CHAPTER 9
MassDOT SUPPLEMENTAL CODING GUIDE

9.1 INTRODUCTION

The purpose of this Supplemental Coding Guide Chapter is two-fold. First, it establishes the MassDOT conventions and interpretations for coding certain items in the Federal Highway Administrations *Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges*. These MassDOT specific conventions are intended to assure that key information is provided in a consistent manner for all bridges in Massachusetts; so that anyone using the bridge inventory can be assured of the proper meaning of the information provided and that any search of those Items will give consistent and accurate results.

The second purpose is to introduce and define the coding for Massachusetts Specific Items. These Items are used by MassDOT to collect additional information about features of a bridge or bridge inspection that are not found in the FHWA Coding Guide and which cannot be readily found elsewhere. Massachusetts Specific Items are used routinely by MassDOT as part of their operations and decision making process.

Chapter 9 is organized in the same format as the rest of the Bridge Inspection Handbook, with the exception of Section 9.5, Supplemental Coding Guide; Section 9.6, Secondary Records; and Section 9.7, Massachusetts Specific Items. Section 9.5, Supplemental Coding Guide, is organized to follow the numerical sequencing of the FHWA Coding Guide Item numbers, with any additional information pertaining to multiple Item Numbers located in Subsections at the end of Section 9.5. Sections 9.6 and 9.7 are organized by topic in alphabetical order.

9.2 DEFINITIONS TO BE USED WITH THE SUPPLEMENTAL CODING GUIDE

9.2.1 Bridge Number (BDEPT#)

The Bridge Number is used to identify and catalog by city/town a specific crossing of a transportation facility over a depression or obstruction(s) by means of a bridge structure(s). Since it is the transportation facility that defines the crossing, a divided highway would be treated as if it were a single facility. For example, if a divided highway crossed a river, the two bridge structures would have the same Bridge Number. Similarly, a multi-span viaduct would have only one Bridge Number, even though there may be several different obstructions or types of structures involved.

9.2.2 Bridge Key # (BRKEY)

The Bridge Key # is no longer used and is referenced here for historical purposes. The Bridge Key # was discontinued in February 2001 when the current coding for Item 8 was implemented. The Bridge Key # was used to precisely identify a particular bridge structure of bridge crossing. For example, the Bridge Key # would be used to distinguish between northbound/southbound or eastbound/westbound bridge structures on divided highways with the same Bridge Number, as in the example above. A Bridge Key # would also be used to divide up a viaduct into separate spans for inspection and maintenance purposes.

9.2.3 BIN (Bridge Identification Number)

A BIN is used to uniquely identify a specific bridge structure that exists or has existed at some time in the past. Since the Bridge Number is not unique to a specific bridge structure, the BIN is used to track and reference information on a given bridge structure, even though it may have been demolished and its record removed from the active National Bridge Inventory. For example, the BIN will be used to distinguish between northbound/southbound or eastbound/westbound bridge structures on divided highways with the same Bridge Number. A BIN will also be used to divide up a viaduct into separate spans for inspection and maintenance purposes.

9.2.4 Federal Information Processing Standards (FIPS) Code

This information is taken from the current version of The Census of Population and Housing - Geographic Identification Scheme, which applies a numbering system to States, Counties, City(ies)/Town(s), and streets nationwide.

9.2.5 Strategic Highway Corridor Network (STRAHNET)

A system of highways which are strategically important to the defense of the United States. The Military Traffic Management Command Report SE 89-4b-27, Strategic Highway Corridor Network, January 1991, contains additional information on STRAHNET.

9.2.6 Survey Convention

Historically, for surveys made in Massachusetts, baselines run from West to East, and South to North. This convention is to be used in any case where it does not conflict with an existing, established survey. For a STRAHNET highway, the survey convention will always be West to East and South to North.

9.2.7 Orientation

Orientation will depend on the terminations of the road. For example, the orientation of I-495 is South/North even though local portions of it are West/East. Scale the latitude and longitude of the terminations to determine the orientation.

9.2.8 Primary Record

Same as the "on" record referred to in the FHWA Coding Guide. A Primary Record is the bridge inventory record where all applicable NBI data items are coded with respect to the structure and the inventory route on it.

9.2.9 Secondary Record

Same as the "under" record referred to in the FHWA Coding Guide. Only certain NBI data items need be coded for a secondary record, however, all route-oriented data is coded with respect to the route under the bridge.

9.2.10 Town Line Bridge

A bridge that spans over a city/town boundary is called a town line bridge. Since every structure is cataloged by town, a town line bridge will have 2 (or more, if the same structure crosses several city/town boundaries) BDEPT#'s written as an equation, for example: H21035=S18012. For the purpose of NBI coding, the primary bridge record will be assigned to the city/town that appears first on the statewide alphabetical listing of cities/towns (referred to as the primary town). The bridge will also have a dummy bridge record for other city/town (referred to as the adjoining town), however, this record will appear only on the Non-NBIS inventory.

9.3 PROCEDURE FOR ASSIGNING BDEPT NUMBER AND/OR BIN NUMBER

This Section describes procedural steps to be followed in assigning a Bridge Number (BDEPT#) and/or Bridge Identification Number (BIN) to a bridge structure.

The following two situations will warrant the initiation of a Bridge Number and/or BIN request:

1. An existing bridge structure (with a span of 4 ft (1.2 m) or greater) that has not been previously inventoried is found regardless of ownership.
2. A bridge project is about to start the final design stage, either for the rehabilitation or replacement of an existing bridge or for the design of a new bridge on a new road or road segment. Issuance of the BDEPT and/or BIN will ensure that the bridge structure is properly referenced on all construction documents, design calculations, inventory inspection and rating reports.

This process of assigning a BDEPT# and/or BIN starts when a Bridge Number / BIN Request Form is filled out by an authorized requesting party and is submitted to the State Bridge Engineer. Requests must include the necessary back-up material as described below so that the State Bridge Engineer can make a proper determination.

9.3.1 Definitions to be Used When Submitting BDEPT # and/or BIN Requests

- Realigned road: A segment of new road which starts and ends on the same road that the existing bridge is on.
- Relocated road: A segment of new road which starts on but does not end on the same road that the existing bridge is on.
- For the definition of the following types of bridge design projects see the Bridge Manual Part I: Proposed Bridge, Proposed Bridge Rehabilitation, and Proposed Superstructure Replacement.
- Proposed Deck Replacement, where all deck elements are replaced and main load carrying superstructure elements and all substructure elements are retained with retrofits, if required, to meet current code requirements.

9.3.2 General Guidelines for Assigning a Bridge Number and/or Bridge Identification Number

1. A Bridge Number will only be assigned by one person, the State Bridge Engineer, to avoid duplication of assigned numbers. Once a Bridge Number and BIN have been assigned to a specific location and bridge structure respectively, they are not available for use again. These two references shall be used on all correspondence, construction plans, design calculations,

inspection reports, rating reports, or any other documentation or correspondence that deals with the bridge structure.

2. For an existing bridge previously not inventoried: a new Bridge Number and a new BIN will be issued.

3. For an existing bridge under design for a Proposed Bridge Rehabilitation, Proposed Superstructure Replacement, Proposed Deck Replacement: the existing Bridge Number and the existing BIN will be retained.

4. For a Proposed Bridge functional replacement of an existing bridge either: A) in the same location; or B) on a realigned road where at least the existing bridge superstructure will be demolished: the existing Bridge Number will be retained and a new BIN issued.

5. For a Proposed Bridge functional replacement of an existing bridge on a realigned road where the existing bridge structure will be retained in its entirety: a new Bridge Number and a new BIN will be issued.

6. For a Proposed Bridge functional replacement of an existing bridge on a relocated road regardless of whether or not the existing bridge will be demolished in full or in part: a new Bridge Number and a new BIN will be issued.

7. For a Proposed Bridge either on a new road or on an existing road where there was no bridge previously: a new Bridge Number and a new BIN will be issued.

8. If an existing bridge requires that several BIN's be issued for inspection and maintenance purposes: the bridge will be divided up into inspection/maintenance segments before requesting a Bridge Number and BIN. A BIN will be issued for every inspection/maintenance segment.

9. If a Proposed Bridge under design, such as a viaduct, will require several BIN's for inspection and maintenance purposes when it is finished: a new Bridge Number and only one BIN will be issued at the design stage to reserve the Bridge Number/BIN combination for this structure in the Bridge Inventory and for use on correspondence, plans and design calculations. The remaining BIN's will be issued when the structure is completed and ready for the Initial Inventory Inspection. At that time it will be divided up into inspection/maintenance segments and BIN shall be requested for each of those segments.

9.3.3 Existing Structure Not Previously on an Inventory

1. The process for requesting a Bridge Number for an existing structure, not previously inventoried can be initiated by either, the bridge owner, the State Bridge Engineer, Bridge Inspection Engineer, District Highway Director, Area Bridge Inspection Engineer, or District Bridge Inspection Engineer. The requesting party shall fill out the Bridge Number / BIN Request Form and shall attach, at a minimum, the plans (if available), the physical location of the structure (google map, latitude and longitude coordinates), and photos (elevation, underside and approaches).

2. The State Bridge Engineer will forward the request to the Area Bridge Inspection Engineer who will check the Bridge History Books and the NBIS computer inventory to make sure that this

bridge structure has not had a Bridge Number previously issued in the past. After doing so, he/she will sign off on the Bridge Number / BIN Request Form and forward it State Bridge Engineer.

3. The State Bridge Engineer will assign a Bridge Number and forward the request form to the Bridge Information Systems Engineer who will ensure that the sequence of Bridge Number's for the city/town is maintained. If the sequence needs to be adjusted, the Bridge Information Systems Engineer will coordinate with the State Bridge Engineer and agree on the Bridge Number to be used.

4. The Bridge Information Systems Engineer will reserve the Bridge Number in the NBIS computer inventory by creating an initial inventory record which will include at a minimum Items 6 and 7, the Owner and Bridge Category Codes of Item 8, and assigning a BIN(s) to it. After the BIN(s) is (are) established, the Bridge Information Systems Engineer will scan and store the backup documentation and return the completed Request Form and back up documentation to the State Bridge Engineer.

5. The State Bridge Engineer upon receipt of the completed Bridge Number/BIN Request Form from the Bridge Information Systems Engineer will have his/her Administrative Assistant forward the completed Request Form with the new Bridge Number/ BIN(s) and back up documentation to the person who initiated the request with a copy to the Bridge Inspection Engineer.

6. The Bridge Inspection Engineer shall forward the Request Form to the Area Bridge Inspection Engineer who, in turn, will provide the District Bridge Inspection Unit with a copy, create a new file in the Bridge History File for the bridge, and will store the Request Form in that file.

9.3.4 A Bridge Structure Under Design

1. The process for requesting a Bridge Number/BIN for a bridge under design shall be initiated by either: the District Bridge Engineer, Consultant Review Engineer, Bridge Design Engineer, Consultant Project Reviewer or In-House Design Squad Leader. The request shall be made as soon as the scope of work for the project and bridge type has been established. This is typically at the start of the Sketch Plan (25%) phase of design.

2. The person initiating the request will fill out a Bridge Number / BIN Request Form and submit it along with a plan and elevation view of the proposed bridge structure, preferably half size from the Sketch Plans, to the State Bridge Engineer.

3. The State Bridge Engineer shall determine if a new Bridge Number and/or BIN or neither is required. The State Bridge Engineer will indicate this determination on the Request Form. If required, the State Bridge Engineer will assign a Bridge Number and forward request to Bridge Information Systems Engineer who will ensure that the sequence of Bridge Number's for the city/town is maintained. If the sequence needs to be adjusted the Bridge Information Systems Engineer will coordinate with the State Bridge Engineer and agree on the Bridge Number to be used.

4. If only a new BIN is required (the existing Bridge Number remains the same), the Bridge Information Systems Engineer will: create an initial inventory record with the minimal

information required (the new BIN, the existing Bridge Number, Item 6 and Item 7, and a coding of DES for the Item 8 Bridge Category Code); write the new BIN along with the existing Bridge Number on the Request Form; scan and store the backup documentation; return the completed Request Form and back up documentation to the State Bridge Engineer.

7. If both a new Bridge Number and BIN are required, the Bridge Information Systems Engineer will: reserve the Bridge Number assigned by the State Bridge Engineer by creating an initial inventory record with the minimal information required (the new BIN, the new Bridge Number, Item 6 and Item 7, and a coding of DES for the Item 8 Bridge Category Code); write the new Bridge Number and BIN on the Request Form; scan and store the backup documentation; return the completed Request Form and back up documentation to the State Bridge Engineer.

8. The State Bridge Engineer upon receipt of the completed Bridge Number/BIN Request Form from the Bridge Information System Engineer will have his/her Administrative Assistant forward the completed Request Form with the new Bridge Number/ BIN(s) and back up documentation to the person who initiated the request with a copy to the Bridge Inspection Engineer.

9. The Bridge Inspection Engineer shall forward the Request Form to the Area Bridge Inspection Engineer who, in turn, will provide the District Bridge Inspection Unit with a copy, create a new file in the Bridge History File for the bridge, and will store the Request Form in that file.

9.4 CITY/TOWN DATA TO BE USED WITH THE SUPPLEMENTAL CODING GUIDE

The table in Attachment 9-1 provides the city/town specific codes and information that is referenced in the MassDOT Supplemental Coding when coding certain bridge inventory records. The present district number refers to the MassDOT district that the city/town is currently located in. The previous district number refers to the MassDOT district that the city/town was located in prior to the October 1992 redistricting and any subsequent redistricting and is provided for informational purposes only. City names are in bold, all capital lettering. All others names denote towns.

It shall be noted that certain cities/towns had changed districts even before the 1992 redistricting. These earlier district numbers had in that earlier district are given in parenthesis for informational purposes only and some historic data may refer to those earlier districts.

9.5 SUPPLEMENTAL CODING GUIDE

All Item No.'s in this Supplemental Coding Guide refer to the corresponding Data Items in the FHWA Coding Guide. Those items not found in this Supplemental Coding Guide will be coded exactly as specified in the FHWA Coding Guide.

ITEM 2 - DISTRICT

This Item shall be coded by the District. The Item denotes the MassDOT District in which the bridge is located. Use the Present District Number from the table in Attachment 9-1 for the city/town in which the bridge is located.

ITEM 3 - COUNTY

This Item shall be coded by Boston. The Item denotes the Massachusetts County in which the bridge is located. When coding a bridge record, use the 3 digit FIPS COUNTY code from the table in Attachment 9-1 for the city/town in which the bridge is located. To sort bridge records by county, the 3 digit FIPS COUNTY codes for the fourteen Massachusetts counties are as follows:

County	FIPS Code
Barnstable	001
Berkshire	003
Bristol	005
Dukes	007
Essex	009
Franklin	011
Hampden	013
Hampshire	015
Middlesex	017
Nantucket	019
Norfolk	021
Plymouth	023
Suffolk	025
Worcester	027

ITEM 4 - PLACE

This Item shall be coded by Boston. Use the 5 digit FIPS PLACE code from the table in Attachment 9-1 for the city/town in which the bridge is located.

ITEM 5 – INVENTORY ROUTE

This Item shall be coded by both the District and by Boston.

ITEM 6 – FEATURES INTERSECTED

This Item shall be coded by both the District and by Boston. This Item is a 25 character alphanumeric field that is used to identify the feature(s) under the structure being inventoried. The District shall be responsible for coding this Item as part of the Initial Inventory Inspection. The Boston Headquarters shall review and update this Item with information that the District does not have access to and will inform the District of the reason for any changes. For the purpose of writing memos and letters using 4D a Massachusetts coded item that is not governed by the number of characters has been added in Subsection 9.7.5.

