

# Rehabilitation of Bridge No. 00722

Project No. 102-356

City of Norwalk

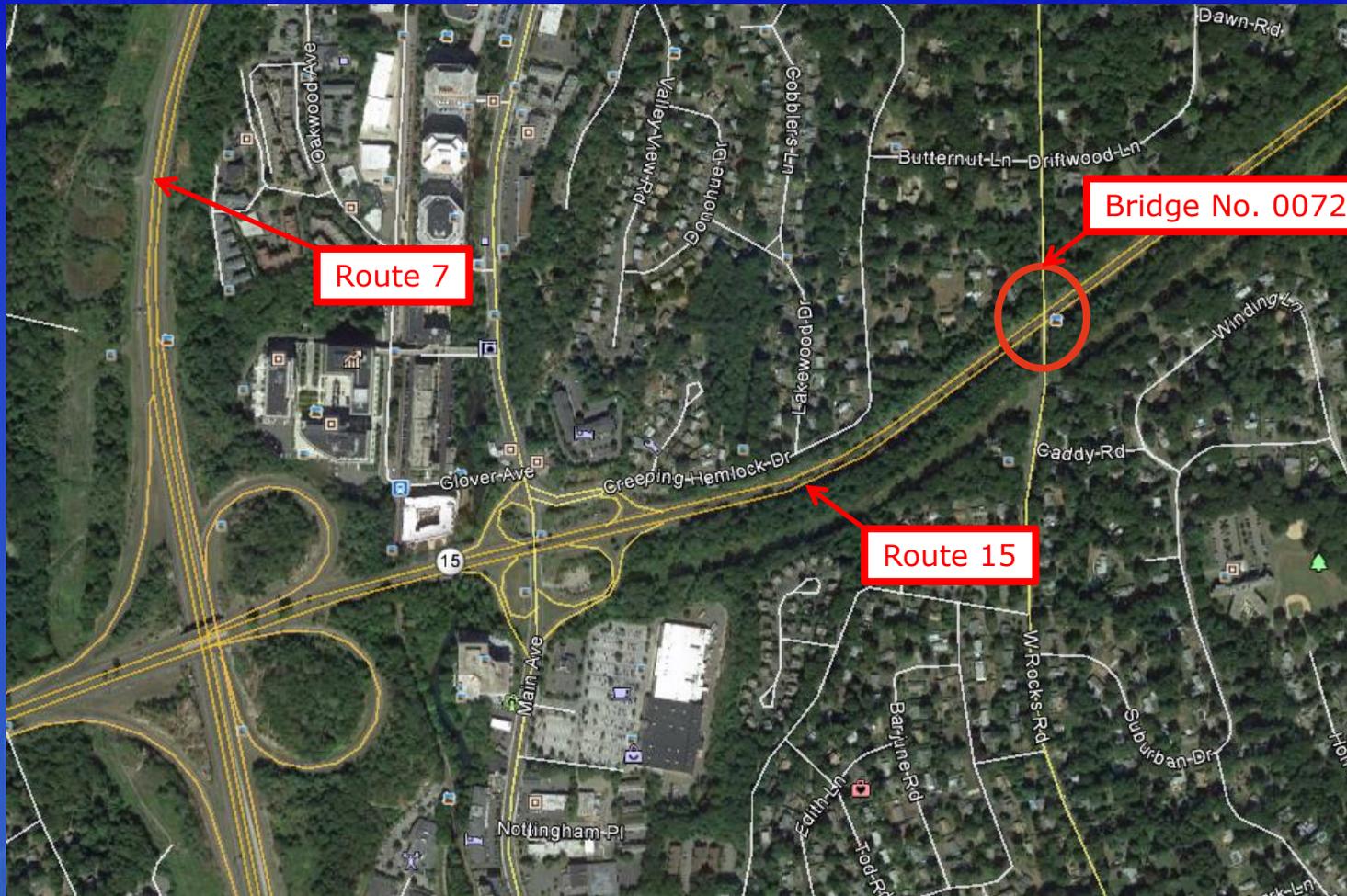
West Rocks Road over Merritt Parkway



Connecticut Department of Transportation



# Location of Project



# Street view



# Existing Roadway



## **West Rocks Road Looking North**

Connecticut Department of Transportation



# Existing Roadway



## **West Rocks Road Looking South**

Connecticut Department of Transportation



# Existing Bridge Information

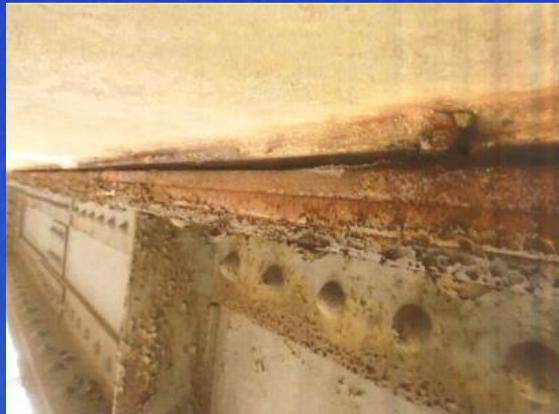
- **Original structure constructed in 1938**
- **Structure Type**
  - **Steel Rigid Frame with Ends Encased in Concrete**
- **Dimensions**
  - **Curb-to-Curb Width: 27.5 ft**
  - **Out-to-Out Width: 36 ft**
  - **Total Structure Length: 90 ft**
- **Service**
  - **Carries West Rocks Road over Merritt Parkway, with one lane of traffic in each direction**
  - **Estimated Average Daily Traffic is 10282 Vehicles (5% trucks) (2015)**
  - **2.5ft wide sidewalk on West Side**



# Existing Bridge Information

## Current Ratings

Section	2013	2015
Deck	4	4
Superstructure	6	5
Substructure	6	6



2013



2015

**In the past 2 years there has been a large amount of additional deterioration. It is anticipated that the steel may be a 4 by the time the project will be in construction in 2018.**

# Existing Site Conditions



## **Typical Underside**

Connecticut Department of Transportation



# Girder Deterioration



# Girder Deterioration



# Girder Deterioration



# Existing Site Conditions



## **South Abutment**

Connecticut Department of Transportation



# Abutment Spalling



# Existing Bridge Information

**The existing structure does not meet current design loading standards.**

**Plating the riveted members would require complete disassembly.**

**The deck is rated a 4 and must be replaced.**

**Superstructure replacement will be required to bring it up to standards.**



# **Defining Historic Elements**

- **Riveted steel Arch members**
- **Ornamental Band along fascia**
- **Ornamental Railing and Parapet**



