

State Project 0092-0687: Rehabilitation of Bridge No. 00337, New Haven Virtual Public Information Meeting

Live Event: Thursday, November 17th, 7:00 p.m.

Join us for a Question and Answer session following the formal presentation and send us a question or a comment during the session.

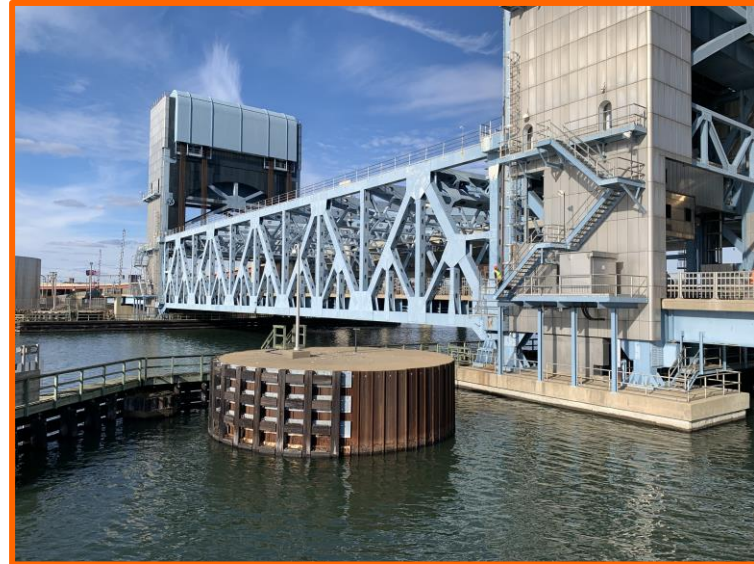
Project Email:

DOTProject92-687@ct.gov

Phone: (860) 594-2020 (voicemail only)

Visit the Project Webpage:

<https://portal.ct.gov/DOTNewHaven92-687>



A recording of this presentation will be available on YouTube after the event. Closed captioning, including non-English translation options, is available now on Zoom and YouTube Live.

La grabación de esta presentación estará disponible después del evento en YouTube, incluyendo subtítulos y acceso a traducciones en otros idiomas.

Rehabilitation of Bridge No. 00337 // State Project No. 0092-0687



Question & Answer Session – Send a Question or Comment



by chat: [Zoom Q&A](#)



by email: DOTProject92-687@ct.gov



by phone: (860) 594-2020 – please leave a voicemail and specify project 92-687



Via project webpage: <http://portal.ct.gov/DOTNewHaven92-687>



Survey: <https://portal.ct.gov/ctdotsurvey>

Note: The comment period is open through **December 1, 2022**

Title VI – Civil Rights

- Brief Voluntary Feedback Survey Appreciated.

- <https://portal.ct.gov/ctdotsurvey>

- Civil Rights information.

- <https://portal.ct.gov/DOT/Business/Contract-Compliance/Title-VI-Page>

- No Person shall, on the basis of race, color or national origin, be excluded from participation or subject to discrimination in the development of this project.



Public Information Meeting



Bart Sweeney
Manager of Bridges - CTDOT



Bao Chuong
Principal Engineer - CTDOT



Sowatei Lomotey
Project Manager – CTDOT



Barak Brako Frempong
Project Engineer – CTDOT



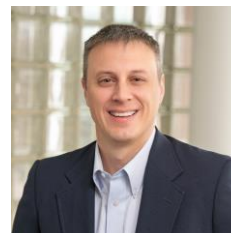
Ryan Cooley
Project Manager – CHA



Josh Nishball
Structural Engineer – CHA



Jeff LeMay
Highway Engineer – CHA



Lee Lentz
Mechanical/Electrical –
Modjeski and Masters Inc.



Project Purpose and Need

Purpose:

- To upgrade the Bridge to a "State of Good Repair". A preservation project to extend the service life of the movable bridge and improve the conditions of approach roadway and structural components.

Need:

- Prevent future disruptions to the movable bridge service due to potential mechanical and electrical deficiencies, to promote and enhance area commerce and safe public transportation.



