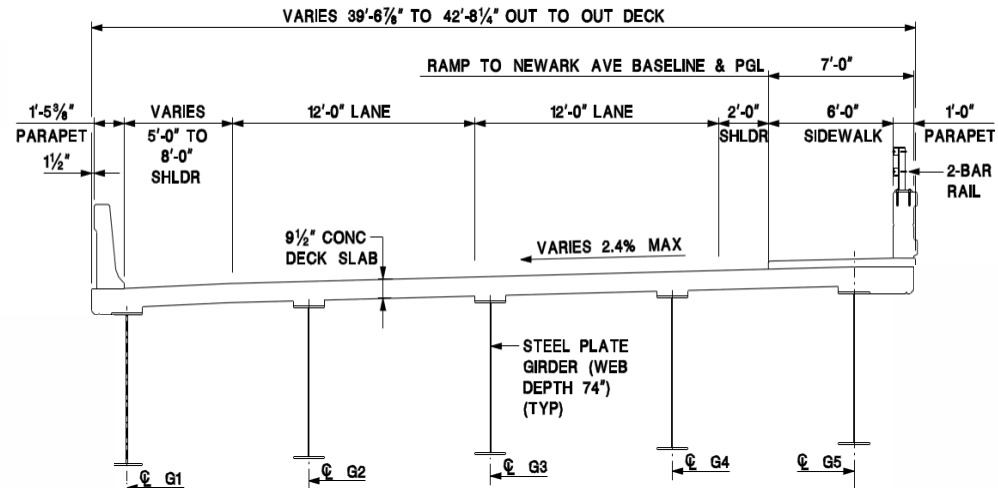


# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Ramp to Newark Avenue

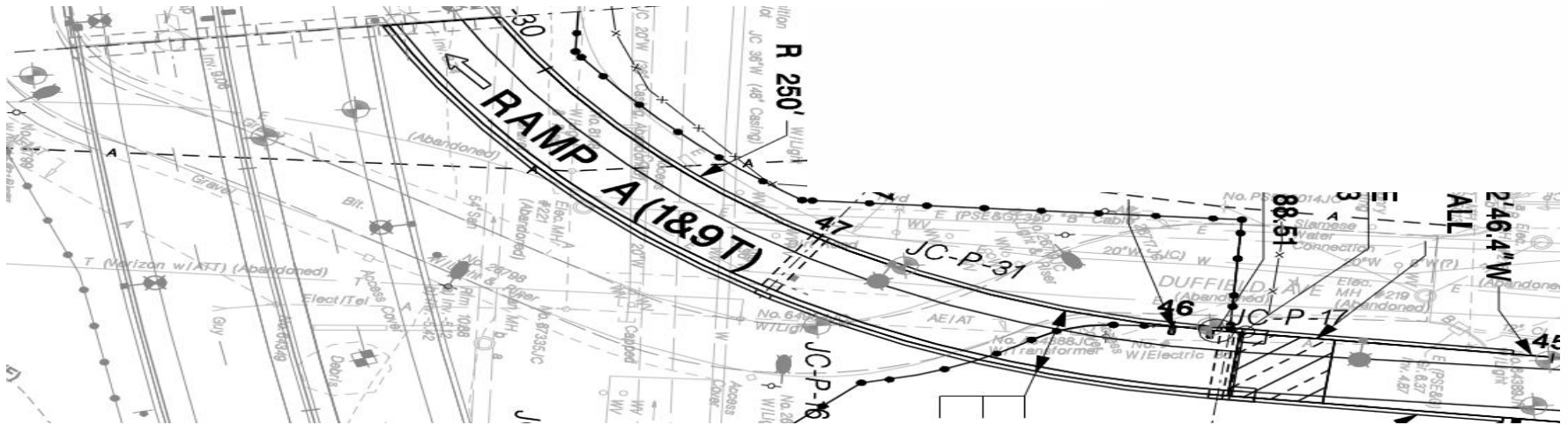


- 3 Span Continuous Steel Plate Girders
- Approx. 500 LF
- 3 Piers on Piles
- 1 Abutment on Piles
- Connects to Route 7 EB at Pier 4E-1