# **Proposed Rehabilitation** **Partial Structural Replacement**

**Existing 3 Steel Frame Arches replaced with 3 Plate Girder Arches and 2 Intermediate Rolled Beams**

**Angle Stiffeners attached with simulated rivets**

**Abutment partially reconstructed to accommodate new Girder configuration**

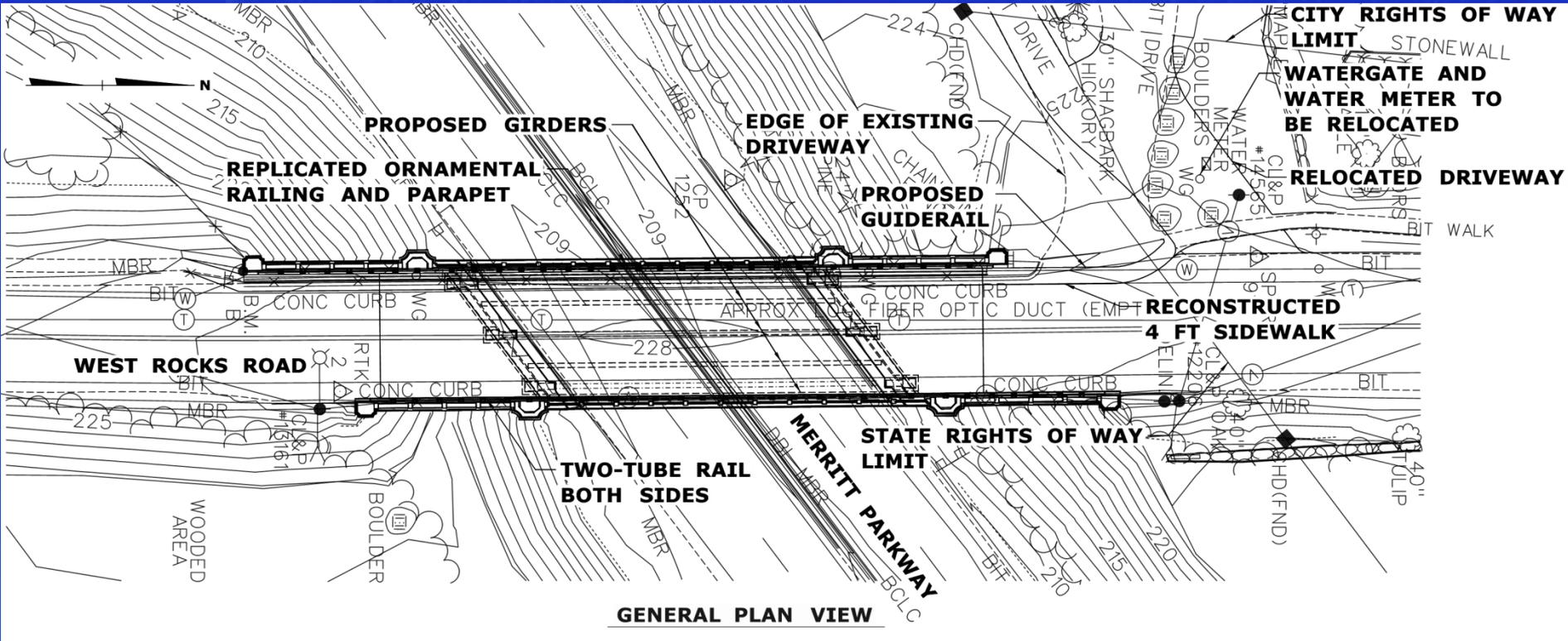
**Deck fully replaced**

**Replicated historic parapet, ornamental band, and historic rail**

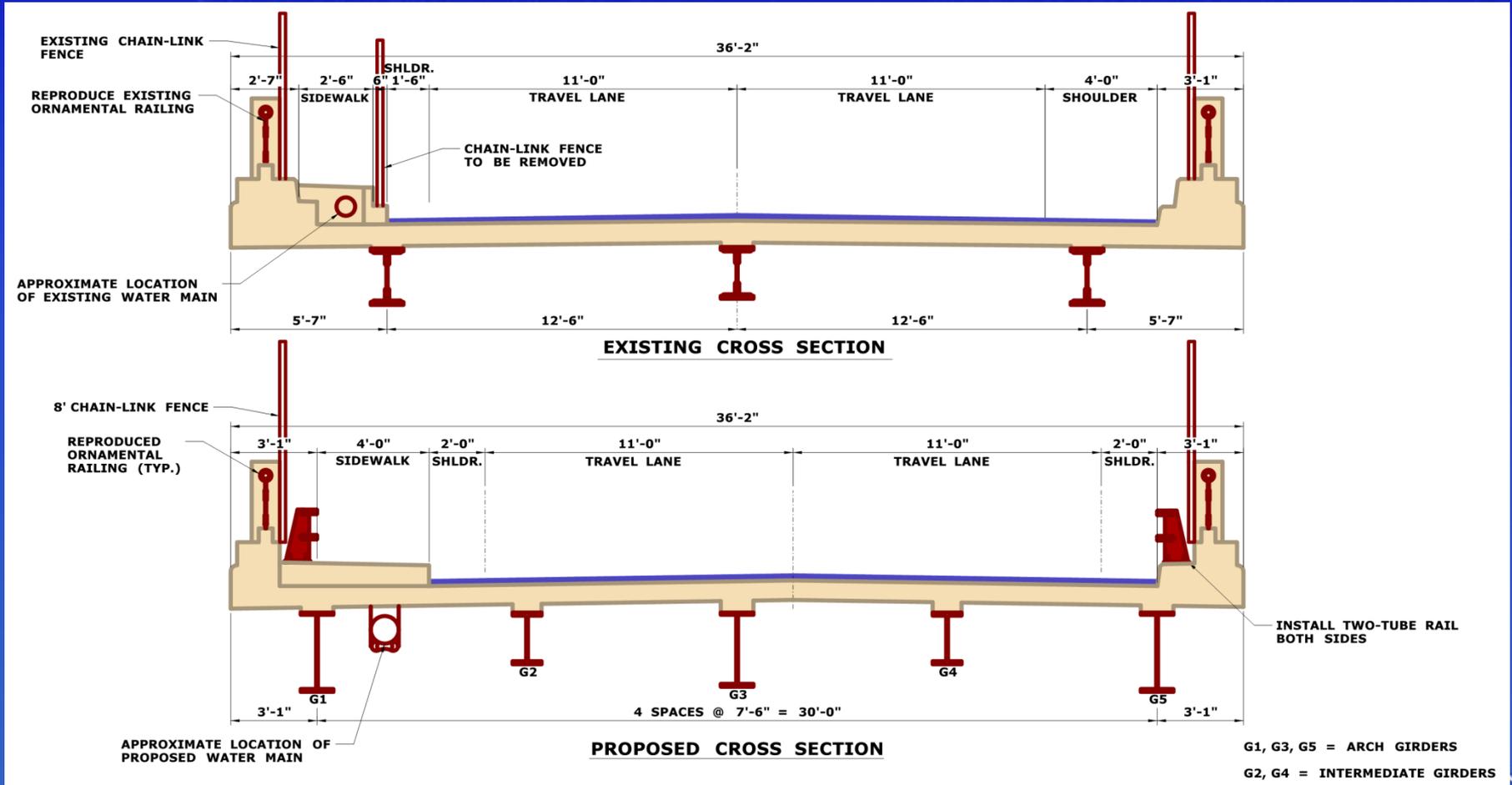
**Two-Tube Rail along West Rocks Road**



# Proposed Rehabilitation Plan View



# Proposed Rehabilitation Cross Section



# Proposed Rehabilitation



Existing (Note recessed steel arches)



Proposed (Arch shape maintained, with smaller cantilever)

Connecticut Department of Transportation



# Underside



Existing



Proposed (Note shallower intermediate beams)  
Connecticut Department of Transportation



# Stiffeners

- Angle stiffeners on fascia of arch girders
- Button head bolts used to attach stiffeners to emulate rivets