INTRODUCTION



Josh Nishball
Structural Engineer – CHA

Formal Presentation

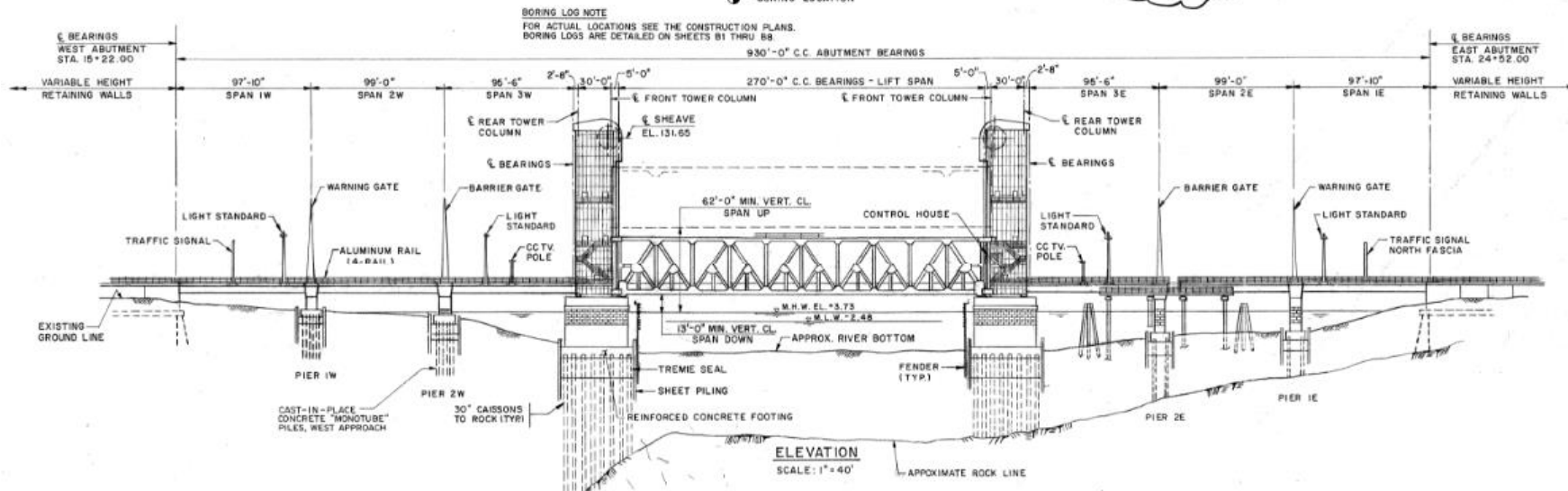
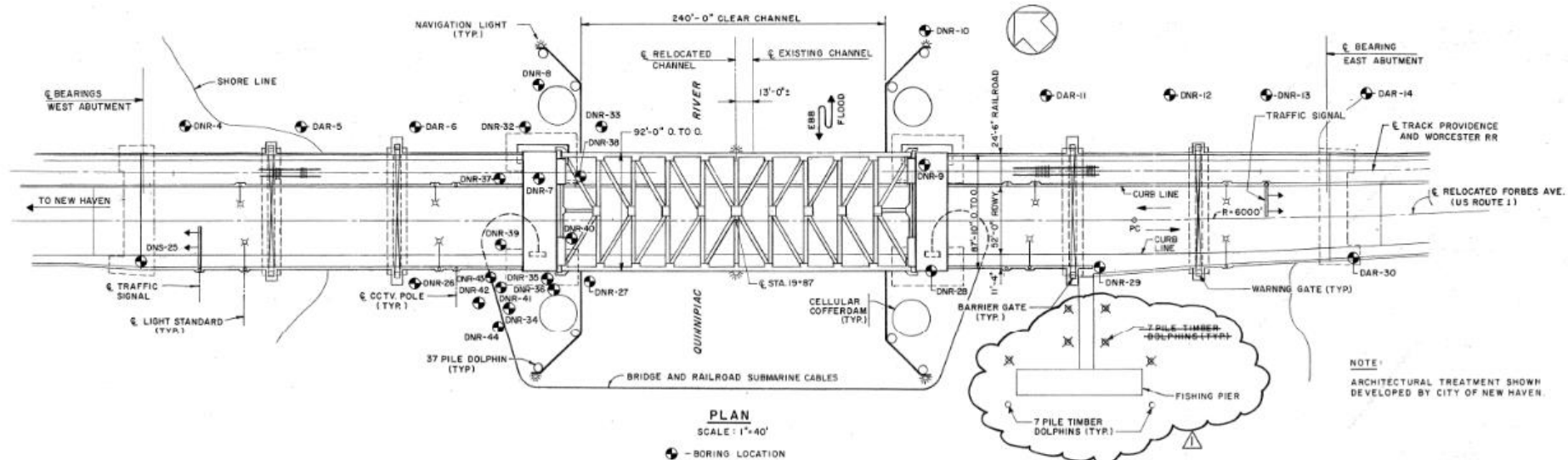
Josh Nishball from CHA will walk us through the presentation.



