# CHAPTER 3
# INSPECTION FREQUENCY, SCHEDULING AND COORDINATION

## 3.1 INTRODUCTION

MassDOT has established bridge inspection frequencies that conform to the requirements set forth in 23 CFR 650 Subpart C for all bridges under its jurisdiction. This is implemented with the aid of the Bridge Inspection Management System (4D) that allows for the scheduling and programing of the bridge inspections.

MassDOT policy is to inspect all bridges within their established frequency. The responsibility for performing inspections within their established frequencies has been delegated to the appropriate Districts and Agencies. The Boston Bridge Inspection Unit monitors the conformance of inspection dates with the required frequencies. If a bridge inspection is completed out of frequency, the DBIE or Agency representative must provide the Bridge Inspection Engineer with a written explanation of the reason for the delay for inclusion into the NBIS history file located in Boston. Also, a copy of the written explanation shall be placed in the District history file.

The District Bridge Inspection Engineer (DBIE) is allowed to move bridges within an established frequency for a number of reasons, for example, water flow conditions, access restrictions, special requests, etc. At no time is the DBIE allowed to increase the frequency of an inspection.

The DBIE is required to evaluate the upcoming workload from month to month in their District and request consultant services to help, when needed, to meet the frequencies. When scheduling inspections, the DBIE must take into account the type of inspections required. Special Member Inspections are to be scheduled with the highest priority. All Special Member Inspections shall be performed when scheduled, and no "out of frequencies" (OOF) will be allowed on these types of inspections.

In this chapter, procedures have been standardized for requesting and obtaining police details, railroad flag protection and traffic management services. This standardization is required to help facilitate the process of paying invoices in a timely manner. The DBIE may delegate the task required to coordinate the inspection to various members of their staff.

## 3.2 INSPECTION TYPES AND FREQUENCIES

All bridges in the NBIS Bridge Inventory shall be inspected by team leaders that meet the qualifications outlined in 23 CFR 650 Subpart C. Common types of Inspections and their frequencies are as follows:

### 3.2.1 Routine Inspection

Routine Inspections are a "hands on" Inspection. MassDOT's Routine Inspection exceeds the level of inspection as referenced in the MBE in that the inspections are more of an "in-depth" inspection. Elements that exhibit deficiencies are accessed so documentation can be collected. The term "hands on" is meant to signify that the inspector must be at arm's length from the structural member being inspected. The hand's on inspection consists of observations and measurements, to determine the condition of the structural elements as compared to the previously recorded condition.

Routine Inspections are performed at regular intervals not to exceed twenty- four months.

### 3.2.2 Fracture Critical Inspection

Fracture Critical Inspections are performed on structures that have been determined to be fracture critical. Fracture Critical bridges are structures that have Fracture Critical Members (FCM's). Inspections are hands on and consist of the inspection of all FCM's as identified in the documented Fracture Critical Procedures that are on file in both the District and Boston offices. The NBIS Regulations require that Fracture Critical procedures be on file for Fracture Critical structures. As per Article 3.6.1.6 of the 2013 LRFD Bridge Manual, any Designer of a Fracture Critical bridge shall submit the procedure for the inspection of it to the Boston Bridge Inspection Engineer. This procedure will be placed in the history file and a copy of the procedure will be forwarded to the District.

The Fracture Critical Inspection is to be scheduled at the same time the Routine Inspection is performed unless circumstances arise that will require the frequency to be reduced to address deficiencies noted in previous inspections.

Fracture Critical Inspections are to be performed at regular intervals not to exceed twenty- four months.

### 3.2.3 Underwater Inspection

Underwater Inspections are performed on the underwater portions of bridge structures and the surrounding channel. These inspections may include soundings and probing to locate channel bottom and substructure undermining as well as conditions of submerged substructure elements. The MassDOT dive team may perform underwater inspections when water depths are too deep for inspectors to adequately assess conditions of the submerged elements. Customarily, underwater inspections occur on structures when depth of water along the substructure elements exceeds three feet.

Underwater Inspections are to be performed at regular intervals, generally 36 months, but not to exceed 60 months.

### 3.2.4 Special Member Inspection

Special Member Inspections are performed on a reduced frequency for every bridge in the NBIS inventory that has an overall condition rating of 4 or less (poor condition) for the deck, superstructure or substructure (Items 58, 59, 60 and 62 respectively). The Special Member Inspection is performed on those particular structural element(s) that are responsible for the poor condition rating for the overall item.

Special Member Inspection frequencies are as follows:

1. Structures with an overall condition rating of 4 in any one of the items 58, 59, 60, 62 shall be inspected at regular intervals not to exceed 12 months;

2. Structures with an overall condition rating of 3 in any one of the items 58, 59, 60, 62 shall be inspected at regular intervals not to exceed 6 months.

### 3.2.5 Underwater Special Member Inspection

Underwater Special Member Inspections are performed for the same reasons as stated in Subsection 3.2.4 and shall follow the same frequency policy. These Underwater Special Member Inspections are performed only when the structural component under the water is controlling the overall condition.

### 3.2.6 Closed Bridge Inspection

Closed Bridge Inspections document that the structure has been properly closed to vehicles and pedestrians when required. These Closed Bridge Inspections shall also include evaluation of the portion of the structure that is officially open to pedestrian traffic.

All closed bridges in the NBIS inventory, shall have a closed bridge inspection at a frequency not to exceed twenty-four months.

The DBIE may assign a more frequent inspection interval to ensure public safety. The frequency of a closed bridge may be increased due to the following:

1. DBIE's knowledge of the bridge;

2. Structure is open to pedestrians;

3. Structural element deterioration conditions could affect the use or public safety of individuals that use the facility underneath the structure.

If a structure has been closed to traffic for 5 years with no active project in place for repairs or replacement in the foreseeable future, the structure may be removed from the NBI and moved to the Non-NBIS Inventory. Coding for Item 8 shall be in accordance with Section 9.5.

Prior to the removal of the structure from the inventory, the District shall contact the owner of the structure to confirm that there are no plans anticipated for repairs or replacement. A letter to the owner of the structure shall be sent out stating that all future inspections will be the owner's responsibility. See Attachment 3-1 for a sample letter for a town owned structure.

### 3.2.7 Freeze/Thaw Bridge Inspection

Freeze/Thaw Bridge Inspections shall be performed yearly with the assistance of the District Maintenance Units. The Freeze/Thaw Inspections begin in the month of April and evaluate the condition of the exposed concrete elements primarily within the travel way. Refer to Section 8.7 for further information.

## 3.3 BRIDGE INSPECTION WAIVERS

The Federal Highway Administration (FHWA) does allow, with prior approval, for the inspection frequency interval to be extended from a maximum of twenty-four months to forty-eight months.