MassDOT has a specific convention for coding the data in the first 24 characters of this item. Refer to Subsections 9.5.1 thru 9.5.3 for further information on coding Item 6.

ITEM 7 – FACILITY CARRIED BY STRUCTURE

This Item shall be coded by both the District and Boston. This Item is an 18 character alphanumeric field that is used to identify the transportation facility being carried by the structure being inventoried. The District shall be responsible for coding this Item as part of the Initial Inventory Inspection. The Boston Headquarters shall review and update this Item with information that the District does not have access to and will inform the District of the reason for any changes. For the purpose of writing memos and letters using 4D a Massachusetts coded item that is not governed by the number of characters has been added in Subsection 9.7.5.

MassDOT has a specific convention, which is described below, for coding the data. Refer to Subsections 9.5.1 thru 9.5.3 for further information on coding Item 7.

ITEM 8 – STRUCTURE NUMBER

This Item shall be coded by Boston. This Item is a 15 character alphanumeric field consisting of the 6 character Bridge Number (BDEPT#), the 3 character BIN, the 3 character Owner Code and the 3 character Bridge Category Code that are assigned to a bridge structure (or part of a structure) for precise identification.

The Bridge Number is used to identify and catalog by city/town a specific crossing of a transportation facility over a depression or obstruction(s) by means of a bridge structure(s). Since it is the transportation facility that defines the crossing, a divided highway would be treated as if it were a single facility. For example, if a divided highway crossed a river, the two bridge structures would have the same Bridge Number. Similarly, a multi-span viaduct would have only one Bridge Number, even though there may be several different obstructions or types of structures involved.

For this reason, the BIN is used to precisely identify a particular bridge structure of a bridge crossing that exists or has existed at that location. For the divided highway example above, the BIN would be used to distinguish between the northbound/southbound or eastbound/westbound bridge structures with the same Bridge Number. A BIN would also be used to divide up a viaduct into separate spans for inspection and maintenance purposes.

For reference, Item 8 is coded in the following sequence:

ABCDEFGHIJKLMNO

Where:

ABCDEF	is the BDEPT# (Bridge Number)
GHI	is the BIN (Bridge Identification Number)
JKL	is the Owner Code
MNO	is the Bridge Category Code

For clarity, whenever writing the Structure Number on inspection reports, correspondence, etc., insert a space between the BDEPT#, BIN, Owner Code and Bridge Category Code.

CODING ABCDEF: BDEPT#'s are assigned to both highway and non-highway facilities. The first 3 characters are the city/town code and the last 3 characters are the sequential serial number within the city/town assigned to the bridge.

City/town Code (**ABC**): Use the 3 digit City/Town Code For BDEPT# from the table in Attachment 9-1 for the city/town in which the bridge is located. The first character of this code is the first letter of the city/town name and the second and third characters are the city/town position on a statewide alphabetical list of all cities/towns beginning with the same letter.

Sequential Serial Number (DEF): Assigned by the Data Control Unit. This number starts from 001 and increases sequentially. When a new BDEPT# is issued for a bridge crossing, it is assigned the next unreserved number in the sequence.

NOTE: There are four missing city/town codes in the city/town codes sequence. These missing codes were the ones for the towns of Dana (D02), Enfield (E09), Greenwich (G13) and Prescott (P15), which were abandoned and flooded to create the Quabbin Reservoir, which was built between 1930 thru 1939.

CODING GHI: The BIN, or Bridge Identification Number, is a computer generated 3 digit alphanumeric that is assigned to uniquely and permanently identify a bridge inventory record for every bridge structure in the state. All bridge inventory records, including agencies, railroads, private bridges, etc., have an assigned BIN. The BIN, once assigned to a record, cannot be deleted or modified, and so, can be used to identify inventory records for bridges that have been demolished.

The BIN uses the letters A through Z (excluding the letters O, I, Z and S) and the numerals 0 through 9.

CODING JKL: The Owner Code is a three character alphabetic code which identifies the owner of the bridge, either specifically, as is the case with bridges owned by major state agencies, or generically, as is the case with bridges owned by cities or towns. The Owner Codes are as follows:

DEM	Department of Environmental Management
DOT	Department of Transportation
MBT	Massachusetts Bay Transportation Authority
MDC	Department of Conservation and Recreation (formerly Metropolitan District Commission)
MPA	Massachusetts Port Authority
MUN	City/Town owned bridge
STA	Other state agency
PRI	Privately owned bridge
RRY	Railroad Company owned bridge
WRA	Water Resources Authority

CODING MNO: The Bridge Category Code is a three character alphanumeric code which identifies the category that the bridge falls into. This code is used primarily to distinguish between bridges that belong on the National Bridge Inventory (i.e. that meet the NBIS definition of a bridge) and those that belong on the Non-NBIS Inventory of Bridges and those that are

owned by Federal Agencies. In the case of the Non-NBIS Inventory, this code is used to distinguish bridges based on the type of facility carried by the bridge.

- **NBI Bridges**

NBI A highway bridge which meets the NBIS definition of a bridge (this includes privately owned bridges that are on public ways or that otherwise allow unrestricted use by the public).

634 A Chapter 634 bridge, which is a highway bridge over a railroad that meets the NBIS definition of a bridge whose ownership was transferred to the MassDOT under Chapter 634 of the Acts of 1971.

TMP A temporary bridge greater than 20 feet put in place to carry traffic for a structure that has been closed because of extensive deterioration. These structures can be placed above or adjacent to the closed structure. This designation is not to be used when a temporary structure is in place as part of the Contractor's means and methods of meeting the requirement of stage construction for a bridge replacement project.

- **Non-NBIS Inventory Bridges**

BRI A bridge under Massachusetts law which carries a highway: any structure with a span over 10 feet (3.05 meters) but less than or equal to 20 feet (6.1 meters) measured along the centerline.

BKY Any bridge or structure which carries a bikeway over a depression or other obstruction(s).

BLD Building over a highway.

BTS Boat Section. This is only used for structures that were built as part of Boston's Central Artery/Tunnel project, since normally boat sections are considered to be approaches to a bridge underpass or tunnel.

CLO A bridge or culvert that has been permanently closed for more than 5 years with no access allowed.

CLP A bridge or culvert that has been permanently closed for more than 5 years with pedestrian access allowed.

CUL Any highway structure with a span less than 10 feet (3.05 meters), but greater than 4 feet (1.22 meters), provided that no opening or pipe diameter comprising the structure measures less than 4 feet (1.22 meters).

DES A record used to reserve a BDEPT# and BIN for a new bridge currently under design.

DUM "Dummy" Record denoting an inventory record for the 2nd town of a town line bridge.

PED Any bridge or structure which carries a pedestrian way over a depression or other obstruction(s).

NBP A bridge which meets the NBIS definition of a bridge but is privately owned or publicly owned but access to vehicles is restricted by a gate, guardhouse or other means.

REM A bridge structure that has been physically removed but whose inventory record is being retained as a historic record for archival purposes.

RRO Any bridge or structure which carries a railroad over a depression or other obstruction(s).

TNL Tunnels are defined as enclosed roadways with vehicle access that is restricted to portals regardless of type of structure or method of construction. Tunnels do not include highway bridges, railroad bridges or other bridges over a roadway. Tunnels are structures that require special design considerations that may include lighting, ventilation, fire protection systems, and emergency egress capacity based on the owner's

determination. This is the official AASHTO Definition as adopted by the *AASHTO Subcommittee on Bridges and Structures* in 2008.

TRO Any bridge or structure which carries a transit line over a depression or other obstruction(s).

UTL Bridge carrying only utility(ies).

- **Bridges Owned by Federal Agencies**

Federal agencies, like the Army Corps of Engineers, inspect their own NBIS length bridges and submit SI&A's for these bridges directly to the FHWA in Washington. The FHWA, in turn, sends an electronic copy of this data to the state in which these bridges are located. Since federal agencies have their own convention for coding Item 8, these bridges do not follow the Massachusetts coding procedure outlined above. However, for state inventory purposes, MassDOT appends these records with a BDEPT#, BIN, and Bridge Category Code, which are assigned according to the procedures outlined above, and an Owner Code of FED.

ITEM 16 - LATITUDE

This Item shall be coded by both the District and Boston. Latitude should be coded in degrees, minutes, seconds and hundredths of a second in accordance with the FHWA Coding Guide. All initial inventory inspections shall determine the Latitude of the bridge through the use of a GPS receiver positioned as close to the midpoint of the bridge as possible. In 2013, a consultant was hired to update coordinates utilizing Google maps. On initial inspections, the District shall gather the coordinates and shall forward the information to Boston for verification.

ITEM 17 - LONGITUDE

This Item shall be coded by both the District and Boston. Longitude has been coded the same way as Item 16, except that in Massachusetts, the first digit of longitude is always zero. In 2013, a consultant was hired to update coordinates utilizing Google maps. On initial inspections, the District shall gather the coordinates and shall forward the information to Boston for verification.

ITEM 19 – BYPASS, DETOUR LENGTH

This Item shall be coded by the District. The detour length shall be determined in accordance with the FHWA Coding Guide, except that the detour route will be measured using only unrestricted bridges (either for weight or height limitations), even though a shorter detour route may exist with restricted bridges.

ITEM 26 – FUNCTIONAL CLASSIFICATION OF INVENTORY ROUTE

This Item shall be coded by Boston. The coded to be used is for the inventory route coded in Item 5. Follow the FHWA Coding Guide to determine if a bridge is rural or urban.

System	Code	Description
On	01	Rural Principal Arterial - Interstate
System	02	Rural Principal Arterial - Other

	06	Rural Minor Arterial
	07	Rural Major Collector
	11	Urban Principal Arterial - Interstate
	12	Urban Principal Arterial - Other Freeways or Expressways
	14	Urban Other Principal Arterial
	16	Urban Minor Arterial
	17	Urban Collector
Off	08	Rural Minor Collector
System	09	Rural Local
	19	Urban Local

ITEM 27 – YEAR BUILT

This Item shall be coded by both the District and Boston. This Item denotes the date of construction of the oldest surviving original element of the present bridge, whether that oldest element is a part of the substructure or a part of the superstructure. The District shall be responsible for coding this Item as part of the Initial Inventory Inspection. The Boston Headquarters shall review and update this Item based on historical information that the District does not have access to and will inform the District of the reason for any changes.

Code the actual year the bridge was built and/or opened to traffic. Typically, this would be the date on the endpost. If this is not precisely known, use the advertising date from the plans. Another source is the Cultural Resources Section in Boston, which has done significant research on the history of older and historic bridges. For example, if one abutment wall constructed in 1890 is reused as an abutment of the new bridge structure, Item 27 is coded 1890.

In order for an element to be considered a part of a bridge structure, it must provide structural support, which, if removed, would cause the bridge structure to collapse. This situation may not always be evident, especially with integral abutment bridges, which are built to span over existing abutments that are retained but do not provide structural support.

YEAR BUILT does not reflect the original construction date of any reused structural element, which was not originally built as part of the present bridge that is being inventoried, but which was relocated from its original site and incorporated into the present structure. For example, if a bridge superstructure was moved from its original location and installed on new abutments built in 1996, Item 27 is coded 1996.

YEAR BUILT does not reflect the construction date of any earlier bridge on the site, if no identifiable physical element of that earlier structure can be shown to exist as part of the present bridge. For example, a new integral abutment bridge structure was built in 1996. The existing bridge was demolished except for the abutments that retain earth but do not provide structural support to the new structure. Item 27 is coded 1996.

NOTE: The code year "1850" has been used in the past to denote a bridge built long-ago whose precise date of construction is not known. Inventory records that have this misleading date are still around. Since few bridges of that era remain in the United States at all, a year built date of 1850 should be viewed with skepticism and should not automatically be taken as fact.

ITEM 29 – AVERAGE DAILY TRAFFIC (ADT)

This Item shall be coded by the District. If available, ADT data should be obtained from the Boston Traffic Data section. Otherwise, the traffic volume and truck percentage should be obtained from field observation and counts.

NOTE: 1) The default value calculated to have no effect (plus or minus) on the AASHTO Sufficiency Rating is 49 vehicles/lane.

2) ADT for closed bridges shall be the ADT expected to use the bridge if it were neither closed nor restricted for weight or clearance.

Article 4.5.11.5 of this manual should be referenced for further explanation and procedures on obtaining ADT information.

ITEM 36 – TRAFFIC SAFETY FEATURES

This Item shall be coded by the District. Item 36 consists of four elements, each one digit in length, which for the purposes of this Supplemental Coding Guide will be referred to the same as in the FHWA Coding Guide as follows:

36A Bridge Railings
36B Transitions
36C Approach Guardrail
36D Approach Guardrail Ends

The following single digit numerical code will be used to report the ADEQUACY of the feature being inspected:

1 if the feature **completely** meets the currently acceptable standards.
0 if the feature does **not completely** meet the currently acceptable standards or if a safety feature is required and none is provided.
N if the feature is either obviously not applicable or is not required.

Completely means that the feature has to meet the standards in all locations. This means for both the right and left sides of the bridge and at all four approaches. For bridges on the NHS, the accepted standards are set by regulation and require that the features have been verified by actual crash-tests. Chapter 10 provides examples and guidance to assist the bridge inspector in determining the proper coding for Item 36.

When reporting on adequacy of the traffic safety features, the condition is not relevant. The conditions of the Traffic Safety Feature elements are recorded elsewhere on the Routine Bridge Inspection form as follows:

Item 58.8 – Railing and/or 58.7 - Parapet
Approaches, d. - Guardrail

CODING 36A (Bridge Railings)

The following bridge railings are MassDOT standards. All have been accepted by FHWA as meeting the requirements of NCHRP 350 and/or MASH and so are considered as completely meeting currently acceptable standards.

The S3-TL4 is the same railing as the S3-PL2, except that the designation has been changed to signify that it has been crash-tested in accordance with NCHRP 350 Test Level 4 (TL4) criteria instead of the AASHTO Performance Level 2 (PL2) criteria.

Bridge Manual Name	Bridge Manual Part II Reference
CT-TL2 RAIL	Section 9.2
S3-TL4 RAIL	Section 9.3
CP-PL2 BARRIER	Section 9.4
CF-PL2 BARRIER	Section 9.5
CF-PL3 BARRIER	Section 9.6

The use of these barriers is determined by the application matrix in Part I of the Bridge Manual. Since the CP-PL2 Barrier is used primarily for pedestrian applications, it must always be used either with a Type II protective screen or a hand rail.

There are other railings and railing retrofits, in addition to the ones listed above, that have been crash tested and accepted by FHWA and which have been used by MassDOT or municipalities. When they are encountered, they can be coded as acceptable.

CODING 36B (Transitions)

Most of the older end post transitions that are in use in Massachusetts do not meet current standards. MassDOT has a crash tested standard bridge rail to highway guardrail transitions, also referred to as highway guardrail transitions, for all of the standard MassDOT bridge railings. Standard plans for them are available through the Bridge Section. In addition, there are other crash tested transitions which have been accepted by FHWA that may be used by MassDOT or municipalities where the standard transition is inappropriate.

In order for a highway guardrail transition to be coded as acceptable, even for those that are based on the accepted crash tested standards, the following must hold true:

1) The bridge rail/barrier must transition smoothly into the concrete highway guardrail transition section, and, for metal bridge railings, the rails must be firmly attached to the concrete highway guardrail transition and must not protrude beyond its face.

2) Where there is approach guardrail (see 36C), the approach guardrail must overlap and be firmly attached to the vertical flat surface of the highway guardrail transition. This connection must be solid and fully secured to prevent pull-out.