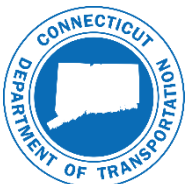
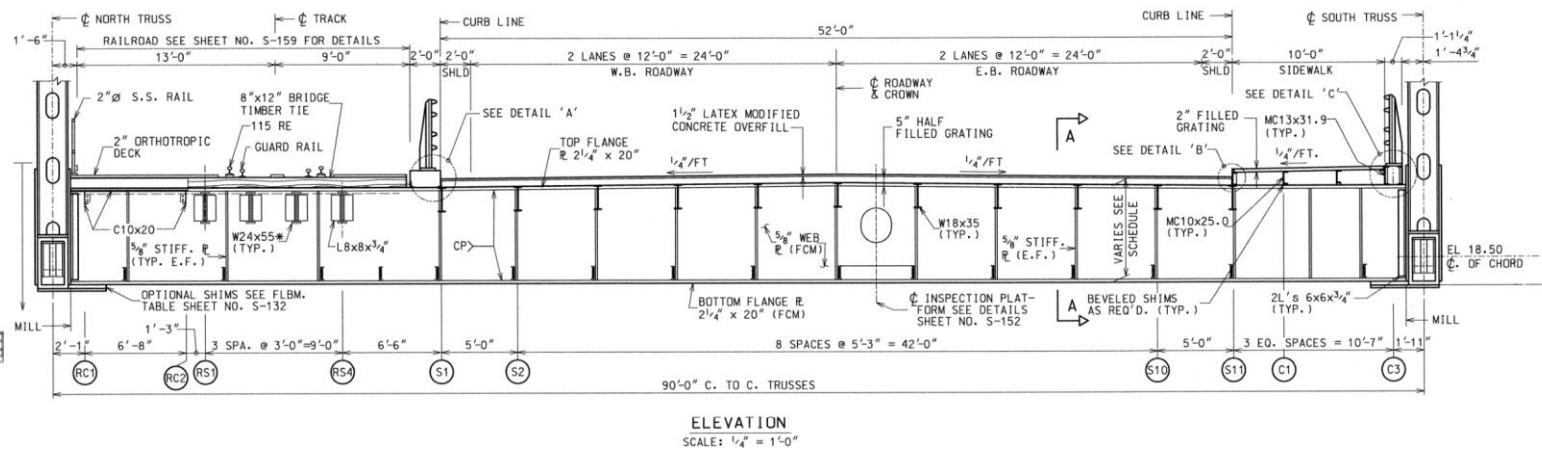
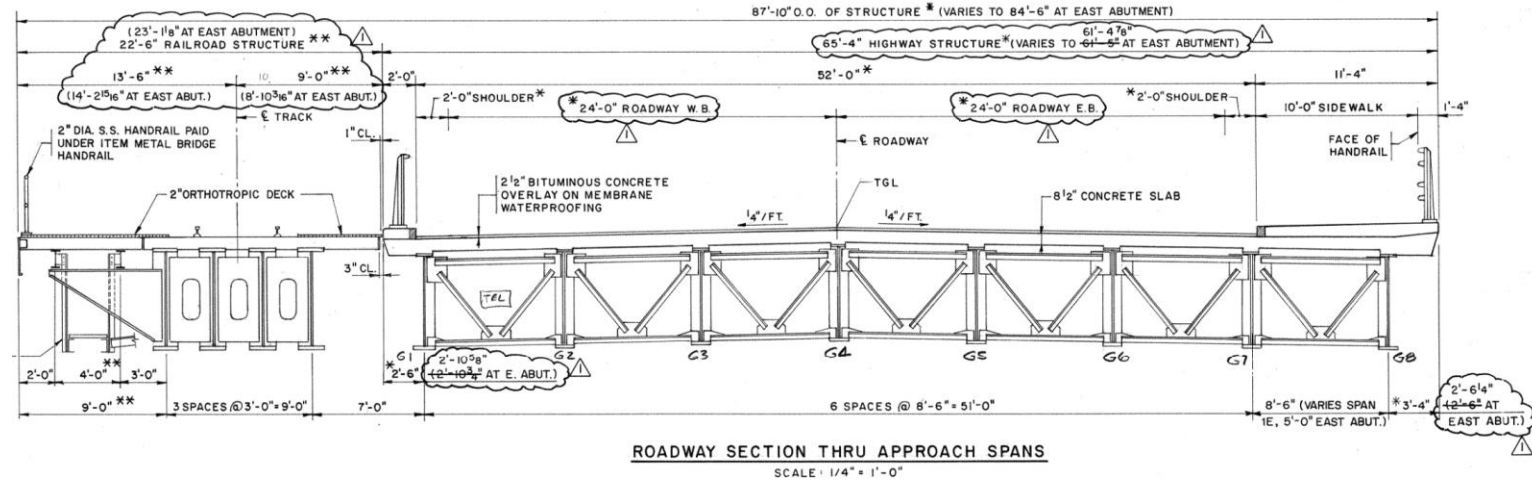
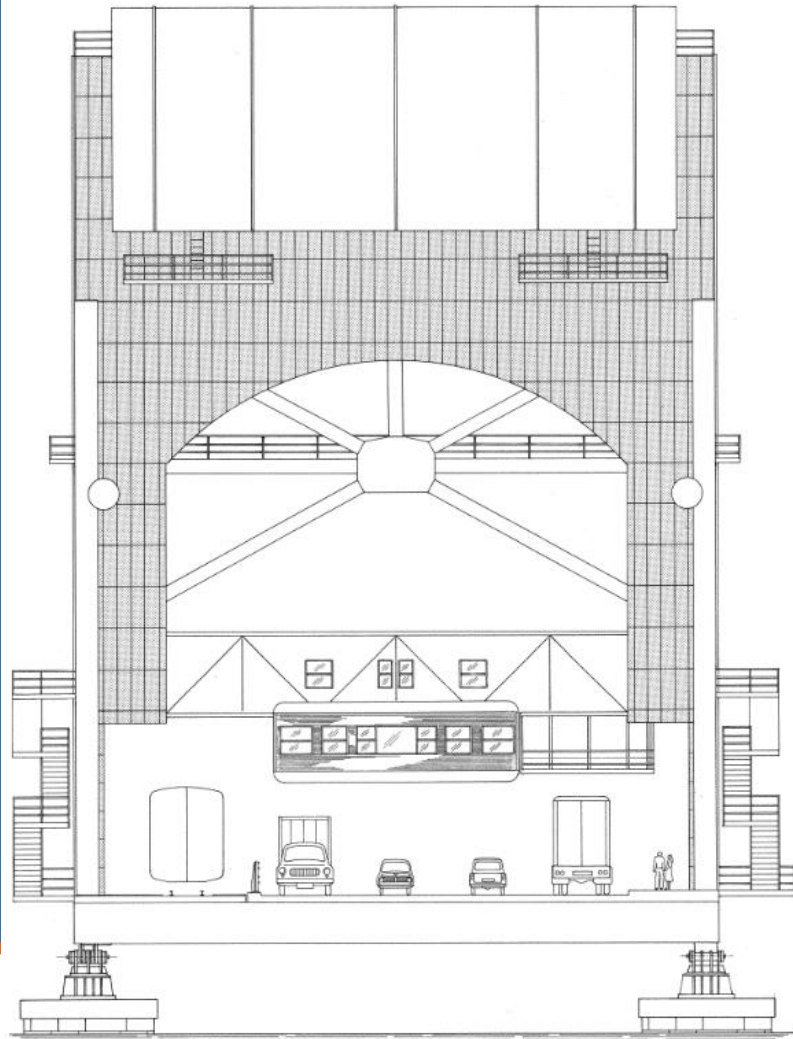
PROJECT LOCATION