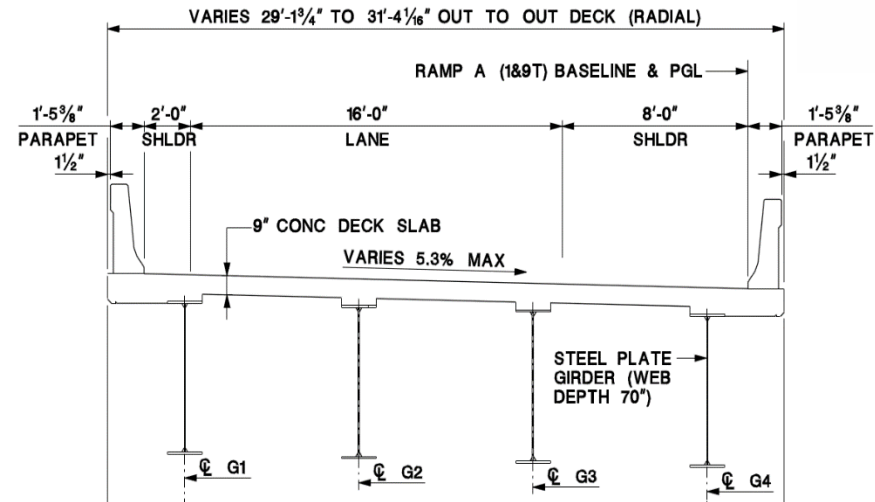


# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Ramp A (1&9T)

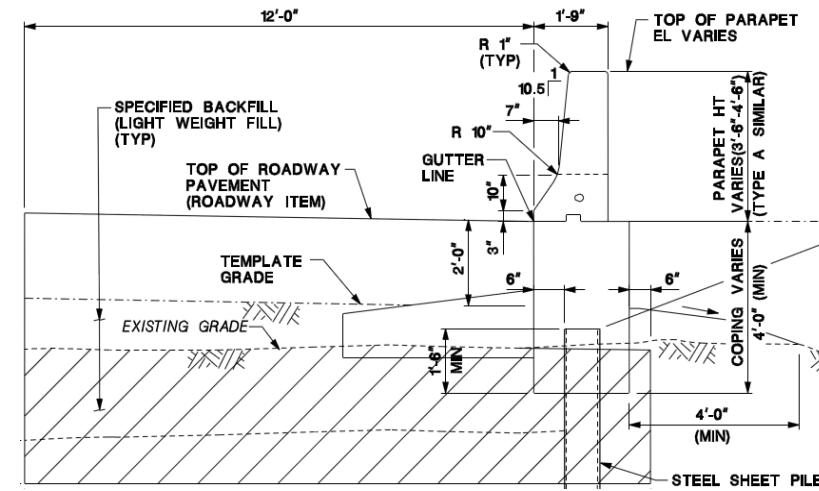
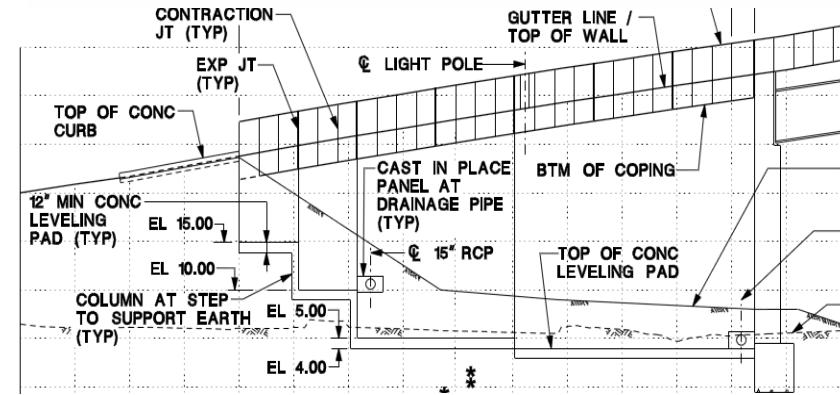
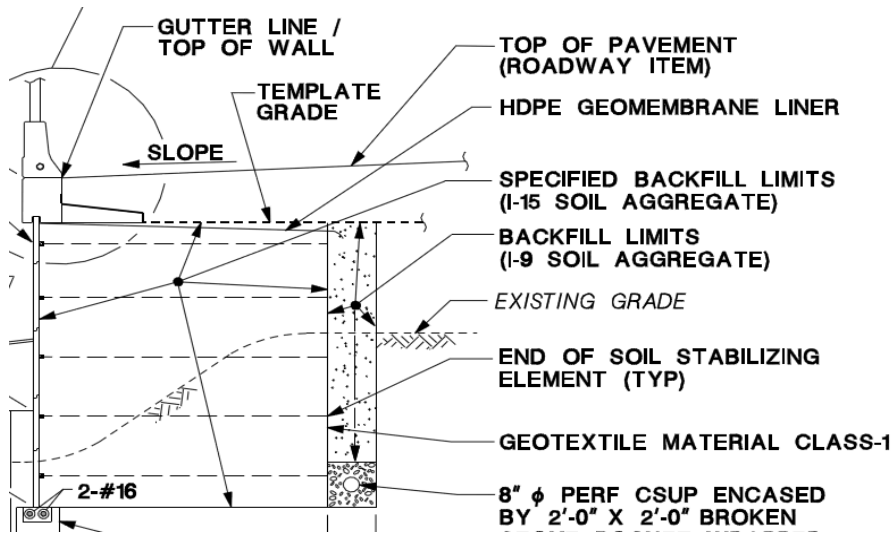