3) The guardrail system immediately adjacent to the highway guardrail transition must be appropriately and gradually stiffened, from a flexible system to a rigid system.

4) The upstream base of the highway guardrail transition needs to be protected either with a curb or rub rail to prevent vehicle tire snagging.

5) If there is no approach curb off of the bridge, the bridge curb must be tapered away from the roadway so that there is no exposed blunt end to snag the wheels of a car. If there is an approach curb, it must smoothly transition into the bridge curb.

CODING 36C (Approach Guardrail)

Approach guardrails must be structurally sound, will smoothly redirect an impacting vehicle, and will not collapse or otherwise deflect excessively to pocket and snag an impacting vehicle. Guardrails should be installed at all four corners of a bridge, leading as well as trailing ends, since a vehicle must still be smoothly redirected as it exits the bridge after impact.

Guardrails are not always possible, especially in urban areas, where buildings may abut the bridge site and highway guardrail transition. In such cases, the inspector must determine if the lack of a guardrail creates a potentially hazardous situation. For example, if there is a gap between a building and the highway guardrail transition that should be protected by guardrail, then Item 36C is 0. If there is no such gap, and there are acceptable guardrails at the other corners, then Item 36C is 1. If buildings abut the highway guardrail transitions on all four corners with no unprotected gaps so that approach guardrail is not required, then Item 36C is N.

For the purpose of inspecting this item, the minimum Length-of-Need (LON) of approach guardrail typically required to protect the end of a bridge is 25 feet (7.6 meters). However, this length may be deficient for protecting motorists from other hazards that are located off of the roadway, such as trees, sign structures or long, steep slopes. Lengths shorter than 25 feet (7.6 meters) should not be used except for low speed (less than 45 mph) locations and where there are no potential off-road hazards as described above. Similarly, longer lengths are acceptable if they are required as protection from these hazards. The inspector must judge if the LON is sufficient to protect motorists from off-road hazards adjacent to the bridge.

CODING 36D (Approach Guardrail Ends)

The following are currently the only acceptable standards for the treatment of approach guardrail ends:

1) For semi-rigid guardrails, flaring the guardrail away from the roadway at a 15:1 slope beyond the 30 foot (9.144 meter) clear zone and providing a terminal end.
2) Burying the end in the back slope where a natural back slope exists. Burying the end in an earth berm within the clear zone is not an acceptable method.
3) A terminal end that is an accepted, crash tested impact attenuating device. For most highway applications, this will be a flared-type end treatment. However, for guardrail lengths that do not meet the minimum LON and for roads that do not have a runout area, a tangent-type end treatment should be used.
4) No end, since the guardrail is continuous, well beyond the bridge site.

ITEM 37 - HISTORICAL

This Item shall be coded by Boston. This Item is coded as follows for internal MassDOT purposes and is translated to the required FHWA format by the Boston Data Control Unit:

H = Bridge is listed in the National Register of Historic Places (NR), either individually or as a contributing element in an NR Historic District.

E = Bridge has been determined eligible for listing in the NR, either individually or as a contributing element in an historic district, by the Keeper of the National Register.

P = Bridge has been found to be potentially eligible for listing in the NR, either individually or as a contributing element in an historic district.

A = Bridge has been found to be not eligible for individual listing in the NR, but is located in a historic area, that is, in or near a known/potential historic district, or near a known/potential historic property or site.

N = Bridge has been found not eligible for individual NR listing.

C = Bridge has possible historical significance but is less than 50 years old, and has been found, by the Massachusetts Historic Commission (MHC) to be conditionally not eligible for individual listing in the NR because of its age. A "conditionally not eligible" bridge is treated as "not eligible" until it reached 50 years of age; at that point its NR eligibility must be reassessed.

R = Bridge is less than 50 years old, is of a common structural type, and has been found to be conditionally not eligible for individual listing in the NR because of its age and common structural type, by MassDOT's Historic Bridge Specialist.

X = The Bridge's NR eligibility is under dispute or requires further research.

Z = Bridge was built after 1949 and is presumed to be not eligible, pending individual review.

Blank= The Bridge's NR eligibility has not been determined.

For the purposes of review under Section 106 of the National Historic Preservation Act of 1966 (as amended), bridges coded as **H**, **E**, or **P** are considered to be historic. Although bridges coded **A** are not considered to be historic in themselves, projects involving **A**-coded bridges will require review under Section 106 for possible project impacts on nearby historic properties.

For conversion purposes, the MassDOT codes equate to the following FHWA Coding Guide codes:

MassDOT CODE	FHWA CODE
H	1
E	2

P	2
A	3
N	5
C	3
R	3
X	3
Z	5
Blank	4

ITEM 41 – STRUCTURE OPEN, POSTED OR CLOSED TO TRAFFIC

This Item shall be coded by the District. This Item will be coded in accordance with the FHWA Coding Guide except for the following clarifications:

Code

B Massachusetts law (Ch. 85 s. 34) requires that load posting signs be erected not less than 100 feet (30.480 meters) from the bridge. Federal Regulations (23 CFR §650.313 (c)) accept the posting of a bridge in accordance with state law. For the purposes of coding this Item, a bridge will be coded "**P**" (Posted for Load) and not "**B**" (all signs not in place) if all signs are erected in accordance with Massachusetts law even though there are no signs immediately at or on the bridge, provided that there are no intersecting streets between the erected sign and the bridge.

E This is only to be used on the primary record that has been closed and only where a temporary structure has been put in place to carry the legal loads. The temporary structure will have its own structure number and will be coded as outlined in the FHWA Coding Guide.

R This code is to be used on structures with load based restrictions in place that are not individually posted for loads. For example Parkways legally restrict trucks from using the facilities and would be code R. Limited access structures (closed off by fences or bollards) for a majority of the year and have limited use are to be coded R. Improper use of R would be when a structure is restricted for the winter months and then open to the public in the summer months. In this case the proper coding that applies for that structure should be coded under item 41 outlined in the FHWA Coding Guide.

ITEM 48 – LENGTH OF MAXIMUM SPAN

This Item shall be coded by the District. This Item will be coded in accordance with the FHWA Coding Guide except for the following clarification. If the plans show definite centerlines of bearings, use the center to center of bearing points for this dimension. If the plans do not show definite centerlines of bearings, such as for a rigid frame structure, then use the clear open distance between substructure elements.

ITEM 60 - SUBSTRUCTURE

This Item shall be coded by the District. For bridges over water that require a separate dive report to evaluate the condition of the below water component of the substructure, the Condition Rating to be entered for Item 60 shall generally be the lowest controlling condition rating for the substructure from either the above water or the dive report. Refer to Subsection 4.6.9 of this Handbook for an example.

ITEM 61 – CHANNEL AND CHANNEL PROTECTION

This Item shall be coded by the District. For bridges over water that require a separate underwater inspection, the dive team shall code Item 61. However, the above water inspection team may find during their inspection that the condition of one of the inspection sub items for Item 61, which is readily accessible without the need for underwater operation equipment, has changed from the condition noted on the dive report. In such situations, the above water inspection team shall change the condition rating of this sub Item, and note the reason for this change, on the inspection report. If this change necessitates a change in the condition rating for Item 61, the above water inspection team will then also change Item 61 to reflect the lowest controlling condition rating of the inspection sub Items.

For bridges over water that do not require a separate underwater inspection, the above water inspection team shall code Item 61.

ITEM 62 - CULVERTS

This Item shall be coded by the District. In the past, before the adoption of the December 1988 FHWA Coding Guide, all structures greater than 20' in length were considered bridges even if their structure type was more accurately described as a culvert. Thus culverts greater than 20 feet (6.1 meters) in length had Item 62 coded as "**N**". Starting with the December 1988 Coding Guide and continuing with the December 1995 Coding Guide, this is no longer correct. For the proper coding of Items 43, 51, 52, 58, 59, 60 and 62, follow the rules set forth in the 1995 Coding Guide. Do not follow the Massachusetts Definition of a bridge and culvert.

NOTE: In the case of Item 43, ignore factors such as span length, and consider only the design of the structure and then select the category that best describes it. Having selected a code, the following rules must be observed:

1) If either Item 51 (Bridge Roadway Width), or Item 52 (Deck Width) must be **0.0 meters**, then Item 43B must be coded as **"19"** (Culvert).

2) If Item 43B is not **"19"** (Culvert), then Item 51 and Item 52 must contain a non-zero dimension (**not 0.0 meters**). Structures that are coded as a slab (Item 43B = **01**) or as an arch (Item 43B = **11 or 12**) must have Item 51 (Roadway Width) and Item 52 (Deck Width) filled in with a non-zero dimension. In the case where the bridge has no deck, use the roadway width for the deck width. Although illogical, there is no other way to avoid an error check.

3) If Item 43B is "**19**" (Culvert) then Item 58, 59 and 60 must be coded "**N**" and Item 62 must contain a number from **0 to 9**.

4) It is not necessary to code Item 51 (Roadway Width) and Item 52 (Deck Width) as **0.0 meters** for culverts (ITEM 43B = **19**). In a case where a culvert carries a roadway with no or minimal fill and the roadway's width is restricted by the culvert headwalls, Items 51 and 52 should be coded. For coding these Items, refer to the December 1995 Coding Guide. In addition, you should code Item 28, Item 29 and Item 102 if there is any traffic going over the culvert.

5) If traffic rides directly on top of the culvert roof with only a wearing surface and no fill, it may be necessary to rate the roof's condition separate from that of the remaining culvert elements. In this case, do not code the structure as a culvert (Item 43B = **19**) even if the design "looks" like a culvert. Code Item 43B as "**00**" (other) or whatever comes closest to describing the structure type and make sure Item 62 is "**N**". This situation will require a separate condition rating for Items 58, 59 and 60.

NOTE: The following two categories of errors appear frequently:

1) **Bridges that have either Item 51 OR Item 52 coded as 0.0 meters and Item 43B is not coded a "19" (Culvert).** To correct this, fill in Item 51 and/or Item 52 with a valid, non-zero dimension. The other option is to change Item 43B to "19" if the structure really is a culvert. Remember that Items 58, 59 and 60 must be then be changed to "**N**" and Item 62 must contain a valid condition rating.

2) **Item 43 B is "19" (Culvert) and Items 58, 59, 60 are not coded an "N" and/or Item 62 is "N**". To correct this, replace the numerical codes in Items 58, 59 and 60 with "**N**" and place a valid rating between **0 and 9** in Item 62. Alternatively, if the structure appears to have a deck, code 43B a "**00**" (other) or whatever comes closest to describing the structure type and make sure Item 62 is "**N**". Items 58, 59 and 60 must in this case be reexamined.

For a Culvert structure (Item 43B = **19**), use a Culvert Inspection Form; otherwise use a Routine Inspection Report Form.

ITEM 63 – METHOD USED TO DETERMINE OPERATING RATING

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. Refer to Section 9.5.4 for further information on coding Item 63.

ITEM 64 – OPERATING RATING

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. Refer to Section 9.5.4 for further information on coding Item 64.

ITEM 65 – METHOD USED TO DETERMINE INVENTORY RATING

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. Refer to Section 9.5.4 for further information on coding Item 65.

ITEM 66 – INVENTORY RATING

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. Refer to Section 9.5.4 for further information on coding Item 66.

ITEM 67 – STRUCTURAL EVALUATION

This Item shall be coded be Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer program that determines the proper coding for these Items. Inspectors should not attempt to code these Items themselves, but should only ensure that the inventory data which is used to determine the coding for these Items is correct.

ITEM 68 – DECK GEOMETRY

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer program that determines the proper coding for these Items. Inspectors should not attempt to code these Items themselves, but should only ensure that the inventory data which is used to determine the coding for these Items is correct.

ITEM 69 – UNDERCLEARANCES, VERTICAL AND HORIZONTAL

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer program that determines the proper coding for these Items. Inspectors should not attempt to code these Items themselves, but should only ensure that the inventory data which is used to determine the coding for these Items is correct.

ITEM 70 – BRIDGE POSTING

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer program that determines the proper coding for these Items. Inspectors should not attempt to code these Items themselves, but should only ensure that the inventory data which is used to determine the coding for these Items is correct.

ITEM 75 – TYPE OF WORK

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer program that determines the coding for this Item in conjunction with the coding of Items 94, 95, 96, and 97. Inspectors should not attempt to code these Items themselves.

ITEM 76 – LENGTH OF STRUCTURE IMPROVEMENT

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer program

that determines the coding for this Item in conjunction with the coding of Items 94, 95, 96, and 97. Inspectors should not attempt to code these Items themselves.

ITEM 90 – INSPECTION DATE

This Item shall be coded by the District. This Item will be coded in accordance with the FHWA Coding Guide and will reflect the date of the last Routine Inspection. When Inspections are extensive and require multiple days to perform, then the start date of the inspection shall be placed in this item.

ITEM 91 – DESIGNATED INSPECTION FREQUENCY

This Item shall be coded by the District. This Item will be coded in accordance with the FHWA Coding Guide and will reflect the most frequent time interval at which the bridge is regularly inspected. This inspection can be either routine, any of the regularly scheduled Critical Feature Inspections, or Closed Bridge Inspection.

ITEM 92 – CRITICAL FEATURE INSPECTION

This Item shall be coded by Boston. This is a 9 character alphanumeric composed of 3 elements, each 3 characters in length, coded in accordance with the FHWA Coding Guide. For the purposes of this Supplemental Coding Guide the 3 elements will be referred to the same as in the FHWA Coding Guide as follows:

92A Fracture Critical Details
92B Underwater inspection
92C Other Special Inspections

- Coding Items 92B and 93B

  If the structure requires an underwater inspection, the inspection frequency will be determined by the Boston Underwater Operations Team and will be coded in Item 92B in accordance with the FHWA Coding Guide. The date of the latest underwater inspection is entered in Item 93B. Both Items are to be coded ONLY by the Underwater Operations Team. In some cases a normally non-dive bridge may be visited and/or inspected by Underwater Operations personnel. In this situation, Item 92B will be coded "N", while Item 93B will coded with the date when the Underwater Operations personnel last visited the bridge.

- Coding Items 92C and 93C

  Items 92C and 93C are used to record the frequency and the date of the latest Special Member Inspection. A Special Member Inspection is used to monitor bridge members for a known deficiency and its frequency is based on the member's condition rating. In addition, if the structure contains unique or special features which require additional attention or procedures that are not typically found in the Bridge Inspectors Reference Manual (BRIM), the inspection of these features will be considered a Special Inspection. The frequency, in months, established to inspect these features will be coded in Item 92C in accordance with the FHWA Coding Guide. The date of the latest Special Inspection is entered in Item 93C.

ITEM 93 – CRITICAL FEATURE INSPECTION DATE

This Item shall be coded by the District. This is a 12 digit numerical composed of 3 elements, each 4 digits in length, coded in accordance with the FHWA Coding Guide. For the purposes of this Supplemental Coding Guide the 3 elements will be referred to the same as in the FHWA Coding Guide as follows:

93A Fracture Critical Details
93B Underwater inspection
93C Other Special Inspections

Refer to Item 92, coding of Items 92B and 93B and coding of Items 92C and 93C for additional reference.

ITEM 94 – BRIDGE IMPROVEMENT COST

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer routine that determines the coding for these Items in conjunction with the coding of Items 75 and 76. Inspectors should not attempt to code these Items themselves.

ITEM 95 – ROADWAY IMPROVEMENT COST

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer routine that determines the coding for these Items in conjunction with the coding of Items 75 and 76. Inspectors should not attempt to code these Items themselves.