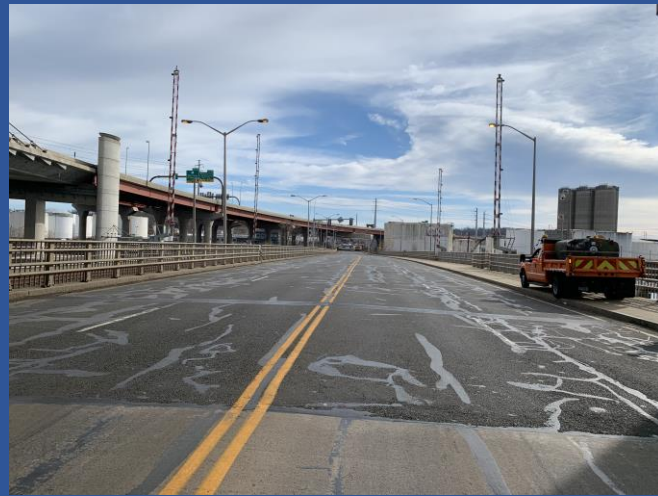
EXISTING PLAN & ELEVATION



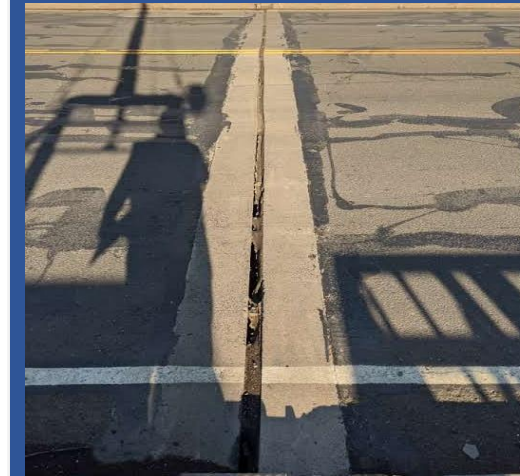
EXISTING CROSS SECTION (APPROACH & LIFT SPAN)



EXISTING FIELD CONDITIONS – DECK



Top of Bridge at Approach Spans (Looking East)



Preformed Joint Seal at Approach Spans (Typ.)



