Connecticut Work Zone Reviews

Annual Report

2017

State of Connecticut

Department of Transportation

Office of Construction

Prepared by

Anthony O. Kwentoh, P.E.

Kiah A. Patten

Reviewed by

James P. Connery, P.E.

Construction Division Chief

Contents

Introduction

The Connecticut Department of Transportation (CTDOT) Office of Construction (OOC) conducts work zone safety field reviews to evaluate the effectiveness of work zone safety and mobility practices and procedures in compliance with 23 CFR 630 Subpart J. The reviews were conducted for randomly selected active highway construction and maintenance projects administered by CTDOT.

The reviews include an inspection of traffic control devices, construction sign installation and removal, sign recognition and visibility, recognition of opportunities to enhance safety for motorists, and the conduction of a personnel questionnaire to determine strengths and opportunities for improvement in work zone procedures. The focus areas for work zones are temporary lane closure, temporary signalization, pedestrian/bicycle access, stage construction, detour, and night work. There is also an overarching focus to determine if findings are deemed potential systemic issues.

During a regular field review, personnel from the OOC and the Division of Traffic Engineering (Traffic) are accompanied by the project staff from the Construction District to tour the project's work zone. The review team evaluates what is being implemented and uses what is found as teaching tools to the project staff as well as other Construction inspection staff in training sessions. The OOC has set a goal to conduct a minimum of ten regular field reviews a year.

For in-depth reviews, the review team may include personnel from the OOC, Traffic, and Federal Highway Administration (FHWA). This team, along with FHWA, will tour the work zone with the project staff to review what is being implemented and note FHWA's point of view in comparison to the federal standard. The OOC has set a goal to conduct four in-depth field reviews a year.

For both types of review, reports noting findings with corresponding recommendations for improvements and/or best practices, photographs of field conditions, and answers to the questionnaire are composed and then distributed to all participants. The reports either help identify issues that need immediate action, identify possible systemic issues that need addressing on a statewide level, or find best practices that could improve the Connecticut's Work Zone Safety practices.

For the 2017 construction season, the OOC was successful in meeting the goal of completing fifteen regular reviews and four in-depth reviews. The findings from these reviews were compiled and sorted by similarities. These findings were categorized by the following:

- Additional Devices Needed
- Advanced Warning
- Best Practices
- Complete Project Documents

- Enterprise Coordination
- Material Research
- Message Confusion
- More Thorough Plan Reviews
- Pattern Installation
- Pavement Issues
- Pavement Markings
- Pedestrian Safety
- Procurement Issues
- Project Coordination
- Proper Installation of Devices
- Proper Signage
- Proper Usage of Devices
- Quality of Devices
- Radar Speed Trailer
- Rolling Road Block
- Sign Placement
- Specification Enforcement
- Stakeholder Communication
- TMP Maintenance
- Traffic Safety
- Travel Hazards
- Unforeseen Conditions

Findings of work zone field reviews will be added to the action item list of the Work Zone Safety and Mobility Process Review for resolution by the appropriate Department unit. The Process Review is an evaluation tool used for the Department's work zone program. The Process Review team is comprised of personnel from the OOC, Traffic, Office of Highway Operations, Bureau of Policy and Planning, FHWA and Office of Highway Design. Opportunities for improvement, successful practices, and implementation of new technologies can be efficiently proposed and managed between these units to develop a holistic work zone safety program the Department can benefit from.

Findings and Recommendations by Category

Project No.	Finding	Recommendation
Additional Devices Needed		
0135-0326	There was utility work at the intersection of Atlantic Street and South State Street with a left lane closure on the off-ramp. Vehicles attempted to enter the left turn lane before the closure.	The lane should be closed entirely with drums or cones to prevent vehicles from entering.
Advanced Warning		
0170-3435 C & C1	The VMS over the Northbound side didn't have any message displayed about the work zone below.	If VMS will be the only advance warning messaging for a project, they need to be turned on and displaying the correct messages.
0170-3435 F	The flashing arrow in the closed lane is in the arrow mode not the straight bar.	The flashing arrow used in the closed lane should indicate a closed lane by displaying the straight bar.
Best Practices		
0050-0219	The Contractor held a tailgate talk before proceeding out onto the roadway.	Holding tailgate talks before every shift is a good practice to ensure the team works efficiently.
0050-0219	Both rolling roadblocks, one on I-95 SB at 8 PM and the other on I-95 NB at 9 PM, were initiated and removed within 8 minutes and 9 minutes, respectively. Time was still needed after the roadblock was removed from installing the rest of the work zone drums, cones, and signs.	The Contractor executed the Rolling Road Blocks within the allowable 15 minutes.
0050-0219	Drum spacing in tapers was held to 40 feet, while cone spacing in the tangent sections were kept to 80 feet.	The traffic cones and drums were installed according to plan.
0063-0699	The construction signs had their sides cut off to keep them from infringing into the travel lanes.	Adjusting the signs to accommodate the field conditions is a good practice, as long as the adjustments do not confuse the message or prohibit the motorists from safely moving through the work zone.

Project No.	Finding	Recommendation
0160-0139	A sign is posted on the riverbed below stating CAUTION BRIDGE WORK AHEAD.	Considering possible waterway traffic under bridges and informing users of construction work is a good practice.
0170-3435 C & C1	The General Supervisor stated that more State Police should be used on their multi-lane traffic patterns for enforcement.	Using State Police for enforcement within a work zone is a good safety emphasis.
0170-3435 C & C1	Before every shift, the Contractor's crew leader holds a tailgate talk. He also draws out the traffic pattern on a white board so the crew can see the pattern they are going to install while he describes how they will install it. During the tailgate talk, District 1 Maintenance crew has everyone present sign in.	Holding tailgate talks every shift is a good practice. It ensures everyone understands what's to be done that shift and work can proceed smoothly. Having a sign in sheet can safeguard the supervisors that each worker will account for the information received.
0170-3435 C & C1	On the Southbound side the Variable Message Sign (VMS) overhead displayed a message about the Work Zone conditions.	Since the Contractor didn't use Changeable Message Signs, it was good to have the VMS used to bring awareness about the conditions.
0170-3435 C & C1	The Contractor on this project uses the "Reduce Speed to 45 MPH" sign.	The "Reduce Speed to 45 MPH" sign is not enforceable but have been included to be a good traffic calming control.
0170-3435 C & C1	The Contractor uses a green 12-inch cone underneath overhead utility lines to bring awareness to truck drivers to lower raised tracks beds in that location.	Using devices to bring awareness to the presence of obstructions to the work is a good practice.
0170-3435 C & C1	The I-91 Northbound side used 42-inch cones for its traffic pattern.	The tall42-inch cones are best for traffic patterns on interstates.
0170-3435 D	After an intersection, small arrow signs mounted on traffic cones were used to guide motorists into their appropriate lane.	Having more signs added to the minimum required signs for the pattern is a good practice to help direct motorists to their proper place.
0170-3435 D	A speed trailer was mounted on the back of the Contractor's work truck to help calm traffic.	Having traffic calming devices like speed trailers within the traffic pattern are a good practice in reducing speeds within work zones.

Project No.	Finding	Recommendation
0170-3435 F	The Contractor installs an extra REDUCE SPEED TO 45 MPH sign within the pattern.	The REDUCE SPEEDS signs are good traffic calming practice that can be considered for other highway traffic patterns.
0170-3435 F	The Contractor has a speed trailer mounted on their truck and parks it within the work zone so the trailer can display speeds of oncoming vehicles.	Speed trailers within patterns are a good traffic calming device.
0170-3435 I	For a night operation on secondary road, the use of traffic control wands for the flagging operation in lieu of a typical flagger paddle.	Using equipment such as the traffic control wands for an enhanced visibility for nighttime flagging operations is a good practice.
Complete Project Documents		
0068-0211	There was no Transportation Management Plan included in the project documents.	There should be a TMP for the project since the project is on an interstate which is considered to be significant.
0170-3435 C & C1	There is no Transportation Management Plan for this project even though it's on an interstate.	Now that Maintenance is administered Pavement Preservation Projects located on interstate roadways, the projects should have a TMP included with them.
Enterprise Coordination		
0158-0211	The PWZMS is installed but it is not fully functional as required in the contract.	The project staff and vendor should work together to get the system fully operational and collecting data for prior condition baseline and during construction work zones.
Material Research		
0094-0252	The blackout paint color for the temporary pavement markings does not match the roadway overlay.	Research should be conducted to have a selection of colors to use for matching existing roadway pavement to avoid confusing motorists and conflict with other markings.
Message Confusion		
0050-0219	The portable CMS near the I-95 NB Exit 21 on-ramp had the "Road Work Ahead" and "Lanes Closed Ahead" messages. "Lanes Closed Ahead" was not technically correct, since only the left lane was closed.	The CMS messaging should be compliant with the M&PT special provision.

Project No.	Finding	Recommendation
0050-0219	On I-95 SB there was a truck mounted CMS that read “Constr. Zone” and “Fines Doubled.” “Constr. Zone” is not an approved message. Refer to the special provision for Item No. 0971001A: Maintenance and Protection of Traffic for approved messages.	Enforce the specifications for appropriate message to the motorists.
0117-0157	The message of the CMS placed on Route 7 Westbound stated that the road was closed ahead. Note: This message was meant for a future date.	The message on the CMS should reflect the current conditions of the project or should be accompanied with future dates so motorists know when the conditions will take effect.
0135-0326	A “Flagger Ahead” sign was placed before the utility work zone on Atlantic Street but there was no flagger operation, just a municipal police vehicle with flashing lights on.	If a sign is going to be used to indicate a trafficperson ahead it needs to be further back for more advanced warning not at the work area. Instead, a “Road Work Ahead” sign would be better to use since there weren’t any flaggers being used.
More Thorough Plan Reviews		
0158-0211	The quantity of Type D Portable Impact Attenuation Systems was too low.	Item quantities can better reflect what will be used in the field through plan reviews and post-construction reviews.
0158-0211	The Project Engineer suggested that if a Portable Work Zone Management System is included in a project it should be accompanied with items for protection for the system.	Highway Operations can consider adding a requirement for the Smart Work Zone specification or creating an item for protection of the PWZMS field trailers.
0160-0139	The estimate for the Trafficperson (Uniformed Flagger) item was too low.	Quantity estimation needs to reflect how many Trafficperson hours will be needed for mobilizing trucks in and out of the stockyard.

Project No.	Finding	Recommendation
0160-0139	The project had to close the road over a weekend to resolve constructability issues. The new bridge is 3 feet higher than the roadway and needs to match the grade of the road. The quantity for the Remote Controlled Changeable Message Sign was increased to assist with an added detour.	Construability issues can possibly be resolved with more thorough plan reviews and prevent other issues with insufficient item quantities (i.e. Changeable Message Signs) and the need for additional traffic plans (i.e. detour plan).
0162-0145	The roof overhang prevents trucks from accessing the back of the convenient store's building.	When designing for business access around a building, the roof overhang needs to be considered.
Pattern Installation		
0063-0699	On the westbound side, space was limited to place all the traffic devices.	Field adjustments are allowable as long as the minimum requirements on the traffic plans are met.
0063-0699	A crash truck advising motorists to merge left was providing extra protection for the sign truck while the crew installed the devices for the tangent of the pattern.	Only on roadway sections where there are three or more lanes, can a crash truck protect the traffic-side of the sign truck. However, the crash truck is still considered to be interfering with traffic by closing the second lane before the Limits of Operation allow a closure of two lanes.
Pavement Issues		
0160-0139	The Chief Inspector suggested for future temporary bridges with temporary signals, use open grates on the bridge instead of temporary pavement. The pavement on the bridge had poor adhesion so when traffic stops on the bridge at the light, the pavement is being shoved and potholes forming.	Adhesion of roadway overlay on temporary bridges should be considered to avoid pavement shoving or open deck grates that may ice over during the winter.
Pavement Markings		
0135-0326	The black aggregate cover-up markings on I-95 are beginning to wear and should be refreshed prior to winter.	Pavement markings should be regularly maintained to indicate to motorists where the lanes are.
0162-0145	Pavement markings for pedestrian detour pathway are faded.	Pavement markings should be clearly defined and should not conflict with other markings. If the markings are worn, they should be refreshed.

Project No.	Finding	Recommendation
Pedestrian Safety		
0100-0178	There is a sidewalk on Bassett Road which was closed but no detour was implemented for pedestrians.	The Chief Inspector said that closing the sidewalk on Bassett Road was discussed with the Town Engineer and he agreed that no detour was needed since it wasrarely used by pedestrians.
Procurement Issues		
0170-3435 D	Maintenance provided the CMS used for the project and they could only procure one used near the pattern in Windham.	The Contractor is supposed to provide the traffic control for the project, including Changeable Message Signs. If CMS are needed for either end s of the project for advance warning, the Contractor should provide that.
Project Coordination		
0117-0157	The adjacent project (Project No. 117-149) has a CMS stating not to take Route 35 and seek an alternate Route when Route 35 is the detour route for Project No. 117-157.	Project 117-149 and Project No. 117-157 have coordinated their detour routes and the projects do not work concurrently allowing at least one work zone route (either Route 7 or Route 35) open for the traveling public to use. This effort is a good practice.
Proper Installation of Devices		
0135-0326	The TPCBC along South State Street was misaligned.	TPCBC needs to have properly aligned sections to redirect wheels of vehicles back towards the roadway and not get snagged between sections.
Proper Signage		
0117-0157	The sign informing motorists of bridge closure dates has a message that's too long and has lettering too small for motorists to read while driving by.	Signs need to be clear and visible from a distance to allow motorists enough reaction time to read them in advance before reaching the sign.
0135-0326	There is a concurrent pedestrian walk across South State Street at the intersection of Atlantic Street. Visibility to pedestrian is obscured for right turning vehicles onto South State Street.	It is recommended that a sign be installed to tell motorists of the pedestrians and to yield. 

Project No.	Finding	Recommendation
0135-0326	There is signing on South State Street showing which lane vehicles should be in for left turns to Canal Street, through moves to I-95 and through/right turns to Canal Street /South State Street however, in the current staging configuration, the left turn lane is closed.	It is recommended to revise the signs before Canal Street as shown below. Any lane signs at the intersection and pavement markings should be adjusted accordingly. 
Proper Usage of Devices		
0117-0157	TPCBC is placed on the steel plates so the guiderail can continue running along the roadway.	Using concrete barrier to mount the guiderail is a good practice to keep the guiderail system running uninterrupted when there are limitations for installing posts.
0170-3435 C & C1	Temporary signs used to describe prolonged conditions, like “Raised Structures” or “Bump”, were not anchored or weighted on the base of the temporary sign tripod stand.	Construction signs mounted on tripod stands used for a long-term duration should be anchored by weighting the bottom of the stand so they don’t get displaced by fast winds on the interstates.
Quality of Devices		
0050-0219	Some construction signs were dirty with significant scuffing. The signs were still reflective, but were not in ideal shape.	Traffic signs that are dirty or scuffed should be cleaned before use. If they cannot be cleaned to restore reflectivity, they should be replaced.
0050-0219	There was a traffic drum that was horizontally sliced that compromised the physical integrity of the device. There were also drums and cones with reflective tape that was peeling off.	Traffic devices that are misshaped, missing reflectivity, or badly damaged need to be replaced.
0135-0326	Permanent gore impact attenuator barrels were damaged.	The impact attenuation system needs to be repaired so the barrier wall end is adequately protected.
0135-0326	Some of the traffic control devices were badly misshaped.	Devices that are misshaped, worn, or has poor reflectivity in unacceptable condition should be replaced.

Project No.	Finding	Recommendation
0135-0326	Signs and messaging: (a) the no right turn sign facing the off-ramp is faded and should be replaced and (b) do not enter signs and a one-way sign (on the north side) are needed at the end of the off-ramp.	Signs need to have their messaging clearly visible to motorists.
0160-0139	The ROAD WORK AHEAD sign is posted on waffle board which is not an acceptable material to use.	Waffle board is an unacceptable substrate material to use for construction signs since the reflectivity of the signs is poor.
0162-0145	Condition of the traffic control devices: (a) TPCBCs are worn and cracked and the pins are not properly connected between some of the sections. The condition is unacceptable for use, and (b) some of the traffic drums are badly misshaped which is an unacceptable condition.	Traffic control devices that are in poor condition should be replaced. To understand what acceptable conditions for traffic control devices are, refer to the ATSSA Guidelines for the Temporary Traffic Control Devices and Features.
0162-0145	Some traffic drums are badly misshaped.	Traffic control devices that are misshaped, scuffed, or missing reflectivity are in unacceptable condition and should be replaced.
0170-3435 C & C1	The construction signs were mounted on waffle board.	Construction signs should not be mounted on waffle board types of plastic substrate, foam core, and composite sign substrates. These materials decrease the reflectivity of the signs.
0170-3435 C & C1	Most cones used for the traffic pattern on the southbound side were in marginal or unacceptable condition.	Traffic devices and signs should be cleaned if dirty or replaced if misshapen, worn, or missing reflective tape.
0170-3435 D	The signs are mounted on waffle board.	Waffle board is an unacceptable material to use for construction signs since the reflectivity of the signs is poor.
0170-3435 D	Some of the traffic cones used were worn, bent out of shape, or missing reflective tape. There was also a sign mounted too low and one had paint on its face..	Traffic devices in marginal or unacceptable condition should be replaced and signs should be mounted with an adequate height to increase visibility to the motorists.

Project No.	Finding	Recommendation
0170-3435 I	A number of the traffic control devices and post-mounted signs are worn and dirty. Some traffic cones were missing reflective tape and misshaped and some construction signs had lettering worn off and low reflectivity.	Traffic control devices that are in unacceptable quality per ATSSA Quality Guidelines need to be replaced so visibility of the work zone is maximized.
Radar Speed Trailer		
0050-0219	The I-95 southbound "Your Speed" radar sign was black (unlit), even though there was a fair amount of traffic on I-95. Earlier in the night it was observed that the sign recorded speed was constant for speeds in the upper-30's and would flash for speeds over 40 MPH. It is unclear why the sign appeared off.	The radar speed display should be operational during the entire time the work zone is in place. This is a traffic calming strategy that can help promote safety in the work zone. If the device was having technical issues, it should be corrected as soon as possible.
Rolling Road Block		
0050-0219	The contractor stated that there were 5 crash trucks and 3 State troopers on site. Normally, there are 5 troopers on site. A state trooper assisted the sign crew while the traffic drums and cones were being installed. A state trooper was used to block the open lane adjacent to the closed lane in order to protect the workers installing the traffic drums.	Using TMAs instead of state police vehicle to protect sign crew in close lanes is a preferred practice. Also, closing the middle lane before the limitations of operation allows is considered interference to traffic.
0063-0699	The project used a Rolling Road Block (RRB) to install their traffic pattern. On the I-84 Westbound side it ran from 8:32 pm to 8:54 pm (22 minutes). On the Eastbound side it ran from 9:17 pm to 9:29 pm (12 minutes).	Although the RRB went over the time limit stated in the Construction Directive, the residual back up was minimal. The project should adhere to the policy as allowed.

Project No.	Finding	Recommendation
0100-0178	A Rolling Road Block was used to install the traffic pattern. It started at 7:16 pm and the left lane was opened to traffic at 7:24 pm. A TMA was positioned in the middle lane protecting the crew while they were on the road in the right lane installing the taper.	The Contractor was compliant in keeping the time under the allowable 15 minutes granted in the Rolling Road Block Directive. However, the TMA in the middle lane used to protect the workers while traffic is let through is infringing on the Limitations of Operation by closing two lanes before it is allowed.
0170-3435 C & C1	A Rolling Road Block (RRB) was used on I-91 in a four-lane section from 7:47 pm to 8:08 pm (21 minutes) while the sign crew set up the two-lane closure pattern. The RRB extended not only after the taper was installed for the first lane but even after the taper was installed for the second lane. The State Police directed the implementation of the RRB which contradicted Department policy.	The Office of Construction has issued a Construction Directive to limit Rolling Road Blocks to 15 minutes. This prevents significant delays from occurring due to the road being blocked and to allow residual backups to disperse quickly. This directive should also be used by the Office of Maintenance to ensure consistency within the Department.
0170-3435 F	A Rolling Road Block (RRB) was used on Route 15 from 8:03 pm to 8:28 pm (25 minutes) while the sign crew installed the pattern.	Although the RRB exceeded the time limit by 10 minutes, Route 15 is a narrow two-lane expressway and the State Police did not traffic through in order to keep workers safe as they installed the entire pattern.
Sign Placement		
0117-0157	Plant growth has obstructed the messaging of some post-mounted signs.	Selective clearing will improve the visibility of the signs.
0135-0326	A sign had overgrown brush blocking it.	Clearing of brush is needed for visibility to the signs.
0135-0326	A “Utility Ahead” sign was blocking a sidewalk on Atlantic Street.	Equipment and devices shouldn’t block the pedestrians’ pathway. The sign should be relocated to allow pedestrian access through.
0160-0139	The “signal ahead” sign on Route 74 (Tolland Turnpike) was placed before another signal not before the temporary one.	The “signal ahead” sign should be placed after the permanent signal but before the temporary one so motorists will know which one the sign is indicating to.

Project No.	Finding	Recommendation
0162-0145	There is poor sightline for the Stop sign at the end of Whiting Street.	The project can add a "Stop Ahead" construction sign on Whiting Street to inform motorists of the Stop sign they cannot see from the road.
0162-0145	Northwest Connecticut Community College parking lot sign is within the TPCBC.	If existing signs are obstructed from view by construction devices or activities, they should be relocated to a more visible location.
0170-3435 C & C1	The pattern on the Northbound side didn't include an END ROAD WORK sign at the end.	Signs noted on the plans within the Work Zone Safety Guidelines for Maintenance Operations need to be installed correctly and completely.
Specification Enforcement		
0050-0219	"Road Work Ends" signs were only installed on one side of the road (the closure side) instead of both sides of the road, as shown in the special provision for Item No. 0971001A: Maintenance and Protection of Traffic.	Compliance with the traffic plans should be enforced and have signs installed on both sides of the roadway as required in the contract.
0050-0219	I-95 mainline liability signs seemed to have been missing.	Missing liability signs should be corrected.
0050-0219	There were sections of traffic cones that were installed crossing the outside of the lane line, effectively narrowing the width of the travel lane. The traffic cones and drums should be installed either within the lane or on the lane line not to minimize the travel lane width. Tight lane widths increase the chances of these devices being struck by vehicles, as well as the potential for vehicle sideswipes.	The lanes should remain at the full width unless specifically requested and approved by the District for a reduction.
0100-0178	One Changeable Message Sign does not work and the field staff has requested for it to be replaced.	A non-compliance notice can be issued to direct the Contractor for time resolution.

Project No.	Finding	Recommendation
0100-0178	Some of the Temporary Precast Concrete Barrier Curb sections had pins that were not fastened at the bottom.	The TPCBC needs to be installed according to the plan including fastening the pins at both ends.
0100-0178	The liability sign for the project is posted after the start of the pattern not before the advance warning signs closer to the project limits.	Liability and Fines Doubled signs should be at the beginning of the advance warning signs so motorists are aware of their responsibility when entering the work zone.
0160-0139	The only sign in advance of the project on Phelps Way was the legal sign. There were no “signal ahead” sign or “road work ahead” sign until right before the temporary bridge.	More advance warning should be on Phelps Way and not just before the project site to allow motorists ample time for notice of what’s to come.
0162-0145	Some of the detour signs were missing.	Construction signs should be installed according to.
0170-3435 C & C1	The construction signs were only installed on the left side of the highway not both sides of the highway.	The advance warning signs are to be installed on both sides of the highway as noted in the Work Zone Safety Guidelines for Maintenance Operations to bring more awareness to motorists about the work ahead no matter which lane they’re traveling in.
0170-3435 D	The traffic patterns used arrow signs in the tapers.	The typical plans included in the Work Zone Guidelines for Maintenance Operations depicted that a high mounted internally illuminated flashing arrow should be used within the taper not temporary construction arrow signs.
0170-3435 F	The Contractor only installed traffic signs on the left side of the road.	The Work Zone Guidelines for Maintenance Operations depicts signs to be installed on both sides of the roadway.
0170-3435 F	The arrow sign installed in taper is a sign not a flashing arrow board.	The Work Zone Guidelines depicts a flashing arrow be placed in the taper.

Project No.	Finding	Recommendation
0100-0178	The Chief Inspector doesn't like how the Construction Access specification was written. He says that it doesn't clearly state how to maintain the access.	A Construction Access special provision for clarification can be developed.
Stakeholder Communication		
0117-0157	On Route 7, north of the intersection with Own Home Avenue in Wilton, temporary construction signs from a previous project are still posted. The Project Engineer stated the signs are left from a past town project.	The signs should be removed if they are not applicable any more. The project can coordinate with the town to have them removed.
TMP Maintenance		
0094-0252	The project hasn't been updating the Transportation Management Plan. They didn't think the plan was applicable since their staging plans have changed.	Although the staging has changed, anything done for traffic control and public outreach need to be noted in the TMP.
Traffic Safety		
0068-0211	With the limited space, the Stage 2 configuration makes it difficult for oncoming traffic to merge onto the highway, especially at night.	Other strategies (e.g. Dynamic Lane Merging) to assist the oncoming traffic should be explored by Traffic Engineering and Design.
0100-0178	State Police has told the Chief Inspector that the Contractor's workers pulling in and out of the median before lanes are closed is infringing on the limitations of operation. The workers aren't using their strobes on their vehicles.	The Limitations of Operation need to be enforced. Another Work Zone Safety meeting can be held to determine better practices for work zone safety.
Travel Hazards		
0135-0326	H-piles at the leading end of Wall No. 103 created a blunt end and needed protection.	The wall leading ends with exposed H-piles beside the edge of the roadway as blunt objects need protecting.
0135-0326	Leading end on TPCBC along Wall No. 103 needs protection. Also, sections of the TPCBC were left not connected at the loops.	TPCBC leading end should be protected or angled away from the roadway. Also, if TPCBC sections are missing the connection pins, the ends will become snap points or dislodge upon vehicular impacts.

Project No.	Finding	Recommendation
0135-0326	The storage area on Manhattan Street should be secured properly.	The drums/barricades used to close Manhattan Road on the east end and the construction fencing on the northbound side of Atlantic Street at the intersection of South State Street needs to be fixed.
0170-3435 C & C1	Equipment mobilized into the left lane before pattern installation was complete. If traffic was let through once the taper was installed, motorists could have bypassed the pattern installation, changed into the left lane and met the parked equipment abruptly.	Equipment that will be used within the work zone shouldn't enter the intended closed lane until the traffic pattern is installed.
0170-3435 C & C1	The equipment parked on the Northbound side was parked within the clear zone.	The clear zone requirement based on the design speed of the roadway needs to be maintained. Objects within the clear zone are considered blunt ends and need to either be placed outside the clear zones or positively protected.
Unforeseen Conditions		
0050-0219	On I-95 NB, the queue that resulted from implementing the work zone extended to the nearest Service Plaza.	The queue that formed could be due to the location of I-95 which has a historical large amount of traffic regardless.

Summary

The successful practices and areas that require improvement found during the reviews will be addressed through the Work Zone Process Review. The Process Review will coordinate among the Department units to ensure that any systemic issues are mitigated and best practices are implemented statewide. The recommendations associated with the findings may be addressed as follows:

- Best practices can be implemented through specification changes, creation of new policies and procedures, and inspector training.
- Discrepancies found in the plans and specifications can be addressed through Lessons Learned presentations to the working level engineers. Proposed specification changes can also be brought to the Specifications Committee or the Division of Traffic Engineering.
- Modifications to existing policies and procedures for work zone field activities and common practices that pose a potential safety hazard to the traveling public should be made.
- New policies can be created to address potential unsafe practices in the field..
- Training is the most effective tool to address systemic issues found in the field, such as specification enforcement and the acceptable quality of safety devices. Inspectors can be made aware of deficiencies through verbal communication, review reports, and during the annual winter inspectors' training. Another training resource is the use of the Inspectors' Pocket Guide Checklists.
- New technologies and materials are being researched and piloted to improve Work Zone Safety and Mobility. A new Engineering & Construction Directive was issued this year for the Smart Work Zone System Guidance Manual for use of ITS in Work Zone Management on feasible projects.
- Timely communication between the Construction field staff and other Department units will yield effective project coordination in getting issues resolved.

The Work Zone Safety Field Reviews are instrumental in identifying how successful safety practices are within the field and receiving feedback from personnel who use them on a continuous basis. The Department will continue to benefit from implementation of these successful strategies for effective work zone safety and mobility.