ITEM 96 – TOTAL PROJECT COST

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer routine that determines the coding for these Items in conjunction with the coding of Items 75 and 76. Inspectors should not attempt to code these Items themselves.

ITEM 97 – YEAR OF IMPROVEMENT COST ESTIMATE

This Item shall be coded by Boston. Coding will be in accordance with the FHWA Coding Guide. The Bridge Section's Bridge Information System Unit has a computer routine that determines the coding for these Items in conjunction with the coding of Items 75 and 76. Inspectors should not attempt to code these Items themselves.

ITEM 100 – STRAHNET HIGHWAY DESIGNATION

This Item shall be coded by Boston. This Item is used to indicate whether or not the inventory route (identified in Item 5) that the bridge is on is part of the Strahnet System. The Office of Transportation Planning supplies the Bridge Inspection Unit with the interactive maps

for the coding of this item. For the purposes of this Supplemental Coding Guide this item will be referred to the same as in the FHWA Coding Guide as follows:

0 The inventory route **is not** a STRAHNET route
1 The inventory route **is** on a Interstate STRAHNET route
2 The inventory route **is** on a Non-Interstate STRAHNET route
3 The inventory route is on STRAHNET connector route

ITEM 103 – TEMPORARY STRUCTURE DESIGNATION

This Item shall be coded by the District.

ITEM 104 – HIGHWAY SYSTEM OF THE INVENTORY ROUTE

This Item shall be coded by Boston This Item is used to indicate whether or not the Inventory route (identified in Item 5) that the bridge is on is part of the National Highway System. The Office of Transportation Planning supplies the Bridge Inspection Unit with the interactive maps for the coding of this item. For the purposes of this Supplemental Coding Guide this item will be referred to the same as in the FHWA Coding Guide as follows:

0 If the Inventory Route **is not** on the NHS
1 If the Inventory Route **is** on the NHS

ITEM 106 – YEAR RECONSTRUCTED

This Item shall be coded by the District. For the purposes of coding this Item, reconstruction work will include any major bridge work that retains and incorporates any element of the existing bridge into the new structure. The date when this work was completed will be coded in Item 106. Maintenance type work, as defined in the FHWA Coding Guide, is not considered as reconstruction work.

For reference, the following two categories of bridge projects, as defined in Part I of the Bridge Manual, are considered reconstruction work:

- **PROPOSED BRIDGE REHABILITATION** - Some superstructure and substructure elements are replaced and/or existing elements that are to remain are retrofitted to meet current code requirements.

- **PROPOSED SUPERSTRUCTURE REPLACEMENT** - All elements of the superstructure are replaced. Some or all substructure elements are retrofitted to meet current code requirements, or, if required, some, but not all, substructure elements are replaced.

The following category of work is not defined in Part I of the Bridge Manual, but is also considered reconstruction work:

- **PROPOSED DECK REPLACEMENT** - All deck elements are replaced. Main load carrying superstructure elements and all substructure elements are retained with retrofits, if required, to meet current code requirements.

In addition, any work to the main load carrying members that increases their load carrying capacity will be considered a reconstruction and the date that this work was done will be coded in this Item. For example, adding cover plates to a bridge to increase its capacity qualifies as a reconstruction, while adding cover plates to replace section loss due to deterioration does not.

If a bridge structure is replaced in its entirety so that no portion of the original bridge structure is incorporated into the new structure, the date the new bridge was constructed will be coded in Item 27 and Item 106 will be coded 0000, even if portions of the original bridge were physically retained for non-structural purposes. See the MassDOT Supplemental Coding Guide instructions for Item 27 for more information.

ITEM 108 – WEARING SURFACE PROTECTIVE COATING

This Item shall be coded by the District. Item 108 consists of three sub items consisting of Item 108A: Type of Wearing Surface, Item 108B: Type of Membrane, and Item 108C: Deck Protection.

Item 108A, Type of Wearing Surface, shall be coded according to reflect the predominant material present on the existing wearing surface at the time of the inspection. For example, if the original wearing surface according to the construction drawings states that it will be comprised of a bituminous concrete wearing surface, but at the time of the inspection, the wearing surface has in excess of 50% of the wearing surface area patched with concrete patches, then the predominant wearing surface material shall be coded as a monolithic concrete wearing surface.

Item 108B and 108C shall be coded according to the FHWA coding guideline requirements.

ITEM 109 – AVERAGE DAILY TRUCK TRAFFIC

This Item shall be coded by the District. This data may be available from the Traffic Section. If not, generate a number from actual counts taken at the bridge site during the actual inspection. See the MassDOT Supplemental Coding Guide instructions for Item 29 for more information.

ITEM 110 – DESIGNATED NATIONAL NETWORK

This Item shall be coded by Boston. This Item indicates whether or not the inventory route (identified in Item 5) that the bridge is on is part of the National Network for trucks. The Office of Transportation Planning supplies the Bridge Inspection Unit with the interactive maps for the coding of this item.

ITEM 113 – SCOUR CRITICAL BRIDGES

This Item shall be coded by Boston. The initial coding of this Item was determined by the MassDOT Scour Committee in the late 1990's as part of the MassDOT Scour Program. Further evaluations were completed in the early 2010, as part of the MassDOT Scour Plan of Action program. Subsequently, the MassDOT Hydraulics Engineer will be reviewing this coding periodically to determine if, based on more information and the results of additional stream bed

evaluations and/or dive inspections, this coding should be reconsidered. The coding of this Item either for new or rehabilitated bridges or bridges that have had scour countermeasures will also be revised based on a review of the work by the MassDOT Hydraulics Engineer.

ITEM 114 – FUTURE AVERAGE DAILY TRAFFIC

This Item shall be coded by Boston. The intent is to provide a basis for a 20 year forecast for the average daily traffic for the inventory route identified in Item 5. According to the FHWA Coding Guide, the projection shall be at least 17 but no more than 22 years from the date of inspection. So if the projections is for 21 years, this Item can be updated every second inspection (or every 4 years) to stay current. If data is not available from the Traffic Section, a general traffic growth factor used in Massachusetts is 1.022 raised to the 21st power for a 21 year projection, which calculates to a traffic growth factor of 1.5793. This formula dates from 1975, so it should be checked with the Traffic Projection Section of Planning for current statistics.

9.5.1 MassDOT Convention for Coding Item 6 and Item 7

For coding purposes for Item 6, each of the 25 characters is referred to as follows, with **A** denoting the first character:

ABCDEFGHIJKLMNOPQRSTUVWXY

NOTE: The 2001 errata to the FHWA Coding Guide has specified that the 25th character (**Y**), previously used to designate a "Critical Facility", will no longer be coded. A blank space will be inserted in its place.

For coding purposes for Item 7, each of the 18 characters is referred to as follows, with **A** denoting the first character:

ABCDEFGHIJKLMNOPQR

Generally, the first 5 characters (**ABCDE**) are reserved for the MassDOT feature/facility code. The 6th character (**F**) must always be blank. The remaining characters (**G** through **X** for Item 6, or **G** through **R** for Item 7) are reserved for the feature/facility description, which gives the official name or other official identifying designation. Abbreviations may be used where necessary, but every effort shall be made to keep them meaningful. The feature/facility description will always be left justified.

It is understood that there may be situations where the feature/facility description conventions cannot be followed exactly (because of too many features/facilities and the limitation on the number of characters that can be entered). In these situations, the coder will attempt to provide as meaningful description as possible while attempting to adhere to the spirit of these conventions.

Also, when using STREET, ROAD, AVENUE, etc., as part of the feature name, use the appropriate contraction: ST, RD, AVE or AV. When using RIVER, BROOK, STREAM, etc., as part of the feature name, spell it out, except where space limitations do not allow this, then use the appropriate contraction: RIV, R, BRK, BK, STR, etc. When a compass designation is used as part of the street name, such as North Main Street, use only the first letter of the direction, for this example: N MAIN ST, except when a compass direction is the official name of the facility: WEST ST. Omit punctuation marks such as periods in the feature/facility description. For divided highways, specify the orientation of the barrel using the following abbreviation convention: northbound is abbreviated "NB", etc. Do not use periods, such as N.B., in the abbreviations.

A slash (/) is used to distinguish between features/facilities which share a common right of way and an ampersand (&) is used to distinguish between features/facilities which are on separate parallel rights of way.

9.5.2 Coding Item 6 and Item 7 for a Single Feature/Facility

- Interstates: The Feature/Facility Code **A** will be coded "I" and the number of the Interstate will be entered right justified in **BCDE**. On/off ramps from an interstate will have the same feature/facility code as the interstate being accessed. Specify the orientation of the barrel, if only a single barrel is involved. If both barrels of an interstate are involved, omit all references to orientation. For ramps, use the ramp designation found on the plans, such as "RAMP A", and/or orientation, if applicable.

  For example: Interstate 495: I 495

  The numbering of Intestates Routes follows a set convention. One and two digit numbered routes are the main interstate routes that stretch from state to state. Interstate numbers increase from west to east and from south to north.

  Even two digit Interstate numbers indicate west to east routes. Odd one/two digit Interstate numbers indicate south to north routes. Two digit Interstate numbers ending in 0 or 5 are used for routes that extend long distances, typically from coast to coast or border to border.

  Three digit interstate numbers are used in urban areas and denote branches that originate on the main interstate routes. The first digit represents the type of branch and the second and third digits indicate the main interstate route from which the branch originates. If the first digit is even, then the route is a beltway or loop. If the first digit is odd, then the route is a spur that extend from a main route to a city or other location.

  Since three digit Interstates are primarily local branches, these numbers may be repeated from state to state. For example, there is an I-495 in Massachusetts, an I-495 in New York on Long Island, an I-495 around Wilmington, Delaware, and the Capital Beltway in Maryland and Virginia is also I-495. Even numbered three digit interstates can complete the loop to the interstate they start from via another interstate. For example, I-290 in Worcester starts at I-90 in Auburn and completes the loop to I-90 in Westborough via I-495.

- US Routes: The Feature/Facility Code **AB** will be coded "US" and the number of the US Route will be entered right justified in **CDE**. On/off ramps from a US route will have the same feature/facility code as the US route being accessed.

  For example: US Route 202: US202

If the route has limited access barrels including ramps, code the same as for an interstate. If the route has a local street name, enter this starting in **G**.

For example: US 20 N BEACON ST

If the route has an orientation as well as a local street name, enter the orientation abbreviation first, then the local street name, separating the two by a slash (/).

For example: US 20 EB/WASHNGTON

Sometimes, it may be useful to add a description which is not an official name. This description should be added in parenthesis.

For example: US 6 (DRAWBRIDGE)

- State Routes: The Feature/Facility Code **AB** will be coded "ST" and the number of the State Route will be entered right justified in **CDE**. On/off ramps from a state route will have the same feature/facility code as the state route being accessed.

  For example: State Route 109: ST109

  Generally, if a US route has a suffix letter, such as the "A" in Route 122A or Route 2A, the suffix letter is always entered in **G**. If there is also a local name, enter it after the suffix letter, separating the two by a slash (/).

  For example: ST122 A/MAIN ST
  ST 2 A/N MAIN ST

- Local Streets: The Feature/Facility Code **ABC** will be coded "HWY" and **DE** will be left blank. The Feature/Facility description shall be the Official street name.

- Railroads: Feature/Facility Code **AB** will be coded "RR" and **CDE** will be left blank. When entering railroad company names, use the following abbreviations instead of the full name:

Bay Colony Railroad	BCRR
Fore River Railroad	FRR
Grafton & Upton Railroad	GURR
Housatonic Railroad	HRR
MBTA Commuter Rail	MBTA
Massachusetts Central Railroad	MCRR
Massachusetts Coastal Railroad	MACRR
New England Central Railroad	NECR
Pan Am Railroad	PARR
Pioneer Valley Railroad	PVRR
Providence & Worcester Railroad	PWRR

In addition to these active railroad companies, there have been others that have operated in Massachusetts in the past. If a rail line was abandoned and not replaced by another facility, then Item 6 for the bridge over it (or Item 7 if the bridge is an RRO over a road) should still reference the old railroad company that existed at the time of abandonment followed by (ABANDONED) or (ABAND) if space is limited. A partial list of these historic railroad companies is as follows:

Boston and Albany Railroad	BARR
Boston & Maine Railroad	BMRR
Consolidated Rail Corporation	CONRAIL
New York, New Haven and Hartford Railroad	NYNHHRR
Penn Central Railroad	PCRR

AMTRAK preferably should not be abbreviated, however, if this is unavoidable due to space limitations, use AMTK.

CSX Transportation Co. should be listed as CSX without RR after its initials.

Enter the railroad company which provides the flagging services for inspection and is responsible for reviewing bridge plans affecting the railroad. This may or may not be the owner of the railroad right-of-way. For example, the Massachusetts Department of Transportation (MassDOT) owns certain rail lines, but the designated operator (such as Massachusetts Coastal RR) provides the flagging service and so should be entered in the feature/facility description, not MassDOT.

If a second railroad shares the tracks and is also granted the right to review bridge plans by the owner, this company will be entered second in the feature/facility description, separated from the first by a slash (/).

Do not enter the railroad's official branch name. This will be entered as a Massachusetts specific item. Do not enter a railroad which only has trackage rights to operate trains but has no right for review of plans.

In the case of MBTA commuter rail lines, since July 1, 2014, Keolis Commuter Services shall operate the commuter trains and provide flagging services under contract for the MBTA, however, Keolis Commuter Services should not be listed in the feature/facility description along with the MBTA.

- Rapid Transit Lines: The Feature/Facility Code **AB** will be coded "TR" and **CDE** will be left blank. Enter the official name of the transit line. In the case of MBTA rapid transit lines, this would be the line's standard color reference.

  For example: RED LINE

If space is limited, abbreviate the MBTA color code as follows:

Blue Line	BLUE	
Orange Line	ORNG	
Red Line	RED	(North of JFK station)
Red Line SSH	REDS	(Braintree Line)
Red Line AMT	REDA	(Ashmont Line)
Red HSL	RHSL	(Mattapan-Ashmont HSL)
Silver Line	SILV	
Green Line D	GRND	(Riverside Line)

(If other Green Line branches need to be entered, follow the same convention as above).

- Bodies of Water: This includes rivers, streams, brooks, tidal inlets, etc. The Feature/Facility Code **ABCDE** will be coded "WATER". The Feature/Facility Description shall be the official geographical name for the river, stream, pond etc.

- Town Line Bridges: The Feature/Facility Code **ABCDE** will be coded "OTHER". The Feature/Facility description shall enter the following:

  - Item 6: The two BDEPT#'s as an equation, with the primary record BDEPT# first

  - Item 7: Roadway name. If roadway name is different from the primary record then the adjoining City/Towns' roadway name shall be entered.