Top of Bridge at Lift Span (Looking West)

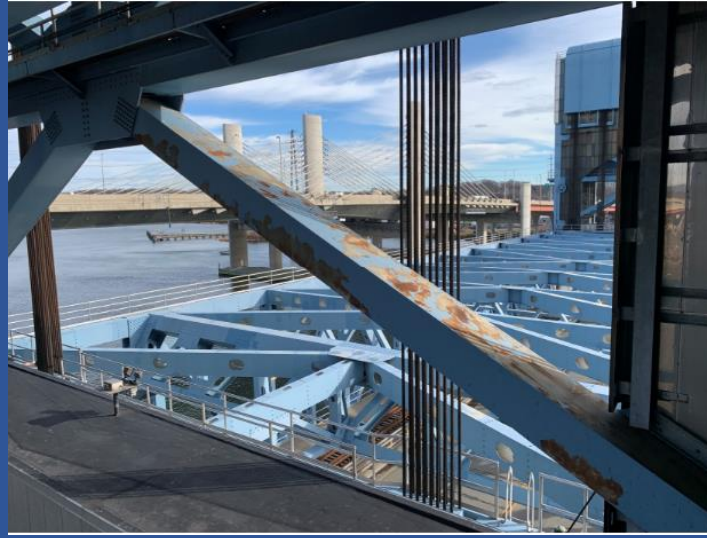
ITEM	CONDITION	RATING
Deck	Good	7
• Overlay (Bituminous Concrete)	Good	7
• Deck – Structure	Good	7
• Median/Railing	Satisfactory	6
• Expansion Joints	Fair	5



EXISTING FIELD CONDITIONS – SUPERSTRUCTURE



Peeling paint on lift span fascia bracing.



Peeling paint at railroad girder

ITEM	CONDITION	RATING
Superstructure	Satisfactory	6
• Bearings	Satisfactory	6
• Stringers	Satisfactory	6
• Girders	Satisfactory	6
• Floorbeams	Satisfactory	6
• Trusses	Good	7
• Truss – Portals	Good	7
• Truss - Bracing	Good	7
• Paint	Good	7
• Rust	Satisfactory	6
• Machinery Movable Span	Satisfactory	6
• Rivets & Bolts	Satisfactory	6
• Welds	Good	7
• Member Alignment	Satisfactory	6
• Catwalks	Good	7

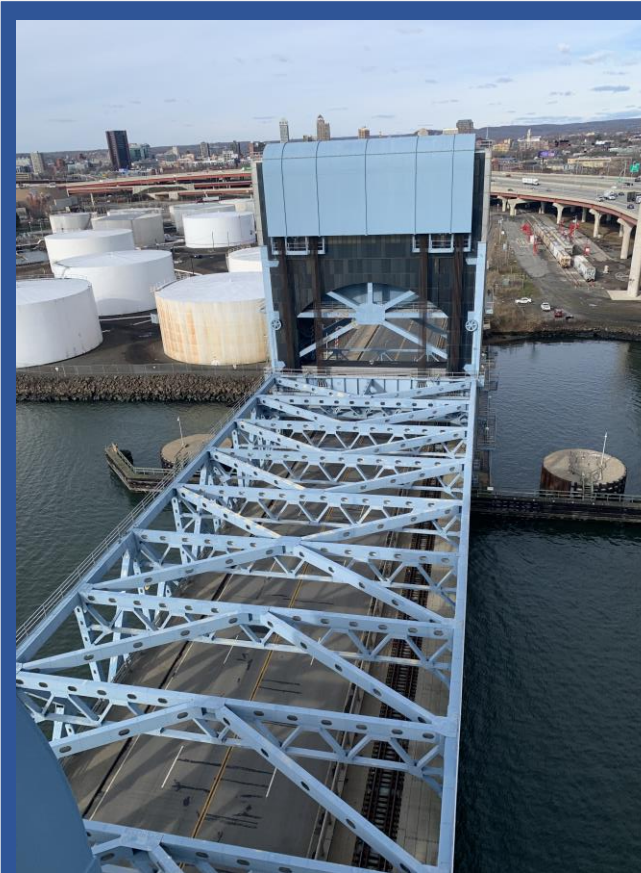
EXISTING FIELD CONDITIONS – SUPERSTRUCTURE



South Fascia of lift span, looking northwest.



Through view of lift span, looking west.



Overview of Lift span, looking west.



Typical Approach Span Elevation



Rust at approach span bearing plate



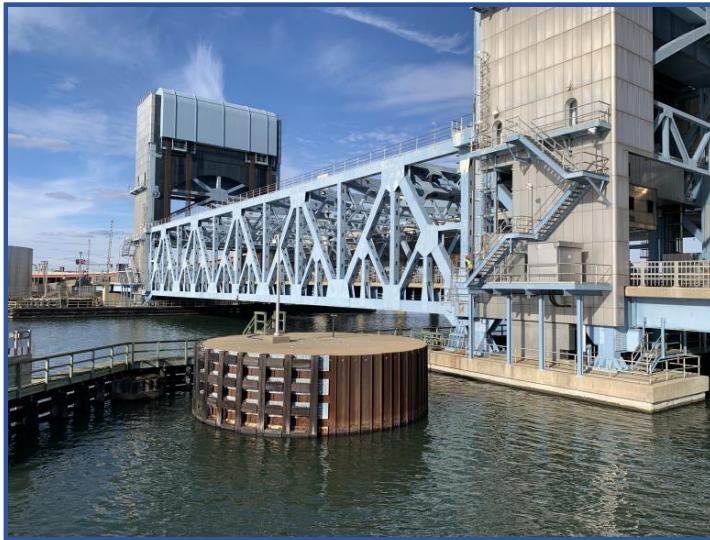
EXISTING FIELD CONDITIONS – SUBSTRUCTURE



East Abutment and Pier 1E.



