Accelerated Bridge Construction in Connecticut
State Project No. 131-194/195

Rehabilitation of Bridge Nos. 01235 and 01236 I-84 over Marion Ave Southington, Connecticut
CTDOT TEAM

Design
Ajit Gokhale, CJM
Andrew Lessard, Stantec Consulting
Louis Bacho, CTDOT
Mary Baker, CTDOT

Construction, CTDOT
Mohammed Bishtawi
Joe Calafiore
Shawn Mangan
Terri Thompson
CONTRACTOR

Northern Construction Service, LLC
Weymouth, MA
Project awarded on June 7, 2013
Contract Amount: $6,031,429.40
Est. Revised Contract Amount: $7,500,000
Sean Hoey, Project Superintendent
Shawn Clark, Project Manager
Bridge 01235  (EB) East Elevation

Connecticut Department of Transportation
Bridge 01236 (WB) West Elevation
Project Goals

- Replace two deficient superstructures
- Utilize SPMTs
- 56 hour maximum closure of I-84
- Safe work zone

“Get In, Get Out, and Stay Out”
Accelerated Bridge Construction

ABC uses innovative planning, design, and construction methods to

- Improve Work zone safety - closures
- Reduce congestion – short duration
- Minimize economic impact – business and families
- Reduce on site construction time with prefabrication
Design Options
superstructure replacements

- 3 stages maintaining 2 lanes
  - $6.5 M, 18 months

- Widening maintaining 3 lanes
  - $8.0 M, 24 months

- Temporary bridge and crossover, 3 lanes
  - $7.3 M, 24 months
Construction Staging

• **Stage 1** – Median Wingwall Parapets

• **Stage 2** – Outside Wingwall Parapets

• **Stage 3** – Rapid Replacement of Superstructures

• Maintain 3 lanes of traffic in I-84 during Stages 1 & 2

• Construct New Superstructures off-line during Stages 1 & 2
Demo Plan W.B

Connecticut Department of Transportation

GENERAL NOTES:
1. GC SHALL IMPLEMENT TMP AND FULLY CLOSE BRIDGE TO TRAFFIC
2. CATCH BASINS ON MARION AVENUE TO BE PROTECTED FROM CONCRETE SLURRY UTILIZING HAYBALES & SILTSACKS

LIMITS OF REMOVAL

TYPICAL BEAM REMOVAL ELEVATION

DUAL CRANE PICK:
1. BOTH CRANES SHALL BE RIGGED TO THE BEAM UTILIZING RIGGING SHOWN
2. LIFT BEAM OFF OF BEAM SEATS
3. BEAM SHALL BE LIFTED AND MOVED TO MARION AVENUE BELOW
4. RIDGING SHALL BE REMOVED FROM BOTH CRANES
5. BEAM SHALL BE MOVED AND PLACED INTO LAY-DOWN AREA UTILIZING HYDRAULIC EXCAVATOR
6. REFER ABOVE FOR TYPICAL BEAM RIDGING ELEVATION
Demo procedure W.B

**General Notes:**
1. Eastbound bridge to be removed utilizing spmt.
2. GC shall implement spmt and fully close bridge to traffic.
3. Catch basins on Marion Avenue to be protected from concrete slurry utilizing hay bales & silt socks.

**TYPICAL WB BEAM REMOVAL PLAN VIEW**

**Dual Crane Pick**
1. Both cranes shall be rigged to the beam utilizing rigging shown.
2. Lift beam off of beam seats.
3. Beam shall be lifted and moved to Marion Avenue below.
4. Rigging shall be removed from both cranes.
5. Beam shall be moved and placed into laydown area utilizing hydraulic excavator.
6. Refer to sheet 3 for typical beam rigging elevation.

**Limits of Removal**
Closure Schedule

Friday, 6/27/14

9 am – Southington Rest Area, I-84 East Closed

5 pm to 9 pm - I-84 Exit 30 Off and On Ramps Closed
Marion Avenue closed at ramps- no through traffic

6 pm - One lane taken on I-84 East at Exit 27 (I-691)
7 pm - One lane taken at Exit 31 (Rt 229)
8 pm - Two lanes taken at EB Exit 27 and WB Exit 31 with
one travel lane open
9 pm - I-84 Closed, one lane of traffic off at Exit 30 and
Exit 29 On and Off Ramps at Route 10 Closed

Monday, 6/30/14  5 am

I-84 OPEN ALL LANES IN BOTH DIRECTIONS and I-84
East Southington Rest Area reopens
Making It On Time

• Traffic Management Unified Command Center on site to continuously monitor and control traffic

• DOT CHAMP vehicles (CT Highway Assistant Motorist Patrol)

• Incident Management response

• Traffic Management Plan - regional and local detours, cameras, and message boards for advising traveling public and coordination with adjacent states for interstate travel.
Making It On Time

• Contractor contingency plan - mechanics, extra equipment parts and services on site for repairs if needed

• Public website, press notices, alerts, cameras, message boards, detour signing, live camera feeds on work

• Traffic Coordination Working Group - law enforcement, Regional emergency management and communications, DOT, Contractor, Towns, EMS

• Outreach to area, venues, local and regional businesses
Regional Detour Strategies

• Use Intelligent Transportation System (ITS) technology to aid motorists through detours and keep them informed
  • Cameras
  • Message Boards
  • Advisory Radio
  • Massachusetts, Rhode Island, New York, and New Jersey travel alert systems

• Project Website
REGIONAL and LOCAL VARIABLE MESSAGE BOARD ACTIVATION
Local Strategies

- Officers located at project site and along detour routes. The additional services for Fire and Police Depts. paid through the DOT project.