- 2 Span Continuous Steel Plate Girders
- Approx. 240 LF
- 1 Pier on Piles
- 1 Abutment on Piles
- Connects to Route 7 WB at existing Pier 6E and Route 1&9T



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Retaining Walls

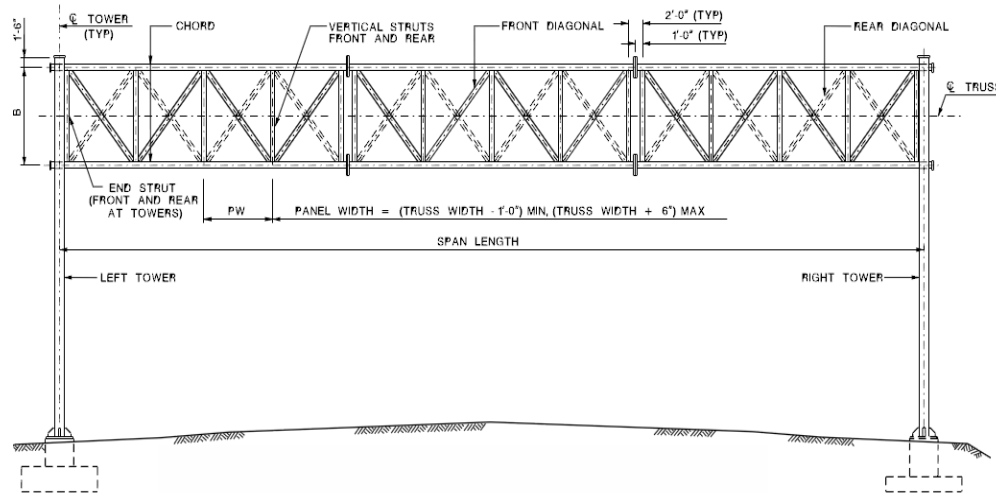
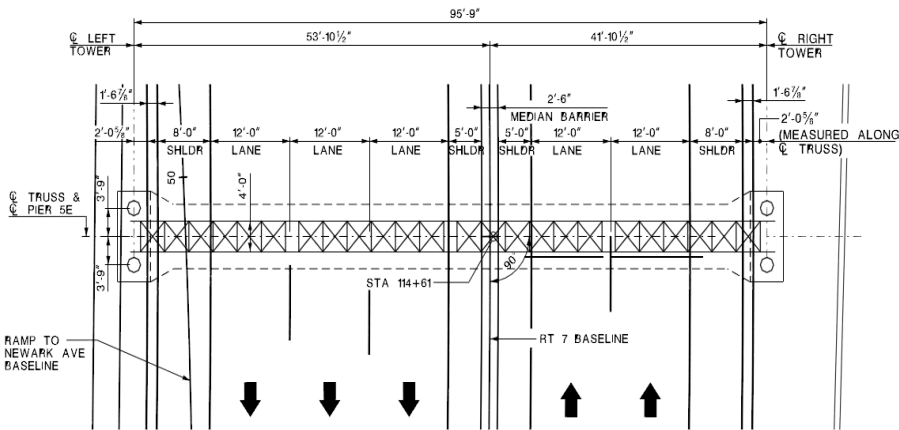