Appendix:

2017 Work Zone Safety Field Review Reports

Regular Field Reviews

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0017-0182 **District:** 1

Date: 7/17/17 **Time:** 9:30am **Weather, Temp.:** 75

Town: Bristol **Route:** 6

Road Type: ☐ Interstate ☐ Expressway ☒ Secondary ☐ Local

FOCUS OF REVIEW:
☒ Temporary Lane Closure
☒ Temporary Signalization
☒ Pedestrian/Bicycle Access
☒ Stage Construction
☐ Detour
☒ Night Work

Project Engineer: Juan Ruiz **Chief Inspector:** Anna Warchol

Prime Contractor: Empire Paving **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: 13 million **Percent Complete:** 19%

Calendar Days Allotted: 488 **Calendar Days Completed:** 95

REVIEW PARTICIPANTS

NAME	REPRESENTING
Ryan Lewis	District 1 Construction
Anna Warchol	District 1 Construction
Juan Ruiz	District 1 Construction
Kermit Ramdal	Office of Construction
Robert W. Turner	CT FHWA
Kevin McKernan	Division of Traffic
Andi Baughn	District 1 Construction
Brett Stoeffler	Division of Traffic
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction
Dean Dickinson	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain. **Yes.**

2. Have there been any incidents within your project's work zone? **One incident not related to the project. Two gas leaks (at Burger King) not related to the project.**

3. What documents do you reference for work zone information? **Maintenance and Protection of Traffic special provision, Traffic Plans, and Prosecution and Progress specification.**

4. What, if any, accommodations have been made for Emergency Services? **Two lanes are always open. Town police are always on sight when work is in progress and will facilitate the passing through of emergency vehicles as needed.**

5. What, if any, accommodations have been made for pedestrians and bicyclists? **There are sidewalks on both sides of the roadway. If one is closed signs are placed to direct pedestrians to the nearest crossing area where they can cross in a designated cross walk area.**

6. Have ADA requirements been met for pedestrians? **Yes.**

7. Where is the designated laydown area for materials to be stored? **On Route 6 by L.A. Fitness (off the road). Also, along the work zone behind barrier.**

8. Where is the designated area for equipment to be stored when construction is not in progress? **Same as 7.**

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful? **There was no Traffic Management Plan for this project.**

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them? **Item #0971001A - Maintenance and Protection of Traffic, Item #'s 1111201A-1111206A - Temporary Detection (Site Nos. 1 thru 6), Item #'s 1118051A-1118057A – Temporary Signalization (Site Nos. 1 thru 7).**

3. What work zone traffic plans are included in the project plans? Are they complete and current? **The Traffic Typical Standard sheets and Plan sheets SPM-01 thru SPM-06 and STG-01 thru STG-06. They are complete and current.**

4. Is there stage construction? If so, explain. **Yes. The project is approximately 1 mile long. There are 2 main stages with 3 construction sequences in each stage. The first stage is the eastern half of the project (approx. 3400 feet.) The second stage is the western half (approximately 2000 feet.) The 3 construction sequences are as follows: 1) The south side of Route 6 is constructed. 2) Construction of the north side of Route 6. 3) Reconstruction of the center of Route 6.**

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878. **No.**

6. Is there a temporary signalization? If so, explain. **Yes. Signal heads are realigned and temporary turn loop detectors installed.**

7. Is there a detour? If so, explain. **No.**

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain. **Yes. The clear zone for this project is 16 feet.**

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	**16 feet**

9. Chief Inspector Comments: **The police have been very helpful to help waive traffic along to keep it moving and by helping pedestrians cross the road during daytime construction activities.**

10. Project Engineer Comments: **The local police are not very receptive to the use of flagmen on the project.**

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☒	☐	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height?
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☐	☒	a. Clean and visible? A few of the cones had significantly worn reflectivity.
☒	☐	b. Reflectorized?
☐	☒	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☐	a. Functioning in the correct mode?
		b. Location?
☐	☒	**5. Changeable Message Sign (CMS)?**
		a. How many?
		b. Location?
☐	☐	c. Message understandable?
		d. Number of frames displayed?
☐	☐	e. Timing between screens acceptable?
☐	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many?
		b. Location?
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☐ Epoxy
☒	☐	a. Legible?
☐	☒	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		

☒	☐	Is everyone wearing the proper reflective equipment?
E.	**Traffic Control Personnel**	
		☐ State Police ☒ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☒	☐	1. Wearing high-visibility gear?
☐	☒	2. Using traffic control devices (i.e. paddle and pole)
☒	☐	3. Properly positioned?
F.	**Pedestrian / Bicycle Access**	
☒	☐	1. Signs
☒	☐	a. Clean and visible?
		b. Mounting height?
☒	☐	2. Designated pathways?
☒	☐	a. Clear?
☐	☒	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Photo 1: Photos 1 and 2 show the advanced warning signs were well placed with good sight line and no interference with pedestrian activity.

Photo 2:

Photo 3: Here is a very visible sign (well placed) informing drivers they are leaving the work zone.

Photo 4: "Business Open" signs were well placed at several locations throughout the work zone.

Photo 5: All temporary business entrances were well constructed by the Contractor.

Photo 6: Here a cone was used to shut down a sidewalk. A sign (sometimes accompanied by a barricade) should be used to close a sidewalk and inform sidewalk users that the side walk is closed. In addition, if a sidewalk is shut down a temporary or detoured sidewalk route needs to be established.

Photo 7: If key traffic markings are eradicated by construction activity they may need to be re-established before the final pavement surface is placed. Here a cross walk was almost completely removed by a large drainage trench. Drivers unfamiliar with the area may not recognize that this is a designated crosswalk area that will be frequented by pedestrians.

Photo 8: Photos 8 and 9 showing a sign made from corrugated plastic board. Several signs throughout the project were made of this material. All signs should be made of plywood or aluminum sheeting. Corrugated plastic board signs tend to warp and get bent over time. This detrimentally affects their reflectivity at night. In additIon, this sign encroaches a little on the travel way. It could possibly get clipped by a passing vehicle.

Photo 9: Corrugated plastic signs (waffle board substrate).

Photo 10: This temporary ramp to the push button located on the span pole was well formed, but it was done with loose ½ inch stone. A wheelchair would have trouble traversing through the loose stone. A more dense graded material that compacts to form a tight surface should be used.

Photo 11: Here, the Contractor makes good use of sheeting to cover and protect excavated areas.

Photo 12: Shown here is an example of well stored equipment and materials behind temporary concrete barrier. The Inertial Drums should be delineated with Sign No. 50-5032.

Photo 12: This sign was well placed showing a closed sidewalk and indicating an alternate route (detour) to the sidewalk across the street.

Photo 13: This is the ramp just in front of the closed sidewalk (in Photo 12). You can't see it in this picture but the driveway concrete apron to the right has a 2 inch lip. Because side walk users are being diverted across this apron in order to cross to the sidewalk on the other side of the roadway, this "lip" should be wedged with a little bit of HMA so that wheelchairs don't potentially get hung up on it.

Photo 14: An example of construction equipment and materials being stored well outside of the roadway clear zone.

Photo 15: Here materials are stored unprotected right along the edge of the travelway. All materials and equipment must be stored a minimum 16 feet off of the roadway or behind concrete barrier.

Photo 16: Cones that do not meet the reflectivity requirements need to be removed from the project and replaced with cones in good condition.

Photo 17: Like Photo 15, this concrete pipe was stored right along the edge of the travelway.

Photo 18: Here the Contractor has installed construction fencing around the back and sides of the excavated area to prevent anybody from walking into this potential hazard.

Photo 19: Another photo of equipment and materials stored too close to the travelway.

FINDINGS and RECOMMENDATIONS:

1. **Throughout the work area, business access and driveways are well maintained.**
2. **All sidewalks and ramps that are closed should provide for a detour, keeping in mind that all detours need to be ADA compliant, particularly if the sidewalk closed was ADA compliant. See Photos 6, 10 and 13.**
3. **If existing traffic markings are eradicated by construction activities, they should be re-established as temporary until the permanent markings are installed. See Photo 7.**
4. **All temporary construction signs should be made of approved plywood or aluminum. See Photo 9.**
5. **Signs should not encroach on the travel portion of the roadway. See Photo 8.**
6. **All construction equipment and materials should be stored a minimum of 16 feet off of the roadway or behind concrete barrier. See Photos 15,17, and 19.**
7. **Any cones or other reflectorized traffic control devices that don't meet specification requirements should be removed and replaced. See Photo 16.**

Submitted by: Dean Dickinson Date: 8/16/17

Reviewed by: _____ Date: 8/16/17

Anthony Kwentoh

All in Attendance

Cc: James Connery – Mary Baier

Robert Turner (FHWA)

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 40-136 **District:** 2

Date: 7/21/2017 **Time:** 1:00 pm **Weather, Temp.:** Sunny, 92 F

Town: East Haddam **Route:** 82

Road Type: ☐ Interstate ☐ Expressway ☒ Secondary ☐ Local

FOCUS OF REVIEW:

☐ Temporary Lane Closure ☒ Stage Construction

☒ Temporary Signalization ☐ Detour

☐ Pedestrian/Bicycle Access ☐ Night Work

Project Engineer: Pat Warzecha **Chief Inspector:** Torrie Schwab

Prime Contractor: Tully Construction **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: $3.5 M **Percent Complete:** 10%

Calendar Days Allotted: 488 **Calendar Days Completed:** 98

REVIEW PARTICIPANTS

NAME	REPRESENTING
Torrie Schwab	CTDOT
Patrick Warzecha	CTDOT D2 Construction
Anthony Kwentoh	CTDOT OOC
Dean Dickinson	CTDOT (Construction)
Kiah Patten	CTDOT OOC
Bahira Korkutovic	CTDOT Traffic
Kermit Ramdial	CTDOT (Construction)

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.- **Yes**

2. Have there been any incidents within your project's work zone?- **No**

3. What documents do you reference for work zone information?- **Plan sheets, specs. MUTCD, Construction Manual, pocket guides.**

4. What, if any, accommodations have been made for Emergency Services?- **Fire, police and EMS have been notified regarding construction**.

5. What, if any, accommodations have been made for pedestrians and bicyclists?- **N/A**

6. Have ADA requirements been met for pedestrians?- **N/A**

7. Where is the designated laydown area for materials to be stored?- **On site behind the barrier wall**

8. Where is the designated area for equipment to be stored when construction is not in progress?- **Same as 7.**

9. Chief Inspector Comments:- **No comments**

10. Project Engineer Comments:- **The passing zones from the West approach were eliminated for safety considerations during construction.**

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?- **No TMP**

2. What special provisions related to work zones were added to this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them? **Item #0971001A(MP&T), Item #1105001A thru Item #1107011A, Item #1112410A, Item #1111201A thru Item #1111206A, Item #1118051A thru Item #1118057A, Item #1118306A, Item #1131002A and Item #1803071A**

3. What work zone traffic plans are included in the project plans? Are they complete and current?- **Dwg. HWY-10 (Stage 1)**

   Dwg. HWY-11 (Stage 2)

4. Is there stage construction? If so, explain.- **Yes, there are two stages**

5. Are there any issues with oversize/overweight or construction loads on bridges?- **OS/OW was notified in April of lane width reduction to 10 ft. and alternate one lane flow with two 1 ft. shoulders.**

6. Is there is temporary signalization? If so, explain. – **Microwave detectors on overhead traffic signals in both directions.**

7. Is there is a detour? If so, explain.- **No**

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.- **Yes**

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	**16 feet**

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A.		**Travel Hazards**
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B.		**Traffic Control Devices**
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☐ Cones ☒ Drums ☒ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☒	☐	c. Anchored? – **Concrete barrier wall is pinned on bridge**
☒	☐	**3. Warning lights?** Type: ☒ High intensity ☐ Low intensity
☒	☐	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☐	a. Functioning in the correct mode?
		b. Location?
☐	☒	**5. Changeable Message Sign (CMS)?**
		a. How many?
		b. Location?
☐	☐	c. Message understandable?
		d. Number of frames displayed?
☐	☐	e. Timing between screens acceptable?
☐	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?- N/A**
		a. How many?
		b. Location?
C.		**Temporary Pavement Markings**
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☐ Epoxy
☒	☐	a. Legible?
☐	☒	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D.		**Personal Protective Equipment**
☒	☐	Is everyone wearing the proper reflective equipment?
E.		**Traffic Control Personnel- N/A**

PART 3: WORK ZONE INSPECTION CHECKLIST

		☐ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☐	1. Wearing high-visibility gear?
☐	☐	2. Using traffic control devices (i.e. paddle and pole)
☐	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access- **N/A**		
☐	☐	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☐	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Photo 1: Photos 1 and 2 show permanently mounted construction signs were well placed in areas with good sightline for drivers.

Photo 2:

Photo 3: The temporary signalized one way traffic control system is well suited for the project and working well.

Photo 4: Type 3 Barricades are well placed to prevent any one walking down the road from wandering into the work area.

Photo 5: Any damage that may affect a traffic control device's ability to reflect light should be repaired or replaced.

Photo 6: The work site is well delineated, protected, and bounded so as to keep motorists and pedestrians out of the work zone. The DE-9 sign has been replaced with new sign No. 50-5032

Photo 7: All equipment and materials was stored behind temporary barrier or at least 16 feet off of the roadway.

Photo 8: Here, materials are stored well outside the required clear zone of 16 feet off of the roadway.

Photo 9: Here, temporary concrete barrier is well "pinned" to the existing bridge deck.

Part 5: Findings and Recommendations

Findings:

1. One barrel was not compliant (Photo 5)
2. DE-9 sign is no longer used(Photo 6)

Recommendations:

1. Non- compliant barrel should be repaired or replaced.
2. New sign No. 50-5032 should replace the DE-9

Submitted by: _____
Kermit Ramdial

Approved by: _____
Tony Kwentoh

All in Attendance

CC: James Connery – Mary Baier
FHWA Safety Engineer
District Engineer
Assistant Engineer
TSE
Project Design Lead

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0050-0219 **District:** 3

Date: 8/23/2017 **Time:** 6:30 pm **Weather, Temp.:** Clear, 76°

Town: Fairfield, Bridgeport **Route:** I-95

Road Type: ☒ Interstate ☐ Expressway ☐ Secondary ☐ Local

FOCUS OF REVIEW:

☒ Temporary Lane Closure
☐ Temporary Signalization
☐ Pedestrian/Bicycle Access
☐ Stage Construction
☒ Detour
☒ Night Work

Project Engineer: Prashant Chandra **Chief Inspector:** Jason Smith

Prime Contractor: Waters Construction Co., Inc. **Inspection Forces:** ☐ State ☒ Consultant

Contract Value: $13,588,590.13 **Percent Complete:** 75%

Calendar Days Allotted: 371 **Calendar Days Completed:** 265

REVIEW PARTICIPANTS

NAME	REPRESENTING
Daniel Stafko	District 3 Construction
Prashant Chandra	District 3 Construction
Jason Smith	Beta Group Inc.
Daniel Waida	Beta Group Inc.
Michael Chachakis	Division of Traffic Engineering
David Rundio	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Dean Dickinson	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   Yes, there have been seven fender benders from the beginning of the taper over a two-year period.

3. What documents do you reference for work zone information?

   The Maintenance and Protection of Traffic special provision and the Manual on Uniform Traffic Control Devices are referenced.

4. What, if any, accommodations have been made for Emergency Services?

   Bridgeport Operations are notified when ramps are being closed. Currently, bridge joints were being done across the roadway and EMS can't get through but a police escort is available if needed.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   Not applicable.

6. Have ADA requirements been met for pedestrians?

   Not applicable.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored at 300 Bostwick Avenue, Bridgeport which is Waters Construction's company yard.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is also stored at Waters' yard.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is a TMP and it's located on ProjectWise. The field staff was unaware or the TMP and has not been updating the document. The review team explained the importance of the document and the need to update it on a yearly basis.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   NTC – Traffic Signals, Rev. 09/14

   NTC – Project Coordination, Rev. 11/15

NTC – Use of State Police Officers, Rev. 06/12

Item #0970006A – Trafficperson (Municipal Police Officer), Rev. 06/15

Item #0970007A – Trafficperson (Uniformed Flagger), Rev. 06/15

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

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

Item #1131007A – Portable Work Zone Management System Deployment, Rev. 04/16

Item #1131008A – Portable Work Zone Management System Operations, Rev. 04/16

Item #1131009A – Portable Work Zone Management System Queue Trailer/Sensor (PQT), Rev. 04/16

Item #1131012A – Portable Work Zone Management System Changeable Message Sign/Queue Sensor Trailer (PCMQ), Rev. 04/16

Item #1131013A – Portable Work Zone Management System Queue Trailer Relocation, Rev. 04/16

Item #1210101A – 4" White Epoxy Resin Pavement Markings, Rev. 02/14

Item #1210102A – 4" Yellow Epoxy Resin Pavement Markings, Rev. 02/14

Item #1210103A – 6" White Epoxy Resin Pavement Markings, Rev. 02/14

Item #1210104A – 8" White Epoxy Resin Pavement Markings, Rev. 02/14

Item #1210105A – Epoxy Resin Pavement Markings, Symbols and Legends, Rev. 02/14

Item #1210106A – 12" White Epoxy Resin Pavement Markings, Rev. 02/14

Item #1806201A – Type D Portable Impact Attenuation System, Rev. 01/16

The field staff weren't kept informed about the change in the Traffic Engineering standard drawings for the Epoxy Resin Pavement Markings. The process for grinding before installing the markings changed and the new process that the Subcontractor did wasn't according to the contract plans. The quantity and layout of the markings has now changed. Also, the Subcontractor painted 12 inch chevron legends for the gore area; however it was changed to 24 inches per the new standard.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   DTR-01 – DTR-12: Detour Signing Plans

   The staff doesn't have any issues with the detour plans.

4. Is there stage construction? If so, explain.

   No, there is no stage construction but there are three sequences: 1) Fairfield, 2) Bridgeport, 3) additional mile that was added for project scope change.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   Yes, there is a weight restriction on Bridge No. 0099 and 0105A for the Contractor's construction equipment.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   Yes, there are detours for ramp closures.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes.

   * Design Speed Standard:

Roadway Speed	Clear Zone Distance
60-70 mph	**30 feet**
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	16 feet

9. Chief Inspector Comments:

   The Chief Inspector says he has to constantly tell the Contractor to pick up fallen devices through the night.

   He also would like the "Reduce Speed to 45 MPH" construction signs back in the work zone traffic plans. He understands that they aren't enforceable but suggests having

them be black and white to have them enforceable and then cover them when work is in progress.

He says the speed trailer is not effective in reducing speeds through the work zone.

10. Project Engineer Comments:

The Project Engineer asks if the Department has considered automated radar photography to ticket for speeding. The Chief Inspector adds that a portion of the ticket can be given to the Town and a portion can be given to the project which could pay for the State Police item.

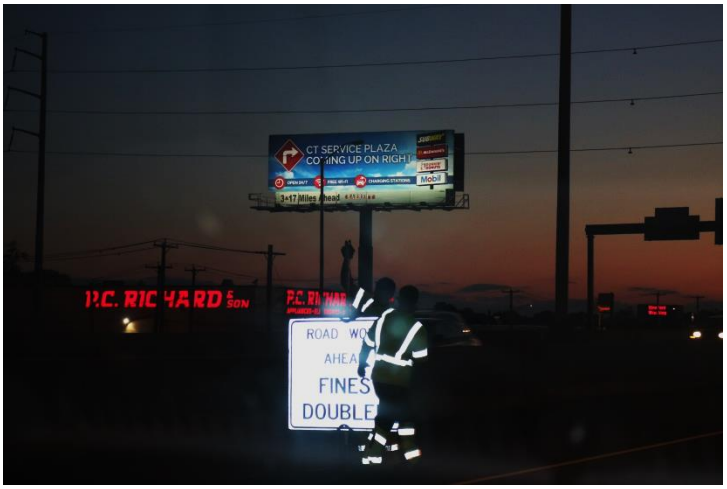
PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☒	☐	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☒	☐	**4. Advance Flashing Arrow?** Type: ☒ Portable ☒ Truck-mounted
☒	☐	a. Functioning in the correct mode?
		b. Location? **In the closed shoulder**
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **Three**
		b. Location?
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☒	☐	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many? **Five**
		b. Location? **Assisted with pattern installation on both sides of I-95**
C. Temporary Pavement Markings		
☐	☒	Temporary pavement markings? Type: ☐ Tape ☐ Paint ☐ Epoxy
☐	☐	a. Legible?
☐	☐	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☒ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☐	1. Wearing high-visibility gear?
☐	☐	2. Using traffic control devices (i.e. paddle and pole)
☐	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☐	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☐	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

The Contractor has a tailgate talk before proceeding out to I-95.



I-95 SB: The first sign installed is a FINES DOUBLED sign.

I-95 SB: The Rolling Road Block used while installing the pattern.

I-95 SB: A TMA used to close on ramps during the RRB had a flashing straight bar to indicate lane closed.

The Contractor has the signs mounted on plywood which is an acceptable rigid material to use.

I-95 SB: The signs have a bit of smudging and needs to be cleaned.

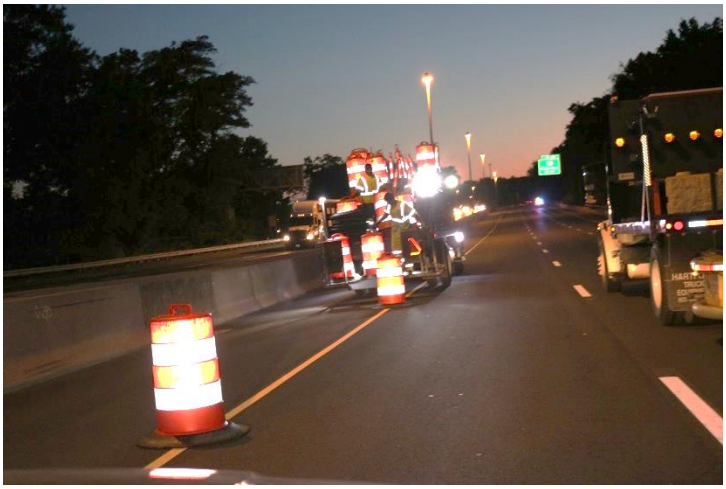
PART 4: WORK ZONE INSPECTION PHOTOS

I-95 SB: The next sign was a LEFT LANE CLOSED AHEAD on both sides of the roadway.

I-95 SB: Within the taper a TMA is parked with a flashing arrow directing traffic to merge right.

I-95 SB: The last sign to be installed on both sides is the merge right depiction.

I-95 SB: The sign crew started the tangential to the pattern using traffic cones.



I-95 SB: The taper is started from the left shoulder and consists of traffic drums.

I-95 SB: Finally, an END ROAD WORK sign is placed at the end of the pattern only in the closed left lane.

PART 4: WORK ZONE INSPECTION PHOTOS

I-95 NB: This traffic drum is missing reflective tape and is marginally acceptable.

I-95 NB, Exit 21: A CMS on the on ramp states ROAD WORK AHEAD, LANES CLOSED AHEAD.

I-95 NB: This traffic drum is partially misshaped which is marginally acceptable.

I-95 NB: There is a TMA with a CMS mounted on back stating SLOW DOWN, ROAD WORK on two frames.

PART 4: WORK ZONE INSPECTION PHOTOS

I-95 NB: A CMS a part of the PWZMS states BE PREPARED TO STOP, STOPPED TRAFFIC 1 MILE on two frames.

I-95 NB: About 1000 feet away, an overhead Variable Message Sign states on two frames LEFT LANE CLOSED, ROAD WORK EXITS 24-27.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. The Contractor held a tailgate talk before proceeding out onto the roadway.
2. The contractor stated that there were 5 crash trucks and 3 State troopers on site. Normally, there are 5 troopers on site. A state trooper assisted the sign crew while the traffic drums and cones were being installed. Adjacent to live traffic, the state trooper was used to block the open lane adjacent to the closed lane in order to protect the workers installing the traffic drums.
3. Both rolling roadblocks, one on I-95 SB at 8 PM and the other on I-95 NB at 9 PM, were initiated and removed within 8 minutes and 9 minutes, respectively. Time was still needed after the roadblock was removed from installing the rest of the work zone drums, cones, and signs.
4. Drum spacing in tapers was held to 40 feet, while cone spacing in the tangent sections were kept to 80 feet.
5. On I-95 NB, the queue that resulted from implementing the work zone extended to the nearest Service Plaza.
6. The I-95 southbound "Your Speed" radar sign was black (unlit), even though there was a fair amount of traffic on I-95. Earlier in the night it was observed that the sign was constant on for speeds in the upper-30's and would flash for speeds over 40 MPH. It is unclear why the sign appeared off.
7. "Road Work Ends" signs were only installed on one side of the road (the closure side) instead of both sides of the road, as shown in the special provision for Item No. 0971001A: Maintenance and Protection of Traffic.
8. Some construction signs were dirty with significant scuffing. The signs were still reflective, but were not in ideal shape.
9. There was a traffic drum that was horizontally sliced that compromised the physical integrity of the device. There were also drums and cones with reflective tape that was peeling off.
10. I-95 mainline liability signs seemed to have been missing.
11. The portable CMS near the I-95 NB Exit 21 on-ramp had the "Road Work Ahead" and "Lanes Closed Ahead" messages. "Lanes Closed Ahead" was not technically correct, since only the left lane was closed.
12. On I-95 SB there was a truck mounted CMS that read "Constr. Zone" and "Fines Doubled." "Constr. Zone" is not an approved message. Refer to the special provision for Item No. 0971001A: Maintenance and Protection of Traffic for approved messages.
13. There were sections of traffic cones that were installed crossing the outside of the lane line, effectively narrowing the width of the travel lane. The traffic cones and drums should be installed either within the lane or on the lane line not to minimize the travel

lane width. Tight lane widths increase the chances of these devices being struck by vehicles, as well as the potential for vehicle sideswipes.

RECOMMENDATIONS:

1. Holding tailgate talks before every shift is a good practice to ensure the team works efficiently.
2. Using TMAs instead of state police vehicle to protect sign crew in close lanes is a preferred practice. Also, closing the middle lane before the limitations of operation allows is considered interference to traffic.
3. The Contractor executed the Rolling Road Blocks within the allowable 15 minutes.
4. The traffic cones and drums were installed according to plan.
5. The queue that formed could be due to the location of I-95 which has a historical large amount of traffic regardless.
6. The radar speed display should be operational during the entire time the work zone is in place. This is a traffic calming strategy that can help promote safety in the work zone. If the device was having technical issues, it should be corrected as soon as possible.
7. Compliance with the traffic plans should be enforced and have signs installed on both sides of the roadway as required in the contract.
8. Traffic signs that are dirty or scuffed should be cleaned before use. If they cannot be cleaned to restore reflectivity, they should be replaced.
9. Traffic devices that are misshaped, missing reflectivity, or badly damaged need to be replaced.
10. Missing liability signs should be corrected.
11. The CMS messaging should be compliant with the M&PT special provision.
12. Enforcement of the specifications for appropriate message to the motorists.
13. The lanes should remain at the full width unless specifically requested to the District for a reduction.

Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

Anthony Kwentoh

All in Attendance

Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0058-0327 **District:** 2

Date: 6/21/17 **Time:** 9:30am **Weather, Temp.:** Sunny, 80

Town: Groton **Route:** Crystal Lake Road

Road Type: ☐ Interstate ☐ Expressway ☐ Secondary ☒ Local

FOCUS OF REVIEW:

☒ Temporary Lane Closure ☐ Stage Construction

☐ Temporary Signalization ☐ Detour

☒ Pedestrian/Bicycle Access ☐ Night Work

Project Engineer: Jason T. Burgess **Chief Inspector:** Mark Fullerton

Prime Contractor: American Industries **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: $3,495,000 **Percent Complete:** 22%

Calendar Days Allotted: 308 **Calendar Days Completed:** 67

REVIEW PARTICIPANTS

NAME	REPRESENTING
Mark Fullerton	District 2 Construction
Kiah Patten	Office of Construction
Dean Dickinson	Office of Construction
Anthony Kwentoh	Office of Construction
Jason Burgess	District 2 Construction
Colin Baummer	Division of Traffic Engineering
Tyler Hespeler	District 2 Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain. **Yes.**

2. Have there been any incidents within your project's work zone? **No.**

3. What documents do you reference for work zone information? **Project plans and specifications and the ATSSA Guide for Devices.**

4. What, if any, accommodations have been made for Emergency Services? **A safety meeting was conducted at the beginning of the project with local and naval police. No additional special arrangements were made with local EMT or ambulance services.**

5. What, if any, accommodations have been made for pedestrians and bicyclists? **None. There is an undisturbed sidewalk on the north side of the road that pedestrians can use. Bicyclists will use the roadway as usual.**

6. Have ADA requirements been met for pedestrians? **As part of this project, all new construction within the project limits will meet current ADA requirements.**

7. Where is the designated laydown area for materials to be stored? **Drainage structures have been stored along the construction work zone at least 16 feet off of the roadway. There is also a small storage area at the eastern end of the project on the corner of Crystal Lake Road and Military Highway.**

8. Where is the designated area for equipment to be stored when construction is not in progress? **Equipment is stored on the corner of Crystal Lake Road and Military Highway, in areas along the construction work zone that are greater than 16 feet off the roadway. There is also an area on the western end of the project, near Route 12, where some equipment can be stored behind guardrail, beyond the defection zone.**

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful? **There is no Transportation Management Plan for this project.**

2. What special provisions related to work zones were added to this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them? **Item #0971001A – Maintenance and Protection of Traffic, Item #0981101A – Opposing Traffic Lane Divider, Item #1111201A – Temporary Detection (Site No. 1), Item #1111202A - Temporary Detection (Site No. 2), Item #1111203A - Temporary Detection (Site No. 3), Item #1112259A – Video Detection Processor, Item #1113901A – Camera Cable, Item #1118051A – Temporary Signalization (Site No. 1).**

3. What work zone traffic plans are included in the project plans? Are they complete and current? **Standard Department Traffic Plan #'s 11, 15, and 17 are included.**

4. Is there stage construction? If so, explain. **No.**

5. Are there any issues with oversize/overweight or construction loads on bridges? **No.**

6. Is there is temporary signalization? If so, explain. **No, but temporary sensors will be installed prior to performing the full depth reclamation of the roadway.**

7. Is there is a detour? If so, explain. **No.**

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain. **Yes, with one exception. Some basin tops along the south side of Crystal Lake Road were set on their respective basin wells, but remained significantly raised above the excavated surrounding ground. They are raised enough to be considered an immoveable object within the required 16 foot clear zone. See photo number 11.**

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	16 feet

9. Chief Inspector Comments: **As part of this project property has been purchased by the State in front of a garage that previously owned the property. Currently, the garage owner continues to park cars in this area until the widening in that area begins. The Chief Inspector inquired as to the liability of the State under such circumstances. The cars will be moved within the next two months as the Contractor's work schedule dictates. The Chief Inspector commented that it would be desirable to have better direction, either in the plans and specifications or in a Departmental policy, to follow when transitioning property (and clearing it) over to the property of the State.**

10. Project Engineer Comments: **Same as the Chief Inspector above.**

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☒	☐	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **The mounting heights for all signs appeared to be correct.**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☐	☒	c. Anchored? **N/A**
☐	☐	**3. Warning lights?** Type: ☒ High intensity ☐ Low intensity
☒	☐	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☒	a. Functioning in the correct mode? **N/A**
		b. Location? **N/A**
☐	☒	**5. Changeable Message Sign (CMS)?**
		a. How many? **N/A**
		b. Location? **N/A**
☐	☒	c. Message understandable? **N/A**
		d. Number of frames displayed? **N/A**
☐	☒	e. Timing between screens acceptable? **N/A**
☐	☒	f. Readable from a distance? **N/A**
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many? **N/A**
		b. Location? **N/A**
C. Temporary Pavement Markings		
☐	☒	Temporary pavement markings? Type: ☐ Tape ☐ Paint ☐ Epoxy
☐	☒	a. Legible? **N/A**
☐	☒	b. Conflicting other markings? **N/A**
☐	☒	c. If nighttime, markings visible? **N/A**

D.	**Personal Protective Equipment**	
☒	☐	Is everyone wearing the proper reflective equipment?
E.	**Traffic Control Personnel**	
		☐ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☒	1. Wearing high-visibility gear? **N/A**
☐	☒	2. Using traffic control devices (i.e. paddle and pole) **N/A**
☐	☒	3. Properly positioned? **N/A**
F.	Pedestrian / Bicycle Access	
☐	☒	1. Signs
☒	☐	a. Clean and visible?
		b. Mounting height?
☒	☐	2. Designated pathways?
☒	☐	a. Clear?
☐	☒	b. ADA compliant? **Existing conditions are not 100% compliant. Final configuration will be 100% compliant.**

PART 4: WORK ZONE INSPECTION PHOTOS

Photo 1: Signs on Route 12 South approach to Crystal Lake Road were well placed.