All requests for bridge inspection waivers are to be submitted to the Bridge Inspection Engineer for consideration. The Districts shall keep in mind that all extended frequencies must be approved by the

State Bridge Engineer and FHWA. Documentation submitted by the District for a waiver request shall conform to the guidelines for obtaining approval contained in the FHWA Technical Advisory - Revisions to the National Bridge Inspection Standards (NBIS), T5140.21.

## 3.4 BRIDGE INSPECTION SCHEDULING

The DBIE should utilize the 4D scheduling application and stored quick reports to produce lists of inspections to be performed in any given month. The reports also provide the names of previous team leaders who performed the last inspection.

Each DBIE will assign the bridges to be inspected in any given month to the available team leaders (TL's). The DBIE must attempt to evenly distribute the bridges to the TL's available while attempting to ensure that a TL has not inspected the bridge in its previous Routine Inspection.

It should be noted that the TL may inspect a given bridge on successive Special Member Inspections until the next Routine Inspection is due.

If the number and/or complexity of the bridges to be inspected exceed the capabilities of the DBIE's in-house staff, then the DBIE shall request consultant assistance by completing and submitting a Consultant Inspection Request Form, see Attachment 3-2, which is generated using 4D. The Consultant Inspection Request Form shall be submitted to the ABIE and the BIE for review and concurrence. Consultant Inspection Request Forms should be submitted to the BIE no later than the 15th of the month for inspections to be assigned for the following month.

Consultant Inspection Requests to be performed over active railroads must be submitted six months prior to their scheduled inspection date. This will allow for the time needed to obtain the necessary access permits.

Complex bridges that require assignment to consultants on a regular schedule are identified in 4D. Structures that are on the complex bridge inspection list are assigned by the BIE on a semi-yearly or quarterly basis, depending on the desired lead time. Consultant Request Forms for Complex Bridge Inspections are not required. The DBIE can request that a structure be considered for inclusion on the complex bridge inspection list by submitting their requests, with supporting documentation, to the ABIE and BIE for consideration.

## 3.5 OUT OF FREQUENCY

MassDOT strives for ZERO Out of Frequency (OOF). Bridge inspections MUST be completed during the month in which the inspection is due. The due month is determined by the date of the previous inspection and the frequency for the inspection type and condition ratings. Inspection types and associated frequencies are well documented herein. This requirement for zero OOF cannot be overstressed. All DOT's are evaluated yearly by the FHWA and frequency compliance is a critical metric.

If a bridge or portion thereof cannot be accessed in order to complete an inspection during the month that it is due, the TL shall conduct as much of the inspection that is possible and complete an inspection report depicting the areas and elements inspected. For areas and components not accessible, a visual inspection from as close as possible should be done to ensure there are no obvious safety issues. The

report should also clearly indicate areas of the bridge that were not inspected and provide the reason. The TL should then return to the bridge to complete an "Other" inspection when access is granted and/or possible. The TL in coordination with the DBIE shall establish a frequency that shall be inputted in Item 92 to correspond to a time frame that would be required to revisit the structure to complete the "Other" Inspection. By placing a time frame on the frequency, this will ensure that the "Other" Inspection is undertaken and not forgotten because 4D shall cue the structure in the future month's scheduling.

If a bridge inspection cannot be completed in the month that it is due then the DBIE must notify the BIE. The correspondence should document the reason for the delay. FHWA requires that the documentation be placed in the Bridge Inspection History File.

### 3.5.1 Out of Frequency Checks

Out of Frequency (OOF) checks shall be performed on a regular scheduled basis in order to monitor compliance with NBIS standards. The DBIE is responsible for compliance of the in-house inspections performed and the inspections performed by Consultant Teams.

Area Bridge Inspection Engineers (ABIE) shall monitor inspection frequency compliance within the Districts for which they have oversight responsibility. On or about the first of each month the ABIE should run an Out of Frequency (OOF) check within 4D for his/her Districts with a 1 month leeway.
For any bridges that appear on the OOF list, the ABIE should discuss the status of the required inspection with the DBIE. Once the status of the inspections has been confirmed then the documentation can be submitted. All documentation may be encompassed in an email format and shall include the reasons why the structure fell out of frequency. This documentation shall be provided to the ABIE and BIE as soon as the DBIE is aware of the structure being OOF.

## 3.6 INSPECTION COORDINATION

### 3.6.1 Police Details for Bridge Inspection

The purpose of this Subsection is to instruct Bridge Inspection Unit personnel on how, when to assign, and pay for Police Detail Services required during bridge inspections. A Police Detail Support Bridge is any bridge where a police detail is needed to insure the safety of either the Inspection Team or the Traveling Public. Examples of such bridges include bridges over high speed roadways, high traffic volume roadways, roadways with high truck percentages or other roadways where the presence of an inspection set up would have negative impact on the safety of the roadway traffic.

#### 3.6.1.1 Procedures on Obtaining Police Details

The necessity of Police Detail Services will be determined by the District Bridge Inspection Engineer or his/her designee. When a bridge has been defined as a Police Detail Support Bridge, the District Bridge Inspection Engineer shall insure that the Bridge Inventory records are coded as such.

#### 3.6.1.2 Scheduling Police Details

When a Police Detail Support Bridge is due for inspection, the Team Leader shall request authorization for Police Detail Services from the District Bridge Inspection Engineer or his/her designee in advance so that the frequency of inspection will be maintained.

When requesting a Police Detail, the individual ordering the detail shall ensure that their name is placed on the Police invoice. Also, it shall be stated to the City or Town that MassDOT has a policy of not paying for police cruisers or administrative expenses unless the fees are preapproved by MassDOT. Furthermore, the Police invoice shall be sent to the District Office, and not to the Satellite Bridge Inspection office for processing.

If a Police Detail Service is consistently unresponsive to providing scheduled Police Details, causing the Bridge Inspection Unit to fall out of frequency, the District Bridge Inspection Engineer shall immediately notify the District Bridge Engineer, Area Bridge Inspection Engineer and Bridge Inspection Engineer. A record of this Police Detail Service non-performance infraction shall be kept by the District Bridge Inspection Engineer.

3.6.1.3 Payment of Police Details

The Team Leader will complete the Police Detail form in the field, see Attachment 3-3, and return it to the District Bridge Inspection Engineer who will forward a copy to the Boston Bridge Inspection Unit.

When a Police Detail Service invoice is received, the District Bridge Inspection Engineer shall verify that the invoice is for the police protection requested by the Bridge Inspection Unit. The invoice shall be marked ("OK TO PAY") by the District Bridge Inspection Engineer and forwarded to the Boston office thereby recommending signature by the State Bridge Engineer.