- 11 Total Retaining Walls
  - 7 Required MSE Walls
  - 1 Required Sheet Pile Wall
  - 3 MSE or Prefabricated Walls
- Approx. 3,800 LF of Retaining Walls
- NJDOT qualified product list website

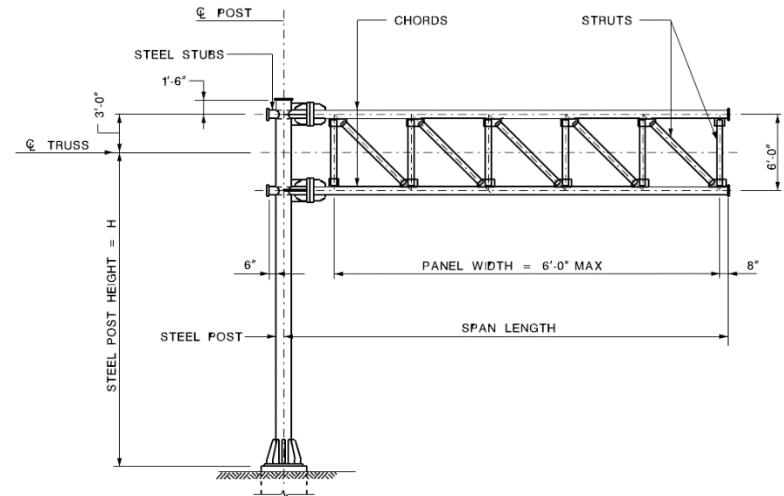


# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Sign Structures



- 9 Total Sign Structures
  - 8 Typical Overhead Sign Supports
  - 1 Cantilever Sign Support
- 4 Founded on Existing Structures
- 1 Founded on Spread Footings
- 4 Founded on Piles





## Roadway/MPT

- Coordinate with ongoing construction - survey will be required
- Coordinate with Pulaski
- 11 Stages of Construction
- 9 different Detour routes used throughout stages
- Maximum number of detours for each stage
- Maintain 2 lanes of traffic on Route 7 Mainline
- Tight/Restrictive Work Zones and Work Zone Access
- Temporary Lighting
  - Lighting required for any roadway open to traffic
  - Existing utility pole lighting will be decommissioned. Required roadway lighting to be provided by the contractor
  - PSE&G requires letter from payee (NJDOT/Hudson County)



## Roadway/MPT (Cont'd)

- Drainage
  - Extensive temporary drainage for roadway drainage
  - Contractor required to drainage work zone
- Signing
  - Existing drawbridge ahead sign replaced with wireless VMS
- Access to local properties
  - Maintain access to OC, HCIA, Bellezza
  - Temporary inventory and access road for OC
  - Maintain OC circulation and perimeter fence during gas main and Wall 1 work
  - Maintain CSX perimeter fencing until new is installed
  - Temporary trench restoration in OC followed by new concrete pavement during OC off peak season (winter shutdown)



## Underground/Aerial Utilities

- Transco
- PSE&G
- Hess
- Verizon
- AT&T
- Teleport  
Communications
- Sprint
- JCMUA
- Town of Kearny
- Conrail
- CSX
- NJ Transit
- PATH