- Coordination with Southington I.T. Department who notified residents of the closures, detours, and parking bans, via the Everbridge System.

- Residents had no disruption of utility services. The utilities had been relocated and protected from the weight of the bridge moving equipment.

- Residents had full Fire and Police protection during the closure.

- Emergency Services notification coordinated for local and adjacent towns
Informational meetings

- Public info in Design, October 2011
- Pre-bid conference, March 2013
- Town staff meeting, January 2014
- Reporter at jobsite, March 2014
- Traffic Coordination, SPD, April 2014
- Town Council Meeting, May 2014
- Public info in Construction, May 2014
- Merchant meeting, June 2014
- DOT Manager meeting, June 2014
DOT gives details of I-84 bridge installation

By Jesse Buchanan

SOUTHBURG—State and local officials explained to about two dozen residents Wednesday details of the plan to replace the highway bridge over Marion Avenue, a project that will close Interstate 84 for 56 hours and reroute local traffic.

The state Department of Transportation (DOT) has created a design plan to replace the bridges carrying manual, bridges that are structurally deficient may be in poor condition due to deterioration or damage. carry large structures such as bridges from offsite locations into different positions. These transporters are prefabricated. I-84 eastbound and westbound at Exit 30 and Marion Avenue. The closure will take place during a weekend in the late fall.

I-84 will be closed, and one lane of I-84 east and westbound traffic will remain open along the ramps.

The plans are set for I-84 bridge closure

By LISA CAPOBIANCO STAFF WRITER
Connecticut Department of Transportation (DOT) has designed a plan for the closure of I-84 bridge carrying three lanes of traffic averaging 81,800 vehicles daily.

SOUTHBURG — I-84 will be shut down in both directions at Exit 30 from the night of June 27 to the morning of June 30 to replace a bridge, and traffic will be detoured on local streets.

The project involves the Accelerated Bridge Construction project set for I-84 bridge over Marion Avenue

By LISA CAPOBIANCO STAFF WRITER

The Connecticut Department of Transportation (DOT) has designed a plan for the closure of I-84 bridge carrying three lanes of traffic averaging 81,800 vehicles daily. The bridge is replacing a superstructure that is structurally deficient, said Mary Baker, a project engineer of DOT.

The project involves the Accelerated Bridge Construction project set for I-84 bridge over Marion Avenue. The bridge is replacing a superstructure that is structurally deficient, said Mary Baker, a project engineer of DOT.
Rehabilitation of Bridge Numbers 01235 and 01236, Interstate 84 over Marion Avenue in Southington
DOT Project No. 0131-0194/195

TRAVEL ALERT - REVISED SCHEDULE!
FULL CLOSURE OF INTERSTATE 84 AT EXIT 30 SCHEDULED FOR WEEKEND OF JUNE 27-30, 2014

Interstate 84 in both directions is scheduled to be closed at Exit 30, Marion Avenue, June 27-30. Interstate 84 will be reduced to a single lane entering the area and traffic will be directed off the ramps at Exit 30 in both directions and back onto the highway from the on ramps.

The hours of full closure are scheduled to occur starting at 9 p.m. on Friday, June 27 through 5 a.m. Monday, June 30, 2014. The rain date will be 9 p.m. on Friday, July 11, through 5 a.m. on Monday, July 14, 2014.

Currently, shoulder closures are in place in both directions and lane closures are allowed on Monday through Thursday from 9 a.m. to 3 p.m. and 6 p.m. to 6 a.m. and on Friday from 6 p.m. to 6 a.m. on Monday.

Marion Avenue closures will occur between the hours of 9 a.m. and 3 p.m. Monday – Friday and on Saturday and Sunday before 10 a.m. and after 6 p.m.
I-84 Detour Plan
Public Outreach

- Trucking companies, hospitals, major venues have been notified of this upcoming work
- Federal Law Enforcement Agencies
- Local businesses through the Chambers of Commerce for Southington, Meriden, Cheshire, Wolcott, Waterbury, Bristol
- Neighboring states: New York, Massachusetts, Rhode Island
- Emergency Management Coordinators with the Department of Public Health and Homeland Security
CTDOT Successful Completion

June 27-29, 2014

Project 131-194/195

- Rehabilitation of Bridges 01235 and 01236
- I-84 EB and WB over Marion Avenue, Southington
- Superstructure replacements ~ 102 ft. each
- Built in gore area, Exit 30
- I-84 closed one weekend for demo and replacement using SPMTs
- Ramps open for by-pass
Bridge Opening EB: Sunday 4:40 p.m.
WB: Sunday 8:15 p.m.
Lessons Learned

- Lighter weight superstructure
- Max grade for SPMTs
- Adequate travel path width
- Incentive/disincentives
- Advance utility/IMS relocation
- Local review of traffic plan
- Consider use of alternate bids and alternate contracting method to allow innovation and minimize risk for stakeholders.
Home page, click on I-84 Southington ABC Project
Rehabilitation of Bridge Numbers 01235 and 01236, Interstate 84 over Marion Avenue in Southington
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Summary of Traffic Management Results

The east and westbound structures were replaced during the weekend of June 27-30, 2014. The eastbound direction of Interstate 84 was fully open to all lanes of traffic at 4:40 p.m. and the westbound direction was opened at 8:15 p.m.

Gov. Malloy: Video Documents Creative Approach to Achieve Early Completion of CTDOT I-84 Bridge Replacement Project in Southington

The time lapse video that was provided by EarthCam, Inc. and also a time-lapse video produced by the Connecticut Department of Transportation is available for viewing at the following links:

I-84 Southington Bridge Replacement ConnDOT Time Lapse
I-84 Southington Bridge Replacement Earthcam Time Lapse
Contact Information

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