If an invoice received includes various Bridge Inspection Police Detail Services, the DBIE shall attach a copy of all the Police Detail forms to the invoice and submit them to the Boston Office. Invoices submitted that were not authorized by the District Bridge Inspection Engineer will not be approved for payment. All unauthorized invoices should be forwarded to the Bridge Inspection Engineer, with a copy held by the DBIE.

3.6.1.4 Records of Police Details

The District Bridge Inspection Engineer shall insure that Police Detail Service support documents are filed in a separate folder. A copy of all infraction documentation shall be forwarded to the State Bridge Engineer.

The District Bridge Inspection Engineer shall keep accurate files for Police Detail Support Bridges, infractions and invoices. The files shall be kept in such a manner that a report of the costs can be readily made annually.

### 3.6.2 Railroad Flagging Services for Bridge Inspection

The purpose of this Subsection is to instruct Bridge Inspection Unit personnel on how, when to assign, and pay for Railroad Flagging Services. A Railroad Flagging Support Bridge is any bridge over a railroad with active tracks where flagging service is needed. There are Agreements in place for the various Railroad companies in Massachusetts (i.e. PanAm, CSX, MBTA, BAY COLONY, etc.)

3.6.2.1 Procedures on Obtaining Railroad Flaggers

The necessity of Railroad Flagging Services will be determined by the District Bridge Inspection Engineer or his/her designee. When a bridge has been defined as a Railroad Flagging Support Bridge, the District Bridge Inspection Engineer shall insure that the Bridge Inventory records are coded as such.

3.6.2.2 Scheduling Railroad Flaggers

When a Railroad Flagging Support Bridge is due for inspection over the tracks, the District Bridge Inspection Engineer or his/her designee shall schedule, in advance, requests for Flagging Services so that the frequency of inspection will be maintained. The District Bridge Inspection Engineer or his/her designee shall:

1. Determine status (ownership) of the right-of-way involved with the bridge. See Attachment 3-4, Brief History of Railroads in Massachusetts.

2. Establish the type of inspection required, type of equipment that is going to be used, and how it will affect the railroad's operation.

3. Contact the appropriate railroad to schedule a flagman.

4. Inform railroad contact of the following:

    - Bridge inspection for MassDOT (by what consultant if appropriate)
    - Type of inspection required
    - Location of bridge to be inspected by town, road name, and railroad milepoint (if available)
    - Date and time you would like to perform inspection
    - Number of hours (days) your inspection will take
    - Method of reimbursement to railroad if bridge is not a Chapter 634 transfer

5. Confirm date(s) of inspection, bridge to be inspected, time and meeting place for flag person.

In the event the railroad will not provide a flag person within a reasonable time, the DBIE shall keep a record of refusal indicating the name of the railroad company, contact person who refused to provide a flag person, date and the reason for refusal.

3.6.2.3 Payment of Railroad Flaggers

The Team Leader will complete the Flagging Service form in the field, see Attachment 3-5, and return it to the District Bridge Inspection Engineer, who will forward it to the Boston Bridge Inspection Unit.

When a Railroad Flagging Service invoice is received, the District Bridge Inspection Engineer shall verify that the invoice is for the flag protection requested by the Bridge Inspection Unit. The invoice shall be initialed by the District Bridge Inspection Engineer thereby recommending signature by the State Bridge Engineer, and forwarded to the Boston office.

**NOTE:** If the invoice received includes various Bridge Inspection Flagging Services, the DBIE shall attach a copy of all the Flagging Service forms to the invoice and submit them to the Boston Office.

Invoices submitted that were not authorized by the District Bridge Inspection Engineer will not be approved for payment. All unauthorized invoices should be forwarded to the Bridge Inspection Engineer, with a copy held by the DBIE.

3.6.2.4 Records of Railroad Flaggers

The District Bridge Inspection Engineer shall insure that Railroad Flagging Service support documents are filed in a separate folder. A copy of all infraction documentation shall be forwarded to the State Bridge Engineer.

The District Bridge Inspection Engineer shall keep accurate files for Railroad Flagging Support Bridges, infractions and invoices. The files shall be kept in such a manner that a report of the costs can be readily made annually.

### 3.6.3 Traffic Management Services for Bridge Inspection

The purpose of this Subsection is to instruct Bridge Inspection Unit personnel on how, when to assign, and pay for Traffic Management Services. A Traffic Management Bridge is any bridge over a roadway that would require traffic safety setup to ensure the safety of the inspection team and the safety of the traveling public.

3.6.3.1 Procedures on Obtaining Traffic Management Services

The necessity of Traffic Management Services will be determined by the District Bridge Inspection Engineer or his/her designee. When a bridge has been defined as a bridge requiring a traffic safety setup, the District Bridge Inspection Engineer shall insure that the Bridge Inventory records are coded as such.

The District Bridge Inspection Engineer or his/her designee shall follow the procedures outlined in the Roadway Work Notification memorandum dated December 18, 2009, see Attachment 3-6 and Attachment 3-7 when obtaining traffic management services.

The District Bridge Inspection Engineer or his/her designee shall prepare the Roadway Work Notification Form, see Attachment 3-8, and enter the form into the Event Reporting System (ERS).

### 3.6.4 Navigable Waterway Inspection Coordination

For inspections that are to be performed on or over navigable waterways all local interested parties should be informed as appropriate for the site. Advance coordination may be required from: Massachusetts Department of Conservation and Recreation; U.S. Coast Guard; Massachusetts State Police Marine Unit; Local Harbormasters, etc. Note: this includes above water inspections as well as dive inspections.

## 3.7 FIELD INSPECTION NOTIFICATION PROCEDURES

On occasion, it is important that the District Bridge Engineer, BIE and DBIE be cognizant of each inspection team's field inspection locations on any giving day in the event an inquiry is made or when an emergency may arise that would require the dispatching of an inspection team to address the situation.

### 3.7.1 Daily Field Inspection Notification

It is important that the DBIE be cognizant of each inspection team's field inspection locations. A system shall be established in each district bridge inspection office to indicate daily field inspection locations for each team's actively inspecting structures. If for any reason a planned inspection cannot be performed and the team moves to an alternate location, the team leader shall so notify the DBIE and or his designee.