## Underground/Aerial Utilities

- Transco – 12” XX, 24” XX
- PSE&G Gas – 16” XX, 20” XX
- Hess – 10” Steel, Cut and Cap for staging
- Verizon – 42- 4” conduits
- AT&T – Fiber in Verizon
- Teleport Communications – Fiber in Verizon conduit
- Comcast – Aerial and Conduit FHR, Fiber in Verizon conduit



## Underground/Aerial Utilities

- Sprint – conduit in CSX yard, relocate for drilled shafts
- JCMUA – 36” Water Rte 7
- Town of Kearny – 36 “ Water Rte 7 and FHR
- Conrail – Flagging
- CSX - Flagging
- NJ Transit
- PATH – Work within 50 feet of ROW



## Underground/Aerial Utilities

- Utilities
  - Several utilities completed in section due to staging
  - Many utility crossings. Many are deep as a result. Consider GW and shoring.
  - Major work done by pre approved contractors. PSEG gas distribution tie in by Company.
  - Consider longer lead times for materials
  - PSEG electric sonotubes for utility poles in LWA
  - Transmission towers
  - 5 foot max stockpile heights
  - Vibration monitoring
  - No dynamic compaction
  - Design plans by some Companies in Construction Details



## Underground/Aerial Utilities

- Owens Corning
  - Utility pole lighting eliminated for Wall 1 construction (high voltage)
  - Provide temporary lighting. Replace with final private lighting in barrier island
  - Separate service for new private lighting
  - New underground primary service for water pump house to remain



## Contaminated Soil & Groundwater Dewatering

- Environmental sampling confirmed Historic Fill (contaminated soil)
- High Water Table will require dewatering of excavations
- Required to retain environmental firm with a licensed water supply and wastewater operator to design and oversee GW/dewatering operations
- Dewatering discharge will require permit obtained by Contractor
  - DGW (Discharge to Groundwater) PBR - DEP approval – typically 30-60 days
    - Recharge to groundwater
  - Discharge to Surface Water Permit – DEP approval – often 6 months
    - Typical for larger volumes
    - Requires treatment





## Contaminated Soil & Groundwater Dewatering

- Linear Construction Project
  - LSRP oversight
  - HASP, MHP, PPCP
  - Contractor required to provide documentation for tracking and management of material
- No reuse of soil from HCIA property (active remediation site)
- No reuse of material Bellezza property for Transco pipe
- Extensive ground improvements will generate excess material
- Reuse other regulated soils meeting requirements of I-14
- Clean environmental cover required



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Coast Guard Coordination

- **Coordinate all channel closures with the USCG: must submit a plan and schedule of operation for approval at least 90 days before commencement of work**

### *Proposed Periods for Navigation Closure*

<b>Approximate Dates</b>	<b>Channel Closure/Obstruction</b>	<b>Description of Work</b>
Aug 6, 2021 – Aug. 20, 2021	Channel Closure While Working	Bridge Demolition
Aug. 21, 2021 – Aug. 23, 2021	Channel Open to Unrestricted Navigation	Working Outside Channel
Aug. 24, 2021 – Sept. 6, 2021	Channel Open to Unrestricted Navigation	Bridge Demolition
To be Coordinated with USCG	Daily Closure	10 maximum - Bridge Demolition

**On or about 09/06/21, restore the channel to normal operating conditions.**

**The First District USCG office contact information is as follows:**

**Mr. Chris Bisignano  
First Coast Guard District  
Bridge Program Manager – Bridge Branch Manager  
One South Street  
Battery Park Building  
New York, NY 10004-1466  
212-514-4331  
christopher.j.bisignano@uscg.mil**



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Environmental Permits

- Anticipated need of Surface Water Discharge Permit due to high volume of contaminated dewatering effluent during construction. Contractor is responsible for obtaining NJDEP's approval of the Discharge to Surface Water (DSW) Permit.

