New York State
Department of Transportation
Bridge Inventory Manual

Bridge Data Management System

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Governor

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Commissioner
Errata to New Bridge Inventory Manual

The Highway Data Management System (HDMS) is not active at this time. Therefore, the highway data which is listed in this manual as being obtained from HDMS is unavailable. The following fields will require direct input at this time:

**Field Name**
- Route Description
- Route Number or Reference Marker
- Milepoint
- State Highway Number
- Overlap Routes
- AADT
- AADT Year
- AADT Truck %
- Functional Class
- Highway Type
- STRAHNET Designation
- National Network for Trucks
- National Highway System

Notification will be sent when this data is available. The anticipated timeframe is June 2004.
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   Political Unit
   Latitude
   Longitude
   Location
   Direction of Orientation
   Owner
   Maintenance Responsibility
   Federal-Aid/Federal Funding Status
   Type of Service
   Map Number
   Contract Plans Available
   Hydrological Report Available
   Original Contract Number
   Year Built
   Year of Last Major Rehabilitation
   Acquisition Method
   Order Number
   Year Acquired
   Ramps Attached
   Historical Significance
   Critical Facility
   State Priority Rank
Record Code 02 - Structural Details
Material Main Span
Superstructure Type (Main Span)
Material (Approach Span)
Superstructure Type (Approach Span)
Design Load
Length of Longest Span
Total Length of Bridge
Approach Roadway Width
Out-to-Out Width
Out-to-Out Width Varies
Curb-to-Curb Width
Curb-to-Curb Width Varies
Curb Type (Left & Right)
Sidewalk Width (Left & Right)
Sidewalk Type (Left & Right)
Median Width
Median Type
Abutment Type (Begin & End)
Abutment Wingwall Type (Begin & End)
Abutment Footing Type (Begin & End)
Abutment Pile Type (Begin & End)
Abutment Height (Begin & End)
Abutment Skew Angle (Begin & End)
Abutment Joint Type (Begin & End)
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Area of Bridge Deck
Radius
Temporary Bridge Designation

Record Code 03 - Safety and Utility
Type of Guide Rail
Guide Rail Transition
Guide Rail Terminus
Curb Transition
Appraisal of Approach Roadway Alignment
Type of Median Barrier
Type of Railing (Left & Right Bridge)
Gore Area
Type of Attenuator
Utilities
Light Standards On
Light Fixtures On (On/Under)

Record Code 04 - Inspection Responsibility
Inspection Responsibility - Primary
Inspection Responsibility - Primary - Spans
  * This Item is no longer used
Inspection Responsibility - Secondary
Inspection Responsibility - Secondary - Spans
  * This Item is no longer used
**Record Code 05 - Bridge Inspection**

- Bridge Inspection Ratings
- Inspection Date
- Flags
- Agency
- Inspection Type
- Condition Rating
- Sufficiency Rating Prefix
- Sufficiency Rating

**Record Code 06 - Postings**

- Recording Date
  - * This Item is no longer used
- Posted Vertical Clearance (On)
- Posted Vertical Clearance (Under)
- Posted Load
- Date Posted

**Record Code 07 - Load Rating**

- Level 1 Rating Method
- Level 1 Rating Source
- Level 1 Rating Date
- Level 1 H Inventory Rating - Tons
- Level 1 H Operating - Tons
- Level 1 HS Inventory Rating - Tons
- Level 1 HS Operating Rating - Tons
- Level 1 M Inventory Rating - M Tons
- Level 1 M Operating Rating - M Tons
- Level 1 MS Inventory Rating - M Tons
- Level 1 MS Operating Rating - M Tons
- Level 2 Rating Method
- Level 2 Rating Source
- Level 2 Rating Date
- Level 2 H Inventory Rating - Tons
- Level 2 H Operating Rating - Tons
- Level 2 HS Inventory Rating - Tons
- Level 2 HS Operating Rating - Tons
- Level 2 M Inventory Rating - M Tons
- Level 2 M Operating Rating - M Tons
- Level 2 MS Inventory Rating - M Tons
- Level 2 MS Operating Rating - M Tons

**Record Code 08 - Proposed Improvements**

(Section to be written)
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Deck Rating
Superstructure Rating
Substructure Rating
Channel Rating
Culvert Rating
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NBI Structural Condition
NBI Deck Geometry
NBI Under Clearance

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Feature Number
Over-Under-On Code
Feature Code
Description Type
Description or Route Number/Reference Marker
Secondary Description
Future AADT
Year of Future AADT
Mile Point
Overlap Routes
Maximum Vertical Clearance
State Highway Number
Type of Highway
Route Description
Federal Aid System
Functional Classification
Toll
Total Number of Lanes on the Bridge
Lanes Vary
Minimum Lane Width
Number of Lanes (Left & Right)
AADT
Year of AADT
Average Daily Truck Traffic
Total Horizontal Clearance
Minimum Vertical Clearance
Bypass Detour Length
STRAHNET Designation
Designated National Network (for Trucks)
National Highway System
Record Code 13 - Feature Intersected
Feature Number (of Intersected Feature)
Over-Under-On Code
Feature Code
Description Type
Description or Route and Reference Marker
Mile Point
Future AADT
Year of Future AADT
State Highway Number
Type of Highway
Route Description
Federal Aid System
Functional Classification
Toll
Number of Lanes
Maximum Vertical Clearance
Minimum Vertical Clearance Provided for Navigation
(Movable Bridges Only)
Protection of Substructures from Navigation
AADT
Year of AADT
Total Horizontal Clearance
Minimum Horizontal Clearance (Left)
Minimum Horizontal Clearance (Right)
Minimum Vertical Clearance
Navigation Control
Maximum Vertical Clearance Available to Navigation
Stream Bed Material
Bank Protection
Velocity of Current
Features Affecting Stream Flow
Bypass Detour Length
STRAHNET Designation
Designated National Network (for Trucks)
Record Code 15 - Span

Span Number
Material Type
Protective Coating Type
Composite Action
Simple, Continuous, Suspended, Curved
Superstructure Span Design Type
Structural Details
Fracture Critical
Fatigue Resistant
Out-of-Plane Bending
Load Path Redundancy
Internal Redundancy
Structural Redundancy
Span Length
   Pier Type
   Pier Height
   Pier Footing
      Pier Piles
   Pier Skew Angle
   Pier Joint Type
   Deck Drainage
      Type of Railing (Left/Right) - No longer used
Bearing Fixity (Begin and End)
Bearing Type (Begin and End)
Structural Deck Type
Stay-In-Place Forms
Original Wearing Surface
Original Wearing Surface Still In Place
Present Wearing Surface
Surface Sealant
Ballast
Median Width
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BIN
Inspection Date
Span Number
Region
County
Wearing Surface Rating
Monolithic Surface Rating
Curbs Rating
Sidewalk/Fascia Rating
Rail/Parapets Rating
Scupper Rating
Grate Rating
Median Rating
Structural Deck Rating
Primary Member Rating
Secondary Member Rating
Superstructure Paint Rating
Superstructure Joint Rating
Superstructure Recommendation
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Pier Pedestal Rating
Pier Top of Cap Rating
Pier Stem Rating
Pier Cap Beam Rating
Pier Column Rating
Pier Footing Rating
Pier Erosion Rating
Pier Pile Rating
Pier Recommendation
Lighting Rating
Sign Rating
Utility Rating
Download Year
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Span Number
Walking
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Extension Ladder
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60 Ft UBIU (18 m)
Lightweight UBIU
Small Lift
Medium Lift
Large Lift
Rowboat
Barge
Diving
Railroad Flagman
Railroad Electrical
Scaffolding
Lane Closure
Shadow Vehicle
Other Access Needs

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Delete BIN

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Further Investigation

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Type of Work
Month
Year
Contract Number
Type of Contract
Money Value
Comments
Designer Name*
Designer Organization*
PIN*
* These codes are for future use

**Record Code 68 - Activate Bridge Status**
Activate Bridge Status
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- Vulnerability Failure Type
- Vulnerability Rating Category
- Vulnerability Classification Score

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Introduction

I. Overview
This manual describes the NY State Bridge Data Management System (BDMS); what data is stored, how data is entered and how it is used.

Two main types of data are stored for NY State bridges in BDMS: Inventory Data and Inspection Data. Inventory and Inspection data are recorded for all bridges which carry a public highway, cross over a public highway or cross over a navigable waterway. Other types of data that is stored in BDMS are, Bridge Vulnerability Data (BSA), Historic Bridge Data, Bridge Management System Costs and Diving Inspection Data.

Bridge data is entered using the BDMS Client PC Application. Data is entered by either the Main Office Structures Bridge Data Systems Unit or the Main Office Structures Load Rating Group. Inventory and Inspection Data are organized and updated by Record Code. A Record Code is defined as a group of related bridge data.

BDMS data entry can be accomplished by coding paper forms, generating electronic files with WINBOLTS (Windows Bridge Online Transaction System) or BIPPI (Bridge Inspection Program Pen Interface), both PC based applications or by using the Bridge Load Rating Graphical User Interface within the BDMS application.

The BDMS data is used most importantly to report to Congress each year the number and condition of bridges in NY State, as well as providing the necessary data for the Departments Bridge Replacement and Rehabilitation Program.

The Main Office and Regional Personnel responsible for supporting and maintaining BDMS are:

ISB The Information Services Bureau supports the mainframe database and application.
BDSU The Bridge Data Systems Unit supports the updating and use of the inventory and inspection data, excluding load rating data.
BIU The Bridge Inspection Unit supports the bridge inspection data.
RBIICs The Regional Bridge Inventory and Inspection Coordinators oversee the collection and processing of the data in the Regional Offices.
SDLRG The Structures Division Load Rating Group supports the updating and use of bridge load rating data.

II. Bridge Terms
The following terms are used in the Bridge Data Management System:

Bridge - a structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet* between undercappings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.
*(6.1 meters)

Inventory Bridge - a bridge is included in the bridge inventory file when it carries a public highway or when it carries moving loads over a public highway or a navigable waterway. Any bridge which recently satisfied one of these conditions, but is now Closed or Collapsed, shall also be considered as an Inventory Bridge until it is declared Abandoned.

Collapsed Bridge - a bridge that once satisfied the Inventory Bridge definition, but is now closed due to
Introduction

the collapse of at least one span which prevents the safe passage of any service. Closure became necessary as the result of structural or foundation failure, an accident, or an act of God. If the owner has made no serious effort to restore the structural integrity and physical continuity of the bridge, within three years after its collapse, it shall be declared "Abandoned".

Closed Bridge - a closed bridge once satisfied the Inventory Bridge definition, but is now temporarily closed for any reason except collapse. Temporary closure is established by installing barricades to all traffic or to the primary use of the bridge. However, closed highway or railroad bridges may continue to serve secondary uses such as pedestrian traffic. If a bridge has been Closed for five years to vehicular traffic or one year to pedestrian traffic, and the owner has made no serious effort to reopen it, the bridge shall be declared "Abandoned." Closed Bridges are inspected on a regular basis just like bridges which are open to traffic and are eligible to receive Federal and State funds to rehabilitate them.

Abandoned Bridge - is a bridge that once satisfied the Inventory Bridge definition, but is now permanently closed. When a bridge is abandoned, it must be barricaded to the all traffic with permanent obstacles. The abandoned bridge will remain in the inactive bridge file until it is demolished. An abandoned bridge is no longer inspected and is no longer eligible to receive Federal and State funds to rehabilitate it.

Deleted Bridge - is a bridge which has been deleted from the inventory. It is recorded as having been deleted from the current database and is reported to FHWA as having been deleted during the year it was deleted.

Temporary Bridge - is used to maintain traffic during the modification or replacement of another bridge. If a Temporary Bridge will be in service for more than nine months, it should be given a temporary BIN and included in the inventory. The temporary BIN should be the same number as the BIN for the closed structure, except that the last digit is changed to a "T".
II. Data

The Bridge Data Management System (BDMS) is an Oracle database with a visual basic front end. This system is replacing the Bridge Inventory and Inspection System (BIIS) which was a legacy mainframe system utilizing a DB2, flat file database served by various batch programs.

The Bridge Data Management System will be part of a corporate database structure and will store only bridge associated data. The new Highway Data Management System (HDMS) will store highway data and will be linked with the BDMS system to extract bridge related highway data for viewing. A new Geographic Information System will store geographical data and will be linked with the BDMS system to extract bridge related geographic data for viewing. The items affected by this change in data structure are identified in each record code.

The Bridge Data Management System data is entered in Oracle tables via Record Codes and extracted for User access into Microsoft Access tables. Users view the data contained in the Microsoft Access tables using WINBOLTS. Record Codes are a carryover from the original BIIS data entry system. Each Record Code transaction generates an electronic text file containing 120 characters. The data contained in the electronic text files is then processed to the Oracle tables using the BDMS Client PC Application.

Three types of data will be stored in BDMS. April data, Current data and Project data. April data corresponds to end of the previous year data, i.e., April 2001 data is data from calendar year 2000. This data was used to create the Federal File submission (see the Reports Section of the manual) for that particular year. Current data and Project data include all data that is current in the system. This includes all updates to the system that have been made since the April version of the data. Current data will include data for bridges as they currently exist in the field. Project data is data for bridges that will be created by a capital project that has yet to be executed. This data will reflect rehabilitation work on current bridges and new or replacement bridges yet to be constructed. Project data will be converted to current data when the bridge work is completed in the field. Project data upload files can be created by using Record Code numbers which add 50 to the record code numbers shown in the manual. Record Code 1 data can be added to the Project database by using a Record Code value of 51.

The data included in each Record Code is described in the following sections. A general list of the Items in each Record Code is provided in the Table of Contents.

** At the time of implementation of BDMS the corporate database structure will not be complete. Therefore, some highway related data will need to be coded and stored in BDMS. Each affected Record Code Item reflects this need.
ITEM: Region
FHWA 2

PROCEDURE:
Record the New York State Department of Transportation Region where the bridge is located. If a bridge spans between regions, record the region where the beginning abutment is located.

CODING:
Use the following codes to record the NYSDOT Region in which the bridge is located.

1 - Albany
2 - Utica
3 - Syracuse
4 - Rochester
5 - Buffalo
6 - Hornell
7 - Watertown
8 - Poughkeepsie
9 - Binghamton
10 - Hauppauge
11 - New York City

ITEM: County
FHWA 3

PROCEDURE:
Record the county where the bridge is located. If the bridge spans between counties, record the county where the beginning abutment is located.

CODING:
Region 1          Region 2          Region 3          Region 4          Region 5
1 - Albany        1 - Fulton        1 - Cayuga        1 - Genesee        1 - Cattaraugus
2 - Essex         2 - Hamilton       2 - Cortland       2 - Livingston     2 - Chautauqua
3 - Greene        3 - Herkimer       3 - Onondaga       3 - Monroe         3 - Erie
4 - Rensselaer    4 - Madison        4 - Oswego         4 - Ontario        4 - Niagara
5 - Saratoga      5 - Montgomery     5 - Seneca         5 - Orleans        5 - Orleans
6 - Schenectady   6 - Oneida         6 - Tompkins       6 - Wyoming        7 - Wayne
7 - Warren        8 - Washington     

Region N (11)
1 - Bronx
2 - Kings
3 - New York
4 - Queens
5 - Richmond
ITEM: Bridge Identification Number
FHWA 8

PROCEDURE:
A unique seven character bridge identification number (BIN) assigned to each bridge. Record the BIN assigned to the bridge. If the bridge does not have a BIN assigned, contact the Bridge Data Services Unit (BDSU). Also, refer to the Assigning New BIN Form in the Appendix.

CODING:
Accepts numeric characters only, except for the last position which accepts alpha or numeric.

ITEM: Contractor Code

PROCEDURE:
This code is no longer used.

The original purpose was to facilitate the sorting of the data submitted by individual consulting firms.

CODING:
Leave this field blank.

ITEM: Record Code

PROCEDURE:
Bridge Inventory data is processed into Oracle tables as 120 character text files identified as Record Codes.

All file transactions have to identify which Record Code the changes are associated with. This code is generated by WinBolts or the colored paper forms, whichever is being used. No separate coding is required by the user.

CODING:
None

ITEM: Transaction Code

PROCEDURE:
For each edit/update, the system (BDMS) requires a transaction code which identifies the changes being made to the data. This code is generated by WinBolts, but needs to be entered by the user on the colored paper forms. The user should enter one of the following codes.

CODING:
1 - Delete
2 - Update/change data on a record using English values
3 - Create a new record using English values
5 - Used for RC68, Change Bridge Status from Project to Active(see RC68)
8 - Update/change data on a record using Metric values
9 - Create a new record using Metric values
ITEMS INCLUDED IN IDENTIFICATION (RC01)

- Local Bridge Number
- Political Unit
- Latitude
- Longitude
- Location
- Direction of Orientation
- Owner
- Maintenance Responsibility
- Federal-Aid/Federal Funding Status
- Type of Service
- Map Number
- Contract Plans Available
- Hydrological Report Available
- Original Contract Number
- Year Built
- Year of Last Major Rehabilitation
- Acquisition Method
- Order Number
- Year Acquired
- Ramps Attached
- Critical Facility
- Historical Significance
- State Priority Ranking
ITEM: Local Bridge Number

PROCEDURE:
Record the Local Bridge Number. This is defined as any identifying number which has been assigned by a Locality, a Railroad, etc.

CODING:
Numbers and Letters
(Maximum of 5) If Local Bridge Number has been assigned
* plus the Thruway's 4 digit mile point, rounded to the nearest tenth of a mile If the bridge carries or crosses the New York State Thruway Authority
Blank If there is no Local Bridge Number

ITEM: Political Unit

PROCEDURE:
The “Political Unit” data (FIPS (Census - GEOID)) will be obtained from the Geographic Information System (GIS). This data will be generated internally. It will not have to be manually entered.

However, if this data is missing or if it is incorrect as shown in the current BDMS data base, the data should be manually recorded.

Separate tables are presented for Village, City and Town within an Indian Reservation. Municipalities are listed in ascending code order. Some municipalities were added after the initial list was prepared. They appear at the end of the list, in code order, but not in alphabetical order. These tables also provide Region and County codes for each municipality.

If the bridge is located in a Village, City or Indian Reservation, record the appropriate code for the Village, City or Indian Reservation.

If the bridge is not located in a Village, City or Indian Reservation, record the code for the Town where it is located.

If the bridge is located in more than one Political Unit, record the Political Unit where the Beginning Abutment is located. See the “Direction of Orientation” Item for a definition of the Beginning Abutment.

CODING:
Accepts the numbers 1 - 3999
<table>
<thead>
<tr>
<th>Town</th>
<th>Unit RC</th>
<th>Town</th>
<th>Unit RC</th>
<th>Town</th>
<th>Unit RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>0001 73</td>
<td>Barrington</td>
<td>0053 66</td>
<td>Butler</td>
<td>0105 47</td>
</tr>
<tr>
<td>Addison</td>
<td>0002 64</td>
<td>Barton</td>
<td>0054 65</td>
<td>Butternuts</td>
<td>0106 94</td>
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<tr>
<td>Afton</td>
<td>0003 92</td>
<td>Batavia</td>
<td>0055 41</td>
<td>Byron</td>
<td>0107 41</td>
</tr>
<tr>
<td>Alabama</td>
<td>0004 41</td>
<td>Bath</td>
<td>0056 64</td>
<td>Cairo</td>
<td>0108 13</td>
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<td>Albion</td>
<td>0005 45</td>
<td>Bedford</td>
<td>0057 87</td>
<td>Lake George</td>
<td>0109 17</td>
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<tr>
<td>Albion</td>
<td>0006 34</td>
<td>Beeekman</td>
<td>0058 82</td>
<td>Caledonia</td>
<td>0110 42</td>
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<tr>
<td>Alders</td>
<td>0007 53</td>
<td>Beekaantown</td>
<td>0059 71</td>
<td>Callicoon</td>
<td>0111 96</td>
</tr>
<tr>
<td>Alexander</td>
<td>0008 41</td>
<td>Belfast</td>
<td>0060 61</td>
<td>Cambria</td>
<td>0112 54</td>
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<td>Alexandria</td>
<td>0009 73</td>
<td>Bellmont</td>
<td>0061 72</td>
<td>Cambridge</td>
<td>0113 18</td>
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<td>Alfred</td>
<td>0010 61</td>
<td>Bennington</td>
<td>0062 46</td>
<td>Camden</td>
<td>0114 26</td>
</tr>
<tr>
<td>Allegany</td>
<td>0011 51</td>
<td>Benson</td>
<td>0063 22</td>
<td>Cameron</td>
<td>0115 64</td>
</tr>
<tr>
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<td>Benton</td>
<td>0064 66</td>
<td>Camillus</td>
<td>0116 33</td>
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<td>Bergen</td>
<td>0065 41</td>
<td>Campbell</td>
<td>0117 64</td>
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<td>Canadice</td>
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<td>Berne</td>
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<td>Canajoharie</td>
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<td>Bethany</td>
<td>0069 41</td>
<td>Canandaigua</td>
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<td>Amenia</td>
<td>0018 82</td>
<td>Bethel</td>
<td>0070 96</td>
<td>Candor</td>
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<td>Amherst</td>
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<td>Bethlehem</td>
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<td>Caneeada</td>
<td>0123 61</td>
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<td>Amity</td>
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<td>Big Flats</td>
<td>0072 62</td>
<td>Canisteo</td>
<td>0124 64</td>
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<td>Binghamton</td>
<td>0073 91</td>
<td>Canton</td>
<td>0125 75</td>
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<td>Ancram</td>
<td>0022 81</td>
<td>Birdsall</td>
<td>0074 61</td>
<td>Cape Vincent</td>
<td>0126 73</td>
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<td>Andes</td>
<td>0023 93</td>
<td>Black Brook</td>
<td>0075 71</td>
<td>Carlisle</td>
<td>0127 95</td>
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<td>Andover</td>
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<td>Blecker</td>
<td>0076 21</td>
<td>Carlton</td>
<td>0128 45</td>
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<tr>
<td>Angelica</td>
<td>0025 61</td>
<td>Blenheim</td>
<td>0077 95</td>
<td>Carmel</td>
<td>0129 84</td>
</tr>
<tr>
<td>Annsville</td>
<td>0026 26</td>
<td>Blooming Grove</td>
<td>0078 83</td>
<td>Caroga</td>
<td>0130 21</td>
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<tr>
<td>Antwerp</td>
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<td>Bolivar</td>
<td>0079 61</td>
<td>Caroline</td>
<td>0131 36</td>
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<tr>
<td>Arcade</td>
<td>0028 46</td>
<td>Bolton</td>
<td>0080 17</td>
<td>Carroll</td>
<td>0132 52</td>
</tr>
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<td>Arcadia</td>
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<td>Bombay</td>
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<td>Carrollton</td>
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<tr>
<td>Argyle</td>
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<td>Boonville</td>
<td>0082 26</td>
<td>Castle</td>
<td>0134 46</td>
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<td>Catharine</td>
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<td>Arkwright</td>
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<td>Catlin</td>
<td>0136 62</td>
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ITEM: Latitude
FHWA 16

PROCEDURE:
The “Latitude” data will be obtained from the Geographic Information System (GIS). This data will be generated internally. It will not have to be manually entered.

However, if this data is missing or if it is incorrect, as shown in the current BDMS data base, it will have to be manually recorded.

CODING:
Accepts codes: 40 00.0 - 46 00.0 - m Latitude

ITEM: Longitude
FHWA 16

PROCEDURE:
The “Longitude” data will be obtained from the Geographic Information System (GIS). This data will be generated internally. It will not have to be manually entered.

However, if this data is missing or if it is incorrect, as shown in the current BDMS data base, it will have to be manually recorded.

CODING:
Accepts codes 071 00.0 - 080 00.0 - Longitude

ITEM: Location
FHWA 9

PROCEDURE:
Record a narrative description of the bridge location with reference to features identified on Highway Road Maps using a maximum of 25 characters. Features include: the junction of highways, major waterways, or the distance to the nearest town, village, hamlet or topographic feature shown on this map. Use standard abbreviations as presented in Appendix C - Standard Abbreviations.

If the Feature Carried and the Feature Crossed are both shown on the planimetric map, record the Location as the Feature Carried over the Feature Crossed; e.g., 87I over Mohawk River.

If only the Feature Carried or the Feature Crossed is on the map, record the Location as the identified Feature Carried or Crossed being a specified distance from the nearest mapped feature; eg, 1.5 m S Rt9 + Mohawk Rv .4 m S I-87 Exit 22 1.2 m W MA border + I90

Distances should be identified in miles, NOT kilometers, even when entering other data in metric units.

CODING:
Accepts all standard keyboard characters.
ITEM: **Direction of Orientation**
FHWA 5E Translated

**PROCEDURE:**
The Direction of Orientation is the compass direction of the centerline of the bridge measured from the Beginning Abutment, along the bridge centerline, to the End Abutment. This value is determined when the bridge is first inventoried and it should not be changed because it establishes the numbering order for spans.

For bridges carrying State or Interstate highways, the Beginning Abutment and the End Abutment are identified in the order of increasing Reference Markers or Mile points. Reference Markers generally increase from West to East and South to North along the route. Therefore, the End Abutment is generally East or North of the Beginning Abutment. This may not be true if a section of highway twists around from its generally West/East or South/North direction. For parallel state highway bridges, e.g., one bridge carries northbound traffic and one carries southbound traffic, both bridges have the same Direction of Orientation.

For Ramp Bridges, the Direction of Orientation is the compass direction of the centerline of the Ramp Bridge as measured from the Main Bridge.

**CODING:**
1 - North
2 - Northeast
3 - East
4 - Southeast
5 - South
6 - Southwest
7 - West
8 - Northwest

ITEM: **Owner (Primary and Secondary)**
FHWA 22 T

**PROCEDURE:**
Record the agency or agencies responsible for the non-federal share of the cost of replacement or rehabilitation of the bridge.

Ownership of a bridge cannot normally be proven by the existence of a deed or some other form of title. The owner shall be assumed to be the agency or agencies identified as having maintenance responsibility for the bridge. A different agency should be recorded as Owner only if there is tangible evidence, such as legislation or a written agreement indicating that the above assumptions are incorrect.

The agencies responsible for Ownership and Maintenance Responsibility are identified on the Contract Plans when capital improvements are made. The Highway Design Manual describes how Maintenance Responsibilities are assigned by law.

The entry for owner shall not be considered legally binding on the party or parties identified. A court decision may be required.

This item is divided into two parts: Owner, Primary and Owner, Secondary. If there is only one owner, record the owner code for the Owner, Primary and record "99" for Owner, Secondary. The agency having greater responsibility should be listed as Owner, Primary and the agency with lesser responsibility listed as Owner, Secondary. If two agencies share equal responsibility, list them in either order.
**Coding:**
Following is a list of Owner codes. These codes are also used for Maintenance Responsibility.

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<td>24</td>
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<td>Interstate Bridge Commission</td>
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<td>East Hudson Parkway Authority</td>
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Note: Code 61 - Long Island Railroad is identified as a separate agency because it is one of the MTA agencies which are all identified as separate agencies.
**Item: Maintenance Responsibility (Primary and Secondary)**

**PROCEDURE:**
Record the agency or agencies responsible for maintaining the bridge. This responsibility is established by law, agreement, or common consent. If tangible evidence is not available to establish this responsibility, it shall be assumed that the agencies which currently perform these activities are the responsible agencies.

Ownership and Maintenance Responsibility are identified on the Contract Plans when capital improvements are made. The Highway Design Manual describes how maintenance responsibilities are assigned by law.

The entry for Maintenance Responsibility shall not be considered legally binding on the party or parties identified. A court decision may be required.

This item is divided into two parts: Maintenance Responsibility, Primary and Maintenance Responsibility, Secondary.

If there is only one maintenance agency, record the agency’s code for Maintenance Responsibility, Primary and record “99” for Maintenance Responsibility, Secondary. The agency having greater responsibility should be listed as Maintenance Responsibility, Primary and the agency with lesser responsibility listed as Maintenance Responsibility, Secondary. If two agencies share equal responsibility, list them in either order.

**CODING:**
Refer to the Owner and Maintenance Responsibility codes listed for the “Owner (Primary and Secondary)” Item.

**ITEM: Federal-Aid/Federal Funding Status**

**PROCEDURE:**
Record the appropriate code to indicate the relationship of the bridge to the Federal-Aid system and/or federal funding.

The use of Federal Funds can be determined at the time that the bridge is rehabilitated or replaced from the Title Sheet of the Contract Plans in the lower right table.

**CODING:**
1 - Bridge built with Federal funds and carries a Federal-Aid route.
2 - Bridge built without Federal funds and carries a Federal-Aid route.
3 - Bridge built with Federal funds, but does not carry a Federal-Aid route.
4 - Bridge built without Federal funds, does not carry a Federal-Aid route, but does cross a Federal-Aid route.
5 - Bridge built without Federal funds and does not carry or cross a Federal-Aid route.
0 - Bridge is not involved with highways in any way.
* - Unknown at this time. Determination required.
ITEM: Type of Service (On and Under)

PROCEDURE:
Record the Type of Service (primary usage) carried by the bridge and the Type of Service passing under it.