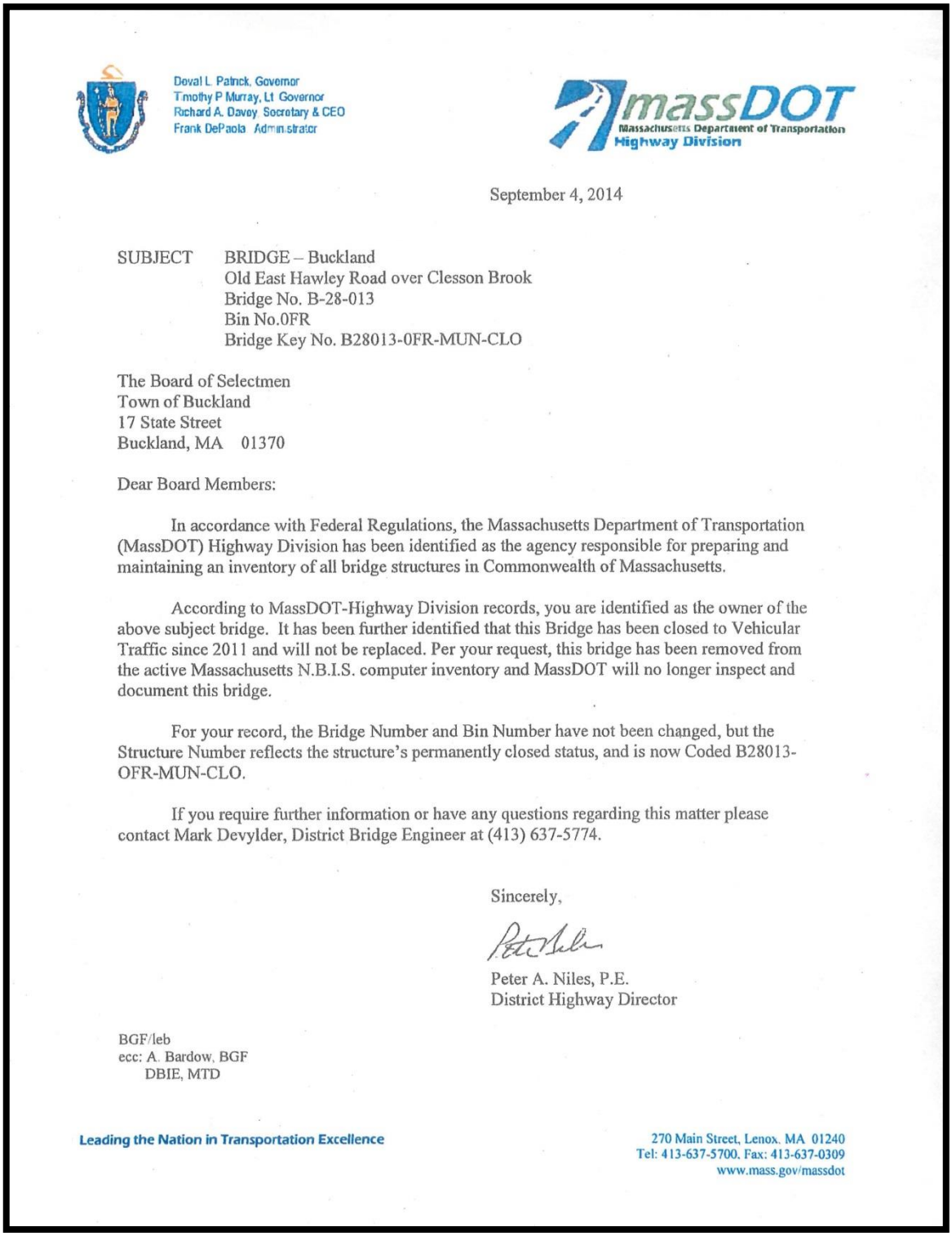
### 3.7.2 Consultant Field Inspection Notification

Inspection consultants are required to inform the DBIE, ABIE and BIE of their scheduled field inspection activities with a MassDOT Field Inspection Notification Form, see Attachment 3-9. This notification is to be made via email the day prior to the planned inspection. For multiple day inspections the form should be submitted for each day in the field. It is also helpful if the last day of the field work would be indicated on the form by adding Inspection Completed as the status.

### 3.7.3 Dive Inspection Notification

For certain underwater inspections such as at critical bridges, signature bridges, and major waterways or at highly visible locations the U/W Operations Engineer or his designee should notify the BIE of the planned dive. This should be done via email or a phone call no later than the morning of the planned dive inspection.

## 3.8 CHAPTER 3 ATTACHMENTS



Deval L. Patrick, Governor
Timothy P Murray, Lt Governor
Richard A. Davey, Secretary & CEO
Frank DePaola, Administrator

MassDOT
Massachusetts Department of Transportation
Highway Division

September 4, 2014

SUBJECT BRIDGE – Buckland
Old East Hawley Road over Clesson Brook
Bridge No. B-28-013
Bin No.0FR
Bridge Key No. B28013-0FR-MUN-CLO

The Board of Selectmen
Town of Buckland
17 State Street
Buckland, MA 01370

Dear Board Members:

In accordance with Federal Regulations, the Massachusetts Department of Transportation (MassDOT) Highway Division has been identified as the agency responsible for preparing and maintaining an inventory of all bridge structures in Commonwealth of Massachusetts.

According to MassDOT-Highway Division records, you are identified as the owner of the above subject bridge. It has been further identified that this Bridge has been closed to Vehicular Traffic since 2011 and will not be replaced. Per your request, this bridge has been removed from the active Massachusetts N.B.I.S. computer inventory and MassDOT will no longer inspect and document this bridge.

For your record, the Bridge Number and Bin Number have not been changed, but the Structure Number reflects the structure's permanently closed status, and is now Coded B28013-OFR-MUN-CLO.

If you require further information or have any questions regarding this matter please contact Mark Devylder, District Bridge Engineer at (413) 637-5774.

Sincerely,

Peter A. Niles, P.E.
District Highway Director

BGF/leb
ecc: A. Bardow, BGF
DBIE, MTD

Leading the Nation in Transportation Excellence

270 Main Street, Lenox, MA 01240
Tel: 413-637-5700, Fax: 413-637-0309
www.mass.gov/massdot

Attachment 3-1: Sample Letter of Municipally Owned Structure Removed from NBI Inventory

## REQUEST FOR CONSULTANT BRIDGE INSPECTION

**To be filled out by the DBIE:**

District: Town:

Bridge No: Struct No: BIN:

Facility Carried (1-7): Feature Intersected (1-6):

Type of Inspection requested:

| | | |
|---|---|---|
| ☐ Routine | Due Date:_____ | Team Hours Needed* _____ |
| ☐ Special Member | Due Date:_____ | Team Hours Needed* _____ |
| ☐ Fracture Critical | Due Date:_____ | Team Hours Needed* _____ |
| ☐ Other (Please explain) | Due Date:_____ | Team Hours Needed* _____ |

* Based on your knowledge of this structure and structure's condition determine the number of Team Hours Needed to inspect this bridge. This number shall include all preparation time for inspection, travel time from District Office, actual inspection and preparations of the reports.

Special equipment and requirements for this inspection [i.e. Inspection-50 (Bridge Master), Rigging, Police, RR Flag Person, and etc.]: _____

Remarks:

DBIE's Signature: Date of submission to Area Engineer:

Please attach a copy of the latest SI&A.

