

BUILDING SAFER



WORK ZONES



State of Connecticut

2011 & 2012

Work Zone Safety Reviews

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Office of Construction

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CONNECTICUT 2011-2012 WORK ZONE SAFETY REVIEW REPORT

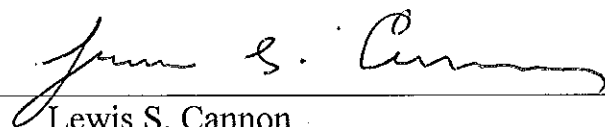
The report was prepared by the Connecticut Department of Transportation and the reviews have been completed to conform to the requirements of the Department's Work Zone Safety Improvement Plan, specifically Table 3, Work Zone Self-Assessment Element No. 8, Program Evaluation.

The Plan was developed in response to the recommendations in the 2011 Connecticut Work Zone Safety and Mobility Process Review Report and is evidence of Connecticut's compliance with 23 CFR 630.1008.

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

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INTRODUCTION

The FHWA's 2011 & 2012 Work Zone Mobility and Safety Self-Assessment document contains a section titled Program Evaluation. Under the program evaluation section, field reviews are conducted to help evaluate varying aspects of work zones paying particular attention to the current practices and designs being used in the Connecticut Department of Transportation's (CTDOT) work zones. The reviews began in 2010 as a means to better understand and evaluate different characteristics of a work zone and the strategies and procedures that could be improved upon or used as a "best practices" example. In-depth field reviews included key personnel from the project, Office of Construction, Division of Traffic, Division of Safety and the Federal Highway Administration (FHWA). Reports were created to document both successes and needed areas of improvement, not only within the project limits but also within Department policies or procedures. The reviews included an overview of traffic control devices, sign installation and removal methods, sign recognition and visibility, and survey of project personnel to determine strengths and weaknesses in work zone procedures. The goal is to take the "Lessons Learned" and improve upon the various disciplines that are involved in work zone engineering, design and implementation. The issues that arise as a result of these reviews are considered for incorporation into the Work Zone Improvement Plan and added to working group action item issues. Refer to Table 3, 4, 4a and 5 in Appendix A of this report.

Projects are chosen from each of the four districts in the state: District 1- Central Connecticut; District 2- Eastern Connecticut; District 3- Southwestern Connecticut and District 4- Western Connecticut. There was an attempt to identify projects that had some unique features to address in the plans and specifications. Once a project was selected, the review team was notified and a date for the field review was determined. The field review team meets with project personnel at the field office for an initial meeting then follows up with a field review to observe all aspects of the work zone, again with key project personnel. Upon completion of the review a report is generated detailing findings that include comments from project personnel.

Over the course of two construction seasons, fifteen reviews were conducted with five of the reviews being In-depth. The main focus areas for the reviews were: 1) Night reviews 2) Detour reviews 3) Temporary Signalization and 4) Stage construction on both interstate and secondary roadways. Five (5) issue areas were identified: markings, signing, maintenance and protection of traffic, traffic control devices and staging. The report contains an executive summary, copies of work zone reviews, project action items generated from reviews, and updated tables that are also included in the Work Zone Improvement Plan. It should be noted that this is an evolving evaluation process. It is the intent that these reviews will continue every construction season, in order to continually improve work zone safety for construction crews and the traveling public.

WORK ZONE SAFETY REVIEW EXECUTIVE SUMMARY

The Connecticut Department of Transportation (CTDOT) with the assistance of the Federal Highway Administration (FHWA) conducts work zone field reviews (audits) as a means to assess current field practices relative to applying work zone safety and mobility processes and procedures on these projects. These field reviews are an important tool to promote better understanding of the operational and design characteristics of a work zone. They help CTDOT develop improvements in the area of design, construction and operations.

The projects were selected with the objective of conducting reviews with various types of activities, challenges and also look at projects during daytime and nighttime hours since operations do differ based on light conditions. The field reviews are scheduled to include various types of projects in construction and maintenance. The Reviews can range from a full audit of all work zone aspects to a selected audit of particular work zone elements such as pedestrian accessibility, pattern deployment, quality of traffic control devices and innovative techniques.

The 2011-2012 Work Zone Safety and Mobility field reviews were conducted using the same Work Zone Review Form and Checklist developed in 2010. The information is then entered into an Access database that can be used to analyze and identify possible design issues, material defects, specification problems, training needs for inspectors, policy and procedural issues, and best practices.

The primary user group for the information will be the Work Zone Operations Working Group under the Work Zone Improvement Plan recently signed by the FHWA and CTDOT. The Plan was developed in response to the Work Zone Safety and Mobility Process Review (Process Review) completed during the 2010 calendar year to comply with the requirements of 23 CFR Part 630, Preconstruction Procedures, Subpart J—Work Zone Safety and Mobility.

The Working Group will focus on elements related to work zone traffic management practices and policies on a statewide/area-wide basis. Many of the tasks for the working group are derived from information obtained during the work zone reviews. This group will evaluate and make recommendations for changes or improvements to the various elements that are a part of work zone traffic management practices and policies. This may include: improvements to traffic control devices; creating, updating, and revising specifications; development of guidance documents; and the use of innovative practices for the safety of the highway workers and the traveling public.

Some of the issues and good practices from the 2011-2012 reviews are as follows:

1. Markings

- Existing/conflicting pavement markings not eradicated or covered.
- Temporary markings missing or worn.
- Black out tape not adequately covering the permanent lines completely.

2. Signing

- Detour signs not covered when detour not in effect nor being removed when the detour is no longer required.
 - Construction signs not mounted on breakaway posts.
 - Improper sign height on post mounted and portable stands. Many Exit signs not meeting height requirement of 7' above pavement.
 - High intensity barricade warning lights on signs other than those posts mounted.
 - Use of Overhead Wires signs to alert construction vehicles of hazards as a good practice.
3. Maintenance and Protection of Traffic
- Ramp closures need to be considered during design phase to develop detours and closures for operations where the ramps are too narrow to safely accommodate a work area and traffic.
 - Inadequate notice of ramp closures and no detour posted for closure.
 - Inadequate use of temporary work zone lighting.
 - Improper positioning of light plants resulting in blinding oncoming traffic.
 - Use of dedicated and trained traffic control crews for maintenance and protection of traffic as a good practice.
 - Standard traffic plans for sign patterns are not always applicable to certain stages of construction, roadway geometry especially at complex interchanges, HOV lanes.
4. Traffic Control Devices
- Marginal or unacceptable quality of drums, cones and barricades that should be replaced or do not meet standard.
 - Incorrect use and quality of Type III barricades. Stripes sloping in wrong direction and loss of reflectivity and obvious color fading.
 - The DE-7C delineators located on the TPCBC missing and wrong color used based on side of road on. (i.e. yellow delineators on barrier located on right side of traffic).
 - Arrow board on trucks not using correct display when parked in closed lane or on shoulder.
 - Use of portable smart work zone technology to assist motorists and project in monitoring of traffic queues, delays, speeds and volumes in project area as good practice.
5. Staging
- Alternative temporary barrier designs and impact attenuation systems required for access to workspace during stage construction.
 - Lack of accommodations for pedestrians and bicyclists.
 - Staging plans need to be reviewed in detail to account for emergency service access, space for outriggers on cranes and taper lengths
6. Transportation Management Plans (TMPs)
- Project personnel are not aware of a plan being part of contract
 - Lack of updating of plan to reflect changes in maintenance and protection, staging, or other construction related activities.
 - Better system of reporting and archiving incidents in work zones
 - Lacking ability to acquire crash data during construction activity to perform analytics on types and frequency.

Project Action Items
2011 & 2012 Work Zone Review Issues

2011 Work Zone Review Issues

Proj.ID	Comments
59-155	<ol style="list-style-type: none"> 1. Conflicting pavement markings require correction.
67-115	<ol style="list-style-type: none"> 1. Chevrons on Type III barricade are pointing the wrong direction 2. Blunt end on TPCBC exposed. 3. Vegetative growth obscuring DE-9 delineator and impact attenuation. 4. Existing pavement markings not eradicated or covered.
84-102	<ol style="list-style-type: none"> 1. There are missing or worn pavement markings that need to be addressed. 2. Temporary line striping needs to be refreshed prior to winter shutdown. 3. Some materials are too close to roadway. 4. Numerous cones were not up to Conn DOT Standards. 5. While the detour is not in effect, change the temporary signal at Green Street to flash red all-way to avoid unnecessary back-ups on Green Street. If the detour is no longer required, please remove the temporary traffic signal. 6. While the detour is not in effect, cover the detour signs. Remove the detour signs when the detour is no longer required. 7. Many of the traffic drums and cones are visibly worn and should be replaced. 8. There were many traffic cones noted on the jobsite that do not conform to current DOT standards. 9. Replace temporary pavement markings throughout the project limits including stop bars at the intersections. 10. There were multiple roadside hazards during the safety inspection (concrete blocks, material piles, construction equipment, etc.) All fixed objects must be protected, removed, or located outside of the clear zone. 11. All construction signs must be mounted on breakaway posts. Breakaway post height needs to be reviewed and corrected if not in conformance with the plans. It appeared that the spacer bars were not installed; if this is a new design then supporting documentation should be provided by the contractor.
92-531 92-619	<ol style="list-style-type: none"> 1. It is unclear that ramp is closed until you come upon ramp. 2. Queue's for pattern set up 95 SB & 95 NB extending beyond advance warning during set up. 3. Arrow board on trucks show incorrect display during set up of I-91 SB pattern. 4. Should be flashing arrow during the lane closure process. 5. Work force wearing Hi-O's Class 3 PPE. 6. Due to the amount of dust delineators were not reflecting properly. Should be cleaned. 7. One arrow board was on flashing arrow instead of bar or corners. 8. Contractors expressed concerns about motorists continually speeding through the work zones. 9. Inadequate notice of ramp closures Rt. 34 Eastbound to I-91 Northbound and no detour was posted for this closure.

126-167	<ol style="list-style-type: none"> 1. One sign obstructed by traffic drum. 2. Problem with horizontal clearance for oversize trucks due to lane closures. 3. Some of the contractor's personnel need to wear Class 3 reflective. 4. Barricade warning lights High Intensity should be removed from non-permanent construction signs. 5. Discussion about Temporary night time work zone illumination. The light plant should not face into oncoming traffic. Review of opposing traffic should be inspected to ensure there are no issues as well. 6. Consideration should be given to using 42" traffic cones in the on-ramp / operational lane gore area. 7. Consideration should be given to locating the State trooper out of the left lane closure to back of queue. Current location is not well protected. 8. 4" Black out tape did not cover some of the permanent lines completely. 9. Contractor extended lane closure to accommodate traffic from on ramp. This was done to prevent existing traffic from jumping lane.
173-414	<ol style="list-style-type: none"> 1. Two pre warning signs installed were not Bright Fluorescent sheeting. 2. Some of the workers for the contractor were not wearing the proper reflective apparel for limited access highways. 3. VMS was outside of the clear zone but hard to see within reasonable time frame.

2012 Work Zone Review Issues

Proj.No.	Comments
82-299	<ol style="list-style-type: none"> 1. Staging plans should be looked at in more detail. Access for emergency services, space for outriggers on cranes, taper lengths and signage are some issues. 2. Portable impact attenuation system barrels to be used on bridge during stage construction were found to be too wide therefore used different system which was considerably more expensive. 3. Standard glare screens are not as effective at lower speeds.
42-312	<ol style="list-style-type: none"> 1. There is no project specific control on the plans. Plans are similar to a Maintenance vendor-in-place contract and plans were a part of actual contract with minimal detail available. Traffic control plans should have been more detailed especially for area at a difficult work zone. 2. State trooper should be doing speed enforcement during shift. 3. No HOV Lane Closed Ahead signs were shown on the plans. A regulatory type sign was used instead of construction sign and was made by project. Not MUTCD compliant. 4. Both sides of the highway were not signed. Wide roadway with more than two lanes across. This was especially an issue when no signs were used next to the lane closure. (High speed lane closed and no signs in high speed shoulder). 5. Lane Closed Ahead sign too close to arrow board and lane closure. Difficult to read and not time to react. Not MUTCD compliant. 6. Tri-axle trucks used on the jobsite should be equipped with amber lights and or warning signs saying Construction Vehicle attached to the back of the tailgate.
79-215	<ol style="list-style-type: none"> 1. There were four Type III construction barricades that were faded, not providing appropriate reflectivity. The project added high intensity barricade warning lights to the Type III barricades. 2. The stripes of four Type III barricades were sloping in the wrong direction. Stripes should slope downward in the direction traffic is to pass. 3. On the detour signs, the "1" in Route 71 appeared to be grey and not matching the black color as the rest of the letters on the signs.
96-199	<ol style="list-style-type: none"> 1. Shoulder is not delineated with temporary tape 2. Some of the drums and cones appear to be marginal, needing to be replaced 3. Speeding trucks at night are an issue. 4. Paving the ramps is problematic. The ramps are too narrow to safely accommodate for a work area and traffic. The contractor would like to be able to close the ramps in order to perform milling and paving. 5. A "Motorcycles Use Caution" sign was placed on the left side of the road. The same sign needs to be placed on the right side of the road. 6. One of the flashing arrows on the shoulder should have been flashing a straight bar or four corner dots.

98-100	<ol style="list-style-type: none"> 1. One of the solar powered high intensity lights is not as bright due to being located in the shade. 2. Type III barricade has stripe pattern sloped in the wrong direction. 3. The existing 45 MPH sign and Do Not Pass signs that are in conflict with temporary signs need to be covered. 4. A Type III barricade located on the north side of the structure needs to be reversed so the stripe pattern slopes downward in the direction traffic is to pass. 5. The DE-7C delineators located on the TPCBC need to be turned for yellow side to be on the left side of traffic. 6. The yellow skip lines in the south bound approach to the alt. one-way traffic need to be covered with black tape. 7. The breakaway posts on the construction signs need to be adjusted to the appropriate height.
103-256	<ol style="list-style-type: none"> 1. The DE-7C delineators shall be turned with the yellow side on the left side of traffic.
137-143	<ol style="list-style-type: none"> 2. The high intensity warning lights are solar powered, can be dim on grey days 3. Regular traffic cones were replaced with 42" traffic cones due to better visibility & stability. 4. Have to remove the T.P.C.B.C. to gain access to work site. This resulted in adding an item to relocate the Temp. Impact Attenuation System.
144-179	<ol style="list-style-type: none"> 1. It would be beneficial to the project if someone from the inspection staff as well as lower level contractor staffing (foremen) had training in work zone safety. 2. Standard templates don't address sharp curves. On ramps could be difficult for long wheeled bases such as tractor trailers.
171-351	<ol style="list-style-type: none"> 1. There were few signs that were scratched, scuffed, and dirty, which reduced their visibility. 2. The vests worn by the contractor's employees are old and non-reflective. Pants are not typically used.

NIGHT REVIEWS

- 42-312, I-84, East Hartford and Manchester
- 92-531/619, I-95/I-91, New Haven
- 96-199, I-84, Newtown, Southbury and Middlebury, CT
- 144-179, Route 25, Trumbull, CT
- 171-351, Bridges in Southington, Hartford, East Hartford and Manchester, CT
- 173-414, Route 15, Hamden, CT

WORK ZONE REVIEW FORM**Project Number: 0042-0312****District No. 1****Date: 08/23/2012****Weather: clear 68° F****Project Type:** Construction Maintenance Bridge Safety**Road Type:** Limited Access Secondary Local / Town**Inspection Forces:** State Maintenance Consultant**Location (Route & Town): I-84 East Hartford, Manchester****Focus of Review:** Lane Closure: Temporary Permanent; Stage Construction Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work**Prime Contractor: Tilcon Connecticut, Inc****Project Engineer:** Paul Carl**Chief Inspector:** Alan Lobaugh**Project Amount:** \$9,177,264.72**Percent Complete:** 80%**Calendar Days completed:** 74**Calendar Days Allotted:** 119**Review Participants**

Name	Representing
Alan Lobaugh	DOT D1/ Milone & MacBroom
Terri Thompson	CT DOT Office of Construction
Jeff Hunter	CT DOT Office of Construction
Chris	Tilcon CT foreman

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). No queue length at the time of inspection. Inspector says queue dissipates within an hour after lane closures.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). None noted at the time of inspection.
- 4) Are there any horizontal/vertical clearance issues? No
- 5) Are there any permitted load issues? No
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? One "HOV lane closed" sign was a regulatory type sign.
- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes

- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? No
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? 30' or behind deflection of rail system.
 - Where are materials stored for the project? At the field office or in the gore area of ramps
 - Where is equipment stored when construction is not in progress? gore areas.
- 10) Have accommodations been made to account for
- Emergency Services – Notified of project.
 - Pedestrian/ Bike/ ADA issues? N/A Limited access highway
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No, Tilcon has a dedicated work zone crew.
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings, If yes, indicate removal method being used? No, however milling operation is removing markings
 - Are there conflicting markings? None noted at time of inspection.
 - Are the temporary markings legible? If night review, comment on visibility
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Yes
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 hrs
- Uniformed Flagger
- Comments from Traffic Control Personnel (indicate type of traffic person): Trooper on jobsite mentioned the need to have training on using moving roadblocks and installing and removing patterns. Visual aids would be helpful.
- 15) Chief Inspector Comments: Post construction reviews should be conducted between design, consultant and construction more often. No safe place to park vehicles. Foreman in charge of work zone safety for contractor was very good in difficult situations.
- 16) Project Engineer Comments: Did not attend the review.