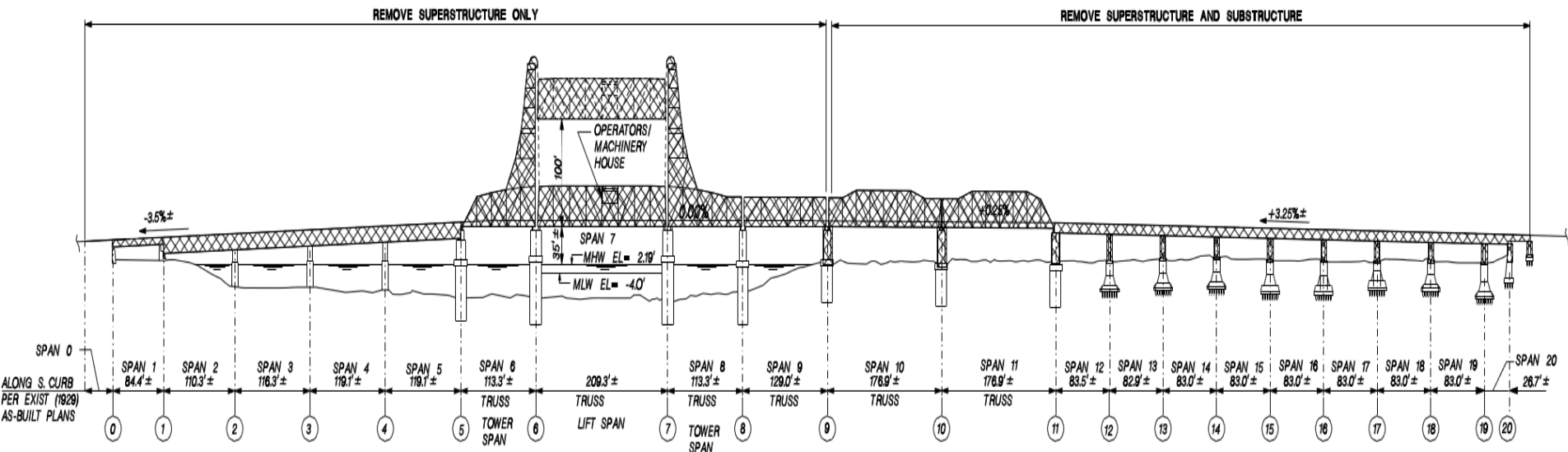
PERMITS		
PERMIT TYPE	ISSUED	EXPIRES
1. NJDEP WATERFRONT DEVELOPMENT (ORIGINAL PERMIT) PERMIT NO. WFD 090002 (IP IN WATER) PERMIT NO. WFD 090001 (IP UPLAND)	9/22/10	9/22/15
NJDEP INDIVIDUAL FRESHWATER WETLANDS (ORIGINAL PERMIT) PERMIT NO. FWW 090001 (IP WETLAND) PERMIT NO. FWW 090002 (IP OPEN WATER)	9/22/10	9/22/15
NJDEP WATER QUALITY CERTIFICATE	9/22/10	9/22/15
NJDEP FLOOD HAZARD AREA PERMIT NO. FHA 090001 (IP FHA) PERMIT NO. FHA 090002 (VERIFICATION)	9/22/10	9/22/20
2. NJDEP WATERFRONT DEVELOPMENT PERMIT NO. WFD 150002 (IP IN WATER - PERMIT EXTENSION)	9/22/15	9/22/20
NJDEP INDIVIDUAL FRESHWATER WETLANDS PERMIT NO. FWW 150001 (IP WETLAND - PERMIT EXTENSION)	9/22/15	9/22/20
3. UNITED STATES ARMY CORPS OF ENGINEERS INDIVIDUAL WETLANDS (ORIGINAL PERMIT) PERMIT NUMBER NAN-2010-00611-M1	4/12/11	4/12/14
4. UNITED STATES ARMY CORPS OF ENGINEERS INDIVIDUAL WETLANDS (PERMIT EXTENSION) PERMIT NUMBER NAN-2010-00611-M2	4/12/14	4/12/21
5. UNITED STATES COAST GUARD	4/7/11	4/7/18
6. NJDEP TIDELANDS CONVEYANCE INSTRUMENT (10 YR. LICENSE)	2/10/11	2/10/21
7. NJPDES 5G3 - CONSTRUCTION ACTIVITY STORMWATER GENERAL PERMIT (NJG0088323) (REQUEST FOR AUTHORIZATION (RFA) IS REQUIRED.)	3/1/12	2/28/17 (TO BE RENEWED AUTOMATICALLY BY THE NJDEP UPON EXPIRATION)
8. THE CONTRACTOR SHALL ENSURE THE REQUIRED DISCHARGE PERMITS FOR DEWATERING ARE OBTAINED. SEE SOIL EROSION AND SEDIMENT CONTROL NOTES.		
9. TRANSCO PIPELINE (ORIGINAL PERMIT)		
UNITED STATES ARMY CORPS OF ENGINEERS GENERAL PERMITS 12 & 33 PERMIT NUMBER NAN-2014-01221	2/24/12	2/24/17
NJDEP WATERFRONT DEVELOPMENT PERMIT NO. WFD 110001 (IP UPLAND)	2/24/12	2/24/17
NJDEP FRESHWATER WETLANDS GENERAL PERMIT NO. 2 PERMIT NO. FWW 110001	2/24/12	2/24/17
NJDEP HACKENSACK MEADOWLANDS WATER QUALITY CERTIFICATE PERMIT NO. CDT 110001	2/24/12	2/24/17
10. TRANSCO PIPELINE (PERMIT EXTENSIONS)	PENDING	