**To be filled out by the Area Engineer:**

☐ I agree with the above request from the DBIE

☐ I do not agree with the above request from the DBIE, because: _____

Area Engineer's Signature: Date of submission to BIE:

**To be filled out by the Bridge Inspection Engineer:**

☐ Assign ☐ Do not assign, because: _____

☐ Returned it to the District because: _____

Bridge Inspection Engineer's Signature: Date of submission to NBIS CCE:

Consultant:

Contract No:

Assignment No:

Date of letter requesting fee proposal:

**Remarks:**

Attachment 3-2: Request for Consultant Bridge Inspection Form

# POLICE DETAIL FORM

**Massachusetts Department of Transportation**
**Bridge Inspection Unit**

District: _____ District Address: _____

Town: _____ Bridge No./BIN No.: _____

Bridge Location: _____

Meeting Location: _____

Date of Service: _____ From: _____AM/PM To: _____AM/PM

Print
Officer No. 1's Name: _____Badge No.: _____

Print
Officer No. 2's Name: _____Badge No.: _____

State Police: ☐ Town Police: ☐

Officer's Work Address:_____ Officers Work Telephone No.

_____ _____

_____ _____
Officer No. 1's Signature Officer No. 2's Signature

_____ _____
Team Leader's Signature Date

Attachment 3-3: Police Detail Form

## BRIEF HISTORY OF RAILROADS OPERATING IN MASSACHUSETTS

Massachusetts is currently served by eleven operating freight railroad companies, one operating passenger railroad company, and one commuter rail agency.

### CSX TRANSPORTATION, INC. (CSXT)

CSX ownership of all lines in Massachusetts formerly owned by the Consolidated Rail Corporation (CONRAIL) dates back to the takeover and division of the CONRAIL system by CSX and the Norfolk Southern Railroad (NS), approved by the Surface Transportation Board (STB) effective August 22, 1998. After a transitional period, CSX began full operation of the former CONRAIL lines on June 1, 1999.

As of October 2, 2012, CSX completed the sale and transfer of the Boston to Worcester portion of the Boston Subdivision mainline, the Grand Junction Railroad between Boston and Somerville and its lines in Southeastern Massachusetts to Fall River and New Bedford to the Massachusetts Department of Transportation. These lines will be administered for MassDOT by the MBTA.

CONRAIL had been established under the Regional Rail Reorganization Act of 1973 for the purpose of acquiring certain lines of bankrupt railroad companies in the Northeast and Midwest. CONRAIL commenced operations on April 1, 1976. In Massachusetts, all lines taken over by CONRAIL had been operated by the Penn Central Transportation Company prior to April 1, 1976. The Penn Central System in Massachusetts was made up of former routes of the New York Central Railroad and the New York, New Haven and Hartford Railroad.

The Penn Central Railroad was created by the merger of the New York Central and the Pennsylvania Railroads on February 1, 1968. All New York Central lines in Massachusetts were once part of the Boston and Albany Railroad. The New York, New Haven and Hartford Railroad (NYNH&H) was merged into the Penn Central on January 1, 1969. The NYNH&H system was formed through a series of mergers of numerous smaller companies but most of its lines in Massachusetts were once part of the Old Colony Railroad, the Boston and Providence Railroad, and the New England Railroad.

CSX itself was formed through the merger of the Chessie and Seaboard railroad systems in 1983. These systems had been formed through the consolidation of various railroads serving Southeastern and Midwestern United States dating back to the 1960's. The chief components included the Chesapeake and Ohio Railroad, the Baltimore and Ohio Railroad, the Louisville and Nashville Railroad, the Atlantic Coast Line and the Seaboard System.

### BOSTON AND MAINE RAILROAD (B&M RR)

Presently, the Boston & Maine Railroad is a wholly owned subsidiary of Pan Am Railways, Inc. (PAR), prior to March 2006 known as Guilford Rail System (GRS). Pan Am Railways is itself a subsidiary of Pan Am Systems, formerly known as Guilford Transportation Industries (GTI). Guilford bought the name, colors and logo of Pan American World Airways in 1998.

In October 1981, GTI applied to the Intestate Commerce Commission for authority to control the Boston & Maine Corporation, then in bankruptcy. This transaction, completed in June 1983, gave GTI complete stock ownership of the Boston & Maine Railroad. On January 1, 1984, GTI purchased control of the B&M's subsidiary, the Springfield Terminal Railway. While the B&M Railroad is the official corporate owner of the railroad right of way, the actual train operations are leased out to the Springfield Terminal Railway, PAR's operating subsidiary.

The system operated by the Boston & Maine Railroad was formed through a series of mergers of smaller companies. Most B&M lines in Massachusetts were once part of the Eastern Railroad, the Boston and Lowell

Railroad, the Fitchburg Railroad, and the Connecticut River Railroad.

On May 15, 2008, Norfolk Southern Corp. reached agreement with Pan Am Railways to create a joint rail route between Albany, NY and the eastern Massachusetts to be called the "Patriot Corridor". The Surface Transportation Board approved this deal on March 12, 2009. Each of the two companies own 50% of a new company known as Pan Am Southern (PAS). PAR's trackage between Ayer, MA and Mechanicville, NY was transferred to PAS but continues to be operated and maintained by PAR's Springfield Terminal Railway subsidiary.

**NEW ENGLAND CENTRAL RAILROAD (NECR)**
The New England Central Railroad was formed by Railtex Corp. of San Antonio, Texas, when it purchased the Central Vermont Railway (CV) from its previous owner, Canadian National. NECR took over railroad operations of the former CV on February 4, 1995. The NECR main line between Connecticut and Vermont runs through Massachusetts from the Connecticut line at Monson to the Vermont line at East Northfield, a distance of 55 miles. The NECR has no other lines in Massachusetts except for industrial and yard tracks.

**HOUSATONIC RAILROAD (HRR)**
The Housatonic Railroad began as a passenger excursion railroad in 1985 in the state of Connecticut, operating on an abandoned portion of the former Penn Central, nee NYNH&H, Berkshire Line between Canaan and Cornwall Bridge, CT. Later, after it branched into freight operations, the Housatonic purchased the Massachusetts portion of the Berkshire Line, between Pittsfield and Canaan, CT, just over the Connecticut line from Sheffield, from Guilford Transportation Industries in January 1991. Presently, the Housatonic is exclusively a freight railroad reaching from Pittsfield as far south as Danbury, CT. It has no other lines in Massachusetts except for industrial spur tracks.