Pier typical condition (Pier 2E).



East Lift Tower South footing.

ITEM	CONDITION	RATING
Substructure	Satisfactory	6
• Abutment (Stem/Backwall)	Satisfactory	6
• Abutment (Wingwalls/Footings)	Good	7
• Piers (Columns)	Satisfactory	6
• Piers (Footings)	Good	7



EXISTING FIELD CONDITIONS – CHANNEL & PROTECTION



Channel under bridge, looking Northwest.



Channel upstream of bridge (Quinnipiac River), looking Northwest.



Channel downstream of bridge (New Haven Harbor/Long Island Sound), looking Southeast.

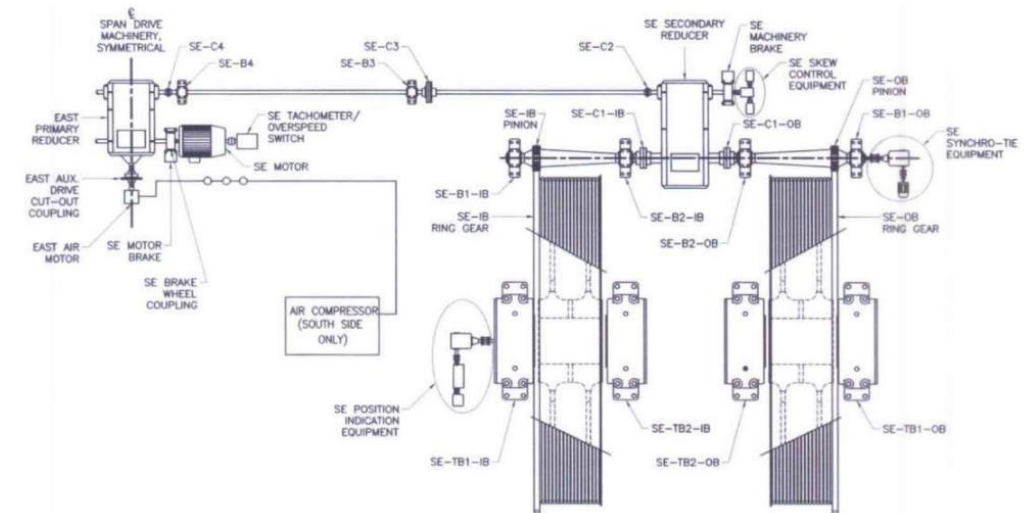
ITEM	CONDITION	RATING
Channel & Channel Protection	Satisfactory	6
• Channel – Scour	Satisfactory	6
• Embankment – Erosion	Good	7
• Channel Change	Good	7
• Fender - System	Good	7



EXISTING FIELD CONDITIONS – MECHANICAL

Mechanical Deficiencies:

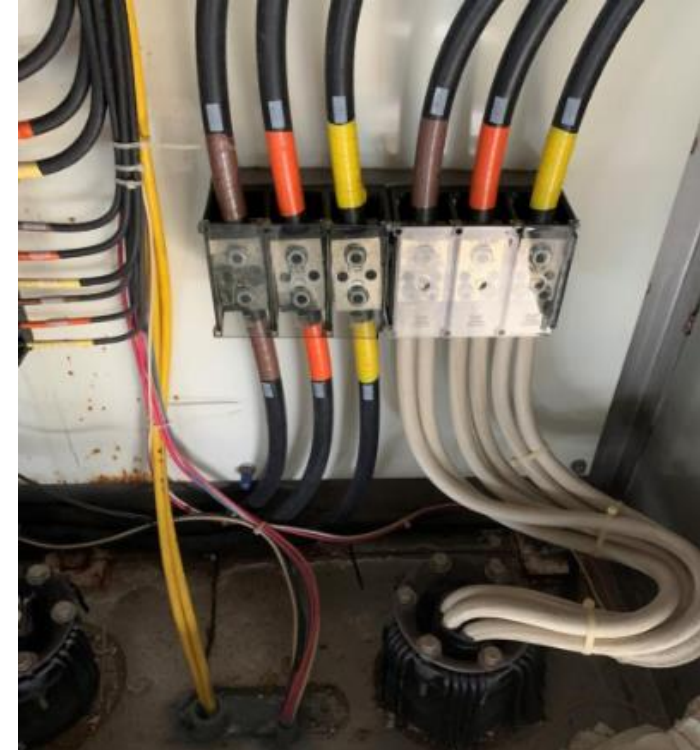
- Span Drive System
- Emergency Drive Machinery
- Main Counterweight System
- Auxiliary Counterweight System
- Live Load Shoes (Bearings)
- Guide Machinery
- Span Lock Machinery
- Barrier Gates & Warning Gates
- Limited Access for Maintenance & Inspection
- Elevator System Out of Service