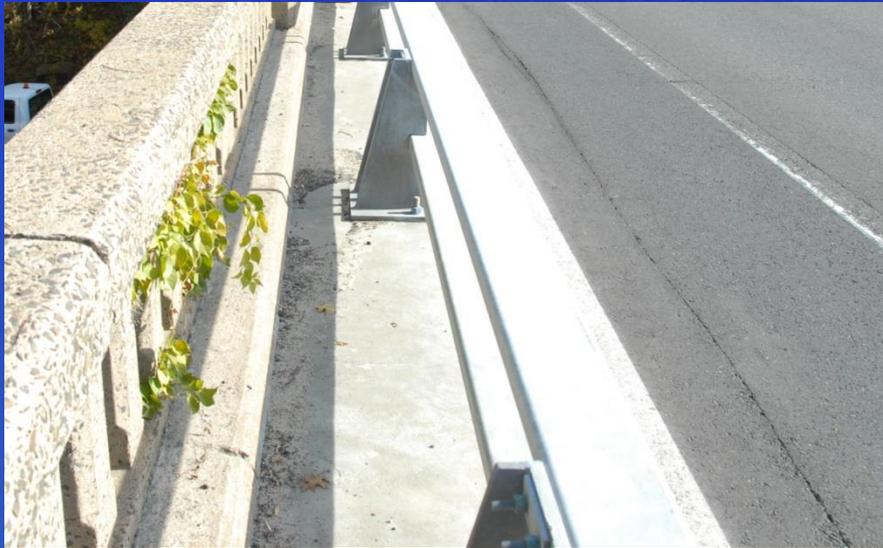


Battery Maritime Building Restoration, Lower Manhattan, NY

Connecticut Department of Transportation

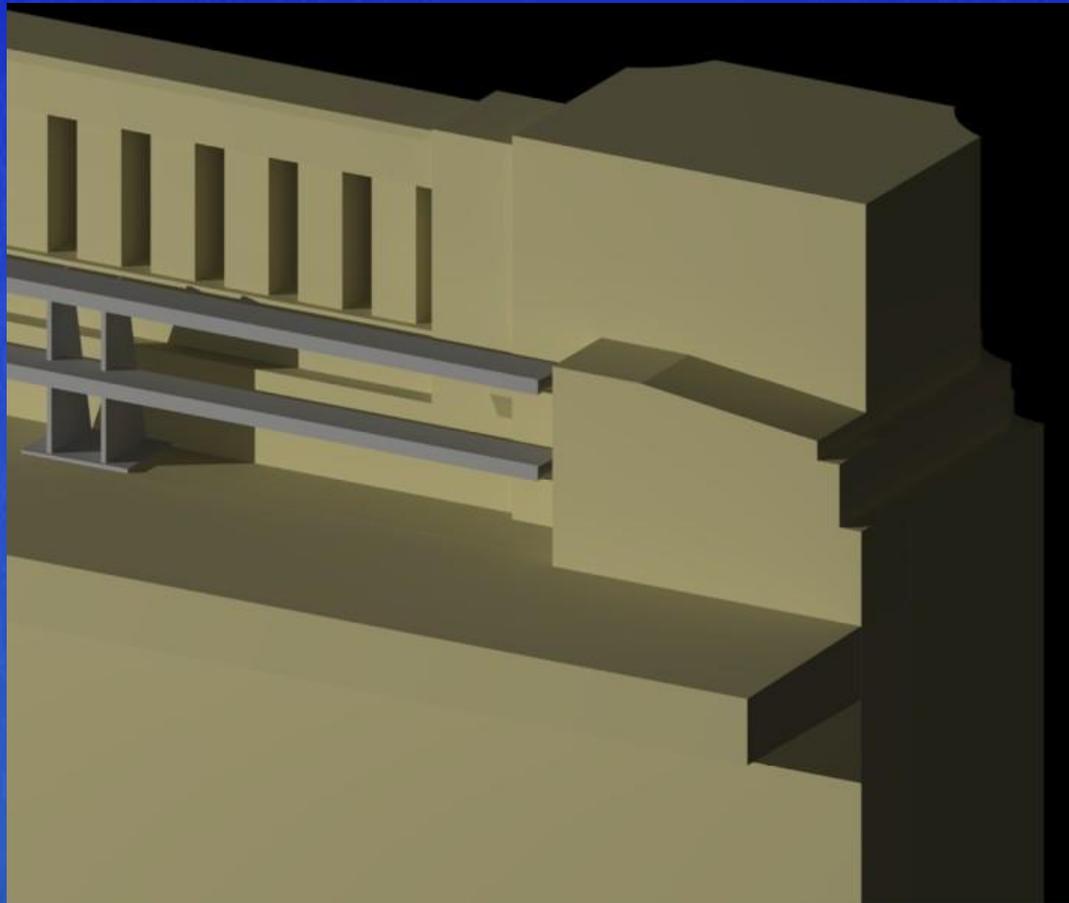


# Two-Tube rail



# Two-Tube Rail

## Typical Endblock





**Department of Transportation**  
**Division of Rights of Way**  
**(ROW)**

**Michelle Miller**  
**Project Coordinator**  
**2800 Berlin Turnpike**  
**P.O. Box 317546**  
**Newington, CT 06131-7546**



# Function

- **Acquire all property/property rights necessary for transportation projects.**



# **Statutory References**

- **State of Connecticut**

**C.G.S. Sections 13a-73 & 13a-98e**

- **Federal**

**Uniform Relocation Assistance and Real Properties Acquisition Act of 1970, as amended.**



# Property Impacts

- Total Acquisitions
- Partial Acquisitions
- Easements
- Construction Easements
- Rights