**BAY COLONY RAILROAD CORPORATION (BCL RR)**
The Bay Colony Railroad Corporation (Bay Colony) was chartered on March 31, 1977, with the intent of taking over freight service on former New Haven lines in Southeastern Massachusetts from CONRAIL, which was planning to abandon service. The Commonwealth of Massachusetts subsequently purchased these lines and Bay Colony took over all freight operations on them on June 12, 1982 with a 25-year contract. This contract, administered by the Massachusetts Executive Office of Transportation (predecessor of the MassDOT), expired on December 31, 2007. The contract for freight operations on the MassDOT owned lines on Cape Cod and Southeastern Massachusetts was awarded to a new company, the Massachusetts Coastal Railroad, which took over on January 1, 2008. At that time the Bay Colony ceased operation on those lines, but continues to provide freight operations on the line from Medfield Junction to Newton Upper Falls.

**MASSACHUSETTS COASTAL RAILROAD (MAC RR)**
The Massachusetts Coastal Railroad is a subsidiary of Cape Rail Inc., which also operates the Cape Cod Central Railroad, an excursion and dinner train operator between Hyannis and Buzzards Bay. Mass Coastal was awarded the contract to be the freight operator of MassDOT owned rail line on Cape Cod as well as some others in Southeastern Massachusetts that were formerly operated by the Bay Colony Railroad. This contract took effect on January 1, 2008.

**PROVIDENCE AND WORCESTER RAILROAD COMPANY (P&W RR)**
The Providence and Worcester Railroad was originally incorporated separately in Rhode Island and Massachusetts in 1844. The Massachusetts Corporation was merged into the Rhode Island Corporation in 1845. The Company's main line between Providence and Worcester was opened in 1847.

On July 1, 1892, the New York, New Haven and Hartford Railroad leased the P&W for 99 years. The New

Haven itself merged into the Penn Central Railroad on January 1, 1969. On April 6, 1970 the P&W announced its intention to separate from the merger. After a legal battle, the Interstate Commerce Commission approved the request on August 25, 1972, and on November 2, Penn Central signed the agreement effective December 30. The P&W cancelled the lease on February 3, 1973.

The P&W's trackage expanded in 1974, when the P&W reopened the B&M' s former Peterborough Branch between Worcester and Gardner, which the B&M had abandoned in 1972. The second expansion was in 1976, when the USRA transferred the former Norwich & Worcester Railroad, including a branch to Southbridge, from the Penn Central to the P&W. In Massachusetts, this trackage extends from Worcester to the Connecticut line in Webster. The branch to Southbridge was subsequently abandoned in 2004.

**PIONEER VALLEY RAILWAY COMPANY (PVRR)**
The Pioneer Valley Railway Company, a subsidiary of the Pinsly Railroad Company, was organized in 1982 for the purpose of acquiring the CONRAIL Holyoke and Florence Secondary lines. At the time of the purchase, the Florence Secondary had been abandoned from Florence to Easthampton since 1969. The PV also took over operations on the Boston & Maine Corporation's 3.3 mile Easthampton Branch in Easthampton in 1982, but by 1995, the line was no longer in service and it was officially abandoned in 1998.

**MASSACHUSETTS CENTRAL RAILROAD CORPORATION (MCRR)**
The Massachusetts Central Railroad was incorporated December 16, 1975 and started limited operations on a few miles of former Boston & Maine trackage in and around the Ware Yard. In 1976, the Commonwealth of Massachusetts awarded the Mass Central a contract to provide freight operations on the portion of the former Ware River Railroad that the state had purchased from CONRAIL. Mass Central currently provides freight operations on the 26 mile line from Palmer to South Barre.

**GRAFTON AND UPTON RAILROAD COMPANY (G&U RR)**
The Grafton and Upton Railroad Company was incorporated in October 1873 as the Grafton Center Railroad; the present name was adopted in February 1888. Today the G&U owns a 15.4 mile route between the CSX Boston Subdivision main line at North Grafton and the CSX Milford secondary track at Milford. Currently, the track between Milford and West Upton is out of service, however, as of 2012, there are plans to restore service to this stretch of track as well.

**THE FORE RIVER RAILROAD (FRR)**
The shortest common-carrier railroad in Massachusetts is the 2.4 mile Fore River Railroad (FRR). It was originally built by Thomas Watson, Alexander Graham Bell's assistant in the invention of the telephone, in 1903 as a private railroad to serve his shipyard at Quincy Point on the Fore River. The railroad company was incorporated on January 6, 1919, only after the Bethlehem Steel Corporation bought the shipyard and railroad. The railroad has always been under the same ownership as the shipyard. In 1987, the Massachusetts Water Resources Authority (MWRA) purchased the shipyard property, including the FRR, in order to construct a major sewage sludge processing facility on the site. As of July 1, 2001, the FRR is being operated under contract to the MWRA by Fore River Transportation, a division of Twin Rivers Technologies which is the railroad's largest customer.

**NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)**
The National Railroad Passenger Corporation (AMTRAK) was established by Congress in 1971 to operate a nationwide network of inter city passenger trains. AMTRAK currently provides inter city passenger trains between Boston and Worcester, Springfield, Pittsfield and Chicago and between Boston, Providence, New Haven, New York, Philadelphia, and Washington. In Massachusetts, AMTRAK owns trackage along the Connecticut River between the Connecticut border and the Springfield railroad station. Elsewhere, AMTRAK

operates by trackage rights on other railroads. In 2000, the AMTRAK electrified the Northeast Corridor, which in Massachusetts includes the MBTA Providence Line from Boston to the Rhode Island border, and since that date all intercity passenger service provided by AMTRAK on the Northeast Corridor has been with electric locomotives.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA)**

The Massachusetts Bay Transportation Authority (MBTA) was created in 1964. At that time, the discontinuance of most remaining railroad commuter service in Massachusetts was imminent due to the bankruptcy or near bankruptcy of the railroad operating commuter service.

All commuter rail service to and from Boston is operated under the auspices of the MBTA. With the sale of the CSX Boston Subdivision mainline from Boston to Worcester, all routes over which service is provided are also owned by the MBTA. As of July 1, 2014, the MBTA has contracted with Keolis Commuter Services to operate all Boston commuter railroad services. Previously, the Massachusetts Bay Commuter Railroad Co. operated all MBTA commuter rail service under a contract that started July 1, 2003, succeeding AMTRAK, who had operated those services starting January 1, 1987, and prior to that, for over ten years, the Boston and Maine Corporation had been the sole contract operator of this service.