This Item uses a two character code to identify: Type of Service On - the type of service carried by the bridge and Type of Service Under - the type of service passing under the bridge.

The term “Highway” is used here to indicate a road available to the public. Maintenance roads should be coded as “0 - Other.”

A bridge which carries a highway and a sidewalk with a width of at least 2’ is providing a “Highway-Pedestrian” Type of Service. (Code 05)

All permanently abandoned bridges, regardless of service carried, should be coded “0 ” in Type of Service On only, with “99” coded in Postings: Load Posting.

CODING:

**Type of Service ON Codes**
1 - Highway
2 - Railroad
3 - Pedestrian - Bicycle only
4 - Highway - Railroad
5 - Highway - Pedestrian
6 - Second Level (Interchange)
7 - Third Level (Interchange)
8 - Fourth Level (Interchange)
9 - Building or Plaza
0 - Other

**Type of Service UNDER Codes**
1 - Highway (with or without pedestrians)
2 - Railroad
3 - Pedestrian - Bicycle only
4 - Highway - Railroad
5 - Waterway
6 - Highway - Waterway
7 - Railroad - Waterway
8 - Highway - Railroad - Waterway
9 - Relief
0 - Other

ITEM: Map Number

PROCEDURE:
Using the NYSDoT 1:24,000 Series Planimetric Maps, record the number of the map which shows the location of the bridge.

The Map “Number” can be composed of numbers and letters (eg., 226B).

CODING:
Accepts alpha and numeric characters.
ITEM: **Contract Plans Available**
NYSDoT

**PROCEDURE:**
Record the location of the Contract Plans or "as-built" plans for the bridge.

**CODING:**
- F - Federal
- 1 - State - Main Office
- 2 - State - Region Office
- 3 - Railroad
- 4 - County
- 5 - Authority/Commission
- 6 - Consultant
- 7 - City
- 8 - Town
- 9 - Village
- X - Not Available
- 0 - Other
- * - Unknown

ITEM: **Hydrological Report Available**
NYSDoT

**PROCEDURE:**
Record the location of the Hydrological Report or the Hydraulic Study which was prepared for the waterway that is intersected by the bridge.

If both reports were prepared, record the location of the Hydraulic Study.

Record this Item as "N - Not Applicable", if the bridge does not intersect water.

**CODING:**
- F - Federal
- 1 - State - Main Office
- 2 - State - Region Office
- 3 - Railroad
- 4 - County
- 5 - Authority / Commission
- 6 - Consultant
- 7 - City
- 8 - Town
- 9 - Village
- 0 - Other
- N - Not Applicable
- * - Unknown, requires determination

ITEM: **Original Contract Number**
NYSDoT

**PROCEDURE:**
Record the number of the Contract under which the bridge was originally constructed.

Enter the Original Contract Number from the Contract Plans using up to 10 characters, left justified.

**CODING:**
Accepts all standard keyboard characters.
ITEM: Year Built
FHWA 27

PROCEDURE:
Record the four digit year that the bridge was originally constructed.

For new and replacement bridges, this is the year when the bridge was opened to traffic. If this date cannot be accurately determined, record a reasonable approximation. If you are recording the data prior to Contract letting record the Contract completion date.

CODING:
Accepts numeric characters greater than 1799

ITEM: Year of Last Major Rehabilitation
FHWA 106

PROCEDURE:
Record the two-digit year when the bridge received its most recent “Major Rehabilitation.” The date to be recorded is the year when the bridge was opened to traffic following this Rehabilitation.

A “Major Rehabilitation” is defined as any of the following Work Types. These Work Types are described in Record Code 21 - Work History Record.

210 - Deck Rehabilitation
220 - Deck Replacement
230 - Superstructure Replacement
240 - General Rehabilitation

Each “Major Rehabilitation” should also be recorded in the Work History file for the bridge.

If the bridge has never had a “Major Rehabilitation”, record this Item with “NN”.

CODING:
Accepts “NN” and the numbers 00 - 99

ITEM: Acquisition Method
NYSDoT

PROCEDURE:
Record the method of acquisition for ownership of the bridge.

CODING:
1 - Legislation 3 - Reconstruction  * - Unknown
2 - Construction 4 - Official Order
ITEM: **Order Number**  
NYSDoT

**PROCEDURE:**  
If the bridge was acquired by Official Order, record this Item with the Official Order Number.  

If the bridge was not acquired by Official Order, leave this Item blank.

**CODING:**  
Accepts numeric characters and blanks.

ITEM: **Year Acquired**  
NYSDoT

**PROCEDURE:**  
If the bridge was acquired by Official Order, record the year of the Official Order.  

If the bridge was not acquired by Official Order, leave this Item blank.

**CODING:**  
Accepts numeric characters or blanks.

ITEM: **Ramps Attached (Parent Bin/Span)**  
NYSDoT

**PROCEDURE:**  
Record the BIN and Span Number of the Parent Bridge which supports the Ramp Bridge being inventoried.  

When inventorying a bridge without ramps or a Parent Bridge with ramps, leave this Item blank.

**CODING:**  
Accepts numeric characters and blanks.

ITEM: **Critical Facility**  
FHWA 6 B

**PROCEDURE:**  
Record whether the bridge is a critical facility as defined by the Defense Bridge and Critical Highway Facility Report. A list of these bridges is currently on file in the Structures Division.

**CODING:**  
* - The bridge is considered to be a critical facility.  
Blank - The bridge is not considered a critical facility.
ITEM: **Historical Significance**  
FHWA 37

**PROCEDURE:**
The “Historical Significance” data will be obtained from the Environmental Analysis Bureau’s historic database. This data will be generated internally. It will not have to be manually entered.

**CODING:**
1- Bridge is on the National Register of Historic Places  
2- Bridge is eligible for the National Register of Historic Places  
3- Bridge is possibly eligible for the National Register of Historic Places or bridge is on a state or local Historic Register  
4- Historic significance is not determinable at this time.  
5- Bridge is not eligible for the National Register of Historic Places

ITEM: **State Priority Rank**  
NYSDoT

**PROCEDURE:**
This item is calculated by BDMS, the entry indicates the specific priority rank in the State. The priority rating is determined using a formula which includes bridge condition rating and AADT.
ITEMS INCLUDED IN STRUCTURAL DETAILS (RC02)

General Type of Main Span
General Type of Approach Span
Number of Main Spans
Number of Approach Spans
Number of Ramps
Design Load
Length of Maximum Span
Total Length of Bridge
Roadway Approach Width
Out to Out Width
Out to Out Width Varies
Curb-to-Curb Width
Curb-to-Curb Width Varies
Curb Type (Left & Right)
Sidewalk Width (Left & Right)
Sidewalk Type (Left & Right)
Median Width
Median Type
Abutment Type (Beginning & End)
Abutment Wingwall Type (Beginning & End)
Abutment Footing Type (Beginning & End)
Abutment Pile Type (Beginning & End)
Abutment Height (Beginning & End)
Abutment Skew Angle (Beginning & End)
Abutment Joint Type (Beginning & End)
Abutment Slope Protection (Beginning & End)
Area of Bridge Deck
Radius
Temporary Structure Designation
ITEM: Material (Main Span)
FHWA 43A

PROCEDURE:
Record the type of material which was used to construct the General Type Main Span(s).

Normally, the Main Span is the span which is over the major feature crossed. It is usually the longest span on the bridge.

There can be more than one Main Span. A bridge with two equal spans crossing an interstate would have two Main Spans.

CODING:
1 - Concrete
2 - Concrete (Continuous)
3 - Steel
4 - Steel (Continuous)
5 - Prestressed Concrete
6 - Prestressed Concrete (Continuous)
7 - Timber
8 - Masonry
9 - Aluminum, Wrought Iron or Cast Iron
0 - Other
A - Unpainted Steel
B - Unpainted Steel (Continuous)
N - Not Applicable to be used for GTAS only when there are no Approach Spans

ITEM: Superstructure Type (Main Span)
FHWA 43B

PROCEDURE:
Record the type of superstructure used to support the Main Span from the following table. Use the NYSDOT codes. The federal codes are shown for reference only.

CODING:
01 - Slab
Single or multiple, cast-in-place or precast concrete longitudinal members acting as a shallow beam and serving as the structural deck.

02 - Stringer/Multi-Beam or Girder
Multiple, longitudinal members which directly support the structural deck. These members may be either rolled beams or plate girders.

Rolled beams are manufactured by rolling molten steel in rolling mills to the desired I shape. They are usually limited to 36 in (1 m) depth.

Plate girders are similar in appearance to rolled beams (I shaped), but are assembled from steel sections (plates, angles) and are riveted, bolted or welded together to form a girder. They are used to span longer distances than rolled beams.

03 - Girder and Floorbeam System
Two or more longitudinal members supporting a floor system which transfers loads from Structural Deck to primary members.

04 - Tee Beam
Typically concrete, monolithic deck and beam system formed in the shape of the letter “T”. Tee beams may be used in the shape of bulb tee, double tee, quad tee and rib tee.

05 - Box Beam or Box Girder - Multiple
Usually, multiple, longitudinal, voided, prestressed concrete longitudinal beams placed adjacent to each other. Distinct joints separating members can be seen from below. A concrete wearing surface is applied.

06 - Box Beam or Box Girder - Single or Spread
Either trapezoidal or rectangular shaped, voided, steel or concrete units. A single unit may accommodate the entire roadway section.

Spread units will either support a concrete structural deck or have cantilevered top flanges connecting to adjacent units.

07 - Frame
The superstructure and substructure of a frame are an integral or rigidly connected unit. Frames may have either vertical or slanted legs.

The top of a frame will usually follow the roadway surface. Concrete frames usually have approach fill placed against its vertical legs.

Steel frames are usually “Grasshopper” shaped.

ConSpan and HySpan bridges fall into this category.

08 - Orthotropic
Stiffened, structural plate deck supported by main beams, generally with asphalt wearing surface.

09 - Truss, Deck
A truss is a two dimensional load carrying element whose members are arranged in the shape of triangles.

The structural deck is placed at the level of the top chord of the trusses which support it.

10 - Truss, Thru
A truss is a two dimensional load carrying element whose members are arranged in the shape of triangles.

A Thru Truss's load carrying structural members are longitudinal trusses with the Structural Deck placed between the trusses. A Thru Truss may or may not have overhead bracing.

11 - Arch, Deck
Concrete, steel or timber arched structural members supporting a structural deck above via spandrel columns or walls.

12 - Arch, Thru
Concrete or steel arched structural members with a structural deck placed between the arches.

13 - Suspension
Two cables on either side of the roadway provide the support system for suspension bridges. These
cables are draped over towers and anchored into concrete blocks embedded into rock at each end. Suspension bridges are often used to span wide waterway openings.

The structural deck and floor system are supported by vertical cables which are fastened to the main cables.

The deck is often provided with a stiffening truss to reduce the flexibility of the roadway.

14 - Stayed Girder
The superstructure is directly supported by cables attached to towers at the main piers.

15 - Movable, Lift
One or more spans capable of being raised vertically while remaining parallel to the roadway to provide for passage of marine traffic beneath the bridge.

16 - Movable, Bascule
One or two spans capable of being rotated from a horizontal position to a near vertical position providing unlimited vertical clearance.

17 - Movable, Swing
One or more spans capable of being rotated in a horizontal plane on a pivot pier to permit passage of marine traffic.

18 - Tunnel
An underground passage through natural material (mountain, river, etc.), conveying vehicular traffic that does not meet the definition of a culvert.

19 - Culvert
This category is defined by FHWA to designate those structures receiving special inspection procedures due to the following characteristics:

1. Hydraulics: are usually designed to operate at peak flows with a submerged inlet to improve hydraulic efficiency.
2. Structural: usually covered with embankment material so that live loads on culverts are not as significant as dead loads. Also, the embankment material surrounding the culvert plays an important structural role.
3. Maintenance: culverts often constrict flow thus increasing potential for waterway blockage by debris and sediment.
4. Traffic And Safety: Usually guide rail is used to protect vehicular traffic rather than bridge parapets or railings.

20 - No Type is Dominant (Mixed Types)
This is a federal code which is not used in NYS.

21 - Segmental Box Girder
Transverse, Precast or Cast-in-Place concrete segments which are often the full width of the bridge and are connected longitudinally by post tensioning.

22 - Channel Beam
Channel beams are generally precast concrete sections 4’ to 6’ wide and consist of a thin slab cast monolithically with two legs about three to four feet apart. Adjacent beams are bolted together and can be differentiated from Tee beams by the seam running between sections.

00 - Other
NN - Not Applicable
Applies to GTMS only where there are no Approach Spans

ITEM: Material (Approach Span)
FHWA 44

PROCEDURE:
Record the type of material used to construct the Approach Span(s). An Approach Span is considered to be any span which is not a Main Span.

CODING:
Use same codes listed for "Material (Main Span)" to record this Item.

ITEM: Superstructure Type (Approach Span)
FHWA 44

PROCEDURE:
Record the type of superstructure used to support the Approach Spans.

CODING:
Use same codes listed for “Superstructure Type (Main Spans)” to record this Item.

If there are no Approach Spans, record this Item with “NN”.

ITEM: Number of Main Spans
FHWA 45

PROCEDURE:
Record the number of main spans on the bridge. Main spans are described in the Material (Main Span) Item.

When inventorying ramp bridges, record the number of spans in the ramp.

CODING:
Accepts numbers 000-999.

ITEM: Number of Approach Spans
FHWA 46

PROCEDURE:
Record the number of Approach Spans on the bridge. Approach Spans are described in the Material (Approach Span) Item.

When inventorying ramp bridges, record this Item with “000”.

If there are no Approach Spans, record this item with “000”. 
**CODING:**
Accepts numeric characters 000 - 999

**ITEM: Number of Ramp Bridges**
NYSDoT

**PROCEDURE:**
Record the number of Ramp Bridges connected to the bridge being inventoried.

A Ramp Bridge is connected at one end to a span of the bridge being inventoried. The other end will usually be supported by an abutment.

If there are no Ramp Bridges connected to the bridge being inventoried, code this Item with 0

**CODING:**
Accepts numbers 00 - 99

**ITEM: Design Load**
FHWA 31 Translated

**PROCEDURE:**
Record the design load for which the bridge was originally designed or the design load for which it has been redesigned.

This information can be obtained from the Record Plans. Use one of the codes listed below.

**CODING:**
Record one of the listed codes.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>H 15</td>
</tr>
<tr>
<td>20</td>
<td>H 15</td>
</tr>
<tr>
<td>30</td>
<td>HS 15</td>
</tr>
<tr>
<td>40</td>
<td>H 20</td>
</tr>
<tr>
<td>50</td>
<td>HS 20</td>
</tr>
<tr>
<td>60</td>
<td>HS 20 + Mod (2-24,000# Axles @ 4’ Ctrs., when they govern)</td>
</tr>
<tr>
<td>61</td>
<td>Thruway (HS20-44 at 30 Ft. Centers)</td>
</tr>
<tr>
<td>70</td>
<td>Less than 60 lb./sq.ft. (Pedestrian Loading)</td>
</tr>
<tr>
<td>71</td>
<td>60 Thru 70 lb./sq.ft. (Pedestrian Loading)</td>
</tr>
<tr>
<td>72</td>
<td>71 Thru 80 lb./sq.ft. (Pedestrian Loading)</td>
</tr>
<tr>
<td>73</td>
<td>81 Thru 90 lb./sq.ft. (Pedestrian Loading)</td>
</tr>
<tr>
<td>74</td>
<td>91 Thru 100 lb./sq. ft. (Pedestrian / Platform Loading)</td>
</tr>
<tr>
<td>75</td>
<td>Over 100 lb./sq.ft. (Pedestrian / Platform Loading)</td>
</tr>
<tr>
<td>80</td>
<td>Less than E50 (RR)</td>
</tr>
<tr>
<td>81</td>
<td>E50 (RR)</td>
</tr>
<tr>
<td>82</td>
<td>E60 (RR)</td>
</tr>
<tr>
<td>83</td>
<td>E72 (RR)</td>
</tr>
<tr>
<td>84</td>
<td>E80 (RR)</td>
</tr>
<tr>
<td>90</td>
<td>HS 25</td>
</tr>
<tr>
<td>91</td>
<td>HL93</td>
</tr>
<tr>
<td>92</td>
<td>Other</td>
</tr>
<tr>
<td>NN</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

**ITEM: Length of Longest Span**
FHWA 48

**PROCEDURE:**
ITEM: Total Length of the Bridge  
FHWA 49

PROCEDURE:
Record the total length of the bridge along the centerline of the Feature Carried, to the nearest 100mm or to the nearest foot.

This length is normally measured between the Bridge Begins and Bridge Ends Stations. These Stations indicate the points where the bridge deck ends and the approach slab or pavement begins.

If the structure is a culvert, record the maximum horizontal distance between the inside faces of the exterior walls, parallel to the centerline of the roadway.

If the structure is a tunnel, record the length of the roadway that it carries.

When the abutments are not parallel, or when curved, measure the length along both curb lines or both faces of railing. Record the bridge length as the average of one of these sets of measurements.

CODING:
Accepts the numbers:
- Metric: 1 - 9999.9
- English: 1 - 99999

ITEM: Approach Roadway Width  
FHWA 32

PROCEDURE:
Record the usable width of the Approach Roadway and its shoulders to the nearest 100mm or one foot.

If the Approach Roadway Width is not the same at both ends of the bridge, record the smaller width.

Include the shoulders in this measurement if they meet the following criteria:

- They are designed, constructed, and maintained flush with the adjacent lane.
- They are structurally adequate for all weather and traffic conditions, consistent with the facility carried.

The shoulders shall not be included in this measurement if they are constructed of unstabilized grass or dirt with no base course, even if they are flush with the adjacent traffic lane.

Medians, which do not meet the criteria for shoulders, should not be included in the Approach Width.

For structures with medians, record the sum of the usable widths of the Approach Roadways.

Ramps which are adjacent to the through lanes approaching the structure shall be included in this measurement.

If the bridge does not carry a highway, record this Item with "000".
CODING:
Accepts the numbers:

Metric - 0 - 99.9
English - 0 - 999

ITEM: Out-to-Out Width
FHWA 52

PROCEDURE:
Record the Out-to-Out Width of the bridge, to the nearest 30mm or tenth of a foot.

Out-to-Out Width is measured at the same point where the Curb-to-Curb Width is measured. The Out-to-Out measurement should not include the flared areas of bridges with attached ramps.

If the superstructure is a deck girder, deck truss, or deck arch, the Out-to-Out Width should be measured between the fascia. If it is a thru girder, thru truss, or a thru arch, the Out-to-Out Width should be measured between the inside faces of the superstructure.

For culvert-type structures, the Out-to-Out Width is measured from the top-of-slope (left) to the top-of-slope (right).

CODING:
Accepts the numbers:

Metric - 0 - 99.9
English - 0 - 999.9

ITEM: Out-to-Out Width Varies
FHWA 35

PROCEDURE:
Record whether the Out-to-Out Width of the bridge varies by at least 600mm or two feet.

Generally, the width will vary when ramps are connected to the bridge.

CODING:
  0 - Out-to-Out Width does not vary.
  1 - Out-to-Out Width varies by 600mm (2 feet) or more.

ITEM: Curb-to-Curb Width
FHWA 51

PROCEDURE:
Record the minimum distance between the curbs or the bridge railings (if there are no curbs), to the nearest 30mm or tenth of a foot.
For bridges with closed medians, record the sum of the minimum distances for all roadways carried by the bridge.

If there are no curbs or railing: eg., pipe culverts or box culverts under fill, record this Item with "0".

Do not include the flared areas for ramps in the Curb-to-Curb Width.

CODING:
- Metric - 0 - 99.9
- English - 0 - 999.9

**ITEM: Curb-to-Curb Width Varies**
FHWA 35

**PROCEDURE:**
Record whether the Curb-to-Curb Width varies by more than 300mm or one foot. Use the codes listed below.

**CODING:**
- 0 - Not applicable (no curb)
- 1 - Curb-to-Curb Width does not vary by more than 300mm or one foot.
- 2 - Curb-to-Curb Width varies by more than 300mm or one foot.

**ITEM: Curb Type (Left and Right)**
NYSDoT

**PROCEDURE:**
Record the type of curb on the bridge.

While looking in the "Direction of Orientation", record the left curb first and then the right curb.

Jersey Barriers or Safety Shapes are not considered to be curbs. They should be recorded as "1 - No Curb."

**CODING:**
- 1 - No Curb
- 2 - Concrete
- 3 - Granite
- 4 - Stone
- 5 - Steel Plate
- 6 - Molded Asphalt
- 7 - Timber
- 0 - Other

**ITEM: Sidewalk Width (Left and Right)**
FHWA 50

**PROCEDURE:**
Record the minimum width of the sidewalk, carried by the bridge, which is usable for pedestrian traffic, to the nearest 300mm or tenth of a foot.
Sidewalk Width is measured between any two of the following elements:
- Face of Railing
- Edge of Curb
- Inside face of the truss member of the inside edge or cover plate for a thru girder

The minimum width of a sidewalk is 300mm or one foot. Safety walks are assumed to be sidewalks for this purpose.

Record the Left Sidewalk Width in the first field, followed by the Right Sidewalk Width in the remaining field.

“Left” and “Right” are determined while facing in the Direction of Orientation.

CODING:
Accepts the numbers:
- Metric - 0 - 9.9
- English - 0 - 99.9

ITEM: Sidewalk Type (Left and Right)

PROCEDURE:
Record the type of material used to construct the Left and Right Sidewalks on the bridge.

If the Sidewalk Width is less than 1.0 feet, then code this Item “1 - No Sidewalk.”

Left and right are determined by looking in the Direction of Orientation.

CODING:
1 - No Sidewalk 5 - Asphalt Concrete
2 - Concrete 6 - Wood
3 - Steel Plate 0 - Other
4 - Steel Grating

ITEM: Median Width

PROCEDURE:
Record the median width to the nearest 30mm or tenth of a foot.

If the median width varies, record the predominant width.

For pipe culverts or box culverts which are continuous under a divided highway, the mall width, between directions of travel, is considered to be the Median Width.

If the Median Type (below) is “6 - Stripped” or “7 - Flush”, record the width of the stripped or flush medians.

If the Median Type (below) is “0 - None”, record the Median Width as “0”. 
**CODING:**
Accepts the numbers:

Metric - 0.0 - 9.9
English - 0.0 - 99.9

**ITEM: Median Type**
FHWA 33 T

**PROCEDURE:**
Record the Type of Median on the bridge using one of the codes listed below.

Safety shapes should be coded with “8 Barrier”.

**CODING:**
1 - Open 6 - Striped
2 - Closed 7 - Flush
3 - Other 8 - Barrier
4 - Raised 9 - Post
5 - Curbed 0 - None

**ITEM: Abutment Type (Begin and End)**
NYSDoT

**PROCEDURE:**
Record the type of abutment used at each end of the structure.

Record the Beginning Abutment Type first and then Ending Abutment Type as defined by the Direction of Orientation. Note: Bridge Ramps do not have Beginning Abutments as they attach directly to the main bridge.

**CODING:**
1 - None
2 - Stub

A Stub Abutment has a backwall with a maximum height of about 3m. Superstructure members are supported on individual pedestals.

3 - Integral

An Integral abutment is composed of a concrete cap beam which is supported by a single row of steel bearing piles or Cast-in-Place concrete piles.

4 - Cantilever

A Cantilever abutment is used when the height of backwall required exceeds the limits of a stub abutment. The superstructure is supported on a continuous bridge seat.
5 - Jointless

This code is no longer used.

6 - Gravity

A Gravity abutment derives its ability to resist applied loads primarily from its size and weight.

7 - Counterfort

Counterfort Abutments have bracket-like elements which project from the fill side of the backwalls. They provide additional resistance against overturning. The backwall is designed as a horizontal beam between Counterforts.

8 - Abutmentless

This code is no longer used.
9 - Stub Abutment on Mechanically Stabilized Earth Retaining Wall
Mechanically Stabilized Earth Retaining Walls are sometimes used instead of conventional embankments to support a stub abutment and the approach roadways.

![Mechanically Stabilized Earth Retaining Wall Diagram]

9. Stub Abutment on Mechanically Stabilized Earth Retaining Wall

A - Masonry

This includes all abutments constructed of unreinforced, Stonework or Brickwork. This does not include aesthetic treatments of these materials on reinforced concrete abutments.

0 - Other
* - Unknown

ITEM: Abutment Wingwall Type (Begin and End)
NYSDoT

PROCEDURE:
Record the type of wingwall used for each Abutment.

CODING:
1 - None
2 - "U" Type
3 - "Splayed"
4 - One Wall "U" Type, the other wall connected to the adjacent abutment
5 - One Wall "U" type, the other wall "Splayed"
6 - Cribbing
7 - One wall "Splayed", the other wall connected to the adjacent abutment.
8 - Reinforced Earth
0 - Other
* - Unknown
ITEM: Abutment Footing Type (Begin and End)
NYSDoT

PROCEDURE:
Record the type of Footing used for each Abutment.

CODING:
1 - None, Doweled to Rock
2 - Individual, Spread-on-Rock
3 - Continuous, Spread-on-Rock
4 - Individual, Spread-on-Earth Fill
5 - Continuous, Spread-on-Earth Fill
6 - Individual, Spread-on-Earth Cut
7 - Continuous, Spread-on-Earth Cut
8 - Individual Pile
9 - Continuous Pile
0 - Other
* - Unknown
Blank - No Footing

ITEM: Abutment Pile Type (Begin and End)
NYSDoT

PROCEDURE:
Record the pile Type for each Abutment.
If there is no Abutment, leave this Item blank.

CODING:
1 - No Piles
2 - Steel, “H” or “I” Section
3 - Steel Pipe
4 - Concrete, Cast-in-Place
5 - Concrete, Cast-in-Place, Tapered
6 - Concrete, Precast
7 - Concrete, Prestressed, Precast
8 - Timber
0 - Other
* - Unknown

ITEM: Abutment Height (Begin and End)
NYSDoT

PROCEDURE:
Record the height of each Abutment.
The height of an abutment is the distance from the bottom of the footing to the top of the backwall. The Record Plans are usually required to determine this distance.

If there is no Abutment, leave this Item blank.

**CODING:**
Accepts the numbers:

- Metric - 0.0 - 9.9
- English - 0.0 - 99
- Blank

**ITEM:** Abutment Skew Angle (Begin and End)
FHWA 34

**PROCEDURE:**
Record the skew angle at each Abutment to the nearest degree.

The Skew Angle is defined as the angle between a line perpendicular to the centerline of the Feature Carried and a line parallel to the centerline of bearings at the Abutment.

If there is no Abutment, leave this Item blank.

**CODING:**
Accepts the numbers:

- 0 - 89
- Blank

**ITEM:** Abutment Joint Type (Begin and End)
NYSDoT

**PROCEDURE:**
Record the type of joint listed at each Abutment.

If there is no Abutment, leave this Item blank.
### CODING ABUTMENT JOINT TYPE

<table>
<thead>
<tr>
<th>CODING</th>
<th>EXPANSION</th>
<th>FIXED</th>
<th>ABUTMENT JOINT TYPE</th>
</tr>
</thead>
<tbody>
<tr>
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<td>None</td>
</tr>
<tr>
<td>02</td>
<td>NA</td>
<td>01</td>
<td>Finger</td>
</tr>
<tr>
<td>03</td>
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<td>Sliding Plate</td>
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<tr>
<td>04</td>
<td>01</td>
<td>22</td>
<td>Filled, Elastic Material</td>
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<tr>
<td>05</td>
<td>NA</td>
<td>22</td>
<td>Open with Trough</td>
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<td>06</td>
<td>01</td>
<td>23</td>
<td>Open</td>
</tr>
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<td>07</td>
<td>01</td>
<td>27</td>
<td>Elastomeric (Transflex, Wabo-Flex)</td>
</tr>
<tr>
<td>08</td>
<td>01</td>
<td>24</td>
<td>Sealed-Embedded Membrane (RR)</td>
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<td>09</td>
<td>01</td>
<td>25</td>
<td>Other</td>
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<td>10</td>
<td>01</td>
<td>26</td>
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<td>11</td>
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<td>28</td>
<td>Armored Elastomeric</td>
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<td>12</td>
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<td>Armored Compression Seal</td>
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<td>Modular</td>
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<td>01</td>
<td>31</td>
<td>Strip Seal with Integral Armoring Angle</td>
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<td>16</td>
<td>01</td>
<td>32</td>
<td>Strip Seal - Extrusion Anchored to Deck, No Elastomeric Concrete</td>
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<tr>
<td>17</td>
<td>01</td>
<td>33</td>
<td>Strip Seal - Extrusion Embedded in Elastomeric Concrete</td>
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<td>18</td>
<td>01</td>
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<td>Strip Seal - Type Unknown</td>
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<tr>
<td>19</td>
<td>NA</td>
<td>35</td>
<td>Sawed and Filled</td>
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<tr>
<td>20</td>
<td>01</td>
<td>35</td>
<td>None - Jointless Detail Used</td>
</tr>
</tbody>
</table>

### ITEM: Abutment Slope Protection (Begin and End)

**NYSDot**

**PROCEDURE:**
Record the type of slope protection used at each abutment.

If there is no abutment, leave this Item blank.