Photo 2: Approach signs on Military Highway were very visible and well placed.

Photo 3: Another view of the Military Highway (north) approach to Crystal Lake Road.

Photo 4: Here is an extra sign placed on the Military Highway approach to Crystal Lake Road to notify motorists of increased truck traffic. Ahead at the corner intersection with Crystal Lake Road is one of the Contractor's equipment storage areas. It also is an area where the Contractor is processing aggregate. Trucks and equipment enter and exit regularly.

Photo 5: Military Highway access point to the Contractor's equipment storage and aggregate processing area.

Photo 6: The space for lead in signs is limited at the beginning of Crystal Lake Road heading east. The Contractor did a good job spacing and arranging the signs to alert motorists of a road work area ahead.

Photo 7: Another photo of signs placed. Here you see a pickup truck partially blocking the "Road Work Ahead" sign. The truck was only parked there briefly.

Photo 8: The taper to take the right lane was not well formed. As you can see from this photo, too many cones were left on the edge of the roadway. This muddles the delineation of cones as drivers approach the work zone. Any cones on the edge of the road should be removed from the vicinity of the taper to insure a clear sight line of tapered cones for traffic to follow.

Photo 9: Here, the Contractor had just completed excavation of a small pit, 10'x12'x6'deep. The protection around the pit is inadequate. Pedestrians or anyone walking through this area are susceptible to falling in. Better protection is needed to fully block off this pit to anyone passing through this area.

Photo 10: Here is the same area after the Contractor made some adjustments. The area is now well delineated and prevents a potential clear pass-through by pedestrians or others passing along the edge of the roadway.

Photo 11: These new basins being set are within the 16 foot clear zone and are protruding high enough above the surrounding ground to create a potential hazard to motorists if left like this overnight. The drop-off is rather abrupt and too close to the travel way once the pattern is taken down. And although these basins had been worked on earlier, the grates were left off of several of them while they were not being worked on. If the basin is left unattended the grates or some other protection should be placed over the opening.

PART 5: FINDINGS AND RECOMMENDATIONS

Findings:

1. Additional cones on the side of the roadway next to cones placed to form a taper can create a muddled sightline along the taper for drivers.
2. Catch basin tops that were being set along the roadway were within 16 feet of the edge and were raised enough to be considered a roadside hazard.
3. There was an excavated area that was mostly coned off, but left open on one side partly along the edge of the road. Also, some catch basins had their grates removed because they had been worked on earlier in the day.

Recommendations:

1. In the vicinity of any taper, remove any barrels, cones, or barricades away from the cones forming the taper so that motorists can fix their sightline on the taper and not be distracted visually by other traffic control devices that aren't part of the pattern.
2. Once drainage structures are set, including the tops they should be backfilled enough so that if a vehicle leaves the roadway it can roll over the structure not impact it. In addition, if a drainage structure is not being actively worked on, the grates should be put back or some other protection should be placed over the opening.
3. Excavated areas or other fall hazards that are deep enough to cause injury should be protected with the appropriate traffic and work site control devices.

Submitted by: Dean Dickinson Date: 6/29/17

Reviewed by: _____ Date: 6/29/17
Anthony Kwentoh

All in Attendance
Cc: James Connery – Mary Baier
Robert Turner (FHWA)

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0068-0211 **District:** 2

Date: 7/26/2017 **Time:** 10:00 am **Weather, Temp.:** Sunny, 66°

Town: Killingly **Route:** I-395, Tracy Road

Road Type: ☒ Interstate ☐ Expressway ☐ Secondary ☒ Local

FOCUS OF REVIEW:
☒ Temporary Lane Closure
☒ Temporary Signalization
☒ Pedestrian/Bicycle Access
☒ Stage Construction
☐ Detour
☐ Night Work

Project Engineer: Jason Burgess **Chief Inspector:** Thomas Gadzik

Prime Contractor: Northern Construction Co. **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: $3,740,591.76 **Percent Complete:** 86%

Calendar Days Allotted: 392 **Calendar Days Completed:** 280

REVIEW PARTICIPANTS

NAME	REPRESENTING
Jason Burgess	District 2 Construction
Thomas Gadzik	District 2 Construction
Robert Paradis	Northern Construction Company
Kevin McKernan	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   Yes, there has been about three or four incidents while the project has shifted to the Stage 2 configuration. The project personnel have not been notified of the incidents but the Project Engineer is made aware of them because he volunteers for the local fire department.

3. What documents do you reference for work zone information?

   The Maintenance and Protection of Traffic specification and plans are referenced.

4. What, if any, accommodations have been made for Emergency Services?

   The temporary signal has optical detection that will trip the green light when an Emergency vehicle approaches with a flashing light. The Emergency Services, Fire Department, Ambulance, and State Police were notified of the closure beforehand.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   The five-foot sidewalk on Tracy Road has been maintained. During construction, it has been protected with safety fence and barricades.

6. Have ADA requirements been met for pedestrians?

   Built temporary ramps on existing sidewalks until the permanent ramps and pads were installed.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored within the work zone on Tracy Road or behind barrier on I-395.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored in same location as material.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is no TMP for the project but there should be since the project is on Interstate 395.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   NTC – Lane Change Advanced Notice

   Item # 0970007A – Trafficperson (Uniformed Flagger), Rev. 1/08

   Item # 0971001A – Maintenance and Protection of Traffic, Rev. 2/14

Item # 1118101A – Temporary Signalization, Rev. 8/15

Item # 1131002A – Remote Control Changeable Message Sign, Rev. 4/15

Item # 1210101A – 4" White Epoxy Resin Pavement Markings, Rev. 02/14

Item # 1210102A – 4" Yellow Epoxy Resin Pavement Markings, Rev. 02/14

Item # 1210103A – 6" White Epoxy Resin Pavement Markings, Rev. 02/14

Item # 1210104A – 8" White Epoxy Resin Pavement Markings, Rev. 02/14

Item # 1216020A – 6" Black Aggregate Cover-Up Resign Pavement Markings, Rev. 8/15

Item # 1216021A – 8" Black Aggregate Cover-Up Resign Pavement Markings, Rev. 8/15

Item # 1216022A – 10" Black Aggregate Cover-Up Resign Pavement Markings, Rev. 8/15

There are no concerns with the above listed items.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   Pavement Markings Plan

   Maintenance and Protection of Traffic

   The Stage 2 configuration was difficult for oncoming motorists, especially trucks, to merge into thru traffic but the staff understands that no other configuration could be done.

4. Is there stage construction? If so, explain.

   Yes, there are two stages. The high speed lane was closed in Stage 1 and the low speed and climbing lanes were closed in Stage 2.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   Yes, there are width restrictions. Currently in Stage 2, the one lane open is 11 feet wide with 2 feet shoulders on either side. The OS/OW office was notified of the lane reduction.

6. Is there a temporary signalization? If so, explain.

   Yes, there is a temporary signal with an optical sensor on Tracy Road to assist with the one-way alternate traffic pattern.

7. Is there a detour? If so, explain.

   Yes, there was a detour for 4 nights for local traffic on Tracy Road to accommodate for the demolition of the bridge overhead.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes, any objects on I-395 are stored behind barrier.

   * Design Speed Standard:

Roadway Speed	Clear Zone Distance
60-70 mph	**30 feet**
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	**16 feet**

9. Chief Inspector Comments:

   The Chief Inspector said the Stage 2 configuration had to be negotiated. Blinking yield signs were added on the on-ramp for extra caution to oncoming motorists.

10. Project Engineer Comments:

    The Project Engineer referred to his comments mentioned before about the Stage 2 configuration.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☒	☐	**3. Warning lights?**
☒	☐	a. Functioning?
☒	☐	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☒	☐	a. Functioning in the correct mode?
		b. Location? **Within the work zone on I-395**
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **One**
		b. Location? **On Exit 94 On-ramp**
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many?
		b. Location?
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☐ Paint ☒ Epoxy
☒	☐	a. Legible?
☒	☐	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☐ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☐	1. Wearing high-visibility gear?
☐	☐	2. Using traffic control devices (i.e. paddle and pole)
☐	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☒	☐	1. Signs
☒	☐	a. Clean and visible?
		b. Mounting height? **Adequate**
☒	☐	2. Designated pathways?
☒	☐	a. Clear?
☒	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Tracy Road: This is the work zone as a motorist approaches from the west side. There is the temporary signal above, traffic drums closing the shoulders and closing the eastbound side. The ROAD WORK AHEAD sign is for the multi-use pathway.

Tracy Road: An existing ramp for the multi-use path.

Tracy Road: A temporary signal ahead sign posted. Since it is a diamond-shaped post-mounted sign it needs a barricade warning light attached which it has.

I-395: The work zone is protected by TPCBC. Material, as shown, is stored behind the barrier.

I-395 NB: The work zone over Tracy Road.

PART 4: WORK ZONE INSPECTION PHOTOS

I-395 NB, Exit 94 On-Ramp: The yield signs added to the traffic pattern to help assist motorists merge onto I-395 with the lane closures.

I-395 NB, Exit 94 On-Ramp: A post-mounted ROAD WORK AHEAD sign with barricade warning light and a Changeable Message Sign.

I-395 NB, Exit 94 On-Ramp: The legal sign posted on the ramp.

I-395 NB, Exit 94 On-Ramp: The first frame for the CMS states "ONE LANE ROAD". The lighting on the CMS appears too dim for daylight but the message is still readable as a motorist moves closer to the CMS.

PART 4: WORK ZONE INSPECTION PHOTOS

I-395 NB, Exit 94 On-Ramp: The second frame states "YIELD CAUTION YIELD".

I-395 NB: The post-mounted END ROAD WORK sign.

I-395 NB: The travel lane that's open adjacent to the work zone. The work area has a flashing arrow showing a straight bar indicating the lane is closed.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. There was no Transportation Management Plan included in the project documents.
2. With the limited space, the Stage 2 Configuration makes it difficult for oncoming traffic to merge onto the highway, especially at night.

RECOMMENDATIONS:

1. There should be a TMP for the project since the project is on an interstate which is considered to be significant.
2. Other staging options to assist the oncoming traffic should be explored by Traffic Engineering and Design.

Submitted by: _____ Date: 8/8/17

Kiah Patten

Reviewed by: _____ Date: 8/8/2017

Anthony Kwentoh

All in Attendance
Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0102-0346 **District:** 3

Date: 7/10/17 **Time:** 1:00pm **Weather, Temp.:** Sunny, 85

Town: Norwalk **Route:** Route 1 and Stuart Ave.

Road Type: ☐ Interstate ☐ Expressway ☒ Secondary ☒ Local

FOCUS OF REVIEW:

☒ Temporary Lane Closure ☒ Stage Construction

☒ Temporary Signalization ☐ Detour

☒ Pedestrian/Bicycle Access ☒ Night Work

Project Engineer: Travis Woodward **Chief Inspector:** Patrick Dasilva

Prime Contractor: Water's Construction **Inspection Forces:** ☒ State ☒ Consultant

Contract Value: $2,865,000 **Percent Complete:** 25%

Calendar Days Allotted: 395 **Calendar Days Completed:** 100

REVIEW PARTICIPANTS

NAME	REPRESENTING
Patrick Dasilva	District 3 Construction
Travis Woodward	District 3 Construction
Dean Dickinson	Office of Construction
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction
Michael Chachakis	Division of Traffic Engineering
Stephen Bruno	Division of Traffic Engineering

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain. **Yes.**

2. Have there been any incidents within your project's work zone? **No.**

3. What documents do you reference for work zone information? **Project plans and specifications.**

4. What, if any, accommodations have been made for Emergency Services? **A work zone safety meeting was conducted at the beginning of the project with local police. The Department's Highway Operations Center is also informed when the Contractor is out on the road.**

5. What, if any, accommodations have been made for pedestrians and bicyclists? **When a sidewalk is removed or disturbed a temporary sidewalk is constructed to accommodate pedestrians and others using the sidewalk.**

6. Have ADA requirements been met for pedestrians? **As part of this project, all new construction within the project limits will meet current ADA requirements.**

7. Where is the designated laydown area for materials to be stored? **The primary area is a piece of State property (maintenance lot) at the intersection of Belden Street and Van Buren Avenue. Some additional equipment and materials are stored along the roadway within the project limits outside of the clear zone minimum. (16 feet)**

8. Where is the designated area for equipment to be stored when construction is not in progress? **Same as 7.**

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful? **There is no Transportation Management Plan for this project.**

2. What special provisions related to work zones were added to this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them? **Item #0971001A – Maintenance and Protection of Traffic, Item #1111201A – Temporary Detection (Site No. 1), Item #1111202A - Temporary Detection (Site No. 2), Item #1118012A – Removal and/or Relocation of Traffic Signal Equipment, Item #1118051A – Temporary Signalization (Site No. 1), Item # Temporary Signalization (Site No. 2), Item #1118301A – Relocate Pre-emption System (Site No. 1), Item #1118302A – Relocate Pre-emption System (Site No. 2), Item #1803071A – Type B Impact Attenuation System (Tangential).**

3. What work zone traffic plans are included in the project plans? Are they complete and current? **Traffic Standards TRA-1 thru TRA-6 and the prosecution and progress phasing plan.**

4. Is there stage construction? If so, explain. **Yes. There are 4 stages. 1) Widen north side of Route 1. 2) Widen the south side of the road. 3) Install traffic signalization and other features. 4) Mill and pave the roadway.**

5. Are there any issues with oversize/overweight or construction loads on bridges? **No.**

6. Is there is temporary signalization? If so, explain. **Yes. There is one that will use the existing signal to make the adjustment.**

7. Is there is a detour? If so, explain. **No.**

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain. **Yes, with one exception. The clear zone requirement is 16 feet for this project. See photo number 13.**

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	16 feet

9. Chief Inspector Comments: **Same as Project Engineer.**

10. Project Engineer Comments: **This project has a sister project (Project No. 102-325) on Route 1 just north of this project. The Project Engineer explained that there is a major dispute with language interpreted in the Maintenance and Protection of Traffic language vs. the Limits of Operations requirements of the project. The dispute does not affect this project.**

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☒	☐	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **The mounting heights for all signs appeared to be correct.**
☐	☐	d. Mounted properly?
☐	☐	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☐	☒	c. Anchored? **N/A**
☒	☐	**3. Warning lights?** Type: ☒ High intensity ☐ Low intensity
☐	☒	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☐	a. Functioning in the correct mode? **N/A**
		b. Location? **N/A**
☐	☒	**5. Changeable Message Sign (CMS)?**
		a. How many? **N/A**
		b. Location? **N/A**
☐	☐	c. Message understandable? **N/A**
		d. Number of frames displayed? **N/A**
☐	☐	e. Timing between screens acceptable? **N/A**
☐	☐	f. Readable from a distance? **N/A**
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many? **N/A**
		b. Location? **N/A**
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☐ Paint ☐ Epoxy
☒	☐	a. Legible? **N/A**
☐	☒	b. Conflicting other markings? **N/A**
☒	☐	c. If nighttime, markings visible? **N/A**

D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?
E. Traffic Control Personnel		
		☐ State Police ☒ Municipal Police ☒ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☒	☐	1. Wearing high-visibility gear? **N/A**
☐	☐	2. Using traffic control devices (i.e. paddle and pole) **N/A**
☐	☐	3. Properly positioned? **N/A**
F. Pedestrian / Bicycle Access		
☐	☒	1. Signs
☒	☐	a. Clean and visible?
		b. Mounting height?
☒	☐	2. Designated pathways?
☒	☐	a. Clear?
☐	☒	b. ADA compliant? **Existing conditions are not 100% compliant. Final configuration will be 100% compliant.**

PART 4: WORK ZONE INSPECTION PHOTOS

Photo 1: Photos 1 and 2 showing work zone approach signs along Route 1, north, mounted just at the outside edge of the sidewalk allowing enough room for pedestrians to pass.

Photo 2

Photo 3: More lead in signs, northbound, Route 1, approaching the work zone. Although there appears to be enough room for pedestrians to pass, a minimum width of 36 inches is required. Also, the attached flashing warning lights are not crashworthy compliant. The Contractor may submit a certification of crash tests to be approved if they are going to be used on portable signs and barrels. If struck by vehicles the lights could become detached and become projectiles.

Photo 4: This lead in sign, Route 1, NB is partially blocking the sidewalk. The sign should be moved to the right and placed just on the edge of the grassy area.

Photo 5: Route 1, NB approaching the tapered section. The warning lights on the barrels are unnecessary and may become projectiles if hit. If the warning lights were needed the attachment system would have to be submitted and approved by the Department. Also, the "Sidewalk Closed" sign should be accompanied by a Type 3 Barricade located just behind the sign.

Photo 6: This is a photo of the work zone area (see photo 5) from across the road. Here, the use of warning tape helps better delineate the work area to construction workers and potential pedestrians, bicyclists, etc.…

Photo 7: Looking south on Route 1. This sidewalk section is being reconstructed. When reconstructing existing sidewalk areas, the existing condition and functionality must be maintained or improved while the new sidewalk is being built unless a pedestrian detour is provided. The temporary condition of this sidewalk may not be adequate for some pedestrian groups.

Photo 8: Showing the southern end of the same sidewalk as in Photo 7. The crushed gravel ramp formed at the transition is approximately 6 inches high by 12 inches long. The existing sidewalk condition has not been matched or made better at this location.

Photo 9: Stuart Road at Route 1. Here, the Contractor has maintained the condition of the side walk during reconstruction by surfacing the affected area with temporary asphalt. Also, notice that the cone closest in the photo is in poor condition. As cones and barrels deteriorate they should be removed from the project and replaced accordingly.

Photo 10: Route 1, SB. "Business Access" signs were placed as needed in front of business driveways that may be obscured (even slightly) to inform motorists and pedestrians that they are still open during construction.

Photo 11: This is an area just off Route 1 where drainage was installed and tied into the drainage system along I-95, SB. The pre-existing condition included a guiderail that provided a barrier between the top of the slope and the I-95 right of way. A fence, temporary concrete barrier or Type 3 barricades should be installed, matching or bettering the system that was there before construction to keep workers, pedestrians, and vehicles from driving or walking and possibly falling down the slope into the right of way to I-95.

Photo 12: Showing the slope (in photo 11) down to the I-95 right of way.

Photo 13: This is the same area as photos 11 and 12. An attempt to use equipment to block off the slope to I-95 has resulted in a potential clear zone hazard. All equipment and materials are to be stored a minimum of 16 feet off of the roadway.

Photo 14: Same are as photos 11, 12, and 13. This is an area where equipment and materials are stored for use on the project. Everything here, except the small backhoe noted in Photo 13, is stored well outside the required 16 foot clear zone.

Photo 15: This cone has lost a significant amount of reflective material. Cones in poor condition should be replaced.

PART 5: FINDINGS AND RECOMMENDATIONS

Findings:

1. Warning lights should not be installed on barrels or portable signs unless they are specified (Photos 3 and 5.) If the sign or barrel is hit the warning light could potentially become detached and act as a projectile. If warning lights are for some reason necessary on barrels, an attachment or fastening plan must be submitted for approval. Otherwise, warning lights should only be used on post mounted signs as specified.
2. Portable signs should be installed off of sidewalk areas so as not to block pedestrian access (Photo 4.)
3. If a sidewalk is closed a Type 3 Barricade should be installed across the sidewalk in addition to the sidewalk closed sign (Photo 5.)
4. The sidewalk condition in construction on the northern side of Route 1 west of Stuart Ave does not meet or exceed the pre-existing condition of the sidewalk (Photos 7 and 8.) An example of meeting or exceeding the pre-existing condition (of a sidewalk) can be seen in Photo 9.
5. If fencing or guardrail is removed as part of the construction work, temporary fence, concrete barrier and/or Type 3 barricades should be installed as a temporary measure to provide positive protection and delineation for workers and pedestrians that may wander into this area from the Interstate 95 right of way (Photos 11 and 12.)

6. Equipment and materials need to be stored outside of the "clear zone." The clear zone for this project is 16 feet (Photo 13.)
7. Worn out cones and other traffic control devices that do not meet current requirements for reflectivity should be replaced as needed.
8. "Do Not Enter" sign on the right side of the Lowe's driveway exit was removed.

Recommendations:

1. Remove warning lights from barrels and moveable signs.
2. Set up signs in areas that won't interfere with sidewalk traffic.
3. Include utilization of Type 3 Barrier when closing sidewalks.
4. Upgrade all temporary sidewalk construction so that it is wheel chair and handicap accessible.
5. Reinstall temporary barrier and/or fencing to delineate and protect the project work area from the I-95 non access line.
6. Move any equipment outside of the 16 foot clear zone or behind guiderail or barrier (outside the deflection zone.)
7. Replace worn out cones and barrels.
8. Reinstall the "Do not Enter" sign.

Submitted by: Dean Dickinson Date: 7/18/17

Reviewed by: _____ Date: 7/18/17
Anthony Kwentoh

All in Attendance
Cc: James Connery – Mary Baier
Robert Turner (FHWA)

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0117-0157-R2 **District:** 4

Date: 8/15/17 **Time:** 10:00 am **Weather, Temp.:** Cloudy, 72°

Town: Ridgefield **Route:** 7

Road Type: ☐ Interstate ☐ Expressway ☒ Secondary ☐ Local

FOCUS OF REVIEW:

☒ Temporary Lane Closure
☐ Temporary Signalization
☐ Pedestrian/Bicycle Access
☒ Stage Construction
☒ Detour
☒ Night Work

Project Engineer: David Neelands **Chief Inspector:** Christian Sturm

Prime Contractor: New England Infrastructure **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: $3,489,712.00 **Percent Complete:** 30.73%

Calendar Days Allotted: 399 **Calendar Days Completed:** 365

REVIEW PARTICIPANTS

NAME	REPRESENTING
David Neelands	District 4 Construction
Christian Sturm	District 4 Construction
Erik Schoumaker	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Dean Dickinson	Office of Construction
Kermit Ramdial	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   No.

3. What documents do you reference for work zone information?

   The project references the Maintenance and Protection of Traffic special provisions, the Prosecution and Progress, the contract plans, and the MUTCD.

4. What, if any, accommodations have been made for Emergency Services?

   A Work Zone Safety meeting was held at the beginning of the project and every time there's a lane closure via phone and email.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   Not applicable. There are no sidewalks and bicyclists follow through the work zone.

6. Have ADA requirements been met for pedestrians?

   Not applicable.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored in a commercial lot adjacent to the bridge that's being leased.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored in the commercial lot as well.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is no TMP for the project; however, the project has coordinated detours with the adjacent project No. 117-149.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   NTC – NCHRP 350 Req. for Work Zone Traffic Control Devices, Rev. 05/14

   NTC – Traffic Control Signal Revisions, Rev. 04/05

   NTC – Traffic Drums and Traffic Cones, Rev. 04/05

   NTC – Use of State Police Officers, Rev. 06/12

   Section 12.08 – Sign Face – Sheet Aluminum, Rev. 11/03

Item # 0822005A – Temporary Precast Concrete Barrier Curb (Structure), Rev. 07/14

Item #0822006A – Relocated Temporary Precast Barrier Curb (Structure), Rev. 07/14

Item #0970006A – Trafficperson (Municipal Police Officer), Rev. 01/08

Item #0970007A – Trafficperson (Uniformed Flagger), Rev. 01/08

Item #0971001A – Maintenance and Protection of Traffic, Rev. 08/14

Item #0979003A – Construction Barricade Type III, Rev. 04/14

Item #1131001A – Changeable Message Sign, Rev. 12/02

Item #1210101A – 4" White Epoxy Resin Pavement Markings, Rev. 02/14

Item #1210102A – 4" Yellow Epoxy Resin Pavement Markings, Rev. 02/14

Item #1220013A – Construction Signs – Bright Fluorescent Sheeting, Rev. 01/12

There were no issues with above listed special provisions.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   Traffic Control Signal Plan

   Detour Plan

   Not all business driveways were accounted for on the plans. More "Business Open" signs were needed for business driveways along Route 7.

4. Is there stage construction? If so, explain.

   Yes, there are five weekend closures with detours.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   The OS/OW office is contacted for each closure. No heavy loads can come through the project. There is temporary shoring only designed for standard loads. Also, the last stage will have a width restriction of 11-foot lanes.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   Yes, traffic is detoured from Route 7 to Route 102 then to Route 35. The detour is 3.5 miles long and Municipal Police are used.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes.

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	**24 feet**
≤ 40 mph	16 feet

9. Chief Inspector Comments:

   The Chief Inspector suggested that the messaging for the CMS be changed.

10. Project Engineer Comments:

    The Project Engineer commented that the estimate for the Municipal Police was exceeded the first weekend. The estimate should better reflect the costs for having Municipal Police on projects throughout the project duration.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☐	☒	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☒	☐	e. Need to be covered?
☐	☒	**2. Channelizing Devices?** Type: ☐ Cones ☐ Drums ☐ Barricades
☐	☐	a. Clean and visible?
☐	☐	b. Reflectorized?
☐	☐	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☐	a. Functioning in the correct mode?
		b. Location?
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **Two**
		b. Location? **On Route 7 NB & SB before work zone**
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many?
		b. Location?
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☐ Epoxy
☒	☐	a. Legible?
☒	☐	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☐ State Police ☒ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☐	1. Wearing high-visibility gear?
☐	☐	2. Using traffic control devices (i.e. paddle and pole)
☐	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☐	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☐	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Route 7 NB: The legal sign for the project.

Route 7 NB: A Changeable Message Sign states ROUTE 7 CLOSED 1 MILE AHEAD on two frames. The message is incorrect since the Route is open during the week. The road is closed and detour takes effect on the weekends.

Route 7 NB: This construction sign for the detour is covered during the week.

Route 7 NB: The next signs in the advance warning are post-mounted but tree or shrub growth has obstructed the messaging for the signs. Selective clearing will improve the visibility of the signs.

PART 4: WORK ZONE INSPECTION PHOTOS

Route 7: The equipment is stored off Route 7 in a parking lot.

Route 7 NB: More detour signs that are posted on existing sign posts are covered during the week.

Route 7: The bridge which is being replaced. During the week the opening is covered with steel plates and edges are delineated with traffic drums.

Route 7 NB: This sign states what dates the bridge on Route 7 will be closed and the detour in effect. However, the message is too long and lettering too small for motorists to read the message.

PART 4: WORK ZONE INSPECTION PHOTOS

Route 7: Since metal beam rail posts could not be installed on the steel plates, a TPCBC is placed on the steel plate behind the guiderail with attachments.

The temporary sheet piling on the east side of the bridge

Right at the bridge is a sign stating <u>CAUTION</u>: STEEL PLATES IN ROAD. This sign may be better placed more in advance of the bridge.

Route 7 NB: The end road work sign

Route 7 SB: A CMS at the other end of the project is for the adjacent project (No. 117-149 on Route 35) states ROUTE 35 BRIDGE WORK, SEEK ALT ROUTE. The detour routes for the two projects have been coordinated by the field staff to make sure they don't conflict.

PART 4: WORK ZONE INSPECTION PHOTOS

Signs left from a previous project that should be removed. See Finding #5.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. The message of the CMS placed on Route 7 Westbound stated that the road was closed ahead.
2. Plant growth has obstructed the messaging of some post-mounted signs.
3. The sign informing motorists of bridge closure dates has a message that's too long and has lettering too small for motorists to read while driving by.
4. TPCBC is placed on the steel plates so the guiderail can continue running along the roadway.
5. The adjacent project (Project No. 117-149) has a CMS stating not to take Route 35 and seek an alternate Route when Route 35 is the detour route for Project No. 117-157.
6. On Route 7, north of the intersection with Own Home Avenue in Wilton, temporary construction signs from a previous project are still posted (see photos on previous page). The Project Engineer stated the signs are left from a past town project.

RECOMMENDATIONS:

1. The message on the CMS should reflect the current conditions of the project or should be accompanied with future dates so motorists know when the conditions will take effect.
2. Selective clearing will improve the visibility of the signs.
3. Signs need to be clear and visible from a distance to allow motorists enough time to read them before reaching the sign.
4. Using concrete barrier to mount the guiderail is a good practice to keep the guiderail system running uninterrupted when there are limits for installing posts.
5. Project 117-149 and Project No. 117-157 have coordinated their detour routes and the projects do not work concurrently allowing at least one route (either Route 7 or Route 35) open for the traveling public to use. This effort is a good practice.
6. The signs should be removed if they are not applicable any more. The project can coordinate with the town to have them removed.

Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

Anthony Kwentoh

All in Attendance
Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0135-0326 **District:** 3

Date: 9/7/2017 **Time:** 10:00 am **Weather, Temp.:** Mostly cloudy, 64°

Town: Stamford **Route:** I-95, Atlantic Street

Road Type: ☒ Interstate ☐ Expressway ☐ Secondary ☒ Local

FOCUS OF REVIEW:
☒ Temporary Lane Closure
☒ Temporary Signalization
☒ Pedestrian/Bicycle Access
☒ Stage Construction
☒ Detour
☒ Night Work

Project Engineer: Chukwuekezie Ezigbo **Chief Inspector:** Louis Eveno

Prime Contractor: Yonkers Contracting Co., Inc. **Inspection Forces:** ☒ State ☒ Consultant

Contract Value: $35,371,618.21 **Percent Complete:** 60%

Calendar Days Allotted: 574 **Calendar Days Completed:** 398

REVIEW PARTICIPANTS

NAME	REPRESENTING
Chukwuekezie Ezigbo	District 3 Construction
Louis Eveno	District 3 Construction
James Boehm	District 3 Construction
Andi Karica	District 3 Construction
Jarret Moore	District 3 Construction
Carolyn Foston	District 3 Construction
John Winsor	Garg Consulting Services Inc.
David DeWitt	HAKS
James Massini	Division of Traffic Engineering
Saroj Bhandari	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Dean Dickinson	Office of Construction
Kermit Ramdial	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes, however some of the barricade warning lights need attention.

2. Have there been any incidents within your project's work zone?

   Yes, there have been about five crashes within the work zone outside the Contractor's work hours. They were fender benders.

3. What documents do you reference for work zone information?

   The Maintenance and Protection of Traffic specifications, stage plans, and typical details and drawings are referenced.

4. What, if any, accommodations have been made for Emergency Services?

   Two fire hydrants have been disconnected to accommodate construction work and the Town is aware. Stamford Police will stop construction activities and direct EMS through. The project has coordination with the Town for traffic impacts and staff has attended Town's Traffic Advisory Committee meetings.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   Pedestrian traffic is detoured on Atlantic Street. One sidewalk on Atlantic Street will be open to traffic while the other is closed. The few bicyclists that come through the project proceed through along with other vehicular traffic.

6. Have ADA requirements been met for pedestrians?

   The existing ADA features are being maintained. Pedestrian push buttons and signals have been installed where needed.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored in a city-owned lot on Manhattan Street that the project is permitted to use. The Waste Stockpile Area is located on Myrtle Avenue.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored within Manhattan Street lot and on site behind barrier.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is a TMP for this project and it's located on ProjectWise. The project was unaware of the TMP. The importance of the TMP was explained and a team member showed the Chief Inspector where to locate the document in ProjectWise.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   NTC- Use of State Police Officers, Rev. 6/12

   Item #0822001A – Temporary Precast Concrete Barrier Curb

   Item #0822002A – Temporary Precast Concrete Barrier Curb (Pinned), Rev. 6/15

   Item #0971001A – Maintenance and Protection of Traffic, Rev. 2/14

   ~~**Item #0973723A – Worksite Traffic Supervisor**~~

   Item #0979003A – Construction Barricade Type III, Rev. 4/14

   Item #1105003A – 1 Way, 3 Section Span Wire Traffic Signal, Rev. 4/14

   Item #1105103A – 1 Way, 3 Section Mast Arm Traffic Signal, Rev. 4/14

   Item #1105105A – 1 Way, 5 Section Mast Arm Traffic Signal, Rev. 4/14

   Item #1105303A – 1 Way, 3 Section Pedestal Mounted Traffic Signal, Rev. 4/14

   Item #1105400A – 1 Way, 3 Bridge Mounted Traffic Signal, Rev. 4/14

   Item #1107011A – Accessible Pedestrian Signal and Detector (Type A), Rev. 5/15

   Item #1111201a – Temporary Detection (Site No. 1), Rev. 1/13

   Item #1111202a – Temporary Detection (Site No. 2), Rev. 1/13

   Item #1111203a – Temporary Detection (Site No. 3), Rev. 1/13

   Item #1111204a – Temporary Detection (Site No. 4), Rev. 1/13

   Item #1111205a – Temporary Detection (Site No. 5), Rev. 1/13

   Item #1118012A – Removal and/or Relocation of Traffic Signal Equipment, Rev. 4/12

   Item #1118051A – Temporary Signalization (Site No. 1), Rev. 4/15

   Item #1118052A – Temporary Signalization (Site No. 2), Rev. 4/15

Item #1118053A – Temporary Signalization (Site No. 3), Rev. 4/15

Item #1118054A – Temporary Signalization (Site No. 4), Rev. 4/15

Item #1118055A – Temporary Signalization (Site No. 5), Rev. 4/15

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

Item #1208928A – Sign Face-Sheet Aluminum (Type III Reflective Sheeting), Rev. 9/13

Item #1220013A – Construction Signs – Bright Fluorescent Sheeting

Item # 1803060A – Type B Impact Attenuation System (Non-gating), Rev. 6/13

An item was added through a Change Order for Black Aggregate Cover-Up Resin Pavement Markings. The Chief Inspector asked to know why Black Cover-Up Tape is added into contracts.

The inspection staff was informed that there were recent changes to the Traffic Standard Sheets. Traffic advised to follow the project plans, if there are any questions to contact them.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

SPM-01 – SPM-05: Signing and Pavement Marking Plans

TCS-01 – TCS-03: Traffic Control Signal Plans

DTR-01 – DTR-03: Detour Plans

STG-01 – STG-110: M&PT Stage Plans and Cross Sections

TTCS-01 – TTCS-05: Temporary Traffic Control Signal Plans

A subinspector stated that the Traffic Control Signal Plans were not done well. The cables weren't laid out according to DOT standards. Although Traffic may comment on the plans, the comments aren't included in the final print. The subinspector would like to see Traffic's comments.

The detour plans didn't account for the truck traffic. The Project lowered the road at the Exit 8 Bridge to accommodate trucks.

The project staff added a signal on Atlantic Street due to limited sightline of the temporary signal plan configuration from under the railroad bridge.

4. Is there stage construction? If so, explain.

Yes, there are three stages: 1) built jacking pit and installing temporary signals on Atlantic Street; 2) installing a temporary signal on Canal Street, closing a lane on South State Street, installing viaduct wall and retaining walls; and 3) open new off ramp, installing permanent signals, installing wall and abutments, and then shift traffic back onto new ramp, and final paving.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   No.

6. Is there a temporary signalization? If so, explain.

   Yes, many temporary signals installed on Atlantic Street and Canal Street.

7. Is there a detour? If so, explain.

   Yes, there is a detour for South State Street when closed.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes, objects are stored behind barrier.

   * Design Speed Standard:

Roadway Speed	Clear Zone Distance
60-70 mph	30 feet
55 mph	**26 feet**
45-50 mph	24 feet
≤ 40 mph	**16 feet**

9. Chief Inspector Comments:

   No comments.

10. Project Engineer Comments:

    No comments.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☒	☐	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☐	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☒ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☐	☒	c. Anchored?
☒	☐	**3. Warning lights?**
☐	☐	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☐	a. Functioning in the correct mode?
		b. Location?
☐	☒	**5. Changeable Message Sign (CMS)?**
		a. How many?
		b. Location?
☐	☐	c. Message understandable?
		d. Number of frames displayed?
☐	☐	e. Timing between screens acceptable?
☐	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many?
		b. Location?
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☒ Epoxy
☒	☐	a. Legible?
☐	☒	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☐ State Police ☒ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☐	1. Wearing high-visibility gear?
☐	☐	2. Using traffic control devices (i.e. paddle and pole)
☐	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☐	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☐	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Atlantic Street: Type III barricades and traffic drums were used to close the sidewalk on the west side of the street.

Atlantic Street: Traffic drums delineate the pedestrian cross walk on Manhattan Avenue since the road is closed.

Atlantic Street: A bicyclist is proceeding through the work zone with traffic.

Manhattan Avenue: Material storage area

Atlantic Street: A post-mounted sign before the work zone stating "Work Area, Be Prepared to Stop".

Atlantic Street: The Metro-North Railroad bridge overhead

PART 4: WORK ZONE INSPECTION PHOTOS

Atlantic Street: Here is the additional temporary signal that was installed to help with the poor sightline under the railroad bridge.

Atlantic Street: Utility work is in the left southbound lane. Traffic cones are used to the close the lane and municipal police are assisting with traffic control.

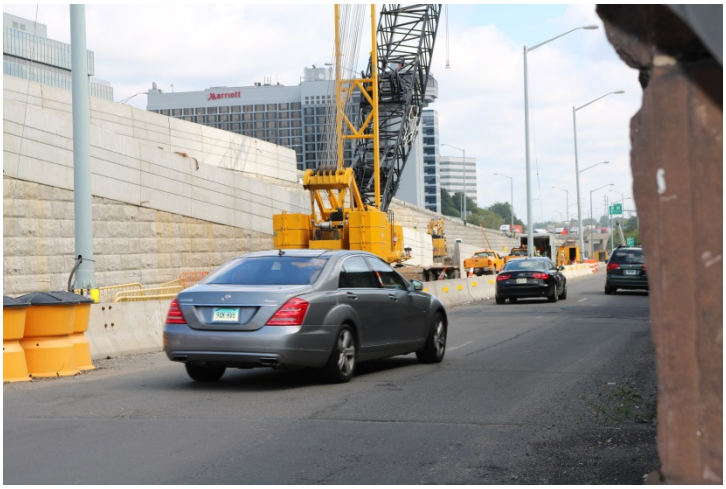
Atlantic Street: Here are the other temporary configurations of the traffic signals that are difficult to see from under the bridge.

Atlantic Street: A pedestrian crossed when the pedestrian signal queued walking, however, since the traffic signal is concurrent with the pedestrian signal vehicles can proceed and even turn right, crossing over the crosswalk.

PART 4: WORK ZONE INSPECTION PHOTOS

South State Street and Exit 8 Off Ramp: There is TPCBC and Type III barricades to close off the work area in between.

Atlantic Street: There is a construction sign advising the clearance under the new ramp. The entrance to the work area is closed with a combination of traffic cones, traffic drums, and a Type III barricade. There is a construction sign stating Road Work Ahead.



South State Street: There is the work area with a crane parked behind TPCBC.

The barricade has an arrow sign on it directing traffic to proceed to the right around the barrier. The leading end of the barrier has an impact attenuation system to protect it.

PART 4: WORK ZONE INSPECTION PHOTOS

Atlantic Street: The left turn lane on the ramp is closed due to the utility truck parked partially within the intersection blocking a clear path to the northbound lanes. The utility work is independent of this construction project.

A construction sign stating "Utility Work Ahead" is used but it's placed on the sidewalk blocking the path for pedestrians.

Atlantic Street: There is a "Flagger Ahead" sign placed just before the utility work area, however, there is no flagger just a municipal police officer.

PART 4: WORK ZONE INSPECTION PHOTOS

I-95 Exit 8 Off Ramp: This traffic drum is terribly misshaped and needs to be replaced.

The sections of the TPCBC aren't connected at their joints. If impacted, a vehicle could displace a section and hit the blunt side of another.

I-95 Exit 8 Off Ramp: The left turn lane is only closed at the end. The lane closure should have started farther back to prevent vehicles from entering the left turn lane.

I-95 Exit 8 Off Ramp: The TPCBC is missing a section causing the exposed end to be a blunt end.

PART 4: WORK ZONE INSPECTION PHOTOS

I-95 Exit 8 Off Ramp: There is a temporary signal sign right when a vehicle exits the highway. The impact attenuation system is in disrepair and needs to be attended to.

On I-95 pavement markings covered with black aggregate cover-up resin pavement markings are starting to wear and should be refreshed.

I-95 Exit 8 Off Ramp: There are construction signs informing motorists that trucks may be entering/exiting the ramp.

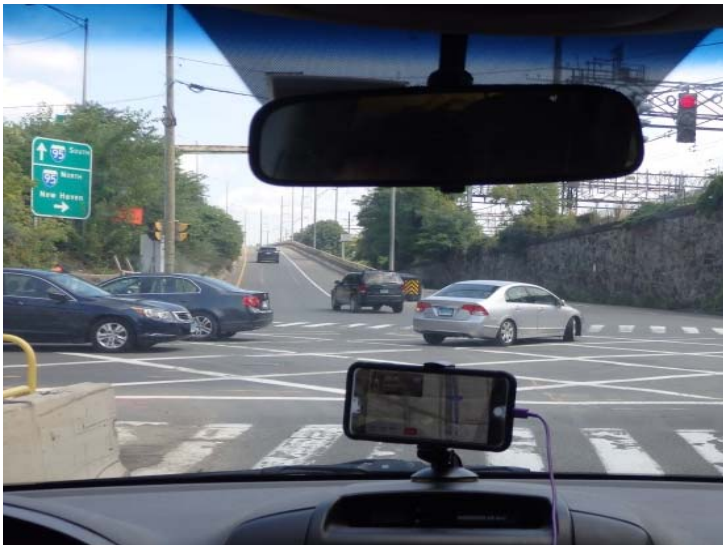
The edges of the H-piles used for the embankment support are unprotected and need to be protected as a blunt odject.

PART 4: WORK ZONE INSPECTION PHOTOS

This is the work area on the newly installed bridge to be the new Exit 8 Ramp.

South State Street: The alignment of the TPCBC is skewed preventing divergent vehicles to be directed back to the roadway if impacted.

South State Street: A sign to indicate direction of the lanes at the next intersection needs vegetation clearing in front. The sign indicates there are three lanes: left turn lane, through lane, and a through and right turn combo.



South State Street: When approaching the intersection with Canal Street, the left turn lane is closed with TPCBC and only the thru lane is on the left. The sign either needs to be covered or replaced with a construction sign indicating what lanes are open to use.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. Permanent gore impact attenuator barrels were damaged.
2. H-piles for the leading end of Wall No. 103 need protection.
3. Leading end on TPCBC along Wall No. 103 needs protection. Also, sections of the TPCBC were left not connected at the loops.
4. Some of the traffic control devices were badly misshaped.
5. A "Utility Ahead" sign was blocking a sidewalk on Atlantic Street.
6. A "Flagger Ahead" sign was placed before the utility work zone on Atlantic Street but there was no flagger operation, just a municipal police vehicle with flashing lights on.
7. The storage area on Manhattan Street should be secured better.
8. There is a concurrent pedestrian walk across South State Street at the intersection of Atlantic Street. Visibility to pedestrian is obscured for right turning vehicles onto South State Street.
9. There was utility work at the intersection of Atlantic Street and South State Street with a left lane closure on the off-ramp. Vehicles attempted to enter the left turn lane before the closure.
10. Signs and messaging:
    a. The no right turn sign facing the off-ramp is faded and should be replaced.
    b. Do not enter signs and a one-way sign (on the north side) are needed at the end of the off-ramp.
11. The black aggregate cover-up markings on I-95 are beginning to wear and should be refreshed prior to winter.
12. There is signing on South State Street showing which lane vehicles should be in for left turns to Canal Street, through moves to I-95 and through/right turns to Canal Street /South State Street however, in the current staging configuration, the left turn lane is closed.
13. Also, the sign had overgrown brush blocking it.
14. The TPCBC along South State Street was misaligned.

RECOMMENDATIONS:

1. The impact attenuation system needs to be repaired so the barrier wall end is protected.
2. The leading ends of the H-piles beside the edge of the roadway are blunt objects that need protecting.
3. TPCBC poses blunt objects if the leading end is not protected or angled away from the roadway. Also, if sections are missing the connection pins, the exposed ends become blunt end that needs protection as well.
4. Devices that are misshaped, worn, or has poor reflectivity are in unacceptable condition and should be replaced.

PART 5: FINDINGS AND RECOMMENDATIONS

5. Equipment and devices shouldn't block the pedestrians' pathway. The sign should be relocated to allow pedestrian access through.
6. If a sign is going to be used to indicate a trafficperson ahead it needs to be further back for more advanced warning not at the work area. Also, a "Road Work Ahead" sign would be better to use since there weren't any flaggers being used.
7. The drums/barricades used to close Manhattan Road on the east end and the construction fencing on the northbound side of Atlantic Street at the intersection of South State Street needs to be fixed.
8. It is recommended that a sign be installed to tell motorists of the pedestrians and to yield.

9. The lane should be closed entirely with drums or cones to prevent vehicles from entering.
10. Signs need to have their messaging clearly visible to motorists.
11. Pavement markings should be maintained to indicate to motorists where the lanes are.
12. It is recommended to revise the signs before Canal Street as shown below. Any lane signs at the intersection and pavement markings should be adjusted accordingly.

13. Clearing of brush is needed for visibility to the signs.
14. TPCBC needs to have aligned sections to redirect wheels of vehicles back towards the roadway and not get snagged between sections.

Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

Anthony Kwentoh

All in Attendance

Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0144-0191 **District:** 3

Date: 7/13/17 **Time:** 1:00pm **Weather, Temp.:** Sunny, 85

Town: Trumbull **Route:** 15 and 127

Road Type: ☐ Interstate ☐ Expressway ☒ Secondary ☒ Local

FOCUS OF REVIEW:

☒ Temporary Lane Closure ☒ Stage Construction

☐ Temporary Signalization ☒ Detour

☒ Pedestrian/Bicycle Access ☒ Night Work

Project Engineer: Elona Coppola **Chief Inspector:** Dan Paton

Prime Contractor: Iapaluccio Inc. **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: $3,600,000 **Percent Complete:** 28%

Calendar Days Allotted: 244 **Calendar Days Completed:** 104

REVIEW PARTICIPANTS

NAME	REPRESENTING
Elona Coppola	District 3 Construction
Kermit Ramdal	Office of Construction
Dean Dickinson	Office of Construction
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction
Daniel Paton	District 3 Construction
Claudel Meronnis	Division of Traffic Engineering
Seamus Flannery	District 3 Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain. **Yes.**

2. Have there been any incidents within your project's work zone? **No.**

3. What documents do you reference for work zone information? **MPT project plans and specifications.**

4. What, if any, accommodations have been made for Emergency Services? **A work zone safety meeting was conducted at the beginning of the project.**

5. What, if any, accommodations have been made for pedestrians and bicyclists? **N/A. This project consists of constructing a new multi-use trail.**

6. Have ADA requirements been met for pedestrians? **N/A. This is new construction through a wooded area.**

7. Where is the designated laydown area for materials to be stored? **There are 3 large areas along the trail (as delineated on the plans) where the Contractor can store materials and equipment.**

8. Where is the designated area for equipment to be stored when construction is not in progress? **Same as 7.**

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful? **There is no Transportation Management Plan for this project.**

2. What special provisions related to work zones were added to this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them? **Item #0971001A – Maintenance and Protection of Traffic. No concerns.**

3. What work zone traffic plans are included in the project plans? Are they complete and current? **Traffic Standards SPM-01 thru SPM-03 and MPT-01 thru MPT-06.**

4. Is there stage construction? If so, explain. **Yes. There are 3 stages. 1) For both Route 15 ramps, shift traffic to right side of the ramp to install half the precast tunnels. 2) Shift the traffic back to the other side of the ramps and install the other half of the tunnels. 3) Mill and pave the pavement surface on both the Route 15 ramps from curb to curb over the newly installed tunnels.**

5. Are there any issues with oversize/overweight or construction loads on bridges? **No.**

6. Is there is temporary signalization? If so, explain. **No.**

7. Is there is a detour? If so, explain. **Yes. For one night of work the ramp from 25 South to 15 north will be closed. Traffic will be detoured down to the next exit.**

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain. **Yes.**

   * Design Speed Standard:

Roadway Speed	Clear Zone Distance
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	16 feet

9. Chief Inspector Comments: **The southern access to the construction of the trail head is very wide open. Vehicles were entering the project site at night. The inspector had been requesting that the contractor install Type 3 Barricade. There was some delay, but the Contractor recently delivered 3 to the job site to help block entry points to the work site.**

10. Project Engineer Comments: **None.**

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☐	☐	1. Clear and understandable guidance through the work zone? **N/A**
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **The mounting heights for all signs appeared to be correct.**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☐ Cones ☐ Drums ☒ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☐	☒	c. Anchored? **N/A**
☒	☐	**3. Warning lights?** Type: ☒ High intensity ☐ Low intensity
☒	☐	a. Functioning?
☒	☐	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☒	☐	a. Functioning in the correct mode?
		b. Location?
☐	☒	**5. Changeable Message Sign (CMS)?**
		a. How many? **N/A**
		b. Location? **N/A**
☐	☐	c. Message understandable? **N/A**
		d. Number of frames displayed? **N/A**
☐	☐	e. Timing between screens acceptable? **N/A**
☐	☐	f. Readable from a distance? **N/A**
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many? **N/A**
		b. Location? **N/A**
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☐ Epoxy
☒	☐	a. Legible?
☐	☒	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible? **N/A**

D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?
E. Traffic Control Personnel		
		☒ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☐	1. Wearing high-visibility gear? **N/A**
☐	☐	2. Using traffic control devices (i.e. paddle and pole) **N/A**
☐	☐	3. Properly positioned? **N/A**
F. Pedestrian / Bicycle Access		
☐	☒	1. Signs
☐	☐	a. Clean and visible? **N/A**
		b. Mounting height? **N/A**
☐	☐	2. Designated pathways? **N/A**
☐	☐	a. Clear?
☐	☒	b. ADA compliant? **Existing conditions are new construction and not 100% compliant. Final configuration will be 100% compliant.**

PART 4: WORK ZONE INSPECTION PHOTOS

Photo 1: This is the "end" of the existing multi-use trail and the beginning of new trail construction. A sidewalk closed sign was installed. Type 3 Barricades were also put in place approximated 150 yards further down the new trail to help discourage vehicles from driving into the project site.

Photo 2: Type 3 Barricade installed to help prevent vehicles and pedestrians from proceeding any further.

Photo 3: Route 25 South to Route 15 north connector ramp. Here, concrete barrier is installed to channelize and shift traffic to the southern half of the ramp. An opening was created to allow construction vehicles to enter and exit the work site.

Photo 4: Fencing and cones are used here to delineate and protect the excavated area while the precast tunnel sections are being installed.

Photo 5: This is one of 3 designated areas for material and equipment storage. Because the project is through a wooded area there is plenty of room to store equipment and materials

Photo 6: This is another equipment and materials storage area. Here the Contractor had plenty of room to set up a small crushing operation for the rock that was excavated from within the project.

Photo 7: More storage. Lots of room.

Photo 8: This is the second tunnel area being constructed to go under a connector ramp from Route 15 S to Route 25 north. Construction fencing and cones were used here also to protect and delineate the excavated area.

Photo 9: This is the connector ramp from 15 S to 25 N. Temporary concrete barrier was used to shift traffic to one side of the ramp. Stage 2 will shift the traffic back to the left side in order to complete the installation of the tunnel.

Photo 10: A temporary connection was not made where the temporary concrete barrier meets the bridge parapet on the north side of the connector ramp from 15 S to 25 N.

Photo 11: Same as Photo 10 – South side shown here.

Photo 12: The connection rods for the temporary concrete barrier were not locked down with a threaded nut on the bottom of the rod.

PART 5: FINDINGS AND RECOMMENDATIONS

Findings:

1. The work area through the project was generally neat and well graded and organized with good delineation and protection of excavated areas.
2. The temporary concrete barrier was not connected to the bridge parapet (Photos 10 and 11.)
3. The temporary concrete barrier did not have the bottom of the connection rods locked down with a threaded nut (Photo 12.)

Recommendations:

1. Attach the temporary concrete barrier to the bridge parapet with a "R-B 350 Bridge Attachment Trailing End, 10 GA" connection as shown on the plans.
2. Attach threaded nuts to the bottom of the connection rods.

Submitted by: Dean Dickinson Date: 7/26/17

Reviewed by: _____ Date: 7/26/17
Anthony Kwentoh

All in Attendance
Cc: James Connery – Mary Baier
Robert Turner (FHWA)

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0160-0139 **District:** 1

Date: 8/2/2017 **Time:** 10:30 am **Weather, Temp.:** Sunny, 75°

Town: Tolland, Willington **Route:** 74

Road Type: ☐ Interstate ☐ Expressway ☒ Secondary ☐ Local

FOCUS OF REVIEW:

☐ Temporary Lane Closure
☒ Temporary Signalization
☐ Pedestrian/Bicycle Access
☒ Stage Construction
☒ Detour
☐ Night Work

Project Engineer: Paul Carl **Chief Inspector:** Fredrick Vanston

Prime Contractor: Brunalli Construction Company **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: $5,727,896.36 **Percent Complete:** 69%

Calendar Days Allotted: 471 **Calendar Days Completed:** 320

REVIEW PARTICIPANTS

NAME	REPRESENTING
Paul Carl	District 1 Construction
Fredrick Vanston	District 1 Construction
Brett Stoeffler	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Kermit Ramdial	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   No.

3. What documents do you reference for work zone information?

   Plan sheets and the contract's special provisions are referenced for information.

4. What, if any, accommodations have been made for Emergency Services?

   The Fire Department was contacted to explain how they could access local residents around the site. Two lanes of traffic are open at all times for Emergency Services to go through. If there is an operation that impedes upon traffic, the flaggers on duty will stop traffic to permit EMS through.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   There are no existing features to maintain. Currently, there is a 5 feet shoulder on the temporary bridge that pedestrians use when there are any. The new bridge will have a sidewalk to be used.

6. Have ADA requirements been met for pedestrians?

   Not applicable.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored in the staging area within the project field office yard.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored in the office yard or parked on site off the road.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is no TMP for this project.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   Item #0970007A – Trafficperson (Uniformed Flagger), Rev. 06/15
   Item #0971007A – Maintenance and Protection of Traffic, Rev. 05/15
   Item #1118101A – Temporary Signalization, Rev. 10/03
   Item #1131002A – Remote Controlled Changeable Message Sign, Rev. 12/02
   Item #1210101A – 4" (100 mm) White Epoxy Resin Pavement Markings, Rev. 02/14
   Item #1210102A – 4" (100 mm) Yellow Epoxy Resin Pavement Markings, Rev. 02/14
   Item #1210105A –Epoxy Resin Pavement Markings, Symbols and Legends, Rev. 02/14
   Item #1803064A – Type B Impact Attenuation System (Tangential) Replacement Parts, Rev. 04/07
   Item #1803071A – Type B Impact Attenuation System (Tangential), Rev. 04/07

The estimate for the Trafficperson (Uniformed Flagger) item was too low. The quantity for the Remote Controlled Changeable Message Sign was increased to assist with an added detour.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   TR-02: Temporary Traffic Signal
   MPT-01: Maintenance & Protection of Traffic
   STG-01: Stage Construction Details
   STG-02: Temporary Route 74

   A detour plan was added by a design-initiated Change Order for a weekend road closure August 11 through August 13.

4. Is there stage construction? If so, explain.

   Yes, there are four stages with utilities. First, a temporary bridge was built alongside the existing. Next, traffic was shifted onto temporary bridge. Then, existing bridge is replaced and traffic is shifted back.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   There is a width restriction on the temporary bridge which is 28 feet wide curb to curb. The Project Engineer contacted the OS/OW office about the stage construction and suggested OS/OW traffic take Route 32 instead.

6. Is there a temporary signalization? If so, explain.

   Yes, a temporary signal was installed to help regulate traffic on the temporary bridge since the bridge's trusses impede the sightlines for South River Road.

7. Is there a detour? If so, explain.

   Yes, a detour was added for a weekend road closure to resolve some constructability issues. The detour is 2 miles long.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes.

* Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	**16 feet**

9. Chief Inspector Comments:

   The Chief Inspector suggested for future temporary bridges with temporary signals, use open grates on the bridge instead of temporary pavement. The pavement on the bridge has little to no adhesion so when traffic stops on the bridge at the light, the pavement is being shoved and potholes forming.

10. Project Engineer Comments:

    No comments.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☒	☐	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☒	☐	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Some were too low.**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☒ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☐	☒	c. Anchored?
☒	☐	**3. Warning lights?**
☐	☐	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☐	a. Functioning in the correct mode?
		b. Location?
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **Three**
		b. Location? **Off I-84 Exit west of project; east of project; South River Rd**
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many?
		b. Location?
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☐ Epoxy
☒	☐	a. Legible?
☐	☒	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

PART 3: WORK ZONE INSPECTION CHECKLIST

E. Traffic Control Personnel		
		☐ State Police ☐ Municipal Police ☒ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☒	☐	1. Wearing high-visibility gear?
☒	☐	2. Using traffic control devices (i.e. paddle and pole)
☒	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☒	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☒	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Route 74 EB (Tolland Stage Road): The temporary bridge with the temporary signal. There are impact attenuation systems protecting the ends of the bridge with DE-9 delineators on front.

Route74 (Tolland Stage Road): The new bridge being built.

A sign is posted on the riverbed below stating CAUTION BRIDGE WORK AHEAD.

South River Road: The road is divided with bidirectional traffic signs in the center. Also, one of the CMS stationed on the left.

PART 4: WORK ZONE INSPECTION PHOTOS

Barricades with ROAD CLOSED signs on front close the entrance to the new bridge.

Route 74 WB: This ROAD WORK AHEAD sign is posted on waffle board which is not an acceptable material to use.

The safety boat for the work over water is stationed on the riverbank.

Route 74 WB: This reverse S-curve sign is posted on plywood which is an acceptable material but it is posted too low for motorists to see well.

PART 4: WORK ZONE INSPECTION PHOTOS

Route 74: Another CMS, just east of the project, is off the road and currently not being used but will inform motorists of the weekend closure. The two frames stating "Route 74 EB to Be Closed 8/11 6PM to 8/14 6AM".

Route 74 WB: The work area with barricades closing the entrance to the new bridge and traffic drums delineating around it.