# FLAGGING SERVICE FORM

## Massachusetts Department of Transportation
## Bridge Inspection Unit

District: _____ District Address: _____

Town: _____ Bridge No./BIN No.: _____

Bridge Location: _____

Meeting Location: _____

Date of Service: _____ From: _____AM/PM To: _____AM/PM

Print
Railroad Company: _____

Print
Flag Person's Name: _____

Print
Flag Person Supervisor's Name: _____

Print
Flag Person's Work Address: _____

_____ _____ _____
Flag Person's Signature Team Leader's Signature Date

**To Be Filled out by DBIE**

The above bridge is under Chapter 634 and therefore Flagging Services are free of charge ( Y / N)

Invoice for the above work received on:_____

Invoice No.:_____

Submitted to Boston Office on: _____

DBIE's Signature:_____

Attachment 3-5: Railroad Flagging Service Form

**Massachusetts Department of Transportation**
**Highway Division**
**Interoffice Memorandum**

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**To:** All District Highway Directors and Deputy Chief Engineers

**From:** Frank A. Tramontozzi, P.E., Chief Engineer

**Date:** December 18, 2009

**Subject:** **New Roadway Work Notification Form**

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Effective immediately, the MassDOT Highway Division will use a single Roadway Work Notification Form to collect information regarding planned work activities on all significant state highways, as identified in the attached guidance document. Former Turnpike Authority employees have already been using this new form since August 2009.

The attached guidance document describes employee responsibilities including submittal and approval procedures, and contains detailed instructions for completing the forms. All approved forms shall be submitted to the MassDOT Highway Operations Center and to Smart Routes for entry into the Event Reporting System (ERS).

This process will allow us to internally access ERS to view all planned surface roadway activity for each coming week. The process will also allow Smart Routes to use the information to develop electronic feeds to different media outlets and will provide the MassDOT Communications and Public Affairs office with key information regarding our road and bridge system.

As MassHighway and Turnpike Authority operations become more integrated, some of these new procedures may be modified to reflect our evolving organizational structure. In the meantime, please follow these procedures to achieve a consistent method of collecting roadway work information throughout MassDOT.

Thank you for your cooperation regarding this initiative.

Attachments: Roadway Work Notification Form
Roadway Work Notification Procedures

Attachment 3-6: 12-18-09 IOM NEW ROADAY NOTIFICATION FORM

## Massachusetts Department of Transportation
## Highway Division

### Roadway Work Notification Procedures

This guidance document describes the procedures that MassDOT Highway Division employees shall follow for approving and submitting information pertaining to scheduled work or planned activities on or along designated roadways. Effective immediately, all MassDOT Highway Division employees are required to submit Roadway Work Notification Forms and comply with the following procedures for all scheduled work or planned activities on or along designated roadways.

**General**

The following requirements shall apply to all roadways and associated ramps that are listed near the end of this document.

All MassDOT Highway Division employees and designated consultant bridge inspectors who are responsible for supervising, coordinating or performing construction work, maintenance activities, bridge inspection, permit projects or other planned events shall prepare a Roadway Work Notification Form for review and approval.

Each Roadway Work Notification Form shall include all required information. The duration of work approvals shall be limited to one week at a time. If the work exceeds one week then a new Roadway Work Notification Form is required to be submitted for each additional week.

**Approval**

*For Activities on Former MassHighway Facilities*

All Roadway Work Notification Forms must be submitted to the District office in which the work will occur. The District Highway Director will designate approval authority to at least three people. Notifications regarding bridge inspection, including consultant inspections, must also be submitted to the District office for approval.

Planned closures of any of the listed roadways or ramps must be approved directly by the District Highway Director.

*For Activities on Former Turnpike Authority Facilities*

All construction and permit work shall be approved by the Western Turnpike Division Engineer's Office.

All maintenance and internal work shall be approved by the Western Turnpike Division Maintenance Office.



Attachment 3-7: Roadway Work Notification Procedures, Page 1 of 4

**Submission**

Designated personnel from each District or Turnpike office shall submit approved forms to the Highway Operations Center (HOC) and Smart Routes. A scan of the form submitted by e-mail is the preferred method of notification, however faxes will be accepted. All forms must contain the required information and have the proper signatory approval. Forms must be submitted no later than 3:00 PM on the Thursday prior to the week the work will begin. All approved work request forms shall be submitted to both of the following locations:

**MassDOT Highway Operations Center**

**E-mail:** toc@massters.com
**Fax:** 617-310-4799, or 617-310-4789
**Telephone:** 617-310-4700, or 800-227-0608

**Smart Route Systems**

**E-mail:** 511toc@smartraveler.com
**Fax:** 617-494-5271
**Telephone:** 617-494-5200

The HOC staff will review each form as it is received and will enter the information from all MassHighway and MassTurnpike forms as soon as possible, but no later than 24 hours from receipt. If the information is incomplete or needs clarification, the HOC staff will notify the approving authority from the District/Turnpike office to resolve any issues. Roadway Work Notification Forms not entered into the Event Reporting System (ERS) within 24 hours shall be given to the HOC Shift Supervisor on duty for review and resolution.

**Confirmation of Daily Work**

Every day, prior to the beginning of any work, changes in a work zone location or changes in lane configuration, the Contact Person shall call the HOC to confirm the planned work or activity. The Contact Person and HOC staff will coordinate to activate available variable message signs (VMS) to support the work. If HOC staff has not received a confirmation call within one hour of the planned work, HOC staff shall call the Contact Person to confirm. VMSs will not be activated until the work is confirmed for the scheduled period. To avoid conflicting roadway messages within the work zone, contact to the HOC is required even if the Contractor is using their own message boards.

The Contact Person is also required to call the HOC at the completion of work each day and to notify the HOC if the work has been canceled due to scheduling or weather conditions.



Attachment 3-7: Roadway Work Notification Procedures, Page 2 of 4

**Required Information and Instructions**

**Date and Time:** Enter the date and time when the work or event will begin and end. The start and end time will be based on the placement or removal of traffic control devices or the beginning of actual work for the approved activity, whichever is the earliest or latest time.

**Work or Event Type:** Chose the type of work or event that is proposed. If the work is a construction project include the contract number. If the work is a permit project include the permit number. If choosing "Other" include a one or two word description.

**District/Region:** Enter the MassHighway District or Masspike Region where the work or event will occur.

**City/Town:** Enter the city or town where the work or event will take place. If the work occurs in two or more municipalities, enter them in the order in which traffic will flow through the project. Ex.: north to south or east to west.

**Roadway:** Enter the route number and/or street name where the work will take place.

**Direction:** Indicate the direction of traffic flow along the roadway that the work will take place.

**From/To:** Enter the beginning and ending work limits based on exit numbers or intersecting streets. If necessary include descriptions, such as "300 feet before Exit 15" or "400 feet after Oak Street". For activities on I-90, Mile Markers and Interchanges where the activity is between must be noted.

**Bridge Number:** Only enter information about a bridge if the work is specific to the bridge. For bridge inspection work, enter information about the roadway or roadways that will be impacted by the inspection. For example, if the inspection is performed from beneath the structure, include the information about the roadway beneath. If the inspection does not require any lane or shoulder restrictions, such as a bridge over water or a railroad being inspected from underneath, then no roadway work approval is required.