EXISTING FIELD CONDITIONS – ELECTRICAL

Electrical Deficiencies:

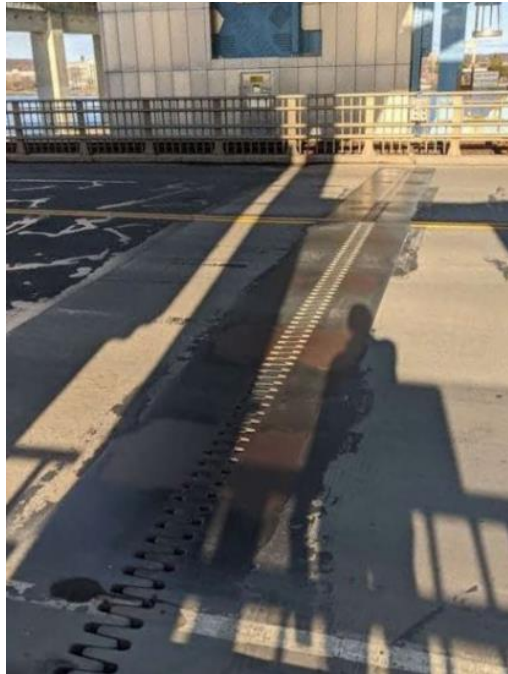
- Electrical Services
 - Malfunction with east service's step-down transformer.
- Power, Motor Starter, and Drive Cabinets
- SCR Drives and Resistors
- Main Span Drive Motors
- Panelboards, Transformers, and Lighting Controls
- Motor Local Disconnect Switches
- Limit Switches
- Emergency Auxiliary Span Drive
- Span Locks
- Barrier Gates
- Warning Gates
- Roadway Lighting
- Submarine Cables
- Closed Circuit TV System
- Bridge Control System
- Maintenance Lighting



BRIDGE JOINTS

EXISTING

- Fair “5” condition
- No notable deficiencies in Lift Span finger joints



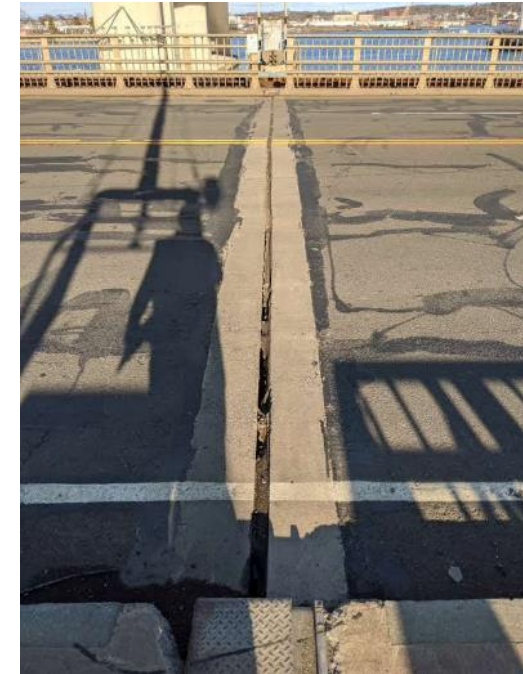
Lift Span Finger Joint

PROPOSED REPAIRS

- Replace asphaltic plug joints and preformed joint seals.



Asphaltic Plug Joint (Typ.)



Preformed Expansion Joint (Typ.)

BEARINGS

EXISTING

- Satisfactory “6” condition
- Lift Span expansion bearings are locked in the expanded position



Lift span expansion bearing in fully expanded position



Lift span fixed bearing

PROPOSED REPAIRS

- Jack approach span girders to clean and paint bearings; fill gaps between masonry plates and concrete pedestals
- Clean and repair fixed bearings lift span bearings

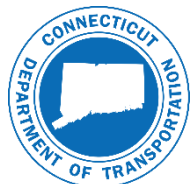


Typical Approach Span Bearing

PAINT CONDITION

EXISTING CONDITIONS (PER 2021 INSPECTION REPORT)

- Paint Condition Rating
 - Rating “7”
 - “Less than 10% deteriorated paint”
- Areas of Concern
 - Girders & Stringers
 - Random peeling with light to moderate rust.
 - Especially under railroad tracks
 - Lift Span Truss
 - Random areas of peeling/chipping paint, minor scrapes.
 - Portals have peeling paint on connection angles with exposed primer
 - Lift Tower Members – Exposed areas with peeling/chipped paint
 - Bearings - Laminated rust at isolated areas
 - Catwalks – Isolated areas of peeling/chipping paint



PAINT CONDITION

GENERAL PAINT CONDITION PHOTOS (LIFT TRUSS & TOWER)



PAINT CONDITION

GENERAL PAINT CONDITION PHOTOS (RR GIRDERS, BEARINGS, ETC.)