**CODING:**
1 - None Used
2 - Rip-Rap
3 - Concrete Block Paving
4 - Timber
ITEM: **Area of Bridge Deck**

**PROCEDURE:**
The area of a Bridge Deck, including Box Culverts and Pipe Culverts, is determined by multiplying its total length by its Out-to-Out Width. This information is usually available on the Contract Plans.

The area of ramp bridges is not to be included with the main bridge.

For Tunnels, the number to be recorded is the product of the length of the Tunnel and its Out-to-Out Width.

If there is no Bridge Deck, record the plan view area of the structure.

**CODING:**
Accepts the numbers:

- Metric - 0 - 99999.9
- English - 0 - 999999.9

ITEM: **Radius**

**PROCEDURE:**
Record the length of the shortest radius of the horizontal curves carried by the bridge to the nearest 300mm or 1 foot.

The radius shall be measured from the center of curvature to the centerline of the bridge.

**CODING:**
Accepts the numbers:

- Metric - 0 - 999.9
- English - 0 - 9999.9

ITEM: **Temporary Bridge Designation**

**PROCEDURE:**
Record whether temporary measures have been taken to keep this bridge open to traffic.

Temporary measures may be required to keep a bridge open to traffic while it is being reconstructed on new or existing alignment, or while it is being rehabilitated. Temporary measures may also be required if the bridge is to be used as a detour.

Some examples of temporary measures are:

- Adding temporary supports
- Strengthening various members
- Performing temporary repairs
- Reducing the speed and volume of bridge traffic

If this item is coded "T", all data recorded shall be for the structure without temporary measures except for the following items:

Rec. Code  06, Posted Load
Rec. Code  12, Maximum Vertical Clearance
Rec. Code  12, Total Horizontal Clearance
Rec. Code  12, Minimum Vertical Clearance
Rec. Code  13, Maximum Vertical Clearance
Rec. Code  13, Minimum Horizontal Clearance (Left/Right)

CODING:
T - Temporary structures or conditions exist
Blank - No temporary structures or conditions exist
ITEMS INCLUDED IN SAFETY & UTILITY (RC 03)

Type of Guide Rail
Guide Rail Transition
Guide Rail Terminus
Curb Transition
Appraisal of Approach Roadway Alignment
Type of Median Barrier
Type of Railing (Left & Right-Bridge)
Gore Area
Type of Attenuator
Utilities
Light Standards On
Light Fixtures On/Under
ITEM: Type of Guide Rail  
FHWA 36C Translated

PROCEDURE:
Record the least desirable Type of Approach Guide Rail immediately adjacent to each end of the bridge. It may be physically attached to the bridge and will generally terminate within 300m of the bridge.

If the bridge carries two-way traffic, evaluate the guide rail at each corner of the bridge. For example, if one of the corners has no guide rail, record this Item with “NN - No Approach Guide Rail.”

If the bridge carries one-way traffic, record only the guide rail type at the approach end of the bridge.

If vertical posts are used on the approaches with no horizontal rails or cable connecting them, record this Item with “NN - No Approach Guide Rail”, since this does not constitute a guide rail system.

If a guide rail system has been damaged or destroyed, it still should be recorded, based on the type of system that was originally in place.

CODING:
01 - Bridge does not carry highway traffic.  
02 - Box Beam, Weak Steel Post (W3x5.7 section or equivalent).  
03 - Safety Shape (Jersey or GM Shape).  
04 - Thrie Beam, Weak Post (Thrie beam is a corrugated shape similar to a W-Section, except that it has 3 corrugations and it is approximately 500mm wide).  
05 - Thrie Beam, Strong Post.  
06 - W-Section, Weak Steel Post (Post equal to a W3x5.7 section or equivalent).  
07 - W-Section, Strong Steel Post (Post larger than a W3x5.7 section)  
08 - W-Section, with Concrete Posts.  
09 - W-Section, with Wood Posts.  
10 - Cable with Weak Steel Post (W3x5.7 section or equivalent).  
11 - Cable with Strong Steel Post.  
12 - Cable with Concrete Posts.  
13 - Cable with Wood Posts.  
14 - Steel Pipe.  
15 - Concrete Wall with Vertical Face, 27” and higher.  
16 - Masonry Wall, 700mm and higher.  
17 - Masonry Wall, lower than 700mm.  
18 - Concrete Wall with Vertical Face, lower than 700mm.  
19 - W-Section, Blocked-out, Strong Steel Post (Post W6x8.5 or W6x9).  
97 - Other (Meets current AASHTO standards).  
98 - Other (does not meet current AASHTO standards).  
00 - No Approach Guide Rail

ITEM: Guide Rail Transition  
FHWA 36B Translated

PROCEDURE:
Record the Type of Guide Rail Transition used to connect the approach guide rail to the bridge railing.

For bridges carrying two-way traffic, evaluate each corner of the bridge and record the least desirable transition.
For bridges carrying one-way traffic, record the least desirable Transition, considering only the approach ends of the bridge.

Unacceptable Transitions have one or more of the following details:
1. Bridge railing not continuous with the guide rail.
2. An unprotected pylon between the end of the bridge and the guide rail.
3. Cable guide rail. There is no acceptable cable transition.
4. Unstiffened W-Section (no backup channel) connected to, or carried continuously across, the face of the bridge railing.

CODING:
01 - Single box beam guide rail connected to the bridge railing. No pylon is present.
03 - Single box beam guide rail connected to a concrete parapet. There is no pylon.
05 - W-Section guide rail connected to, or carried continuously across, the bridge railing. It is stiffened longitudinally with a channel in the area of the transition. There is no pylon.
06 - W-Section guide rail connected to, or carried continuously across, the bridge railing. It is stiffened longitudinally with a channel in the area of the transition with a weak post spacing. There is no pylon.
07 - Guide Rail (box beam, W-Section not stiffened with a channel, channel wide flange) carried continuously across the bridge. There is no pylon.
09 - Guide Rail is connected to the bridge railing posts. It is not carried continuously across the bridge. There is no pylon.
11 - Pylon is present between the end of the bridge railing and the guide rail. The guide rail has been extended and runs continuously in front of the pylon and bridge railing.
12 - Continuous, Vertical -Faced Concrete Parapet (with Railing Code 16) is present along the entire length of the bridge. The transition guide rail (upper tube or lower and upper tube) has been extended so that it runs continuously between end transitions and is bolted to the front vertical face of the parapet. The one or two continuous tubes serve as rub rails.
13 - Pylon is present between the end of the bridge railing and guide rail. Either the guide rail or the bridge railing is discontinuous at the pylon.
14 - There is no continuity between the guide rail and bridge railing. There is no pylon.
15 - Thrie beam bridge railing to W-Section. Strong posts (with block-outs) between the bridge rail and the end of transition section.
17 - Four-rail steel bridge railing to box beam guide rail.
18 - Two-rail steel bridge railing to box beam guide rail.
19 - Box beam bridge railing to box beam guide rail on trussed structures.
20 - Two-rail steel bridge railing to W-Section guide rail.
21 - Four-rail steel bridge railing to W-Section guide rail.
22 - W-Section bridge railing upgrade to W-Section guide rail with block-outs and a continuous channel stiffener.
23 - Concrete vertical - faced parapet to box beam guide rail.
24 - Blocked-out box beam upgrade on steel bridge rail to box beam guide rail.
97 - Other type guide rail transition which meets current AASHTO standards.
98 - Other type of guide rail transition which does not meet current AASHTO standards.
NN - Bridge does not carry highway traffic.
00 - No bridge approach guide rail.
ITEM: Guide Rail Terminus

PROCEDURE:
Record the least desirable type of approach Guide Rail Terminus. (The terminus is the section of guide rail immediately adjacent to the ends of the bridge).

For two-way bridges, the approach termini at all four corners of the bridge must be evaluated.

For one-way bridges, only the approach termini must be evaluated.

CODING:
- 01 - Approach guide rail is made continuous with the guide rail along the highway.
- 02 - The highway guide rail is merged with the approach guide rail by “ducking” it under the approach guide rail.
- 03 - Approach guide rail is transitioned horizontally and sloped to the ground as shown in Standard Sheet 606-3R4.
- 04 - Approach guide rail has a sloped end, but is not transitioned horizontally.
- 05 - Approach guide rail is horizontally transitioned and terminates at a vertical post (does not slope to the ground).
- 06 - Approach guide rail is not horizontally transitioned and terminates at a vertical post (does not slope to the ground).
- 97 - Other (Meets current AASHTO standards).
- 98 - Other (Does not meet current AASHTO standards).
- NN - Bridge does not carry highway traffic.
- 00 - No approach guide rail.

ITEM: Curb Transition

PROCEDURE:
Record the least desirable type of Curb Transition on the bridge.

For two-way bridges, all four corners must be evaluated to determine the least desirable Curb Transition.

For one-way bridges, only the approach Curb Transition must be evaluated to determine the least desirable Transition.

If curbs are carried on the approaches, they should be carried across the bridge.

The distance from the curb to the edge of the travel lane, including auxiliary lanes, should be the same on the approaches as it is on the bridge. This is the best practice when approach curbs are involved.
An undesirable condition will exist if the difference in curb-to-curb width is not properly transitioned between the approaches and the bridge. A proper Curb Transition is any horizontal slope equal to or less than 1 transverse to 8 longitudinal.

**CODING:**

01 - The curb is transitioned under the approach guide rail in an acceptable manner and the distance from the face of the bridge rail to the face of the curb is less than or equal to 300mm.

02 - The curb height is 80mm or less (in the transition area) and is transitioned under the approach guide rail in an acceptable manner.

03 - The curb height is greater than 80mm, but its face is more than 300mm from the face of the rail or guide rail. The curb is transitioned under the guide rail in a proper manner.

04 - Curb and/or sidewalk are sloped into the ground.

05 - Curb is carried on the approaches and continued across the bridge. The distance between the edge of the travel lane and the curb is the same on both sides of the bridge and the approaches.

06 - Curb is carried on the approaches and continued across the bridge. The curb-to-curb distance on the approaches is different than it is on the bridge, but the transition, as described in the procedure, is properly made.

07 - Curb is carried on the approaches and continued across the bridge. The curb-to-curb distance on the approaches is different than it is on the bridge and the transition, as described in the procedure, is improperly made.

08 - Curb is carried on the approaches, but the bridge has no curb.

09 - Curb and/or sidewalk end in a vertical face (perpendicular to traffic) without a proper transition. Distance from face of rail to face of curb is equal to, or less than 300mm.

10 - Curb and/or sidewalk end in a vertical face (perpendicular to traffic) without a proper transition. Distance from face of rail to face of curb is greater than 300mm.

97 - Other (Meets current AASHTO standards).

98 - Other (Does not meet current AASHTO standards).

NN - Bridge does not carry highway traffic.

00 - No curb on the bridge OR the approaches.

**ITEM: Appraisal of Approach Roadway Alignment**

**FHWA 72**

**PROCEDURE:**

Record the adequacy of the Approach Roadway Alignment.

This rating provides an indication of the affect that the horizontal and vertical alignment of the approach highway is having on vehicle operating speed. Speed reductions which are caused by structure width, rather than alignment, shall not be included.

**CODING:**

Enter a rating from 1 to 9 using the following values as a guide:

8 - No reduction of vehicle operating speed required.

6 - Minor reduction of vehicle operating speed required.

3 - Substantial reduction of vehicle operating speed required.

N - bridge does not carry a highway.
ITEM: **Type of Median Barrier**

NYSDoT

**PROCEDURE:**
Record the type of median barrier used on the bridge.

**CODING:**
- 01 - No barrier.
- 02 - Steel, design conforms to current AASHTO specifications.
- 03 - Steel, design does not conform to current AASHTO Specifications.
- 04 - Aluminum, design conforms to current AASHTO specifications.
- 05 - Aluminum, design does not conform to current AASHTO specifications.
- 06 - Cable
- 07 - Concrete
- 08 - Chain link fence
- 09 - Steel, Balustrade
- 10 - Concrete, Balustrade
- 11 - Pipe
- 12 - Timber
- 13 - Double W-Section, Post S3 x 5.7
- 14 - Double W-Section w/Block-Out, Post W6 x 8.5 or W6 x 9
- 00 - Other

ITEM: **Type of Railing (Left and Right)**

FHWA 36A Translated

**PROCEDURE:**
Record the type of railing used on each side of the bridge.

This Item has two fields. These are Type of Railing Left and Type of Railing Right to record the predominant type of railing on each side of the bridge. The left and right sides are determined by looking in the Direction of Orientation, as described previously.

If the type of railing cannot be found among the railing types shown, use one of the types indicated by Codes "02"-"05", "07"-"12", "17"-"19", or "00".

Two types of railing are sometimes required on the same side of a bridge. An example would be when a railing is required for both pedestrians and vehicular traffic. When this situation occurs, the railing type recorded should always be for the railing which restricts vehicular traffic.

Culverts under fill which have guide rail carried across the structure, without “bridge railing,” should be coded 06, 13 or 14 as applicable.

Continuity clips and continuous cable backup of bridge rails are to be ignored when determining the railing type.

**CODING:**
An asterisk following a Code indicates that the type of railing meets current AASHTO standards, without regard to the vaulting problems associated with specific railing and curb/sidewalk configurations.
01 - No railing.
02 - Steel, design conforms to current AASHTO specifications.
03 - Steel, design does not conform to current AASHTO specifications.
04* - Aluminum, design conforms to current AASHTO specifications.
05 - Aluminum, design does not conform to current AASHTO specifications.
06 - Cable
07 - Concrete including, but not limited to, parapets less than 700mm high without bridge rail, parapets less than 700mm high with an attached discontinuous railing, or with any aluminum railing system.
08 - Chain link fence
09 - Steel, Balustrade
10 - Concrete, Balustrade
11 - Pipe
12* - Timber, conforming to current AASHTO specifications.
13* - Strong post guide rail with channel backing carried across the bridge with adequate anchorage and clear railing deflection distances. (No other railing is present.)
14* - Weak post guide rail is carried across the bridge with adequate anchorage and clear railing deflection distances. (No other railing is present.)
15* - Concrete barrier (safety shape)
16* - Concrete Parapets 700mm and higher without bridge rail (built since 1970.)
17 - Timber, not conforming to current AASHTO specifications.
18* - W-Section upgrading conforming to current guidelines.
19 - Three-Beam upgrading conforming to current guidelines.
20 - Four-Rail Steel, discontinuous rails.
21 - Three-Rail Steel, discontinuous rails.
22 - Four-Rail Steel with cast poles and tubular discontinuous rails.
23 - Three-Rail Steel with cast poles and tubular discontinuous rails.
24* - Two-Rail Steel with cast poles and tubular discontinuous rails.
25 - Two-Rail "picket fence" railing with vertical pipes at 6" centers between the rails and the discontinuous rails.
26 - Four-Rail Steel with cast posts and discontinuous pipe rails.
27 - Three-Rail Steel with cast posts and discontinuous pipe rails.
28* - Two-Rail Steel with open web posts and continuous Box Section rails.
29 - Four-Rail Steel with open web posts and continuous Box Section rails. Top rail is not a vehicular rail.
30 - Four-Rail Aluminum with cast posts and discontinuous rails.
31 - Three-Rail Aluminum with cast posts and discontinuous rails.
32 - Three-Rail Aluminum with extruded posts and rails. The rails are continuous.
33 - Two-Rail Aluminum with extruded posts and rails. The rails are continuous.
34* - One-Rail Aluminum with extruded posts and rail. The rail is continuous (with 27" or higher concrete parapet and assuming no vaulting problem).
35* - Four-Rail Steel with open web posts and continuous box section rails.
36* - Two-Rail Steel with open web posts and continuous box section rail.
37* - One-Rail Steel with open web posts and continuous rail tube (with concrete parapet).
38* - Two-Rail Steel with open web posts and continuous box section rail (Curbless bridges).
45 - Four-Rail (Code "20") railing, upgraded by attaching a continuous box section to the face of railing.
46 - Three-Rail (Code "21") railing, upgraded by attaching a continuous box section to the face of railing.
47 - Four-Rail (Code "22") railing, upgraded by attaching a continuous box section to the face of railing.
48 - Three-Rail (Code "23") railing, upgraded by attaching a continuous box section to the face of
49 - Two-Rail (Code “24”) railing, upgraded by attaching a continuous box section to the face of railing.
50 - Two-Rail (Code “25”) railing, upgraded by attaching a continuous box section to the face of railing.
51* - Four-Rail (Code “26”) railing, upgraded by attaching a continuous box section to the face of railing.
52* - Three-Rail (Code “27”) railing, upgraded by attaching a continuous box section to the face of railing.
53 - Continuous Box Section mounted on steel posts which are attached to the sidewalk. Used in conjunction with thru girder superstructure.
54 - Continuous Box Section mounted on the stiffeners of a thru girder.
55 - Continuous Box Section mounted on steel posts which are attached to the top flange of a thru girder.
56 - Continuous Box Section mounted on a truss railing on the traffic side of the main members.
57 - Continuous Box Section attached directly to the main members of a truss.
58 - Four-Rail (Code “20”) railing, upgraded with a continuous W-Section attached to the face of the railing.
59 - Three-Rail (Code “21”) railing, upgraded with a continuous W-Section attached to the face of the railing.
60 - Four-Rail (Code “22”) railing, upgraded with a continuous W-Section attached to the face of the railing.
61 - Three-Rail (Code “23”) railing, upgraded with a continuous W-Section attached to the face of the railing.
62 - Two-Rail (Code “24”) railing, upgraded with a continuous W-Section attached to the face of the railing.
63 - Two-Rail (Code “25”) railing, upgraded with a continuous W-Section attached to the face of the railing.
64 - Four-Rail (Code “26”) railing, upgraded with a continuous W-Section attached to the face of the railing.
65 - Three-Rail (Code “27”) railing, upgraded with a continuous W-Section attached to the face of the railing.
66 - Four-Rail (Code “30”) railing, upgraded with a continuous W-Section attached to the face of the railing.
67 - Three-Rail (Code “31”) railing, upgraded with a continuous W-Section attached to the face of the railing.
68* - Four-Rail (Code “20”) railing, upgraded by attaching a continuous W-Section and a continuous channel, with a block-out, to the face of the railing.
69* - Three-Rail (Code “21”) railing, upgraded by attaching a continuous W-Section and continuous channel, with a block-out, to the face of the railing.
70* - Two-Rail (Code “25”) railing, upgraded by attaching a continuous W-Section and a continuous channel, with a block-out, to the face of the railing.
71* - Four-Rail (Code “26”) railing, upgraded by attaching a continuous W-Section and a continuous channel, with a block-out, to the face of the railing.
72* - Three-Rail (Code “27”) railing, upgraded by attaching a continuous W-Section and a continuous channel, with a block-out, to the face of the railing.
73* - Four-Rail (Code “20”) railing, upgraded by attaching a continuous Thrie Beam Section to the face of the railing.
74* - Three-Rail (Code “21”) railing, upgraded by attaching a continuous Thrie Beam Section to the face of the railing.
75* - Four-Rail (Code “22”) railing, upgraded by attaching a continuous Thrie Beam Section to the face of the railing.
76* - Three-Rail (Code “23”) railing, upgraded by attaching a continuous Thrie Beam Section to the face of the railing.
77* - Two-Rail (Code “25”) railing, upgraded by attaching a continuous Thrie Beam Section to the face of the railing.
of the railing.

78* - Four-Rail (Code “26”) railing, upgraded by attaching a continuous Thrie Beam Section to the face of the railing.

79* - Three-Rail (Code “27”) railing, upgraded by attaching a continuous Thrie Beam Section to the face of the railing.

80* - Continuous Thrie Beam Section mounted on steel posts which are attached to the top flange of a thru girder.

81* - Continuous Thrie Beam Section mounted on steel posts which are attached to the sidewalk. This is used in conjunction with a thru girder superstructure.

82* - Four-Rail (Code “20”) railing, upgraded by attaching a continuous Box Section to the face of the railing with a block-out.

83* - Three-Rail (Code “21”) railing, upgraded by attaching a continuous Box Section to the face of the railing with a block-out.

84* - Four-Rail (Code “22”) railing, upgraded by attaching a continuous Box Section to the face of the railing with a block-out.

85* - Three-Rail (Code “23”) railing, upgraded by attaching a continuous Box Section to the face of the railing with a block-out.

86* - Two-Rail (Code “25”) railing, upgraded by attaching a continuous Box Section to the face of the railing with a block-out.

87* - Four-Rail (Code “26”) railing, upgraded by attaching a continuous Box Section to the face of the railing with a block-out.

88* - Three-Rail (Code “27”) railing, upgraded by attaching a continuous Box Section to the face of the railing with a block-out.

89* - Continuous Box Section mounted on A steel post with a block-out.

90* - Continuous Box Section mounted on THE stiffeners of a thru girder.

91* - Continuous Box Section mounted on steel posts which are attached to the top flange of a thru girder.

92* - Double Continuous Box Sections mounted on steel posts WHICH ARE mounted on the traffic side of the main members of a truss.

93* - Double Continuous Box Sections attached with block-outs to the main members of A truss.

00 - Other

ITEM: Gore Area

NYSDOT

PROCEDURE:
Record whether Gore Areas are present on the bridge and whether they are the type that require impact attenuators.

The Gore Area is to be recorded with the main bridge inventory, not with the ramp inventory.

CODING:
1 - No Gore Areas are present on bridge.
2 - Gore Area/Areas that do not normally require the protection of an impact attenuator (most “ON” ramps).
3 - Gore Area/Areas that are present that require the protection of an impact attenuator (most “OFF” ramps).
4 - Gore Areas are present and some of them require the protection of an impact attenuator.
ITEM: Type of Attenuator

PROCEDURE:
Record the type of Impact Attenuators on the bridge.

CODING:
1 - No Impact Attenuators on the bridge.
2 - Connected steel drums (empty).
3 - Configuration of water-filled bags.
4 - Connected plastic barrels filled to various levels with sand.
0 - Others

ITEM: Utilities

PROCEDURE:
Record up to eight Utilities that are carried by the bridge.

If there are no Utilities carried by the bridge, enter 01 - None, left justified with the rest of the field left blank.

If Utilities are supported by the bridge, list each of them without a space or comma, entering 01 - None for the last entry; e.g., “020901.

When removing or adding a new Utility, all Utilities must be re-entered.

CODING:

<table>
<thead>
<tr>
<th>Visible Utilities</th>
<th>Not Visible or Encased Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 - None</td>
<td>22 - Gas Line</td>
</tr>
<tr>
<td>02 - Gas Line</td>
<td>23 - Water Line</td>
</tr>
<tr>
<td>03 - Water Line</td>
<td>24 - Electric</td>
</tr>
<tr>
<td>04 - Electric</td>
<td>25 - Telephone</td>
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<tr>
<td>05 - Telephone</td>
<td>26 - Fire Alarm</td>
</tr>
<tr>
<td>06 - Fire Alarm</td>
<td>27 - Police Call</td>
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<tr>
<td>07 - Police Call</td>
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<td>09 - Steam Line</td>
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<td>31 - Sewer</td>
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<td>12 - Chemical Line</td>
<td>33 - Fuel Line</td>
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<tr>
<td>13 - Fuel Line</td>
<td>34 - Unknown Duct</td>
</tr>
<tr>
<td>14 - Unknown Duct</td>
<td>35 - Fiber Optic (encased)</td>
</tr>
<tr>
<td>15 - Fiber Optic Cable</td>
<td>40 - Other</td>
</tr>
<tr>
<td>00 - Other</td>
<td></td>
</tr>
</tbody>
</table>
**ITEM: Light Standards On**  
NYSDoT

**PROCEDURE:**  
Record the type of Light Standard used on the bridge.

**CODING:**
1 - None  
2 - Steel, Painted  
3 - Steel, Stainless  
4 - Steel, Galvanized  
5 - Aluminum  
6 - Concrete  
7 - Wood  
8 - Rail Lighting  
0 - Other

**Item: Light Fixtures (On/Under)**  
NYSDoT

**PROCEDURE:**  
Record the type of Light Fixture on the bridge and the type of lighting under the bridge.

**CODING:**
1 - None  
2 - Fluorescent  
3 - Mercury Vapor  
4 - Incandescent  
5 - Sodium Vapor  
0 - Other
ITEMS INCLUDED IN INSPECTION RESPONSIBILITY (RC04)

- Inspection Responsibility (Primary)
- Inspection Responsibility - Primary - Spans
- Inspection Responsibility (Secondary)
- Inspection Responsibility - Secondary - Spans
Item: Inspection Responsibility - Primary
NYSDoT

PROCEDURE:
Record the Agency responsible for the inspection of all or most of the bridge.

NYSDoT is authorized to and does inspect bridges owned by Towns, Counties, Cities and Villages, however, the responsibility for these bridges belongs to and should be recorded as being the Town, City, County or Village.

If an agency hires a consultant to do an inspection, the agency should be recorded here and not the consultant.

CODING:
Enter the code for the agency responsible for Inspecting the majority of the bridge from the following table.

<table>
<thead>
<tr>
<th>Code</th>
<th>Agency</th>
<th>Code</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>NYSDoT</td>
<td>22</td>
<td>Alleghany State Park Authority</td>
</tr>
<tr>
<td>11</td>
<td>Retired (State - Waterways Maintenance)</td>
<td>23</td>
<td>Nassau County Bridge Authority</td>
</tr>
<tr>
<td>12</td>
<td>State - Subcontracted to another Party</td>
<td>24</td>
<td>Peace Bridge Authority (a/k/a Buffalo &amp; Fort Erie Public Bridge Authority)</td>
</tr>
<tr>
<td>2A</td>
<td>Genesee State Parks and Recreation Commission</td>
<td>25</td>
<td>Capital District State Park Commission</td>
</tr>
<tr>
<td>2B</td>
<td>Interstate Bridge Commission</td>
<td>26</td>
<td>Central NY State Park Commission</td>
</tr>
<tr>
<td>2C</td>
<td>NYS Dept of Environmental Conservation</td>
<td>27</td>
<td>City of NY State Park Commission</td>
</tr>
<tr>
<td>2D</td>
<td>Lake Champlain Bridge Commission</td>
<td>28</td>
<td>East Hudson Parkway Authority</td>
</tr>
<tr>
<td>2E</td>
<td>Lake George Park Commission</td>
<td>29</td>
<td>Finger Lakes Parks and Recreation Commission</td>
</tr>
<tr>
<td>2F</td>
<td>Long Island State Parks &amp; Recreation Commission</td>
<td>30</td>
<td>County</td>
</tr>
<tr>
<td>2G</td>
<td>Metropolitan Transportation Authority</td>
<td>40</td>
<td>Town</td>
</tr>
<tr>
<td>2H</td>
<td>Monroe County Water Authority</td>
<td>41</td>
<td>Village</td>
</tr>
<tr>
<td>2I</td>
<td>Niagara Falls Bridge Commission</td>
<td>42</td>
<td>City</td>
</tr>
</tbody>
</table>
### Inspection Responsibility Codes
(Same as Owner and Maintenance Responsibility Codes)

<table>
<thead>
<tr>
<th>Code</th>
<th>Agency</th>
<th>Code</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>2J</td>
<td>Niagara Frontier State Park Commission</td>
<td>43</td>
<td>NYC Dept of Water Supply, Gas, and Electric</td>
</tr>
<tr>
<td>2K</td>
<td>NYS Bridge Authority</td>
<td>50</td>
<td>Federal (Other than those listed below)</td>
</tr>
<tr>
<td>2L</td>
<td>NYS Thruway Authority</td>
<td>51</td>
<td>Bureau of Indian Affairs</td>
</tr>
<tr>
<td>2M</td>
<td>Ogdensburg Bridge &amp; Port Authority</td>
<td>52</td>
<td>U. S. Forest Service</td>
</tr>
<tr>
<td>2N</td>
<td>Palisades Interstate Park Commission</td>
<td>53</td>
<td>National Park Service</td>
</tr>
<tr>
<td>2P</td>
<td>NYS Power Authority</td>
<td>54</td>
<td>Bureau of Land Management</td>
</tr>
<tr>
<td>2Q</td>
<td>Seaway International Bridge Authority</td>
<td>55</td>
<td>Bureau of Reclamation</td>
</tr>
<tr>
<td>2R</td>
<td>Retired (Used to be Taconic State Park Commission)</td>
<td>56</td>
<td>Military Reservation / Corps of Engineers</td>
</tr>
<tr>
<td>2S</td>
<td>Thousand Island Bridge Authority</td>
<td>60</td>
<td>Railroad</td>
</tr>
<tr>
<td>2T</td>
<td>Transit Authority</td>
<td>61</td>
<td>Long Island Railroad</td>
</tr>
<tr>
<td>2U</td>
<td>MTA Bridge and Tunnels a/k/a (TBTA)</td>
<td>62</td>
<td>Retired (previously Conrail - converted to 60)</td>
</tr>
<tr>
<td>2V</td>
<td>Tri-State Transportation Commission</td>
<td>70</td>
<td>Private - Industrial</td>
</tr>
<tr>
<td>2W</td>
<td>Port Authority of NY &amp; NJ</td>
<td>71</td>
<td>Private - Utility</td>
</tr>
<tr>
<td>20</td>
<td>State - Other</td>
<td>72</td>
<td>Other Non-Authority</td>
</tr>
<tr>
<td>21</td>
<td>Authority or Commission - Other</td>
<td>99</td>
<td>One Agency - Listed in first sub-field</td>
</tr>
</tbody>
</table>

Note: Code 61 - Long Island Railroad is identified as a separate agency of the MTA.