This impact attenuation system is the only one with a Sign No. 50-5032 at the nose.

The shoved pavement on the temporary bridge.

PART 4: WORK ZONE INSPECTION PHOTOS

Route 74: Equipment mobilizing to the laydown yard.

Route 74 WB: There is delamination of the pavement on the eastbound side although that side doesn't stop at the light on the bridge.

Route 74: Material stored off the road behind barrier.

Phelps Way: The only sign in advance of the project on this road is a legal sign. There was no sign warning about the temporary signal.

Phelps Way: The next advance warning sign about the road work ahead or a temporary signal ahead is only a few feet from the project site.

PART 4: WORK ZONE INSPECTION PHOTOS

Route 74 (Tolland Turnpike): There is more advance warning signs. One seen here is the signal ahead. However this signal sign was before another signal at the intersection of Route 74 and Route 32. Motorists may consider this signal in a temporary configuration and not know there is another temporary signal coming up ahead.

Route 74 WB (Tolland Turnpike): The post-mounted diamond-shaped signs have barricade warning lights attached.

Route 74 EB (Tolland Stage Road): This post-mounted sign needs selective clearing in front.

Route 74 EB (Tolland Stage Road): The third CMS had two frames; one stating SLOW DOWN and another stating ROAD WORK AHEAD.

PART 4: WORK ZONE INSPECTION PHOTOS

Route 74 EB (Tolland Stage Road): Approaching the project site around the bend in the road. There are Type III barricades that close the shoulder of the road.

Route 74 EB (Tolland Stage Road): There is a flagger to stop traffic and allow construction traffic to enter and exit Route 74.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS

1. The estimate for the Trafficperson (Uniformed Flagger) item was too low.
2. The project has to close the road over a weekend to resolved constructability issues. The new bridge is 3 feet higher than the roadway and needs to match the grade of the road. The quantity for the Remote Controlled Changeable Message Sign was increased to assist with an added detour.
3. The Chief Inspector suggested for future temporary bridges with temporary signals, use open grates on the bridge instead of temporary pavement. The pavement on the bridge has little to no adhesion so when traffic stops on the bridge at the light, the pavement is being shoved and potholes forming.
4. A sign is posted on the riverbed below stating CAUTION BRIDGE WORK AHEAD.
5. This ROAD WORK AHEAD sign is posted on waffle board which is not an acceptable material to use.
6. The only sign in advance of the project on Phelps Way was the legal sign. There were no "signal ahead" sign or "road work ahead" sign until right before the temporary bridge.
7. The "signal ahead" sign on Route 74 (Tolland Turnpike) was placed before another signal not before the temporary one.

RECOMMENDATIONS

1. Quantity estimation needs to reflect how many Trafficperson hours will be needed for mobilizing trucks in and out of the stockyard.
2. Construability issues can possibly be resolved with more thorough plan reviews and prevent the other issues with deficient item quantities (i.e. Changeable Message Signs) and the need for additional traffic plans (i.e. detour plan).
3. A solution for roadways on temporary bridges should be considered since pavement gets shoved and open grates may ice over during the winter.
4. Considering possible waterway traffic under bridges and informing users of construction work is a good practice.
5. Waffle board is an unacceptable material to use for construction signs since the reflectivity of the signs is poor.
6. More advance warning should be on Phelps Way and not just before the project site to allow motorists more notice of what's to come before coming upon it.
7. The "signal ahead" sign should be placed after the permanent signal but before the temporary one so motorists will know which one the sign is indicating to.

Submitted by: _____ Date: 8/8/17

Kiah Patten

Reviewed by: _____ Date: 8/8/2017

Anthony Kwentoh

PART 5: FINDINGS AND RECOMMENDATIONS

All in Attendance
Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0162-0145 **District:** 4

Date: 9/13/2017 **Time:** 10:00 am **Weather, Temp.:** Sunny, 66°

Town: Winsted **Route:** Holabird Avenue

Road Type: ☐ Interstate ☐ Expressway ☐ Secondary ☒ Local

FOCUS OF REVIEW:

☐ Temporary Lane Closure
☐ Temporary Signalization
☒ Pedestrian/Bicycle Access
☒ Stage Construction
☒ Detour
☐ Night Work

Project Engineer: Mark Sosnowski **Chief Inspector:** Thomas Moynihan

Prime Contractor: Schultz Corporation **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: $2,980,422.64 **Percent Complete:** 22%

Calendar Days Allotted: 571 **Calendar Days Completed:** 214

REVIEW PARTICIPANTS

NAME	REPRESENTING
Mark Sosnowski	District 4 Construction
Thomas Moynihan	District 4 Construction
Erik Schoumaker	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   No.

3. What documents do you reference for work zone information?

   The staff refers the contract plans and specifications for its work zone information.

4. What, if any, accommodations have been made for Emergency Services?

   Whiting Street, adjacent to the project, has had a portion of it changed from two-way direction to one-way. Only the Town's Fire Department has access to Whiting Street in both directions. When a fire truck needs to proceed through, it sounds its siren to notify motorists that it's coming down the closed section of the road.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   A pedestrian detour is in place through Northwestern Connecticut Community College parking lot. It is fully signed.

6. Have ADA requirements been met for pedestrians?

   Yes, the exiting ADA features are being maintained. One sidewalk that intersects with Whiting Street has had the corner repaved and a paved ramp was put in to maintain access.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored in a lot on Holabird Avenue and the Town's garage on Rowley Street. There's also a Waste Stockpile Area at the garage too.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored on site behind barrier.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is no TMP for this project.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   Item #0970006A – Trafficperson (Municipal Police Officer), Rev. 06/15

   Item #0970007A – Trafficperson (Uniformed Flagger), Rev. 06/15

   Item #0971001A – Maintenance and Protection of Traffic, Rev. 2/14

   Item #1210101A – 4" White Epoxy Resin Pavement Markings, Rev. 02/14

Item #1210102A – 4" Yellow Epoxy Resin Pavement Markings, Rev. 02/14

Item #1210105A – Epoxy Resin Pavement Markings, Symbols and Legends, Rev. 02/14

Section 1.08 – Prosecution and Progress

No, there aren't any concerns with the above listed special provisions.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   MPT-02: Detour Plan

   Yes, the plan is complete.

4. Is there stage construction? If so, explain.

   Yes, there are two stages. The first stage will include reconstruction of the abutment and wingwalls and transfer the sanitary sewer line passing through the bridge to be connected through the new structure. The second stage will be removal of the old structure and completion of the new.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   No.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   Yes, vehicular traffic is detoured from Holabird Avenue to Colony Drive to Glendale Avenue to Main Street or from Holabird Avenue to Stanton Avenue toWallens Street to North Main Street (refer to MPT-02).

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes.

* Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	**16 feet**

9. Chief Inspector Comments:

   No comments.

10. Project Engineer Comments:

    No comments.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☐	a. Functioning in the correct mode?
		b. Location?
☐	☒	**5. Changeable Message Sign (CMS)?**
		a. How many?
		b. Location?
☐	☐	c. Message understandable?
		d. Number of frames displayed?
☐	☐	e. Timing between screens acceptable?
☐	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many?
		b. Location?
C. Temporary Pavement Markings		
☐	☒	Temporary pavement markings? Type: ☐ Tape ☐ Paint ☐ Epoxy
☐	☐	a. Legible?
☐	☐	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☐ State Police ☐ Municipal Police ☒ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☒	☐	1. Wearing high-visibility gear?
☒	☐	2. Using traffic control devices (i.e. paddle and pole)
☒	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☒	☐	1. Signs
☒	☐	a. Clean and visible?
		b. Mounting height? **Adequate**
☒	☐	2. Designated pathways?
☒	☐	a. Clear?
☒	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

This is work zone behind TPCBC on Holabird Ave and Northwestern Connecticut Community College (NCCC) parking lot.

The pedestrian path has been painted in NCCC's parking lot to detour pedestrian traffic around the site. The markings need its paint refreshed.

This is the Town's Fire House on Holabird Avenue. They have exclusive access to both directions on Whiting Street despite the southbound side being closed.

On Holabird Avenue just before the road closure signs are posted stating "Fines Doubled", "Sidewalk Closed", pedestrian detour, and "Whiting Street Closed to Thru Traffic".

PART 4: WORK ZONE INSPECTION PHOTOS

This traffic drum is badly misshaped and needs to be replaced.

The road closure from the west side of the bridge has Type III barricades in front with signs stating STOP and NO LEFT TURN (for the Whiting Street closure).

Behind the TPCBC, the existing sign for NCCC's parking is still posted. However, it should be relocated to be more visible to motorists.

The sidewalk on Whiting Street has a construction sidewalk liability at the end of it adjacent to the closure.

PART 4: WORK ZONE INSPECTION PHOTOS

A utility project on Whiting Street has posted a STOP AHEAD sign since there is poor sightline for the Stop sign at the end of the street. However, when the utility project finishes the sign will be removed. The Town should consider permanently mounting a Stop Ahead sign.

Motorists have worn down the corner of this sidewalk by driving over it. The project has paved a new corner and ramp so pedestrians can access it, however, it is deteriorating due to motorists still driving over it.

This is the bridge being replaced. The cast iron pipe is the sewer line that is attached to the old beam. Once the new beam is installed and the line relocated, the old bridge will be removed.

PART 4: WORK ZONE INSPECTION PHOTOS

The project closes access to the bridge by securing this construction fencing in front of it.

This is an existing crosswalk and pedestrian pedestal that can be used to access the pathway a part of the detour.

The pedestrian bridge that crosses the river on NCCC's campus is a part of the pedestrian detour.

At Holabird Avenue on the east side, more pedestrian signs are posted at the corner of the sidewalk.

These are signs posted to give direction for the pedestrian detour.

At the other corner, a FINES DOUBLED and sidewalk liability sign are posted.

PART 4: WORK ZONE INSPECTION PHOTOS

Further up at the closure a roadway liability sign is mounted.

This is the business parking lot the project is impeding upon. Half the lot has been taken for construction. The project had to leave enough space for trucks to access the back of the building but the roof overhang wasn't taken into consideration and prohibits access.

There is a ROAD CLOSED sign mounted, however, it is blocked by a parked truck.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. Condition of the traffic control devices:
    a. TPCBCs are worn and cracked and the pins are not properly connected between some of the sections. The condition is unacceptable for use.
    b. Some of the traffic drums are badly misshaped which is an unacceptable condition.
2. There is poor sightline for the Stop sign at the end of Whiting Street.
3. Some traffic drums are badly misshaped.
4. Pavement markings for pedestrian detour pathway are faded.
5. Northwest Connecticut Community College parking lot sign is within the TPCBC.
6. The roof overhand prevents trucks from accessing the back of the convenient store's building.
7. Some of the detour signs were missing.

RECOMMENDATIONS:

1. Traffic control devices that are in poor condition should be replaced. To understand what acceptable conditions for traffic control devices are, refer to the ATSSA Guidelines for the Temporary Traffic Control Devices and Features.
2. The project can add a "Stop Ahead" construction sign on Whiting Street to inform motorists of the Stop sign they cannot see from the road.
3. Traffic control devices that are misshaped, scuffed, or missing reflectivity are in unacceptable condition and should be replaced.
4. Pavement markings should be clearly defined and should not conflict with other markings. If the markings are worn, they should be refreshed.
5. If existing signs are obstructed from view by construction devices or activities, they should be relocated to a more visible location.
6. When designing for business access around a building, the roof overhang needs to be considered.
7. Construction signs should be installed according to plan (see attached marked up plan).

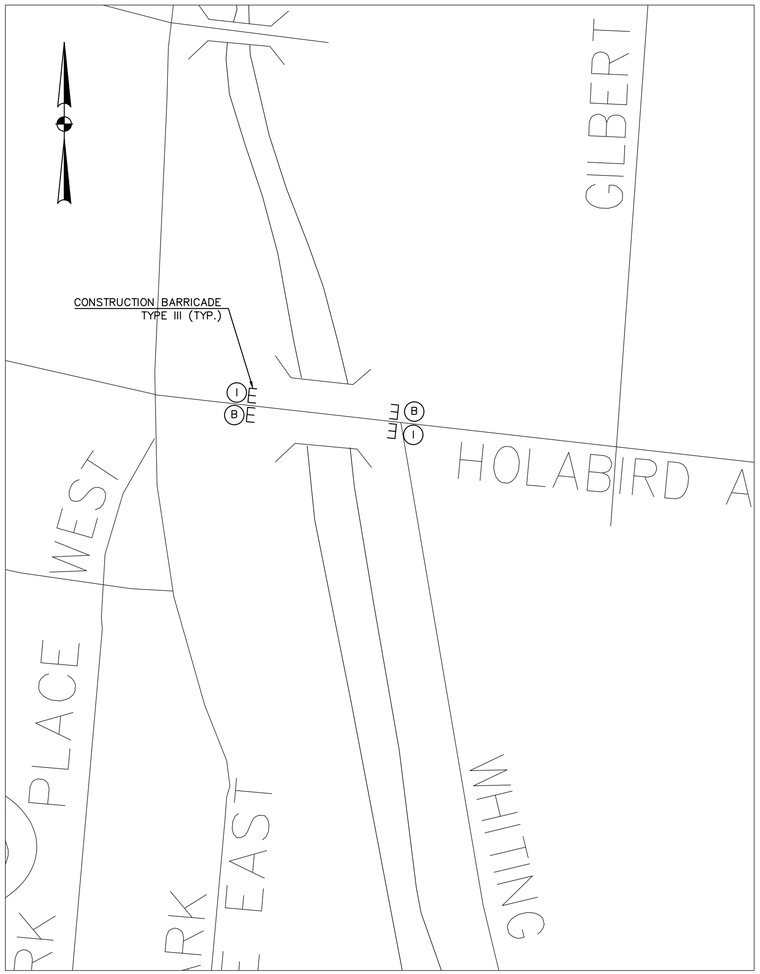
Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

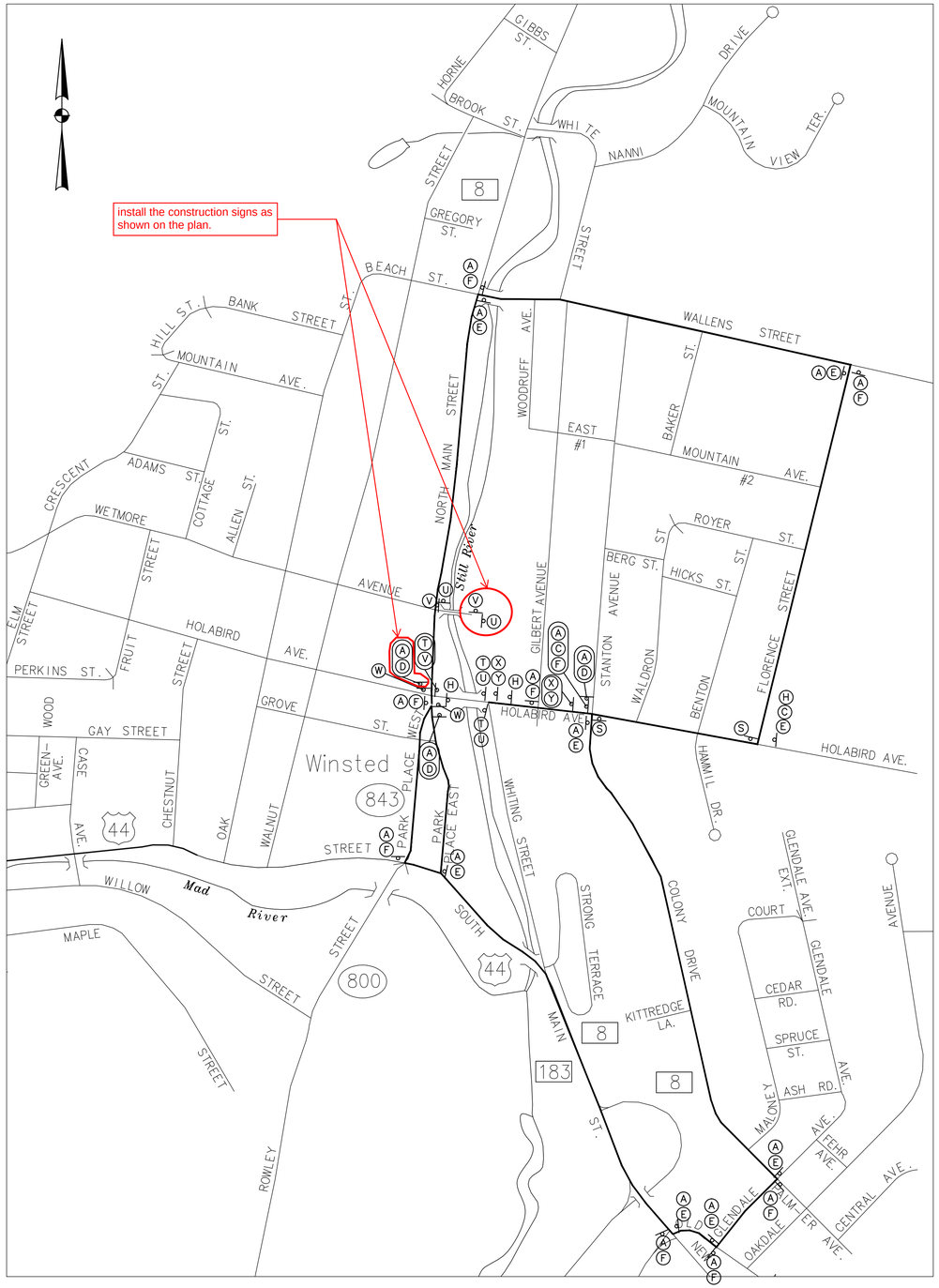
Anthony Kwentoh

All in Attendance
Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead



DETOUR SIGNING PLAN FOR BRIDGE CLOSURE

SCALE: N.T.S.



DETOUR SIGNING PLAN FOR BRIDGE CLOSURE

SCALE: 1" = 400'

SCHEDULE OF SIGNS (80-SERIES)

	SIGN	CONNDOT SIGN NO.	DIMENSION	DESCRIPTION	NO. REQ.'D
	(A)	80-9916	48" X 10"	HOLABIRD AVENUE	19
**	(B)	31-0552	30"	STOP	2
	(C)	80-9078	60" X 30"	BRIDGE CLOSED ___ MILES AHEAD. LOCAL TRAFFIC ONLY	2
	(D)	80-9710	30" X 24"	DETOUR (STRAIGHT ARROW)	3
	(E)	80-9710	30" X 24"	DETOUR (RIGHT ARROW)	8
	(F)	80-9710	30" X 24"	DETOUR (LEFT ARROW)	9
*	(H)	80-9928	60" X 30"	HOLABIRD AVENUE CLOSED FOR CONSTRUCTION EFFECTIVE MONDAY (MM/DD/YY)	3
**	(I)	80-9080	48" X 30"	ROAD CLOSED	2
	(S)	80-9708	24" X 18"	END DETOUR	2
	(T)	80-9076	30" X 18"	SIDEWALK CLOSED	3
	(U)	80-9703 (R)	30 X 24"	PEDESTRIAN DETOUR ⇨	4
	(V)	80-9703 (L)	30 X 24"	PEDESTRIAN DETOUR ⇦	3
	(W)	50-5934	36" X 36"	BUSINESS ACCESS	2
	(X)	80-9928	60" X 30"	WHITING STREET CLOSED TO THRU TRAFFIC	2
	(Y)	31-1619	30" X 30"	NO LEFT TURN	2

NOTES: SEE TR-1220_01 FOR "SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS" DETAILS.

* INDICATES SIGNS TO BE VISIBLE AT LEAST 2 WEEKS PRIOR TO CONSTRUCTION AND THEN COVERED OR REMOVED DURING CONSTRUCTION.

** INDICATES SIGNS TO BE MOUNTED ON TYPE III CONSTRUCTION BARRICADES.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

1. THE CONTRACTOR SHALL LOCATE AND PLACE ALL SIGNS AS INDICATED ON THIS SHEET OR AS DIRECTED BY THE ENGINEER.

2. THE CONTRACTOR SHALL NOT CLOSE ACCESS TO NORTH WESTERN COMMUNITY COLLEGE ON HOLABIRD AVENUE FOR THE DURATION OF CONSTRUCTION. ACCESS MUST BE MAINTAINED AT ALL TIMES.

3. THE BRIDGE SHALL BE CLOSED FOR ALL PHASES OF THE PROJECT.

4. ALL TRAFFIC OVER HOLABIRD AVENUE BRIDGE SHALL BE DETOURED TO NORTH MAIN STREET, WALLENS STREET, FLORENCE STREET, COLONY DRIVE, GLENDALE AVENUE, OLD NEW HARTFORD ROAD, SOUTH MAIN STREET, PARK PLACE WEST AND PARK PLACE EAST.

5. TEMPORARY PRECAST CONCRETE BARRIER CURBS (TPCBC) SHALL BE PROVIDED AT BOTH ENDS OF THE BRIDGE, DURING BRIDGE RECONSTRUCTION (SEE BRIDGE STAGING PLAN SHEET 19 AND 20 OF 31) TO ADEQUATELY WARN, AND PROHIBIT MOTORISTS AND PEDESTRIANS FROM USING THE BRIDGE DURING CONSTRUCTION.

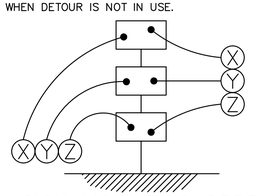
6. THE CONTRACTOR SHALL PROVIDE MOVEABLE TYPE III CONSTRUCTION BARRICADE IN FRONT OF THE TPCBC AS SHOWN ON THE PLANS, OR AS ORDERED BY THE ENGINEER, TO FURTHER INSURE MOTORIST AND PEDESTRIAN SAFETY. ALL MOVEABLE TYPE III CONSTRUCTION BARRICADES SHALL BE FITTED WITH BARRICADE WARNING LIGHTS – HIGH INTENSITY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE UPRIGHT STABILITY OF THE TYPE III CONSTRUCTION BARRICADES AT ALL TIMES.

7. THE CONTRACTOR SHALL CLOSE WHITING STREET TO THRU TRAFFIC AND PROVIDE TRAFFIC DRUMS AND TYPE III CONSTRUCTION BARRICADES TO ADEQUATELY WARN MOTORISTS. SEE FIREHOUSE ACCESS AND COORDINATION NOTES ON BRIDGE STAGING PLAN SHEET NO. 04.05 AND 04.06.

8. ALL TRAFFIC CONTROL AND PROTECTION DEVICES, INCLUDING PAVEMENT MARKINGS, SHALL BE IN PLACE BEFORE RESPECTIVE CONSTRUCTION OPERATION COMMENCES.

8. ALL CONFLICTING SIGNS SHALL BE COVERED OR REMOVED.

9. DETOUR SIGNS ARE ONLY TO BE POSTED WHEN DETOUR IS IN USE. DETOUR SIGNS SHOULD BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE.



SIGN MOUNTING ORDER

SCALE: N.T.S.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 03/23/16

DESIGNER/DRAFTER: C.P.L./J.A.W.

CHECKED BY: J.A.C.

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: 12113 Winsted - Holabird FD Re-Design\Drawings\FDP

SIGNATURE/ BLO

WMC Consulting Engineers
87 Holmes Road
Newington, CT 06111

PROJECT TITLE:
RECONSTRUCTION OF HOLABIRD AVENUE AND BRIDGE No. 04060 OVER STILL RIVER

TOWN: WINCHESTER, CT

DRAWING TITLE: DETOUR PLAN

PROJECT NO. 162-145

DRAWING NO. MPT-02

SHEET NO. 05.02

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0170-3435 C & C1 (PPP) **District:** 1

Date: 8/3/2017 **Time:** 6:00 pm **Weather, Temp.:** Clear, 81°

Town: Rocky Hill, Wethersfield **Route:** I-91

Road Type: ☒ Interstate ☐ Expressway ☐ Secondary ☐ Local

FOCUS OF REVIEW:

☒ Temporary Lane Closure
☐ Temporary Signalization
☐ Pedestrian/Bicycle Access
☐ Stage Construction
☒ Detour
☒ Night Work

Project Engineer: Steven Petrello (General Supervisor)

Chief Inspector: Mohammad Tahir (Crew Leader)

Prime Contractor: Tilcon Connecticut Inc.

Inspection Forces: ☒ State ☐ Consultant

Contract Value:

Percent Complete:

Calendar Days Allotted:

Calendar Days Completed:

REVIEW PARTICIPANTS

NAME	REPRESENTING
Steven Petrello	District 1 Maintenance
Mohammad Tahir	District 1 Maintenance
Fredrick DiNardi	Office of Maintenance
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   No.

3. What documents do you reference for work zone information?

   Documents the crew references are Work Zone Safety Guidelines for Maintenance Operations and the traffic plans in the contract. Every night the crew leader fills out a Maintenance-21 form which is the daily work report for Maintenance and General Supervisor reads them the following day to see how activities went.

4. What, if any, accommodations have been made for Emergency Services?

   Emergency Services are notified of current activities through Press Releases. When proceeding through the work zone, EMS has priority.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   Not applicable.

6. Have ADA requirements been met for pedestrians?

   Not applicable.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored on I-91 SB Exit 26 on ramp from Marsh Street, Glastonbury and off the I-91 Exit 21 off ramp to Route 372, Cromwell.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored off the road off I-91.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There are no TMPs for Maintenance projects.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   Not applicable.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   Typical traffic plans included in the contract.

4. Is there stage construction? If so, explain.

   No.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   No.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   Yes, there are detours for ramp closures. When the operation moves in front of a ramp, the ramp is closed and traffic is detoured to the next exit.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes.

   * Design Speed Standard:

Roadway Speed	Clear Zone Distance
60-70 mph	**30 feet**
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	16 feet

9. Chief Inspector Comments:

   The Crew Leader left before commenting.

10. Project Engineer Comments:

    The General Supervisor stated that State Police should be used within Maintenance traffic patterns more. They have State Police for this project but for other VIP projects, only crash trucks are used.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☐ Drums ☐ Barricades
☐	☒	a. Clean and visible? **Some unacceptable cones were used.**
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☒	☐	**4. Advance Flashing Arrow?** Type: ☐ Portable ☒ Truck-mounted
☒	☐	a. Functioning in the correct mode?
		b. Location? **Within the pattern**
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **One**
		b. Location? **VMS sign overhead I-91 SB after Exit 26**
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☒	☐	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many? **Two**
		b. Location? **Within taper on I-91 NB & SB**
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☐ Epoxy
☒	☐	a. Legible?
☐	☒	b. Conflicting other markings?
☒	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☒ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☒	☐	1. Wearing high-visibility gear?
☐	☐	2. Using traffic control devices (i.e. paddle and pole)
☒	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☒	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☒	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Sign crew truck with all the traffic cones and signs for the southbound side.

The construction signs are mounted on waffle board which is unacceptable material. The waffle board reduces the reflectivity of the signs.

The Contractor's Supervisor draws out the traffic pattern to be installed that shift.

The Maintenance crew and the Contractor's crew have a tailgate talk before every shift and District 1 has the group sign in during the talks.

PART 4: WORK ZONE INSPECTION PHOTOS

I-91 SB Exit 26: A temporary sign turned to face traffic when in use warning oncoming traffic that the LEFT TWO LANES CLOSED AHEAD.

I-91 SB Exit 25: A FINES DOUBLED sign is installed on the on ramp.

I-91 SB: Although this is a temporary construction sign, it stays in place through day to inform motorists of the roadway conditions that may be exposed from shift to shift like RAISED STRUCTURES.

I-91 SB Exit 25: A LEFT TWO LANES CLOSED AHEAD sign on the ramp.

PART 4: WORK ZONE INSPECTION PHOTOS

I-91 SB: A VMS overhead states WORK ZONE AHEAD SLOW DOWN on its first frame.

I-91 SB: A ROAD WORK AHEAD sign is installed only on the left side.

I-91 SB: The VMS's second frame states LEFT TWO CENTER LANES CLOSED. A FINES DOUBLED sign is installed only on the left side of the highway.

I-91 SB: Maintenance uses the REDUCED SPEED TO 45 MPH sign which have been discontinued by CTDOT Traffic Engineering for construction work zones because it is deemed not enforceable by law.

PART 4: WORK ZONE INSPECTION PHOTOS

I-91 SB: A legal sign post-mounted for the project after the advance warning. The Maintenance vehicles block oncoming traffic while the sign crew installs the pattern.

I-91 SB: The taper of the pattern being installed. The far left lane is closed.

I-91: Another temporary sign installed for a semi-permanent condition.

I-91 SB: The far left lane is closed and the tangential of the pattern is being installed.

PART 4: WORK ZONE INSPECTION PHOTOS

I-91 SB: A Rolling Road Block is used to slow traffic in all four lanes while the entire pattern is being installed. State Police, TMAs, and Maintenance vehicles are used to slow traffic. The RRB started at 7:47 PM.

I-91 SB: The taper for the center left lane is being installed.

I-91 SB: A LANE ENDS MERGE RIGHT sign installed in the closed left lane before starting the taper for the center left lane.

I-91 SB: Although the far two left lanes are closed, the Rolling Rod Block continues.

PART 4: WORK ZONE INSPECTION PHOTOS

I-91 SB: The equipment and dump trucks are stationed in the left lane. The RRB continued despite the lanes being closed to ensure motorists don't pass the sign truck and come into the left lanes where the equipment is.