    For example: Same roadway name in each City/Town

    Item 6 is OTHER H21035=S18012
    Item 7 is OTHER US202

    For example: Different roadway name in adjoining City/Town

    Item 6 is OTHER F01001=N06002
    Item 7 is OTHER COGGSHALL ST

- Removed Bridges: The Feature/Facility Code **ABCDE** will be coded "OTHER"

  - For bridges that have been permanently removed without replacement, the Feature/Facility Description shall enter the following:

    - Item 6: Name of original facility/feature intersected, compressed as required

      For example: BMRR/BEAR DEN RD
      CROSS RD/NORTH R

- Item 7: REMOVED
  This may be modified to provide additional information about historical circumstances regarding the removal of this bridge, if this information is available, such as:

  WASHED OUT 1955
  FILLED IN 1984

- For bridges that have been functionally replaced by a structure with another BDEPT#, the Feature/Facility Description shall enter the following:

  - Item 6: REPLACED BY (*BDEPT# of the bridge that replaced this bridge*)

    For example: REPLACED BY A15018

  - Item 7: REMOVED

- For bridges that have been functionally replaced by a structure with another BIN but the same BDEPT#, the Feature/Facility Description shall enter the following:

  - Item 6: REPLACED BY (*BIN of the bridge that replaced this bridge*)

    For example: REPLACED BY ALD

  - Item 7: REMOVED

- Other: This is intended to cover any feature/facility that is neither a highway facility open to the public nor one of the other categories listed above. The Feature/Facility Code **ABCDE** will be coded "OTHER". For bikeway facilities, provide the official name. For pedestrian bridges that are not part of a separate pedestrian path, specify PED and, followed by an @ (at) sign and the closest parallel street. For a building, provide the name of the building Some typical examples:

MINUTMN BKY	(bikeway facility)
PED@WEST ST	(pedestrian bridge)
STAR MKT	(building over a roadway)

9.5.3 Coding Item 6 and Item 7 for a Multiple Features/Facility

9.5.3.1 Hierarchy of Precedence for Multi Features/Facility

Generally, the following hierarchy of precedence will be used when entering information:

1) Interstates
2) US Numbered Routes

3) State Numbered Routes
4) Local Streets
5) Railroads
6) Rapid Transit Lines
7) Bodies of Water (rivers, streams, etc.)
8) Other (non-highway facilities or other information regarding a non-extant bridge)

9.5.3.2 Multiple Features/Facilities of the Same Type

- Roadways: Use the code for the feature/facility having the highest precedence in the above hierarchy. For features/facilities on the same segment of roadway, the descriptions shall follow all applicable conventions and will be entered in the hierarchy of precedence order with slashes separating each description. If no orientations are required, still provide a slash to indicate that the roadway is being shared. If there is also a local street name and space permits, enter this last separated by a slash (/).

  For example: I95 NB/ST128 NB
  ST 97/ST113
  ST110/ST111/AYER

  For features intersected on separate rights of way, the description for each right of way will follow all applicable conventions and will be entered in the hierarchy of precedence order with ampersands (&) separating the description of each right of way.

  For example: I93 NB&SERVC RD
  I95 /ST128&ACCS

- Railroads: If there are multiple users of the same set of tracks but only one owner, this is considered a single feature/facility. If there are two sets of tracks each of which is owned by a different entity, then code both the feature/facility code and description using the single feature/facility convention except that the two railroad names will be separated by an ampersand (&).

  For example: RR PARR & NECR

9.5.3.3 Multiple Features/Facilities of Different Types

Generally, this is only applicable for coding Item 6 and is used if two features of different types are intersected, such as a road and a river. The Feature/Facility Code **ABCD** will be coded "COMB" and **E** will be blank. Using all applicable conventions and the hierarchy of precedence, enter the each feature's description separated by an ampersand (&) from the others

For example: COMB W ORANGE RD&PARR
COMB PARR&HOOSIC RIV

9.5.4 Coding Items 63, 64, 65, and 66

If a bridge has a rating report or an addendum to a rating report that was specifically prepared with a Load Factor MS18 Inventory and Operating Rating for compliance with the FHWA 1995 Coding Guide, then Item 63 and 65 shall be coded "1" and the Inventory and Operating Ratings specified for Items 64 and 66 on the report's Summary Sheet shall be entered in Items 64 and 66.

If a bridge does not have a rating report or addendum specifically prepared with a Load Factor MS18 Operating Rating, but does have a rating report with an HS20 Inventory and Operating Rating in English Tons prepared using the Allowable Stress Method, then Item 63 and 65 shall be coded "2" and the English Ton HS20 Operating Rating from the report's Summary Sheet shall be multiplied by the 0.9 conversion factor (English to Metric Tons) specified by the FHWA National Bridge Inventory Information System (NBIS) October 1996 Metric Conversion Program to obtain an equivalent MS18 Inventory and Operating Ratings which will be entered in Item 64 and Item 66.

If a bridge has neither a rating report nor an addendum with a Load Factor MS18 Inventory and Operating Rating nor an Allowable Stress HS20 Inventory and Operating Rating, but does have a Rating Report with Inventory and Operating Ratings, obtained either by Allowable Stress numerical calculations or by Engineering Judgment, then Items 63, 64, 65 and 66 shall be coded as follows:

- NUMERICAL RATINGS:

  Item 63 and 65 shall be coded "2" and the largest Inventory (IR) and Operating Rating (OR) from the Rating Summary for either the H20, Type 3 or Type 3S2 trucks shall be converted to an approximate MS18 Inventory and Operating Rating, to be entered in Item 64 and 66, as follows:

  H Truck: Item 64 = OR x 1.25 (truck type conversion factor) x 0.9
  Type 3: Item 64 = OR x 1.0 (truck type conversion factor) x 0.9
  Type 3S2: Item 64 = OR x 0.7 (truck type conversion factor) x 0.9

  H Truck: Item 66 = IR x 1.25 (truck type conversion factor) x 0.9
  Type 3: Item 66 = IR x 1.0 (truck type conversion factor) x 0.9
  Type 3S2: Item 66 = IR x 0.7 (truck type conversion factor) x 0.9

  The truck type conversion factors are taken from the FHWA NBIS October 1996 Metric Conversion Program and are based on adjustment factors specified in the December 1988 FHWA Coding Guide.

- ENGINEERING JUDGMENT

  Item 63 and 65 shall be coded "5" and the Inventory and Operating Ratings for Items 64 and 66 shall be calculated as specified under Numerical Ratings above.

9.5.4.1 Design Ratings

If no rating report exists and the Department has determined that the structure is capable of carrying statutory loads based on the original Design Load Criteria shown on the plans, and its condition

at the time of consideration, then Item 63 and Item 65 shall be coded "5" and Item 64 shall be coded "**44.1**" and Item 66 shall be coded "32.4".

If a bridge was designed using the Load and Resistance Factor Design (LRFD) method and the HL-93 design loading, then Load and Resistance Factor Rating (LRFR) Rating Factors will need to be provided in order to comply with the FHWA NBIS Coding Guide for Item 64 and Item 66 . Items 63 and 65 shall be coded as an "8" to reflect the "LRFR Rating by RF method using HL-93". Item 64 and Item 66 shall have a rating factor greater of 1.0. This rating factor would mean that the structure has a capacity exceeding the design limits of the HL-93 design loading.

9.5.4.2 Closed Structures

If based on the results of a rating report, Item 63 and 65 shall be coded depending on the method of analysis; Item 64 and 66 shall be coded "**00.0**".

If based on the results of an inspection without any calculations, then Item 63 and 65 shall be coded "5"; Item 64 and 66 shall be coded "**00.0**".

For structures closed by the owner for non-structural reasons (the City and/or Town decides the roadway or bridge should be closed) Items 63, 64, 65, and 66 shall **not be changed**. If Items 64 and 66 are changed for the structure to "0.00", the structure would become structurally deficient and that may not accurately reflect its condition.

9.6 SECONDARY RECORDS

If the route(s) beneath the structure being inventoried in the primary record is (are) one of the following: Federal-aid highway, STRAHNET route or connector, or an otherwise important facility, a separate record known as the secondary record, also called an "under" record in the FHWA Coding Guide, must be created to inventory information regarding the route underneath the structure.

Each route on a separate roadway under the same structure will have a separate "under" record. This secondary record, along with the clearance information for when this route is "on" a bridge, allows FHWA to have a continuous record of clearances for this entire route.

Secondary records will be generated for all structures over these routes, whether or not they carry highways. Railroad bridges, pedestrian/bikeway bridges, buildings, etc., will only have a secondary record that is reported to the FHWA. The primary record for these structures will be included only in the Non-NBIS Inventory.

CREATION OF SECONDARY RECORDS

Area Bridge Inspection Engineers are responsible for the creation of the secondary records in the Bridge Inspection Management System (4D). STRAHNET routes are always considered to be of highest importance and are listed first, followed by Interstates, Principal Arterial, Minor Arterial, and Major or Urban Collector.

CODING THE SECONDARY RECORDS

For each of these secondary records, an additional Item 5 is created for inventory route identified as an "under" route. The Structure Number is identical to the primary record for the structure over the route.

CODING ITEMS FOR THE SECONDARY RECORDS

For each secondary record created, the following Items must be coded for the inventory route that is identified in Item 5 as an "under" inventory route:

Item 1
Items 3 through 11
Items 16 & 17
Items 19 & 20
Items 26 through 30
Items 42 & 43
Items 100 through 104
Items 109 & 110

Follow the coding directions in the FHWA Coding Guide for "under" records to properly code these items. Do not reverse the descriptions in Items 6 and 7 between the primary and secondary records. They must remain the same in the secondary record as in the primary record. Item 10 is coded for the minimum vertical clearance over the inventory route identified in Item 5, which, in the case of a secondary record, is the road below the structure.

9.7 MASSACHUSETTS SPECIFIC ITEMS

MassDOT has created its own specific Items to provide additional information that cannot be coded as part of the NBI inventory record but is nevertheless useful to have in the inventory. This information includes other identifying designations for the bridge, such as local names or alternate bridge numbers, to be used for cross reference purposes as well as information regarding the inspection and posting of this bridge.

Since these Items are not part of the NBI, they are referred to only by name and do not carry an Item number.

For easy reference, the following is a listing of all Massachusetts Specific Items. They have been grouped into the following subsection categories based on a common subject.

9.7.1 ACCESS ITEMS

Except for the ACCESS OTHER Item, all Access Items are a coded as two digit fields. The first field is intended to help bridge inspection personnel prepare for a bridge inspection by indicating the equipment and services needed to properly access and inspect a structure for all required types of inspection. The second field is used to track which equipment or service was actually used during each inspection. In addition to this 2 digit coding, the ACCESS OTHER Item has a 10 character field to permit a description of this access Item.

Since the first field for these Items is used for planning purposes and is not intended to indicate the equipment actually used, the coding for this field shall not change from inspection to inspection unless conditions at the bridge site change. A coding of "**Y**" indicates that this equipment or service is essential for proper access. A coding of "**P**" indicates that this equipment is not essential for proper access, however its use will facilitate or expedite the inspection and bridge inspection personnel should make an effort to secure its use. A coding of "**N**" indicates that no equipment or service is essential for proper access. However, the timely inspection of these bridges should not be delayed if this equipment is not available.

- Access Other

  This Item shall be coded by the District and has a 12 character field size. It denotes if an access item other than one of the ones listed below are required to properly access and inspect a structure for all types of inspection. Code this Item either **Y**, **N** or **P** for Field 1, **Y** or **N** for Field 2 and Describe the access item in Field 3 thru 12.

- Barge

  This Item shall be coded by the District and has a 2 character field size. A barge is needed to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Boat

  This Item shall be coded by the District and has a 2 character field size. A boat is needed to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Class A Emp

  This Item shall be coded by the District and has a 2 character field size. A Class A Employee from AMTRAK, qualified to provide protection from electrical hazards, is needed to provide access for inspection. Code this Item either **Y** or **N** for Field 1 and for Field 2.

- Confined Space

  This Item shall be coded by the District and has a 2 character field size. Confined space procedures, precautions and entry equipment are needed to provide access for inspection. Code this Item either **Y** or **N** for Field 1 and for Field 2.

- Ladder

  This Item shall be coded by the District and has a 2 character field size. A ladder is needed to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Lift Bucket

  This Item shall be coded by the District and has a 2 character field size. A Lift Bucket is needed to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Night/Off Hours Work

  This Item shall be coded by the District and has a 2 character field size. Access for inspection can only be obtained during night time or other off peak hours. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Police

  This Item shall be coded by the District and has a 2 character field size. A police detail is required to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Railroad Flagging

  This Item shall be coded by the District and has a 2 character field size. Railroad flagging is required to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Rigging

  This Item shall be coded by the District and has a 2 character field size. Rigging is needed to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Snooper

  This Item shall be coded by the District and has a 2 character field size. The Snooper is needed to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Traffic Control

  This Item shall be coded by the District and has a 2 character field size. A traffic control set up is needed to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

- Wader

  This Item shall be coded by the District and has a 2 character field size. Waders are needed to provide access for inspection. Code this Item either **Y**, **N** or **P** for Field 1 and **Y** or **N** for Field 2.

9.7.2 BRIDGE FEATURES

- Foundation Type

  This Item shall be coded by Boston and has a 1 character field size. This Item is used to indicate the type of foundation that the bridge has been designed with. The information should be taken from the plans, or if there are no plans available, then from the results of any investigation

performed to establish the foundation type. If there is no information regarding the foundation type, the coding should be X - Unknown Foundation. If there is a mixture of foundation types, then the coding should be for the type of foundation of the majority of substructure units. This Item is coded as follows:

A Spread Footings on Soil
B Spread Footings on Ledge
C Pipe Piles
D H-Piles
E Concrete Piles
F Timber Piles
G Drilled Shafts
H Mini-Piles
X Unknown Foundation

- Jointless Bridge

This Item shall be coded by Boston and has a 1 character field size. This Item is used to indicate the type of jointless construction that the bridge has been designed with. Jointless bridges are those bridges that do not have a roadway joint between the superstructure and the abutment backwall. Integral abutment bridges are those bridges whose beams are embedded in a stub abutment stem, which extends up to and is tied into the deck pour. Integral abutments, although typically founded on piles, may also be on spread footings. Semi-Integral abutments are those that have a horizontal joint between the abutment seat and the superstructure to allow for movement, but the beam ends are embedded in a monolithic end diaphragm that extends to and is tied into the deck pour. Rigid frame bridges have a full moment connection between the superstructure and the full height abutment walls, thereby forming a moment frame. This Item is coded as follows:

A INTEGRAL (strong axis H-piles)
B INTEGRAL (weak axis H-piles)
C INTEGRAL (pipe piles)
D INTEGRAL (concrete piles)
E INTEGRAL (timber piles)
F INTEGRAL (spread footings)
G INTEGRAL (cantilevered end span)
H SEMI-INTEGRAL (piles)
I SEMI-INTEGRAL (spread footings)
J RIGID FRAME
X Not applicable (Not a Jointless Bridge)

- Overhead Signs

This Item shall be coded by the District and has a 1 character field size. This Item indicates whether or not a bridge has an overhead traffic sign attached to it. Code this Item either **Y or N** if there is an overhead sign.

- Pier Type

  This Item shall be coded by the District and has a 2 character field size. This Item is used to provide information regarding the bridge's piers, if any. The first character denotes the type of material used in the pier's construction and the second character denotes the type of pier. This information can be taken either from the plans or from a field inspection. If the bridge is a mixture of pier types or pier materials, then the coding should be for the predominant pier type and the material used in its construction.

  The first character denotes the type of material used in the pier's construction and is coded as follows:

  A Concrete
  B Steel
  C Timber
  D Masonry
  E Other
  N No pier

  The second character denotes the type of pier and is coded as follows:

  A Single column pier
  B Hammerhead pier (Single column with cantilevered pier cap ends)
  C Two column frame
  D Multi column pier, without pier caps
  E Multi column pier, with pier cap
  F Multi column pier on top of railroad crash wall
  G Wall pier
  H Pile bent
  I Integral with arch superstructure
  J Integral with culvert superstructure
  K Other
  N No pier

- Pin & Hanger

  This Item shall be coded by the District and has a 1 character field size. This Item indicates whether or not a bridge has pin & hanger details as part of its superstructure construction. Code this Item either **Y** if there are pin & hanger details or **N** if there are no pin & hanger details.