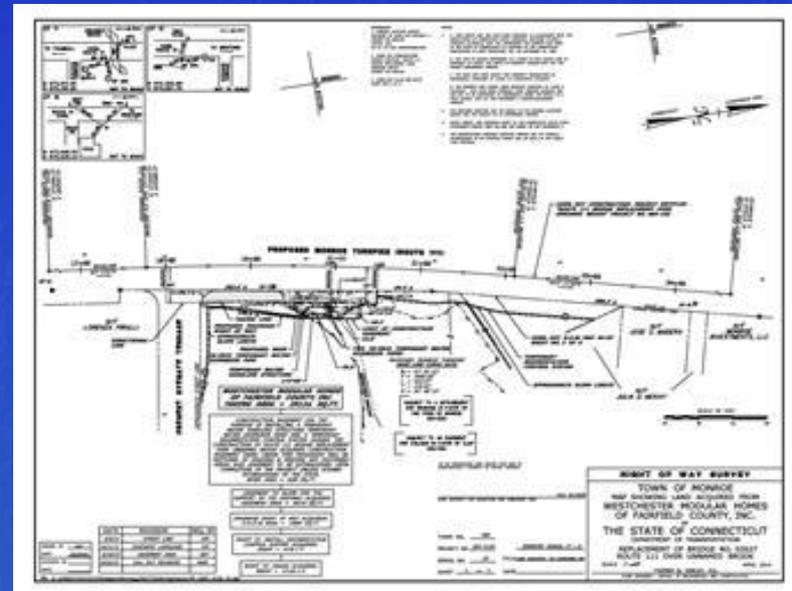


**\* Note: Specific impacts are subject to change as the design progresses.**



# ROW Acquisition Process

- Letter of Intent to Acquire
- Valuation
- Offer of Just Compensation
- Negotiation
- Acquisition
  - Agreement
  - Eminent Domain/Condemnation
    - » 6 month appeal period



# **Timing for Acquisitions**

- **All property rights must be acquired by the project advertising date.**
- **Current Advertising Date:  
9/20/2017**



# **Project Cost**

**Estimated construction cost: \$2,000,000.**

**Construction funding: 100% State Funds**



# Project Schedule

- **Construction is anticipated to begin in the spring of 2018 and be completed in the fall of 2018, utilizing a three month summer roadway closure and detour.**
- **The existing deck is supported by only three steel arches, which prohibits using alternating one-way traffic methods to perform the superstructure replacement over two stages.**



# Project Schedule

- **The components to be replaced cannot be done with the bridge left open to alternating one lane of traffic.**
- **The schedule is preliminary and is predicated upon the availability of funding and the resolution of any property impacts.**



# **Utility Coordination**

- **Overhead utilities are present at the bridge location:**
  - **Electrical**
  - **Telecommunications**
  - **Cable TV**
- **Underground utilities are present at the bridge:**
  - **Water Main**
- **Project work that includes utility relocations will be performed prior to the closure of the bridge and after its reopening.**



# **Maintenance and Protection of Traffic**

## **Prior to Detour:**

- **Off-peak lane closures are required to perform minor construction activities (utilities relocations)**

## **During Detour:**

- **Major construction activities will take place during 12 weeks detour (deck demolition, replacement of superstructure and rehabilitation of substructure)**
- **Minor lane closures in non-peak hours will be required on the Merritt Parkway to gain temporary access to the underside and abutments of the bridge.**

## **After Detour:**

- **Open the bridge to traffic. If required, off-peak lane closures will be utilized to perform minor construction activities (guiderail, final grading and pavement)**



# **Proposed Detour Route**

- **Detour will reduce construction duration:**
  - **The detour route has been coordinated with the City of Norwalk's Department of Public Works.**
  - **Detour Route: West Rocks Rd. to Cannon St. to East Rocks Rd. to Bayne St. and back to West Rocks Rd.**
    - **Proposed Detour Time Frame: 12 Weeks**
    - **Detour Length is approximately 5 miles**