**Old Codes**

20 - NY City /State Unbuilt - no longer used.

If the Agency recorded here is responsible for inspecting the entire bridge, input “99 - Only One Agency Responsible” in Item: Inspection Responsibility - Secondary.
ITEM: Inspection Responsibility - Primary - Spans
NYSDoT

PROCEDURE:
This Item is no longer used.

ITEM: Inspection Responsibility - Secondary
NYSDoT

PROCEDURE:
Record the Agency that is required to inspect those portions of the bridge for which the Primary Agency is not responsible.

CODING:
Record this Item with one of the codes listed for the “Inspection Responsibility - Primary” Item.

If only one Agency is responsible for inspecting the bridge, record this Item with “99 - Only One Agency Responsible.”

ITEM: Inspection Responsibility - Secondary - Spans
NYSDoT

This Item is no longer used.
ITEMS INCLUDED IN BRIDGE INSPECTION (RC05)

- Inspection Date
- General Recommendation
- Flags
- Scour Critical Code
- BA Joint Rating
- EA Joint Rating
- BA Bearing Rating
- EA Bearing Rating
- BA Seats/Pedestals Rating
- EA Seats/Pedestals Rating
- BA Backwall Rating
- EA Backwall Rating
- BA Stem Rating
- EA Stem Rating
- BA Erosion Rating
- EA Erosion Rating
- BA Footing Rating
- EA Footing Rating
- BA Piles Rating
- EA Piles Rating
- BA Recommendation
- EA Recommendation
- BWW Wall Rating
- EWW Wall Rating
- BWW Footing Rating
- EWW Footing Rating
- BWW Erosion Rating
- EWW Erosion Rating
- BWW Piles Rating
- EWW Piles Rating
- Stream Alignment Rating
- Channel Erosion Rating
- Waterway Opening Rating
- Bank Protection Rating
- Appr Drainage Rating
- Appr Embankment Rating
- Appr Settlement Rating
- Appr Erosion Rating
- Appr Pavement Rating
- Appr Guiderail Rating
- Agency
- Inspection Type
- Condition Rating
- Sufficiency Rating Prefix
- Sufficiency Rating
The Bridge Data Management System (BDMS) stores inventory information regarding the various bridge components. It also stores information regarding the condition of those components. The current NYS Bridge Inspection Manual describes how each component is to be rated. The rated items are presented solely for the purpose of identifying what inspection data is stored in BDMS and what values may be recorded.

**Bridge Inspection Ratings**

**NYSDoT**

**PROCEDURE:**
Most of the items in this table record the inspection ratings assigned to individual bridge elements by the inspector. Ratings are recorded for the following bridge elements:

- General Recommendation
- BA Joint
- EA Joint Rating
- BA Bearing Rating
- EA Bearing Rating
- BA Seats/Pedestals Rating
- EA Seats/Pedestals Rating
- BA Backwall Rating
- EA Backwall Rating
- BA Stem Rating
- EA Stem Rating
- BA Erosion Rating
- EA Erosion Rating
- BA Footing Rating
- EA Footing Rating
- BA Piles Rating
- EA Piles Rating
- BA Recommendation
- EA Recommendation
- BWW Wall Rating
- EWW Wall Rating
- BWW Footing Rating
- EWW Footing Rating
- BWW Erosion Rating
- EWW Erosion Rating
- BWW Piles Rating
- EWW Piles Rating
- Stream Alignment Rating
- Channel Erosion Rating
- Waterway Opening Rating
- Bank Protection Rating
- Appr Drainage Rating
- Appr Embankment Rating
- Appr Settlement Rating
- Appr Erosion Rating
- Appr Pavement Rating
- Appr Guiderail Rating

**CODING:**
Each bridge component is given a numeric rating using the following codes:

1 - Totally deteriorated, or in failed condition.
2 - Used to shade between ratings of 1 and 3.
3 - Serious deterioration, or not functioning as originally designed.
4 - Used to shade between ratings of 3 and 5.
5 - Minor deterioration, but functioning as originally designed.
6 - Used to shade between ratings of 5 and 7.
7 - New condition. No deterioration.
8 - Not applicable.
9 - Condition and/or existence unknown.

**Inspection Date**

**NYSDoT**

**PROCEDURE:**
Record the Month, Day and Year of the most recent inspection. Record the month and day using two
 digits with "zero fill" as required. Record the last two digits of the year.

CODING:
Accepts any date in MM/DD/YY format.

Flags
NYSDoT

PROCEDURE:
This field provides a three digit code. The first digit indicates if a Red Flag was identified anywhere on the bridge during the inspection. A “0” indicates No flag identified and a “1” indicates a Flag was identified. The second digit similarly indicates if a Yellow Flag was identified and the third digit indicates if a Safety Flag was identified.

CODING:
000 - No Flags identified
100 - Only Red Flag identified
010 - Only Yellow Flag identified
All other combinations respectively.

Agency
NYSDoT

PROCEDURE:
Record the code for the Agency performing the inspection.

CODING:
10 - State employees
13 - Consultant
21 - Authority

Inspection Type
NYSDoT

PROCEDURE:
Record the code for Type of Inspection performed.

CODING:
1 - Biennial
2 - Interim
3 - Not used
4 - None (under construction)
5 - Special or Other
ITEM: Condition Rating
NYSDoT

PROCEDURE:
Condition Rating is a value which NYSDoT calculates to represent an overall assessment of the condition of a bridge. It is a numerical value from 1.000 (poor) - 7.000 (excellent.)

The computation uses 13 bridge elements considered most important for an overall condition appraisal. Each element is weighted in proportion to its relative importance. The condition of each element is multiplied by the assigned weight for that element, with the result divided by the sum of the weighted values, resulting in the Condition Rating for the bridge.

The 13 bridge elements and their respective weights, are as follows:

<table>
<thead>
<tr>
<th>Element</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Members</td>
<td>10</td>
</tr>
<tr>
<td>Abutments (Stem/Breastwall)</td>
<td>8</td>
</tr>
<tr>
<td>Piers</td>
<td>8</td>
</tr>
<tr>
<td>Structural Deck</td>
<td>8</td>
</tr>
<tr>
<td>Bridge Seats</td>
<td>6</td>
</tr>
<tr>
<td>Bearings</td>
<td>6</td>
</tr>
<tr>
<td>Wingwalls</td>
<td>5</td>
</tr>
<tr>
<td>Backwalls</td>
<td>5</td>
</tr>
<tr>
<td>Secondary Members</td>
<td>5</td>
</tr>
<tr>
<td>Joints</td>
<td>4</td>
</tr>
<tr>
<td>Wearing Surface</td>
<td>4</td>
</tr>
<tr>
<td>Sidewalks</td>
<td>2</td>
</tr>
<tr>
<td>Curbs</td>
<td>1</td>
</tr>
</tbody>
</table>

When a bridge has several elements of one kind, such as multiple piers, the lowest rating of all elements is used. Details of the relationship of condition values to the various elements used in the Structural Condition Formula may be found in the Department's Bridge Inspection Manual.

Condition Rating is computed to three decimal places using the ratings of the thirteen elements with whole number values assigned. The three decimal point accuracy is significant only for the purpose of "breaking ties" when listing bridges by rank order of Condition Rating.

CODING:
Accepts numeric values 0.000 - 7.000

ITEM: Sufficiency Rating
FHWA

PROCEDURE:
FHWA uses a Sufficiency Rating to provide an overall assessment of a bridge's condition. A number is assigned from 0.0 (poor) to 100.0 (excellent) to represent both structural and functional adequacies. A fairly complex formula is used and is described in FHWA’s Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges, December 1995.

CODING:
A numeric value from 0.0 to 100.0
ITEM: Sufficiency Rating Prefix

PROCEDURE:
This Item indicates an asterisk (*) if the Sufficiency Rating (the next item described) was calculated even though some essential data was missing or coded incorrectly. The BDMS system will substitute a value for the unusable data (which will not lower the rating) and calculate the sufficiency rating. The asterisk is dropped when the unusable data is corrected.

It is normal that all culverts with Bridge Roadway Width, Curb-to-Curb coded '0000' will have an asterisk prefixed sufficiency.

CODING:
- Essential data was missing, but Sufficiency Rating calculated anyway
- Blank All essential data available for calculating Sufficiency Rating
ITEMS INCLUDED IN POSTINGS (RC06)

Recording Date
Posted Vertical Clearance (On)
Posted Vertical Clearance (Under)
Posted Load
Date Posted
**Item: Recording Date**

**PROCEDURE:**
This Item is no longer used.

**ITEM: Posted Vertical Clearance (On)**

**PROCEDURE:**
Record the Vertical Clearance which is posted on the bridge in feet and inches, zero filled; e.g., “12/06.”

If the bridge is not posted for Vertical Clearance, or does not carry a highway, record “0/0.”

If the bridge was posted for Vertical Clearance and the restriction has been intentionally removed, record “0/0.”

**CODING:**
Accepts 0/0 - 99/99

**ITEM: Posted Vertical Clearance (Under)**

**PROCEDURE:**
Record the Vertical Clearance posted for the roadway passing under the bridge in feet and inches, e.g., “12/06.”

If the under roadway is not posted for Vertical Clearance, leave this Item blank.

If the under roadway was posted for Vertical Clearance and the restriction has been intentionally removed, record as “0/0.”

If there is no under roadway, record as “0/0.”

**CODING:**
Accepts 0/0 - 99/99

**ITEM: Posted Load**

**PROCEDURE:**
Record the Load for which the bridge is Posted, or record that the bridge is Closed or Restricted to its primary use.

If the bridge is not Posted for Load or a Load Restriction, or does not carry highway traffic, leave this Item blank.
CODING:

Blank - the bridge is not posted or does not carry highway traffic.
The load the bridge is posted for in Tons.
“88” - Bridge is restricted from vehicles with “R” permits.
“90” - Bridge is posted for number of vehicles on bridge, load capacity reduction (non-tonnage “R”).
“95” - The bridge is open for unrestricted traffic, but would be posted for load except for temporary shoring, etc.
“97” - The bridge is an open temporary structure in place to carry legal loads while original structure is closed and awaiting replacement or rehabilitation.
“98” - Bridge Closed for Construction. Traffic being accommodated on site by: parallel bridge, temporary bridge, etc.
“99” - Bridge Closed to primary usage or closed to its primary usage, but still open for secondary usage.

ITEM: DATE POSTED
NYSDoT

PROCEDURE:
Record the month and year when the Posted Load was last changed.

If the bridge is not Posted for Load, or does not carry highway traffic, leave this Item blank.

CODING:
Accepts all MM/YY dates and blanks.
ITEMS INCLUDED IN LOAD RATING (RC07)

BIN
Region
County
Level 1 Rating Method
Level 1 Rating Source
Level 1 Rating Date
Level 1 H Inventory Rating - Tons
Level 1 H Operating Rating - Tons
Level 1 HS Inventory Rating - Tons
Level 1 HS Operating Rating - Tons
Level 1 M Inventory Rating - MTons
Level 1 M Operating Rating - MTons
Level 1 MS Inventory Rating - MTons
Level 1 MS Operating Rating - MTons
Level 2 Rating Method
Level 2 Rating Source
Level 2 Rating Date
Level 2 H Inventory Rating - Tons
Level 2 H Operating Rating - Tons
Level 2 HS Inventory Rating - Tons
Level 2 HS Operating Rating - Tons
Level 2 M Inventory Rating - MTons
Level 2 M Operating Rating - MTons
Level 2 MS Inventory Rating - MTons
Level 2 MS Operating Rating - MTons
RC07: Load Rating

The Bridge Data Management System (BDMS) Record Code 07 is entitled “Load Rating”. It currently records: Load Rating Methods, Sources, Dates, H and HS Inventory and Operating Ratings, and M and MS Inventory and Operating Ratings. Processing of this data will be done by the Structures Division Load Rating Unit through coordination with the Regional Offices. All data will be processed using a graphical user interface.

ITEM: Level 1 Rating Method
FHWA 63 & 65

PROCEDURE:
Record the method used for calculating the Level 1 H/M and HS/MS Inventory and Operating Ratings. Level 1 Ratings are PE Certified.

CODING:
<table>
<thead>
<tr>
<th>Rating</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Load Factor (LFD)</td>
</tr>
<tr>
<td>2</td>
<td>Allowable Stress (ASD)</td>
</tr>
<tr>
<td>3</td>
<td>Load &amp; Resistance Factor (LRFR)</td>
</tr>
<tr>
<td>4</td>
<td>Other</td>
</tr>
<tr>
<td>5</td>
<td>Not Used</td>
</tr>
</tbody>
</table>

ITEM: Level 1 Rating Source
FHWA 63 & 65

PROCEDURE:
Record the Level 1 Rating Source of the Level 1 H/M and HS/MS Inventory and Operating Ratings.

CODING:
1 - Manual
V - P.E. Certified Virtis
T - Load Testing

ITEM: Level 1 Rating Date
NYSDoT

PROCEDURE:
Record the date the Level 1 calculations of the H/M and HS/MS Inventory and Operating Ratings were completed on. (Note: This is not the date they are being entered into the Inventory System.)

CODING:
MM/DD/YYYY
ITEM: Level 1 H Inventory Rating - Tons
NYSDoT

PROCEDURE:
Record the Level 1 analysis results for the H Inventory Rating Load in English tons.

CODING:
000.0 - 999.9
Blank - no rating

ITEM: Level 1 H Operating Rating - Tons
NYSDoT

PROCEDURE:
Record the Level 1 analysis results for the H Operating Rating Load in English tons.

CODING:
000.0 - 999.9
Blank - no rating

ITEM: Level 1 HS Inventory Rating - Tons
NYSDoT

PROCEDURE:
Record the Level 1 analysis results for the HS Inventory Rating Load in English tons.

CODING:
000.0 - 999.9
Blank - no rating

ITEM: Level 1 HS Operating Rating - Tons
NYSDoT

PROCEDURE:
Record the Level 1 analysis results for the HS Operating Rating Load in English tons.

CODING:
000.0 - 999.9
Blank - no rating

ITEM: Level 1 M Inventory Rating - MTons
NYSDoT

PROCEDURE:
Record the Level 1 analysis results for the M Inventory Rating Load in Metric tons.

CODING:
000.0 - 999.9
ITEM: Level 1 M Operating Rating - MTons
NYSDOT

PROCEDURE:
Record the Level 1 analysis results for the M Operating Rating Load in Metric tons.

CODING:
000.0 - 999.9
Blank - no rating

ITEM: Level 1 MS Inventory Rating - MTons
FHWA 66

PROCEDURE:
Record the Level 1 analysis results for the MS Inventory Rating Load in Metric tons.

CODING:
000.0 - 999.9
Blank - no rating

ITEM: Level 1 MS Operating Rating - MTons
FHWA 64

PROCEDURE:
Record the Level 1 analysis results for the MS Operating Rating Load in Metric tons.

CODING:
000.0 - 999.9
Blank - no rating

ITEM: Level 2 Rating Method
FHWA 63 & 65

PROCEDURE:
Record the method used for calculating the Level 2 H/M and HS/MS Inventory and Operating Ratings. Level 2 Ratings are NOT PE Certified.

CODING:
<table>
<thead>
<tr>
<th>Rating</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Load Factor (LFD)</td>
</tr>
<tr>
<td>2</td>
<td>Allowable Stress (ASD)</td>
</tr>
<tr>
<td>3</td>
<td>Load &amp; Resistance Factor (LRFR)</td>
</tr>
<tr>
<td>4</td>
<td>Other</td>
</tr>
<tr>
<td>5</td>
<td>Not Used</td>
</tr>
</tbody>
</table>
ITEM: Level 2 Rating Source
NYSDoT

PROCEDURE:
Record the Level 2 Rating Source of the Level 2 H/M and HS/MS Inventory and Operating Ratings.

CODING:
B - BLRS
V - Virtis

ITEM: Level 2 Rating Date
NYSDoT

PROCEDURE:
Record the date the Level 2 calculations of the H/M and HS/MS Inventory and Operating Ratings were entered into the Inventory System.

CODING:
MM/DD/YYYY

ITEM: Level 2 H Inventory Rating - Tons
NYSDoT

PROCEDURE:
Record the Level 2 analysis results for the H Inventory Rating Load in English tons.

CODING:
000.0 - 999.9
** Not ratable
Blank - no rating

ITEM: Level 2 H Operating Rating - Tons
NYSDoT

PROCEDURE:
Record the Level 2 analysis results for the H Operating Rating Load in English tons.

CODING:
000.0 - 999.9
** Not ratable
Blank - no rating
ITEM: **Level 2 HS Inventory Rating - Tons**

**PROCEDURE:**
Record the Level 2 analysis results for the HS Inventory Rating Load in English tons.

**CODING:**
- 000.0 - 999.9
- **Not ratable**
- Blank - no rating

ITEM: **Level 2 HS Operating Rating - Tons**

**PROCEDURE:**
Record the Level 2 analysis results for the HS Operating Rating Load in English tons.

**CODING:**
- 000.0 - 999.9
- **Not ratable**
- Blank - no rating

ITEM: **Level 2 M Inventory Rating - MTons**

**PROCEDURE:**
Record the Level 2 analysis results for the M Inventory Rating Load in Metric tons.

**CODING:**
- 000.0 - 999.9
- **Not ratable**
- Blank - no rating

ITEM: **Level 2 M Operating Rating - MTons**

**PROCEDURE:**
Record the Level 2 analysis results for the M Operating Rating Load in Metric tons.

**CODING:**
- 000.0 - 999.9
- **Not ratable**
- Blank - no rating
ITEM: **Level 2 MS Inventory Rating - MTons**

**PROCEDURE:**
Record the Level 2 analysis results for the MS Inventory Rating Load in Metric tons.

**CODING:**
- 000.0 - 999.9
- **Not ratable**
- Blank - no rating

ITEM: **Level 2 MS Operating Rating - MTons**

**PROCEDURE:**
Record the Level 2 analysis results for the MS Operating Rating Load in Metric tons.

**CODING:**
- 000.0 - 999.9
- **Not ratable**
- Blank - no rating
ITEMS INCLUDED IN FEDERAL RATINGS (RC09)

Deck Rating
Superstructure Rating
Substructure Rating
Channel Rating
Culvert Rating
Inspection Date
NBI Structural Condition
NBI Deck Geometry
NBI Under Clearance
Historic Note: This Record Code was formerly used to record information about Defense Highways. It is now used to record the Federal Ratings. The NYSDoT Bridge Inspection Manual describes how to rate the various bridge components. The ratings are presented here to identify the inspection data which is stored in BDMS and to identify the values which may be recorded.

DECK RATING
SUPERSTRUCTURE RATING
SUBSTRUCTURE RATING
FHWA 58, 59 & 60

PROCEDURE:
Each of these items record the federal ratings assigned to individual bridge components by the inspector.

Note: FHWA requires culverts to be inspected differently than other structures; i.e., they receive a Federal Culvert Rating rather than Federal Deck, Superstructure and Substructure Ratings. Therefore, any one bridge will have either a Deck, Superstructure and Substructure Rating or a Culvert Rating.

CODING:
The following general condition ratings shall be used as a guide in evaluating Deck, Superstructure and Substructure Ratings:

N NOT APPLICABLE
9 EXCELLENT CONDITION
8 VERY GOOD CONDITION no problems noted.
7 GOOD CONDITION some minor problems.
6 SATISFACTORY CONDITION structural elements show some minor deterioration.
5 FAIR CONDITION all primary structural elements are sound, but may have minor section loss, cracking, spalling or scour.
4 POOR CONDITION advanced section loss, deterioration, spalling or scour.
3 SERIOUS CONDITION loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2 CRITICAL CONDITION advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1 "IMMINENT" FAILURE CONDITION major deterioration or section loss present in critical structural components, or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic, but corrective action may put the bridge back in light service.
0 FAILED CONDITION out of service beyond corrective action.
CHANNEL RATING
FHWA 61

PROCEDURE: Records the federal rating assigned to the Channel by the inspector.

CODING:
- N NOT APPLICABLE - use when bridge is not over a waterway (channel).
- 9 There are no noticeable or noteworthy deficiencies which affect the condition of the channel.
- 8 Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.
- 7 Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.
- 6 Bank is beginning to slump. River control devices and embankment protection have widespread minor damage. There is minor stream bed movement evident. Debris is restricting the waterway slightly.
- 5 Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.
- 4 Bank and embankment protection is severely undermined. River control devices have severe damage. Large deposits of debris are in the channel.
- 3 Bank protection has failed. River control devices have been destroyed. Stream bed aggradation, degradation or lateral movement has changed the channel to now threaten the bridge and/or approach roadway.
- 2 The channel has changed to the extent the bridge is near a state of collapse.
- 1 Bridge closed because of channel failure. Corrective action may put bridge back in light service.
- 0 Bridge closed because of channel failure. Replacement necessary.

CULVERT RATING
FHWA 62

PROCEDURE:
Records the federal rating assigned to the Culvert by the inspector.

Note: FHWA requires culverts to be inspected differently than other structures; ie, they receive a Federal Culvert Rating rather than Federal Deck, Superstructure and Substructure Ratings. Therefore, any one bridge will have either a Culvert Rating or a Deck, Superstructure and Substructure Rating.

CODING:
- N NOT APPLICABLE - Use if structure is not a culvert
- 9 No deficiencies.
- 8 No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift.
- 7 Shrinkage cracks, light scaling, and insignificant spalling which does not expose reinforcing steel. Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls, or pipes. Metal culverts have a smooth symmetrical curvature with superficial corrosion and no pitting.
- 6 Deterioration or initial disintegration, minor chloride contamination, cracking with some leaching, or spalls on concrete or masonry walls and slabs. Local minor scouring at curtain walls, wingwalls, or pipes. Metal culverts have a smooth curvature, non-symmetrical shape, significant corrosion or moderate pitting.
5 Moderate to major deterioration or disintegration, extensive cracking and leaching, or spalls on concrete or masonry walls and slabs. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection in one section, significant corrosion or deep pitting.

4 Large spalls, heaving scaling, wide cracks, considerable efflorescence, or opened construction joint permitting loss of backfill. Considerable settlement or misalignment. Considerable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection throughout, extensive corrosion or deep pitting.

3 Any condition described in Code 4, but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Holes may exist in walls or slabs. Integral wingwalls nearly severed from culvert. Severe scour or erosion at curtain walls, wingwalls, or pipes. Metal culverts have extreme distortion and deflection in one section, extensive corrosion, or deep pitting with scattered perforations.

2 Integral wingwalls collapsed, severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls and pipes. Corrective action required to maintain traffic. Metal culverts have extreme distortion and deflection throughout with extensive perforations due to corrosion.

1 Bridge closed. Corrective action may put bridge back in light service.

0 Bridge closed. Replacement necessary.

INSPECTION DATE
NYSDoT

PROCEDURE:
Record the Month, Day and last two digits of the Year (MM/DD/YY) of the inspection.

CODING:
Accepts any date in MM/DD/YY format.

ITEM: NBI STRUCTURAL CONDITION
FHWA 67

ITEM: NBI DECK GEOMETRY
FHWA 68

ITEM: NBI UNDER CLEARANCE
FHWA 69

PROCEDURE:
Each of these items is calculated using ratings from other items, these items are not directly recorded by the bridge inspector. (Refer to the current FHWA NBI Coding Guide for specific details)
CODING:
Each of these items is given a single digit, numeric rating using the following rating scale:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Not applicable</td>
</tr>
<tr>
<td>9</td>
<td>Superior to present desirable criteria</td>
</tr>
<tr>
<td>8</td>
<td>Equal to present desirable criteria</td>
</tr>
<tr>
<td>7</td>
<td>Better than present minimum criteria</td>
</tr>
<tr>
<td>6</td>
<td>Equal to present minimum criteria</td>
</tr>
<tr>
<td>5</td>
<td>Somewhat better than minimum adequacy to tolerate being left in place as is</td>
</tr>
<tr>
<td>4</td>
<td>Meets minimum tolerable limits to be left in place as is</td>
</tr>
<tr>
<td>3</td>
<td>Basically intolerable requiring high priority of corrective action</td>
</tr>
<tr>
<td>2</td>
<td>Basically intolerable requiring high priority of replacement</td>
</tr>
<tr>
<td>1</td>
<td>This value of rating code not used</td>
</tr>
<tr>
<td>0</td>
<td>Bridge closed</td>
</tr>
</tbody>
</table>
## ITEMS INCLUDED IN FEATURE CARRIED (RC12)

<table>
<thead>
<tr>
<th>Feature Number</th>
<th>Over-Under-On Code</th>
<th>Feature Code</th>
<th>Description Type</th>
<th>Description or Route Number and Reference Marker</th>
<th>Secondary Description</th>
<th>Future Average Daily Traffic</th>
<th>Year of Future Average Daily Traffic</th>
<th>Milepoint</th>
<th>Overlap Routes</th>
<th>Maximum Vertical Clearance</th>
<th>State Highway Number</th>
<th>Type of Highway</th>
<th>Route Description</th>
<th>Federal-Aid System</th>
<th>Functional Classification</th>
<th>Toll</th>
<th>Total Number of Lanes on the Bridge</th>
<th>Lanes Vary</th>
<th>Number of Lanes (Left &amp; Right)</th>
<th>AADT</th>
<th>Year of AADT</th>
<th>Average Daily Truck Traffic</th>
<th>Total Horizontal Clearance</th>
<th>Minimum Vertical Clearance</th>
<th>Bypass Detour Length</th>
<th>STRAHNET Designation</th>
<th>Designated National Network (for Trucks)</th>
<th>National Highway System</th>
</tr>
</thead>
</table>
ITEM: Feature Number
NYSDoT

PROCEDURE:
Information about each Feature, carried and crossed by the bridge, is recorded. BDMS will allow multiple Features Carried. The primary Feature Carried is assigned Feature Number “1”. The secondary Feature(s) carried by the bridge is assigned consecutive numbers beginning with 2, if needed.

CODING:
1 - Primary Feature carried by the bridge.
2, 3, etc., - Secondary Feature(s) carried by the bridge.

ITEM: Over-Under-On Code
NYSDoT

PROCEDURE:
This Item identifies the Features carried or crossed by the bridge. Record Code 12 identifies the Feature Carried by the bridge. Therefore, the value of “1” is recorded.

CODING:
1 - Feature Carried on the bridge

ITEM: Feature Code
NYSDoT

PROCEDURE:
Record the code that best describes the Feature Carried. This code should be consistent with the “Description or Route Number” Item.

If the bridge is closed to all use or to its primary use, but is not “Abandoned”, record this Item with “60” or “61” and record the “Posted Load” Item of Record Code 06 with “99”.

CODING:
09 - State Highway
10 - Expressway
11 - Interstate
12 - Parkway
13 - Authority
14 - County Road
15 - Town Road
16 - City Street
17 - Village Street
18 - Indian Reservation Road
19 - Military Reservation Road
20 - Access Road or Ramp
21 - Institution Road
22 - Park Road
23 - Board of Water Supply Road
24 - Private Road
50 - Railroad
60 - Feature closed to all use
61 - Closed to prime use (open for other service)
80 - Conveyer
90 - Pedestrian
99 - Other and Miscellaneous
**ITEM: Description Type**

**NYSDoT**

**PROCEDURE:**
If the Feature is an Interstate, US Route or State Touring Route, leave this Item blank. A route number and a reference marker will be supplied in the following fields via a link with the Highway Database (HDMS). If this Feature is not an Interstate, US Route or State Touring Route, record a “D” in this field and provide a description in the next Item, “Description or Route Number and Reference Marker.”

**CODING:**
D - Feature is not an Interstate, US Route or State Touring Route
Blank - Feature is an Interstate, US Route or State Touring Route

**ITEM: Description or Route Number and Reference Marker**

**NYSDoT**

**PROCEDURE:**
If the Feature is an Interstate, US Route or State Touring Route, leave this Item blank. The data will be supplied by the Highway Database (HDMS).

A partial list of State Touring Route numbers and their common names are identified in Appendix ?. This is supplied as a reference to help identify touring route names when viewing data.