- Protective Screen

  This Item shall be coded by the District and has a 1 character field size. This Item indicates whether or not a bridge has an anti-missile fence. A Protective Screen fence is an anti-missile which is erected on the side of a bridge or attached to the bridge railing to prevent debris from being dropped or thrown from the bridge onto the road or railroad below. An anti-missile screen should have a minimum height of 8' - 9" (2.66 meters) from the top of sidewalk or roadway (if no sidewalk) and should have a mesh, such as chain link, with openings which will prevent an object

greater than 2 inches (50 mm) from passing through. The top of the fence need not be curved to be considered an anti-missile fence. Code this Item either **Y or N** if there is an anti missile fence.

- Snow Fence

  This Item shall be coded by the District and has a 1 character field size. This Item indicates whether or not a snow fence is installed across the bridge. Code this Item either **Y** if there is a snow fence or **N** if there is no snow fence.

- Steel Coating

  This Item shall be coded by the District and has a 1 character field size. This Item indicates the type of coating system used for the structural steel. Code this Item as follows:

  G **Galvanized**
  M **Metalized**
  P **Painted**
  W **Weathering Steel**
  O **Other Coating System**

- Temporary Bridge

  This Item shall be coded by the District and has a 1 character field size. This Item indicates the existence and type of temporary bridge that carries traffic in place of the permanent bridge. This Item will indicate only those temporary bridges which are positioned in the exact same location as the permanent bridge which the temporary bridge functionally replaces. The temporary bridge may be located over the permanent bridge or in place of the permanent bridge, if it has been removed. This Item will not indicate temporary bridges that are located on a separate alignment from that of the permanent bridge. Code this Item as follows:

  N if there is no temporary bridge
  A if the temporary bridge is an ACROW Panel Bridge
  M if it is a Mabey Bridge
  P if it is a commercially available pre-engineered bridge
  O if it is any other type of temporary bridge

  A temporary bridge shall be considered a permanent bridge if it remains in place for more than 5 years and a new replacement bridge is not programmed for design and construction. When this becomes the case, the NBI inventory shall be updated with all pertinent data of this formerly temporary bridge structure, and this Item shall be coded "**N**".

- Utilities

  This Item shall be coded by the District and has a 1 character field size for each appropriate utility type. Code this Item either **Y or N** for each utility type that exists on a structure's superstructure. This Item will indicate the presence and type of utility present and carried or supported by the structure's superstructure. The types of utilities that a structure's superstructure may carry or support are as follows:

- Water Line
- Sewer Line
- Natural Gas Line
- Electrical Conduit Lines
- Communication Conduit or Lines

9.7.3 CLEARANCE INFORMATION

- Posted for Vertical Clearance

  This Item shall be coded by the District and has a 1 character field size. This Item indicates whether or not this bridge has a vertical clearance posting. Code this Item either **Y or N** if there is a vertical clearance posting.

- N/E Vertical Clearance Measured

  This Item shall be coded by the District and has a 4 character field size. This Item is the minimum vertical clearance under a bridge over the Northbound or Eastbound roadway as measured in English Units. If this is the controlling clearance for the bridge, the clearance measurement provided under this Item is the English Unit conversion of the metric unit clearance coded in Item 54 of the FHWA Coding Guide. This Item is intended to be used by the inspectors to more easily verify the existing vertical clearance posting signs at a bridge without having to do unit conversions in the field. This Item is coded in feet and inches, **FFII**, where **FF** is the foot component of the clearance and **II** is the inch component of the clearance. The inch dimension should be rounded down to the nearest inch.

- N/E Vertical Clearance Posting

  This Item shall be coded by the District and has a 4 character field size. This Item is the vertical clearance over the Northbound or Eastbound roadway in English Units for which the bridge is actually posted. This Item is coded in feet and inches, **FFII**, where **FF** is the foot component of the clearance and **II** is the inch component of the clearance. The inch dimension should be rounded down to the nearest inch.

- S/W Vertical Clearance Measured

  This Item shall be coded by the District and has a 4 character field size. This Item is the minimum vertical clearance under a bridge over the Southbound or Westbound roadway as measured in English Units. If this is the controlling clearance for the bridge, the clearance measurement provided under this Item is the English Unit conversion of the metric unit clearance coded in Item 54 of the FHWA Coding Guide. This Item is intended to be used by the inspectors to more easily verify the existing vertical clearance posting signs at a bridge without having to do unit conversions in the field. This Item is coded in feet and inches, **FFII**, where **FF** is the foot component of the clearance and **II** is the inch component of the clearance. The inch dimension should be rounded down to the nearest inch.

- S/W Vertical Clearance Posting

  This Item shall be coded by the District and has a 4 character field size. This Item is the vertical clearance over the Southbound or Westbound roadway in English Units for which the bridge is actually posted. This Item is coded in feet and inches, **FFII**, where **FF** is the foot component of the clearance and **II** is the inch component of the clearance. The inch dimension should be rounded down to the nearest inch.

- Truss Portal Measured

  This Item shall be coded by the District and has a 4 character field size. This Item is the vertical clearance over the roadway at the truss portal in English Units. This Item is coded in feet and inches, **FFII**, where **FF** is the foot component of the clearance and **II** is the inch component of the clearance. The inch dimension should be rounded down to the nearest inch. Truss portals are another situation that may require clarification by signing the low point location to alert the driver of where the clearance is the lowest along the roadway. Refer to Section 4.8 for further discussion.

9.7.4 CULVERT ITEMS

The following Items are used to inventory a culvert structure and are found on the Routine Culvert Inspection form.

- Barrel Height

  This Item shall be coded by the District and has a 5 character field size. This Item is the largest vertical dimension of the typical culvert barrel opening. If the culvert is composed of barrels of different sizes, use the largest opening. This Item is coded in meters and hundredths of a meter as **XX.XX.**

- Barrel Number

  This Item shall be coded by the District and has a 2 character field size. It indicates the number of barrels that make up the culvert structure.

- Barrel Width

  This Item shall be coded by the District and has a 5 character field size. This Item is the largest horizontal square dimension of the typical culvert barrel opening. If the culvert is composed of barrels of different sizes, use the largest opening. This Item is coded in meters and hundredths of a meter as **XX.XX**.

- Culvert Coating

  This Item shall be coded by the District and has a 20 character field size. A text field used to enter a description of the type of protective coating applied to the culvert.

- Culvert Material

  This Item shall be coded by the District and has a 40 character field size. A text field used to enter a description of the material that the culvert is made from. The description should be consistent with the material specified in Item 43 but should try to be more descriptive, for example: reinforced concrete, corrugated aluminum, corrugated steel, etc.

- Culvert Shape

  This Item shall be coded by the District and has a 20 character field size. A text field used to enter a description of the shape of the culvert. Typical descriptions are: rectangular, round, elliptical.

- Depth of Cover

  This Item shall be coded by the District and has a 4 character field size. This Item is the average depth of cover over the culvert, rounded to the nearest tenth of a meter. This Item is coded in decimal meters as **XX.X**.

9.7.5 INVENTORY ITEMS

- Agency Bridge #

  This Item shall be coded by Boston and has a 9 character field size. If a bridge is owned by another state agency or other political entity which uses a bridge numbering scheme different from the MassDOT bridge numbers, this internal agency bridge number is recorded here for cross reference purposes.

- BDEPT #

  This Item shall be coded by Boston and has a 6 character field size. BDEPT# is a 6 character alphanumeric used to identify a specific crossing of a transportation facility over a depression or obstruction(s) by means of a bridge structure(s). BDEPT#'s are assigned to both highway and non-highway facilities. The first 3 characters are the city/town code and the last 3 characters are the sequential serial number within the city/town assigned to the bridge. Although the BDEPT# is a part of the FHWA Coding Guide Item 8, it is also used as a Massachusetts Specific Item for reference purposes.

  City/Town Code: Use the 3 digit City/Town Code for BDEPT# from the table in Attachment 9-1 for the city/town in which the bridge is located. The first character of this code is the first letter of the city/town name and the second and third characters are the city/town position on a statewide alphabetical list of all cities/towns beginning with the same letter.

  Sequential Serial Number: Assigned by the Data Control Unit. This number starts from 001 and increases sequentially. Each new BDEPT# is assigned the next unreserved number in the sequence.

  NOTE: There are four missing city/town codes in the city/town codes sequence. These missing codes were the ones for the towns of Dana (D02), Enfield (E09), Greenwich (G13) and Prescott (P15), which were abandoned and flooded to create the Quabbin Reservoir.

- BIN

  This Item shall be coded by Boston and has a 3 character field size. The BIN, or Bridge Identification Number, is a computer generated 3 digit alphanumeric that is assigned to uniquely and permanently identify a bridge inventory record for every bridge structure in the state. All bridge inventory records, including agencies, railroads, private bridges, etc., have an assigned BIN. The BIN, once assigned to a record, cannot be deleted or modified, and so can be used to identify inventory records for bridges that have been demolished. The BIN uses the letters **A** through **Z** (excluding the letters **O, I, Z** and **S**) and the numerals **0** through **9**.

  Although the BIN is a part of the FHWA Coding Guide Item 8, it is also used as a Massachusetts Specific Item for reference purposes. All bridge references must include the BIN. For example, Bridge No. A13015 (0FK).

- Bridge Category Code

  This Item shall be coded by the Boston and has a 3 character field size. The Bridge Category Code is a three character alphanumeric code which identifies the category that the bridge falls into. This code is used primarily to distinguish between bridges that belong on the National Bridge Inventory (i.e. that meet the NBIS definition of a bridge) and those that belong on the Non-NBIS Inventory of Bridges. In the case of the Non-NBIS Inventory, this code is used to distinguish bridges based on the type of facility carried by the bridge. Although the Bridge Category Code is a part of the FHWA Coding Guide Item 8, it is also used as a Massachusetts Specific Item for reference purposes. A complete listing of Bridge Category Codes is found in the description of Item 8 in Section 9.5.

- Bridge Name

  This Item shall be coded by the Boston and has a 30 character field size. Record the official local name of the bridge or officially dedicated memorial name of the bridge.

- Bridge Key

  This Item was coded by both the District and Boston and had a 12 character field size. The BRKEY, or Bridge Key #, was a 12 character alphanumeric field that was assigned to a bridge structure (or part of a structure) for precise identification. The Bridge Key # is no longer used and is referenced here for historical purposes.

  The BRKEY was used to distinguish between bridge structures that have the same BDEPT#. The BRKEY was also used to divide up a multi-span bridge or viaduct for inspection or maintenance identification purposes. Logically, this would be done using existing, readily identifiable features, such as expansion joints, changes in the structure type, or where the deck geometry changes.

  For reference, the BRKEY was coded in the following sequence:

  ABCDEFGHIJKL

Where:

ABC is the owner and/or facility carried on the bridge code
DEF is the city/town code
GHI is an unique bridge number used for identification
JKL is the directionality/route classification indicator

CODING ABC:

MassDOT OWNED NBIS BRIDGES: **ABC** is a three digit number coded depending on the functional classification of the route the bridge is on:

Federal Aid Primary	001-099
Federal Aid Secondary	100-399
Federal Aid - Other	400-799
Miscellaneous	800-999

Except that the following codes are reserved to identify interstate and Chapter 634 bridges:

086	=	I-84	091	=	I-91	096	=	I-495
087	=	I-395	092	=	I-291	097	=	I-195
088	=	I-895	093	=	I-93	098	=	I-295
089	=	I-391	094	=	I-290	099	=	I-190
090	=	I-90	095	=	I-95	900	=	Chapt. 634

NOTE: 1) I-84 was originally numbered I-86, hence the code.
2) I-895 was to be the Boston Inner Belt which was never built.
3) A Chapter 634 bridge is a highway bridge over a railroad whose ownership was transferred to the MassDOT under Chapter 634 of the Acts of 1971.

NON-NBIS BRIDGES REGARDLESS OF OWNER: **ABC** is one of the following alphabetic codes, except when the owner is another state agency in which case the agency code is used instead (see the NON-MassDOT OWNED NBIS OR NON-NBIS BRIDGES for the codes of these state agencies).

These structures may or may not be owned by MassDOT:

BRI A bridge under Massachusetts law which carries a highway: any structure with a span over 10 feet (3.05 meters) measured along the centerline or 8 feet (2.44 meters) measured square to the abutments but less than or equal to 20 feet (6.1 meters) measured along the centerline.
BKY Bikeway bridge.
CUL Any highway structure with a span less than 8 feet (2.44 meters), measured square to the abutments, but greater than 4 feet (1.22 meters), provided that no opening or pipe diameter comprising the structure measures less than 4 feet (1.22 meters).
DUM "Dummy" Record denoting an inventory record for: 2nd town of a town line bridge.

DRE A bridge structure that has been physically removed but whose inventory record is being retained as a historic record for archive purposes.
PED Pedestrian bridge.
RRO Railroad bridge (other than MBTA owned).

NON-MassDOT OWNED NBIS OR NON-NBIS BRIDGES: **ABC** is one of the following alphabetic codes. These structures are not owned by MassDOT:

BLD Building over a highway
DEM Department of Environmental Management
FED Owned by any Federal Agency not specifically listed
MDC Metropolitan District Commission
MPA Massachusetts Port Authority
MTA Massachusetts Turnpike Authority
MUN City/Town owned bridge on a Federal Aid System
PRI Privately owned bridge
TEE Any MBTA structure. This code can be refined as follows:

TEC MBTA owned CUL
TEH MBTA owned NBIS bridge
TEB MBTA owned BRI bridge
TET MBTA owned transit bridge
TED MBTA owned drawbridge
TER MBTA owned railroad bridge
TEP MBTA owned pedestrian bridge

TWN City/Town owned "off-system" bridge (i.e. not on a Federal Aid System)
UTL Bridge carrying only utility(ies)
WRA Water Resources Authority

OTHER CATEGORY REGARDLESS OF OWNER: **ABC** is one of the following alphabetic codes. These structures may or may not be owned by MassDOT:

CAN Temporary CANA Ramps
DES A record used to reserve a BDEPT# and/or BIN for a new bridge currently under design.
CLO A bridge that has been permanently closed with no access allowed.
CLP A bridge that has been permanently closed with pedestrian access allowed.

CODING DEF: Use the 3 digit City/Town Code for BRKEY from the table in Appendix 9-1 for the city/town in which the bridge was located.

CODING GHI: A unique 3 digit identification number used to precisely identify each bridge structure within a city/town for inspection or maintenance purposes. For some bridges, this number is identical to the last 3 digits of the BDEPT#. For other bridges, this is an independent number generated by the District Bridge Inspection Unit or Structures Maintenance Unit to distinguish bridges structures with the same BDEPT# or to divide up a multi-span bridge or viaduct.

STRUCTURES WHERE **ABC** IS CODED BRI, BKY, CUL, CLO, CLP, PED, BLD: **GHI** will be coded as follows:

OWNER	**G**	**HI**
City/Town	T	Unique number
MassDOT	S	Unique number
Army COE	A	Unique number
DEM	D	Unique number
Federal	F	Unique number
MDC	P	Unique number
MTA	M	Unique number
RR (other than MBTA)	R	Unique number
Private	Z	Unique number

DIVIDING UP A MULTI-SPAN BRIDGE OR VIADUCT: A logical sequence should be employed so that the individual structures that make up the overall bridge can be easily identified. An example of such a sequence can be as follows:

G	=	N	For structures on the NB Roadway
G	=	S	For structures on the SB Roadway
G	=	E	For structures on the EB Roadway
G	=	W	For structures on the WB Roadway
G	=	B	For structures carrying bidirectional traffic
HI	=	00 thru 99	For Mainline Structures
H	=	R	For Ramp
I	=	Letter A to Z	For Ramps

All structures should be coded sequentially according to the established survey and kilometer numbering direction for the inventory route.