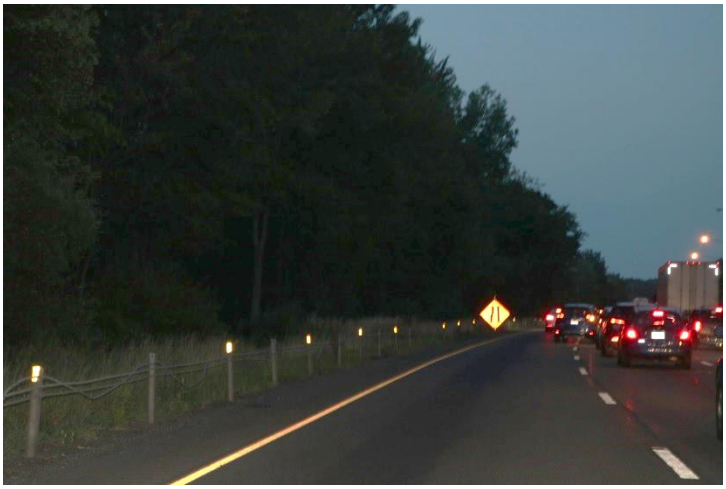
I-91 SB: The cones being used are 36 inches which is the minimum required height for Maintenance projects. However, the quality of the cones is marginal with a number of scuff marks and dirt on them.

I-91 SB: Maintenance installs a small cone with as electric symbol under overhead utility lines so dump trucks are aware of when to lower their truck beds.

I-91 SB: The END ROAD WORK is installed around Exit 24.

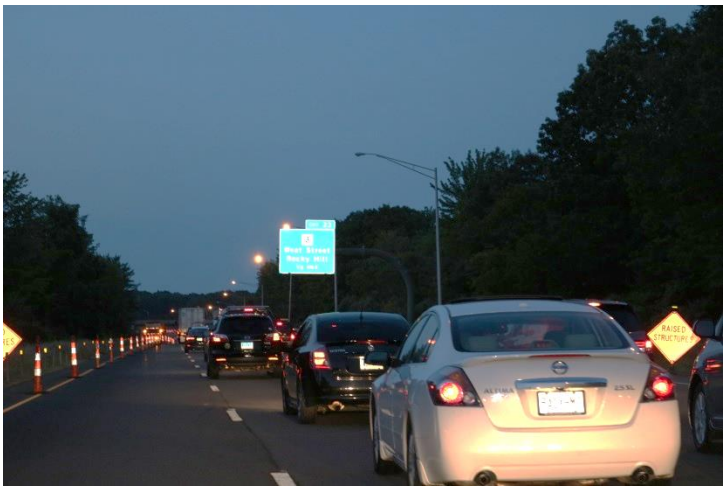
PART 4: WORK ZONE INSPECTION PHOTOS

I-91 SB: The RRB finished at 8:08 PM when the full pattern was installed allowing the traffic to proceed through.



I-91 NB: A merge right depiction sign only on the left side of the road. None was placed on the right side of the roadway.

I-91 NB: The advance warning signs starting the northbound side.

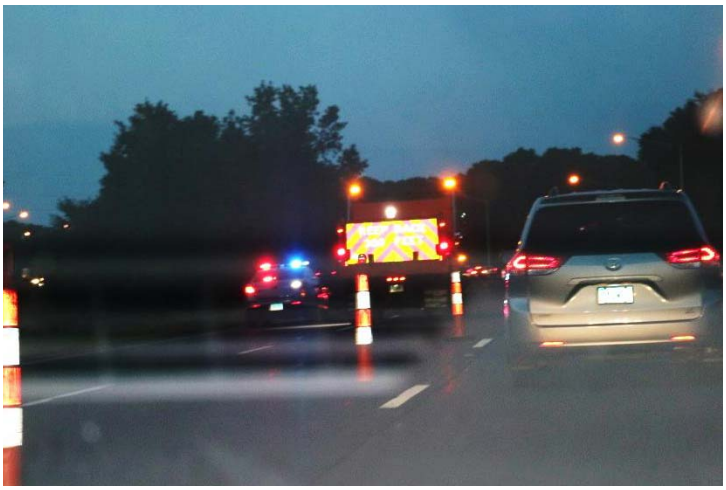


I-91 NB: The taper of the pattern starting on the far left lane.

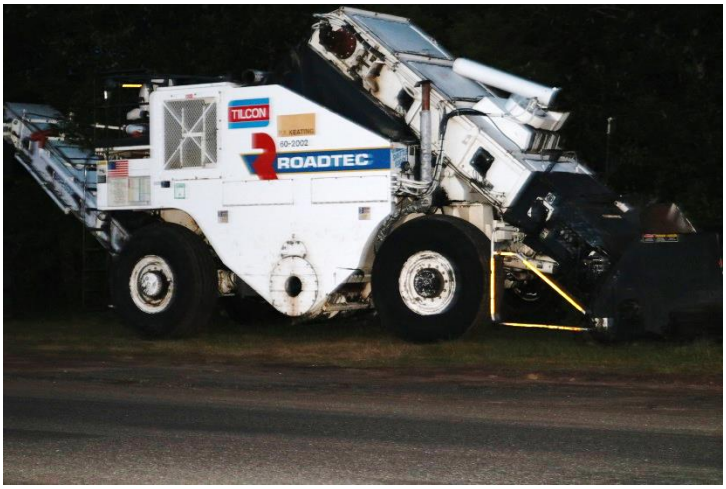
PART 4: WORK ZONE INSPECTION PHOTOS

I-91 NB: The pattern is comprised of 42-inch cones which are preferable especially on the interstate. A TMA is within the taper and has an advance flashing arrow signaling to merge right.

I-91 NB: The VMS over the northbound side didn't display any messages about the work zone below.



I-91 NB: A State Police vehicle is stationed within the pattern.



I-91 NB: Equipment is parked off the side of road when not in use, however it looks to be within the clear zone.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS

1. There is no Transportation Management Plan for this project even though it's on an interstate.
2. The General Supervisor stated that more State Police should be used on their multi-lane traffic patterns for enforcement.
3. The construction signs were mounted on waffle board.
4. Before every shift, the Contractor's crew leader holds a tailgate talk. He also draws out the traffic pattern on a white board so the crew can see the pattern they are going to install while he describes how they will install it. During the tailgate talk, District 1 Maintenance crew has everyone present sign in.
5. The construction signs were only installed on the left side of the highway not both sides of the highway.
6. On the Southbound side the Variable Message Sign (VMS) overhead displayed a message about the Work Zone conditions.
7. The Contractor on this project uses the "Reduce Speed to 45 MPH" sign.
8. Temporary signs used to describe prolonged conditions, like "Raised Structures" or "Bump", were not anchored or weighted on the base of the temporary stand.
9. Most cones used for the traffic pattern on the southbound side were in marginal or unacceptable condition.
10. A Rolling Road Block (RRB) was used on I-91 in a four-lane section from 7:47 pm to 8:08 pm (21 minutes) while the sign crew set up the two-lane closure pattern. The RRB extended not only after the taper was installed for the first lane but even after the taper was installed for the second lane. The State Police directed the implementation of the RRB which contradicted Department policy.
11. Equipment mobilized into the left lane and parked before pattern installation was complete. If traffic was let through once the taper was installed, motorists could have bypassed the pattern installation, changed into the left lane and met the parked equipment abruptly.
12. The Contractor uses a green 12-inch cone underneath overhead utility lines to bring awareness to truck drivers to lower raised beds in that location.
13. The Northbound side used 42-inch cones for its traffic pattern.
14. The VMS over the Northbound side didn't have any message displayed about the work zone below.
15. The equipment parked on the Northbound side was parked within the clear zone.
16. The pattern on the Northbound side didn't include an END ROAD WORK sign at the end.

RECOMMENDATIONS

1. Now that Maintenance is administering Pavement Preservation Projects located on interstate roadways, the projects should have a TMP included with them.
2. Using State Police for enforcement within a work zone is a good.
3. Construction signs should not be mounted on waffle board types of plastic substrate, foam core, and composite aluminum sign substrates. These materials decrease the reflectivity of the signs.

PART 5: FINDINGS AND RECOMMENDATIONS

4. Holding tailgate talks every shift is a good practice. It ensures everyone understands what's to be done that shift and work can proceed smoothly. Having a sign in sheet can safeguard the supervisors that each worker will account for the information received.
5. The advance warning signs are to be installed on both sides of the highway as noted in the Work Zone Safety Guidelines for Maintenance Operations and will bring more awareness to motorists about the work ahead no matter which lane they're traveling in.
6. Since the Contractor didn't use Changeable Message Signs, it was good to have the VMS used to bring awareness about the conditions.
7. The "Reduce Speed to 45 MPH" sign is not enforceable but have been claimed to be a good traffic calming control.
8. Construction signs mounted on tripod stands used for a long-term duration should be anchored by weighting the bottom of the stand so they don't get displaced by fast winds on the interstates.
9. Traffic devices and signs should be cleaned if dirty or replaced if misshapen, worn, or missing reflective tape.
10. The Office of Construction has issued a Construction Directive to limit Rolling Road Blocks to 15 minutes. This prevents significant delays from occurring due to the road being blocked and to allow residual backups to disperse quickly. This directive should be used by the Office of Maintenance to ensure consistency within the Department.
11. Equipment that will be used can mobilize to the work zone but should be within the closed lane by the end of the taper to allow traffic to be let through without concern about motorists bypassing the traffic pattern installation and changing lanes to be met with the equipment in the way.
12. Using devices to bring awareness to the presence of obstructions to the work is a good practice.
13. The taller 42-inch cones are best for traffic patterns on interstates.
14. If VMS will be the only advance warning messaging for a project, they need to be on and displaying messages.
15. The clear zone requirement based on the design speed of the roadway need to be maintained. Objects within the clear zone are considered blunt ends and need to either be placed outside the clear zones or positively protected.
16. Signs noted on the places within the Work Zone Safety Guidelines for Maintenance Operations need to be adhered to and installed correctly and completely.

Submitted by:_____ Date: 8/8/17

Kiah Patten

Reviewed by: _____ Date: 8/8/2017

Anthony Kwentoh

All in Attendance

Cc: Construction Division Chief

FHWA Safety Engineer

District Maintenance Director – District Maintenance Manager

John DeCastro – Fredrick DiNardi – George Santos

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0170-3435 D (PPP) **District:** 2

Date: 8/9/2017 **Time:** 6:00 pm **Weather, Temp.:** Sunny, 79°

Town: Windham, Chaplin **Route:** 6

Road Type: ☐ Interstate ☐ Expressway ☒ Secondary ☐ Local

FOCUS OF REVIEW: ☒ Temporary Lane Closure ☒ Stage Construction
☐ Temporary Signalization ☐ Detour
☐ Pedestrian/Bicycle Access ☒ Night Work

Project Engineer: Jamie Fellows (General Supervisor) **Chief Inspector:** Mark Herrick (Crew Leader)

Prime Contractor: Tilcon Connecticut, Inc. **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: **Percent Complete:**

Calendar Days Allotted: **Calendar Days Completed:**

REVIEW PARTICIPANTS

NAME	REPRESENTING
Jamie Fellows	District 1 Maintenance
Fredrick DiNardi	Office of Maintenance
Anthony Kwentoh	Office of Construction
Dean Dickinson	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   No.

3. What documents do you reference for work zone information?

   Work Zone Guidelines for Maintenance Operations

4. What, if any, accommodations have been made for Emergency Services?

   State Police were notified of project work and all other Emergency Services are notified through press releases. Emergency Services gets priority through the work zone. If the road is shut down, motorists can take Route 203 around.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   Not applicable.

6. Have ADA requirements been met for pedestrians?

   Not applicable.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored in the median of Route 6 (limited-access highway) heading towards Columbia and in the commuter lot on Route 6.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored in the commuter lot on Route 6.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   Not applicable.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   There are no specific special provisions included in the contract. Traffic control is paid as a lump sum item.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   The typical plans included in the Work Zone Guidelines like noted before.

4. Is there stage construction? If so, explain.

   Yes, there are traffic shifts. All traffic shifted to the eastbound side and work done the westbound side and then the reverse.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   Turning widths are impacted with traffic is shifted. The OS/OW office is notified through press release of any changes to the project. So far, the project has had no issue with wide loads.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   No.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes.

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	**24 feet**
≤ 40 mph	16 feet

9. Chief Inspector Comments:

   Not present.

10. Project Engineer Comments:

    No comments.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☐ Drums ☐ Barricades
☐	☒	a. Clean and visible? **Some cones were marginal, used both 36" and 42" cones**
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☐	a. Functioning in the correct mode?
		b. Location?
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **One**
		b. Location? **Route 6 EB near project limit**
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many?
		b. Location?
C. Temporary Pavement Markings		
☐	☒	Temporary pavement markings? Type: ☐ Tape ☐ Paint ☐ Epoxy
☐	☐	a. Legible?
☐	☐	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☒ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☒	☐	1. Wearing high-visibility gear?
☐	☒	2. Using traffic control devices (i.e. paddle and pole)
☐	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☒	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☒	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Route 6 EB: The sign crew heading out on the road in Windham.

The next temporary construction sign is ROAD WORK AHEAD.

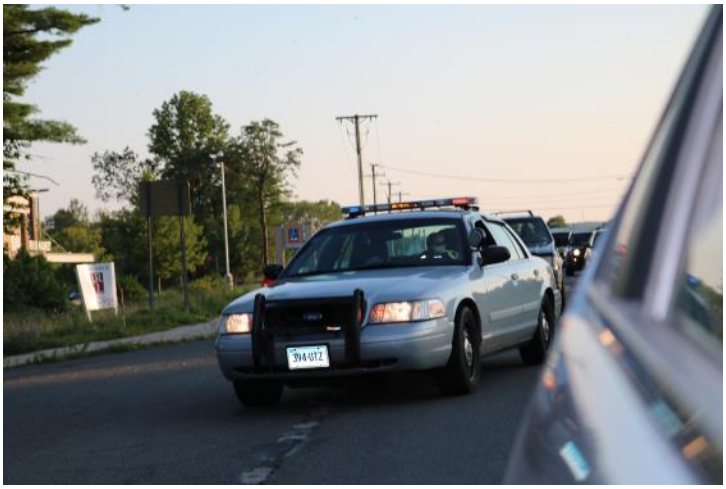
The signs are mounted on waffle board.

Route 6 EB: Although the project is using State Police for awareness and to direct traffic, they place a flagger sign to make people aware of trafficperson ahead.

Route 6 EB: The first sign to be placed is a FINES DOUBLED sign.

Route 6 EB: The taper for the pattern is started. The traffic cones are 36 inches in height.

PART 4: WORK ZONE INSPECTION PHOTOS



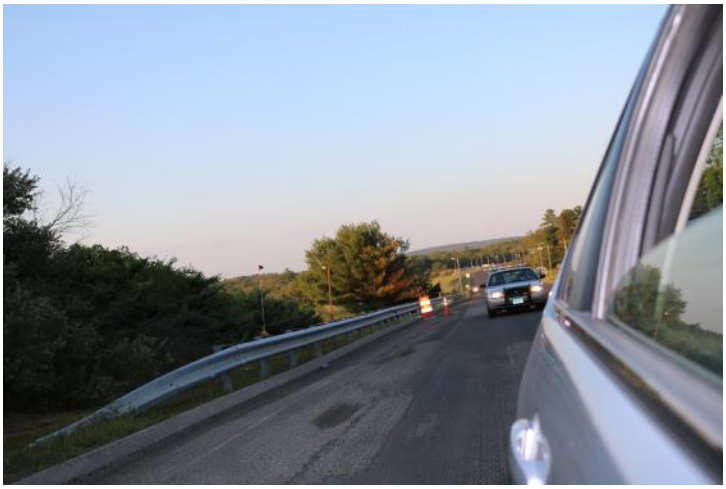
Route 6 EB: The project uses a Rolling Road Block while installing their traffic pattern.

Route 6 EB: The only Changeable Message Sign for the project. Maintenance provided this and this is the only one they could procure. The sign's first frame: MILLING & PAVING STARTING, the second frame: 7/17/17 USE CAUTION.

Route 6 EB: A temporary arrow sign is installed to direct traffic to merge right. According to the Work Zone Guidelines for Maintenance Operations, the sign should be a high mounted internally illuminated flashing arrow.

PART 4: WORK ZONE INSPECTION PHOTOS

The traffic pattern is closing the WB lanes, shifting the WB traffic to the left EB lane and having all EB traffic into the right EB lane.



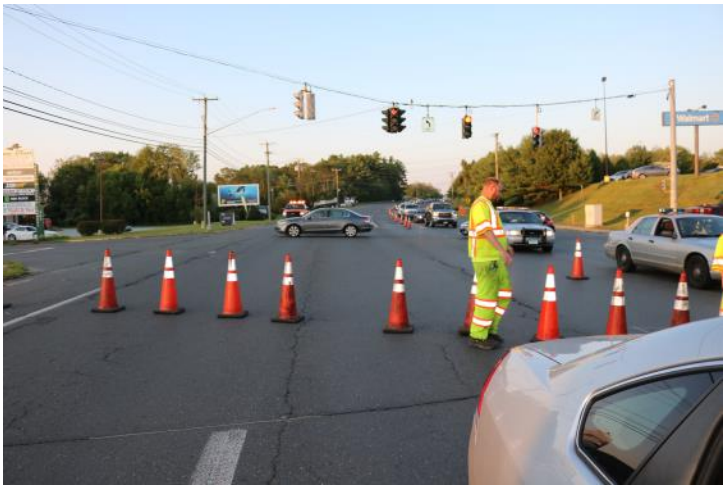
Route 6 WB: The State Police has now started the Rolling Road Block.

Route 6 WB: The first sign placed is the FINES DOUBLED sign. The traffic is still proceeding in their usual lanes.

Route 6 WB: An arrow was installed in the taper again.

Equipment was parked on the side streets of Route 6.

PART 4: WORK ZONE INSPECTION PHOTOS



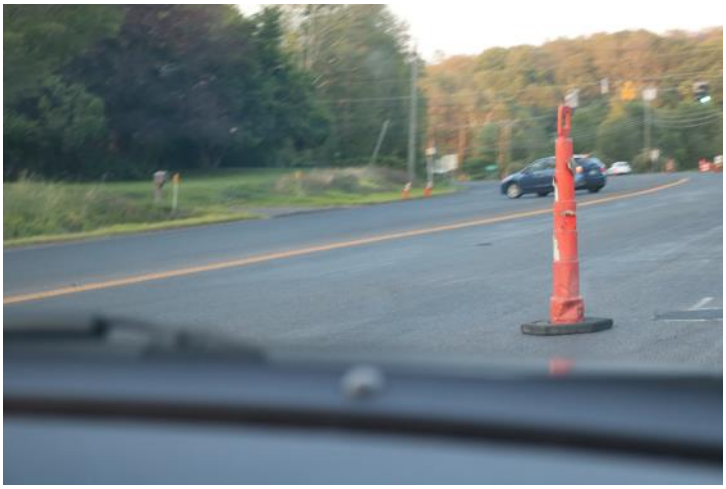
Route 6 WB: To prevent traffic from turning into the closed lanes, traffic cones are placed across the lanes at the intersection.

Route 6 WB: Signs are placed to inform the motorists of the temporary road way condition. This one states GROOVED PAVEMENT AHEAD.

Another arrow sign was installed the end of a business driveway to inform motorists they can only turn right when proceeding out.

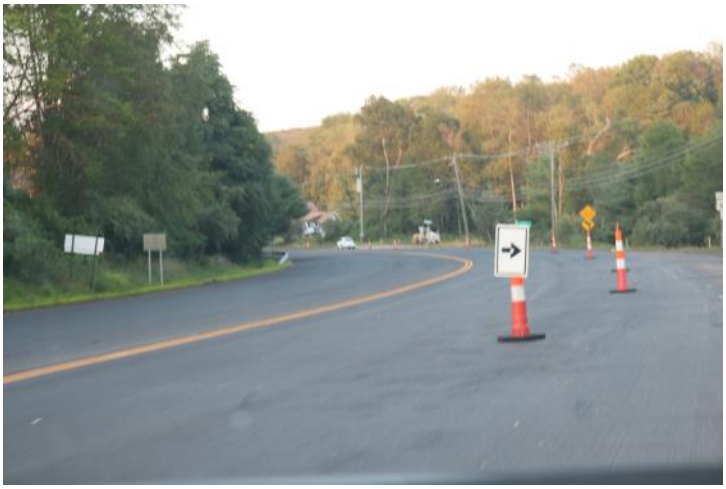
Route 6 WB: The other operation further down Route 6 in Chaplin, the traffic is shifted to the EB side as well. This pattern uses the taller 42-inch cones.

PART 4: WORK ZONE INSPECTION PHOTOS



This traffic cone has unacceptable quality. This is an example of one that needs to be replaced.

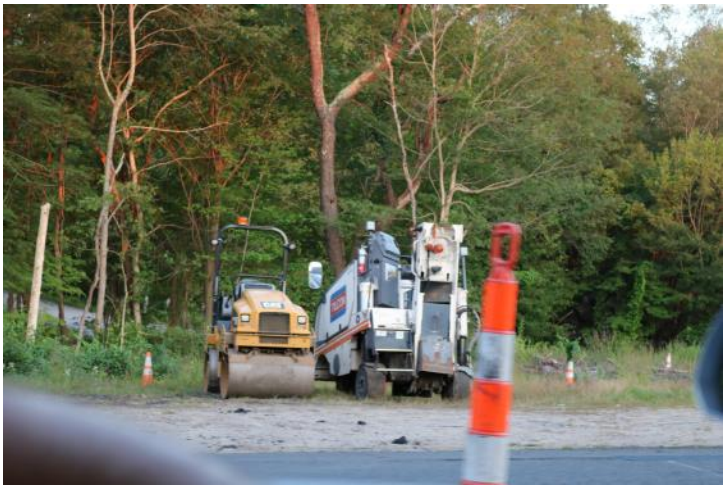
The crew closes off the WB lanes at the intersection.



Route 6 EB: This pattern uses little arrow signs mounted on the traffic cones just after an intersection.

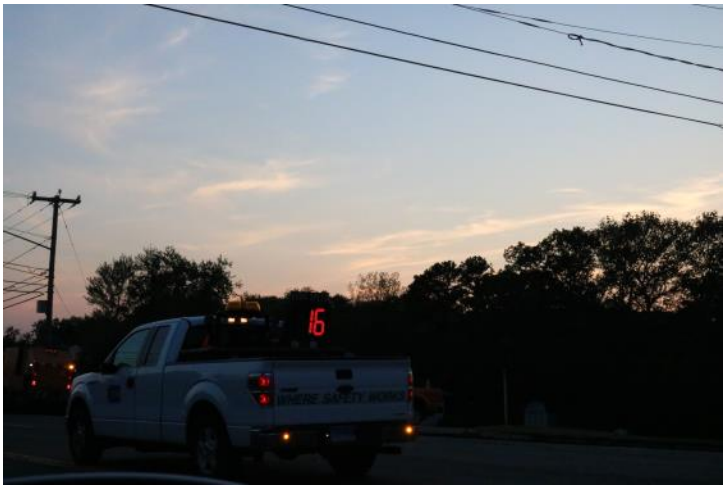
Route 6 WB: This sign (RAISED STRUCTURES) is mounted too low. It may be more convenient to mount on posts already placed but the height of the sign still needs to be high enough to catch a motorist's attention.

Route 6 EB: The sign crew placing the next row of cones to close the WB lane. The State Police is assisting.



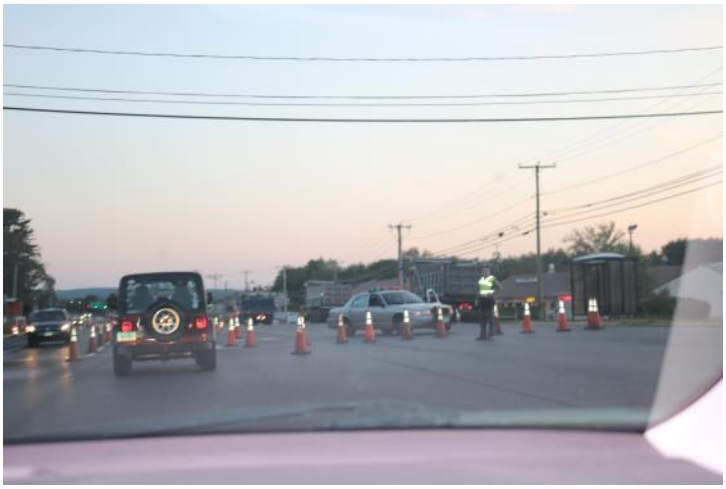
Equipment stored off the road.

PART 4: WORK ZONE INSPECTION PHOTOS



The Contractor has a truck-mounted speed trailer which is placed within the pattern.

Route 6, Chaplin: This pattern uses the LANE SHIFT sign.



Route 6 WB: The traffic shift to the EB lanes.

Route 6, Chaplin: The little arrow sign mounted after an intersection is been painted over and is unclear of what it's depicting.

Route 6, Windham: A police officer is directing traffic through an intersection of Route 6 and entrance for a shopping plaza.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. The signs are mounted on waffle board.
2. The traffic patterns used arrow signs in the tapers.
3. Maintenance provided the CMS used for the project and they could only procure one used near the pattern in Windham.
4. Some of the traffic cones used were worn, bent out of shape, or missing reflective tape. There was also a sign was mounted too low and one had paint on its face..
5. After an intersection, small arrow signs mounted on traffic cones were used to guide motorists into their appropriate lane.
6. A speed trailer was mounted on the back of the Contractor's work truck to help calm traffic.

RECOMMENDATIONS:

1. Waffle board is an unacceptable material to use for construction signs since the reflectivity of the signs is poor.
2. The typical plans included in the Work Zone Guidelines for Maintenance Operations depicted that a high mounted internally illuminated flashing arrow should be used within the taper not temporary construction arrow signs.
3. The Contractor is supposed to provide the traffic control for the project, including Changeable Message Signs. If CMS are needed for either end s of the project for advance warning, the Contractor should provide that.
4. Traffic devices in marginal or unacceptable condition should be replaced and signs should be mounted with an adequate height to increase visibility to the motorists.
5. Having more signs added minimum required signs for the pattern is a good practice to help direct motorists to their proper place.
6. Having traffic calming devices like speed trailers within the traffic pattern are a good practice in reducing speeds within work zones.

Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

Anthony Kwentoh

All in Attendance

Cc: Construction Division Chief
FHWA Safety Engineer
District Maintenance Director – District Maintenance Manager
John DeCastro – Fredrick DiNardi – George Santos

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0170-3435 F (PPP) **District:** 3

Date: 8/10/2017 **Time:** 7:00 pm **Weather, Temp.:** Sunny, 78°

Town: Orange, Woodbridge **Route:** 15

Road Type: ☐ Interstate ☒ Expressway ☐ Secondary ☐ Local

FOCUS OF REVIEW:

☒ Temporary Lane Closure
☐ Temporary Signalization
☐ Pedestrian/Bicycle Access
☐ Stage Construction
☒ Detour
☒ Night Work

Project Engineer: Mark Lalla (General Supervisor) **Chief Inspector:** Dan McSweet (Crew Leader)

Prime Contractor: Tilcon Connecticut, Inc. **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: **Percent Complete:**

Calendar Days Allotted: **Calendar Days Completed:**

REVIEW PARTICIPANTS

NAME	REPRESENTING
Anthony Castaldi	District 3 Maintenance
Fredrick DiNardi	Office of Maintenance
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   No.

3. What documents do you reference for work zone information?

   The project refers to the Work Zone Guidelines for Maintenance Operations.

4. What, if any, accommodations have been made for Emergency Services?

   Emergency Services are notified through press releases posted. While traveling, EMS will use an alternate route around or if they need to proceed through, they get priority.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   Not applicable.

6. Have ADA requirements been met for pedestrians?

   Not applicable.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored in the yard at the Maintenance Garage on Route 34.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored 40 feet off the road in the old service areas which are used as pull off areas or behind the cable systems or guiderail.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is no Transportation Management plan for this project.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   Traffic control is paid as a lump sum item.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   The typical plans are part of the Work Zone Guidelines mentioned before.

4. Is there stage construction? If so, explain.

   No.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   No.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   Yes, when a ramp is closed for a few hours during the night while the operation proceeds by, traffic is detoured to the next exit.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes.

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	**26 feet**
45-50 mph	24 feet
≤ 40 mph	16 feet

9. Chief Inspector Comments:

   Not present.

10. Project Engineer Comments:

    No comments.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☒	☐	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☒	☐	**4. Advance Flashing Arrow?** Type: ☐ Portable ☒ Truck-mounted
☒	☐	a. Functioning in the correct mode?
		b. Location? **Within taper**
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **Two**
		b. Location? **SB Exit 60 and NB Exit 55B**
☐	☐	c. Message understandable?
		d. Number of frames displayed?
☐	☐	e. Timing between screens acceptable?
☐	☐	f. Readable from a distance?
☒	☐	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many? **Two**
		b. Location? **Assisting with RRB**
C. Temporary Pavement Markings		
☐	☒	Temporary pavement markings? Type: ☐ Tape ☐ Paint ☐ Epoxy
☐	☐	a. Legible?
☐	☐	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

PART 3: WORK ZONE INSPECTION CHECKLIST

E. Traffic Control Personnel		
		☒ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☐	1. Wearing high-visibility gear?
☐	☐	2. Using traffic control devices (i.e. paddle and pole)
☐	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☒	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☒	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Here is a comparison of two types of truck-mounted attenuators. The one on the left is the new CT Truck-Mounted Impact Attenuator that complies with Test Level 3. The one on the right is old attenuator that is determined.

The crew meets on the on ramp to Route 15 and a have a brief talk about how to proceed.

The entrance ramp to Route 15 off Derby Avenue has a temporary sign that says BUMP for the milled ramp. The sign is in marginal condition and some of the message has been covered over by tape.

Route 15 NB: The first sign placed is the FINES DOUBLED sign on the left side of the road.

A traffic drum is kept on the catch basin to bring awareness that it is raised.

PART 4: WORK ZONE INSPECTION PHOTOS

Route 15 NB: Equipment is stored off the road in old service areas.

Route 15 NB: The Contractor still uses the REDUCE SPEED TO 45 MPH signs which are a good traffic calming device.