If the Feature is an Interstate, US Route or State Touring Route and also has a street or road name, record its street or road name in the “Secondary Description” Item.

If the Feature carried is not an Interstate, US Route or State Touring Route record the most commonly used description of the Feature, using up to 17 characters, left justified, and record the “Description Type” Item with the letter “D”.

If the Feature is a local road, use the following standard abbreviations:

<table>
<thead>
<tr>
<th>County Road</th>
<th>CR</th>
<th>North</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>County Route</td>
<td>CR</td>
<td>South</td>
<td>S</td>
</tr>
<tr>
<td>Town Highway</td>
<td>TH</td>
<td>East</td>
<td>E</td>
</tr>
<tr>
<td>Road</td>
<td>RD</td>
<td>West</td>
<td>W</td>
</tr>
<tr>
<td>Street</td>
<td>ST</td>
<td>Northbound</td>
<td>NB</td>
</tr>
<tr>
<td>Avenue</td>
<td>AVE</td>
<td>Southbound</td>
<td>SB</td>
</tr>
<tr>
<td>Boulevard</td>
<td>BLVD</td>
<td>Eastbound</td>
<td>EB</td>
</tr>
<tr>
<td>Drive</td>
<td>DR</td>
<td>Westbound</td>
<td>WB</td>
</tr>
<tr>
<td>Parkway</td>
<td>PKWY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressway</td>
<td>EXPWY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Road</td>
<td>SRD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the Feature Carried is a “highway ramp” which provides access from one roadway to another, record it’s description here. Record the Description as “RAMP” plus the Route Number or brief description of the Route from which traffic is coming and to which it is going. For example, “RAMP 90I EB to Main ST.”

If the Feature Carried is a Service Road, enter “SRD” plus the name of the main road; eg, SRD, LIE.
If the Feature is a non-highway, the following naming conventions should be used:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Naming Convention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railroad</td>
<td>Enter the name of the railroad followed by “RR”; eg, CSX RR</td>
</tr>
<tr>
<td>Water Main</td>
<td>Enter “WTR MAIN” plus diameter of main and the name of the Utility Company, if</td>
</tr>
<tr>
<td></td>
<td>known; eg, “WTR MAIN 36” Latham Water District</td>
</tr>
<tr>
<td>Power Line</td>
<td>Enter “PWR LINE”, plus voltage if known, and the name of the Utility Company, if</td>
</tr>
<tr>
<td></td>
<td>known; eg, “PWR LINE 990V” NYSE&amp;G</td>
</tr>
<tr>
<td>Pedestrian Path</td>
<td>Enter “PED PATH” plus any name associated with the path, if known; eg, “PED PATH”</td>
</tr>
<tr>
<td></td>
<td>AP Trail. Use this term instead of similar terms like “Foot Bridge,” etc.</td>
</tr>
<tr>
<td>Aqueduct</td>
<td>Enter “AQUEDUCT” and name of Utility company, if known.</td>
</tr>
<tr>
<td>Bike Path</td>
<td>Enter “BIKE PATH” and name, if known.</td>
</tr>
<tr>
<td>Conveyor</td>
<td>Enter “CONVEYOR” and name of owner, if known.</td>
</tr>
<tr>
<td>Pipeline</td>
<td>Enter “PIPELINE”, its diameter, and owner, if known.</td>
</tr>
<tr>
<td>Horse Path</td>
<td>Enter “HORSE PATH” plus name, if known.</td>
</tr>
</tbody>
</table>

**CODING:**
Accepts alpha-numeric characters.

**ITEM: Secondary Description**

**NYSDoT**

**PROCEDURE:**
If the bridge carries a Route that also has a common name, record the common name in parentheses: eg, (Northern State Parkway). Do not repeat the route number entered in the “Description or Route Number and Reference Marker.”

If the “Description or Route Number and Reference Marker” fully describe the Feature, this Item should be left blank.

If the instructions above do not apply, and the bridge is known by a particular name, record this Item with that name.

**CODING:**
Accepts alpha-numeric characters or blanks.

**ITEM: Future AADT**

**FHWA 114**

**PROCEDURE:**
If the Feature is a highway, this Item will be determined and supplied from the Highway Database (HDMS). It should be based on a projection of at least 17 years, but not more than 22 years, from the submission of the original AADT data. The intent is to provide a basis for a 20-year forecast.

For bridges in parallel configuration or bridges that carry only one-way traffic, the Future AADT will reflect that one direction of travel only.

For closed bridges, the last Future AADT will be retained.

**CODING:**
No coding required.
ITEM: YEAR OF FUTURE AADT

PROCEDURE:
If the Feature is a highway, this Item will be determined and supplied from the Highway Database (HDMS). It should be a projection of at least 17 years, but not more than 22 years, from the submission of the original AADT data. The intent is to provide a basis for a 20-year forecast.

If the Feature is not a highway, code this item with "NN."

CODING:
Accepts numeric characters 00 - 99 and "NN - representing year 2000."

ITEM: Milepoint

PROCEDURE:
The Milepoint, at the beginning of the bridge, will be obtained from the Highway Database (HDMS). The beginning of the bridge will be determined using the "Direction of Orientation Method."

In general, Milepoints will be supplied for Interstates, US Routes and State Touring Routes only.

If the Feature is not a highway or does not use a milepoint system, this field will be blank.

CODING:
No coding required.

ITEM: Overlap Routes

PROCEDURE:
When two or more Routes are carried by the bridge, the Route Number of the highest priority Route is shown in the "Description or Route Number and Reference Marker" Item. The other Route Number(s) will be recorded in this Item. The data will be obtained from the Highway Database (HDMS).

If there are no overlaps, this Item will be left blank.

CODING:
No coding required.

ITEM: Maximum Vertical Clearance

PROCEDURE:
If the Feature Carried is a highway, record the maximum height of a 3 meter or 10 foot wide vehicle that can safely cross this bridge, using this Feature, in either direction, including the shoulders. This clearance is recorded to the nearest 10mm or 2 inches.
The vertical clearance is measured between the bottom of the lowest, permanent overhead obstruction and the point on the usable bridge deck, including shoulders, which is directly below it.

Occasionally, a component with no structural purpose, is provided to limit the height of the vehicles using the bridge. “Headache Bars” are an example of this. The restricted vertical clearance provided by these components should not be considered when recording this Item.

If the Maximum Vertical Clearance is greater than 5.48m, the clearance can be approximated to the nearest 0.1m.

If the clearance is unlimited, record this Item with 99.99 for Metric or English.

If the Feature Carried is not a highway, record this Item with “0”.

CODING:
Accepts the numbers 0 - 99.99 for Metric or English.

ITEM: State Highway Number
NYSDoT

PROCEDURE:
If the Feature is a State Highway, the official State Highway Number will be shown. This data will be obtained from the Highway Database (HDMS).

If the Feature Carried is not a State Highway, or not a highway at all, this Item will be blank.

CODING:
No coding required.

ITEM: Type of Highway
FHWA 5 B

PROCEDURE:
If the Feature Carried is an Interstate, US Route or State Touring Route, this data will be obtained from the Highway Database (HDMS). If the Feature Carried is not an Interstate, US Route or State Touring Route, record this Item with the code shown below which best describes the highway.

High speed facilities or parkways without a Signed Route Number in a city are to be recorded as “5 - City Streets.”

Other parkways without a Signed Route Number, and town and village roads are to be recorded as “8 - Other.”

The coding of this Item will relate directly to the Route Number of the Feature Carried by the bridge, when applicable.

If the Feature Carried is not a highway, record this Item with an "8 - Other."
RC12: Feature Carried

CODING:
1 - Interstate
2 - U.S. Numbered
3 - State
4 - County
5 - City Street
6 - Federal Lands
7 - State Lands
8 - Other

ITEM: Route Description
FHWA 5 C

PROCEDURE:
If the Feature Carried is a highway, record the code below which best describes it.

If the Feature Carried is not a highway, record this Item with "0".

CODING:
1 - Mainline
2 - Alternate
3 - Bypass
4 - Spur
5 - Not Used
6 - Business
7 - Ramp or Wye
8 - Service or Unclassified
0 - No Description Applies

ITEM: Federal Aid System
NYSDOT

PROCEDURE:
This Item is no longer used.

The Federal Aid System can be defined by the National Highway System and the functional classification of the roadway.

ITEM: Functional Classification
FHWA 26

PROCEDURE:
If the Feature Carried is not an Interstate, US Route or State Touring Route, use this Item to record its functional classification. If the Feature Carried is an Interstate, US Route or State Touring Route, this data will be provided by the Highway Database (HDMS). The Functional Classification is officially designated by the Highway Planning Division. It can generally be found in the Project Design Approval document.

CODING:
01 - Rural - Principal Arterial - Interstate
02 - Rural - Principal Arterial - Other
06 - Rural - Minor Arterial
07 - Rural - Major Collector
08 - Rural - Minor Collector
09 - Rural - Local (Including Unclassified)
11 - Urban - Principal Arterial - Interstate
12 - Urban - Principal Arterial - Other Freeways or Expressway
14 - Urban - Other Principal Arterial
16 - Urban - Minor Arterial
17 - Urban - Collector
19 - Urban - Local
00 - None - Not a Highway
ITEM: Toll
FHWA 20

PROCEDURE:
Record the code shown below which best describes the Feature Carried, with respect to Tolls.

Interstate Toll and Toll Bridge Segments Under Secretarial Agreement (Title 23 - United State Code - Highways Section 129, as amended by 1991 ISTEA and prior legislation) means that an agreement has been entered into between NYSDoT and FHWA wherein the State agrees to apply tolls to bridge or highway maintenance, etc. This agreement allows for federal aid to be applied to these facilities.

CODING:
1 - Toll Bridge  Tolls are paid specifically to use the bridge.
2 - Toll Road  Tolls paid are for use of both the highway and the bridge.
3 - Free Road or Non-Highway
4 - Interstate Toll Segment Under Secretarial Agreement  Roadway is part of an Interstate Toll Segment Under Secretarial Agreement
5 - Toll Bridge Is a Segment Under Secretarial Agreement  A separate agreement exists for the bridge in addition to the highway agreement.

ITEM: Total Number of Lanes on the Bridge
FHWA 28A

PROCEDURE:
Record the total number of full width traffic lanes (or railroad tracks) provided by the Feature Carried.

Full width traffic lanes are defined as those carrying through traffic and any ramps or merge lanes that are continuous for the entire length of the bridge. Parking lanes are not to be considered.

If the Feature is not a highway or a railroad, fill this item with “NN.”

If the Feature serves both highway and railroad traffic, record the number of highway lanes only.

CODING:
Accepts numeric characters: 00 - 99

ITEM: Lanes Vary
NYSDoT

PROCEDURE:
Record whether or not the total number of through traffic lanes (or railroad tracks), varies on the Feature Carried.

CODING:
1 - No Highway or Railroad on the Feature Carried
2 - Number of lanes or tracks do not vary
3 - Number of lanes or tracks does varies
ITEM: Minimum Lane Width
NYSDoT

PROCEDURE:
Record the width of the narrowest through traffic lane on the Feature Carried to the nearest 30mm or tenth of a foot. Do not include the width of any shoulders carried by the bridge.

"Special purpose" lanes, such as acceleration, deceleration, or other auxiliary lanes should not be included when determining the minimum lane width.

If the Feature Carried is not a highway, code this item with "0."

CODING:
Accepts numeric characters: 00.0 - 99.9

ITEM: Number of Lanes (Left and Right)
NYSDoT

PROCEDURE:
Record the total number of through lanes, in each direction of travel, for the Feature Carried.

Record the number of left lanes in the first two spaces provided and record the number of right lanes in the next two spaces.

Left and right are determined by looking in the Direction of Orientation method.

If the Feature Carried serves one-way traffic only, record zeros in the first two spaces and record the total number of lanes in the next two spaces.

If the Feature carries alternating one-way traffic, record this Item with "1/0."

If the Feature is not a highway, record this Item with "00/00."

CODING:
Accepts numeric characters: 00/00 - 99/99

ITEM: AADT
FHWA 29

PROCEDURE:
If the Feature Carried is not an Interstate, US Route or State Touring Route, record the current Average Annual Daily Traffic, right justified. If the Feature Carried is an Interstate, US Route or State Touring Route this data will be obtained from the Highway Database (HDMS). This information can be obtained from the current "Traffic Volume Report" published by the Highway Planning Division. It is also included in the Contract Plans.

When an actual count is not available, an estimate is required.

For bridges in parallel configuration and for those that carry one-way traffic only, the AADT should reflect one direction of travel only.
For closed bridges, the last AADT entry should be retained.

If the Feature is not a highway, record this Item with "0."

CODING:
Accepts numeric characters 0 - 999999

**Item: Year of AADT**

**PROCEDURE:**
If the Feature Carried is an Interstate, US Route or State Touring Route, this data will be obtained from the Highway Database (HDMS). If the Feature Carried is not an Interstate, US Route or State Touring Route, record the last two digits of the year when the count was taken.

If the AADT is estimated, record this Item with "EE."

If the Feature is not a highway, record this Item with "NN."

CODING:
Accepts the numbers 0 - 99, “EE” and “NN.”

**ITEM: Average Daily Truck Traffic**

**PROCEDURE:**
If the Feature Carried is not a Signed Route, record the Average Daily Truck Traffic as a percentage of the AADT. Do not include vans, pick-up trucks, and other light delivery trucks in this percentage.

If the Feature Carried is an Interstate, US Route or State Touring Route this data will be obtained from the Highway Database (HDMS).

If this information is not available, record this Item with an estimate of truck traffic for a highway in the same category as the Feature Carried.

If the "AADT" on the Feature Carried is less than 100, record this Item with "0."

CODING:
Accepts numeric characters: 00 - 99
ITEM: **Total Horizontal Clearance**
FHWA 47

**PROCEDURE:**
If the Feature Carried is a highway, record the Total Horizontal Clearance available to traffic to the nearest 30 mm or tenth of a foot.

Measure the clearance between the bridge components which provide the most restrictive horizontal clearance. These include curbs, non-mountable medians, railings and any other items which restrict horizontal clearance.

Do not consider flush or mountable curbs as restrictive features.

If the clearance is greater than 30 m or 99 feet, record this Item with 99.9

If the Feature Carried is not a highway, record this Item with "0."

**CODING:**
Accepts the numbers 0 - 99.9

ITEM: **Minimum Vertical Clearance**
FHWA 54

**PROCEDURE:**
If the Feature Carried is a highway, record the Minimum Vertical Clearance between the travel lanes (not including the shoulders) and the lowest overhead obstruction.

If the Feature Carried is a railroad, record the Minimum Vertical Clearance between the lowest overhead obstruction and the top of rail directly below it.

If the Minimum Vertical Clearance is greater than 7 m or 23 feet, it should be recorded to the nearest 300 mm or to the nearest foot, rounded down.

If the clearance is greater than 30 m or 100 feet, but is not unlimited, record this Item as 30.00 or 99/12.

If the clearance is unlimited, record this Item as 99.99 or 99/99.

If the Feature Carried is neither a highway or a railroad, record this Item as "0."

If the feature is neither a highway nor a railroad, record this item as "0/0."

**CODING:**
Accepts the numbers 00.00 - 99.99 - Metric and 0/0 - 99/99 - English.
ITEM: Bypass Detour Length
FHWA 19

PROCEDURE:
If the Feature Carried is a highway, record the total additional travel distance, to the nearest 1.6km or 1 mile, over a comparable route, if the bridge were closed.

If a ground level bypass is available at the bridge, record this Item with "00." Some examples of this are:
- Diamond Interchanges
- Interchanges where service roads are available
- Interchanges where the positioning and layout of the ramps is such that they could be used to get around the closed bridge without difficulty

A twin bridge may be used as a temporary bypass and, if so, this Item shall be recorded with "0".

If the Feature Carried is a dead-end highway, record this Item with "99."

If the Feature Carried is not a highway, record this Item with "00."

CODING:
Accepts the numbers 0 - 99

ITEM: STRAHNET Designation
FHWA 100

This Item was previously called the “Defense Highway Designation.”

PROCEDURE:
The STRAHNET (Strategic Highway Network) System is officially designated by the Highway Planning Division. If the Feature Carried is an Interstate, US Route or State Touring Route, this data will be obtained from the Highway Database (HDMS). For all other Features, record this Item with the code listed below, which best describes them.

CODING:
- N - The Feature is not a highway.
- 0 - The Feature is not a STRAHNET route.
- 1 - The Feature is on an Interstate STRAHNET route.
- 2 - The Feature is on a Non-Interstate STRAHNET route.
- 3 - The Feature is on a STRAHNET Connector route.
ITEM: Designated National Network (for Trucks)  
FHWA 110

PROCEDURE:
The "National Network for Trucks" is officially designated by the Traffic and Safety Division. This network includes most of the Interstate System and those portions of the Federal-Aid Primary System identified in the Code of Federal Regulations (23 CFR 658). If the Feature Carried is a Signed Route, this data will be obtained from the Highway Database (HDMS). For all other Features, record this Item with the code, listed below, which best describes the Feature being inventoried.

CODING:
- N - The Feature is not a highway.
- 0 - The Feature is not part of the "National Network for Trucks"
- 1 - The Feature is part of the "National Network For Trucks"

ITEM: National Highway System  
FHWA 104

PROCEDURE:
The "National Highway System" includes the Interstate Highway System as well as other highways which are important to the nation's economy, defense, and mobility. Guidelines for the development of the NHS were specified in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

This code will always be obtained from the Highway Database (HDMS).

CODING:
- 0 - Feature Carried is not on the NHS.
- 1 - Feature Carried is on the NHS.
# ITEMS INCLUDED IN FEATURE INTERSECTED (RC13)

<table>
<thead>
<tr>
<th>Feature Number (of Intersected Feature)</th>
<th>Over-Under-On Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature Code</td>
<td>Description Type</td>
</tr>
<tr>
<td>Description or Route Number and Reference Marker</td>
<td>Milepoint</td>
</tr>
<tr>
<td>Future Average Daily Traffic</td>
<td>Year of Future Average Daily Traffic</td>
</tr>
<tr>
<td>State Highway Number</td>
<td>Type of Highway</td>
</tr>
<tr>
<td>Route Description</td>
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</tr>
<tr>
<td>Functional Classification</td>
<td>Toll</td>
</tr>
<tr>
<td>Number of Lanes</td>
<td>Number of Lanes</td>
</tr>
<tr>
<td>Maximum Vertical Clearance</td>
<td>Maximum Vertical Clearance</td>
</tr>
<tr>
<td>Minimum Vertical Clearance Provided for Navigation (Movable Bridges Only)</td>
<td></td>
</tr>
<tr>
<td>Protection of Substructures from Navigation</td>
<td>AADT Year of AADT</td>
</tr>
<tr>
<td>Total Horizontal Clearance</td>
<td>Minimum Horizontal Clearance (Left)</td>
</tr>
<tr>
<td>Minimum Horizontal Clearance (Right)</td>
<td>Minimum Horizontal Clearance (Right)</td>
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<td>Minimum Vertical Clearance</td>
<td>Minimum Vertical Clearance</td>
</tr>
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<tr>
<td>Minimum Horizontal Clearance Available to Navigation</td>
<td></td>
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<tr>
<td>Stream Bed Material</td>
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<tr>
<td>Bypass Detour Length</td>
<td>Bypass Detour Length</td>
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<tr>
<td>STRAHNET Designation</td>
<td>STRAHNET Designation</td>
</tr>
<tr>
<td>Designated National Network (for Trucks)</td>
<td>Designated National Network (for Trucks)</td>
</tr>
</tbody>
</table>
ITEM: Feature Number (of Intersected Feature)

PROCEDURE:
Record the number of the Feature Intersected by the bridge. A bridge may intersect (pass over or under) more than one Feature. Each intersected Feature is identified by the numbers 2, 3, or 4. (Feature 1 is always the Feature Carried by the bridge.) Refer to RC12 for more information on Feature Number.

Every bridge must have at least one Feature Intersected.

CODING: (See RC12 Feature Number of more information on Feature Numbers)
2 - Feature Number 2
3 - Feature Number 3
4 - Feature Number 4

ITEM: Over-Under-On Code

PROCEDURE:
Record the appropriate code to indicate whether the Feature Intersected passes over or under the bridge.

CODING:
2 - Feature passes under the bridge
3 - Feature passes over the bridge.

ITEM: Feature Code

PROCEDURE:
Record the code shown below that best describes the Feature Intersected. This code should be consistent with the “Description or Route Number” Item in this Record Code.

If the bridge is closed, but not abandoned, record this Item with “60” or “61”, and record “99” for the Posted Load Item in Record Code 06 - Postings.

CODING:
01 - Description
09 - State Highway
10 - Expressway
11 - Interstate
12 - Parkway
13 - Authority
14 - County Road
15 - Town Road
16 - City Street
17 - Village Street
18 - Indian Reservation Road
19 - Military Reservation Road
20 - Access Road or Ramp
21 - Institution Road
22 - Park Road
23 - Board of Water Supply Road
24 - Private Road
30 - Navigable Waterway (Non-Canal)
31 - Non-Navigable Waterway
40 - NYS Barge Canal
50 - Railroad
60 - Feature Closed to All Use
61 - Feature Closed to Prime Use
80 - Conveyer
90 - Pedestrian Facility-Bikeway
99 - Other and Miscellaneous
ITEM: Description Type
NYSDoT

PROCEDURE:
If the Feature is an Interstate, US Route or State Touring Route leave this Item blank. A route number and a reference marker will be supplied in the system fields via a link with the Highway Database (HDMS). If this Feature is not an Interstate, US Route or State Touring Route or is a private road or ramp, record a “D” in this field and provide a description in the next Item, “Description or Route Number and Reference Marker.”

CODING:
D - Feature is not an Interstate, US Route or State Touring Route
Blank - Feature is an Interstate, US Route or State Touring Route

ITEM: Description or Route Number and Reference Marker
NYSDoT

PROCEDURE:
If the Feature is on an Interstate, US Route or State Touring Route, leave this Item blank. The data will be supplied by the Highway Database (HDMS).

A partial list of State Touring Route numbers and their common names are identified in Appendix ?. This is supplied as a reference to help identify touring route names when viewing data.

If the Feature is a Signed Route and also has a street or road name, record its street or road name in the “Secondary Description” Item.

If the Feature carried is not a Signed Route, record the most commonly used description of the Feature, using up to 17 characters, left justified, and record the “Description Type” Item with the letter “D”.

If the Feature is a local road, use the following standard abbreviations:

- County Road: CR
- County Route: CR
- Town Highway: TH
- Road: RD
- Street: ST
- Avenue: AVE
- Boulevard: BLVD
- Drive: DR
- Parkway: PKWY
- Expressway: EXPWY
- Service Road: SRD
- North: N
- South: S
- East: E
- West: W
- Northbound: NB
- Southbound: SB
- Eastbound: EB
- Westbound: WB

If the Feature Carried is a “highway ramp” which provides access from one roadway to another, record it’s description here. Record the Description as “RAMP” plus the Route Number or brief description of the Route from which traffic is coming and to which it is going. For example, “RAMP 90I EB to Main ST.”

If the Feature Carried is a Service Road, enter “SRD” plus the name of the main road; eg, SRD, LIE.

If the Feature is a non-highway, the following naming conventions should be used:
**RC13: Feature Intersected**

**Railroad**
Enter the name of the railroad followed by “RR”; eg, CSX RR

**Water Main**
Enter “WTR MAIN” plus diameter of main and the name of the Utility Company, if known; eg, “WTR MAIN 36” Latham Water District

**Power Line**
Enter “PWR LINE”, plus voltage if known, and the name of the Utility Company, if known; eg, “PWR LINE 990V” NYSE&G

**Pedestrian Path**
Enter “PED PATH” plus any name associated with the path, if known; eg, “PED PATH” AP Trail. Use this term instead of similar terms like “Foot Bridge,” etc.

**Aqueduct**
Enter “AQUEDUCT” and name of Utility company, if known.

**Bike Path**
Enter “BIKE PATH” and name, if known.

**Conveyor**
Enter “CONVEYOR” and name of owner, if known.

**Pipeline**
Enter “PIPELINE”, it’s diameter, and owner, if known.

**Horse Path**
Enter “HORSE PATH” plus name, if known.

**CODING:**
Accepts alpha-numeric characters.

**ITEM: Milepoint**

**FHWA 11**

**PROCEDURE:**
The Milepoint, at the beginning of the bridge, will be obtained from the Highway Database (HDMS). The beginning of the bridge will be determined using the “Direction of Orientation Method.”

In general, Milepoints will be supplied for Interstates, US Routes and State Touring Routes only.

If the Feature is not a highway or does not use a milepoint system, this field will be blank.

**CODING:**
No coding required.

**ITEM: Future AADT**

**FHWA 114**

**PROCEDURE:**
If the Feature is a highway, this Item will be determined and supplied from the Highway Database (HDMS). It should be based on a projection of at least 17 years, but not more than 22 years, from the submission of the original AADT data. The intent is to provide a basis for a 20-year forecast.

For bridges in parallel configuration or bridges that carry only one-way traffic, the Future AADT will reflect that one direction of travel only.

For closed bridges, the last Future AADT will be retained.

**CODING:**
No coding required.
ITEM: **Year of Future AADT**  
NYSDoT

**PROCEDURE:**  
Record the last two digits of the year for which the Future Annual Average Daily Traffic was projected. The year of the projected Future AADT shall be at least 17 years, but no more than 22 years, from the year that the data was submitted.

If the Feature is not a highway, code this item with "NN."

**CODING:**  
Accepts numeric characters 00 - 99 and "NN - representing year 2000."

ITEM: **State Highway Number**  
NYSDoT

**PROCEDURE:**  
If the Feature is a State Highway, the official State Highway Number will be shown. This data will be obtained from the Highway Database (HDMS).

If the Feature Carried is not a State Highway, or not a highway at all, this Item will be blank.

**CODING:**  
No coding required.

ITEM: **Type of Highway**  
FHWA 5B

**PROCEDURE:**  
If the Feature Intersected is an Interstate, US Route or State Touring Route this data will be obtained from the Highway Database (HDMS). If the Feature Intersected is not an Interstate, US Route or State Touring Route record this Item with the code shown below which best describes the highway.

High speed facilities or parkways without a Signed Route Number in a city are to be recorded as "5 - City Streets."

Other parkways without a Signed Route Number, and town and village roads are to be recorded as "8 - Other."

The coding of this Item will relate directly to the Route Number of the Feature Intersected by the bridge, when applicable.

If the Feature Intersected is not a highway, record this Item with an "8 - Other."

**CODING:**

1 - Interstate Highway  
2 - U.S. Numbered Highway  
3 - State Highway  
4 - County Highway  
5 - City Street  
6 - Federal Lands Road  
7 - State Lands Road  
8 - Other
RC13: Feature Intersected

ITEM: Route Description
FHWA 5 C

PROCEDURE:
If the Feature Intersected is a highway, record the code below which best describes it.

If the Feature Intersected is not a highway, record this Item with "0".

CODING:
1 - Mainline
2 - Alternate
3 - Bypass
4 - Spur
5 - Not Used
6 - Business Access

ITEM: Federal Aid System
NYSDoT

PROCEDURE:
This Item is no longer used.

The Federal Aid System can be defined by the National Highway System and the functional classification of the roadway.

ITEM: Functional Classification
FHWA 26

PROCEDURE:
If the Feature Intersected is not an Interstate, US Route or State Touring Route use this Item to record its functional classification. If the Feature Intersected is an Interstate, US Route or State Touring Route this data will be provided by the Highway Database (HDMS). The Functional Classification is officially designated by the Highway Planning Division. It can generally be found in the Project Design Approval document.

CODING:
01 - Rural - Principal Arterial - Interstate
02 - Rural - Principal Arterial - Other
06 - Rural - Minor Arterial
07 - Rural - Major Collector
08 - Rural - Minor Collector
09 - Rural - Local (Including Unclassified)
11 - Urban - Principal Arterial - Interstate
12 - Urban - Principal Arterial - Other Freeways/Expressways
14 - Urban - Other Principal Arterial
16 - Urban - Minor Arterial
17 - Urban - Collector
19 - Urban - Local
00 - None - Not a Highway

ITEM: Toll
FHWA 20

PROCEDURE:
Record the code shown below which best describes the Feature Intersected, with respect to Tolls.

Interstate Toll and Toll Bridge Segments Under Secretarial Agreement (Title 23 - United State Code - Highways Section 129, as amended by 1991 ISTEA and prior legislation) means that an agreement has...
RC13: Feature Intersected

been entered into between NYSDoT and FHWA wherein the State agrees to apply tolls to bridge or highway maintenance, etc. This agreement allows for federal aid to be applied to these facilities.