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout the project
Mounting Height	Not measured
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized/Sheeting Type	Yes (bright fluorescent sheeting)
Project Consistency	Yes however 1 sign used was a regulatory sign.
Need to be covered	No
Temp./Permanent	Temporary

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	Cones lane closure length and Drums for taper
Quantity	Did not count
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes, the majority of cones and drums were in good condition.
Reflectorized	Yes
Anchored	No
Consistent throughout project	Spacing too far apart in some instances allow for errant vehicle to enter closed lane

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Not inspected this review
Quantity	
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	
Reflectorized	
Anchored	
Consistent throughout project	
Crash Trucks (TMA) in use? If yes how many and type	

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Not reviewed
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	Portable and truck mounted flashing hours used. Lights functioning and in correct mode
Location of portable devices – Indicate if in clear zone and how protected.	At the beginning of the taper to the lane closures and on the impact attenuation systems
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	Permanent message signs used. Message was understandable, 2 frames displayed. Time between screens was acceptable.

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. Chief Inspector was not aware of one.

What special provisions are there in contract related to work zone (list item no, description and date of provision)? Limitation of operations, Prosecution and Progress and M&PT.

Is the project being completed in stage construction? If yes, explain. No

Is there temporary signalization? If yes, explain. No

Is a detour required or being used? If yes, explain. No

What guides, tools including manuals, pocket guide books etc. do you reference?
MUTCD and ATTSA guidelines

What work zone traffic plans are included in the project?
Just the standard plan sheets.

Has the project had any incident reports filed? Not asked.

Additional Comments:

- Contractor installing alert signs for construction vehicles regarding overhead wires.
- There is no control on the plans. One set of plans actually says 1,000' from start of Gore.
- No issues with state police except one of the troopers should be doing speed enforcement.
- Plans are similar to a Maintenance vendor-in-place contract and plans were part of actual contract with minimal details available.
- Traffic control details should have been more detailed especially for area where merging of Route 15 North with I-384 and I-84 very difficult work zone and should be reviewed.
- A regulatory type sign was used instead of construction sign in one instance and was made by project. Not MUTCD compliant.
- Very difficult to find place to park inspector vehicles during operations.
- Safety meetings should be conducted with subcontractors and also trucking companies, State Police and DOT personnel.
- Portable radios should be utilized by key M&PT personnel.
- Tri-axle trucks used on the jobsite should be equipped with amber lights and or warning signs saying "Construction Vehicle" attached to the back of the tailgate.
- No "HOV lane closed ahead" signs were shown on the plans. One was created by project. These signs should have been incorporated into the project plans and also quantities included for pay item.
- I-84 East direction- Both sides of the highway were not signed. Wide roadway with more than two lanes across. This was especially an issue when no signs were used next to the lane closure. (High speed lane closed no signs in high speed shoulder)
- I-84 East direction "Lane Closed Ahead" sign too close to arrow board and lane closure. Difficult to read and not time to react. Not MUTCD compliant.

- Not enough traffic cones assigned to project item quantity and spacing between cones was too far apart.
- Without some form of stationing or place to put construction stakes or marks it was difficult to track activities and placement quantities for contract pay items or start and end points for work day.



HOV lane sign created by project



Sign too close to lane closure.



Improper sign type- Using regulatory colors (black and white) versus Construction Sign colors (black and orange). Not included in contract



Appears to be waffle board substrate. Poor Retroreflectivity.



Sign with Plywood substrate



Median barrier clamping system for signs and safety sign used by contractor for trucks delivering materials. Good Practice

WORK ZONE REVIEW FORM**Project Number: 0092-0531/0619****District No. 3A****Date: 10/25/2011****Weather: Clear 48° F****Project Type:** Construction Maintenance Bridge Safety**Road Type:** Limited Access Secondary Local / Town**Inspection Forces:** State Maintenance Consultant**Location (Route & Town): I-95 & I-91 Route 34 Interchange (Q Corridor) New Haven****Focus of Review:** Lane Closure: Temporary Permanent; Stage Construction Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work**Prime Contractor: 92-531 E O&G/Tutor Perini / 92-619 E2 Walsh****Project Engineers:**

92-531 Dan Stafko

92-619 Bob Savage

Chief Inspectors:**Charlie Johnson (92-531 CE Resident)****Paul Van Olden (92-619 CE Resident)****Project Amount: \$357,104,784.92****Percent Complete: 8%****Calendar Days completed: 248****Calendar Days Allotted: 2135****Review Participants**

Name	Representing
See Attached attendant sheet	

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Area on Chapel St VMS view obscured. Ramp from 34E to 95 NB unclear that ramp closed until come upon ramp.
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). Queue's for pattern set up 95 SB & 95 NB extending beyond advance warning during set up.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). Construction personnel only protected by traffic drums/cones on limited access highway. Positive protection at drop off of rail not present.
- 4) Are there any horizontal/vertical clearance issues? None noted.
- 5) Are there any permitted load issues? No. Oversize/overweight allowed on I-91/95.
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? No, Variable Message Sign on 95 SB proximity of State St/ Willow St. (Exit 4 area), portable message sign too close to permanent overhead. Additional comments on attachment.
- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Not reviewed close up. General scan appears that acceptable sheeting and integrity is there.

- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? Arrow board on trucks show incorrect display during set up of I-91 SB pattern. Should be flashing arrow during the lane closure process. Once the lane closure is established, the board should then be moved to a four corners or flashing bar.
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? 30' from edge of travelway or min. of 3' behind maximum deflection of rail system.
 - Where are materials stored for the project? Off site in staging areas throughout interchange area.
 - Where is equipment stored when construction is not in progress? Behind barrier or off road.
- 10) Have accommodations been made to account for
- Emergency Services – have been notified and are aware of the project
 - Pedestrian/ Bike/ ADA issues? The detour in place does not look like very pedestrian friendly. It should be stressed that local roads and sidewalks either remain accessible or detour, with the proper signage, pedestrians and bicyclists as well.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. Worksite supervisors stated they do not, however supervisors work for the contractors.
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings, If yes, indicate removal method being used? Not reviewed at this time.
 - Are there conflicting markings? None noted.
 - Are the temporary markings legible? If night review, comment on visibility
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy Experimental blackout paint on 34 WB flyover ramp from I-95 NB.
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Hi-O's Class 3
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 hour minimum.
- Uniformed Flagger
- Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments:
- 16) Project Engineer Comments: Job briefings are held every night before work begins.

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout project
Mounting Height	Various depending on permanent or portable using both.
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Most of the signs are clean and visible however should be reviewed by project.
Reflectorized/Sheeting Type	Both bright fluorescent and type III reflective sheeting
Project Consistency	Fairly consistent however missing signs on detour route.
Need to be covered	No.
Temp./Permanent	Both temporary and permanent construction signs.

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	Traffic cones and drums. cursory review.
Quantity	Numerous, not counted
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	For the most part, yes. Since did not review up close it appeared that most were acceptable.
Reflectorized	Yes.
Anchored	No
Consistent throughout project	For the most part. Did see any that stood out as unacceptable

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Temporary Precast Concrete Barrier Curb
Quantity	Did not count
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Due to the amount of dust delineators were not reflecting properly. Should be cleaned.
Reflectorized	Yes but delineators need to be cleaned.
Anchored	To each other but not to the ground.
Consistent throughout project	Yes.
Crash Trucks (TMA) in use? If yes how many and type	Yes. Two used for moving road block.

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location.	Yes on some permanent mounted construction signs.
Are all lights functioning? High or low intensity?	Did not inventory. The ones that were noted were working High.
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	Both portable and truck mounted in use. No. One was on flashing arrow instead of bar or corners.
Location of portable devices – Indicate if in clear zone and how protected.	
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	Both permanent and portable, however too close together at one location. Did not count number of frames displayed. Timing between screens appeared acceptable.

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain.

Yes. An update is due because of completion of projects. Revision (6/2010). Mobility and Identification of responsible parties.

What special provisions are there in contract related to work zone (list item no, description and date of provision)? MP&T, Worksite supervisor, Truck mounted attenuation systems, cones, drums.

Is the project being completed in stage construction? If yes, explain. Multiple stages see plan sheets.

Is there temporary signalization? If yes, explain. None noted at this time.

Is a detour required or being used? If yes, explain. Various detours in place during ramp closures @ I-91/95 interchange and at local roads. Detour for Wooster St closure @ Chapel.

What guides, tools including manuals, pocket guides, books etc. do you reference?
Not covered during this interview.

What work zone traffic plans are included in the project?

Stage construction plans, M&P lane plans, local road plans. Worksite supervisors for contractors develop traffic plan details. Contractors will use plans and TMP for lane closures, pattern development and also use google maps as a tool in developing changes in staging, and sequence of construction. Need to look at ways to do some work during daytime hours by widening road, traffic shifts and or detours to accommodate construction activities. Example is work of excavator next to residential area using bright lights and issues with noise levels. Contractors expressed concerns about motorists continually speeding through the workzones. Inadequate notice of ramp closures 34 East bound to I-91 Northbound and no detour was posted for this closure.

WORK ZONE REVIEW FORM

Project Number: 96-199
Date: August 29, 2012

District No. 4
Weather: Clear

Project Type: Construction Maintenance Bridge Safety
Road Type: Limited Access Secondary Local / Town
Inspection Forces: State Maintenance Consultant

Location (Route & Town): Route I-84, Newtown, Southbury, and Middlebury

Focus of Review: Lane Closure: Temporary Permanent; Stage Construction
 Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work

Prime Contractor: Tilcon Connecticut, Inc.

Project Engineer: Dave Neelands

Chief Inspector: Mohammed Khadeer

Project Amount: \$8,282,141.00

Percent Complete: 57%

Calendar Days completed: 67 Days

Calendar Days Allotted: 117 Days

Review Participants

Name	Representing
Mohammed Khadeer	DOT – Dist. 4
Ryan Wodjenski	DOT – Dist. 4
Terri Thompson	DOT - OOC
Jeff Hunter	DOT - OOC
Bonney Whitaker	DOT - OOC
Scott Wassmann	DOT - Traffic
Robert Turner	FHWA
Steve Tuxbury	Tilcon Connecticut
Jamie Sirica	Tilcon Connecticut

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes, except shoulder is not delineated with temporary tape. Additional signs were added to the contract. (See comments on page 4).
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). Lane closure resulted in a queue of about 1.5 miles with a 20 minute traffic delay.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). None noticed.
- 4) Are there any horizontal/vertical clearance issues? No
- 5) Are there any permitted load issues? No

- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes. There is a dedicated person to check signs throughout the night.
- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Some of the drums and cones appear to be marginal.
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? Remote controlled changeable message signs.
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? Form 816, Section 1.07.07, 30' from edge of traveled way applies to this project.
 - Where are materials stored for the project? Off Exit 15, out of the clear zone.
 - Where is equipment stored when construction is not in progress? Crash trucks - same as "b" above. Pavers & rollers - stored at closest exit ramp from end of paving area.
- 10) Have accommodations been made to account for
- Emergency Services – No
 - Pedestrian/ Bike/ ADA issues? N/A
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings? If yes, indicate removal method being used? No. Pavement marking removed during milling operations.
 - Are there conflicting markings? No
 - Are the temporary markings legible? If a night review, comment on visibility. Acceptable
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Yes
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 hours minimum
- Uniformed Flagger
- Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments: It is time consuming for inspector to order State Police. Also, speeding trucks at night are an issue.
- 16) Project Engineer Comments: Not available for review.

[Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout project
Mounting Height	Acceptable
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized/Sheeting Type	Bright fluorescent sheeting
Project Consistency	Acceptable
Need to be covered	No
Temp./Permanent	Temporary

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	See traffic drums & traffic cones below.
Quantity	
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	
Reflectorized	
Anchored	
Consistent throughout project	

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Traffic drums & 42” traffic cones
Quantity	Not counted. Additional drums & cones added to contract.
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Some drum and cones were noted to be marginal and needing to be replaced.
Reflectorized	Yes
Anchored	N/A
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	Yes

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	High intensity warning lights. All functioning.
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	Truck mounted flashing arrows. One of the flashing arrows on the shoulder should have been flashing a straight bar or four corner dots.
Location of portable devices – Indicate if in clear zone and how protected.	I-84 W: Beyond edge of pavement. I-84E: In gore area at Exit 13.
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	Using both permanent and portable message signs.

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. Yes, a TMP was put in place due to the high traffic volumes on Interstate 84 within the project limits. However, the project personnel were not aware that a TMP had been prepared for this project.

What special provisions are there in contract related to work zone (list item no, description and date of provision)?

Item #0970006A – Trafficperson (Municipal Police Officer), Rev. 1/2008

Item #0970007A – Trafficperson (Uniformed Flagger), Rev. 1/2008

Item #0971001A – Maintenance & Protection of Traffic, Rev. 12/15/11

Item #1131002A – Remote Controlled Changeable Message Sign, Rev. 12/02/02

Item #1220013A – Construction Signs – Bright Fluorescent Sheeting, Rev. 10/7/11

Is the project being completed in stage construction? If yes, explain. No

Is there temporary signalization? If yes, explain. No

Is a detour required or being used? If yes, explain. No. The contractor would prefer a detour be put in place so ramps could be closed for construction activity.

What guides, tools including manuals, pocket guides, books etc. do you reference?

MUTCD and ATSSA Guide to Temporary Traffic Control in Working Zones

What work zone traffic plans are included in the project? Traffic Sheet Nos. TR_1220_01 & TR_1220_02.

Has the project had any incident reports filed? Yes How many? 3

Contractor comments:

- Paving the ramps is problematic. The ramps are too narrow to safely accommodate for a work area and traffic. The contractor would like to be able to close the ramps in order to perform milling and paving.
- The quantity of cones provided in the contract is insufficient.
- Placing traffic drums for short duration is difficult, but safer.

General comments:

- Good job on placement of extra traffic cones in ramp area.
- Highway Operations stated project is consistent with calling in for message boards.
- Shoulder area was not delineated with temporary tape as specified in the contract. (See question 1).
- A “Motorcycles Use Caution” sign was placed on the left side of the road. The same sign needs to be placed on the right side of the road.
- “Motorcycles Use Caution”, “Bump Ahead” and “Milled Pavement Ahead” signs had to be added to the contract for better public guidance.

WORK ZONE REVIEW FORM**Project Number:** 0144-0179**District No.** 3**Date:** 06/12/2012**Weather:** Cloudy & Rain**Project Type:** Construction Maintenance Bridge Safety**Road Type:** Limited Access Secondary Local / Town**Inspection Forces:** State Maintenance Consultant**Location (Route & Town):** Route 25, Trumbull**Focus of Review:** Lane Closure: Temporary Permanent; Stage Construction Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work**Prime Contractor:** Manafort Brothers, Inc.**Project Engineer:** Steven Hebert**Chief Inspector:** Dave Speerli**Project Amount:** \$17,496,965.65**Percent Complete:** 23%**Calendar Days completed:** 124**Calendar Days Allotted:** 519**Review Participants**

Name	Representing
Bonney Whitaker	DOT O.Q.A.
Steven Hebert	DOT District No. 3
Nick Ozkan	DOT O.Q.A.
Dave Speerli	Amman Whitney
Edwin Brown	DOT Traffic
Jeff Hunter	DOT O.O.C.

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes, Contractor and Inspection team have done a good job with the signing pattern.
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). Traffic flow very smooth, no queue length, speed through the work zones was less than posted speed.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). None noted.
- 4) Are there any horizontal/vertical clearance issues? No.
- 5) Are there any permitted load issues? No.
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes all signs reviewed were acceptable.

- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes.
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? No.
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? 30' from edge of travel way.
 - Where are materials stored for the project? In the median and also along roadway outside of clear zone in both instances.
 - Where is equipment stored when construction is not in progress? Same as b. above.
- 10) Have accommodations been made to account for
- Emergency Services – Notified at beginning of project.
 - Pedestrian/ Bike/ ADA issues? Limited access highway therefore no issues.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No contractor is very good, but inspector noted that this was important from the onset and contractor has been good at keeping up.
- 12) Pavement Markings - Temporary
- Is there an item for removal of pavement markings, If yes, indicate removal method being used? Yes and the method is grinding.
 - Are there conflicting markings? None noted.
 - Are the temporary markings legible? If night review, comment on visibility
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
Note: Existing plastic pavement markings are an issue with diamond grinding.
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Not reviewed on this inspection.
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 hours
- Uniformed Flagger
- Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments: Standard Templates don't address Tangents especially on ramps could be difficult if tractor trailers were present. Project specific lane closures should be submitted for the 90% plan review. On numerous projects have encountered crash truck hours to be insufficient. Traffic cones for lane closures on limited access highways have insufficient weight to keep them from blowing over, constantly required to pick up cones.

16) Project Engineer Comments:

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout project
Mounting Height	Acceptable
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes all signs were clean and legible. No night review performed so reflectivity not reviewed.
Reflectorized/Sheeting Type	Bright Fluorescent sheeting
Project Consistency	Very good
Need to be covered	No
Temp./Permanent	Temporary

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	Traffic Drums for temporary lane closures.
Quantity	Did not count.
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes the majority were clean and visible.
Reflectorized	Yes
Anchored	No
Consistent throughout project	Yes

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Temporary Precast Concrete Barrier Curb
Quantity	Around 300' reviewed
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes.
Reflectorized	Delineators attached to barrier are.
Anchored	To each other.
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	Approximately 5 portable impact attenuation trucks.

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Not reviewed.
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	Some portable and some truck mounted all but one unit had all lights functioning. The other one had one bulb out. All were in correct mode.
Location of portable devices – Indicate if in clear zone and how protected.	Portable flashing arrows were located with the signing pattern at the proper locations.
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	Changeable message signs were used, they were portable with 2 frames displayed and the timing between frames was good.

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain.

No.

What special provisions are there in contract related to work zone (list item no, description and date of provision)? Construction Signs, MP&T, and Traffic persons

Is the project being completed in stage construction? If yes, explain.

No.

Is there temporary signalization? If yes, explain.

No.

Is a detour required or being used? If yes, explain.

Yes, detours will be utilized on the interchange ramps with Route 15 as outlined in the MP&T specifications.

What guides, tools including manuals, pocket guides, books etc. do you reference?

ATTSA guidelines for Work Zone Safety Devices, 2011 MUTCD

What work zone traffic plans are included in the project?

No special plans other than the detours mentioned above for the interchange ramps.

General Comments.

- 1) At times the traffic becomes so light that workers can become complacent when a vehicle does enter the work zone.
- 2) Overhead costs for local police are getting to be very costly and should be reviewed.
- 3) There should be discussions to transferring state trooper ordering back to the contractors.
- 4) Traffic pattern templates for shoulder closures should be reviewed and updated.
- 5) It would be beneficial to the project if someone from the inspection staff as well as lower level contractor staffing (foremen) had training in work zone safety.



Beginning of Signing Pattern Route 25 Northbound



Signs used throughout sign pattern to reinforce lane closure



Proper space provided for exit ramp



Sign in the distance and impact attenuation vehicle in the background with proper signal

WORK ZONE REVIEW FORM

Project Number: 171-351
Date of field review: 9/11/12

District No. 1
Weather: Clear ~60F, Nighttime

Project Type: Construction Maintenance Bridge Safety
Road Type: Limited Access Secondary Local / Town
Inspection Forces: State Maintenance Consultant

Location (Route & Town): Various

Focus of Review: Lane Closure: Temporary Permanent; Stage Construction
 Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work

Prime Contractor: Arborio Corp.

Project Engineer: Joe Sullivan

Chief Inspector: Rich Balzarini

Project Amount: \$1,529,995.00

Percent Complete: 70%

Calendar Days completed: 171

Calendar Days Allotted: 152

Review Participants:

Name	Representing
Rich Balzarini	OOC - District 1, Project Inspector
Bonney Whitaker	OOC - OQA
Jeff Hunter	OOC
Nick Mandler	OE - Traffic
Doug Harz	OOC - OQA
Nick Ozkan	OOC - OQA

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone?** Yes
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition).** To date, work has been done primarily on the off ramps. Generally, light traffic conditions. Initially, when signs go up, some queue would occur. Thereafter, smooth flowing.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs).** No
- 4) Are there any horizontal/vertical clearance issues?** No
- 5) Are there any permitted load issues?** No

- 6) **Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements?** *Yes*
- 7) **Are all cones, drums, barricades, or other channelization devices acceptable?** *Yes*
- 8) **Are warning lights and devices used for Maintenance and Protection of Traffic?**
Didn't use lights – only diamond warning signs have been used for shoulder work
- 9) **Clear Zone issues: (Y / N) Respond to questions below.**
- a. **What is the clear zone for this project?** *Per Form 816, the clear zone for equipment storage is 30' from travel way.*
- b. **Where are materials stored for the project?** *Commuter Parking Lot.*
- c. **Where is equipment stored when construction is not in progress?** *Commuter Parking Lot.*
- 10) **Have accommodations been made to account for**
- a. **Emergency Services –** *When Br. #1469A on I-91 NB had to be closed for a weekend, notifications were sent out via e-mail to contact people and press releases were made for the weekend detour. This was only a one time occurrence for the project.*
- b. **Pedestrian/ Bike/ ADA issues?** *N/A*
- 11) **Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain.** *No*
- 12) **Pavement Markings- Temporary**
- a. **Is there an item for removal of pavement markings, If yes, indicate removal method being used?** *No.*
- b. **Are there conflicting markings?** *No*
- c. **Are the temporary markings legible? If night review, comment on visibility** *N/A*
- d. **Type of marking material being used.** **Tape** **Paint (non-epoxy)** **Epoxy** *N/A*
- 13) **Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain.** *No. Hard hats are used, however, the vests worn by the employees are old and reflective, and pants are not typically used.*
- 14) **Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.**

State Police

Local Police **Minimum Hourly Requirement:** *Hartford Police (\$488/8 hrs. for Police Officer and \$ 672/8 hrs. for a Sgt., when more than 3 officers are on duty.) There are no additional charges for administration.*

Uniformed Flagger - *this item is not used.*

Comments from Traffic Control Personnel (indicate type of traffic person): not asked.

- 15) **Chief Inspector Comments:** *No primary issues. The inspector noted that he did not feel the "ITEM #0973723A – WORKSITE TRAFFIC SUPERVISOR" item was warranted for this project.*

During times, when one of the two Crash Trucks did not have a driver, the contractor was paid partially for the truck without the driver by the inspector.

- 16) **Project Engineer Comments:** *Was not in attendance.*

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	<i>Construction</i>
Location	<i>Throughout project</i>
Mounting Height	<i>Acceptable</i>
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	<i>Signs were clean and visible</i>
Reflectorized/Sheeting Type	<i>Type III reflective sheeting</i>
Project Consistency	<i>Very Good</i>
Need to be covered	<i>No</i>
Temp./Permanent	<i>Temporary</i>

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	<i>Traffic Drums for Temporary Lane Closures</i>
Quantity	<i>Not counted</i>
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	<i>Majority were clean and visible</i>
Reflectorized	<i>Yes</i>
Anchored	<i>No</i>
Consistent throughout project	<i>Yes</i>

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	<i>TPCBC/Barricades were not used on this project</i>
Quantity	<i>–</i>
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	<i>–</i>
Reflectorized	<i>–</i>
Anchored	<i>–</i>
Consistent throughout project	<i>–</i>
Crash Trucks (TMA) in use? If yes how many and type	<i>2 trucks, typically, one manned.</i>

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	<i>None were used</i> <i>The project provided for High Intensity Warning Lights</i>
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	<i>Yes</i> <i>Truck mounted</i> <i>Yes</i>
Location of portable devices – Indicate if in clear zone and how protected.	<i>Off travel way, in delineated areas</i>
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	<i>Since the State's Permanent Changeable Message were utilized, the project's temporary signs were not used, as the field personnel felt that the Portable Message signs would be superfluous</i>

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. *No.*

What special provisions are there in contract related to work zone (list item no, description and date of provision)?

#0970006A - Traffic person (Municipal Police Officer) (1/2008)

#0970007A – Traffic person (Uniformed Flagger) (1/2008)

#0979003A – Construction Barricade Type III (1/17/01)

#1131002A – Remote Control Changeable Message Sign (12/02/02)

#1220013A – Construction Signs- Bright Fluorescent Sheeting (1/17/01)

#0971001A – MP&T (4/13/2011)

#0973723A – Worksite Traffic Supervisor (no date)

Is the project being completed in stage construction? If yes, explain. *No*

Is there temporary signalization? If yes, explain. *No*

Is a detour required or being used? If yes, explain. *Yes, a weekend closure, which entailed a detour, was required to replace the joints. See #10 above.*

What guides, tools including manuals, pocket guides, books etc. do you reference? *The project plans were primarily used.*

What work zone traffic plans are included in the project? *Typical Traffic Control Plans.*

Has project had any incident reports filed? *No.*

How many? *NA*



WORK ZONE REVIEW FORM**Project Number: 0173-0414****District No. 3****Date: 09/12/2011****Weather: Clear 70° F****Project Type:** Construction Maintenance Bridge Safety**Road Type:** Limited Access Secondary Local / Town**Inspection Forces:** State Maintenance Consultant**Location (Route & Town):** Route 15 Southbound, Hamden**Focus of Review:** Lane Closure: Temporary Permanent; Stage Construction Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work**Prime Contractor:** New England Road Inc.**Project Engineer:** Jeffrey Knapp**Chief Inspector:** Chukwuekezie Ezigbo**Project Amount:** \$1,811,110.00**Percent Complete:** 17%**Calendar Days completed:** 58**Calendar Days Allotted:** 261**Review Participants**

Name	Representing
Jeffrey Knapp	District 3 Construction
Chukwuekezie Ezigbo	District 3 Construction
Matthew Bishop	District 3 Construction
Greg Shaffer	DOT Office of Construction
Jeffery Hunter	DOT Office Of Construction

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes, however two pre warning signs installed were not Bright Fluorescent sheeting.
- 2) What is the overall condition of traffic flow through the work zone? (Include queue length and speed limit, roadway condition). Very good. Initial queue time (to get through work zone) was around 10 minutes. Traffic had dissipated within 1.5 hours.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). As per office of Traffic, since only traffic drums separate construction personnel from the traveling motorists this constitutes a hazard.
- 4) Are there any horizontal/vertical clearance issues? No.
- 5) Are there any permitted load issues? No. Trucks are not allowed on this limited access road.

- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes, except two, which were changed over before the end of the night.
- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? No
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? Workers on limited access highway protected by crash truck and traffic drums. Therefore the clear zone is about 1 foot.
 - Where are materials stored for the project? Offsite
 - Where is equipment stored when construction is not in progress? Offsite
- 10) Have accommodations been made to account for
- Emergency Services – Aware of the project
 - Pedestrian/ Bike/ ADA issues? N/A Limited Access highway.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No.
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings, If yes, indicate removal method being used? No
 - Are there conflicting markings? No
 - Are the temporary markings legible? If night review, comment on visibility N/A
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Some of the workers for the contractor were not wearing the proper reflective apparel for limited access highways
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 Hours
- Uniformed Flagger
- Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments: None at this time
- 16) Project Engineer Comments: Did not Interview

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Route 15 SB Right Lane & Shoulder, Hamden
Mounting Height	Not measured but appeared correct for Temporary signs.
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	
Reflectorized/Sheeting Type	Yes, Bright Fluorescent (Except two)
Project Consistency	Except Two which were changed promptly.
Need to be covered	No
Temp./Permanent	Temporary

Table B – Traffic control Devices: Cones and Drums

Requirement	Comment
Type & Placement	Traffic Drums
Quantity	Over 50
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes only two traffic drums were borderline.
Reflectorized	Yes
Anchored	No
Consistent throughout project	Yes

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	
Quantity	
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	
Reflectorized	
Anchored	
Consistent throughout project	
Crash Trucks (TMA) in use? If yes how many and type	

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	No warning lights on signs
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	Portable, notified inspector that one bulb was out. Flashing arrow was operating in correct mode.
Location of portable devices – Indicate if in clear zone and how protected.	VMS was outside of the clear zone but hard to see within reasonable time frame. Tried to move to better location.
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	Portable. Due to work site hard to find acceptable location for the VMS. However Contractor is making attempt to locate a better area for placement.

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. No.

What special provisions are there in contract related to work zone (list item no, description and date of provision)? Standard Items.

Is the project being completed in stage construction? If yes, explain.

Yes. Replace half of the bridge joint in the travel lane and shoulder one night and then replace the high speed lane and shoulder at a later date.

Is there temporary signalization? If yes, explain. No.

Is a detour required or being used? If yes, explain. No.

What guides, tools including manuals, pocket guides, books etc. do you reference? Contract.

What work zone traffic plans are included in the project? MP&T plans.

Notes: Reviewed issues with the Project Engineer and agreed to show field review with inspector Matthew Bishop. During field review noticed that construction signs for the on ramp were not installed. Matt discussed issues with contractor and they were taken care of in a timely manner that evening.



Type III Reflective sheeting (left) Versus Bright Fluorescent Sheeting



Again Mixed Sheeting types Bright Fluorescent (background) versus Type III first sign.



Ramp signs not installed; Again notice Type III versus Bright Fluorescent Sheeting.



Initial Queue of traffic just after signing pattern was set up.

DETOUR REVIEWS

- 79-215, Route 71, Meriden, CT
- 84-102, Route 25, Monroe, CT

WORK ZONE REVIEW FORM**Project Number:** 79-215**District No.** 4**Date:** 11/30/12**Weather:** Clear, 41°**Project Type:** Construction Maintenance Bridge Safety**Road Type:** Limited Access Secondary Local / Town**Inspection Forces:** State Maintenance Consultant**Location (Route & Town):** Route 71 (Cook Ave.) over Harbor Brook, Meriden**Focus of Review:** Lane Closure: Temporary Permanent; Stage Construction Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work**Prime Contractor:** Dayton Construction Co., Inc.**Project Engineer:** Ali Farzan**Chief Inspector:** Rich Rudaitis**Project Amount:** \$2,396,603.47**Percent Complete:** 93%**Calendar Days completed:** 214**Calendar Days Allotted:** 230**Review Participants**

Name	Representing
Rich Rudaitis	District 4
Kevin LaRosa	District 4
Brien Smith	Office of Traffic
Bonney Whitaker	Office of Construction

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes, with detour around work zone in place.
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). Traffic is detoured around the work zone onto Route 70. There are no traffic issues at the work site or on Route 70 with the detour.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). No
- 4) Are there any horizontal/vertical clearance issues? No
- 5) Are there any permitted load issues? No
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes

- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? Yes.
Additional high intensity warning lights were added to Type III barricades at both ends of the bridge.
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? Work area at bridge is closed to traffic and protected by temporary precast barrier curb.
 - Where are materials stored for the project? At trailer site
 - Where is equipment stored when construction is not in progress? Behind barrier at the work site
- 10) Have accommodations been made to account for
- Emergency Services – Police, fire department and schools were involved in meetings. The town also notified those concerned by email.
 - Pedestrian/ Bike/ ADA issues? A temporary sidewalk and temporary pedestrian bridge around the work zone was installed.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings? If yes, indicate removal method being used. N/A
 - Are there conflicting markings? N/A
 - Are the temporary markings legible? If night review, comment on visibility
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Yes
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 hour minimum
Administrative expense: 10%
- Uniformed Flagger
- Comments from Traffic Control Personnel (indicate type of traffic person): Not being used at this time.
- 15) Chief Inspector Comments: None
- 16) Project Engineer Comments: Not present

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout project
Mounting Height	Good
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized/Sheeting Type	Type III Reflective sheeting
Project Consistency	Good
Need to be covered	No
Temp./Permanent	Permanent

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	Not reviewed during this inspection
Quantity	
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	
Reflectorized	
Anchored	
Consistent throughout project	

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Type III barricades at North & South ends of bridge
Quantity	12 each
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	There is noticeable loss of reflectivity and obvious color fading on 4 barricades.
Reflectorized	High intensity warning lights added to barricades.
Anchored	Yes
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	N/A

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Barricade warning lights used on construction detour signs. Project added additional warning lights to Type III barricades used to close the bridge. High intensity.
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	N/A
Location of portable devices – Indicate if in clear zone and how protected.	N/A
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	N/A

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. No

What special provisions are there in contract related to work zone (list item no, description and date of provision)?