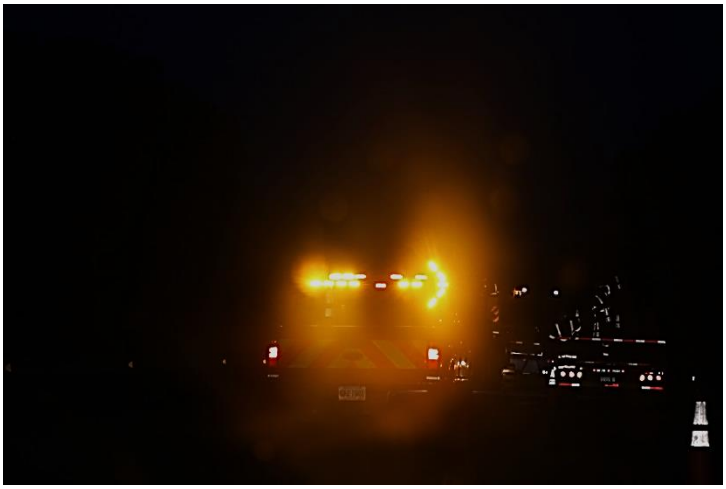
Route 15 NB: Another construction sign stating ROAD WORK AHEAD.

Route 15 NB: An arrow sign is posted instead of an internally illuminated arrow board.

Route 15 NB: The next sign to state LEFT LANE CLOSED AHEAD posted only on the left side of the roadway.

Route 15 NB: The tangential of the pattern being installed with 36 inch cones.

PART 4: WORK ZONE INSPECTION PHOTOS



Route 15 NB: A truck-mounted flashing arrow placed in the closed lane indicates to merge right.

Route 15 NB: The last device placed was the END ROAD WORK sign.

Route 15 NB: The Contractor's truck is placed in the pattern. It has a speed trailer mounted on it to help calm traffic.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS

1. A Rolling Road Block (RRB) was used on Route 15 from 8:03 pm to 8:28 pm (25 minutes) while the sign crew installed the pattern.
2. The Contractor installs an extra REDUCE SPEED TO 45 MPH sign within the pattern.
3. The Contractor only installs traffic signs on the left side of the road.
4. The arrow sign installed in taper is a sign not a flashing arrow board.
5. The flashing arrow in the closed lane is in the arrow mode not the straight bar.
6. The Contractor has a speed trailer mounted on their truck and parks it within the work zone so the trailer can calm speeds.

RECOMMENDATIONS

1. Although the RRB exceeded the time limit by 10 minutes, Route 15 is a narrow two-lane expressway and the State Police did not left traffic through to keep workers safe as they installed the entire pattern.
2. The REDUCE SPEEDS signs are good traffic calming practice that can be considered for other highway traffic patterns.
3. The Work Zone Guidelines for Maintenance Operations depicts signs to be installed on both sides of the roadway.
4. The Work Zone Guidelines depicts a flashing arrow be placed in the taper.
5. The flashing arrow used in the closed lane should indicate a closed lane by displaying the straight bar.
6. Speed trailers within patterns are a good traffic calming device.

Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

Anthony Kwentoh

All in Attendance

Cc: Construction Division Chief
FHWA Safety Engineer
District Maintenance Director – District Maintenance Manager
John DeCastro – Fredrick DiNardi – George Santos

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0170-3435 I (PPP) **District:** 4

Date: 7/31/2017 **Time:** 7:00 pm **Weather, Temp.:** Clear, 85°

Town: Naugatuck, Waterbury **Route:** 63

Road Type: ☐ Interstate ☐ Expressway ☒ Secondary ☐ Local

FOCUS OF REVIEW:

☒ Temporary Lane Closure
☐ Temporary Signalization
☐ Pedestrian/Bicycle Access
☐ Stage Construction
☐ Detour
☒ Night Work

Project Engineer: Glenn Durante (General Supervisor) **Chief Inspector:** Chris Levesque (Crew Leader)

Prime Contractor: Tilcon Connecticut, Inc. **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: **Percent Complete:**

Calendar Days Allotted: **Calendar Days Completed:**

REVIEW PARTICIPANTS

NAME	REPRESENTING
Eoin McClure	District 4 Maintenance
Glenn Durante	District 4 Maintenance
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   No.

3. What documents do you reference for work zone information?

   The crew refers to the Work Zone Safety Guidelines for Maintenance Operations and the Manual on Uniformed Traffic Control Devices

4. What, if any, accommodations have been made for Emergency Services?

   The project sends out Press Releases through the Office of Communications and project updates on Changeable Message Signs.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   Not applicable.

6. Have ADA requirements been met for pedestrians?

   Not applicable.

7. Where is the designated laydown area for materials to be stored?

   Any materials needed are stored in the yard of the Maintenance garage.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored in a staging area off Route 8 Exit 26.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   Not applicable.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   The traffic control is paid by the hour and most items related to work zones are paid as a lump sum. There are items for municipal police and uniformed flaggers. No issues with them.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   The contract includes typical plans from the Work Zone Safety Guidelines for Maintenance Operations.

4. Is there stage construction? If so, explain.

   No.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   No.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   No.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes.

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	**16 feet**

9. Chief Inspector Comments:

   No comments.

10. Project Engineer Comments:

    No comments.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☐	☒	a. Clean, visible, legible per ATSSA guide?
☐	☒	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☐	☒	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☐	☒	**4. Advance Flashing Arrow?** Type: ☐ Portable ☐ Truck-mounted
☐	☐	a. Functioning in the correct mode?
		b. Location?
☐	☒	**5. Changeable Message Sign (CMS)?**
		a. How many?
		b. Location?
☐	☐	c. Message understandable?
		d. Number of frames displayed?
☐	☐	e. Timing between screens acceptable?
☐	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many?
		b. Location?
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☐ Epoxy
☒	☐	a. Legible?
☐	☒	b. Conflicting other markings?
☒	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

PART 3: WORK ZONE INSPECTION CHECKLIST

E. Traffic Control Personnel		
		☐ State Police ☒ Municipal Police ☒ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☒	☐	1. Wearing high-visibility gear?
☒	☐	2. Using traffic control devices (i.e. paddle and pole, traffic control wand)
☒	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☒	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☒	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

Route 63 NB: The post-mounted ROAD WORK AHEAD sign is worn with heavy smudges. This sign is in unacceptable condition and needs to be replaced.

Route 63 NB: This RAISED STRUCTURES sign is in acceptable condition.

Route 63 NB: The temporary sign placed is to notify motorists of the BUMP in roadway.

Route 63 NB: A Naugatuck Police Officer follows the sign crew with lights while the crew starts to install the pattern.

Route 63 NB: A temporary FINES DOUBLED sign.

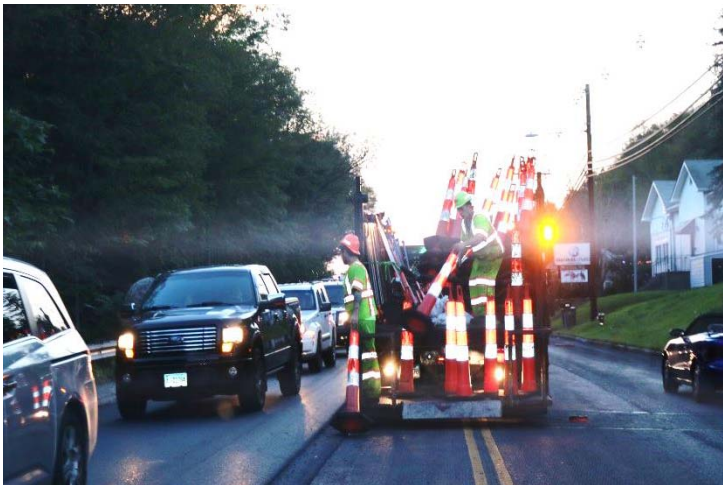
PART 4: WORK ZONE INSPECTION PHOTOS

Route 63 NB: Some of devices need replacing like the cone above.

Route 63 NB: Equipment in the staging area off Route 8 Exit 26.

Route 63 NB: The equipment mobilizing to the work area.

Route 63 NB: There's a uniformed flagger equipped with a traffic control wand is positioned at the work area to direct traffic around the operation.



Route 63 NB: The sign crew placing cones while the SB side is shifted in a reduced lane.

PART 4: WORK ZONE INSPECTION PHOTOS

Route 63 NB: A Municipal Police Officer also with a traffic control wand is directing the motorists through alternating one-way traffic pattern on the SB lane back onto the NB side.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. A number of the traffic control devices and post-mounted signs are worn and dirty. Some traffic cones were missing reflective tape and misshaped and some construction signs had lettering worn off and low reflectivity.

2. For a night operation on secondary road, the use of traffic control wands for the flagging operation in lieu of a typical flagger paddle.

RECOMMENDATIONS

1. Traffic control devices that are in unacceptable quality per ATSSA Quality Guidelines need to be replaced so visibility of the work zone is maximized.

2. Using equipment such as the traffic control wands for the enhanced visibility for nighttime flagging operations is a good practice.

Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

Anthony Kwentoh

All in Attendance
Cc: Construction Division Chief
FHWA Safety Engineer
District Maintenance Director – District Maintenance Manager
John DeCastro – Fredrick DiNardi

In-Depth Field Reviews

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0063-0699 **District:** 1

Date: 8/14/2017 **Time:** 7:00 pm **Weather, Temp.:** Clear, 79°

Town: Hartford **Route:** I-84

Road Type: ☒ Interstate ☐ Expressway ☐ Secondary ☐ Local

FOCUS OF REVIEW:
☒ Temporary Lane Closure ☒ Stage Construction
☒ Temporary Signalization ☒ Detour
☒ Pedestrian/Bicycle Access ☒ Night Work

Project Engineer: Joseph Sullivan **Chief Inspector:** Bret Kaczka

Prime Contractor: The Middlesex Corp. **Inspection Forces:** ☐ State ☒ Consultant

Contract Value: $40,218,453.68 **Percent Complete:** 14%

Calendar Days Allotted: 485 **Calendar Days Completed:** 100

REVIEW PARTICIPANTS

NAME	REPRESENTING
Joseph Sullivan	District 1 Construction
Bret Kaczka	Urban Engineers
Joseph Grasso	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes. There was a Changeable Message Sign installed that had poor lighting. It was brought to the Contractor's attention and it was replaced. Otherwise, all other equipment is new.

2. Have there been any incidents within your project's work zone?

   There have been a number of incidents within the work zone. However, this section of I-84 has a lot of historical incidents regardless of the work zone.

3. What documents do you reference for work zone information?

   The Maintenance and Protection of Traffic special provisions and the typical traffic plans included are referenced.

4. What, if any, accommodations have been made for Emergency Services?

   Emergency Services and other stakeholders are informed when press releases are posted. When EMS approaches the work zone, they have priority to get through. If the work prevents them to proceed through, there is a police escort available.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   The project installed a detour pedestrian pathway at train station. The detour consisted of directing pedestrians across the road to an open sidewalk.

6. Have ADA requirements been met for pedestrians?

   The existing ADA features are being maintained. The pedestrian detour takes place from ramp to ramp.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored at the Laurel Street and Capitol Avenue yard.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is also stored in the Contractor's yard.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is a Transportation Management Plan and it's located on ProjectWise.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   NTC – Regional Transportation Management Plan

   NTC – Urban Pathways, Rev. 3/16

   NTC – Use of State Police Officers, Rev. 6/12

Item #0406314a – 80 Mil Pavement Marking Groove 5" Wide, Rev. 1/15

Item #0406315a – 80 Mil Pavement Marking Groove 7" Wide, Rev. 1/15

Item #0406316a – 80 Mil Pavement Marking Groove 9" Wide, Rev. 1/15

Item #0406317a – 80 Mil Pavement Marking Groove 13" Wide, Rev. 1/15

Item #0971001a – Maintenance and Protection of Traffic, Rev. 3/16

Item #1131002a – Remote Control Changeable Message Sign, Rev. 12/02

Item #1216020a – 6" Black Aggregate Cover-Up Resin Pavement Markings

Item #1216021a – 8" Black Aggregate Cover-Up Resin Pavement Markings

Item #1216022a – 10" Black Aggregate Cover-Up Resin Pavement Markings

Item #1803066a – Type B Impact Attenuation System (High-Incident) Non-Gating, Rev. 6/13

Item #1806201a – Type D Portable Impact Attenuation System, Rev. 5/16

Item #1809001a – Remove Impact Attenuation Device (Sand Inertial Barrier Module), Rev. 6/13

There are no issues with the above listed special provisions.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   MPT Key Sheet

   All traffic plans are complete. However, the project has had issues with installing the pattern on the westbound side since there is limited space. They install the number of devices required but had to decrease the space between the devices in order to fit them all in.

4. Is there stage construction? If so, explain.

   Yes, there are two stages. The two right lanes are closed and then the median and left lanes will be closed.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   There is a width restriction of 11.5 feet. The reduction was submitted in a Change Order to do so and use barrier for protection. OS/OW are notified of the restrictions and stage changes through press releases.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   Yes, there are detours when ramps are closed.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Not applicable. All objects are taken off the road every night to be stored in the yard. The CMS is placed behind barrier.

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	26 feet
45-50 mph	**24 feet**
≤ 40 mph	16 feet

9. Chief Inspector Comments:

   No comments.

10. Project Engineer Comments:

    No comments.

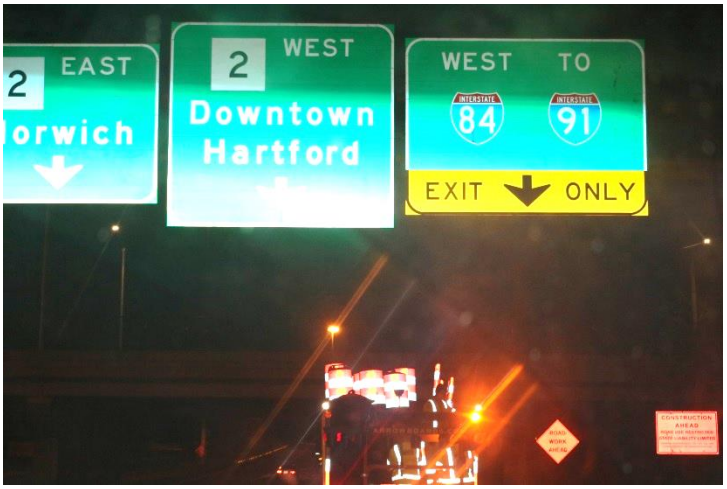
PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☒	☐	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☒	☐	**4. Advance Flashing Arrow?** Type: ☒ Portable ☒ Truck-mounted
☒	☐	a. Functioning in the correct mode?
		b. Location? **Within the pattern**
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **One**
		b. Location? **I-84 Westbound**
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☒	☐	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many? **Four**
		b. Location? **Within the pattern**
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☐ Epoxy
☒	☐	a. Legible?
☐	☒	b. Conflicting other markings?
☒	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☒ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☒	☐	1. Wearing high-visibility gear?
☐	☒	2. Using traffic control devices (i.e. paddle and pole)
☒	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☐	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☐	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

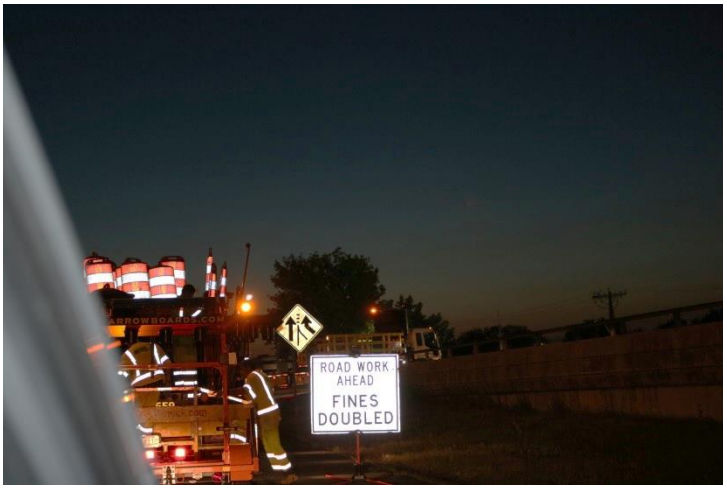
PART 4: WORK ZONE INSPECTION PHOTOS

The construction signs are mounted on plywood which is an acceptable material to use.

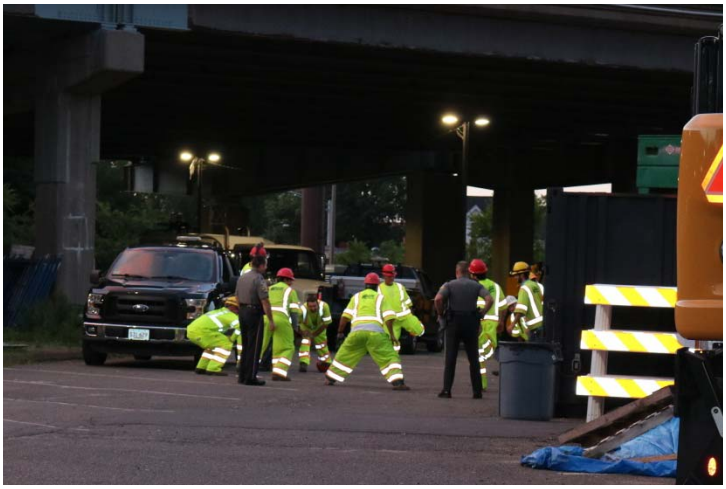


I-84 WB: There are post-mounted signs on the roadway starting at the Route 2 juncture.

There are three out of the four crash trucks ready to proceed out on the roadway with the sign pattern truck.



I-84 WB: The crew places a FINES DOUBLED sign first.



The work crew is holding a tailgate talk before going out which includes stretching.

I-84 WB: The next sign is a ROAD WORK AHEAD sign with the sides cut down to keep it from infringing in the lane.

PART 4: WORK ZONE INSPECTION PHOTOS

I-84 WB: A Changeable Message Sign stationed before Exit 50 states RIGHT 2 LANES CLOSED.

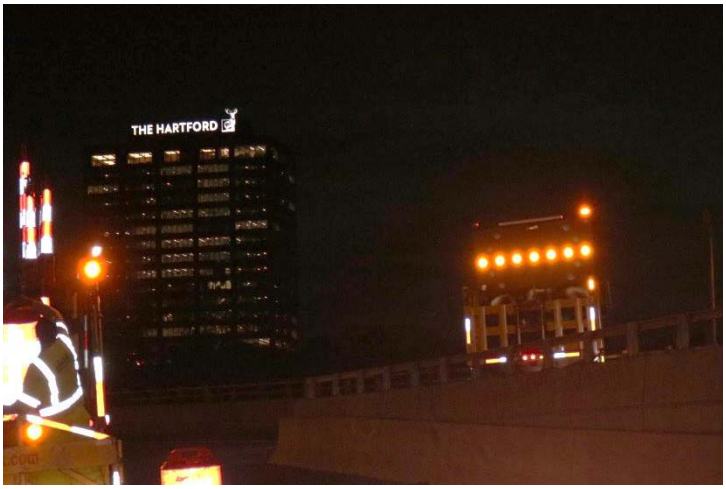
I-84 WB: More legal signs are post-mounted at the Viaduct tunnel.

I-84 WB: The crew mounts signs on both sides of the roadway stating RIGHT TWO LANES CLOSED AHEAD.

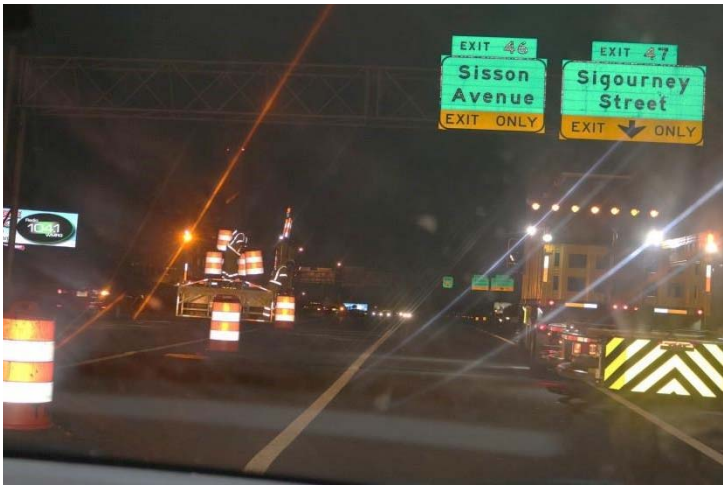
I-84 WB: A merge left sign is mounted within the tunnel. The sides are cut off to prevent it infringing into the lanes.

I-84 WB: More ROAD WORK AHEAD signs are mounted where Route 44 merges into I-84.

PART 4: WORK ZONE INSPECTION PHOTOS

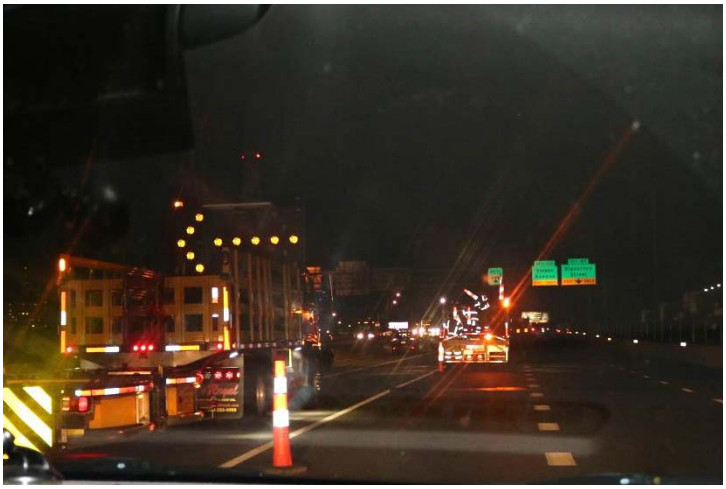


I-84 WB: A crash truck blocking the Exit 49 on ramp also has a flashing arrow indicating lane closed while the sign crew installs the pattern on the mainline.



I-84 WB: Exit 47 to Sigourney Street is closed by a crash truck. It has a straight bar flashing arrow showing the lane is closed. The sign crew is installing traffic drums to close the off ramps.

I-84 WB: There is a traffic shifted ahead sign with a merge left flashing arrow.



I-84 WB: A crash truck advising motorists to merge left was providing extra protection for the sign truck while the crew installed the devices for the tangent of the pattern.

PART 4: WORK ZONE INSPECTION PHOTOS

I-84 WB: The tangential of the pattern leading to the exit.

I-84 EB, Exit 45: A sign truck is closing the on ramp while the sign crew installs the pattern and a motorist had to voice her opinion to the truck driver.

I-84 WB: Traffic cones are placed across the right two lanes at the exit to prevent motorists crossing the right two lanes to the exit from entering the right lanes after the exit. A temporary exit sign is placed in the closed lanes to show motorists where they can exit.

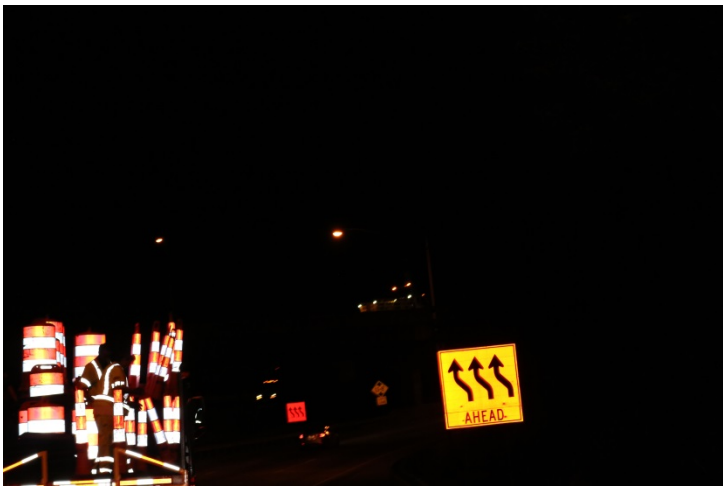
I-84 EB: The legal sign post-mounted on the right.

I-84 WB: A sign placed stating RIGHT LANES CLOSED.

PART 4: WORK ZONE INSPECTION PHOTOS

I-84 EB: The taper of the pattern is started with traffic drums. There is a post-mounted sign with an attached warning light on the right.

I-84 EB: The pattern leads up to an exit and a temporary exit sign is placed in the closed lane.



I-84 EB: A traffic shifted ahead sign for the eastbound side.

I-84 EB: An END ROAD WORK sign is mounted after the exit.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. The project used a Rolling Road Block (RRB) to install their traffic pattern. On the Westbound side it ran from 8:32 pm to 8:54 pm (22 minutes). On the Eastbound side it ran from 9:17 pm to 9:29 pm (12 minutes).
2. The construction signs had their sides cut off to keep them from infringing into the travel lanes.
3. On the westbound side, space was limited to place all the traffic devices.
4. A crash truck advising motorists to merge left was providing extra protection for the sign truck while the crew installed the devices for the tangent of the pattern.

RECOMMENDATIONS:

1. Although the RRB went over the time limit stated in the Construction Directive, the residual back up was minimal. Still the project should try to adhere to the policy as much as possible.
2. Adjusting the signs to accommodate the field conditions is a good practice, as long as the adjustments do not confuse the message or prohibit the motorists from safely moving through the work zone.
3. Field adjustments are allowable as long as the minimum requirements on the traffic plans are met.
4. Only on roadway sections where there are three or more lanes, can a crash truck protect the traffic-side of the sign truck. However, the crash truck is still considered to be interfering with traffic by closing the second lane before the Limits of Operation allow a closure of two lanes.

Submitted by: _____ Date: 8/8/17

Kiah Patten

Reviewed by: _____ Date: 8/8/2017

Anthony Kwentoh

All in Attendance

Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0094-0252 **District:** 2

Date: 9/14/2017 **Time:** 10:00 am **Weather, Temp.:** Cloudy, 71°

Town: Groton, New London **Route:** I-95

Road Type: ☒ Interstate ☐ Expressway ☐ Secondary ☐ Local

FOCUS OF REVIEW:
☒ Temporary Lane Closure ☒ Stage Construction
☐ Temporary Signalization ☐ Detour
☐ Pedestrian/Bicycle Access ☒ Night Work

Project Engineer: Keith Schoppe **Chief Inspector:** Henry Doll

Prime Contractor: Mohawk Northeast, Inc. **Inspection Forces:** ☐ State ☒ Consultant

Contract Value: $31,128,479.35 **Percent Complete:** 27%

Calendar Days Allotted: 488 **Calendar Days Completed:** 130

REVIEW PARTICIPANTS

NAME	REPRESENTING
Keith Schoppe	District 2 Construction
Henry Doll	Figg
Kevin Sherry	Figg
Brett Stoeffler	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Dean Dickinson	Office of Construction
Kermit Ramdial	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   Yes, there have been about six minor rear-end crashes.

3. What documents do you reference for work zone information?

   The staff refers to the standard drawings, specification drawings, and Part 5 of the MUTCD for traffic control on local roads.

4. What, if any, accommodations have been made for Emergency Services?

   The project held a Work Zone Safety Meeting at the beginning of the project. EMS, the New London and Groton Police Department and Fire Department attended, along with the personnel from the Mayor's office and Engineer's office. There is the Lawrence & Memorial Hospital and the Pequot Health Center near the project but it's unsure how they are notified of project activities.

   The Contractor has a walk-through with New London Fire Department recently. However, the Contractor has not provided a rescue boat to date. The project is trying to come to an agreement with Contractor about whether the boat is a boat for safety or one for inspection depending on how it is used.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   On Williams Street beneath the bridge, pedestrians are detoured to the other side of road if work is being done overhead.

6. Have ADA requirements been met for pedestrians?

   The project is maintaining existing ADA features.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored in state-owned parking lot under Spans 3-5 and on Crystal Avenue under Span 13.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored on-site behind barrier.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   The project is a TMP and it's located on ProjectWise. The project is aware of the TMP but has not made any updates as of yet. However, the original suggestions in the TMP

may not be applicable any more since the staging for the project has changed. The review team suggested noting that and what things will be done instead.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   NTC – Use of State Police Officers, Rev. 6/16

   NTC – Construction Access on the Property Owned by Mohawk Northeast, Rev. 6/16

   Section 1.08 – Prosecution and Progress, Rev. 07/16

   Item #0822005A – Temporary Precast Concrete Barrier Curb (Structure), Rev. 6/16

   Item #0971001A – Maintenance and Protection of Traffic, Rev. 7/16

   Item #1131002A – Remote Controlled Changeable Message Sign, Rev. 6/16

   Item #1806201A – Type D Portable Impact Attenuation System, Rev. 5/16

   No, there aren't any concerns with the above listed items. The Project Engineer asked if the process changed for the State Police billing. The team said it has not.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   TR-02 – TR-04: Pavement Marking Plans

   TR-05 – TR-07: Pedestrian Signing Plans

   TR-08: Notes, Details, & Advanced Warning Sign Locations

   TR-09 – TR-10: Maintenance and Protection of Traffic

   TR-11: Overhead Sign Layout

   The inspection staff has added extra lane reduction arrows on the I-95 approach. There weren't any details for work zones on local roads so the staff referred to MUTCD for guidance.

4. Is there stage construction? If so, explain.

   Yes, there are four stages: 1) shifting traffic to the south side of the Southbound bridge and having four lanes open, 2) having traffic shifted to the north side and having three lanes open, 3) having traffic shifted to the south side and having three lanes open, and 4) having traffic shift to the south side with four lanes open.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   Yes, the lanes are reduced to 11 feet, the right shoulder reduced to 2 feet, and the left shoulder reduced to one foot. There is no weight restriction but there are guidelines for loading construction equipment for paving operations.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   No.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes, if not then behind barrier.

   * Design Speed Standard:

Roadway Speed	Clear Zone Distance
60-70 mph	30 feet
55 mph	**26 feet**
45-50 mph	24 feet
≤ 40 mph	16 feet

9. Chief Inspector Comments:

   No comments.