CODING:

1 - Toll Bridge
   Tolls are paid specifically to use the bridge

2 - Toll Road
   Tolls paid are for use of both the highway and the bridge

3 - Free Road or Non-Highway

4 - Interstate Toll Segment Under Secretarial Agreement
   Roadway is part of an Interstate Toll Segment Under Secretarial Agreement

5 - Toll Bridge Is a Segment Under Secretarial Agreement highway agreement
   A separate agreement exists for the bridge in addition to the highway agreement

ITEM: Number of Lanes
FHWA 28 B

PROCEDURE:
If the Feature Intersected is a highway or a railroad, record the total number of full width lanes or railroad tracks which are intersected. This includes full width parking lanes or other pavement which is at least 3.7m or 12 feet wide.

If multiple features are intersected, record the number of lanes, or tracks, associated with each. For example, if a highway and a railroad are intersected, record the number of lanes with the Highway Feature and the Number of Tracks with the Railroad Feature.

CODING:
Accepts the numbers 0 - 99

ITEM: Maximum Vertical Underclearance
FHWA 10

PROCEDURE:
If the Feature Intersected is a highway, record the maximum height, to the nearest 300mm or one foot, of a 3m or ten feet wide vehicle that can safely pass under the bridge using the Feature Intersected, including its shoulders.

The maximum height of vehicle (3m or 10 feet wide) which can safely pass under the bridge is measured between the bottom of the lowest, permanent overhead obstruction to the point directly below it on the Feature Intersected.

Occasionally, a component with no structural purpose is provided to limit the height of vehicles using the bridge. The restricted vertical clearance provided by these components should not be considered when recording this Item.

If the Maximum Vertical Under Clearance is greater than 5.5m or 18 feet, the clearance can be approximated to the nearest 300mm.

If the clearance is unlimited, record this Item with "99/99".

If the Feature Intersected is not a highway, record this Item with "0/0".
RC13:  Feature Intersected

CODING:
Accepts the numbers 00-99 and "N".

ITEM: Minimum Vertical Clearance Provided for Navigation
____ (Movable Bridges Only)
FHWA 116

PROCEDURE:
If the bridge is a movable bridge and the feature intersected is a navigable waterway, record the Minimum Vertical Clearance provided to navigation by the bridge while in the closed or dropped position, rounded down to the nearest 300mm or one foot.

The Minimum Vertical Clearance is measured between the lowest point on the bridge which is above the channel and the datum elevation specified on a navigation permit issued by a Control Agency.

If the bridge is not a movable bridge, leave this Item blank.

CODING:
Accepts the numbers 0 - 99.9 and blank.

ITEM: Protection of Substructures from Navigation

PROCEDURE:
If the Feature Intersected is a navigable waterway controlled by an Agency, record whether the pier or abutment protection is adequate.

CODING:
N - Feature being inventoried is not a navigable waterway
1 - Navigation protection is not required
2 - Navigation protection is in place and it is functioning
3 - Navigation protection is in place, but it is in a deteriorated condition
4 - Navigation protection is in place, but it should be reevaluated
5 - Navigation protection is not in place and this situation should be reevaluated

ITEM: AADT
FHWA 29

PROCEDURE:
If the Feature Intersected is not an Interstate, US Route or State Touring Route record the current Average Annual Daily Traffic, right justified. If the Feature Intersected is an Interstate, US Route or State Touring Route this data will be obtained from the Highway Database (HDMS). This information can be obtained from the current “Traffic Volume Report” published by the Highway Planning Division. It is also included in the Contract Plans.

When an actual count is not available, an estimate is required.

For bridges in parallel configuration and for those that carry one-way traffic only, the AADT should reflect one direction of travel only.

For closed bridges, the last AADT entry should be retained.
RC13: Feature Intersected

If the Feature is not a highway, record this Item with "0."

CODING:
Accepts numeric characters 0 - 999999

Item: Year of AADT
FHWA 30

PROCEDURE:
If the Feature Intersected is not an Interstate, US Route or State Touring Route record the last two digits of the year when the count was taken. If the Feature Intersected is an Interstate, US Route or State Touring Route, this data will be obtained from the Highway Database (HDMS).

If the AADT is estimated, record this Item with "EE."

If the Feature is not a highway, record this Item with "NN."

CODING:
Accepts the numbers 0 - 99, “EE” and “NN.”

ITEM: Total Horizontal Clearance
FHWA 47

PROCEDURE:
If the Feature Intersected is a highway, record the Total Horizontal Clearance available for traffic on the Feature Intersected to the nearest 30mm or tenth of a foot.

The Total Horizontal Clearance is the clearance between the bridge components which provide the most restrictive horizontal clearance. These include curbs, non-mountable medians, railings and any other components which restrict horizontal clearance.

Do not consider flush or mountable medians as restrictive features.

If the clearance is greater than 30m or 100 feet, record this Item with “99.9”.

If the Feature Intersected is not a highway, record this Item with “0”.

CODING:
Accepts the number 0 - 99.9

ITEM: Minimum Horizontal Clearance (Left)
FHWA 56

PROCEDURE:
If the Feature Intersected is a one-way highway (eg, divided highway, ramp, other one-way highway), record the Minimum Horizontal Clearance, on the left side of the highway, to the nearest 30mm or tenth of a foot.

Horizontal Clearance is measured from the edge of the travel lane (not including the shoulder) to the nearest obstruction which is at least 300mm higher than the ground adjacent to it, or to the nearest toe of slope steeper than one on three.
**RC13: Feature Intersected**

If the Feature Intersected is a divided highway, record the smaller Minimum Horizontal Clearance in either direction of travel. If there is no obstruction in the median area, record this Item with “99.9”.

If the clearance is greater than 30 meters or 100 feet, record this Item with “99.8”.

If the Feature Intersected is not a divided highway, a ramp or other one-way highway, record this Item with “0”.

**CODING:**
Accepts the numbers 0 - 99.9

**ITEM: Minimum Horizontal Clearance (Right)**

**PROCEDURE:**
If the Feature Intersected is a highway or a railroad, record the Minimum Horizontal Clearance on the highway or railroad to the nearest 300mm or tenth of a foot. Right and left are determined while facing in the Direction of Orientation.

For highways, the Minimum Horizontal Clearance is measured from the edge of the travel lane (not the edge of the shoulder) to the nearest obstruction which is at least 300mm or one foot higher than the ground adjacent to it, or to the toe of any slope which is steeper than one on three. Measure this distance in both directions of travel and record the smaller of the two.

For railroads, the Minimum Horizontal Clearance is measured from the centerline of the tracks which are farthest to the right.

If the Feature Intersected is not a highway or a railroad, record this Item with “99.9”.

**CODING:**
Accepts the numbers 0 - 99.9

**ITEM: Minimum Vertical Clearance**

**PROCEDURE:**
If the Feature Intersected is a highway, record to the nearest 300mm or one foot, the Minimum Vertical Clearance available between the travel way (not including the shoulders) and the lowest, permanent overhead obstruction (rounded down).

If the Feature Intersected is a railroad, record to the nearest 300mm or one foot, the Minimum Vertical Clearance available between the top for rail and the lowest, permanent overhead obstruction (rounded down).

If the Minimum Vertical Clearance is greater than 7 meters or 23 feet, record this Item to the nearest 300mm or one foot.

If the Minimum Vertical Clearance is greater than 30 meters or 100 feet, but it is not unlimited, record this Item as “99/12”.

If the clearance is unlimited, record this Item as “99/99”.

If the Feature is neither a highway or a railroad, record this Item with “0/0”.
ITEM: **Navigation Control**

**PROCEDURE:**
Record whether navigation at the bridge is controlled by an agency. (A bridge permit is required for Construction.)

**CODING:**
- 1 - Navigation is controlled by an Agency
- 0 - Navigation is not controlled by an Agency
- N - Bridge is not over water

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ITEM: **Maximum Vertical Clearance to Navigation**

**PROCEDURE:**
If the Feature Intersected is a navigable waterway, record the Maximum Vertical Clearance that the bridge provides to navigation, rounded down to the nearest 300mm or one foot.

Vertical Clearance is measured between the surface elevation of the “Maximum Navigable Pool” and the lowest fixed point on the portion of the superstructure which is above the channel.

Navigation lights, which can be temporarily removed, shall be ignored when determining Vertical Clearance.

Record the actual clearance obtained by direct measurement, from the Contract Plans, or from Navigation Permits.

Minimum Vertical Clearance provided by movable bridges should be determined when the bridge is in the **open position**. If the clearance is unlimited (bascule or swing types), record 99.9m or 999 feet.

If the Feature Intersected is not a navigable waterway, or if the bridge is not over water, record this Item with "0".

**CODING:**
Accepts the numbers 0 - 99.9 - Metric
999 - English

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ITEM: **Minimum Horizontal Clearance Available to Navigation**

**PROCEDURE:**
If the Feature Intersected is a navigable waterway, record the Minimum Horizontal Clearance that the bridge provides to navigation, rounded down to the nearest 300mm or one foot.

This Minimum Horizontal Clearance should be the same as the clearance shown on a Navigation Permit. It may be less than the structure actually allows.
RC13: Feature Intersected

If the Feature is not a navigable waterway or if the bridge is not over water, record this Item with “0”.

CODING:
Accepts the numbers 0 - 999.9 - Metric
0 - 9999 - English

ITEM: Stream Bed Material

PROCEDURE:
If the Feature Intersected is a waterway, record the type of stream bed material in the area of the bridge.

If the Feature Intersected is not a waterway, record this Item as “1 - No Waterway.”

CODING:
1 - No Waterway  5 - Sand    * - Unknown
2 - Bed Rock       6 - Silt
3 - Large Stone    7 - Clay
4 - Gravel         0 - Other

ITEM: Bank Protection

PROCEDURE:
If the Feature is a waterway, record the type of bank protection used along the waterway in the vicinity of the bridge.

If the Feature is not a waterway, code as “01 - No Bank Protection.”

CODING:
01 - No Bank Protection 08 - Cribbing, Steel
02 - Rip-Rap, Dry       09 - Steel Sheeting
03 - Rip-Rap, Grouted   10 - Sod
04 - Block              11 - Gabions
05 - Timber             12 - Stone Filling
06 - Granular Fill      13 - Concrete
07 - Cribbing, Concrete 00 - Other
                     ** - Unknown

ITEM: Velocity of Current

PROCEDURE:
If the Feature is a waterway, record the velocity of the stream current in feet per second, based on the data shown on the Contract Plans for capital projects.

If the Feature is not a waterway, enter “0.”

CODING:
1 to 99 - Velocity of the current in feet per second
ITEM: Factors Affecting Stream Flow (F.A.S.F.)

PROCEDURE:
If the Feature is a waterway, record any of the features below which affect the stream flow.

If there are no features affecting the flow, or if the Feature is not a waterway, code "1 - Not applicable."

CODING:
1 - Not Applicable
2 - Dam Upstream
3 - Spur Dyke
4 - Energy Dissipater
5 - Dam Upstream and Spur Dyke
6 - Dam Upstream and Energy Dissipater
7 - Dam Upstream, Spur Dike, and Energy Dissipater
8 - Other
* - Unknown

ITEM: Bypass Detour Length

PROCEDURE:
This item is no longer used.

CODING:
No coding required.

ITEM: STRAHNET Designation

PROCEDURE:
The STRAHNET (Strategic Highway Network) System is officially designated by the Highway Planning Division. If the Feature Carried is an Interstate, US Route or State Touring Route this data will be obtained from the Highway Database (HDMS). For all other Features, record this Item with the code listed below, which best describes them.

CODING:
N - The Feature is not a highway.
0 - The Feature is not a STRAHNET route.
1 - The Feature is on an Interstate STRAHNET route.
2 - The Feature is on a Non-Interstate STRAHNET route.
3 - The Feature is on a STRAHNET Connector route.
ITEM: Designated National Network (for Trucks)

PROCEDURE:
The "National Network for Trucks" is officially designated by the Traffic and Safety Division. This network includes most of the Interstate System and those portions of the Federal-Aid Primary System identified in the Code of Federal Regulations (23 CFR 658). If the Feature Carried is an Interstate, US Route or State Touring Route this data will be obtained from the Highway Database (HDMS). For all other Features, record this item with the code, listed below, which best describes the Feature being inventoried.

CODING:
N - The Feature Intersected is not a highway
0 - The Feature Intersected is not part of the "National Network for Trucks"
1 - The Feature Intersected is part of the "National Network for Trucks"
ITEMS INCLUDED IN SPAN (RC15)

Span Number
Material Type
Protective Coating Type
Composite Action
Simple, Continuous, Suspended, Curved
Superstructure Type (Span Design Type)
Structural Details
Fracture Critical
Fatigue Resistant
Out-of-Plane Bending
Load Path Redundancy
Internal Redundancy
Structural Redundancy
Span Length
Pier Type
Pier Height
Pier Footing
Pier Piles
Pier Skew Angle
Pier Joint Type
Deck Drainage
Type of Railing (Left & Right)
Bearing Fixed/Expansion (Beginning & End)
Bearing Type (Beginning & End)
Structural Deck Type
Stay-In-Place Forms
Original Wearing Surface
Original Wearing Surface Still In-Place
Present Wearing Surface
Surface Sealant
Ballast
Median Width
RECORD CODE 15: SPAN

Data is recorded for each span of the bridge. A span is defined as that portion of a bridge which is included between adjacent supports.

Spans are numbered sequentially from the Beginning Abutment. Span numbers are determined using the Direction of Orientation method described in Record Code 1.

The first span is always supported by the Beginning Abutment at one end and by a pier, by another span or by the End Abutment at the other end.

For a span supported by a cantilever span, the second support is the adjacent span or a substructure element.

Suspended spans are always supported by adjacent spans.

ITEM: Span Number

NYSDoT

PROCEDURE:
Record the span number of the span being inventoried.

The span number should be right justified.

CODING:
Accepts numeric characters: 1 - 999
ITEM: Material Type
NYSDoT

PROCEDURE:
Record the type of material used to fabricate the primary members of the span being inventoried.

CODING:
1 - Steel

2 - Weathering Steel  Use this designation even if the weathering steel is painted.

3 - Special Steel  This type of steel has a special chemical composition and includes any steel other than A7, A36, A441, A572 or A588.

4 - Hybrid Steel Section  This is used to describe a section which is composed of more than one type of steel (e.g., the web is composed of one type of steel and the flanges are composed of another type).

5 - Corrugated Steel

6 - Wrought Iron or Cast Iron

7 - Aluminum

8 - Timber

9 - Masonry

A - Concrete, Unreinforced

B - Concrete, Reinforced

C - Concrete, Unknown  Use this to indicate a concrete structure whose reinforcement cannot be determined.

D - Prestressed Concrete, Post-Tensioned

E - Prestressed Concrete, Pre-tensioned

F - Prestressed Concrete, Unknown  Use this to record that the structure is known to be prestressed, but the method of prestressing (pre-tensioning or post-tensioning) is unknown.

X - Other  Use this to record that the Material Type of the span being inventoried is not one of those listed above.
ITEM: Protective Coating Type
NYSDoT

PROCEDURE:
Record the type of Protective Coating which has been applied to the span being inventoried.

CODING:
1 - Painted, Lead-Based Use this to record that the Superstructure has a non-lead-based paint applied over a lead-based paint.

2 - Painted, Not Lead-Based Use this to indicate that the superstructure has been painted with a non-lead based paint.

3 - Painted, Unknown Use this to record that the Superstructure is painted, but it is not known if lead is present in the paint.

4 - Unpainted (No Coating) Use this to record that the superstructure is not painted and has no other coating (e.g., weathering steel).

5 - Galvanized or Metalized Use this to record that a zinc-based coating has been chemically bonded to the primary members or that a zinc-based coating has been mechanically bonded to the primary members.

6 - Bituminous Based Coating

7 - Concrete Coated Use this to record that a concrete coating has been sprayed on the primary members, or to record that the primary members have been encased in concrete.

8 - Coating Containing Asbestos Use this to record that the coating contains asbestos, even if it fits another description.

9 - Other Coating Use this to record that the coating does not fall in any of the above categories.

A - Localized Painting, Lead-Based Use this to record that the superstructure has been painted, in specific areas only (e.g., under joints, in splash zones, etc.).

B - Localized Painting, Not Lead-Based Use this to record that the superstructure has been painted in specific areas only (e.g., under joints, in splash zones, etc.)

Note: A prohibition against lead-based paint went into effect on January 12, 1989. State contracts which were let prior to that date may or may not contain lead-based paint. Therefore, each bridge that was let prior to this date should be investigated individually.

Non-state contracts are not bound by state specifications. Therefore, non-state bridges should be investigated individually for lead-based paint, regardless of their letting date.
ITEM: Composite Action
NYSDoT

PROCEDURE:
Record whether or not the span being inventoried was designed for Composite Action.

CODING:
1 - Non-composite  Use this to record that there is no designed Composite Action. A jack arch should be considered to be non-composite unless the presence of shear connectors can be proven. Prestressed bridges with concrete surfaces epoxied in place shall also be considered to be non-composite.

2 - Composite

U - Unknown  Use this to record that the existence of Composite Action cannot be determined.

N - Not Applicable  Use this to record that the primary members and the deck are not separate, discernable, structural elements; e.g., tunnel, concrete arch, culvert, etc.)

ITEM: Simple, Continuous, Suspended, Curved
NYSDoT

PROCEDURE:
Record whether the span being inventoried is simply supported, one of a series of continuous spans, part of a suspended span configuration or is curved in the horizontal plane.

CODING:
1 - Simple Span

2 - Simple Span - Curved Stringer

3 - Simple Span - Continuous for Live Load  Use this to record that the structure was originally designed for this condition. This category also includes prestressed bridges that have been designed as simple for dead load and continuous for live load.

4 - Simple Span - Retrofitted for Live Load Continuity  Use this to record that the structure was originally designed with simple spans, but has since been retrofitted for live load continuity.

5 - Continuous Span

6 - Continuous Span - Curved Stringer

7 - Cantilever Span - for Seated Span  Use this to record that the cantilever span is supporting a suspended span.
8 - Anchor Span - for Cantilever Span
Use this to record the type of span anchors a cantilever span.

9 - Cantilever Span - for Fixed, Pinned or Hinged Span
Use this to record that the cantilever span is supporting a suspended span by a fixed hanger, a pin and hanger, a pin or a hinge.

A - Suspended Span - Fixed Hanger
Use this to record that at least one end of the suspended span is supported by a fixed hanger.

B - Suspended Span - Expansion Hanger
Use this to record that one end of a suspended span is supported by an expansion pin and hanger and the other end is supported by anything but a fixed hanger.

E - Suspended Span - Other Than Hangers than Hangers or Seated
Use this to record that the span does not fit into any of the other suspended span categories.

F - Suspended Span - Seated
Use this to record that both ends of a suspended span are supported bearing devices not mentioned above.

Use one of the following appropriate "suspended span (retrofitted)" codes to record that the original suspension system on a suspended span has been retrofitted (e.g., thrust blocks, slings, etc.)

G - Suspended Span - Fixed Hanger (Retrofitted)

H - Suspended Span - Expansion Hanger (Retrofitted)

I - Suspended Span - Other than Hangers or Seated (Retrofitted)

J - Suspended Span - Seated (Retrofitted)

K - Hinged Span
Use this to record that the span is hinged, by a pin, at either end.

X - Other
Use this to record that the type of continuity or curvature is unknown and is not covered by any of the choices given above.

N - Not Applicable
Use this to record that continuity and/or curvature do not apply to the structure being inventoried (e.g., single or multiple box culvert, single or multiple tunnel, etc.)

ITEM: Superstructure Span Design Type
NYSDoT

PROCEDURE:
Record the Superstructure Type (Span Design Type) for the span being inventoried. The following is a list of various Superstructure Types. Each type is described on the following pages.

01 - Slab
02 - Slab, Voided
03 - Box, Adjacent
04 - Box, Spread
05 - Tee Beam
06 - I-Beam (P/S)
07 - Box, Channel (P/S)
08 - Segmental Box
09 - Rolled Beam, Multi-Girder
10 - Rolled Beam - Deck with Floorbeam System
11 - Rolled Beam - Thru with Floorbeam System
12 - Rolled Beam - Jack Arch
13 - Plate Girder - Multi-Girder
14 - Plate Girder - Deck with Floorbeam System
15 - Plate Girder - Thru with Floorbeam System
16 - Plate Girder - Jack Arch
17 - Truss, Deck
18 - Truss, Thru - (Overhead Bracing)
19 - Truss, Thru - (No Overhead Bracing)
20 - Truss, Combination - (Thru and Deck)
21 - Truss, "Kit Bridge"
22 - Thru Arch
23 - Thru Arch - Tied
24 - Deck Arch - Open Spandrel
25 - Deck Arch - Closed Spandrel
26 - Metal Pipe Arch - (Pipe)
27 - Frame
28 - Frame with Floorbeam System
29 - Movable, Bascule
30 - Movable, Lift
31 - Movable, Swing
32 - Orthotropic
33 - Preflex - Plate Girder
34 - Preflex - Rolled Beam
35 - Inverset - Plate Girder
36 - Inverset - Rolled Beam
37 - Suspension
38 - Single Box
39 - Tunnel
40 - Single Box Culvert
41 - Multiple Pipe Culvert (FHWA)
42 - Single/Multiple Pipe Culvert (FHWA/NYS)
43 - Multiple Box Culvert
44 - Timber Beam
XX - Other
UU - Unknown
ITEM: Structural Details
NYSDoT
Type 01 - Slab, Solid

Description: Solid reinforced concrete structural slab, rarely greater than 18" in depth, usually with the slab functioning as the structural deck/wearing surface. Requires Plans to differentiate from 02 Slab, Voided and 03 Box, Adjacent.

Type 02 - Slab, Voided (P/S)

Description: Adjacent, prestressed, reinforced concrete structural slab, with 2 or 3 circular voids, rarely greater than 18" in depth usually with a cast-in-place structural deck/wearing surface. Requires Plans to differentiate from 01 Slab Solid and 03 Box, Adjacent.

Type 03 - Box, Adjacent (P/S)

Description: Adjacent, precast concrete or steel, box shaped, voided, sections, up to 42" deep, usually with a cast-in-place structural deck. Plans are required to differentiate from 01 Slab Solid and 02 Slab, Voided.

Type 04 - Box, Spread (P/S)

Description: Spaced, precast concrete or steel, box shaped voided, sections, up to 42" deep, usually with a cast-in-place structural deck. Similar to 03 Box, Adjacent, but boxes are separated.
Type 05 - Tee Beam

Description: Adjacent or spaced, cast-in-place or precast concrete Tee shaped units with a cast-in-place structural deck. Some designs use multiple Tee shapes precast in one unit, such as the Quad Tee.

Cross Section: 05 - TeeBeam, Cast-in-Place Tee Beam

Cross Section: 05 - TeeBeams, Quad Tee

Cross Section: 05 - Tee Beam, Cast-in-Place Tee Beam

Type 06 - I-Beam (P/S)

Description: Spaced, prestressed concrete beams cast in the shape of an "I" with a cast-in-place structural deck/wearing surface.

Cross Section: 06 - I-Beam (P/S)

Type 07 - Box, Channel (P/S)

Description: Adjacent, prestressed concrete beams cast in the shape of an inverted "U" with a cast-in-place structural deck/wearing surface.

Cross Section: 07 - Box, Channel (P/S)
Type 08 - Segmental Box

Description: Precast, adjacent concrete sections placed longitudinally along the span and post tensioned with a cast-in-place structural deck/wearing surface is placed on the boxes.

Cross Section: 08 - Segmental Box

Type 09 - Rolled Beam, Multi-Girder

Description: Rolled steel "I" beams with a cast-in-place structural deck/wearing surface.

Cross Section: 09 - Rolled Beam, Multi-Girder

Type 10 - Rolled Beam - Floorbeam System, Deck

Description: Rare. Rolled steel "I" beams supported by a floor beam system and a cast-in-place structural deck/wearing surface poured on top of the floorbeam system.

Cross Section: 10 - Rolled Beam - Floorbeam System, Deck - Showing Floor Beams

Type 11 - Rolled Beam - Floorbeam System, Thru

Description: Very Rare. Rolled steel, "I" beams placed on either side of the roadway with a floor beam system above the bottom flange and a cast-in-place structural deck/wearing surface on top of the floorbeam system.

Type 12 - Rolled Beam - Jack Arch

Description: Rolled steel "I" beams with arched stay-in-place forms, supporting either a cast-in-place concrete or earth fill with a cast-in-place structural deck/wearing surface. The cross section is identical to Type 16 - Plate Girder - Jack Arch with rolled beams instead of plate girders.
Type 13 - Plate Girder - Multi-Girder

Description: The structural deck is supported by multiple, spaced, plate girders.

Type 14 - Plate Girder - Deck with Floorbeam System

Description: The structural deck of a Plate Girder - Floorbeam System is supported near the girder's top flange by floorbeams which span between the girders.

The Cross Section is similar to Type 10 - Rolled Beam - Floorbeam System using Plate Girders instead of Rolled Beams.

Type 15 - Plate Girder - Thru with Floorbeam System

Description: Two fabricated girders placed along the sides of the highway with a floor beam system placed above the bottom flange and a cast-in-place structural deck/wearing surface on top of the floorbeam system.

Type 16 - Plate Girder - Jack Arch

Description: The superstructure of a Plate Girder - Jack Arch consists of Plate Girder stringers with arched Stay-in-Place forms which support a cast-in-place concrete deck which is poured over earth or concrete backfill.
**Type 17 - Deck Truss**

Description: Trusses support a floorbeam system placed at the top chord with a structural deck supported by the floorbeam system.

**Type 18 - Thru Truss - (Overhead Bracing)**

Description: Trusses support a floorbeam system at the bottom chords and a structural deck is supported by the floorbeam system. Overhead bracing provided lateral support.
Type 19 - Pony Truss - (No Overhead Bracing)

Description: Trusses support a floorbeam system at the bottom chord and a structural deck is supported by the floorbeam system. No overhead bracing is used.

Type 20 - Truss, Combination - (Thru and Deck)

Description: Trusses support a floorbeam system placed above the bottom chord and a structural deck supported by the floorbeam system. Overhead bracing supports the trusses laterally.

This type is composed of continuous trusses. The approach roadways are supported by deck trusses which transition to a thru truss which supports the Main Span.

Type 21 - Truss, "Kit Bridge"

Description: Prefabricated bridges which are assembled at the site. Various types are available. Usually used for shorter spans by local Bridge Agencies or as temporary bridges.
Type 22 - Thru Arch

Description: A Thru Arch has an elliptical shape. The structural deck is supported by hangers which transfer loads from the deck to the arch.

Type 23 - Thru Arch - Tied

Description: A Tied Arch is similar to a Thru Arch except that the horizontal forces are resisted by a tensile member which ties the ends of the arch together.

Type 24 - Deck Arch - Open Spandrel

Description: A Deck Arch has an elliptical shaped superstructure. Its structural deck is supported by spandrel columns which transfer load from deck to arch.

Type 25 - Deck Arch - Closed Spandrel

Description: A Closed Spandrel Arch is a Deck Arch. Its roadway is supported by fill which is retained between the deck and the arch by the spandrel walls.
Type 26 - Metal Plate Arch (Pipe)

Description: This is a structure whose superstructure is composed of curved steel plates supported on concrete substructures. Their surface is either smooth or corrugated. The plates are joined by riveting, bolting or welding. The roadway is supported by earth fill which is placed between the arch and the roadway. The fill is contained by full height sidewalls or it is placed on a stable slope.

Type 27 - Frame

Description: This is a steel or concrete rigid frame whose “legs” act as piers to provide intermediate support. The entire frame, including its “legs” is considered to be the superstructure. The “legs” are supported by bearings which are placed on concrete footings.

Type 28 - Frame with Floorbeam System

Description: This type is generally the same as Superstructure Type 27, except that the structural deck is carried by floorbeams which are supported by the rigid frame.

Type 29 - Movable, Bascule

Description: This is a span which can be raised at one end to provide a temporary increase in vertical clearance for navigation.
Type 30 - Movable, Lift

Description: A span which can be mechanically raised while maintaining its horizontal orientation. Normally used to provide temporary increased vertical clearance for navigation.

Elevation View: 30 - Movable, Lift

Type 31 - Movable, Swing

Description: A span which can be mechanically rotated 90° to provide unlimited temporary vertical clearance for navigation.

Plan View: 31 - Movable, Swing

Type 32 - Orthotropic

Description: A span with a structural steel plate deck. The deck is connected to the stringers. This connection enables the deck and the stringers to act as a unit to resist applied loads.

Cut Away Elevation View: 32 - Orthotropic

Type 33 - Preflex - Plate Girder

Description: This is a Plate Girder which is inverted and held in a cambered position by gravity. The concrete deck is then poured integrally with the top flange.
Type 34 - Preflex - Rolled Beam

Description: This is a Rolled Beam which is inverted and held in a cambered position by gravity. The concrete deck is then poured integrally with the top flange.

Type 35 - Inverset - Plate Girder

Description: This is a plate girder with a concrete deck poured integrally with the top flange while the beam is being held in a cambered position by gravity.

Shop drawings or contract plans will usually be required to determine that fabrication is by conventional, preflex or inverset methods, since this cannot normally be determined in from visual inspection.