0970006A Trafficperson (Municipal Police Officer), Rev. 1/2008

0970007A Trafficperson (Uniformed Flagger), Rev. 1/2008

0979003A Construction Barricade Type III, Rev 1/17/01

1220011A Construction Signs - Type III Reflective Sheeting, Rev. 1/17/01

Is the project being completed in stage construction? If yes, explain. No

Is there temporary signalization? If yes, explain. No

Is a detour required or being used? If yes, explain. Yes, a detour is required to allow for the reconstruction of the bridge.

What guides, tools including manuals, pocket guides, books etc. do you reference? Construction manual

What work zone traffic plans are included in the project? Detour Plan – 1 and Detour Plan – 2.

Has the project had any incident reports filed? No

Comments:

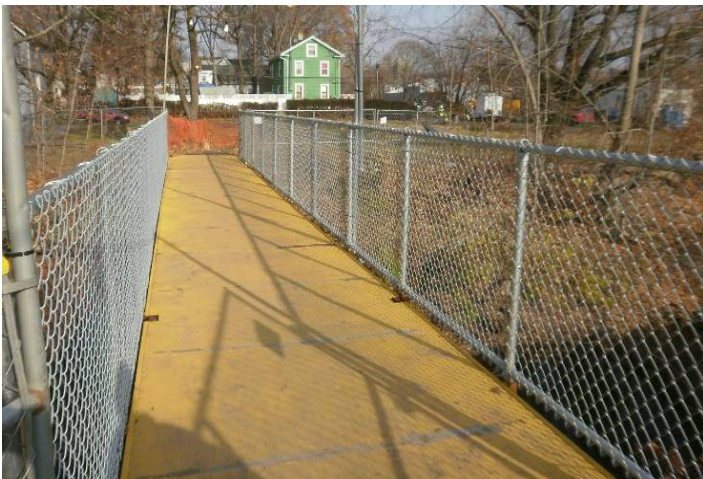
1. There were four Type III construction barricades that were faded and not providing appropriate reflectivity. The project added high intensity barricade warning lights to the Type III barricades.
2. The stripes of four Type III barricades were sloping in the wrong direction. Stripes should slope downward in the direction traffic is to pass.
3. On the detour signs, the “1” in Route 71 appeared to be grey and not matching the black color as the rest of the letters on the signs.



Type III barricades and signs placed at south end of bridge. Barricade stripes should all be sloping downward in the direction traffic is to pass (in this case to the left) and be retroreflective.



Sign pattern for the road closure at north end of bridge. Barricades were moved to allow for construction equipment access. Barricade stripes should all be sloping downward to the left.



Temporary pedestrian bridge installed around the work zone.



Sign No. 80-9929 to inform the public of the bridge closure. In accordance with Note 9 on the plans, this sign should have been removed once the detour was in effect.

WORK ZONE REVIEW FORM

Project Number: 0084-0102
Date: 11/08/2011

District No. 4
Weather: Sunny/65° F

Project Type: Construction Maintenance Bridge Safety
Road Type: Limited Access Secondary Local / Town
Inspection Forces: State Maintenance Consultant

Location (Route & Town): Route 25 Monroe, CT

Focus of Review: Lane Closure: Temporary Permanent; Stage Construction
 Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work

Prime Contractor: Dayton Construction Company Inc.

Project Engineer: Charles Murad

Chief Inspector: Kenneth Rekrut

Project Amount: \$4,200,274.63

Percent Complete: 39%

Calendar Days completed: 213

Calendar Days Allotted: 457

Review Participants

Name	Representing
Robert Rameriz	Federal Highway Administration
Robert Turner	Federal Highway Administration
Anthony Kwentoh	CT DOT Office of Construction
Philip Cohen	CT DOT Office of Traffic
Kenneth Rekrut	DeCarlo & Doll
Oddler Fils	CT DOT Office of Traffic
Jeff Hunter	CT DOT Office of Construction
Scott Smigel	DeCarlo & Doll

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? No, there are missing or worn pavement markings that need to be addressed. Temporary line striping needs to be refreshed prior to winter shutdown. Local police do not take the place of proper work zone signing patterns. Please see contract MP&T provisions for proper guidance.
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). There is a lunchtime queue, length was not measured. Queue cleared up within 45 minutes. See Photo page 10.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). Yes, on a town road that is being utilized for a detour there is a drop-off due to incomplete drainage work. Utility poles also need removal.

- 4) Are there any horizontal/vertical clearance issues? Since detour was on local roads horizontal clearance issues needed to be managed. One vertical issue due to utility pole leaning into town road. See photo on page 9.
- 5) Are there any permitted load issues? Yes, since detour is on town roads, however to date no permits have been requested.
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes.
- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Some cones on site do not meet specification requirements. See photos pages 7 & 8.
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? Yes, warning lights are located on detour signs.
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? 30' or behind deflection of Metal Beam Rail.
 - Where are materials stored for the project? In a laydown area near the work area, however some materials are too close to roadway see photo on page 8.
 - Where is equipment stored when construction is not in progress? See b above.
- 10) Have accommodations been made to account for
- Emergency Services – Fire and Rescue are aware of detour on project and are notified of any changes.
 - Pedestrian/ Bike/ ADA issues? There are pedestrian/bike issues that were not addressed during design, however not really very many bicyclists or pedestrians utilize the road.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. Most of the time the contractor takes care of issues requested, however not always in a timely manner.
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings, If yes, indicate removal method being used? Eradication done by grinding
 - Are there conflicting markings? None noted.
 - Are the temporary markings legible? If night review, comment on visibility. Temporary pavement markings need to be reapplied before winter shutdown.
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Yes.
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.

State Police

Local Police Minimum Hourly Requirement: 4 hours for either service

Uniformed Flagger

Comments from Traffic Control Personnel (indicate type of traffic person): not asked.

15) Chief Inspector Comments: Old utility poles have not been removed yet see photos pages 9 & 10. Recent weather conditions have delayed this work. Eight foot cut has caused some challenges in maintaining commercial business access. Also some challenges with maintaining access to medical offices due to design/staging of project.

16) Project Engineer Comments:

Traffic Control Device Inspection- PART II

Table A – Signs

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout project
Mounting Height	Okay
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized/Sheeting Type	Both Bright wide angle & Type III construction
Project Consistency	Acceptable
Need to be covered	If detour not in use or signs left in place over winter, yes.
Temp./Permanent	Both temporary and permanent

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	Traffic Cones
Quantity	Over 25
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	No, numerous cones were not up to Conn DOT Standards. See photos pages 7 & 8
Reflectorized	Around Half. See photos page 7 & 8
Anchored	No
Consistent throughout project	No

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Not reviewed during this inspection
Quantity	
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	
Reflectorized	
Anchored	
Consistent throughout project	
Crash Trucks (TMA) in use? If yes how many and type	

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Yes, on construction detour signs. Not a focus of this field review.
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	Not an item on this project.
Location of portable devices – Indicate if in clear zone and how protected.	N/A
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	Not used at time of inspection. N/A

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain.

No

What special provisions are there in contract related to work zone (list item no, description and date of provision)? Temporary signalization items.

Is the project being completed in stage construction? If yes, explain.

Yes, traffic detoured to complete ledge blasting and eight foot cut in roadway.

Is there temporary signalization? If yes, explain.

Yes, detour in effect for portion of route 25 closed during blasting of ledge and cut in roadway.
Temporary Signalization needed for Route 25 traffic routed onto town road which needed to make a left turn movement in the detour route.

Is a detour required or being used? If yes, explain.

Yes, detour required for cut in roadway and ledge removal.

What guides, tools including manuals, pocket guides, books etc. do you reference?

Contract plans.

What work zone traffic plans are included in the project?

Maintenance and Protection of Traffic Plans and the Detour Plans.

See Attached Winter shutdown punch list of work zone safety issues and Photos

Project No. 84 – 102
Intersection Improvements Along Route 25
Monroe, CT
Work Zone Safety Review
Weather: dry & sunny, ± 60° F

On Tuesday November 8, 2011, the Offices of Traffic Engineering, Construction, FHWA, and the project chief inspector performed a safety review of the project. The following punch list items should be addressed prior to winter shutdown.

1. While the detour is not in effect, change the temporary signal at Green Street to flash red all-way to avoid unnecessary back-ups on Green Street. If the detour is no longer required, please remove the temporary traffic signal.
2. While the detour is not in effect, cover the detour signs. Remove the detour signs when the detour is no longer required.
3. Please clear all overgrown brush from interfering with sight of construction signs.
4. Many of the traffic drums and cones are visibly worn and should be replaced.
5. There were many traffic cones noted on the jobsite that do not conform to current DOT standards. Please remove and replace with proper traffic cones as needed.
6. Replace temporary pavement markings throughout the project limits including stop bars at the intersections.
7. It is recommended that epoxy be used as temporary pavement markings during the winter shut-down.
8. There were multiple roadside hazards during the safety inspection (concrete blocks, material piles, construction equipment, etc.) All fixed objects must be protected, removed, or located outside of the clear zone.
9. The drop off by the newly installed culvert end on the town road needs to be addressed.
10. While it is understood that utility companies have been busy on storm clean-up phone calls should be made to continue emphasis on removal of utility poles that need to be removed.
11. The utility pole located on the town road by the cemetery is leaning significantly into the roadway. It appears that it has already been hit once. Some sort of warning should be placed to alert commercial trucks of this hazard. The utility company in charge of this pole should be notified of this issue.
12. All construction signs must be mounted on breakaway posts. Breakaway post height needs to be reviewed and corrected if not in conformance with the plans. It appeared that the spacer bars were not installed; if this is a new design then supporting documentation should be provided by the contractor.
13. Refer to the Traffic Control Plans included in the Maintenance and Protection of Traffic special provision for typical traffic control applications showing proper signing pattern.
14. At sawcut locations (driveway aprons and side streets), create smooth transitions to negate bumps. This is a particular concern for winter conditions.
15. All raised manholes and catch basins should be leveled (flushed) with the roadway. This is also a concern for winter conditions. If leveling cannot be obtained then contractor needs to make roadway safe for plowing purposes.

Oddler Fils - Office of Traffic Engineering
Jeff Hunter - Office of Construction



Improper breakaway post height.



Abundant Signs



Overgrown brush blocking view of sign.



Missing or faded Stop Bar



Material too close to Roadway



Utility Pole leaning; town road used for detour.



Numerous Issues.



Impact Attenuation System protecting utility poles.



Lunchtime Traffic Queue. Utility pole requiring removal

TEMPORARY SIGNALIZATION REVIEWS

- 59-155, Route 77, Guilford, CT
- 67-115, Route 341, Kent, CT
- 98-100, Route 17, North Branford, CT

WORK ZONE REVIEW FORM**Project Number: 59-155****District No. 2****Date: 07/21/11****Weather: Hot & Humid 92° F****Project Type:** Construction Maintenance Bridge Safety**Road Type:** Limited Access Secondary Local / Town**Inspection Forces:** State Maintenance Consultant**Location (Route & Town): Route 77 (Durham Road) Guilford, CT****Focus of Review:** Lane Closure: Temporary Permanent; Stage Construction Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work**Prime Contractor: Brunalli Construction Co****Project Engineer: Paul Andruskiewicz****Chief Inspector: John DiBiagio****Project Amount: \$1,087,746.00****Percent Work Complete: 48%****Calendar Days completed: 144****Calendar Days Allotted: 300****Review Participants**

Name	Representing
John DiBiagio	CT DOT Construction D2
Jeff Hunter	CT DOT OOC
Mike Chachakis	CT DOT Traffic
Kiah Patten	CT DOT OOC

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). No Queue length, traffic flow smooth, road conditions good.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). No. All Temporary precast barrier curb protected by impact attenuation systems.
- 4) Are there any horizontal/vertical clearance issues? 14 foot width with shoulders.
No vertical clearance issues.
- 5) Are there any permitted load issues? No weighted load restrictions
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes all signs are acceptable.

- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes.
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic?
Yes, on all permanent construction signs except legal signs.
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? 30' or behind temporary barrier
 - Where are materials stored for the project? Behind TPCBC or in the parking lot of the field office.
 - Where is equipment stored when construction is not in progress?
Behind TPCBC or in the field office parking lot.
- 10) Have accommodations been made to account for
- Emergency Services – Emergency Services were notified at the beginning of the project.
 - Pedestrian/ Bike/ ADA issues? No special accommodations were made however, the lane width is 14' which provides enough room. Usually stage construction calls for 11' lane width.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No, contractor is very good and responsive.
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings, if yes, indicate removal method being used? Yes, grinding and black tape are used.
 - Are there conflicting markings? Yes, stage change occurred day before, work remains.
 - Are the temporary markings legible? If night review, comment on visibility N/A
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
Epoxy will be used if project extends through winter.
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Yes, wearing proper reflective equipment.
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 hr & After 4 hrs Next is 8 hrs
- Uniformed Flagger Minimum hourly requirement is 4 hrs.
- Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments: Design did not take into consideration boat launch area. During the stage where traffic is located next to boat launch area, it is very difficult, if not impossible, for vehicles with boat trailer to make a right turn.
- 16) Project Engineer Comments: Not present.

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Pre warning
Mounting Height	Rural setting, no sidewalks
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes all signs are in very good condition.
Reflectorized/Sheeting Type	Yes/ Type III Bright Wide Angle
Project Consistency	Very good
Need to be covered	No. See comment below
Temp./Permanent	Construction Signs are permanent

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	Type III Barricades Open end of Barrier
Quantity	1
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized	Yes
Anchored	No
Consistent throughout project	Yes

Table C - Barricades and other channelization devices

Requirement	Comment: Temporary Precast Concrete Barrier Curb
Type & Placement	See above/ on bridge for stage construction
Quantity	320 +/- Linear feet
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized	DE 7 Delineators
Anchored	Yes
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	No

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Yes. Warning lights on temporary signalization signs (permanent mounted) Yes High
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	Not used on project.
Location of portable devices – Indicate if in clear zone and how protected.	N/A
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	Not used at the time of review.

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. No.

What special provisions are there in contract related to work zone (list item no, description and date of provision)? MP&T plans and stage construction plans.

Is the project being completed in stage construction? If yes, explain. Yes, one side of bridge is replaced and then switch over and complete the other side.

Is there temporary signalization? If yes, explain. Yes. Bridge is being constructed in two phases, with one way alternating traffic controlled by temporary signals.

Is a detour required or being used? If yes, explain. No detour required.

What guides, tools including manuals, pocket guides, books etc. do you reference?
Plans and the contract documents.

What work zone traffic plans are included in the project? MP&T plans and stage construction plans.



Stage construction with temporary precast concrete barrier curb with delineators.



Boat launch in close proximity to stage construction.



Temporary signalization construction sign high intensity warning light.



Conflicting pavement markings original was eventually covered with tape.

WORK ZONE REVIEW FORM

Project Number: 0067-0115
Date: 06/29/2011

District No. 4
Weather: Clear / 84

Project Type: Construction Maintenance Bridge Safety
Road Type: Limited Access Secondary Local / Town
Inspection Forces: State Maintenance Consultant

Location (Route & Town): Route 341 - Kent

Focus of Review: Lane Closure: Temporary Permanent; Stage Construction
 Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work

Prime Contractor: Dayton

Project Engineer: Matthew Cleary

Chief Inspector: Daniel Paton

Project Amount: 1,761,540.00

Percent Work Complete: 60%

Calendar Days completed: 167

Calendar Days Allotted: 222

Review Participants

Name	Representing
Daniel Paton	CT DOT District 4
Brett Stoeffler	CT DOT Traffic
Jeff Hunter	CT DOT OOC
Kiah Patten	CT DOT OOC

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). No Traffic Issues
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). One TPCBC that needs to be addressed.
- 4) Are there any horizontal/vertical clearance issues? 11' Lanes due to stage construction.
No Vertical issues
- 5) Are there any permitted load issues? Yes, wide load issues until stage construction complete.
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes

- 7) Are all cones, drums, barricades, or other channelization devices acceptable?
Yes
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic?
Yes
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? 30' or behind protective system
 - Where are materials stored for the project? At the project field office.
 - Where is equipment stored when construction is not in progress? Behind TPCBC or at the field office.
- 10) Have accommodations been made to account for
- Emergency Services – Local Services were notified at beginning of project.
 - Pedestrian/ Bike/ ADA issues? ADA N/A since rural setting however Designer did not take into account hikers from the Appalachian Trail. See Photo
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No, Contractor very responsive.
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings, if yes indicate removal method being used? Yes, grinding is the removal method.
 - Are there conflicting markings? None noted.
 - Are the temporary markings legible? If night review, comment on visibility Yes, temporary pavement markings are legible.
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Yes, everyone on jobsite wearing proper reflective equipment.
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement:
- Uniformed Flagger 4 hour minimum
- Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments: None
- 16) Project Engineer Comments: Not present during complete interview.