BICYCLE ACCOMODATIONS

EXISTING CONDITIONS

- Per CTDOT Interactive Bike Map, area east and west of the bridge is identified as "Least Suitable"
- Narrow Roadway (small shoulders)
- Constraints
 - Railroad abuts north edge of road
 - Industrial abuts southeast edge of road
 - Bridge Lift and Approach Span Widths



PROPOSED

- Upgrades to pedestrian/bicycle layout not included in this project, outside of scope



QUINNIPIAC RIVER HYDRAULICS & PERMITTING

ENVIRONMENTAL & WETLAND RESOURCES:

- Navigable river
- Not within an aquifer protection area or public drink watershed
- Critical Habitat for numerous Endangered Species & Essential Fish Habitat
- Location within FEMA Zones VE and AE
- No wetlands are present at the bridge
- Anticipated permits include:
 - NOAA Essential Fisheries Habitat (EFH & ESA) Assessment
 - CTDOT Flood Management General Certification
 - USCG Construction Letter & USCG Deviation Letter
 - Will likely cover USACE Section 10 Rivers and Harbors Act
 - CT DEEP Boating Regulatory Marker Permit
 - CT DEEP General Permit for Coastal Maintenance (Form H)
 - USACE Section 408 (Alter a Civil Works project)



Rehabilitation of Bridge No. 00337 // State Project No. 0092-0687



QUINNIPIAC RIVER HYDRAULICS & PERMITTING

SCOUR ASSESSMENT:

- NBIS(113) - Scour Critical rated “5”
 - Bridge foundation determined to be stable for current scour conditions
- Channel Scour rated “6”
- Channel is tidally influenced
- Channel bottom elevations remain within historic values
- Original design scour countermeasures
 - Caissons anchored into rock
 - H-Piles driven to refusal on rock
 - Riprap installed at east abutment
 - Steel sheet pilings left in place



PROPOSED BRIDGE & ROADWAY IMPROVEMENTS

- “Spot-Paint” Deteriorated Areas of Steel
- Repave Roadway
- Replace Bridge Joints
- Repair Bridge Rails & Approach Guiderails
- Repair Sidewalks
- Repair Bridge Bearings
- Miscellaneous Steel & Concrete Repairs



PROPOSED MECHANICAL & ELECTRICAL REPAIRS / UPGRADES

ELECTRICAL ITEMS:

- Automatic Transfer Switch
- SCR drives
- Motor starter cabinets
- Control System
- Limit Switches and Position Sensors
- Lighting and Receptacles
- Panelboards and Associated Transformers
- Replace Existing Submarine Cables with New Aerial Cables
- Add Backup Generator
- Replace CCTV System and Cameras.

MECHANICAL ITEMS:

- Span Drive Motors
- Motor & Machinery Brakes
- Counterweight & Counterweight Ropes
- Span Locks
- Traffic Gates
- Couplings & Bearings
- Gear Reducers
- Clean & Paint Machinery
- New Elevator System



AERIAL CABLES

ADVANTAGES:

- Significantly lower cost, schedule impacts, permitting and environmental impacts compared to new submarine cable
- Readily accessible for future upgrade or replacement
- Reduces marine traffic outages

DISADVANTAGES:

- Direct exposure to weather
- General aesthetics



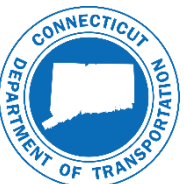
Portage Lake Lift Bridge (Hancock & Houghton, MI)

ANTICIPATED TRAFFIC IMPACTS

- Estimated Construction Duration = 1-2 years
- ADT (2018) = 12,400 (6% estimated truck traffic)
- Off-peak lane closures for majority of bridge & highway work
- Additional Maintenance & Protection of Traffic for certain bridge & highway activities
- Bridge closures with detour routes and marine & RR traffic outages (Mechanical & Electrical activities)

Anticipated Outages

- (4) Full-Weekend marine/roadway/railroad outages for swap overs and testing
- (2) 2-Week long roadway outages (can be at night only) for final testing
- Up to (5) 24-Hour marine outages
- Periodic 8-Hour marine outages
- All work will require close coordination with the railroad
- Emergency vehicles will be able to cross as needed during outages



SCHEDULE AND CONSTRUCTION COST

SCHEDULE

- Advertising for Construction – 01/10/2024
- Estimated Start of Construction – Spring 2024
- Estimated Construction Completion – Fall 2025

ESTIMATED CONSTRUCTION COST

- Total Estimated Construction Cost = \$28,500,000
- 80% Federal Funds, 20% State Funds

The cost and schedule are preliminary and subject to change.



Question & Answer Session – Send a Question or Comment



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Survey: <https://portal.ct.gov/ctdotsurvey>

Note: The comment period is open through **December 1, 2022**

THANK YOU FOR YOUR TIME.