Type 36 - Inverset - Rolled Beam

Description: This is a rolled beam with a concrete deck poured integrally with the top flange while the beam is being held in a cambered position by gravity.

Shop drawings or contract plans will usually be required to determine that fabrication is by conventional, preflex or inverset methods, since this cannot normally be determined in from visual inspection.

Type 37 - Suspension

Description: A Suspension Bridge has a deck and a stiffening truss suspended from two main cables. These main cables are draped over intermediate towers and anchored at each end of the bridge. Susspender ropes transfer the loads from the deck and the stiffening truss to the main cables.

Elevation View: 37 - Suspension
Type 38 - Single Box

Description: This is a steel or concrete, trapezoidal or rectangular voided shape. A single unit may support the entire roadway section.

Cross Section View: 38 - Single Box

Elevation View: 38 - Single Box

Type 39 - Tunnel

Description: A Tunnel is an underground passage constructed through a natural obstruction (mountain, river, etc.), which carries railroad or vehicular traffic.

Elevation View: 39 - Tunnel

Type 40 - Single Box Culvert

Description: This is a structure with a rectangular cross-section which carries a highway or a railroad over a stream or drainage facility. There may be an embankment between the culvert and the roadway.

Cross Section View: 40 - Single Box Culvert
Type 41 - Multiple Pipe Culvert (FHWA)

Description: This superstructure type is composed of multiple circular or elliptical pipes. The pipes may be steel or concrete. No single pipe may have a maximum opening of 20 feet. However, the out-to-out dimension for two adjacent pipes must exceed 20 feet if the space between these pipes is less than one-half of the width of the smaller pipe (e.g., If A>20 Ft., then B<\(\frac{C}{2}\)).

Type 42 - Single/Multiple Pipe Culvert (FHWA/NYS)

Description: This superstructure type is composed of one or more circular or elliptical pipes. At least one of these pipes has a maximum opening, measured parallel to the centerline of the roadway, which exceeds 20 feet.

Type 43 - Multiple Box Culvert

Description: This type is composed of at least two adjacent, rectangular concrete boxes which carry a highway or a railroad over an obstruction, such as stream. The highway or railroad may be supported by an embankment placed on top of the culvert.

Type 44 - Timber Beam

Description: This superstructure type is composed of solid or laminated timber beams. Early designs have transverse wooden decks. More recent designs use deck planks which are parallel to the beams. These planks are placed on edge and laminated transversely using prestressing rods.
Type 00 - Other

Description: Use this to indicate that the type does not match any of the given choices.

Type XX - Unknown

Description: Use this to indicate that the type is not known.

ITEM: Fracture Critical

PROCEDURE:
Record whether the span being inventoried is fracture critical or has fracture critical components as defined by the fracture control plan of the New York State Steel Construction Manual.

Two and three member systems, composed of primary members, subjected to tensile stress, are normally considered to be fracture critical, with the following exceptions:

A two or three member system, designed with heavy bracing to provide an alternate load path. If it can be proven, through analysis, that this alternate load path will provide the necessary redundancy, the span is not considered to be fracture critical.

A three girder system which supports only one traffic lane. The majority of the structures in this category are one-way ramps which are too narrow to carry more than one lane of traffic. These structures are not considered to be fracture critical.

Multi-member spans which frame into a fracture critical component, such as the steel cap beam of a pier, are considered to be fracture critical.

CODING:
1 - Yes Indicates that the span contains tension members with tension components whose failure will cause the collapse of the structure.

2 - No Indicates that the span does not contain fracture critical members.

U - Unknown Fracture critical status has not been determined.

ITEM: Fatigue Resistant

PROCEDURE:
Record the most critical fatigue category present in the primary members of the span being inventoried.

The descriptions and illustrations of these details and their assignment to the respective categories is found in the New York State Standard Specifications for Highway Bridges. On most structures, several different categories will appear. If this is the case, record the worst category. The worst category is listed last, in alphabetical order.

The upgrade codes should be used only when the detail being examined has been upgraded by an approved repair procedure. When using any of the three upgrade codes, record the category that the detail was in before the upgrade. For example, if a “D” detail is upgraded to a “C” detail, it should be

Not applicable should only be used for structures that are composed of materials that are not required to be designed for fatigue by AASHTO. These would include concrete, masonry and wood.

**Note:** The AASHTO specifications define a rivet hole as a “D” detail, a bolt hole as a “B” detail and base metal as an “A” detail.

**CODING:**
- 1 - A & B Details
- 2 - C Details
- 3 - D, E and E’ Details
- 4 - A and B Details - Upgraded
- 5 - C Details - Upgraded
- 6 - D, E and E’ Details - Upgraded
- N - Not Applicable
- U - Unknown

**ITEM:** Out-of-Plane Bending

**PROCEDURE:**
Record whether details are present which can cause the primary members to be susceptible to out-of-plane bending.

Out-of-plane bending occurs when two or more members are connected and one causes distortion in the weak plane of the other. Narrow web gaps at connection plates and stiffeners used as connection plates are details which can cause out-of-plane bending.

The magnitude of this out-of-plane movement depends on:
- the spacing and relative stiffness of the members
- the bridge skew
- the type of framing details

The right combination of these factors, in conjunction with a finite number of fatigue load cycles, will initiate a phenomenon called distortion - induced cracking. If allowed to propagate, this cracking can result in a brittle fracture.

Out-of-plane bending occurs most commonly in girder webs. Therefore,
- the web must be flexible enough to allow the induced deflection to occur, or
- the web must be stiff enough to work as a unit with the flanges, to resist the out-of-plane force

If floor beams or diaphragms are connected to a girder using back-to-back, full-height connection plates or stiffeners, the induced force will be resisted by the entire unit, not just the web.

If the gap between the stiffener and the tension flange is greater than 4 to 6 times the web thickness, the web is considered to be flexible enough to withstand the distortion.

The option, “yes - retrofitted”, should be used whenever the susceptibility of a member to out-of-plane bending is an original condition whose severity has been reduced by a retrofit procedure.

**CODING:**
- 1 - Yes
- 2 - Yes - Retrofitted
- 3 - No
- U - Unknown
**ITEM: Load Path Redundancy**

**PROCEDURE:**
Record whether the span being inventoried is considered load path redundant.

Record the number of main structural members and whether or not multiple load paths exist, either by original design or by retrofit.

Use the retrofit codes only for structures which have a permanent, designed retrofit. They should not be used to indicate a "temporary fix."

**CODING:**
1 - Single Member
2 - Two Member
3 - Two Member with Multiple Load Paths should only be used in cases where this multiple load path condition has been confirmed through analysis.
4 - Two Member - Retrofit with Additional Member(s)
5 - Two Member - Retrofit with Multiple Load Paths
6 - Three Member
7 - Three Member with Multiple Load Paths should only be used in cases where this multiple load path condition has been confirmed through analysis.
8 - Three Member - Retrofit with Additional Member(s)
9 - Three Member - Retrofit with Multiple Load Paths
A - Multi-Member
B - Multi-Member - Retrofitted
N - Not Applicable - should be used where the load path redundancy is not a structural factor; e.g., tunnel, culvert, etc.
U - Unknown

**ITEM: Internal Redundancy**

**PROCEDURE:**
The method used to assemble the main structural members as it relates to Internal Redundancy.

Internal Redundancy is that property which enables a main member to redistribute its loads through multiple internal elements.

A built-up riveted girder has high internal redundancy because a crack cannot propagate from one of its internal elements to another. Conversely, a rolled beam or a welded plate girder has a low internal redundancy because there is nothing to stop the propagation of a crack.

The codes, Internally Redundant, Not Specified Above and Internally Non-Redundant, Not Specified Above, have limited application.

One of the structure types to which the two codes above do apply is a concrete structure.

- If a concrete structure is unreinforced or reinforced with minimal steel only, it should be recorded as Internally Non-Redundant, Not Specified Above.
- If a concrete structure contains designed reinforcement, it should be recorded as Internally Redundant, Not Specified Above.

Timber and other less common materials should be recorded as Not Applicable.
In some instances, the internal redundancy of a member is compromised by welding. One example of this is a riveted, built-up plate girder whose individual plies are tack welded to aid in fabrication. Another example is a riveted, built-up plate girder with an attachment which is welded to more than one ply. In these cases, use Riveted - Internal Redundancy Compromised by Welding.

CODING:
1 - Welded
2 - Rolled
3 - Riveted
4 - Eyebars - one or two per member
5 - Eyebars - three or more per member
6 - Internally Redundant - Not Specified Above
7 - Internally Non-Redundant - Not Specified Above
8 - Riveted - Internal Redundancy Compromised by Welding
N - Not Applicable
U - Unknown

ITEM: Structural Redundancy
NYSDoT

PROCEDURE:
Record whether the span being inventoried is structurally redundant.

Structural redundancy refers to the ability of a structure to redistribute its loads, within a primary member, due to the continuity of that member.

The end spans of a continuous beam are structurally non-redundant. The interior spans are structurally redundant.

Use "S" to record either a simple span, a cantilever span or a suspended span.

"Not Applicable" should be used to record tunnels, culverts, rigid frames, etc., where structural redundancy is not a factor.

"Unknown" should be used only when there is insufficient information to determine the structural redundancy of the structure being inventoried.

When updating any one of the six subfields, the other subfields must also be re-entered. No column should be left blank.

CODING:
C - An interior span of a continuous structure which has at least three spans
S - A simply supported span or the end span of a continuous structure
N - Not Applicable
U - Unknown
ITEM: **Span Length**

NYSDoT

**PROCEDURE:**
Record the length of the span being inventoried to the nearest 300mm or one foot.

The span length is defined as the distance between adjacent points of support for a superstructure member. For culvert type structures, record the clear opening from face of wall to face of wall parallel with the centerline of roadway.

If the span has a skewed substructure or a curved superstructure, the span length may vary transversely from fascia to fascia. In this case, measure the length between adjacent points of support, on both sides of the bridge. These lengths should be measured along the face of the curbs or the inside face of the railings. The length to be recorded is the average of these two measurements.

**CODING:**
Accepts the numbers - 0.0 - 999.9 - Metric Units
0 - 999.9 - English Units

**Item: Pier Type**

NYSDoT

**PROCEDURE:**
Record the type of pier which supports the span being inventoried.

Starting from the beginning abutment, the first pier encountered is Pier "1" and it is recorded with Span "1." The second pier encountered is Pier "2" and it is recorded with Span "2." All remaining piers are consecutively numbered in this manner.

A concrete rigid frame is defined as a multiple column pier which is designed to act as a frame. Frame action occurs only when the vertical column reinforcement is extended into the cap beam or lapped with the cap beam reinforcement to develop the capacity for moment resistance at the beam/column interface.

The concrete column with concrete cap beam configuration is similar in appearance to the concrete rigid frame, except that there is no continuity between the reinforcement in the columns and the reinforcement in the cap beam. Therefore, there is no designed moment resistance at the beam/column interface.

**CODING:**

01 - No Pier
02 - Solid, Concrete
Solid concrete shaft supports superstructure.

03 - Solid, Masonry
Similar to Solid, Concrete above, but constructed of unreinforced stonework or brickwork. This does not include aesthetic treatments on reinforced concrete.

04 - Individual Columns
Superstructure members supported by individual columns.

05 - Hammerhead
Concrete pier with a solid shaft and cap beam. The cap beam cantilevers out beyond either side of the shaft.

06 - Rigid Frame, Concrete
Column reinforcement extends into cap beam and is lapped with cap beam reinforcement to resist the applied moments at the beam/column interface.
<table>
<thead>
<tr>
<th>Pier Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>07 - Rigid Frame, Steel</td>
<td>Steel cap beam is welded or bolted to steel columns to resist the applied moments at the beam/column interface.</td>
</tr>
<tr>
<td>08 - Concrete Columns with Concrete Cap Beam</td>
<td>Concrete cap beam is supported by columns, but no designed moment resistance is provided at the beam/column interface.</td>
</tr>
<tr>
<td>09 - Concrete Columns with Steel Cap Beam</td>
<td>Steel cap beam is supported by concrete columns, but no designed moment resistance is provided at the beam/column interface.</td>
</tr>
<tr>
<td>10 - &quot;V&quot; Bent, Concrete</td>
<td>Concrete pier with a &quot;V&quot; shaped shaft. The shaft may be solid or consist of members inclined to form a &quot;V&quot; shape.</td>
</tr>
<tr>
<td>11 - &quot;V&quot; Bent, Steel</td>
<td>Steel pier composed of columns inclined to form a &quot;V&quot; shape.</td>
</tr>
<tr>
<td>12 - Pile Bent, Steel</td>
<td>Pile bent is composed of a number of steel piles driven to resistance and extended above the ground or water surface. The piles support a cap beam.</td>
</tr>
<tr>
<td>13 - Pile Bent, Concrete Filled Tubular Steel</td>
<td>Same as above, except that the bent is composed of Cast-in-Place concrete piles.</td>
</tr>
<tr>
<td>14 - Pile Bent, Concrete</td>
<td>Same as above, except that the bent is composed of pre-cast concrete piles.</td>
</tr>
<tr>
<td>15 - Pile Bent, Timber</td>
<td>Same as above, except that the bent is composed of timber piles.</td>
</tr>
<tr>
<td>16 - Trestle Bent, Steel</td>
<td>A trestle bent is composed of a steel cap beam supported by three dimensional steel trusses which act as columns.</td>
</tr>
<tr>
<td>17 - Trestle Bent, Timber</td>
<td>Same as above, except that the bent is composed of timber piles.</td>
</tr>
<tr>
<td>00 - Other</td>
<td></td>
</tr>
</tbody>
</table>

The sketches below illustrate the various Pier Types.
Elevation View: 10 - V-Bent, Concrete Solid

Elevation View: 10 - V-Bent, Concrete with Void

Elevation View: 10 - V-Bent, Concrete with Recess

Elevation View: 11 - V-Bent, Steel

Elevation View: 12 - Pile Bent, Steel
13 - Pile Bent, Concrete Filled, Tubular Steel
14 - Pile Bent, Concrete
15 - Pile Bent, Timber

Elevation View: 16 - Trestle Bent, Steel
17 - Trestle Bent, Timber
**ITEM: Pier Height**

**PROCEDURE:**
Record the height of the pier supporting the span being inventoried to the nearest tenth of a meter or to the nearest foot.

The height is defined as the distance between the bottom of the footing and the top of the cap beam. If there is no cap beam, (individual columns, solid pier, etc., ) measure to the top of the surface on which the bearings rest.

The height should be input and right justified.

If there is no pier, leave the Item blank.

**CODING:**
Accepts numeric characters greater than 00 and blanks.

---

**Item: Pier Footing**

**PROCEDURE:**
Record the type of pier footing for the span being inventoried, using the record plans as a reference.

If codes 1-7 are used, then the "Pier Piles" Item should be coded "1."

If there is no pier, leave this Item blank.

**CODING:**
1 - None - Stem Doweled to Rock
2 - Individual Spread - on Rock
3 - Continuous Spread - on Rock
4 - Individual Spread - on Earth Fill
5 - Continuous Spread - on Earth Fill
6 - Individual Spread - on Earth Cut
7 - Continuous Spread - on Earth Cut
8 - Individual Pile
9 - Continuous Pile
0 - Other

---

**ITEM: Pier Piles**

**PROCEDURE:**
Record the type of piles supporting the pier for the span being inventoried, using the record plans as a reference. If there is no pier, leave this Item blank.
CODING:
1 - No Piles
2 - Steel, "H" or "I" Section
3 - Steel Pipe
4 - Concrete, Cast-in-Place
5 - Concrete, Cast-In-Place, Tapered
6 - Concrete, Precast
7 - Concrete, Prestressed, Precast
8 - Timber
0 - Other
* - Unknown

ITEM: Pier Skew Angle
NYSDoT

PROCEDURE:
Record the skew angle, to the nearest degree, at the pier for the far end of the span being inventoried.

The skew angle is defined as the angle between the centerline of bearings and a line which is either radial or perpendicular to the centerline of the feature carried.

If there is no pier, leave this Item blank.

CODING:
Accepts numeric characters 00 - 89, and blanks.

ITEM: Pier Joint Type
NYSDoT

PROCEDURE:
Record the type of joint at the pier at the far end of the span being inventoried.

If there is no pier, leave the Item blank.
<table>
<thead>
<tr>
<th>PIER JOINT TYPE</th>
<th>CODING</th>
<th>EXPANSION</th>
<th>FIXED</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Finger</td>
<td></td>
<td>02</td>
<td>NA</td>
</tr>
<tr>
<td>Sliding Plate</td>
<td></td>
<td>03</td>
<td>NA</td>
</tr>
<tr>
<td>Filled, Elastic Material</td>
<td></td>
<td>04</td>
<td>22</td>
</tr>
<tr>
<td>Open with Trough</td>
<td></td>
<td>05</td>
<td>NA</td>
</tr>
<tr>
<td>Open</td>
<td></td>
<td>06</td>
<td>23</td>
</tr>
<tr>
<td>Elastomeric (Transflex, Wabo-Flex) (See BDD 75-60 A,G)</td>
<td></td>
<td>07</td>
<td>27</td>
</tr>
<tr>
<td>Sealed - Embedded Membrane (RR)</td>
<td></td>
<td>08</td>
<td>24</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>09</td>
<td>25</td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Armored Elastomeric (See BDD 80-64 A,B,C)</td>
<td></td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>Armored Compression Seal (See BDD 80-61, BDD 80-63)</td>
<td></td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Compression Seal</td>
<td></td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>Modular</td>
<td></td>
<td>14</td>
<td>NA</td>
</tr>
<tr>
<td>Strip Seal with Integral Armoring Angle</td>
<td></td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td>Strip Seal - Extrusion Anchored to Deck, No Elastomeric Concrete</td>
<td></td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Strip Seal - Extrusion Embedded in Elastomeric Concrete</td>
<td></td>
<td>17</td>
<td>33</td>
</tr>
<tr>
<td>Strip Seal - Type Unknown</td>
<td></td>
<td>18</td>
<td>34</td>
</tr>
<tr>
<td>Sawed and Filled</td>
<td></td>
<td>NA</td>
<td>21</td>
</tr>
</tbody>
</table>

**ITEM: Deck Drainage**

NYSDoT

**PROCEDURE:**
Record the type of deck drainage used on the span being inventoried.
CODING:
1 - None
2 - Scuppers, with downspout to ground or sewer
3 - Scuppers, no downspout to ground or sewer
4 - Intermittent Grating
5 - Continuous Grating
6 - Pipe
0 - Other

ITEM: Type of Railing (Left/Right)
NYSDoT

PROCEDURE:
This code is no longer used.

ITEM: Bearing Fixed/Expansion (Beginning/End)
NYSDoT

PROCEDURE:
Record whether the bearing at the beginning and the end of the span being inventoried is fixed or expansion.

Input the beginning bearing fixity in Column 45 and the end bearing fixity in Column 48.

CODING:
1 - No Bearing
2 - Fixed
3 - Expansion
* - Unknown

ITEM: Bearing Type (Beginning/End)
NYSDoT

PROCEDURE:
Record the type of bearing at the beginning and the end of the span being inventoried.

Input the Beginning Bearing type in Columns 46 - 47 and the End Bearing type in Columns 49 - 50.
<table>
<thead>
<tr>
<th>BEARING TYPE (BEGINNING/END)</th>
<th>CODING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EXPANSION</td>
</tr>
<tr>
<td>None</td>
<td>.1</td>
</tr>
<tr>
<td>Steel Roller</td>
<td>.2</td>
</tr>
<tr>
<td>Steel Rocker</td>
<td>.3</td>
</tr>
<tr>
<td>Steel Sliding on Phosphor Bronze</td>
<td>.4</td>
</tr>
<tr>
<td>Steel Sliding on Steel</td>
<td>.5</td>
</tr>
<tr>
<td>Steel Sliding on Lubrite</td>
<td>.6</td>
</tr>
<tr>
<td>Steel Sliding, Surface Unknown</td>
<td>.7</td>
</tr>
<tr>
<td>Pot Bearing with P.T.F.E. (Ex.Teflon)</td>
<td>.8</td>
</tr>
<tr>
<td>Multi-Rotational (Pot Bearing) Guided</td>
<td>.9</td>
</tr>
<tr>
<td>Multi-Rotational (Pot Bearing) Unguided</td>
<td>.10</td>
</tr>
<tr>
<td>Multi-Rotational (Disc Bearing) Guided</td>
<td>.11</td>
</tr>
<tr>
<td>Multi-Rotational (Disc Bearing) Unguided</td>
<td>.12</td>
</tr>
<tr>
<td>Elastomeric, Plain</td>
<td>.13</td>
</tr>
<tr>
<td>Elastomeric with P.T.F.E. (Ex. Teflon)</td>
<td>.14</td>
</tr>
<tr>
<td>Elastomeric, Fabric Type with P.T.F.E. (Ex. Teflon)</td>
<td>.15</td>
</tr>
<tr>
<td>Elastomeric Laminated</td>
<td>.16</td>
</tr>
<tr>
<td>Elastomeric, Steel Laminated</td>
<td>.17</td>
</tr>
<tr>
<td>Elastomeric, Fabric Laminated</td>
<td>.18</td>
</tr>
<tr>
<td>Elastom, Steel Laminated w/Ext. Load Plate</td>
<td>.19</td>
</tr>
<tr>
<td>Elastomeric, Steel Laminated w/Lead Core</td>
<td>.20</td>
</tr>
<tr>
<td>Elastomeric, Laminated with P.T.F.E. (Ex. Teflon)</td>
<td>.21</td>
</tr>
<tr>
<td>Steel, Type Unknown</td>
<td>.22</td>
</tr>
<tr>
<td>Elastomeric, Type Unknown</td>
<td>.23</td>
</tr>
<tr>
<td>Other</td>
<td>00</td>
</tr>
<tr>
<td>Steel, Rotates on Rocker</td>
<td>-</td>
</tr>
<tr>
<td>Steel, Rotates on Pin</td>
<td>-</td>
</tr>
<tr>
<td>Plain Rubber Pad</td>
<td>-</td>
</tr>
</tbody>
</table>
ITEM: Structural Deck Type  
FHWA 107

PROCEDURE:
Record the type of structural deck used on the span being inventoried.

A structural deck is a bridge deck which is designed to span between its points of support (e.g., between stringers) and to carry its own weight and any applied dead loads or live loads.

CODING:
01 - None
02 - C-I-P Portland Cement Concrete - Uncoated Rebars
03 - Timber
04 - Steel Grating, open
05 - Steel Grating, filled
06 - Steel Plate
07 - Orthotropic Steel Plate
08 - Longitudinally Stiffened Steel Plate
09 - Transversely Stiffened Steel Plate
10 - Precast Concrete Plank
11 - Open Deck
12 - C-I-P Portland Cement Concrete - Epoxy Coated Rebars
13 - C-I-P Portland Cement Concrete - w/Other Rebar Coating
14 - C-I-P Portland Cement Concrete - Galvanized Rebars
15 - C-I-P Portland Cement Concrete - Cathodic Protection
16 - C-I-P Portland Cement Concrete - Polymer Impregnated
17 - C-I-P Portland Cement Concrete - Internally Sealed
18 - C-I-P Portland Cement Concrete - w/ Other Protection
19 - Corrugated Steel
00 - Other Deck Type

ITEM: Stay-in-Place Forms  
NYSDoT

PROCEDURE:
Record whether or not Stay-In-Place Forms are used on the span being inventoried.

CODING:
1 - Stay-In-Place Forms Not Used
2 - Stay-In-Place Forms Used

ITEM: Original Wearing Surface  
FHWA 108

PROCEDURE:
Record the type of Original Wearing Surface placed on the deck of the span being inventoried when the bridge was originally constructed or when the deck was replaced or rehabilitated by a major rehabilitation project.

This entry will not change until the deck (or bridge) is replaced.
CODING:
01 - None (Including bridges which do not carry highways)
02 - Portland Cement Concrete Overlay (Including prestressed adjacent slabs with "monolithic concrete overlays")
03 - Precast Portland Cement Concrete Plank
04 - Asphalt Concrete
05 - Asphalt Concrete Block
06 - Integral or Monolithic Portland Cement Concrete
07 - Wood or Wood Block
08 - Stone, Block or Brick
09 - Steel Grate, open
10 - Steel Grate, concrete filled
11 - Epoxy or similar material (including Polymer)
12 - Bonded Concrete
14 - Asphalt Concrete without Membrane
22 - Concrete with Membrane
24 - Asphalt Concrete with Membrane
32 - High Density Concrete
34 - Asphalt Concrete with Preformed Sheet Membrane
42 - Latex Modified Concrete
44 - Asphalt Concrete with Coal Tar Epoxy Membrane
45 - Micro-Silica Overlay
52 - Class "HP" Concrete
54 - Asphalt Concrete with Membrane other than Coal Tar
64 - Asphalt Concrete with Mastic Membrane
NN - Other

ITEM: **Original Wearing Surface Still In-Place**
NYSDoT

PROCEDURE:
Record whether the Original Wearing Surface is still In-Place.

CODING:
1 - Original wearing surface is still in use
2 - Original wearing surface is still in-place (overlaid)
3 - Original wearing surface has been removed
* - Unknown

ITEM: **Present Wearing Surface**
NYSDoT

PROCEDURE:
Record the type of Wearing Surface currently in place.

When updating this Item, review the previous Item, Original Wearing Surface Still In-Place, and update if necessary.

CODING:
Use the codes listed fo the "Original Wearing Surface" Item.
ITEM: Surface Sealant

NYSDoT

PROCEDURE:
Record the type of sealant used on the wearing surface of the span being inventoried.

CODING:
1 - None
2 - Linseed Oil
3 - Silane
* - Other

ITEM: Ballast

NYSDoT

PROCEDURE:
Record whether the bridge deck is ballasted on the span being inventoried.

If the bridge does not carry railroad traffic, code this Item with "1."

CODING:
1 - Bridge does not carry railroad traffic
2 - Deck does not have Ballast
3 - Deck has Ballast

ITEM: Median Width

NYSDoT

PROCEDURE:
Record the width of the median on the span being inventoried to the nearest 30mm or tenth of a foot.

If this width varies, record the dominant width.

If there is no median, record this Item with "00.0".

CODING:
Accepts numeric characters 00.0 - 99.9
ITEMS INCLUDED IN SPAN INSPECTION (RC16)

Inspection Date
Span Number
Wearing Surface Rating
Monolithic Surface Rating
Curbs Rating
Sidewalk/Fascia Rating
Rail/Parapets Rating
Scupper Rating
Grate Rating
Median Rating
Structural Deck Rating
Primary Member Rating
Secondary Member Rating
Superstr Paint Rating
Superstr Joint Rating
Superstr Recommendation
Pier Bearing Rating
Pier Pedestal Rating
Pier Top of Cap Rating
Pier Stem Rating
Pier Cap Beam Rating
Pier Column Rating
Pier Footing Rating
Pier Erosion Rating
Pier Pile Rating
Pier Recommendation
Lighting Rating
Sign Rating
Utility Rating
Download Year
The Bridge Data Management System (BDMS) identifies inventory and inspection information about various elements of a bridge. How Bridge Inspection elements are rated is described fully in the NYS Bridge Inspection Manual. They are presented here solely for the purpose of identifying what inspection data is stored in BDMS and what values may be recorded.

BRIDGE INSPECTION RATINGS
NYSDoT

PROCEDURE:
Most of the items in this table record the inspection ratings assigned to individual span elements by the inspector. Ratings are recorded for the following span elements:

- Wearing Surface Rating
- Monolithic Surface Rating
- Curbs Rating
- Sidewalk/Fascia Rating
- Rail/Parapets Rating
- Scupper Rating
- Grate Rating
- Median Rating
- Structural Deck Rating
- Primary Member Rating
- Secondary Member Rating
- Superstructure Paint Rating
- Superstructure Joint Rating
- Superstructure Recommendation
- Pier Bearing Rating
- Pier Pedestal Rating
- Pier Top of Cap Rating
- Pier Stem Rating
- Pier Cap Beam Rating
- Pier Column Rating
- Pier Footing Rating
- Pier Erosion Rating
- Pier Pile Rating
- Pier Recommendation
- Lighting Rating
- Sign Rating
- Utility Rating

CODING:
Each span element is given a single digit, numeric rating using the following rating scale:

1 - Totally deteriorated, or in failed condition.
2 - Used to shade between ratings of 1 and 3.
3 - Serious deterioration, or not functioning as originally designed.
4 - Used to shade between ratings of 3 and 5.
5 - Minor deterioration, but functioning as originally designed.
6 - Used to shade between ratings of 5 and 7.
7 - New condition. No deterioration.
8 - Not applicable.
9 - Condition and/or existence unknown.

INSPECTION DATE
NYSDoT

PROCEDURE:
Record the Month, Day and last two digits of the Year (MM/DD/YY) of the inspection.