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout
Mounting Height	Not measured but appeared correct
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized/Sheeting Type	Yes, Type III sheeting
Project Consistency	Very good
Need to be covered	No
Temp./Permanent	Post mounted (permanent)

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	Barricades Type III
Quantity	5
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes all are visible and reflective
Reflectorized	Yes
Anchored	No
Consistent throughout project	No. Chevrons in wrong direction.

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Temporary Precast Concrete Barrier Curb
Quantity	160 linear feet, 80 linear feet each bridge
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	N/A Delineators are clean functioning and attached to the barrier
Reflectorized	DE7 Delineators are
Anchored	Yes anchored to each other.
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	No TMA's used.

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Yes, Barricade Warning Lights on Construction Signs. Yes High Intensity per contract.
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	Not assigned to this contract.
Location of portable devices – Indicate if in clear zone and how protected.	No portable devices in use at the time of inspection.
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	No changeable message signs in use at the time of inspection.

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. No

What special provisions are there in contract related to work zone (list item no, description and date of provision)? Staging plans and Maintenance and Protection of Traffic plans for Temporary signalization during bridge construction.

Is the project being completed in stage construction? If yes, explain. Yes. Alternating one way traffic on both bridges controlled by Temporary Signalization. Both bridges are complete rehabilitations.

Is there temporary signalization? If yes, explain. Yes. Temporary Signalization in use for installation of new bridges structures. Microwave Detection is use, No preemption installed.

Is a detour required or being used? If yes, explain. No detour in use.

What guides, tools including manuals, pocket guides, books etc. do you reference? Only the plans and contract documents.

What work zone traffic plans are included in the project? Staging Plans and Maintenance and Protection of Traffic Plans.

Additional Comments:

- 1) Some Oak Branches should be trimmed however, excellent signing and no skid marks noted.
- 2) Blunt end on Temporary precast concrete barrier curb needs to be protected currently tied to wire rope of three cable guide rail.
- 3) Better coordination with Highway Design and Traffic to ensure Pedestrian issues are addressed. While this is a very rural area, there is a break in the Appalachian Trail where hikers come down and stop in the town of Kent.
- 4) Traffic barrels should not impede site of DE-9 delineators. The delineators are associated with Impact attenuation systems. See Photo.
- 5) The Type III barricades all appeared to be in very good condition, however chevrons were pointing in the wrong direction.
- 6) The temporary pavement markings were acceptable however permanent markings not eradicated need to be covered.



Notice Blunt end on Temporary Precast Concrete Barrier Curb.



Type III Barricade with chevrons in wrong direction. Traffic Drum blocking DE-9.



Hiker Access to Kent from the Appalachian Trail, Design did not consider this.



Vegetative Growth obscuring impact attenuation and DE-9 delineator view.

WORK ZONE REVIEW FORM**Project Number:** 98-100**District No.** 3**Date:** 7/26/12**Weather:** Pt. Cloudy**Project Type:** Construction Maintenance Bridge Safety**Road Type:** Limited Access Secondary Local / Town**Inspection Forces:** State Maintenance Consultant**Location (Route & Town):** Route 17, North Branford**Focus of Review:** Lane Closure: Temporary Permanent; Stage Construction Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work**Prime Contractor:** D & V Morin Construction Co., Inc.**Project Engineer:** Roger Thomas**Chief Inspector:** Matthew Bishop**Project Amount:** \$443,801.00**Percent Complete:** 27%**Calendar Days completed:** 89**Calendar Days Allotted:** 236**Review Participants**

Name	Representing
Matthew Bishop	DOT Construction
Oddler Fils	DOT Traffic
Jeff Hunter	DOT OOC
Nick Ozkan	DOT OOC-OQA
Bonney Whitaker	DOT OOC-OQA

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). Very good. Traffic clears in one signal cycle.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). No. Temporary impact attenuation systems and barriers are in place.
- 4) Are there any horizontal/vertical clearance issues? Utilities will be moved to accommodate a crane for Stage 2 construction. The travel lane is 11' due to stage construction. A hay wagon clipped a sign and broke a warning light which has been replaced.
- 5) Are there any permitted load issues? No
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes. The inspector is pleased with the Contractors provisions of signs and devices.

- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? Yes.
However, one of the solar powered high intensity lights is not as bright due to being located in the shade.
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? 30' or behind protective system.
 - Where are materials stored for the project? On the property adjacent to the bridge in accordance with a signed agreement between the Contractor and property owner. The materials are set back over 75 feet from the road.
 - Where is equipment stored when construction is not in progress? Same as "b" above.
- 10) Have accommodations been made to account for
- Emergency Services – Yes. The Town Engineer notified appropriate services. There is no preemption on the temporary signalization.
 - Pedestrian/ Bike/ ADA issues? The narrow shoulder does not allow for bikes to safely transverse with the vehicle traffic. The inspector stated that the vehicles allow the bikes to proceed first.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No. The Contractor is very responsive.
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings? If yes, indicate removal method being used? Previous markings covered with black tape.
 - Are there conflicting markings? No.
 - Are the temporary markings legible? If night review, comment on visibility
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Not reviewed on this inspection.
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 hour minimum with an 8 hour minimum if working over 4 hours.
The administrative mark-up is 40.38%.
- Uniformed Flagger
- Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments: The temporary marking tape has held up well. The warning lights grab peoples' attention. Plans did not show painted shoulder line.
- 16) Project Engineer Comments: Not present at review.

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout project
Mounting Height	Acceptable
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes, all clean and visible.
Reflectorized/Sheeting Type	Type III reflective sheeting
Project Consistency	Very good
Need to be covered	No
Temp./Permanent	Permanent

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	Type III barricade
Quantity	4 each. Stage construction plan detail shows 2 each.
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized	Yes
Anchored	No
Consistent throughout project	One has stripe pattern sloped in the wrong direction.

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Temporary Precast Concrete Barrier Curb
Quantity	140 LF
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	N/A
Reflectorized	DE-7C delineators
Anchored	Pinned to each other
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	N/A

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Barricade warning lights used on advanced warning signs. All lights functioning. High intensity.
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	N/A
Location of portable devices – Indicate if in clear zone and how protected.	N/A
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	N/A

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. No

What special provisions are there in contract related to work zone (list item no, description and date of provision)?

Item #0822005A Temporary Precast Concrete Barrier Curb (Structure)

Item #0917010A Repair Guiderail, 7/17/08

Item #0970006A Trafficperson (Municipal Police Officer), 1-08

Item #0970007A Trafficperson (Uniformed Flagger), 1-08

Item #0971001A Maintenance and Protection of Traffic, 5/6/02

Item #0979003A Construction Barricade Type III, 1/17/01

Item #1020030A Temporary Illumination Unit

Item #1111404A Microwave Vehicle Detector, 11-07

Item #1118101A Temporary Signalization

Item #1220011A Construction Signs – Type III Reflective Sheeting, 1/17/01

Is the project being completed in stage construction? If yes, explain. Yes. Stage 1 Construction will remove the east portion of existing structure and construct the east side of the proposed culvert and Stage 2 Construction will do the same for the west side of the project.

Is there temporary signalization? If yes, explain. Yes. Temporary traffic signals installed to facilitate alternating one-way traffic during stage construction. Also, temporary traffic signals installed at adjacent driveways on the north and south ends of the bridge.

Is a detour required or being used? If yes, explain. No detour required.

What guides, tools including manuals, pocket guides, books etc. do you reference?

The MUTCD and the pocket guide for traffic control devices.

What work zone traffic plans are included in the project? Maintenance and Protection of Traffic plans for Stage 1 and Stage 2 Construction and Stage Construction Details.

Have there been any incident reports on the project? No

Recommendations:

- The existing 45 MPH sign and Do Not Pass signs that are in conflict with temporary signs need to be covered.
- A Type III barricade located on the north side of the structure needs to be reversed so the stripe pattern slopes downward in the direction traffic is to pass.
- The DE-7C delineators located on the TPCBC need to be turned for yellow side to be on the left side of traffic.
- The yellow skip lines in the south bound approach to the alt. one-way traffic need to be covered with black tape.
- The End Road Work construction sign missing for southbound traffic needs to be installed.
- The breakaway posts on the construction signs need to be adjusted to the appropriate height.



Signs informing drivers of upcoming travel conditions.



DE-9 delineator is temporarily blocked by the barrel. Type III barricade on the right has striped pattern sloping in the opposite direction.



Plan details note the height of temporary earth retaining system shall not extend above the height of the TPCBC.



Height of breakaway posts is not according to plans.

STAGE CONSTRUCTION REVIEWS

- 82-299, Route 66 (Arrigoni Bridge), Cromwell and Middletown, CT
- 103-256, Route 97, Norwich, CT
- 126-167, Route 8, Shelton, CT
- 137-143, Route 1, Stonington, CT

WORK ZONE REVIEW FORM

Project Number: 0082-0299
Date: 08/08/2012

District No. 1
Weather: Sunny (Temp not recorded)

Project Type: Construction Maintenance Bridge Safety
Road Type: Limited Access Secondary Local / Town
Inspection Forces: State Maintenance Consultant

Location (Route & Town): Arrigoni Bridge Cromwell, Middletown

Focus of Review: Lane Closure: Temporary Permanent; Stage Construction
 Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work

Prime Contractor: The Middlesex Corp.

Project Engineer: James J. Ruitto

Chief Inspector: Craig Albert

Project Amount: \$19,367,550

Percent Complete: 96%

Calendar Days completed: 388

Calendar Days Allotted: 358

Review Participants

Name	Representing
See Attached Attendance Sheet	

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes, however overhead lane markers not aligned with stage construction in one direction.
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). No queue length at time of review, traffic flowing smoothly. Review was not conducted during heavy traffic volumes.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). None noted.
- 4) Are there any horizontal/vertical clearance issues? No.
- 5) Are there any permitted load issues? Permitted loads not allowed on the bridge.
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes.

- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? Yes
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? Behind barrier.
 - Where are materials stored for the project? Under the bridge.
 - Where is equipment stored when construction is not in progress? Under the bridge or behind barrier.
- 10) Have accommodations been made to account for
- Emergency Services – Yes Police officer on bridge at all times in case of accident.
 - Pedestrian/ Bike/ ADA issues? Kept one sidewalk open at all times. ADA entrances to sidewalks installed on previous project. Bicyclists shared sidewalk during construction.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No. Item in contract for worksite supervisor to be on site and maintain work zone and devices during work hours.
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings, If yes, indicate removal method being used? Truck and Hand grinders.
 - Are there conflicting markings? None noted at time of inspection.
 - Are the temporary markings legible? If night review, comment on visibility
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
Also refreshed paint in median islands to make them more visible.
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Yes. Good Safety Program Contractor performs safety talk and stretch every morning. Foreman would also have talk with his crew.
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 hrs min.
- Uniformed Flagger
(No _____ hourly surcharge – Admin. Fee)
- Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments: Staging plans should be looked at in more detail. Access for emergency services, space for outriggers on cranes, taper lengths and signage are some issues.

16) Project Engineer Comments: Limitations of operations were difficult. Communication early on with Middletown, Cromwell and numerous public outreach meetings made motorists more willing to find alternate routes and accept the delays. Detours should be utilized more on projects to expedite project completion.

Traffic Control Device Inspection- PART II

Table A – Signs

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Approaches to construction site
Mounting Height	Urban setting
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized/Sheeting Type	Type III
Project Consistency	Very good
Need to be covered	No
Temp./Permanent	Permanent & Portable construction signs

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	Cones and Drums
Quantity	Did not count quantity
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized	Yes
Anchored	No
Consistent throughout project	Yes

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Temp Precast Conc Barrier Curb W/ glarescreen
Quantity	Did not count
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized	No
Anchored	Yes
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	Not at time of inspection

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Did not review
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	Did not review
Location of portable devices – Indicate if in clear zone and how protected.	In the median areas. If the devices were in the clear zone they were protected by barriers
Changeable Message Signs – indicate if	Portable message signs used on Route 9 & I-91 as part of

Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	an intelligent transportation system to alert motorists if traffic volumes/delays were detected near the construction zone.
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Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. Yes.
It was recommended that a meeting at the end of the project be conducted to review the TMP. It was discussed that TMP's should be considered living documents and should be updated at the end of the project.

What special provisions are there in contract related to work zone (list item no, description and date of provision)

ITEM 1131007A –PORTABLE WORK ZONE MANAGEMENT SYSTEM DEPLOYMENT
ITEM 1131008A – PORTABLE WORK ZONE MANAGEMENT SYSTEM OPERATIONS
ITEM 1131009A – PORTABLE WORK ZONE MANAGEMENT SYSTEM QUEUE
TRAILER/SENSOR (PQT)
ITEM 1131010A – PORTABLE WORK ZONE MANAGEMENT SYSTEM CHANGEABLE
MESSAGE SIGN (PCMS)
ITEM 1131011A – PORTABLE WORK ZONE MANAGEMENT SYSTEM MOBILE VIDEO
TRAILER WITH PAN TILT ZOOM (PTZ)

The use of portable smart work zone technology at a project level is a first for the Department of Transportation and may be considered on future projects if its application is successful on this project. The subcontractor for the system, PDP Associates Inc., has been working with the Department's Traffic, Highway Operations and Project personnel to optimize the capability and use of the portable work zone system. The technology was considered for the project due to the projected traffic impacts for business and residents in the area. The Portable work Zone Management System (PWZMS) was used for notification of incidents, delays and speeds through work zone and roads leading into bridge and included portable camera systems and website for viewing by public. All in all the system was fairly effective on Route 9 but had issues with data collection on secondary Route 66. Use of speed detection and queue sensors was problematic on secondary road application due to traffic signalization, considerable amount of stop and go though business district with pedestrian cross walks, lower speeds which made it difficult to account for delay times. However, cameras were useful to monitor traffic conditions. Some of the detectors and message boards were relocated or removed from system because either found not to be needed in area or wanted to broaden notification and monitoring more effectively based on impacts occurring.

Rev. Date 2/7/11

ITEM #0973723A – WORKSITE TRAFFIC SUPERVISOR

Portable impact attenuation system barrels to be used on bridge during stage construction were found to be too wide therefore used different system which was considerably more expensive. Glare screens were not as effective at speed that motorists traveled through work zone. Worksite supervisor provision should be a living document too with feedback from contractor and project staff after contract complete.

Is the project being completed in stage construction? If yes, explain. Yes, three stages center of bridge, left and right.

Is there temporary signalization? If yes, explain. No however timings on existing signals on either side of bridge were adjusted accommodate peak hour volumes during construction.

Is a detour required or being used? If yes, explain. No, however there were strong suggestions of alternate routes.

What guides, tools including manuals, pocket guides, books etc. do you reference?
ATTSA Pocket Guide, MUTCD

What work zone traffic plans are included in the project?
Staging plans and other miscellaneous plans indicating where intelligent transportation system should be located.

Has the project had any incident reports filed? Yes, the incidents are completed at project level and sent in electronically or via fax. A better system of archiving incidents and reporting out on them is needed.

How many?

Comments:

- Temporary glare screens; spacing meant for highway speeds maybe look into lower speed spacing.
- Utilized traffic officers at intersections during peak am & pm peak traffic hours to control flow.
- Town aided in traffic flow by converting a local road to one way during the construction project.
- Work with the local governments was very important for public outreach and support for this type of project.
- At beginning of project another street scape project was on going the cause traffic queues.
- Worksite supervisor should be a living document in which construction; contractor and designer sit down and have a meeting after the project to discuss what worked and what could use improvement.
- Added "Do Not Block pavement markings in front of Middletown Fire Department and at intersections based on observations of vehicles blocking intersection and causing additional delays and congestion.
- Separate email address specific to project was created along with an official project website used to keep key stakeholders including the traveling public up to date with project progress, traffic updates and link to interactive map and portable work zone website for travel info.
- Monthly meetings held with EMS for area and also Middlesex Chamber of Commerce that was open to the public to discuss concerns, project status and respond to public's questions.



Sign Height for Urban Installation



Anchored Barrier Curb with Glare screen



Lane Designator Alignment



Portable WZMS camera sensor



Bicyclist utilizing sidewalk during construction

Work Zone Safety Meeting

Date: August 8, 2012

Place: Construction Field Office

Attendance Roster

NAME (PLEASE PRINT)	REPRESENTING
Mary Baier	Office of Construction OQA
Mohammed Bishtawi	DOT District 1
Terri Thompson	Office of Construction
Robert Turner	FHWA
Jim Ruitto	DOT District 1
Craig Albert	DOT District 1
Jeff Hunter	Office of Construction
Nick Mandler	DOT Division of Traffic
John Johnson	The Middlesex Corp.
Bonney Whitaker	Office of Construction
Nick Ozkan	Office of Construction

WORK ZONE REVIEW FORM

Project Number: 0103-0256
Date: 06/19/12

District No. 2
Weather: Cloudy

Project Type: Construction Maintenance Bridge Safety
Road Type: Limited Access Secondary Local / Town
Inspection Forces: State Maintenance Consultant

Location (Route & Town): Route 97, Norwich

Focus of Review: Lane Closure: Temporary Permanent; Stage Construction
 Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work

Prime Contractor: Pondview Construction, Inc.