CODING JKL: A 3 digit number to be coded as follows:

J 0 until all inventory coding for the structure is completed, then 1

K Directional Indicator
0 = Two-way traffic
1 = North bound
2 = East bound
3 = South bound
4 = West bound

L For primary records: 0 for unnumbered route; 1 for numbered route.

- Facility Carried by Structure

This shall be coded by District and Boston and has no character field size restriction. The complete street name or roadway segment will be inputted in this field. This will be used for the purpose of writing letters to the cities and towns.

- Features Intersected

  This shall be coded by District and Boston and has no character field size restriction. The complete name of the feature being crossed will be inputted in this field. This will be used for the purpose of writing letters to the cities and towns.

- FC Under

  This Item was coded by Boston and has a 2 character field size. The Functional Classification of the road underneath the structure. The two digits of this Item will be coded using the same two digit code as for FHWA Coding Guide Item 26.

- FHWA Record

  This Item was coded by both the District and Boston and has a 1 character field size. This Item denotes if the inventory record for this bridge belongs on the National Bridge Inventory or not. It is used to distinguish between NBI bridges and Non-NBIS bridges, such as BRI's, closed bridges, demolished bridges, non-highway bridges, etc. The purpose of this Item is to determine which inventory records are to be sent to the FHWA in Washington DC and which are not. The District shall be responsible for coding this Item, however, the Area Bridge Inspection Engineers in the Boston Headquarters have the ability to recode this Item based on their review of the inventory information. The District shall be informed of the reason for any such changes. Code this Item a **Y** if the bridge belongs in the NBI and a **N** if it belongs in the Non-NBIS inventory.

- Legacy Owner

  This Item shall be coded by Boston and has a 3 character field size. On November 1, 2009, the new Massachusetts Department of Transportation was created and the ownership of the bridges of the former Massachusetts Highway Department and the Massachusetts Turnpike Authority along with most of the highway bridges of the Department of Conservation and Recreation and the Tobin Bridge of MassPort was transferred to the MassDOT Highway Division. The Legacy Owner is a three character alphabetic code, which identifies the owner of the bridge prior to it becoming a MassDOT bridge, since these bridges are now coded DOT in the FHWA Coding Guide Item 8. In addition to the listing of Owner Codes found in the description of Item 8 in Section 9.5, the following Legacy Owner code that are no longer used as Owner Codes in Item 8:

CAN	Temporary CANA Ramps
MHD	Massachusetts Highway Department
MHS	Metropolitan Highway System
MTA	Massachusetts Turnpike Authority

- Mile Marker

  This Item shall be coded by the District and has a 5 character field size. If a mile marker is posted on or at the bridge then record the value posted. If the mile marker is not posted but is easily estimated from adjacent mile posts then provide the estimated mile marker rounded to the tenth of a mile.

- Owner Code

  This Item shall be coded by Boston and has a 3 character field size. The Owner Code is a three character alphabetic code which identifies the owner of the bridge, either specifically, as is the case with bridges owned by major state agencies, or generically, as is the case with bridges owned by cities or towns. Although the Owner Code is a part of the FHWA Coding Guide Item 8, it is also used as a Massachusetts Specific Item for reference purposes. A complete listing of Owner Codes is found in the description of Item 8 in Section 9.5.

- Parallel BIN

  This Item shall be coded by the District and has a 3 character field size. This Item records the BIN of the structure on a divided highway which is parallel to the structure being inventoried.

- Railroad Branch

  This Item shall be coded by Boston and has a 20 character field size. This records, for cross reference purposes, the official name that the railroad company uses to identify the rail line under the bridge.

- Railroad Bridge #

  This Item shall be coded by Boston and has a 6 character field size. Railroad companies identify bridges, both railroad bridges and highway bridges over the railroad, by their milepoint location, to the nearest hundredth of a mile, on the particular railroad line's mile post sequence. The railroad company's bridge number is recorded here for cross reference purposes.

  Although the bridge number is typically painted on the bridge structure, this cannot always be assumed to be correct, since some railroads have changed their mile post numbering sequences in recent years with changes in ownership. Always reference the railroad's company's latest track chart for the correct railroad bridge number for a given bridge.

- Town Line BDEPT #

  This Item shall be coded by Boston and has a 6 character field size. A 6 character alphanumeric indicating the BDEPT# for the secondary town of a town line bridge.

- Town Name

  This Item shall be coded by Boston and has a 20 character field size. The name of the city/town in which the bridge structure is located.

9.7.6 INSPECTION ITEMS

- Closed Bridge Inspection Date

  This Item shall be coded by the District and has a 4 character field size. This is a 4 digit number used to record the month and year of the latest Closed Bridge Inspection. For coding, follow the FHWA Coding Guide instructions for coding Items 93A, 93B, and 93C.

- Closed Bridge Inspection Frequency

  This Item shall be coded by the District and has a 3 character field size. This is a 3 character alphanumeric used to indicate the need for a Closed Bridge Inspection and its frequency. For coding, follow the FHWA Coding Guide instructions for coding Items 92A, 92B and 92C.

- Complex Bridge

  This Item is coded by Boston and has a 1 character field size. The Item denotes if this bridge has been identified as a Complex Bridge for inspection purposes. Complex Bridges are assigned for inspection to one of the Complex Bridge Inspection Consultant Contracts. Generally it would be a bridge with one or more non-typical features such as: complex structural details; movable bridge elements; difficult inspection access; or requiring extensive time to inspect. Code this Item a **Y** if it is a complex bridge or an **N** = if it is not a complex bridge.

- Damage Inspection

  This Item shall be coded by the District and has a 4 character field size. This is a 4 digit number used to record the month and year of the last Damage Inspection. For coding, follow the FHWA Coding Guide instructions for coding Items 93A, 93B, and 93C.

- Inspection Hours

  This Item shall be coded by the District and has a 3 character field size. This is a three digit numerical Item which records the number of person hours required to inspect the structure for a ROUTINE inspection, including FRACTURE CRITICAL inspection, if applicable and to complete the inspection report. This number of hours should include time for the review of plans, previous inspection reports, rating books, etc., in preparation for the inspection as well as an estimate of travel time from the central bridge inspection office, time for writing reports and time for data entry.

- Inspection Responsibility

  This Item shall be coded by both the District and Boston and has a 5 character field size. The District or Agency responsible for inspecting this bridge is entered in this Item according to the following code:

DCR	Department of Conservation and Recreation
DIST1	District 1
DIST2	District 2

DIST3	District 3
DIST4	District 4
DIST5	District 5
DIST6	District 6
MBTA	Massachusetts Bay Transportation Authority
MPA	Massachusetts Port Authority
COE	Army Corps of Engineers
FED	Federal Agency
RR	Rail Road

The District shall code the MassDOT information. The Boston Headquarters shall code the Agency and Railroad information.

- Inspection Waiver

  This Item shall be coded by Boston and has a 1 character field size. Indicates that the continued inspection of the bridge on the required frequency for any inspection has been waived. For example, the Handbook specified frequency of a SPECIAL MEMBER inspection based on the condition of a bridge member is waived because the member, even in its deteriorated state, can still safely carry the posted load. Code this Item a **Y** if frequency has been waived and a **N** if frequency has not been waived

- Inspection Waiver Remarks

  This Item shall be coded by Boston and has a 200 character field size. Records inspection type whose frequency is being waived and the basis for the waiver.

- Other Inspection

  This Item is coded by the District and has a 3 character field size.

- Underwater Inspection:

  This Item is coded by Boston and has a 3 character field size.

9.7.7 LOAD RATING INFORMATION

The following Items are used to record load ratings taken from the Summary Sheet of the bridge's rating report.

- INV H20

  This Item shall be coded by Boston and has a 2 character field size. The Inventory Rating weight limit for the H truck for which the bridge is rated, as stated on the rating report Summary Sheet for this bridge. This Item is coded **NN**, where **NN** denotes the Inventory Rating in English Tons.

- INV TYPE 3

  This Item shall be coded by Boston and has a 2 character field size. The Inventory Rating weight limit for the Type 3 truck for which the bridge is rated, as stated on the rating report Summary Sheet for this bridge. This Item is coded **NN**, where **NN** denotes the Inventory Rating in English Tons.

- INV TYPE 3S2

  This Item shall be coded by Boston and has a 2 character field size. The Inventory Rating weight limit for the Type 3S2 truck for which the bridge is rated, as stated on the rating report Summary Sheet for this bridge. This Item is coded **NN**, where **NN** denotes the Inventory Rating in English Tons.

- INV HS

  This Item shall be coded by Boston and has a 2 character field size. The Inventory Rating weight limit for the HS truck for which the bridge is rated, as stated on the rating report Summary Sheet for this bridge. This Item is coded **NN**, where **NN** denotes the Inventory Rating in English Tons.

- OPR H20

  This Item shall be coded by Boston and has a 2 character field size. The Operating Rating weight limit for the H truck for which the bridge is rated, as stated on the rating report Summary Sheet for this bridge. This Item is coded **NN**, where **NN** denotes the Operating Rating in English Tons.

- OPR TYPE 3

  This Item shall be coded by Boston and has a 2 character field size. The Operating Rating weight limit for the Type 3 truck for which the bridge is rated, as stated on the rating report Summary Sheet for this bridge. This Item is coded **NN**, where **NN** denotes the Operating Rating in English Tons.

- OPR TYPE 3S2

  This Item shall be coded by Boston and has a 2 character field size. The Operating Rating weight limit for the Type 3S2 truck for which the bridge is rated, as stated on the rating report Summary Sheet for this bridge. This Item is coded **NN**, where **NN** denotes the Operating Rating in English Tons.

- OPR HS

  This Item shall be coded by Boston and has a 2 character field size. The Operating Rating weight limit for the HS truck for which the bridge is rated, as stated on the rating report Summary Sheet for this bridge. This Item is coded **NN**, where **NN** denotes the Operating Rating in English Tons.

9.7.7.1 Load Rating Values for "DESIGN" Status

If the Department has determined that a structure is capable of carrying statutory loads based on the original Design Load Criteria shown on the plans and its condition at the time of consideration, then the following shall be coded as shown:

OPR H20 =27	INV H20=20
OPR TYPE 3=34	INV TYPE 3=25
OPR 3S2=49	INV 3S2=36
OPR HS=49	INV HS=36

Guidance for coding the Posting Status and Posting date is contained in Section 9.7.9.

9.7.7.2 Load Rating Values for Inventoried Structures with Unknown Design Load Criteria (no plans)

If a structure is inventoried and plans do not exist that define what the original structures Design Load Criteria, then based on the structure's condition at the time of consideration and the fact that the structure has been carrying statutory loads, then the following shall be coded as shown:

OPR H20 =27	INV H20=20
OPR TYPE 3=34	INV TYPE 3=25
OPR 3S2=49	INV 3S2=36
OPR HS=49	INV HS=36

Guidance for coding the Posting Status and Posting date is contained in Section 9.7.9.

9.7.8 MAINTENANCE INFORMATION

- Year Painted

  This Item shall be coded by the District and has a 4 character field size. This Item denotes the year when the bridge was last painted.

- Year Rehabbed

  This Item shall be coded by the District and has a 4 character field size. This Item denotes the year when any maintenance or rehabilitation work, other than that specified under Item 106, was performed on the bridge. If the work qualifies under Item 106, do not enter that date again in this Item.

9.7.9 POSTING INFORMATION

The following Items are used to record the recommended posting for a bridge in accordance with Section 6.7.1 of this Handbook as well as the actual posting as recorded from the posting sign at the bridge.

- Actual 2 Axles

  This Item shall be coded by the District and has a 2 character field size. The weight limit for a 2 axle truck for which the bridge is actually posted. This Item is coded **NN**, where **NN** denotes the posting for the two axle truck on the posting sign in English Tons.

- Actual 3 Axles

  This Item shall be coded by the District and has a 2 character field size. The weight limit for a 3 axle truck for which the bridge is actually posted. This Item is coded **NN**, where **NN** denotes the posting for the three axle truck on the posting sign in English Tons.

- Actual 5 Axles

  This Item shall be coded by the District and has a 2 character field size. The weight limit for a 5 axle truck for which the bridge is actually posted. This Item is coded **NN**, where **NN** denotes the posting for the five axle truck on the posting sign in English Tons.

- Posting Date

  This Item shall be coded by Boston and has a 10 character field size. Coded as follows:

  MM/DD/YYYY (with slashes) where

  MM denotes the month
  DD denotes the day
  YYYY denotes the year

  The POSTING DATE shall be coded as defined in Section 6.7.1, or as otherwise stated below.

  For structures with a posting status of DESIGN, the Posting Date is the "date of the Design Year Built".

  For structures being added to the inventory and no plans exist, posting status is EJDMT (Engineering Judgment), the Posting Date is the "date of year built". This date is typically taken off the endpost. If no endpost date exists, then an assumed date will be entered after the Bridge Inspection Engineer has been consulted.

- Posting Remarks

  This Item shall be coded by Boston and has a 40 character field size. Records any relevant comments about the actual posting of the bridge. For example, if a municipality posts the bridge for less than the posting recommended or if the posting for this bridge is controlled by another bridge on the same stretch of road.

- Posting Status

  This Item shall be coded by Boston and has a 6 character field size. The POSTING STATUS shall be coded as defined in Section 6.7.1, or as otherwise stated below.

  The following are the only valid codes for this Item:

POSTED	LEGAL
EJDMT	DESIGN
WAIVED	CLOSED

  DESIGN status is used generally used as a place holder for bridges recently built or reconstructed. This status remains in place until a numerical rating report is produced and accepted.

  EJDMT status will also be used when a recently inventoried structure is added and no plans exist which define the Design Load Criteria. This status remains in place until a numerical rating report is produced and accepted.

- Recommended 2 Axles

  This Item shall be coded by Boston and has a 2 character field size. The weight limit for a 2 axle truck for the bridge as recommended in the Bridge Engineer's Memo to the NBIS File. This Item is coded **NN**, where **NN** denotes the recommended posting for the two axle truck in English Tons.

- Recommended 3 Axles

  This Item shall be coded by Boston and has a 2 character field size. The weight limit for a 3 axle truck for the bridge as recommended in the Bridge Engineer's Memo to the NBIS File. This Item is coded **NN**, where **NN** denotes the recommended posting for the three axle truck in English Tons.

- Recommended 5 Axles

  This Item shall be coded by Boston and has a 2 character field size. The weight limit for a 5 axle truck for the bridge as recommended in the Bridge Engineer's Memo to the NBIS File. This Item is coded **NN**, where **NN** denotes the recommended posting for the five axle truck in English Tons.