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Demolition of Existing Wittpenn Bridge

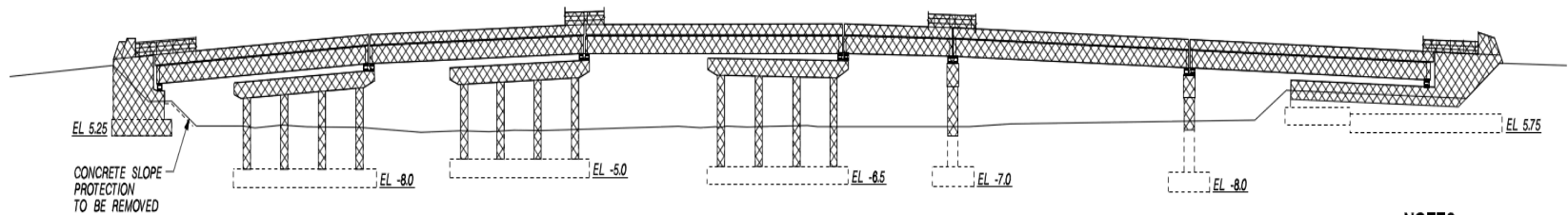
- Includes removal of utilities, drainage pipes, debris, and supports fastened to structure.
- Adjacent railroad bridge and facilities
- Blasting prohibited
- Lead paint, asbestos, and other regulated materials may be present.



# RT 7 Hackensack River Wittpenn Bridge Contract 4

## Demolition

- Demolition includes:
  - Existing Wittpenn Bridge
  - Route 7 Westbound Overpass
  - 7 Existing Sign Structures



NOTES:



# RT 7 Hackensack River Wittpenn Bridge Contract 4

Plans, specifications, and bidding information for the proposed work will be available at Bid Express website.

**Anticipated Advertisement Date: 3/30/17\***

**Anticipated Bid Date: 5/4/17\***

**\*Subject to change by addenda**

**For questions, please contact:**

**(Pre-Advertisement)**

**Division of Procurement**

**Construction Services**

**1035 Parkway Ave.**

**P.O. Box 600**

**Trenton, NJ 08625-0600**

**Phone: (609) 530-2103**

**Fax: (609) 530-2238**

**E-mail: [CSPD.CSPD@dot.nj.gov](mailto:CSPD.CSPD@dot.nj.gov)**

**(Post Advertisement)**

**Please submit all questions on the Bid Express website.**