Project Engineer: Patrick Warzecha

Chief Inspector: Harold Wong

Project Amount: \$1,228,930.50

Percent Complete: 57%

Calendar Days completed: 131

Calendar Days Allotted: 300

Review Participants

Name	Representing
Harold Wong	DOT District No. 2
Jeff Hunter	DOT OOC
Nick Ozkan	DOT OOC-QA
Bonney Whitaker	DOT OOC-QA

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes
- 2) What is the overall condition of traffic flow through the work zone? (Include queue length and speed limit, roadway condition). Limited sightline heading southbound. Slight queue during school bus running time – morning, noon and afternoon. Traffic clears after a few signal cycles.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). None noted.
- 4) Are there any horizontal/vertical clearance issues? Telephone lines were too low and eventually moved. Worked with Occum Maintenance Garage to test plowing & lane width.
- 5) Are there any permitted load issues? No. Informed bridge maintenance of stage construction.

- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes.
- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? Yes.
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? 30' from edge of travel way.
 - Where are materials stored for the project? At field office site & work site.
 - Where is equipment stored when construction is not in progress? Behind the concrete barrier.
- 10) Have accommodations been made to account for
- Emergency Services – Notified at beginning of project. No preemption on temporary signalization.
 - Pedestrian/ Bike/ ADA issues? Missed in the design phase. There is not enough clearance for pedestrian traffic with an 11.00' travel lane.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings? If yes, indicate removal method being used. Yes. Removal is by grinding
 - Are there conflicting markings? No
 - Are the temporary markings legible? If night review, comment on visibility
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Not reviewed on this inspection.
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 5 hours
No administrative fee for Norwich police.
- Uniformed Flagger
- Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments: Additional signs on secondary roads for extended lane closures are useful to slow traffic. Drivers get complacent after a while.
- 16) Project Engineer Comments:

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout project
Mounting Height	Acceptable
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized/Sheeting Type	Type III reflective sheeting
Project Consistency	Very good
Need to be covered	No
Temp./Permanent	Permanent

Table B – Traffic control Devices: Not reviewed

Requirement	Comment
Type & Placement	
Quantity	
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	
Reflectorized	
Anchored	
Consistent throughout project	

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Temporary Precast Concrete Barrier Curb
Quantity	Under 300'
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	N/A
Reflectorized	DE-7 delineator
Anchored	To each other
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	N/A

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Barricade warning lights used on advanced warning signs. All lights functioning. High intensity.
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	N/A
Location of portable devices – Indicate if in clear zone and how protected.	N/A
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	N/A

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. No

What special provisions are there in contract related to work zone (list item no, description and date of provision)?

Item 0822001A Temporary Precast Concrete Barrier Curb

Item 0922005A Temporary Precast Concrete Barrier Curb (Structure)

Item 0822010A Removal of Temporary Precast Concrete Barrier Curb

Item 0970006A Trafficperson (Municipal Police Officer)

Item 0970007A Trafficperson (Uniformed Flagger)

Item 0971001A Maintenance & Protection of Traffic

Item 0979003A Construction Barricade Type III

Item 1118101A Temporary Signalization

Item 1220011A Construction Signs – Type III Reflective Sheeting

Is the project being completed in stage construction? If yes, explain.

Yes. Stage construction is being utilized to allow for the removal and reconstruction of half the bridge per stage.

Is there temporary signalization? If yes, explain.

Yes. Temporary traffic signals installed to facilitate alternating one way traffic on bridge. Also, temporary traffic signals installed at adjacent driveways on northwest end of bridge.

Is a detour required or being used? If yes, explain.

No.

What guides, tools including manuals, pocket guides, books etc. do you reference?

The MUTCD and ATSSA cone guide.

What work zone traffic plans are included in the project?

Guidance provided for layout of the signs and signalization.

Comment: The inspector and contractor did an excellent job of setting the height for the breakaway posts on the construction signs.



Sign to inform motorists of upcoming temporary signalization at bridge



Temporary signalization for driveways



Proper placement of Type A impact attenuation system



Proper placement of sign and pavement markings for temporary signalization at bridge
Notified inspector about traffic barrel blocking view of Delineator

WORK ZONE REVIEW FORM

Project Number: 0126-0167
Date: 06/25/2011

District No. 3
Weather: Partly Sunny/Humid

Project Type: Construction Maintenance Bridge Safety
Road Type: Limited Access Secondary Local / Town
Inspection Forces: State Maintenance Consultant

Location (Route & Town): Route 8 - Shelton

Focus of Review: Lane Closure: Temporary Permanent; Stage Construction
 Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work

Prime Contractor: Rotha Contracting Co.

Project Engineer: Joseph Sorcinelli

Chief Inspector: John Antonucci

Project Amount: \$2,810,140.00

Percent Work Complete: 47%

Calendar Days completed: 202

Calendar Days Allotted: 250

Review Participants

Name	Representing
Mary K. Baier	CT DOT – D3
Robert Turner	FHWA
Terri Thompson	CT DOT OOC
Phil Cohen	CT DOT Traffic
John Antonucci	CT DOT – D3
Steven J. Sartirana	CT DOT Safety
Michael Chachakis	CT DOT Traffic
Jeff Hunter	CT DOT OOC

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes, however one sign obstructed by traffic drum.
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). Minimal backup. Queue to Seymour Avenue. Roadway condition is dry and good visibility. Posted construction speed limit was 45 mph.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). Yes. Current DOT policy will not allow concrete barrier to be used on limited access highways for extended periods of time. Proprietary solutions (movable barrier) are not widely accepted for use on Federal Projects. Until such time that there is a change in policy or additional movable barrier types are designed, this type of hazard will continue to exist.
- 4) Are there any horizontal/vertical clearance issues? Horizontal clearance for oversize trucks due to lane closures.

- 5) Are there any permitted load issues? OS/OW vehicles.
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes except question concerning warning lights high intensity on portable construction signs.
- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes appear to be.
- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? Yes
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? 30' or behind deflection of rail system. During construction traffic is maintained directly adjacent to the work zone, therefore the clear zone while work is ongoing is 0-5 feet.
 - Where are materials stored for the project? In the staging area when working.
 - Where is equipment stored when construction is not in progress? In a parking lot off of the roadway outside of the project limits.
- 10) Have accommodations been made to account for
- Emergency Services – road open no special consideration necessary.
 - Pedestrian/ Bike/ ADA issues? Southbound Side - restricted access notification for separate walkway during joint work. No long term closure was in place.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No. Reviewing workzone every couple of hours. Contractor very proactive.
- 12) Pavement Markings - Temporary
- Is there an item for removal of pavement markings; if yes, indicate removal method being used? Black out Tape.
 - Are there conflicting markings? Yes, the plan sheets indicated that a white edge line was to be placed and construction personnel followed the plans accordingly, however a yellow edge line should have been placed. Construction personnel were notified and asked to correct the error. See figure 6.
 - Are the temporary markings legible? If night review, comment on visibility
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. No. Some of the contractor's personnel need to wear Class 3 reflective.
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.

State Police

Local Police Minimum Hourly Requirement: 5.0 hrs (During Detour)

Uniformed Flagger

Comments from Traffic Control Personnel (indicate type of traffic person): not asked.

15) Chief Inspector Comments:

16) Transportation supervising Engineer Comments: Good planning by contractor. Developed contingency plans. First weekend used to gauge how much work could be done in a weekend. Did not start too much work. Provided temporary guide rail system to bridge the gap in the concrete barrier curb caused by expansion joint work.

Traffic Control Device Inspection- PART II

Table A – Signs

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	
Mounting Height	Correct
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Yes, all clean and visible.
Reflectorized/Sheeting Type	Bright Fluorescent
Project Consistency	Yes
Need to be covered	No
Temp./Permanent	Both

Table B – Traffic control Devices: 42” Cones

Requirement	Comment
Type & Placement	42” Cones
Quantity	Over 25
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes
Reflectorized	Yes
Anchored	No
Consistent throughout project	Yes

Table C - Barricades and other channelization devices: Drums/TPCBC/Type III

Requirement	Comment
Type & Placement	Drums
Quantity	Over 50
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Yes (Daytime Review)
Reflectorized	Yes
Anchored	No
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	Yes, (5) Type D Portable Impact.

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location.	Yes. Used on advanced warning signs. Also using flashing arrow.
Are all lights functioning?	Yes
High or low intensity?	Appear to be High Intensity.
Advance Flashing Warning arrows Portable or Truck-mounted	Portable, two truck mounted

Lights functioning and in correct mode?	All lights functioning in correct mode.
Location of portable devices – Indicate if in clear zone and how protected.	In the lane closure; protected by Traffic Drums.
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	Not used for this stage.

**Work Zone Traffic Control Review
Plans and Specifications Section – PART III**

Is there a Transportation Management Plan? Yes.

What special provisions are there in the contract related to work zone (list item no, description and date of provision)? Limitation of Operations, Prosecution and Progress, Contract Time and Liquidated Damages, and Notice to Contractor – Detour.

Is the project being completed in stage construction? If yes, explain. Yes – New Expansion Joints installed on bridge. Passing lane and shoulder on one weekend; travel lane and shoulder the next weekend. At the time of inspection the project was working on Stage 5.

Is there temporary signalization? If yes, explain. No.

Is a detour required or being used? If yes, explain. A detour was required to close a ramp however not during the stage that was reviewed.

What guides, tools including manuals, pocket guides, books etc. do you reference?

Construction Manual, Plans

What work zone traffic plans are included in the project? Stage construction plans with signing patterns.

COMMENTS:

- 1) Innovative ideas by field personnel and the contractor to place construction signs on wide barrier sections and also using metal beam rail to protect gap in barrier during joint replacement. See Figures 1 and 2.
- 2) Work area cluttered. Materials on both sides of work area could be obstacle/ hazardous if quick action/exit needed. See Figure 7.
- 3) Question concerning distance from work area to front of crash truck. This information should be provided by manufacturer. Discussion about wheel chocks. See Figure 7.
- 4) Barricade warning lights High Intensity should be removed from Non – permanent construction signs. See Figures 2 and 5.
- 5) Discussion concerning loose material on back of Crash Trucks.
- 6) Discussion about Temporary night time work zone illumination. The light plant should not face into oncoming traffic. Review of opposing traffic should be inspected to ensure there are no issues as well. See Figure 7.
- 7) Consideration should be given to using 42” traffic cones in the on-ramp/operational lane gore area.

- 8) Consideration should be given to locating the State trooper out of the left lane closure to back of queue. Current location is not well protected.
- 9) 4" Black out tape did not cover some of the permanent lines completely. See Figure 4.
- 10) If the pavement is wet cannot place the Temporary plastic pavement markings for stage construction.
- 11) Contractor extended lane closure to accommodate traffic from on ramp. This was done to prevent existing traffic from jumping lane.
- 12) Temporary pavement markings are being utilized to direct motorists through weekend work zones. Inspection staff have commented that the tape is working very well. It has stayed in place, been reflective and effective. See Figure 4

Photos of Project:



Figure 1: Innovative Design



Figure 3: Work Area Protection



Figure 2: Innovative Design 2

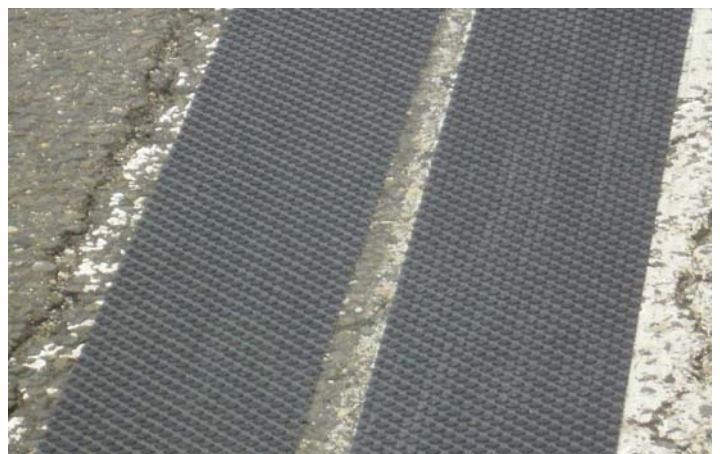


Figure 4: Temporary Tape



Figure 5: Merging Traffic & Barrier Sign Clamp



Figure 8: Temporary Tape



Figure 6: Improper Tape Color



Figure 9: Minimal Protection from live traffic cluttered work area.



Figure 7: Cluttered Work Area

WORK ZONE REVIEW FORM**Project Number:** 137-143 & 137-144**District No. 2****Date:** 10/16/12**Weather:** Clear, 68°**Project Type:** Construction Maintenance Bridge Safety**Road Type:** Limited Access Secondary Local / Town**Inspection Forces:** State Maintenance Consultant**Location (Route & Town):** Route 1 over Stony Brook & over Quanaduck Cove, Stonington**Focus of Review:** Lane Closure: Temporary Permanent; Stage Construction Detour; Pedestrian/ Bike issues; Temporary Signalization; Night Work**Prime Contractor:** Hemlock Construction Co., Inc.**Project Engineer:** Keith Schoppe**Chief Inspector:** Robert Beauchesne**Project Amount:** \$3,287,727.80**Percent Complete:** 67%**Calendar Days completed:** 396**Calendar Days Allotted:** 662**Review Participants**

Name	Representing
Bob Beauchesne	District 2
Mike LaLone	Traffic
Jeff Hunter	OOC
Bonney Whitaker	OOC

Q&A:

- 1) Is there clear, positive, understandable guidance through the work zone? Yes
- 2) What is the overall condition of traffic flow through the work zone? (include queue length and speed limit, roadway condition). The alternating one way traffic allows 3 vehicles to proceed at a time and is working well. A slight back-up occurs when school lets out, but clears up quickly.
- 3) Are there any hazards to the traveling public or construction personnel? (Blunt ends, Drop-offs). No
- 4) Are there any horizontal/vertical clearance issues? No
- 5) Are there any permitted load issues? No
- 6) Are all signs being used for Maintenance and Protection of Traffic acceptable in accordance with applicable requirements? Yes. Signs were new when installed.
- 7) Are all cones, drums, barricades, or other channelization devices acceptable? Yes

- 8) Are warning lights and devices used for Maintenance and Protection of Traffic? Yes. The high intensity warning lights are solar powered and working well. However, they can be dim on grey days. The batteries were recently replaced.
- 9) Clear Zone issues: (Y / N) Respond to questions below.
- What is the clear zone for this project? Per the Form 816, the clear zone is 30' from the travelway.
 - Where are materials stored for the project? On state property, north of the project.
 - Where is equipment stored when construction is not in progress? Behind barrier or next to staging area, (b) above.
- 10) Have accommodations been made to account for
- Emergency Services – The Town, the police and the school bus director were notified.
 - Pedestrian/ Bike/ ADA issues? The inspector stated that there is quite a bit of bike traffic. The bicyclists tend to proceed with the vehicular traffic.
- 11) Do you have a hard time ensuring Traffic Control Devices are in functioning condition and installed according to plan? If yes, explain. No.
- 12) Pavement Markings- Temporary
- Is there an item for removal of pavement markings? If yes, indicate removal method being used. Yes. Grinding was used to remove white lines. Yellow skips were painted over with solid yellow lines.
 - Are there conflicting markings? No
 - Are the temporary markings legible? If night review, comment on visibility
 - Type of marking material being used. Tape Paint (non-epoxy) Epoxy
- 13) Personnel Protective Equipment- Are all members of the work force wearing the proper reflective equipment? If no, explain. Not reviewed
- 14) Type of Traffic Control Personnel being used on project? Indicate type of training or certification for each and position within the work zone area.
- State Police
- Local Police Minimum Hourly Requirement: 4 hour minimum with an 8 hour minimum if working over 4 hours.
Administrative mark-up is 5%.
- Uniformed Flagger
Comments from Traffic Control Personnel (indicate type of traffic person): not asked.
- 15) Chief Inspector Comments: Would have preferred to have access to Bridge No. 01900 without having to remove the T.P.C.B.C. To gain access, time is spent moving 2 to 4 barriers. This resulted in adding an item to relocate the Temp. Impact Atten. System. Also, regular traffic cones were replaced with 42" traffic cones due to better visibility & stability.
- 16) Project Engineer Comments: Not present at review.