# **Questions?**

## **Project Manager:**

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## **Project Engineer:**

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**(860) 594-3117**

**[Sarwat.basha@ct.gov](mailto:Sarwat.basha@ct.gov)**

## **Design Engineer:**

**Mr. Jacob W. Platt**

**(860) 594-3481**

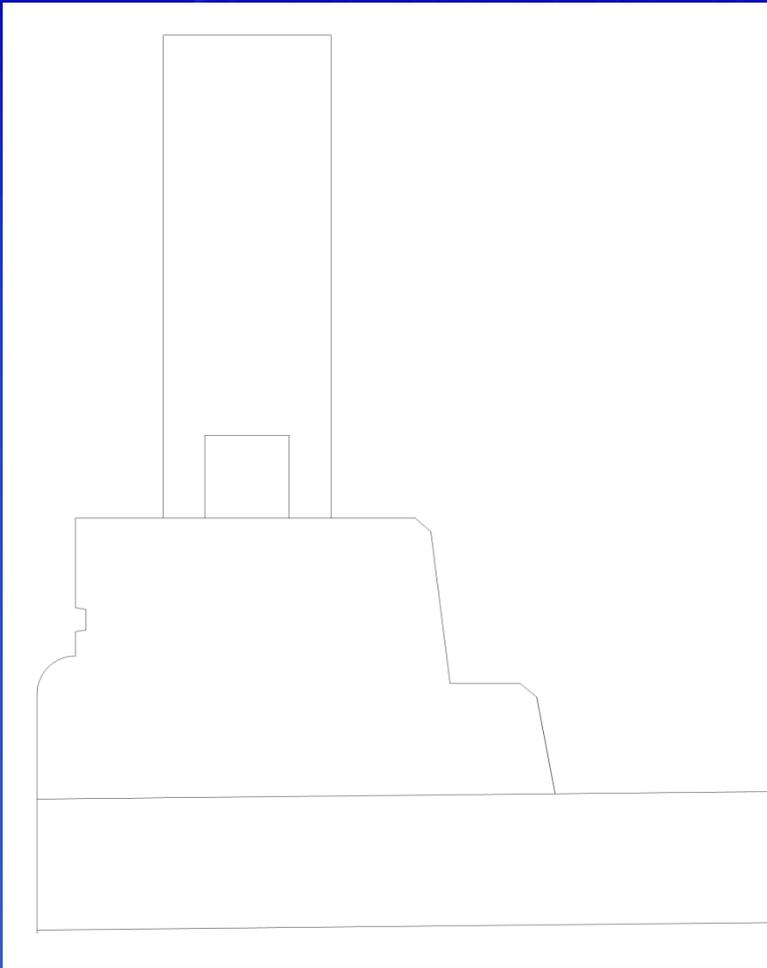
**[Jacob.platt@ct.gov](mailto:Jacob.platt@ct.gov)**



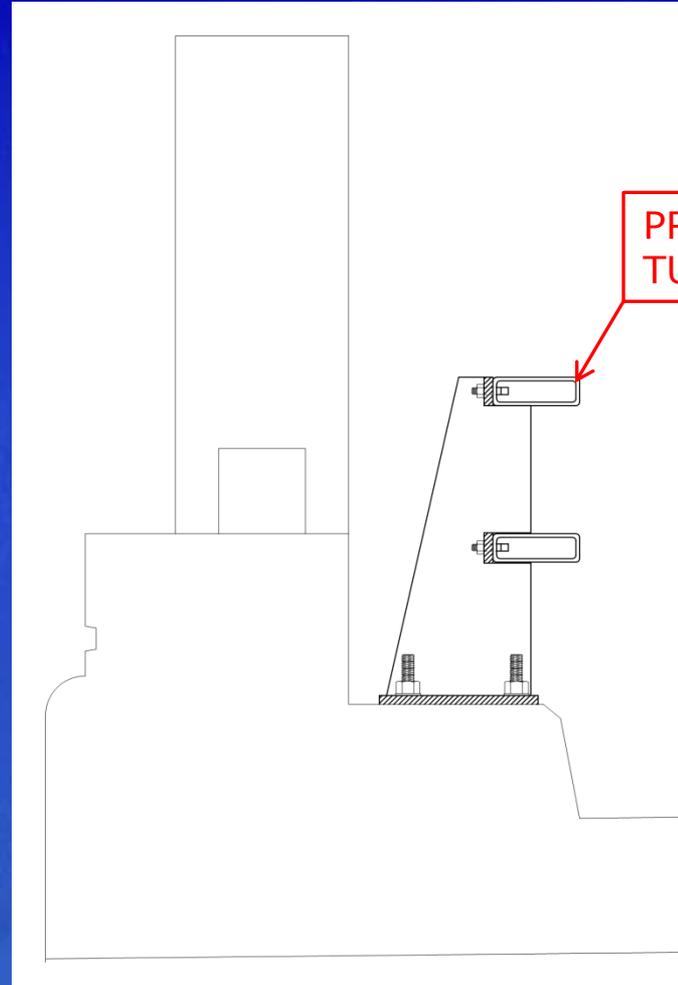
# Girder Deterioration



# Two-Tube Rail



Existing



PROPOSED TWO-TUBE RAIL

Proposed





# Girder Deterioration



# Girder Deterioration



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