**Ramp Closures:** If ramp closures are required include the exit number and the roadways that are connected by the ramp. For example: "Exit 36, from I-93 north to I-95 north", or "Exit 22, from I-95 north to Main Street."

**Brief Description of Work:** Include a brief description of the proposed work including the approved work hours for the project. The description should focus on elements of work that will impact the flow of traffic. Avoid using engineering terms or local landmarks. For the purpose of this form, the material type of a bridge beam or a sidewalk is less important than the method of construction and how it will affect traffic. Construction staging and specific information about when lane closures will occur and in what sequence are very important. Use the second page of the form to explain construction stages or lane closure sequencing.



Attachment 3-7: Roadway Work Notification Procedures, Page 3 of 4

**Existing Lanes:** Use the letters S = Shoulder, L = Travel Lane and M= Median to illustrate the lane configuration of the roadway.

**Lane Usage:** Use the letters O = Open and X = Closed to show which lanes will be Open or Closed to traffic due to the proposed work.

**Contact Person:** Include the name of the MassDOT employee or the designated consultant bridge inspector in charge of the proposed work. Include the name of the person who will be on-site at the project if possible.

**Radio ID:** If available, include the state Radio ID of the person in charge of the work.

**Telephone Numbers:** Include the Contact Person's office and cellular telephone numbers.

**Required Roadway Listing**

| Interstate Highways | Numbered Routes | |
|---|---|---|
| I-84 | 1 | 24 |
| I-90 (excluding MHS) | 1A | 25 |
| I-91 | 2 | 28 |
| I-93 (excluding MHS) | 3 | 57 |
| I-95 | 3A | 63 |
| I-190 | 5 | 128 |
| I-195 | 6 | 140 |
| I-290 | 7 | 146 |
| I-291 | 8 | 202 |
| I-295 | 9 | |
| I-391 | | |
| I-395 | | |
| I-495 | | |

Information regarding other roadways can be submitted in addition to the above list. Events or activities on other roadways that have the potential to impact traffic flow along any of the listed roadways should also be submitted.

**Event Reporting System (ERS) Access and Review**

The information presented in the ERS is accessible through a web-based application at the following URL: http://www.masstraffic.us. A password and user name can be issued to all personnel who need access to the information. To obtain a user name and password please forward all requests to toc@massters.com.

All information will be made available to numerous media and traffic reporting companies through Smart Route Systems and the through the MassDOT Developers Page at the following URL: http://www.eot.state.ma.us/developers/.



Attachment 3-7: Roadway Work Notification Procedures, Page 4 of 4

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**MASSACHUSETTS**
**Roadway Work Notification Form** **Page: 1 of 1**

**Start Date:**_____ **Start Time:**_____ **End Date:**_____ **End Time:**_____

☐ Construction: No. _____ ☐ Bridge Inspection ☐ Maintenance Crew

☐ Permit Project: No. _____ ☐ Other: _____

District: _____ **City/Town:** _____

**Roadway:** _____ **Direction:** ○ NB ○ SB ○ EB ○ WB ○ OTHER

**From:** _____ *(Exit # or Intersecting Street)* **To:** _____ *(Exit # or Intersecting Street)*

**Bridge No.:** _____ _____ *(Roadway)* over _____ *(Roadway, Waterway, Railroad, Other)*

**Ramp Closures:**

Exit # _____ From, _____ (Roadway & Direction) To, _____ (Roadway & Direction)

**Brief Description of Work:** (Attach second sheet for multiple lane closures or additional information)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Existing Lanes | S = Shoulder<br>L = Travel Lane<br>M = Median | | | | | | | |
| Lane Usage | O = Open<br>X = Closed | | | | | | | |

Contact Person: _____ Radio ID: _____

Cell Phone: _____ Office Phone: _____

**Recommended:** _____ **Approved:** _____ **Date:** _____

TOC Fax No.:617 310-4789 or 617 310-4799 TOC Email: TOC@massters.com 511toc@smartraveler.com

Attachment 3-8: Roadway Work Notification Form, Page 1 of 2

Page 2 of 2

**Phase One**

**District:** _____ **City/Town:** _____

**Roadway:** _____ **Direction:** ○ NB ○ SB ○ EB ○ WB ○ OTHER

**Brief Description of Work:** (Attach second sheet for multiple lane closures or additional information)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Existing Lanes | S = Shoulder<br>L = Travel Lane<br>M = Median | | | | | | | |
| Lane Usage | O = Open<br>X = Closed | | | | | | | |

**Phase Two**

District: _____ **City/Town:** _____

**Roadway:** _____ **Direction:** ○ NB ○ SB ○ EB ○ WB ○ OTHER

**Brief Description of Work:** (Attach second sheet for multiple lane closures or additional information)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Existing Lanes | S = Shoulder<br>L = Travel Lane<br>M = Median | | | | | | | |
| Lane Usage | O = Open<br>X = Closed | | | | | | | |

TOC Fax No.:617 310-4789 or 617 310-4799 TOC Email: TOC@massters.com 511toc@smartraveler.com

Attachment 3-8: Roadway Work Notification Form, Page 2 of 2

## MassDOT FIELD INSPECTION NOTIFICATION FORM

Email To: District Bridge Inspection Engineer/Bridge Inspection Engineer
Telephone # Telephone #
Email address email address

From: *Consultant Name*
*Contract Person*
*Telephone No.*

MassDOT Contract No./Assignment No. _____

Date:_____ Weather:_____

| Team #1 | Team #2 |
|---|---|
| Bridge No./BIN:_____ | Bridge No./BIN:_____ |
| City/Town:_____ | City/Town:_____ |
| Item 7:_____ | Item 7:_____ |
| Item 6:_____ | Item 6:_____ |
| Crew: T.L. T.M. T.M. | Crew: T.L. T. M. T.M. |
| Equipment:_____ | Equipment:_____ |
| Lane Closure:_____ | Lane Closure:_____ |
| Comments:_____ | Comments:_____ |
| _____ | _____ |

**PREVIOUSLY DAY WORK REPORT**

Date:_____ Weather:_____

| | |
|---|---|
| Bridge No./BIN:_____ | Bridge No./BIN:_____ |
| City/Town:_____ | City/Town:_____ |
| Item 7:_____ | Item 7:_____ |
| Item 6:_____ | Item 6:_____ |
| Crew: T.L. T.M. T.M. | Crew: T.L. T.M. T.L. |
| Crew Time:_____ | Crew Time:_____ |
| Equipment:_____ | Equipment:_____ |
| Status:_____ | Status:_____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

Attachment 3-9: MassDOT Field Inspection Notification Form