Traffic Control Device Inspection- PART II**Table A – Signs**

Requirement	Comment
Type: Construction/Regulatory	Construction
Location	Throughout project
Mounting Height	Acceptable
Clean, Visible, Legible (rate using quality standards guide ATSSA 3 rd edition)	Signs were clean & visible.
Reflectorized/Sheeting Type	Type III reflective sheeting
Project Consistency	Very good
Need to be covered	No
Temp./Permanent	Permanent

Table B – Traffic control Devices

Requirement	Comment
Type & Placement	42" traffic cones
Quantity	Not counted
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	Acceptable
Reflectorized	Yes
Anchored	N/A
Consistent throughout project	Yes

Table C - Barricades and other channelization devices

Requirement	Comment
Type & Placement	Temporary Precast Concrete Barrier Curb
Quantity	Not counted
Clean, Visible, Functioning (rate using quality standards guide ATSSA 3 rd edition)	N/A
Reflectorized	DE-7 C delineator
Anchored	Pinned to each other
Consistent throughout project	Yes
Crash Trucks (TMA) in use? If yes how many and type	N/A

Table D- Warning lights and devices

Requirement	Comment
Warning lights being used? Indicate type and location. Are all lights functioning? High or low intensity?	Barricade warning lights used on advanced warning signs. All lights functioning. One light needs adjusting back to original position. High intensity, solar powered.
Advance Flashing Warning arrows Portable or Truck-mounted Lights functioning and in correct mode?	N/A
Location of portable devices – Indicate if in clear zone and how protected.	N/A
Changeable Message Signs – indicate if Permanent or Portable, Message understandable, Number of frames displayed, Timing between screens acceptable?	N/A

Work Zone Traffic Control Review
Plans and Specifications Section – PART III

Is there a Transportation Management Plan? If yes, explain. No

What special provisions are there in contract related to work zone (list item no, description and date of provision)?

Item 0822005A Temporary Precast Concrete Barrier Curb (Structure)

Item 0970006A Trafficperson (Municipal Police Officer), Rev. 1/2008

Item 0970007A Trafficperson (Uniformed Flagger), Rev. 1/2008

Item 0971101A Maintenance & Protection of Traffic (Site No. 1), Addendum No. 1

Item 0971102A Maintenance & Protection of Traffic (Site No. 2), Addendum No. 1

Item 0979003A Construction Barricade Type III, Rev. 1/17/01

Item 1220011A Construction Signs – Type III Reflective Sheeting, Rev. 1/17/01

Is the project being completed in stage construction? If yes, explain. Yes stage construction is being utilized to remove existing culverts while maintaining alternate one way traffic over each bridge.

Is there temporary signalization? If yes, explain. No

Is a detour required or being used? If yes, explain. No

What guides, tools including manuals, pocket guides, books etc. do you reference?

The MUTCD and the pocket guide for traffic control devices.

What work zone traffic plans are included in the project? Maintenance & Protection of Traffic – Stage 1 and Maintenance & Protection of Traffic – Stage 2 for Bridge No. 01898 and Bridge No. 01900.

Has the project had any incident reports filed? No

How many? N/A

Comments:

- The inspector stated that the Town pushed for temporary traffic signals, but the three- car stop sign control has been adhered to and is working well. He feels that traffic signals would cause vehicles to speed up to get through the yellow light. He also stated that the town police were particularly vigilant when the alternating one way traffic control began and would pull over motorists who were ignoring the three-car system.
- The project worked closely with DOT traffic for the implementation of the three-car system and the placement of signs.
- Two changeable message signs were added by CO in order to alert the public of the upcoming change to alternating one-way traffic.
- The inspector was informed that some stockpiled material was too close to the road. (See photograph, Page 7.)



A rarely used three-car traffic control system, designed for this location, is working efficiently and without complaints.



Good removal of existing line and placement of new edge line.



Construction Barricade Type III and Temporary Impact Attenuation System (Type A) protecting blunt end of T.P.C.B.C.



Existing sign appropriately covered.

The inspector was informed that the stockpiled materials were too close to the travelway. In accordance with the Form 816, Section 1.07.07, all equipment, materials, equipment or material storage areas, and work areas must be placed, located, and used in ways that do not create a hazard to people or property, especially in areas open to public pedestrian or vehicular traffic. All equipment and materials shall be placed or stored in such a way and in such locations as will not create a hazard to the traveling public. In an area unprotected by barriers or other

means, equipment and materials must not be stored within 30 feet (9.15 meters) of any traveled way.

The Contractor must always erect barriers and warning signs between any of its work or storage areas and any area open to public, pedestrian, or vehicular traffic. Such barriers and signs must comply with all laws and regulations, including any applicable codes.

2011 Work Zone Safety Review Participants

District 2	District 3
<p><u>Project 59-155</u> John DiBiagio – Project Manager Mike Chachakis – Office of Traffic Jeff Hunter – Office of Construction Kiah Patten – Office of Construction</p>	<p><u>Project 126-167</u> Robert Turner – FHWA, Safety Engineer Mary Baier – Supervising Engineer Terri Thompson – Office of Construction Phil Cohn – Office of Traffic Michael Chachakis – Office of Traffic Steven Sartirana – Office of Safety John Antonucci – Project Manager Jeff Hunter – Office of Construction</p> <p><u>Project 173-414</u> Jeffery Knapp – Project Engineer Chukwuekezie Ezigbo – Project Manager Matthew Bishop – Inspector Gregg Shaffer – Office of Construction Jeffery Hunter – Office of Construction</p>
District 3A	District 4
<p><u>Project 92-531/619</u> Robert Ramirez – FHWA, Traffic and Safety Engineer Robert Turner – FHWA, Safety Engineer Anthony Kwentoh – Office of Construction Terri Thompson – Office of Construction Philip Cohen – Office of Traffic Michael Chachakis – Office of Traffic Daniel Stafko – Project Engineer Bob Savage – Project Engineer Vlad Kaminsky – Project Engineer Jim Perkins –Berger Lehman (Consultant) Marilee Beebe – Parsons Brinckerhoff (Consultant) Fred Howe – O&G Industries/Tutor Perini Corp JV (Contractor) Caswell Seinell – O&G Industries/Tutor Perini Corp JV (Contractor) Rich Smith – Walsh (Consultant) Gary Splain – Gannett Fleming (Consultant)</p>	<p><u>Project 67-115</u> Daniel Paton – Project Manager Brett Stoeffler – Office of Traffic Jeff Hunter – Office of Construction Kiah Patten – Office of Construction</p> <p><u>Project 84-102</u> Robert Rameriz – FHWA, Traffic and Safety Engineer Robert Turner – FHWA, Safety Engineer Anthony Kwentoh – Office of Construction Jeff Hunter – Office of Construction Philip Cohen – Office of Traffic Oddler Fils – Office of Traffic Kenneth Rekrut – DeCarlo & Doll (Consultant Inspection) Scott Smigel – DeCarlo & Doll (Consultant Inspection)</p>

2012 Work Zone Safety Review Participants

<p style="text-align: center;">District 1</p> <p><u>Project 42-312</u> Alan Lobaugh – Milone & MacBroom (Consultant) Terri Thompson – Office of Construction Jeff Hunter – Office of Construction Chris – Tilcon CT (Contractor)</p> <p><u>Project 82-299</u> Robert Turner – FHWA Safety Engineer Mohammed Bishtawi – Supervising Engineer Jim Ruitto – Project Engineer Craig Albert – Project Manager Terri Thompson – Office of Construction Mary Baier- Office of Construction – Quality Assurance Jeff Hunter – Office of Construction Bonney Whitaker – Office of Construction Nick Ozkan – Office of Construction Nick Mandler – Office of Traffic John Johnson – The Middlesex Corp. (Contractor)</p> <p><u>Project 171-351</u> Rich Balzarini – Project Manager Jeff Hunter – Office of Construction Nick Ozkan – Office of Construction Bonney Whitaker – Office of Construction Doug Harz – Office of Construction Nick Mandler – Office of Traffic</p>	<p style="text-align: center;">District 2</p> <p><u>Project 103-256</u> Harold Wong – Project Manager Jeff Hunter – Office of Construction Bonney Whitaker – Office of Construction Nick Ozkan – Office of Construction</p> <p><u>Project 137-143/144</u> Bob Beauchesne – Project Manager Jeff Hunter – Office of Construction Bonney Whitaker – Office of Construction Mike LaLone – Office of Traffic</p> <p style="text-align: center;">District 3</p> <p><u>Project 144-179</u> Steven Hebert – Project Engineer Jeff Hunter – Office of Construction Nick Ozkan – Office of Construction Bonney Whitaker – Office of Construction Edwin Brown – Office of Traffic Dave Speerli – Amman Whitney (Consultant)</p> <p><u>Project 98-100</u> Matthew Bishop – Project Manager Jeff Hunter – Office of Construction Nick Ozkan – Office of Construction Bonney Whitaker – Office of Construction Oddler Fils – Office of Traffic</p>
<p style="text-align: center;">District 4</p> <p><u>Project 96-199</u> Robert Turner – FHWA, Safety Engineer Terri Thompson – Office of Construction Jeff Hunter – Office of Construction Bonney Whitaker – Office of Construction Scott Wassmann – Office of Traffic Mohammed Khadeer – Project Manager Ryan Wodjenski – Inspector Steve Tuxbury – Tilcon CT (Contractor) Jamie Sirica – Tilcon CT (Contractor)</p>	<p style="text-align: center;">District 4</p> <p><u>Project 79-215</u> Bonney Whitaker – Office of Construction Brien Smith – Office of Traffic Rich Rudaitis – Project Manager Kevin LaRosa - Inspector</p>

Appendix A

TABLE 3 – Connecticut Work Zone Improvement Plan (WZIP) Action Areas

Updated 11/1/13

Critical Issue Area	Recommendations for Improvement	Actions and/or Products, including Major Steps, if any, and Resources Needed	Responsible Office/ Position/ Person	Status	Target Completion Date
<i>Work Zone Self-Assessment Elements</i>					
<p>1 Leadership and Policy</p>	<p>A) Establish strategic goals specifically to reduce congestion and delays in work zones. B) Reduce crashes in work zones. (Added October 18, 2013 WZIP Meeting)</p>	<p>1. Form working groups comprised of various stakeholders that can assist in improvement.</p> <p>a) Establish Work Zone Operations (WZO) Working Group and Work Zone Performance Measures (WZPM) Working Group.</p> <p>b) Schedule meeting for both groups to go over action plan and issues list from work zone reviews</p> <p>2. Define other safety plans and programs that include Work Zone Safety elements</p> <p>3. Develop strategic goals for work zone safety (CTDOT and stakeholders) to provide safe and efficient roadway systems.</p> <p>4. Prepare recommendation(s) for implementation of strategic goals for review and comment by the SHSP Champion.</p> <p>5. Act on recommendations to implement or return for further action</p> <p>6. Approve strategic goals and incorporate into SHSP</p>	<p>1a. T. Thompson</p> <p>1b. Chairpersons - currently T. Thompson and C. Kissane</p> <p>2. WZO and WZPM Chairpersons</p> <p>3. WZO and WZPM Chairpersons</p> <p>4. WZO and WZPM Chairpersons and SHSP Champion</p> <p>5. SHSP Champion</p> <p>6. SHSP Champion and SHSP steering committee</p>	<p>1a. Completed</p> <p>1b. Pending Approval of WZIP</p> <p>2. Ongoing</p> <p>3. Ongoing</p> <p>4. Pending</p> <p>5. Pending</p> <p>6. Pending</p>	<p>1a. Completed</p> <p>1b. Completed</p> <p>2. Completed</p> <p>3.To Be Determined</p> <p>4.To Be Determined</p> <p>5.To Be Determined</p> <p>6.To Be Determined</p>
<p>2 Leadership and Policy</p>	<p>Implement strategic goals specifically to reduce crashes in work zones.</p>	<p>1. Establish a Work Zone Safety Advocate/Liaison that reports to upper management and coordinates with various offices, agencies and organizations to brainstorm and identify reasonable strategic goals to improve mobility in work zones and handle delays more effectively.</p>	<p>Office of Commissioner</p>	<p>Pending</p>	<p>To Be Determined</p>

TABLE 3 – Connecticut Work Zone Improvement Plan (WZIP) Action Areas

Updated 11/1/13

Critical Issue Area	Recommendations for Improvement	Actions and/or Products, including Major Steps, if any, and Resources Needed	Responsible Office/ Position/ Person	Status	Target Completion Date
<i>Work Zone Self-Assessment Elements</i>					
3 Leadership and Policy	Establish performance measures (e.g. vehicle throughput or queue length) to track work zone congestion and delay	<ol style="list-style-type: none"> 1. Define metrics for performance measures considering <ul style="list-style-type: none"> - Queue lengths - Speed - Volume - Delay time 2. Development of criteria to define the limits of work zones and related queues 3. Establish means to capture real time traffic data.- Low vehicle throughput and long queue lengths causing congestion and delays in work zones <ol style="list-style-type: none"> a) Systems Engineering Analysis - Needs Assessment and Functional Requirements b) Develop RPM Technical Design document for RFP c) RFP Document to be sent to Purchasing / Specification Committee d) RFP Document to be sent to DAS e) RFP Advertising to Award f) Begin Travel Time messaging. 	<ol style="list-style-type: none"> 1-2. WZPM 3. Highway Operations 3a-b) Consultant with input from stakeholders including WZO and WZPM 3c) Highway Operations 3d) Highway Operations 3e) DAS/Purchasing 3f) Highway Operations 	<ol style="list-style-type: none"> 1-2 Pending. Refer to Table 5 3. Ongoing 3a-b) Completed 3c-f) As of November 19, 2013 RFP is not being approved. 	<ol style="list-style-type: none"> 1-2. To Be Determined 3a) Completed 3b) April 30, 2013 3c) May 1, 2013 3d) May 30, 2013 3e) June 15 - Sept. 30, 2013 3f) Sept. 30, 2014

TABLE 3 – Connecticut Work Zone Improvement Plan (WZIP) Action Areas

Updated 11/1/13

Critical Issue Area	Recommendations for Improvement	Actions and/or Products, including Major Steps, if any, and Resources Needed	Responsible Office/ Position/ Person	Status	Target Completion Date
<i>Work Zone Self-Assessment Elements</i>					
<p>4 Leadership and Policy</p>	<p>Implement performance measures (e.g., crash rates) to track work zone crashes</p>	<ol style="list-style-type: none"> 1. Define metrics to be used for performance measure <ul style="list-style-type: none"> - Type - Frequency - Location 2. Develop baseline to determine threshold values to be used a basis of measuring crashes 3. Approval of metrics and baseline 	<ol style="list-style-type: none"> 1. WZPM 2. WZO / WZPM SHSP Champion 3. SHSP Champion and SHSP steering committee 	<ol style="list-style-type: none"> 1. Pending. Refer to Table 5 2. Pending. Refer to Table 5 3. Committee meetings to decide 	<ol style="list-style-type: none"> 1. To Be Determined 2. Coincides with data collection effort 3. Pending
<p>5 Program Evaluation</p>	<p>Collect data to track, analyze and evaluate work zone congestion and delay performance.</p>	<ol style="list-style-type: none"> 1. Research equipment to track work zone information such as speed, volume, and delay (length of queues) in order to establish some performance parameters that can be used in the design of work zones. <ol style="list-style-type: none"> a) Develop specification and add to project as pilot b) Obtain and evaluate data collected c) Revise specification and add to additional projects d) Establish some performance parameters that can be used in the design of work zones 2. Develop reporting system to output incident related delays utilizing current in place system to obtain data <ol style="list-style-type: none"> a) Develop database to log incident reports and structure queries b) produce monthly reports for analysis c) Evaluate and develop delay performance measure. 	<ol style="list-style-type: none"> 1. Highway Operations <ol style="list-style-type: none"> 1a) Terri Thompson and John Korte 1b) PDP Associates – company furnishing system 1c) Terri Thompson and John Korte 1d) Bureau of Engineering & Construction- Offices of Traffic Engineering Design Services, Construction 2. WZO with OIS 	<ol style="list-style-type: none"> 1. Ongoing <ol style="list-style-type: none"> 1a) Implemented on Project No. 0082-0299, Arrigoni Bridge Middletown 1b) Received data – Pending review 1c) Project No. 0060-0152/0153 1d) Pending 2. Pending 	<ol style="list-style-type: none"> 1a) 2011 1b) January 2014 1c) March 2014 1d) To Be Determined 2. Pending