9.8 CHAPTER 9 ATTACHMENTS

CITY/TOWN	CITY/TOWN CODES For BDEPT#	Present District #	Previous District #	PLACE	COUNTY
Abington	A01	5	7	00170	023
Acton	A02	3	4	00380	017
Acushnet	A03	5	6 (7)	00520	005
Adams	A04	1	1	00555	003
Agawam	A05	2	2	00800	013
Alford	A06	1	1	00975	003
Amesbury	A07	4	5	01185	009
Amherst	A08	2	2	01325	015
Andover	A09	4	5 (4)	01465	009
Arlington	A10	4	4	01605	017
Ashburnham	A11	3	3	01885	027
Ashby	A12	3	4	01955	017
Ashfield	A13	1	2	02095	011
Ashland	A14	3	4	02130	017
Athol	A15	2	3 (2)	02480	027
ATTLEBORO	A16	5	6	02690	005
Auburn	A17	3	3	02760	027
Avon	A18	5	6	02935	021
Ayer	A19	3	4	03005	017
Barnstable	B01	5	7	03635	001
Barre	B02	2	3	03740	027
Becket	B03	1	1	04545	003
Bedford	B04	4	4	04615	017
Belchertown	B05	2	2	04825	015
Bellingham	B06	3	6	04930	021
Belmont	B07	4	4	05070	017
Berkley	B08	5	6	05280	005
Berlin	B09	3	3 (4)	05490	027
Bernardston	B10	2	2	05560	011
BEVERLY	B11	4	5	05595	009
Billerica	B12	4	4	05805	017
Blackstone	B13	3	3 (6)	06015	027
Blandford	B14	1	1	06085	013
Bolton	B15	3	3 (4)	06365	027
BOSTON	B16	6	4 (8) (6)	07000	025
Bourne	B17	5	7	07175	001
Boxborough	B18	3	4	07350	017
Boxford	B19	4	5	07420	009
Boylston	B20	3	3	07525	027
Braintree	B21	6	4 (6)	07665	021
Brewster	B22	5	7	07980	001
Bridgewater	B23	5	7 (6)	08085	023
Brimfield	B24	2	3	08470	013
BROCKTON	B25	5	7 (6)	09000	023
Brookfield	B26	3	3	09105	027
Brookline	B27	6	4 (8) (4)	09175	021
Buckland	B28	1	2	09595	011
Burlington	B29	4	4	09840	017
CAMBRIDGE	C01	6	4 (8) (4)	11000	017
Canton	C02	6	4 (6) (8)	11315	021

Attachment 9-1: City and Town List, page 1 of 7

CITY/TOWN	CITY/TOWN CODES For BDEPT#	Present District #	Previous District #	PLACE	COUNTY
Carlisle	C03	4	4	11525	017
Carver	C04	5	7	11665	023
Charlemont	C05	1	2	12505	011
Charlton	C06	3	3	12715	027
Chatham	C07	5	7	12995	001
Chelmsford	C08	4	4	13135	017
CHELSEA	C09	6	4 (8)	13205	025
Cheshire	C10	1	1	13345	003
Chester	C11	1	1	13485	013
Chesterfield	C12	1	2	13590	015
CHICOPEE	C13	2	2	13660	013
Chilmark	C14	5	7	13800	007
Clarksburg	C15	1	1	14010	003
Clinton	C16	3	3	14395	027
Cohasset	C17	5	7	14640	021
Colrain	C18	1	2	14885	011
Concord	C19	4	4	15060	017
Conway	C20	1	2	15200	011
Cummington	C21	1	2	16040	015
Dalton	D01	1	1	16180	003
Danvers	D03	4	5	16250	009
Dartmouth	D04	5	6	16425	005
Dedham	D05	6	4 (6)	16495	021
Deerfield	D06	2	2	16670	011
Dennis	D07	5	7	16775	001
Dighton	D08	5	6	16950	005
Douglas	D09	3	3	17300	027
Dover	D10	6	4 (6)	17405	021
Dracut	D11	4	4	17475	017
Dudley	D12	3	3	17685	027
Dunstable	D13	3	4	17825	017
Duxbury	D14	5	7	17895	023
E. Bridgewater	E01	5	7	18455	023
E. Brookfield	E02	3	3	18560	027
E. Longmeadow	E03	2	2	19645	013
Eastham	E04	5	7	19295	001
Easthampton	E05	2	2	19330	015
Easton	E06	5	6	20100	005
Edgartown	E07	5	7	21150	007
Egremont	E08	1	1	21360	003
Erving	E10	2	2	21780	011
Essex	E11	4	5	21850	009
EVERETT	E12	4	8 (4)	21990	017
Fairhaven	F01	5	6	22130	005
FALL RIVER	F02	5	6	23000	005
Falmouth	F03	5	7	23105	001
FITCHBURG	F04	3	3	23875	027
Florida	F05	1	1	24120	003
Foxborough	F06	5	6	24820	021
Framingham	F07	3	4	24925	017
Franklin	F08	3	6	25065	021

CITY/TOWN	CITY/TOWN CODES For BDEPT#	Present District #	Previous District #	PLACE	COUNTY
Freetown	F09	5	6 (7)	25240	005
GARDNER	G01	3	3	25485	027
Gay Head	G02	5	7	25555	007
Georgetown	G03	4	5	25625	009
Gill	G04	2	2	25730	011
GLOUCESTER	G05	4	5	26150	009
Goshen	G06	1	2	26290	015
Gosnold	G07	5	7	26325	007
Grafton	G08	3	3	26430	027
Granby	G09	2	2	26535	015
Granville	G10	1	2	26675	013
Gr. Barrington	G11	1	1	26815	003
Greenfield	G12	2	2	27025	011
Groton	G14	3	4	27480	017
Groveland	G15	4	5	27620	009
Hadley	H01	2	2	27690	015
Halifax	H02	5	7	27795	023
Hamilton	H03	4	5	27900	009
Hampden	H04	2	2	28075	013
Hancock	H05	1	1	28180	003
Hanover	H06	5	7	28285	023
Hanson	H07	5	7	28495	023
Hardwick	H08	2	3 (2)	28740	027
Harvard	H09	3	3	28950	027
Harwich	H10	5	7	29020	001
Hatfield	H11	2	2	29265	015
HAVERHILL	H12	4	5	29405	009
Hawley	H13	1	2	29475	011
Heath	H14	1	2	29650	011
Hingham	H15	5	7 (6)	30210	023
Hinsdale	H16	1	1	30315	003
Holbrook	H17	5	6	30455	021
Holden	H18	3	3	30560	027
Holland	H19	2	3	30665	013
Holliston	H20	3	4	30700	017
HOLYOKE	H21	2	2	30840	013
Hopedale	H22	3	3	30945	027
Hopkinton	H23	3	4 (3)	31085	017
Hubbardston	H24	3	3	31435	027
Hudson	H25	3	4	31540	017
Hull	H26	5	7	31645	023
Huntington	H27	1	1	31785	015
Ipswich	I01	4	5	32310	009
Kingston	K01	5	7	33220	023
Lakeville	L01	5	7 (6)	33920	023
Lancaster	L02	3	3	34165	027
Lanesborough	L03	1	1	34340	003
LAWRENCE	L04	4	5	34550	009
Lee	L05	1	1	34655	003
Leicester	L06	3	3	34795	027
Lenox	L07	1	1	34970	003

CITY/TOWN	CITY/TOWN CODES For BDEPT#	Present District #	Previous District #	PLACE	COUNTY
LEOMINSTER	L08	3	3	35075	027
Leverett	L09	2	2	35180	011
Lexington	L10	4	4	35215	017
Leyden	L11	2	2	35285	011
Lincoln	L12	4	4	35425	017
Littleton	L13	3	4	35950	017
Longmeadow	L14	2	2	36300	013
LOWELL	L15	4	4	37000	017
Ludlow	L16	2	2	37175	013
Lunenburg	L17	3	3	37420	027
LYNN	L18	4	5 (8)	37490	009
Lynnfield	L19	4	5 (4)	37560	009
MALDEN	M01	4	8 (5)	37875	017
Manchester	M02	4	5	37945	009
Mansfield	M03	5	6	38225	005
Marblehead	M04	4	5	38400	009
Marion	M05	5	7	38540	023
MARLBOROUGH	M06	3	4 (3)	38715	017
Marshfield	M07	5	7	38855	023
Mashpee	M08	5	7	39100	001
Mattapoisett	M09	5	7	39450	023
Maynard	M10	3	4	39625	017
Medfield	M11	3	6	39765	021
MEDFORD	M12	4	8 (4)	39835	017
Medway	M13	3	6	39975	021
MELROSE	M14	4	4	40115	017
Mendon	M15	3	3	40255	027
Merrimac	M16	4	5	40430	009
METHUEN	M17	4	5	40675	009
Middleborough	M18	5	7	40850	023
Middlefield	M19	1	1	40990	015
Middleton	M20	4	5	41095	009
Milford	M21	3	3 (6)	41165	027
Millbury	M22	3	3	41340	027
Millis	M23	3	6	41515	021
Millville	M24	3	3	41585	027
Milton	M25	6	4 (8) (6)	41690	021
Monroe	M26	1	2	42040	011
Monson	M27	2	3	42145	013
Montague	M28	2	2	42285	011
Monterey	M29	1	1	42460	003
Montgomery	M30	1	1	42530	013
Mt. Washington	M31	1	1	43300	003
Nahant	N01	4	5	43580	009
Nantucket	N02	5	7	43790	019
Natick	N03	3	4	43895	017
Needham	N04	6	4 (6)	44105	021
New Ashford	N05	1	1	44385	003
NEW BEDFORD	N06	5	6	45000	005
New Braintree	N07	2	3 (2)	45105	027
New Marlborough	N08	1	1	45420	003

CITY/TOWN	CITY/TOWN CODES For BDEPT#	Present District #	Previous District #	PLACE	COUNTY
New Salem	N09	2	2	45490	011
Newbury	N10	4	5	45175	009
NEWBURYPORT	N11	4	5	45245	009
NEWTON	N12	6	4 (4) (6)	45560	017
Norfolk	N13	5	6	46050	021
N. ADAMS	N14	1	1	46225	003
N. Andover	N15	4	5	46365	009
N. Attleboro	N16	5	6	46575	005
N. Brookfield	N17	3	3	47135	027
N. Reading	N18	4	4	48955	017
NORTHAMPTON	N19	2	2	46330	015
Northborough	N20	3	3	46820	027
Northbridge	N21	3	3	46925	027
Northfield	N22	2	2	47835	011
Norton	N23	5	6	49970	005
Norwell	N24	5	7	50145	023
Norwood	N25	5	6	50250	021
Oak Bluffs	O01	5	7	50390	007
Oakham	O02	3	3	50670	027
Orange	O03	2	2 (3)	51265	011
Orleans	O04	5	7	51440	001
Otis	O05	1	1	51580	003
Oxford	O06	3	3	51825	027
Palmer	P01	2	3	52105	013
Paxton	P02	3	3	52420	027
PEABODY	P03	4	5	52490	009
Pelham	P04	2	2	52560	015
Pembroke	P05	5	7	52630	023
Pepperell	P06	3	4	52805	017
Peru	P07	1	1	53050	003
Petersham	P08	2	3	53120	027
Phillipston	P09	2	3	53225	027
PITTSFIELD	P10	1	1	53960	003
Plainfield	P11	1	2	54030	015
Plainville	P12	5	6	54100	021
Plymouth	P13	5	7	54310	023
Plympton	P14	5	7	54415	023
Princeton	P16	3	3	55395	027
Provincetown	P17	5	7	55500	001
QUINCY	Q01	6	4 (8) (6)	55745	021
Randolph	R01	6	4 (6)	55955	021
Raynham	R02	5	6 (7)	56060	005
Reading	R03	4	4	56130	017
Rehoboth	R04	5	6	56375	005
REVERE	R05	4	8	56585	025
Richmond	R06	1	1	56795	003
Rochester	R07	5	7	57600	023
Rockland	R08	5	7	57775	023
Rockport	R09	4	5	57880	009
Rowe	R10	1	2	58335	011
Rowley	R11	4	5	58405	009

CITY/TOWN	CITY/TOWN CODES For BDEPT#	Present District #	Previous District #	PLACE	COUNTY
Royalston	R12	2	3	58580	027
Russell	R13	1	1	58650	013
Rutland	R14	3	3	58825	027
SALEM	S01	4	5	59105	009
Salisbury	S02	4	5	59245	009
Sandisfield	S03	1	1	59665	003
Sandwich	S04	5	7	59735	001
Saugus	S05	4	5 (8)	60015	009
Savoy	S06	1	1	60225	003
Scituate	S07	5	7	60330	023
Seekonk	S08	5	6	60645	005
Sharon	S09	5	6	60785	021
Sheffield	S10	1	1	61065	003
Shelburne	S11	1	2	61135	011
Sherborn	S12	3	4	61380	017
Shirley	S13	3	4	61590	017
Shrewsbury	S14	3	3	61800	027
Shutesbury	S15	2	2	61905	011
Somerset	S16	5	6	62430	005
SOMERVILLE	S17	4	6(4) (8)(4)	62535	017
S. Hadley	S18	2	2	64145	015
Southampton	S19	2	2	62745	015
Southborough	S20	3	3	63165	027
Southbridge	S21	3	3	63270	027
Southwick	S22	2	2	65825	013
Spencer	S23	3	3	66105	027
SPRINGFIELD	S24	2	2	67000	013
Sterling	S25	3	3	67385	027
Stockbridge	S26	1	1	67595	003
Stoneham	S27	4	4	67665	017
Stoughton	S28	5	6	67945	021
Stow	S29	3	4	68050	017
Sturbridge	S30	3	3	68155	027
Sudbury	S31	3	4	68260	017
Sunderland	S32	2	2	68400	011
Sutton	S33	3	3	68610	027
Swampscott	S34	4	5	68645	009
Swansea	S35	5	6	68750	005
TAUNTON	T01	5	6	69170	005
Templeton	T02	2	3	69275	027
Tewksbury	T03	4	4	69415	017
Tisbury	T04	5	7	69940	007
Tolland	T05	1	2	70045	013
Topsfield	T06	4	5	70150	009
Townsend	T07	3	4	70360	017
Truro	T08	5	7	70605	001
Tyngsborough	T09	4	4	71025	017
Tyringham	T10	1	1	71095	003
Upton	U01	3	3	71480	027
Uxbridge	U02	3	3	71620	027
Wakefield	W01	4	4 (5)	72215	017

CITY/TOWN	CITY/TOWN CODES For BDEPT#	Present District #	Previous District #	PLACE	COUNTY
Wales	W02	2	3	72390	013
Walpole	W03	5	6	72495	021
WALTHAM	W04	4	4	72600	017
Ware	W05	2	2	72880	015
Wareham	W06	5	7	72985	023
Warren	W07	2	3	73090	027
Warwick	W08	2	2	73265	011
Washington	W09	1	1	73335	003
Watertown	W10	6	4	73405	017
Wayland	W11	3	4	73790	017
Webster	W12	3	3	73895	027
Wellesley	W13	6	4 (6) (4)	74175	021
Wellfleet	W14	5	7	74385	001
Wendell	W15	2	2	74525	011
Wenham	W16	4	5	74595	009
W. Boylston	W17	3	3	75155	027
W. Bridgewater	W18	5	7 (6)	75260	023
W. Brookfield	W19	2	3 (2)	75400	027
W. Newbury	W20	4	5	77150	009
W. Springfield	W21	2	2	77850	013
W. Stockbridge	W22	1	1	77990	003
W. Tisbury	W23	5	7	78235	007
Westborough	W24	3	3	75015	027
WESTFIELD	W25	2	2	76030	013
Westford	W26	3	4	76135	017
Westhampton	W27	2	2	76380	015
Westminster	W28	3	3	77010	027
Weston	W29	6	4	77255	017
Westport	W30	5	6	77570	005
Westwood	W31	6	4 (6)	78690	021
Weymouth	W32	6	4 (6)	78865	021
Whately	W33	2	2	79110	011
Whitman	W34	5	7	79530	023
Wilbraham	W35	2	2	79740	013
Williamsburg	W36	1	2	79915	015
Williamstown	W37	1	1	79985	003
Wilmington	W38	4	4	80230	017
Winchendon	W39	2	3	80405	027
Winchester	W40	4	4	80510	017
Windsor	W41	1	1	80685	003
Winthrop	W42	6	4 (8)	80930	025
WOBURN	W43	4	4	81035	017
WORCESTER	W44	3	3	82000	027
Worthington	W45	1	1	82175	015
Wrentham	W46	5	6	82315	021
Yarmouth	Y01	5	7	82525	001