10. Project Engineer Comments:

    The staging was revised due to scope of joints so the TMP's traffic control has changed.

    The District plans to propose adding a Smart Work Zone System to the project through a Change Order. The review team told the inspection staff about the Smart Work Zone guidance document and where to find it for reference.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☐	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☐ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☒	☐	**3. Warning lights?**
☒	☐	a. Functioning?
☒	☐	**4. Advance Flashing Arrow?** Type: ☒ Portable ☐ Truck-mounted
☒	☐	a. Functioning in the correct mode?
		b. Location? **In the closed shoulder within the taper**
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **Two**
		b. Location? **After Exit 88 on the right, in closed lane within the pattern**
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☐	☒	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many?
		b. Location?
C. Temporary Pavement Markings		
☒	☐	Temporary pavement markings? Type: ☐ Tape ☒ Paint ☐ Epoxy
☒	☐	a. Legible?
☐	☒	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☒ State Police ☐ Municipal Police ☒ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☒	☐	1. Wearing high-visibility gear?
☒	☐	2. Using traffic control devices (i.e. paddle and pole)
☒	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☐	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☐	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

I-95 SB: The post-mounted construction roadway liability signs on both sides of the roadway

I-95 SB: The second frame states "CAUTION MERGING TRAFFIC".

I-95 SB: Next, the ROAD WORK AHEAD signs are mounted on both sides of the road

I-95 SB: A construction sign with a non-standard size states "NARROW LANES AHEAD".

I-95 SB: Next is the LEFT LANE CLOSED and behind is a CMS stating "REDUCE SPEED" on its first frame.

I-95 SB: The last advance warning signs are the merge right chimney signs.

PART 4: WORK ZONE INSPECTION PHOTOS

I-95 SB: Another CMS is located in the shoulder of the median. It states "TAKE TURNS MERGING" on its first frame.

I-95 SB: This is the work zone within the median behind TPCBC.

I-95 SB: The second frame state" LEFT LANE MERGE AHEAD".

I-95 SB: The temporary pavement markings shifting the traffic right. However, the blackout paint doesn't match the color of the roadway.

I-95 SB: A portable flashing arrow is in the shoulder and within the taper of the pattern.

I-95 SB: After the work zone, a traffic shifted to the left sign is posted.

PART 4: WORK ZONE INSPECTION PHOTOS

I-95 SB: END ROAD WORK signs posted at Exit 82.

Crystal Avenue: A boom man lift is set up on the road to assist with work on the side of the bridge overhead.

Crystal Avenue: A flagging operation is set up to assist with the alternating traffic pattern.

Crystal Avenue: Signs are posted to inform motorists of the flagging operation.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. The project hasn't been updating the Transportation Management Plan. They didn't think the plan was applicable since their staging plans have changed.
2. The blackout paint for the temporary pavement markings does not match the roadway.

RECOMMENDATIONS:

1. Although the staging has changed, anything done for traffic control and public outreach need to be noted in the TMP.
2. Research should be conducted to have a selection of colors to use for marking roadway pavement. Covered markings that do not match the roadway can become misleading markings themselves and conflict with other markings.

Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

Anthony Kwentoh

All in Attendance
Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0100-0178 **District:** 3

Date: 8/21/2017 **Time:** 6:30 pm **Weather, Temp.:** Clear, 81°

Town: North Haven **Route:** 91

Road Type: ☒ Interstate ☐ Expressway ☐ Secondary ☒ Local

FOCUS OF REVIEW:
☒ Temporary Lane Closure
☐ Temporary Signalization
☐ Pedestrian/Bicycle Access
☐ Stage Construction
☒ Detour
☒ Night Work

Project Engineer: Matthew Briggs **Chief Inspector:** Shalal Hussein

Prime Contractor: MIG Corporation Inc. **Inspection Forces:** ☒ State ☐ Consultant

Contract Value: $6,387,761.61 **Percent Complete:** 32%

Calendar Days Allotted: 240 **Calendar Days Completed:** 120

REVIEW PARTICIPANTS

NAME	REPRESENTING
Shalal Hussein	District 3A Construction
Gary Sirois	District 3A Construction
Claudel Meronnis	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Dean Dickinson	Office of Construction
Kermit Ramdial	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes, most of the devices are installed according to plan. However, one Changeable Message Sign does not work and the field staff has requested for it to be replaced. There is another CMS on the northbound side at Exit 12 is too close to the pattern but that was the only location good enough to place it. It is protected by an impact attenuation system.

2. Have there been any incidents within your project's work zone?

   No.

3. What documents do you reference for work zone information?

   The Maintenance and Protection of Traffic plan is referenced. The project held a Work Zone Safety meeting at the beginning of the project to review the work zone safety criteria.

4. What, if any, accommodations have been made for Emergency Services?

   The project held a Bassett Road closure meeting with the Town and the Chief of Police to ensure everyone is in agreement with how it will be handled. Any project updates are posted on the Town's website and press releases posted on the Department's website.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   Not applicable.

6. Have ADA requirements been met for pedestrians?

   Not applicable.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored in the staging area within the gore of Exit 13 on southbound side. The staging area is permitted. Some materials are hauled into the I-91 median as needed.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored within the closed section of Bassett Road and in the I-91 median.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is no Transportation Management Plan for this project.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

   Item #0100600A – Construction Access, Rev. 05/16

   Item #0971001A – Maintenance and Protection of Traffic, Rev. 07/16

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

   The Chief Inspector doesn't like how the Construction Access specification was written. He says that it doesn't clearly state how to maintain the access.

   There is no item for "water for dust control" but this may be more of an environmental compliance concern.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   TRF-02: MPT Plan

   TRF-03: Bassett Road Detour Plan

   TRF-04 – Signs Face Sheet Aluminum R-Series Typical Details

   The plans are complete and there are no concerns.

4. Is there stage construction? If so, explain.

   No.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   No.

6. Is there a temporary signalization? If so, explain.

   No.

7. Is there a detour? If so, explain.

   Yes, there is a detour about three miles detouring traffic onto Route 22, Pool Road, and then back onto Bassett Road.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes, objects are stored 35 feet off the road.

* Design Speed Standard:

Roadway Speed	Clear Zone Distance
60-70 mph	**30 feet**
55 mph	26 feet
45-50 mph	24 feet
≤ 40 mph	**16 feet**

9. Chief Inspector Comments:

   State Police has told the Chief Inspector that the Contractor's workers pulling in and out the median before lanes are closed is infringing on the limitations of operation. The workers aren't using their strobes on their vehicles.

   Also, the Contractor is using two TMAs to close the lanes but the positioning of the trucks is questionable for the rolling road block operations.

10. Project Engineer Comments:

    Not present.

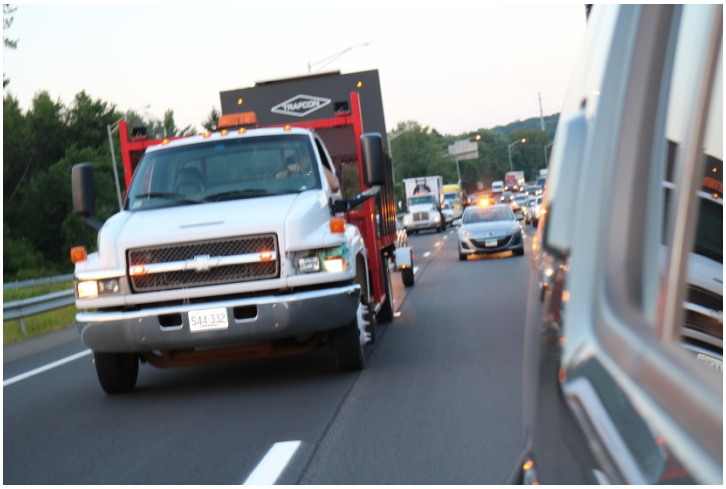
PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☒	☐	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☐	☒	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☒ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☒	☐	**3. Warning lights?**
☒	☐	a. Functioning?
☒	☐	**4. Advance Flashing Arrow?** Type: ☒ Portable ☐ Truck-mounted
☒	☐	a. Functioning in the correct mode?
		b. Location? **Within the pattern**
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **One**
		b. Location? **SB Exit 13 gore**
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☒	☐	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many? **Two**
		b. Location? **Within the pattern**
C. Temporary Pavement Markings		
☐	☒	Temporary pavement markings? Type: ☐ Tape ☐ Paint ☐ Epoxy
☐	☐	a. Legible?
☐	☐	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☐ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☐	1. Wearing high-visibility gear?
☐	☐	2. Using traffic control devices (i.e. paddle and pole)
☐	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☐	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☐	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS

I-91 SB: A post-mounted SHOULDER CLOSED AHEAD sign.



I-91 SB: The start of the Rolling Road Block.

I-91 SB: The GRS-IBS abutment for the bridge on Bassett Road being replaced over I-91.

I-91 SB: The first temporary sign installed is ROAD WORK AHEAD.

I-91 SB: The staging area at the SB Exit 13.

I-91 SB: The next sign is RIGHT LANE CLOSED AHEAD.

PART 4: WORK ZONE INSPECTION PHOTOS

I-91 SB: The last sign is a merge left sign.

I-91 SB: Misshaped traffic drums have been temporarily discarded to the side of the roadway.

I-91 SB: The taper for pattern is being installed with the workers off the truck and a crash truck protecting the crew while on the road.

I-91 SB: A post-mounted SHOULDER CLOSED AHEAD sign has a warning light attached.

I-91 SB: A flashing arrow is installed in the taper.

I-91 SB: A crash truck with a flashing arrow is placed in the closed lane.

PART 4: WORK ZONE INSPECTION PHOTOS

Some of the TPCBC sections had pins that were not fastened on the bottom.

Bassett Road: The material and equipment is stored behind barrier on the road above.

Bassett Road: The road leading up to the bridge is closed. There are signs posted on Type III barricades stating BRIDGE OUT and SIDEWALK CLOSED.

Bassett Road: Further down the road, a sign is posted stating BRIDGE TO BE CLOSED FROM 7/10 TO 11/7.

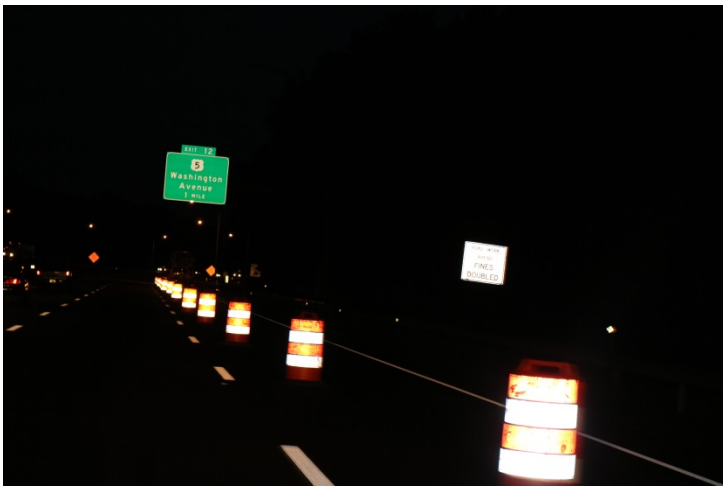
I-91 SB: The CMS at Exit 13 stating RIGHT LANE CLOSED.

PART 4: WORK ZONE INSPECTION PHOTOS

I-91 SB: A construction sign was knocked over after traffic was let through.

I-91 SB: The liability sign for the project is posted after the start of the pattern not before the advance warning signs closer to the project limits.

I-91 SB: A portable flashing arrow within the taper after dark is indicating to merge left.



I-91 SB: The FINES DOUBLED sign post mounted after the pattern not before the advance warning signs.

I-91 SB: A TMA within the taper has a flashing arrow indicating to merge left.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. One Changeable Message Sign does not work and the field staff has requested for it to be replaced.
2. The Chief Inspector doesn't like how the Construction Access specification was written. He says that it doesn't clearly state how to maintain the access.
3. State Police has told the Chief Inspector that the Contractor's workers pulling in and out the median before lanes are closed is infringing on the limitations of operation. The workers aren't using their strobes on their vehicles.
4. A Rolling Road Block was used to install the traffic pattern. It started at 7:16 pm and the left lane was opened to traffic at 7:24 pm. A TMA was positioned in the middle lane protecting the crew while they were on the road in the right lane installing the taper.
5. Some of the Temporary Precast Concrete Barrier Curb sections had pins that were not fastened on the bottom.
6. There is a sidewalk on Bassett Road which was closed but no detour was implemented for pedestrians.
7. The liability sign for the project is posted after the start of the pattern not before the advance warning signs closer to the project limits.

RECOMMENDATIONS:

1. If the Contractor does not provide functioning traffic control devices, a non-compliance notice can be issued or the issue can be elevated to supervisory staff.
2. A proposal for the Construction Access special provision for clarification can be made.
3. The Limitations of Operation need to be enforced. Another Work Zone Safety meeting can be held to determine better practices for work zone safety.
4. The Contractor was compliant in keeping the time under the allowable 15 minutes granted in the Rolling Road Block Directive. However, the TMA in the middle lane used to protect the workers while traffic is let through is infringing on the Limitations of Operation by closing two lanes before it is allowed.
5. The TPCBC needs to be installed according to the plan including fastening the pins at both ends.
6. The Chief Inspector said that closing the sidewalk on Bassett Road was discussed with the Town Engineer and he said that no detour was needed since it was not used much.
7. Liability and Fines Doubled signs should be at the beginning of the advance warning signs so motorists are aware of their responsibility when entering the work zone.

PART 5: FINDINGS AND RECOMMENDATIONS

Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

Anthony Kwentoh

All in Attendance

Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead

CONSTRUCTION
WORK ZONE REVIEW FORM

Project Number: 0158-0211 **District:** 3

Date: 8/17/2017 **Time:** 8:00 pm **Weather, Temp.:** Clear, 73°

Town: Westport **Route:** 15

Road Type: ☐ Interstate ☒ Expressway ☐ Secondary ☐ Local

FOCUS OF REVIEW:

☒ Temporary Lane Closure ☒ Stage Construction

☐ Temporary Signalization ☒ Detour

☐ Pedestrian/Bicycle Access ☒ Night Work

Project Engineer: Joseph Sorcinelli **Chief Inspector:** Paul van Olden (Resident Engineer)

Prime Contractor: Manafort Brothers, Inc. **Inspection Forces:** ☐ State ☒ Consultant

Contract Value: $56,712,000.00 **Percent Complete:** 9%

Calendar Days Allotted: 630 **Calendar Days Completed:** 122

REVIEW PARTICIPANTS

NAME	REPRESENTING
Joseph Sorcinelli	District 3 Construction
Paul van Olden	Gannett Fleming
Rob Barrett	AECOM
Jalal Asad	AECOM
Rodney Stowe	Manafort Brothers, Inc.
Jeff Wedge	Manafort Brothers, Inc.
Cameron Simard	Manafort Brothers, Inc.
Devin Widger	Manafort Brothers, Inc.
Jesse Jezek	Manafort Brothers, Inc.
Oddler Fils	Division of Traffic Engineering
Anthony Kwentoh	Office of Construction
Kiah Patten	Office of Construction

PART 1: PROJECT STAFF QUESTIONNAIRE

1. Are the Contractor's traffic control devices in functioning condition and installed according to plan? If no, explain.

   Yes.

2. Have there been any incidents within your project's work zone?

   Yes, there were four incidents that were non-work zone related.

3. What documents do you reference for work zone information?

   The project staff references the Maintenance and Protection of Traffic, and the Prosecution and Progress specifications.

4. What, if any, accommodations have been made for Emergency Services?

   No accommodations have been made for Emergency Services. Bridgeport Highway Operations is contacted when the Contractor proceeds out onto the roadway.

5. What, if any, accommodations have been made for pedestrians and bicyclists?

   Not applicable.

6. Have ADA requirements been met for pedestrians?

   Not applicable.

7. Where is the designated laydown area for materials to be stored?

   Materials are stored in a fenced Maintenance facility yard at Exit 40 and in the yard at the project field office.

8. Where is the designated area for equipment to be stored when construction is not in progress?

   Equipment is stored in the Maintenance facility at Exit 40, the project field office yard, and the Park & Ride parking lot at Exit 58.

PART 2: PLANS AND SPECIFICATIONS

1. Are you aware if there is a Transportation Management Plan for this project? Has it been helpful?

   There is a TMP for this project and it is located on ProjectWise. The project was advised to refer to the TMP for utilization to effectively manage and monitor work zones for safety and mobility, and maintain updates to the TMP.

2. What special provisions related to work zones are included in this contract? (List item numbers, descriptions, and provision dates.) Are there any concerns with them?

NTC – Traffic Signals, Rev. 8/14

NTC – Use of State Police Officers, Rev. 6/12

NTC – Equipment Operation and Protection, Rev. 11/99

NTC – Coordination of MPT with Other Projects, Rev. 11/16

Section 1.08 – Prosecution and Progress, Rev. 3/16

Item #0100600A – Construction Access, Rev. 5/16

Item #0100602A – Work Area Access

Item #0406314A - 80 Mil Pavement Marking Groove 5" Wide, Rev. 01/05

Item #0406315A - 80 Mil Pavement Marking Groove 7" Wide, Rev. 01/05

Item #0406316A - 80 Mil Pavement Marking Groove 9" Wide, Rev. 01/05

Item #0822002A - Relocated Temporary Precast Concrete Barrier Curb, Rev. 03/13

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

Item #0822006A - Relocated Temporary Precast Concrete Barrier Curb (Structure)

Item #0971001A – Maintenance and Protection of Traffic, Rev. 07/16

Item #0973725A – Worksite Traffic Supervisor (Minimum Bid), Rev. 11/16

Item #1111201A - Temporary Detection (Site No. 1), Rev. 6/15

Item #1111202A - Temporary Detection (Site No. 2), Rev. 6/15

Item #1111203A - Temporary Detection (Site No. 3), Rev. 6/15

Item #1111204A - Temporary Detection (Site No. 4), Rev. 6/15

Item #1111451A - Loop Detector Sawcut, Rev. 1/11

Item #1117301A - Low Bridge Warning Device, Rev. 1/13

Item #1118101A - Temporary Signalization, Rev. 10/03

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

Item #1131007A – Portable Work Zone Management System Deployment, Rev. 11/16

Item #1131008A – Portable Work Zone Management System Operations, Rev. 11/16

Item #1131009A – Portable Work Zone Management System Queue Trailer/Sensor (PQT), Rev. 11/16

Item #1131012A – Portable Work Zone Management System Changeable Message Sign/Queue Sensor Trailer (PCMQ), Rev. 11/16

Item #1131013A – Portable Work Zone Management System Queue Trailer Relocation, Rev. 11/16

Item #1131014A – Portable Work Zone Management System Mobile Video Camera/Queue Sensor Trailer (PVQS), Rev. 11/16

Item #1204120A - Install State Furnished Sign Face Sheet Aluminum, Rev. 11/99

Item #1204121A - Install State Furnished Sign Face Sheet Aluminum (Large Signs), Rev. 7/16

Item #1207034A - Sign Face - Extruded Aluminum (Type IV Retroreflective Sheeting), Rev. 7/16

Item #1216020A - 6" Black Aggregate Cover-Up Resin Pavement Markings

Item #1216021A - 8" Black Aggregate Cover-Up Resin Pavement Markings

Item #1216022A - 10" Black Aggregate Cover-Up Resin Pavement Markings

Item #1216024A - Black Aggregate Cover-Up Resin Pavement Markings, Symbols and Legends

Item #1806201A - Type D Portable Impact Attenuation System, Rev. 5/16

The quantity of Type D Portable Impact Attenuation Systems was too low. The Project Engineer suggested that if a PWZMS is included in a project it should be accompanied with items for protection for the system. The PWZMS is installed but it is not currently being used.

3. What work zone traffic plans are included in the project plans? Are they complete and current?

   DTR-01: Newtown Turnpike Detour Plan

   DTR-02: Redding Road Detour Plan

   AWS-01: Advance Warning Signing Plan

   MPT-01 – MPT-08: Stage Construction M&PT

   MPT-09: Traffic Control Pattern Lane Closure with Shift

   SPM-02 – SPM-13: Signing and Pavement Markings

   The traffic plans listed are complete for the ones that have been used so far.

4. Is there stage construction? If so, explain.

   Yes, there are five stages: 1 & 2) lane closures, 3) isolated work zones a half mile long with a mile in between, protected by barrier, 4) median work behind barrier, 5) final pavement.

5. Are there any weight and width restrictions within the stages? If so, email the OS/OW Unit when the stage is to be implemented at DOT.OSOWPermits@ct.gov or contact the OS/OW Supervisor: Don Braman at (860) 594-2878.

   Yes, there are weight, width, and height restrictions. No triaxles are allowed on Site No. 3 and there will be width restrictions on Site No. 1 with the lanes being reduced to 10 feet.

6. Is there a temporary signalization? If so, explain.

   Yes, on two local roads (Newtown Avenue and Merwins Lane) over the Merritt Parkway (Route 15) there will be temporary signals put in.

7. Is there a detour? If so, explain.

   Yes, there is a detour for Newtown Turnpike, Redding Road, and closed expressway ramps.

8. Is the clear zone requirement being maintained per design speed standard*? If not, explain.

   Yes, there is a design exception for a reduced clear zone due to the Merritt Parkway historical classification. Objects are outside the new clear zone.

   * Design Speed Standard:

Roadway Speed	**Clear Zone Distance**
60-70 mph	30 feet
55 mph	**26 feet**
45-50 mph	24 feet
≤ 40 mph	16 feet

9. Chief Inspector Comments:

   No comments.

10. Project Engineer Comments:

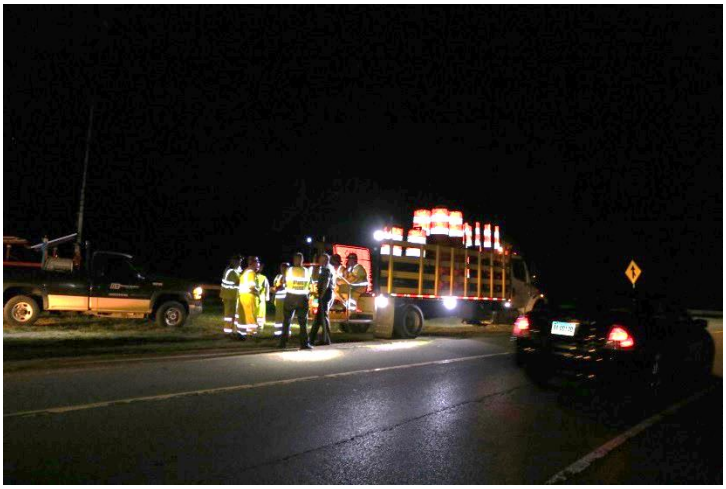
    No comments.

PART 3: WORK ZONE INSPECTION CHECKLIST

Yes	No	
A. Travel Hazards		
☒	☐	1. Clear and understandable guidance through the work zone?
☐	☒	2. Traffic congestion due to work zone?
☐	☒	3. Opportunities to enhance safety for the traveling public (i.e. blunt ends, drop-offs, etc.)?
☐	☒	4. Any horizontal/vertical clearance issues?
B. Traffic Control Devices		
☒	☐	**1. Signs?** Type: ☐ Regulatory ☒ Construction
☒	☐	a. Clean, visible, legible per ATSSA guide?
☒	☐	b. Reflectorized?
		c. Mounting height? **Adequate**
☒	☐	d. Mounted properly?
☒	☐	e. Need to be covered?
☒	☐	**2. Channelizing Devices?** Type: ☒ Cones ☒ Drums ☐ Barricades
☒	☐	a. Clean and visible?
☒	☐	b. Reflectorized?
☒	☐	c. Anchored?
☐	☒	**3. Warning lights?**
☐	☐	a. Functioning?
☒	☐	**4. Advance Flashing Arrow?** Type: ☒ Portable ☐ Truck-mounted
☒	☐	a. Functioning in the correct mode?
		b. Location? **Within the pattern's taper**
☒	☐	**5. Changeable Message Sign (CMS)?**
		a. How many? **Four**
		b. Location? **Near Route 15 SB Exit 40 & 42**
☒	☐	c. Message understandable?
		d. Number of frames displayed? **Two**
☒	☐	e. Timing between screens acceptable?
☒	☐	f. Readable from a distance?
☒	☐	**6. Crash Trucks (Truck Mounted Attenuators)?**
		a. How many? **Three**
		b. Location? **Used for the Rolling Road Block**
C. Temporary Pavement Markings		
☐	☒	Temporary pavement markings? Type: ☐ Tape ☐ Paint ☐ Epoxy
☐	☐	a. Legible?
☐	☐	b. Conflicting other markings?
☐	☐	c. If nighttime, markings visible?
D. Personal Protective Equipment		
☒	☐	Is everyone wearing the proper reflective equipment?

E. Traffic Control Personnel		
		☒ State Police ☐ Municipal Police ☐ Uniformed Flagger
		Next 3 Questions are if uniformed flaggers are being used.
☐	☐	1. Wearing high-visibility gear?
☐	☐	2. Using traffic control devices (i.e. paddle and pole)
☐	☐	3. Properly positioned?
F. Pedestrian / Bicycle Access		
☐	☐	1. Signs
☐	☐	a. Clean and visible?
		b. Mounting height?
☐	☐	2. Designated pathways?
☐	☐	a. Clear?
☐	☐	b. ADA compliant?

PART 4: WORK ZONE INSPECTION PHOTOS



The sign crew and the State Police have a tailgate talk in the on ramp gore before proceeding out.

Route 15 SB: The first advance warning signs to be installed are ROAD WORK AHEAD on both sides of the roadway.

Route 15 SB: Before the pattern near Exit 40, a Changeable Message Sign displays two frames: LANES CLOSED AHEAD, REDUCE SPEED TO 45 MPH.

Route 15 SB: The next signs are LEFT LANE CLOSED AHEAD.

Route 15 SB: The last signs installed are the merge right signs.

PART 4: WORK ZONE INSPECTION PHOTOS

Route 15 SB: The taper is installed using traffic drums.

Route 15 SB: Equipment parked on the side of the road.

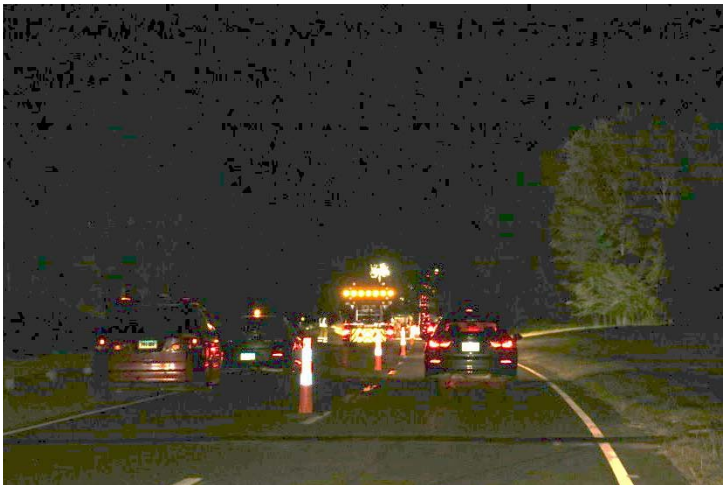
Route 15 SB: A flashing arrow within the taper advising motorists to merge right.

Route 15 SB: Traffic is let go after the Rolling Road Block.

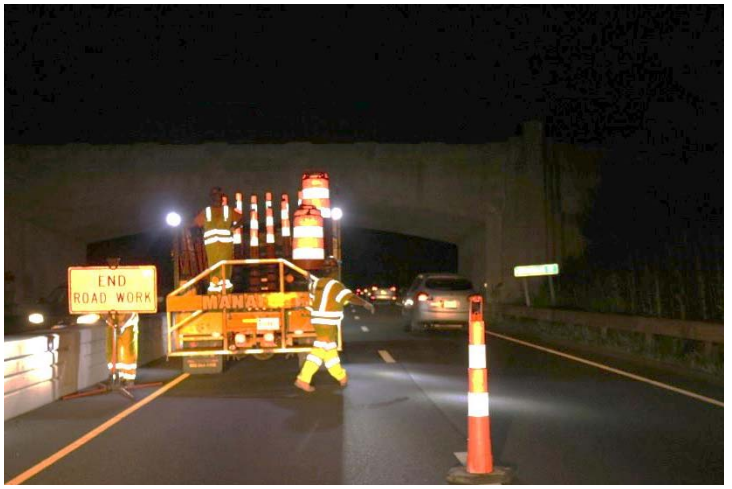
Route 15 SB: The tangent of the pattern is started using traffic cones.

Route 15 SB: More equipment stored off the roadway. However, with the limited space along the Parkway it is stored within the new clear zone exception.

PART 4: WORK ZONE INSPECTION PHOTOS



Route 15 SB: A crash truck is parked within the pattern protecting the work crew. It has a flashing arrow on it indicating with a stop bar that the lane is closed.



Route 15 SB: The END ROAD WORK sign installed.

PART 5: FINDINGS AND RECOMMENDATIONS

FINDINGS:

1. The quantity of Type D Portable Impact Attenuation Systems was too low.
2. The Project Engineer suggested that if a Portable Work Zone Management System is included in a project it should be accompanied with items for protection for the system.
3. The PWZMS is installed but it is not currently being used.

RECOMMENDATIONS:

1. Item quantities can better reflect what will be used in the field through plan reviews and post-construction reviews.
2. Highway Operations can consider adding a requirement for the Smart Work Zone specification or creating an item for protection of the PWZMS field trailers.
3. The project staff and vendor should work together to get the system operational and collecting data as soon as possible.

Submitted by: _____ Date: 9/8/17

Kiah Patten

Reviewed by: _____ Date: 9/11/2017

Anthony Kwentoh

All in Attendance

Cc: Construction Division Chief
FHWA Safety Engineer
District Engineer – Assistant District Engineer
Transportation Supervising Engineer
Project Design Lead