TABLE 3 – Connecticut Work Zone Improvement Plan (WZIP) Action Areas

Updated 11/1/13

Critical Issue Area	Recommendations for Improvement	Actions and/or Products, including Major Steps, if any, and Resources Needed	Responsible Office/ Position/ Person	Status	Target Completion Date
<i>Work Zone Self-Assessment Elements</i>					
		and message legibility. c) Approve recommendations and incorporate into specifications, policies and practices for Department	and Engineering & Construction		
8 Program Evaluation	1. Develop strategies to improve work zone performance based on work zone performance data and customer surveys.	1. Work Zone Traffic Control Reviews a) Develop review form and database to document evaluations. Review sections include - Q&A - Traffic Control Devices - Plans and specifications b) Perform Field Reviews c) Prepare Annual Report 2. Maintain Action List for Working Groups (WZO/WZPM) a) Define issue and problem statement, with expected outcome b) Review issues and develop or revise as needed - Actions Required, Status, Time Frame and Responsible parties c) Update action list and report out on activities to SHSP Champion.	1. Bureau of Engineering & Construction- Office of Construction 1a) Jeff Hunter 1b) Work Zone Review Group – includes personnel from FHWA, Office of Construction, Traffic, Safety, and Highway Operations 1c) Office of Construction 2. Work Zone Review Group	1. Ongoing 1a) Completed 1b) 2010 through 2012 completed 2013 in progress 1c) 2011 and 2012 Draft report completed 2. Revisions for Tables 3, 4 and 5 under review Refer to Table 4 and Table 5	1. Ongoing 1a) Completed 1b) Min. 10 per year 1c) 2011 and 2012 combined in one report November 1, 2013 2. N/A 2c) Present revisions as part of WZIP Annual Meeting

TABLE 4- Work Zone Operations (WZO) Working Group Action Item Issues

* Refer to Table 4a for completed actions

Updated 11/1/13

Issue	Problem	Expected Outcomes	Actions Taken	Actions to be Taken	Current Status	Time Frame	Responsible Parties
<p>1 Construction Sign Retro-Reflective Issues</p>	<p>Plastic Substrate does not appear to be rigid enough to utilize the reflective properties of the sheeting so that the sign can be read properly by the traveling public during night time hours. Condensation found to reduce retro-reflectivity of construction signs.</p>	<p>Improved visibility of signs by the traveling public.</p>	<p>A)* B)*</p>	<p>C) Monitor use of new sign provision on new projects. D) Propose research studies - Testing different types of sheeting and substrates to find qualities that provide optimum visibility and durability. E) Additional in-depth reviews regarding condensation conducted by Project 0044-0151 personnel. Review and, if necessary, revise specification so that condensation is removed from construction signs.</p>	<p>A)* B)* C) Ongoing D) Pending E) Pending further review</p>	<p>A) * B)*</p>	<p>Office of Construction Traffic Engineering</p>
<p>2 Pedestrian /Bicycle Access Issues</p>	<p>Incomplete sidewalks, pedestrian buttons inaccessible or inoperable, lack of crosswalks at intersections, and lack of handicap ramps.</p>	<p>Improved pedestrian and bicycle awareness and accessibility through design and construction</p>	<p>A) Notified and discussed the review teams' concerns with chief inspectors. B) Reviewed contract documents for specific language, or lack thereof, regarding this type of access. C) Investigate if utility delays are the reason why sidewalks are incomplete. D) *</p>	<p>E) Conduct more of these types of reviews to see if these pedestrian/bicycle issues are more widespread. F) Review plans and specifications and revise if necessary.</p>	<p>C) Ongoing D) * E,F) Continue reviewing plans and monitoring projects for conformance</p>	<p>D)* E,F) Ongoing</p>	<p>Traffic Engineering Highway Design Office of Construction Office of Maintenance Mon-motorized Transportation Coordinator</p>

TABLE 4- Work Zone Operations (WZO) Working Group Action Item Issues

* Refer to Table 4a for completed actions

Updated 11/1/13

Issue	Problem	Expected Outcomes	Actions Taken	Actions to be Taken	Current Status	Time Frame	Responsible Parties	
3	Project Lighting for Night Inspection	Refer to Table 4a Completed Issues						
4	Lighting for Night-Time Inspection	Inspectors working on night projects do not have sufficient lighting to inspect work. This could be previously completed work or areas requested by contractor prior to placement of material.	Increase visibility for inspecting night time and improve overall visibility of work area.	A) Reviewed specification requirements and found that contractor not required to supply any lighting either hand held or portable light plants.	B) Place request to specification committee to include wording that for any night work, portable and hand held lighting is to be supplied by contractor for inspection staff.	B) In the process of reviewing current M&PT and work zone requirements included in special provisions and standard specifications.	Ongoing	Office of Construction Traffic Engineering Office of Maintenance Safety Division
5	Barricade Warning Lights - High intensity	High-intensity, solar powered warning lights are not effective in rural areas with significant canopy surroundings.	Ensure that lights are operational under all conditions.	Reviewed specification.	Revise current provision to state exclusion of solar powered warning lights in rural areas. Projects should require and monitor battery-operated lights in areas where this may be an issue. Add as an item on the Daily Site Review checklist referenced is Issue No. 3.	Discussing with the Office of Traffic about possibly changing the plans or revising the specification to allow either solar or battery-operated.	Ongoing	Office of Construction Traffic Engineering Safety Division

TABLE 4- Work Zone Operations (WZO) Working Group Action Item Issues

* Refer to Table 4a for completed actions

Updated 11/1/13

Issue	Problem	Expected Outcomes	Actions Taken	Actions to be Taken	Current Status	Time Frame	Responsible Parties
<p>6 Traffic Control in Work Zones</p>	<p>Experience with and understanding of work zone safety. Establishing levels of effectiveness (i.e. presence versus enforcement).</p>	<p>Consistent practices and implementation of use of traffic persons. Better educated traffic control persons who will provide effective direction in work zones.</p>	<p>“Safe and Effective Use of Connecticut Law Enforcement Personnel in Work Zones” training curriculum now available online. Visit University of Connecticut Technology Transfer (T2) Center at http://www.t2center.uconn.edu/</p>	<p>A) Continue training at the local and state level. Look at grant resources to provide monies for training. B) Executive Policy Statement for “Policy on Effective Use of Traffic Persons in Work Zones”. C) * D) Review policies and procedures and guidance documents and revise to meet current MUTCD, new policy and other standards in place at state and federal level E) Add new section in Division I of Form 816 – Best practices for work zone safety operations</p>	<p>A) T2 continues to provide training but funding is an issue since many local towns and municipalities, as well as, Police Standards Training Academy do not have funds available to pay for this course. Limited to a Train-the-Trainer scenario so they can teach their own. B) Final Draft completed C) * D) Ongoing E) Pending</p>	<p>A) Ongoing B) Pending Awaiting Commissioner signature C)* D) TBD E) TBD</p>	<p>Office of Construction Traffic Engineering Office of Maintenance State Police Safety Division</p>
<p>7 Variable Message Signs</p>	<p>Defining proper placement (i.e. distance from the anticipated queue), proper messaging, and message legibility.</p>	<p>Maximize the best visibility and reading capability for the traveling public.</p>	<p>Continue to verify proper messaging during reviews.</p>	<p>A) Research different types of portable/variable message signs and capabilities to find best approach.</p>	<p>A) Pending</p>	<p>TBD</p>	<p>Office of Construction Traffic Engineering Office of Maintenance Highway Design</p>

TABLE 4- Work Zone Operations (WZO) Working Group Action Item Issues

* Refer to Table 4a for completed actions

Updated 11/1/13

Issue	Problem	Expected Outcomes	Actions Taken	Actions to be Taken	Current Status	Time Frame	Responsible Parties
8 Movable Barrier Systems	Currently only one system available for use – proprietary – therefore difficult to use on federal participating projects.	Having barrier systems that can be utilized on more than one project.	None to date.	A) Need to work with Design to develop a specification and design guidance on positive separation equipment and materials for work zones that are not proprietary and has potential for use on other projects. B) Investigate if other systems have been developed. If so, compare the systems.	A) Positive feedback from Project 0044-0151, I95 Old Lyme that is completed. Project 53-175 Putnam Bridge scheduled to start April 1, 2013. Use is limited to certain project types. Need to look at other alternatives.	Ongoing	Office of Construction Traffic Engineering FHWA Highway Design
9 Environmental Conditions	Visibility of work zone warning equipment during inclement weather. Rain affecting retro-reflective properties of construction signs and pavement markings.	Improved visibility of signs and markings even during inclement weather.	Continued investigation in construction signs and their lack of reflective properties.	Use the Daily Site Review checklist referenced in Issue No. 3.	1. Reviewing new MUTCD requirements and incorporating changes into contracts. 2. Add recessed pavement marking detail and items into contracts to enhance retro-reflective qualities	Ongoing	Traffic Engineering FHWA Office of Construction Office of Maintenance
10 Work Zone Safety Review	Improve and enhance the work zone safety review inspection process.	Improve awareness and documentation of work zone reviews.	Improved questionnaire form and created a database to store information.	A) Include more photographs/videos of projects. Expand the number of field visits. Inform project staff of internet sites and pamphlets/documents. Are issues based on road, material, or project type?	A) Review 8-10 projects per year 2010-Ten projects reviewed 2011-Six projects reviewed 2012-Nine projects reviewed	Ongoing	Traffic Engineering FHWA Office of Construction Office of Maintenance

TABLE 4- Work Zone Operations (WZO) Working Group Action Item Issues

* Refer to Table 4a for completed actions

Updated 11/1/13

Issue	Problem	Expected Outcomes	Actions Taken	Actions to be Taken	Current Status	Time Frame	Responsible Parties
11 Project-Level Work Zone Reviews	Inconsistent applications of work zone principles at the project level.	Consistent practices of work zone reviews for each project.	Included this item in the Winter training session for supervisors and inspectors occurs in February and March 2012.	A) Continue reviewing plans and monitor projects for conformance. B) Use the Daily Site Review checklist referenced in Issue 3. C) Include this item in upcoming winter training session to include Work Zone Policy & Procedure presentation.	A) Ongoing process B) Ongoing Process C) Ongoing Completed for 2011 & 2012.	Implemented Topic of discussion since 2011 training classes.	Office of Construction Office of Maintenance Safety Division
12 Traffic Control Device Quality	Inconsistency in accepting devices of similar quality.	Understanding acceptable qualities for traffic control devices and maintaining consistency in which devices are accepted.	Obtained quality standard field guides.	A) Distribute guides on accepting traffic control devices to field staff to use in daily reviews.	A) Ongoing process	A) Complete by end of 2013	Office of Construction Office of Maintenance Safety Division
13 Signing	Breakaway post height does not conform to plans.	Conformity to requirements posted in the project plans.	Reviewed sign mounting detail with project inspector.	Continue monitoring projects during work zone reviews for compliance.	Ongoing with work zone reviews. New issue in 2011 and 2012 reviews.	Ongoing	Office of Construction
14 Pavement Markings*	Existing pavement markings not eradicated or covered. Missing or worn pavement markings need to be addressed.	Provide a clearly defined path for the traveling public through the work area.	Notified project staff of deficiencies.	Use winter training session to remind projects of the importance of maintaining consistent pavement markings.	Pending New issue in 2011 and 2012 reviews.	Winter Training 2014	Office of Construction Traffic Engineering

Table 4a- Work Zone Operations (WZO) Working Group Action Item Issues Completed

Updated 11/1/13

Issue	Problem	Expected Outcomes	Actions Taken	Actions to be Taken	Current Status	Time Frame	Responsible Parties
<p>1 Construction Sign Retro-Reflective Issues</p>	<p>Plastic Substrate does not appear to be rigid enough to utilize the reflective properties of the sheeting so that the sign can be read properly by the traveling public during night time hours. Condensation found to reduce retro-reflectivity of construction signs.</p>	<p>Improved visibility of signs by the traveling public.</p>	<p>A) Send Memo requesting removal of signs using plastic substrate. B) Revise specification to exclude plastic substrates.</p>		<p>Sent out October 15, 2011 Memo from Construction to Division of Traffic recommending two changes A) Discontinued the use of Type III sheeting and require bright fluorescent sheeting for all construction signs. B) Revised specification Item No. 1220013A Construction Signs - Bright Fluorescent Sheeting to not allow use of corrugated or waffle board types of plastic substrate, foam core, and composite aluminum sign substrates.</p>	<p>A) Completed 5/30/12 B) Completed revision date 1/5/12</p>	<p>Office of Construction Traffic Engineering</p>
<p>2 Pedestrian /Bicycle Access Issues</p>	<p>Incomplete sidewalks, pedestrian buttons inaccessible or inoperable, lack of crosswalks at intersections, and lack of handicap ramps.</p>	<p>Improved pedestrian and bicycle awareness and accessibility through design and construction</p>	<p>D) Conduct training if necessary.</p>		<p>D) Included in winter training session- Work Zone Policy & Procedure presentation. Training session for supervisors and inspectors occurs in February and March.</p>	<p>D) Completed as of April 2012</p>	<p>Traffic Engineering Highway Design Office of Construction Office of Maintenance Mon-motorized Transportation Coordinator</p>

Table 4a- Work Zone Operations (WZO) Working Group Action Item Issues Completed

Updated 11/1/13

Issue	Problem	Expected Outcomes	Actions Taken	Actions to be Taken	Current Status	Time Frame	Responsible Parties
3 Project Lighting for Night Construction	Glare from portable light plants affecting motorists traveling through the work zone.	Reduce glare for motorists in work zone areas.	A) Develop a Daily Site Review checklist to be used by project field personnel.	B) Develop and distribute work zone safety reminders (i.e. issues memo) for field personnel. C) Review specification requirements.	A) Completed B) Completed C) Completed- no change	A) Implemented Aug. 15, 2012	Office of Construction Traffic Engineering Safety Division
6 Traffic Control in Work Zones	Experience with and understanding of work zone safety. Establishing levels of effectiveness (i.e. presence versus enforcement).	Consistent practices and implementation of use of traffic persons. Better educated traffic control persons who will provide effective direction in work zones.	“Safe and Effective Use of Connecticut Law Enforcement Personnel in Work Zones” training curriculum now available online. Visit University of Connecticut Technology Transfer (T2) Center at http://www.t2center.uconn.edu/	C) Work with Bureau of Policy and Planning to include work zones as a required field in accident report.	C) Completed – Model Minimum Uniform Crash Criteria Fourth Edition (2012) Data Element C18	C) Completed through PR-1 crash report.	Bureau of Policy and Planning

TABLE 5- Work Zone Performance Measures (WZPM) Working Group Action Item Issues

Updated 11/1/13

Issue	Problem	Expected Outcomes	Actions Taken	Actions to be Taken	Current Status	Time Frame	Responsible Parties
1 Mobility in Work Zones	Low vehicle throughput and long queue lengths causing congestion and delays in work zones.	Improve mobility in work zones or handle delays more effectively.	Systems Engineering Analysis Review initiated by Highway Operations	A) Establish means to capture real time traffic data.	A) Ongoing- See Table 3 , Item 3	3 years	Bureau of Policy and Planning, Office of Coordination, Modeling and Crash Data and TRCC August 30, 2014 data available
2 Reliable Crash data in Work Zones	Crash data for work zones must be accurately represented on accident reports	Gaining more data in a timely manner to incorporate crash frequency in the design of future projects in the area.	Members of WZO and WZPM became stakeholders in the Traffic Records Coordinating Committee (TRCC)	A) Working with Bureau of Policy & Planning to get more motor vehicle crash reports.	A) Ongoing- See Table 3 Items 4 & 6	Dependent on CTDOT Vehicle Crash Reporting System 100% electronic January 2015	A) Bureau of Policy and Planning, Office of Coordination, Modeling and Crash Data and TRCC
3 Work Zone Safety Performance	Safety concerns for highway workers and the traveling public in work zones	Improved safety in work zones.		A) Collect data to track, analyze and evaluate work zone safety performance. B) Establish work zone safety practices and monitoring that they are applied consistently throughout the duration of the project.	A) Ongoing- See Table 3 Items 6 & 8. Current backlog is 7 months B) See Table 3 Item 8 See WZO Action List Items 10-12	A) Dependent on CT Vehicle Crash Reporting. New Crash report (PR-1) Jan. 2015 Backlog schedule: 6 mo. - Dec 2013 3 mo. - Aug 2014. B) Implemented	A) Bureau of Policy and Planning, Office of Coordination, Modeling and Crash Data and TRCC B) Offices of Safety, Construction and Maintenance
4 Traveler Feedback	Not knowing if the performance measures taken are most useful for the traveling public	Implement practices that are more conscientious of the public and assure them that they're contributing to the process		A) Conduct traveler surveys to evaluate work zone traffic management practices and policies on a state-wide and area region-wide basis	A) Ongoing- See Table 3 Item 7	2013	Office of Construction Office of Maintenance
5 Develop Strategies from Performance Data and Traveler Surveys	Not utilizing information obtained to continuously improve practices	Establishing effective performance measures		A) Evaluate data and surveys to determine where improvements can be made	A) Ongoing- Table 3 Items 1 & 7	Ongoing	Offices of Strategic Planning & Projects, Construction and Maintenance