CODING:
Accepts any date in MM/DD/YY format.
**SPAN NUMBER**
NYSDoT

**PROCEDURE:**
Identifies the span for which the data is provided.

**CODING:**
Accepts any numeric characters: 0-999.

**DOWNLOAD YEAR**
NYSDoT

**PROCEDURE:**
This value is assigned by BDMS when the data is extracted to the Microsoft Access database. It is used for archiving each year's data.

**CODING:**
Any four digit year.
ITEMS INCLUDED IN ACCESS (RC17)

Span Number
Walking
Step Ladder
Extension Ladder
40 Ft UBIU (12 m)
60 Ft UBIU (18 m)
Lightweight UBIU
Small Lift
Medium Lift
Large Lift
Rowboat
Barge
Diving
Railroad Flagman
Railroad Electrical
Scaffolding
Lane Closure
Shadow Vehicle
Other Access Needs
The Bridge Data management System (BdmS) identifies all the equipment needed to conduct the bridge inspection. This data is recorded to assist with estimating the bridge inspection effort and to assist the inspector to prepare for the inspection.

**ITEM: ACCESS EQUIPMENT**

**NYSEDoT**

**PROCEDURE:**
Access equipment required to inspect the bridge and each span of the bridge are identified. The access needs for each span are recorded with the span number. A summary of access needs for the bridge is recorded with a span number.

A separate field is used to identify the need for each of the following special pieces of equipment.

- Walking
- Step Ladder
- Extension Ladder
- 40 foot Under Bridge Inspection Unit (UBI U)
- 60 foot Under Bridge Inspection Unit (UBI U)
- Light Weight Under Bridge Inspection Unit (UBI U)
- <= 30 foot Lift
- 30’ - 90’ Lift
- > 90’ Lift
- Row Boat
- Barge
- Diving
- RR Flagging
- Electric Railroad
- Scaffolding
- Lane Closure Without Shadow Vehicle
- Lane Closure With Shadow Vehicle
- Other

**CODING:**
For each span and then for the bridge summary, each piece of equipment is coded as follows:

- X - Designated equipment is needed for inspection
- 0 - Designated equipment is not needed for inspection
ITEMS INCLUDED IN DELETE BIN DATA (RC18)

Description of required 120 character text file
RC18: Delete BIN Data

This Record Code describes the method of deleting active BIN data from BDMS. To delete BIN data a 120 character text file is required for processing into BDMS. This text file should contain the information as outlined in the General Coding Instructions of this manual. (Region, County, BIN, Record Code and Transaction Code). Region, County and BIN should be the first nine characters. Record Code and Transaction Code should be in columns 118, 119 and 120. The Record Code number should be 18.

This will not totally delete the data from BDMS. It will mark all data as deleted but it will retain the data if needed in the future. This process will be required before Project data can be converted to Active data. To activate project data see record Code 68.
RC19: Further Investigation

ITEMS INCLUDED IN FURTHER INVESTIGATION (RC19)

Further Investigation
RC19: Further Investigation

The Bridge Data Management System (BDMS) records when a bridge inspector determines that further investigation is required to determine the condition of the structure. (See the current NYS Bridge Inspection manual for the definition and criteria for this Item)

ITEM: FURTHER INVESTIGATION
NYSDoT

PROCEDURE:
As part of the Inspection, the inspector determines if further investigation is required for the bridge. Further investigation would include: engineering analysis for Load Posting or removal of concrete casing to reveal the condition of steel members, etc.

CODING:

1 - No
2 - Yes
ITEMS INCLUDED IN WORK HISTORY (RC21)

Type of Work
Month
Year
Contract Number
Type of Contract
Money Value
Comments
Designer Name
Designer Organization
PIN
The Work History Record is used to record work performed on a bridge during its service life. The Work History begins with original construction and includes any contract maintenance or capital projects.

**ITEM: Type of Work**

**NYSDoT**

**PROCEDURE:**

Record the Work Type from the list below. These codes are new with BDMS. The old codes are included for reference when viewing existing data.

**CODING:**

**Capital Project Work Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>New Bridge: Construct a new bridge where none currently exists.</td>
</tr>
<tr>
<td>121</td>
<td>Bridge Replacement: Structural: Remove an existing bridge because of its deteriorating condition and replace it with a new bridge which provides the same features, carried and crossed on approximately the same alignment.</td>
</tr>
<tr>
<td>122</td>
<td>Bridge Replacement: Functional: Remove an existing bridge because of substandard capacity or roadway geometry and replace it with a new bridge which provides the same features, carried and crossed on approximately the same alignment. Note, if a bridge is being replaced for both substandard condition and substandard geometry, use code 121, Bridge Replacement: Structural.</td>
</tr>
<tr>
<td>210</td>
<td>Bridge Deck Treatment: Rehabilitate the entire deck with no other significant additional improvement to the superstructure or substructure. If significant additional work is required on the superstructure or substructure, then the Work Type is “240 General Rehabilitation.”</td>
</tr>
<tr>
<td>220</td>
<td>Deck Replacement: Replace the entire deck. Some additional improvements to the superstructure and substructure may be included. However, the entire superstructure or substructure is not being replaced.</td>
</tr>
<tr>
<td>230</td>
<td>Superstructure Replacement: Replace the entire superstructure. Some additional improvement to the substructure may be included. However, the entire substructure is not being replaced.</td>
</tr>
<tr>
<td>240</td>
<td>General Rehabilitation: General improvements are made to various portions of a bridge. However, the deck, superstructure and substructure are not replaced.</td>
</tr>
<tr>
<td>410</td>
<td>Bridge Removal: Remove a bridge without replacement.</td>
</tr>
<tr>
<td>420</td>
<td>Partial Bridge Removal: Remove part of a bridge to prevent use.</td>
</tr>
</tbody>
</table>
Contract Maintenance Work Codes

Cyclical Maintenance Work Activities

311 Bridge Cleaning: Clean deck, superstructure and substructure to remove salt, dirt and grit.

312 Bridge Painting: Prepare and paint existing steel.

Corrective Maintenance Work Activities

321 Bridge Minor Maintenance: Work typically associated with a single element, i.e., expansion joint repairs.

322 Bridge General Repairs: Work generally associated with a several elements that do not include cyclical maintenance activities. General repairs would include activities such as wingwall, pedestal and structural steel repairs.

323 Bridge Repairs on Demand: Work performed in response to flagged condition reports or emergency situations.

324 Bridge Repairs (5 to 7 year cycle): Work done on structures with a condition rating better than 4.75 aimed at preventing the structure from becoming deficient for 5 years.

000 Other: Any other bridge maintenance not identified above.

Historic Work Codes: 1991 - 2003

These codes have been used in the past and are listed here as a reference for those who are viewing existing or archived data.

Historic Codes
059 - Replace Wearing Surface (All Others)
061 - Replace Bridge
062 - Replace Deck
063 - Replace Superstructure
071 - Bridge Improvements
073 - Safety Improvements
075 - Raise Bridge to Increase Clearance
076 - Repair and/or Replace Wingwalls
077 - Repair and/or Replace Backwalls
078 - Replace Joint System
079 - Maintain and Repair Compression Joints
080 - Maintain and Repair Wearing Surface
081 - Replace Curbs
082 - Replace Sidewalk and Fascia
083 - Replace Railing
084 - Repair Light Standards and Fixtures
085 - Repair or Replace Scuppers and Drains
F61 - Install and/or Repair Guide Rail and Median Barrier
F81 - Install and/or Repair Impact Attenuators
G61 - Maintain Stream Channels and Culverts
ITEM: Month

NYSDoT

PROCEDURE:
Record the 2 digit number of the month in which the work was completed. If you are recording data for a project that will be completed in the future, use the Contract Completion Date.

CODING:
Accepts the numeric characters 01 - 12.
ITEM: Year

PROCEDURE:
Record the 2 digit year in which the work was completed. If you are recording data for a project that will be completed in the future, use the Contract Completion Date.

CODING:
Accepts numeric characters 00 - 99.

ITEM: Contract Number

PROCEDURE:
Record the contract number for the project as recorded on the record plans, left justified.

If there is no contract number, leave this Item blank.

CODING:
Accepts all standard keyboard characters and blanks.

ITEM: Type of Contract

PROCEDURE:
Record the type of contract under which the work was completed.

CODING:
1 - Bid Contract No longer used.
2 - Force Account Work performed by in-house forces other than Owner; e.g., railroad.
3 - In-house Maintenance Work performed by Owner’s In-house maintenance forces.
4 - Maintenance Project Work performed by contractor using Maintenance funds.
5 - Capital Project Work performed by contractor using Capital Funds.
0 - Other
* - Unknown

ITEM: Money Value

PROCEDURE:
Record the value of the project in dollars. If you are recording data for a project that will be let in the future, use the associated money value from the engineer’s estimate.

If money values are entered for Non-Capital project work, the type of work performed and the cost of this work, must be recorded in the "Comments" Item.

CODING:
Accepts numeric values from 0 to 9999999999 and blanks.
ITEM: Comments
NYSDoT

PROCEDURE:
Record any additional comments up to 46 characters needed to clarify the description of the work or costs.

If this is a Bridge Replacement project which required the BIN to be changed, include the statement: “Bridge Replaced - was BIN xxxxxx.”

CODING:
Accepts all standard keyboard characters.

ITEM: Designer Name
This code is for future use.

ITEM: Designer Organization
This code is for future use.

ITEM: PIN
This code is for future use.
ITEMS INCLUDED IN ACTIVATE BIN DATA (RC68)

Description of required 120 character text file
This Record Code describes the method of changing project BIN data to active (current) BIN data within BDMS. To change project BIN data to active data within BDMS a 120 character text file is required for processing. This text file should contain the information as outlined in the General Coding Instructions of this manual. (Region, County, BIN, Record Code and Transaction Code). Region, County and BIN should be the first nine characters. Record Code and Transaction Code should be in columns 118, 119 and 120. The Record Code number should be 68.

The current or active data needs to be deleted before performing this update, see RC18 for instructions.
BSA Data (Bridge Safety Assurance)

Items included in BSA Data

Description of BSA data recorded in the BDMS
BDMS includes the findings of the Bridge Safety Assurance assessment of the 6 bridge vulnerabilities: Hydraulic, Overload, Steel, Collision, Concrete and Seismic. How these findings are determined is described fully in the Manuals prepared for each Vulnerability by the BSA Unit. They are presented here solely for the purpose of identifying what data is recorded in the BDMS and what values may be recorded.

For each of the six vulnerabilities, the following data is recorded.

**ITEM: Region, County, BIN**

**PROCEDURE:**
See General Coding Instructions under Section III of this Manual.

**ITEM: BSA Vulnerability Type Code**

**PROCEDURE:**
Identify which of the six vulnerabilities the data is for.

**CODING:**
- HYD  Hydraulics Vulnerability
- OVL  Overload Vulnerability
- STL  Steel Vulnerability
- COL  Collision Vulnerability
- CON  Concrete Vulnerability
- SMC  Seismic Vulnerability

**ITEM: Vulnerability Rating Date**

**PROCEDURE:**
The date of the Vulnerability assessment which yielded this data.

**CODING:**
4 digit year, slash, two digit Month, slash and two digit Day

**ITEM: Vulnerability Failure Type**

**PROCEDURE:**
Enter the single character Vulnerability Failure Type describes the way a bridge would fail due to this vulnerability.

**CODING:**
- 0
- 1 Structural Damage
- 2
3 Partial Collapse
4
5 Catastrophic

ITEM: Vulnerability Rating Category

PROCEDURE:
Enter the single character Vulnerability Rating Category which describes the type of corrective action needed to reduce the failure vulnerability for the bridge and the urgency in which these actions should be implemented.

CODING:
1 Safety Priority
2 Safety Program
3 Capital Program
4 Inspection Program
5 No Action
6 Not Applicable

ITEM: Vulnerability Classification Score
NYSDoT

PROCEDURE:
Enter the single character Vulnerability Classification Score which indicates the potential vulnerability of a structure to fail relative to other structures.

CODING:
H High
L Low
M Medium
N Not Vulnerable
blank Not yet assessed
V. Data Edit/Update

A. Overview

The Bridge Inventory and Inspection System data is dynamic, reflecting changes due to: Bridge Replacement Projects, Bridge Rehabilitation Projects, Cyclical Maintenance, Bridge Inspections, and Administrative Modifications. Data is entered and processed by various methods. Our goal is to receive as much data as possible electronically via the Windows Bridge On Line Transaction System (WinBolts) and Bridge Inspection Program - Pen Interface (BIPPI).

B. Data Entry Methods

Data can be entered and updated by the following processes:

1. Inspection Data Updates (BIPPI)
2. Inspection Inventory Data Updates (WinBolts)
3. RBII Cs Inventory Updates (WinBolts)
4. BDSU Inventory Updates/Systemic Updates (WinBolts)
5. Adding a New Bridge (WinBolts)
6. Capital Project Updates (WinBolts)
7. Closed Bridge (WinBolts)
8. Deleting a Bridge (WinBolts)
9. Load Rating Updates (Load Rating Unit own Graphical User Interface)
10. Scour Critical Updates
11. Fracture Critical Updates
12. Diving Inspection
13. Historic Bridge Data Updates (Microsoft Access Database - updated directly)
14. Work History - Contract Maintenance (Multiple BINS) Updates (WinBolts)
15. BSA Vulnerability Updates

1. Inspection Data Updates

The Bridge Inspection Program is the major source of updates to the bridge data. Inspectors update the data on the following Record Codes as part of their inspection of each bridge: Bridge Inspection (RC05), Span Inspection (RC16), Federal Rating Form (RC09), Access Needs (RC17), Further Investigation (RC19), and Posting Items (RC06). This section describes this data update process.

In addition, Inspectors are responsible for verifying inventory data to reflect improvements made to the bridge since the last inspection. Section 2. Inspection Inventory Data Updates will describe that update process. Two parts of the inspection warrant special action: Load Posting Changes and Closed or Reopened Bridge Changes.

Load Posting Changes

If the Posted Loads on the bridge differ from that shown on the bridge database, then in addition to changing the load posting on the BIPPI General Recommendation page, the change should be telephoned to the Regional Bridge Management Engineer (RBME) (NYSDOT Inspectors) or Quality Control Engineer (Consultant Inspectors) the day the change is noted. The telephone call will initiate communication which will ensure that all personnel responsible for issuing oversize vehicle permits are immediately notified of the posting.

Closed/Reopened Bridge

If the bridge is closed or reopened to traffic and this was not noted in the inspection information, the closing/reopening should be telephoned to the RBME (NYSDOT Inspectors) or Quality Control Engineer (Consultant Inspectors) the day the closing/reopening is noted. The telephone call will initiate communication which will ensure that all personnel responsible for issuing oversize vehicle permits are immediately notified of the change.

Inspections prepared by NYSDOT Inspectors and Consultants hired by NYSDOT, update inspection data
V. Data Edit/Update_04 (Draft)

using a computer program developed by the Structures Division named Bridge Inspection Program Pen Interface (BIPPI). Inspections prepared by other bridge owners such as Authorities and Commissions are submitted on paper forms. Each process will be described separately.

Inspection Process – BIPPI

The Bridge Inspection Program Pen Interface (BIPPI) PC based computer program runs on the inspection team laptop computer which also contains a copy of the Bridge Inventory data. BIPPI is used to record and report inspection results.

The Inventory Edit/Update process which processes the BIPPI data has crosschecks built into it. One crosscheck which needs special emphasis is if the GTMS structural code is a Culvert. If this is true, then there should be a valid Federal Culvert Rating and no Federal Deck, Superstructure or Substructure Ratings, and if GTMS is not a Culvert, then there should be no Federal Culvert Rating. If the GTMS changes from Culvert to non-Culvert, then the inventory changes must be processed before the inspection changes. To ensure this order is followed, the inspector should identify this file as an Inventory Problem or I-PROB.

The M.O. Inspection Liaison Engineer:
1. spot checks Submissions
2. sends the Submission data file to BDSU for processing into the BDMS
3. copies the sketches and photographs to the Main Office file server for general Main Office availability

Inspection Process - Paper

The inspector fills out paper inspection forms which are reviewed and processed as described in the Bridge Inspection Manual.

2. Inspection Inventory Data Updates
   Inspection Inventory Updates: General

It is the inspector's responsibility to verify and update bridge inventory data. Bridge Inventory data verification/update through this process includes: Bridge Identification (RC01,) Structural Details (RC02,) Safety & Utilities (RC03,) Inspection Responsibility (RC04,) Feature Carried (RC12,) Feature Crossed (RC13,) Span Inventory (RC15,) and Work History (RC21.)

Bridge elements are replaced by capital projects and maintenance efforts. These changes often are first identified by the inspector.

The Inspector's responsibilities for verifying/updating the inventory are five fold:
   a. determine if a capital improvement has been undertaken since the last inspection,
   b. check every bridge element whose rating has increased by 2 or more rating points since the last inspection and update inventory data as necessary
   c. make other changes to the inventory as appropriate.
   d. run cross-checks and address any discrepancies identified.

If a bridge is closed to traffic for the duration of a capital project, then the inspector should not submit a bridge inventory update. When the capital project is completed, the inventory will be updated and a new inspection undertaken.

If a bridge is partially closed to traffic due to a capital project; eg, staged construction, the bridge inventory update should describe the portion of the bridge which is open to traffic. When the capital project is completed, another inspection will be performed and the inventory will be updated to reflect the final bridge work.

If bridge maintenance improvements are being made with the bridge open to traffic (short term projects,) the bridge inventory update should reflect the improvements being made; eg, if the bearings are being replaced on a bridge, the bridge inventory update should reflect the new bearings being replaced.
V. Data Edit/Update_04 (Draft)

For inspections done by NYSDOT inspectors and consultants hired by NYSDOT, update inventory data using a computer program developed by the Structures Division named WinBolts (Windows Bridge Online Transaction System). Inspections performed by other bridge owners such as Authorities and Railroads are submitted on paper forms.

The process for updating inventory data is described below. Regional Office's staffing procedures are different and therefore, they should adapt this process to meet their individual needs.

Inspection Inventory Update: WinBolts Process

a. Open WinBolts: From the BIPPI menu, select “Tools” and then “Inventory Lookup.” This opens the WinBolts Program for the BIN being inspected.

From the WinBolts BIN Display Line, select “Current Data” to display the most recent updates to the WinBolts data. If the bridge has been replaced or had work performed under a capital project, select “Project Data” from the data menu. The inventory data for the proposed/completed work should be displayed.

Go back to “Current Data” and from the WinBolts menu, select “Password.” Enter the password provided to you by your RBlC or Quality Control Engineer. You will be prompted to enter your Name. Enter the initial of your first name and your complete last name; eg, M Fitzpatrick

Your password and ability to change inventory data will continue to be in effect until you either a. exit WinBolts or b. select the “Pause Editing” option from the WinBolts menu.

b. New Bridge: If the bridge being inspected is new and not on the current or project database, WinBolts offers the feature to add the New bridge.

Select the “Identification” tab for any BIN.

Select the Add/Delete option from the menu bar. This offers two options in a drop down menu: Add New Bridge or Delete this Bridge. Select Add New Bridge.

Enter the BIN., Region and County. (the BIN is assigned by the BDSU and should be obtained prior to the inspection.)

The inventory data can then be entered into each tab. If the new bridge has more than one feature carried, feature crossed or span, another can be added by first selecting the respective feature or span tab and then select the Add/Delete option from the menu bar. The drop down list will include the respective options.

c. Capital Project: If the bridge has been replaced or rehabilitated since the last inspection, the contract plans should be used for the inventory update.

Bridge replacements and rehabilitations are characterized by new bridge elements as follows:

1) Bridge Replacement: all Deck, Superstructure and Substructure elements are new.
2) Superstructure Replacement: all the Deck and Superstructure elements (primary and secondary members, bearings, etc.) are new, but not all Substructure elements are new.
3) Deck Replacement: all the Deck elements (structural deck, railings, curbs, wearing surface, etc.) are new, but not all Superstructure and Substructure elements are new.
4) Deck Rehabilitation: the entire Deck was resurfaced, but the Structural Deck is not new, even though portions of the Structural Deck may have been rehabilitated or replaced.
5) General Rehabilitation: portions of the Deck, Superstructure and/or Substructure are new, but none are completely new.
If the condition of some elements has increased but there are still many elements which are in poor condition, then the bridge probably has not been rehabilitated. Contract maintenance work such as painting or doing other work on many bridges is not a rehabilitation.

If the bridge was replaced or rehabilitated, then a complete inventory update and work history record are required.

A complete inventory update involves changing the information on every WinBolts inventory screen, as necessary. While WinBolts displays both inventory items and inspection items, only the inventory items can be updated via WinBolts. The inspection items are updated via the BIPPI Submission. Be sure to check the following:

* Bridge Replacements
  - Identification Tab - Year Built should be changed to the year the bridge was opened to traffic and the Year of Last Major Rehab to be set to “NNNN.”
* Bridge Rehabilitations require the Year of Last Major Rehab to be changed to the year the bridge was opened to traffic after the rehabilitation. Do not change the Year Built.
* Bridge Replacements or Rehabilitations
  - Postings Tab should reflect the new conditions entered thru BIPPI.
  - Check number of lanes on the Feature Carried Tab.
  - Check Number of Main and Approach Spans on the Structural Details Tab.
  - Check number of Span Records on the Spans Inventory Tab.

All State Owned Bridges and Some Locally Owned Bridges: Bridge improvement projects designed by NYSDOT and its consultants, typically have the complete inventory update prepared by the Designer at PS&E. This inventory data should be under “Project Data.” If a capital project has been undertaken, a set of contract plans should be available in the inspection folder.

If the project inventory does not reflect the capital project:
* notify the RBIC who will update the inventory, prepare a Work History Record and obtain a set of record plans.
* from the BIPPI menu, select “Tools” and “New Inventory Forms Needed” option which will trigger an IPROB. (IPROB was described previously in the beginning of this section Inspection Process BIPPI.”) This can be toggled off by selecting it again if desired.
* note the Contract Number in the “Note Any Improvements Area” of the first BIPPI screen that this is a new bridge and the colored forms are included with the inspection report.

Other Non-State Owned Bridges: Inspectors will be responsible for preparing the complete inventory update and work history record if the current or project inventory data does not match the structure in the field or if there is no existing inventory on file. A set of contract plans should be obtained from your coordinator and used for the update.

If a capital project has been undertaken and the contract plans are not available, the inspection and inventory update can progress. BIPPI has the ability to store inspection information for additional spans.
* WinBolts can be used to update the inventory data on Structural Details and Spans Inventory tabs.
* note the Contract Number in the “Note Any Improvements Area” of the first BIPPI screen and explain that a capital project was undertaken and the colored forms are included.

d. Changing Inventory Item Values: From the WinBolts menu, select “Units.” Select either English Highlight the value for the Item. If it is a measurement field, enter the new measurement (in the Units previously chosen.) If it is a description field, click it and a drop down menu will appear containing the acceptable codes. Highlight the desired value. When you move the cursor to a new Item, by using the Mouse or pressing the “Tab Key,” the value you just changed will be displayed in GREEN. By selecting the SAVE/EDIT button, the changes are saved and will be displayed in RED. By highlighting any changed values with the cursor, recent changes will be displayed identifying, who made the change, the date of the change and what the prior value was.
Blanks: Some Items need to be changed from an existing value to a blank. WinBolts offers the option of entering an "@" to indicate the database should be changed to blanks. This value only appears when editing after a Password has been entered for those fields that are allowed to be blank.

Add Feature: If there are more features on the bridge than are recorded in WinBolts, then a feature can be added by:
* selecting the Feature Carried or Feature Crossed tab
* selecting Add/Delete from the menu bar and then Add New Feature from the drop down list.
* Enter the new Feature
* note in the “Note Any Improvements Area” of the first BIPPI screen the number of additional Features being added.

Delete Feature: If there are fewer Features on the bridge than shown in WinBolts by:
* selecting the Feature Carried or Feature Crossed tab
* selecting Add/Delete from the menu bar and then Delete Existing Feature from the drop down list. CAUTION: Verify that this is the feature to be deleted before selecting the “Save/Edits” button.
* note in the “Note Any Improvements Area” of the first BIPPI screen, the number and description of each Feature(s) which needs to be deleted. These will be deleted by BDSU.

Features Carried/Crossed: Except for complete inventory updates associated with new bridges and capital projects, the only Features Carried/Crossed data for highways and railroads which the inspector should update is the Maximum and Minimum Vertical Clearances as described in the following section “g. Field Verification.” Highway features will be linked to the highway database with the majority of data coming from that database. If an inspector believes that these descriptions should be changed, simply note it in the “Note Any Improvements Area”.

Change as many Items on this screen as appropriate following this procedure.

To save the edits periodically, select the Save Edits option button.

When you select a different screen, a popup window will be displayed listing all the changes you have made and giving you the option to either “Save” or “Abandon.” If you note a change that is incorrect highlight the change and click on the “delete” button. Then save or abandon all changes. There is also a disabled button labeled “Help”.

If you select “Save,” your changes will be written to a file named Changes2.db in the directory from which you are running WinBolts. When you submit your BIPPI inspection, these changes will be included with your set of BIPPI files in a file named FVChanges.db.

If after clicking on the Save button and confirming changes the inspector discovers that an incorrect edit has been made, there is a new provision for disapproving the edit. Click on the Show Edits button on the toolbar. A new screen will appear with a table that contains all the edits entered for the current BIN. Scroll down the table and select the row that contains an incorrect edit by clicking on the Left most cell in the row. Next, click on the Disapprove This Edit button. the word “NO” will appear under the BDSU approval column for this row.

If you select “Abandon,” all your changes will be discarded.

e. Field Verification: From the WinBolts menu, select “Display” and then the “Field Verification” option. This screen displays all standard and special inventory items which need to be checked for this bridge.

Standard Checks include:
* Bridge Data:
  - Maximum Vertical Clearance ON
- Minimum Vertical Clearances ON
* Feature Intersected Data
- Maximum Vertical Clearance UNDER
- Minimum Vertical Clearances UNDER
* Spans Data
- Original Wearing Surface
- Original Wearing Surface Still in Place and
- Present Wearing Surface.
* Work History Data

If a deck or superstructure has been replaced, the Original Wearing Surface and Present Wearing Surface should be changed to reflect the new wearing surface type.

Special Checks for 2003:

**Special Check 1 - Culvert/Frame/Arch**
Concern: In the past, there has been little direction provided for differentiating culverts, frames and arches. Individuals often used their personal judgment to assign General Types of Main Span (GTMS) and Span Design Types (SDTs.) Bridges with these GTMS and SDTs will be identified and the inspector asked to reassign these values using the Bridge Inventory Manual. Special Instructions: Please update the Standard Photos to show GTMS and SDTs.

**Special Check 2 - Bridge Length**
Concern: Bridge Length is greater than the sum of the span lengths by definition. If our database shows the Sum of the Span Lengths exceeds the Bridge Length or the Bridge Length is greater than 110% of the sum of the Span Lengths then these lengths will be identified for checking.

**Special Check 3 - Bridge Width**
Concern: Bridge Out-to-Out Width is always greater than Curb-to-Curb Width. Wherever the Curb-to-Curb Width exceeds the Out-to-Out Width, these dimensions will be shown and they should be checked. Exception: This does not apply to culverts where out-to-out width is zero.

**Work History:** Review the Work History Record for any new bridge or bridge having had a capital project undertaken since the last inspection. A capital project includes: bridge replacement, superstructure replacement, deck replacement, deck rehabilitation or general rehabilitation. Compare the latest Work History Record with that provided on the contract plans.

**All State Owned Bridges and Some Locally Owned Bridges:**
* Inspectors should notify the RBIIIC of the need to update the Work History Record with a comment in the “Note Any Improvements Area”.

**Other Non-State Bridges:** Inspectors will be responsible for updating the Work History Record or creating a new one to reflect the capital project. Create a new Work History Record by:
  * selecting the Work History tab
  * selecting Add/Delete from the menu bar and then Add New Work Record from the drop down list.
  * enter the data as appropriate.

**Other Changes:** If the inspector believes that any other inventory data is incorrect, describe this need as a note in the “Note Any Improvements Area” of the first BIPPI screen.

**Cross-Edit Checks:** After all Inventory data has been updated the submission is reviewed. On the Check Edits Screen, select the option “Perform Cross Checks.” This compares data in some fields to data in other fields to ensure compatibility; e.g., Out-to-Out width is greater than the Curb-to-Curb width. The results will be presented on the screen. A file of these results can be created by selecting the Save Cross Checks option.
The inspector should then resolve any inconsistent data identified by the Cross Edit Check as previously described.

i. **Finish Update:** Return to BIPPI.
   - **“No Field Verification Changes:** If no inventory changes are required, from the BIPPI menu, select “Tools” and then “No Field Verification Changes.” Selecting this menu option will generate a record certifying that the inventory has been checked and the inspector has determined that there are no changes to the inventory required.

Whether inventory updates have been made or not, the completed BIPPI Submission will produce two electronic files, one with the new inspection information and one with the inventory update. Both of these are sent to the Quality Control Engineer for processing.

Thus, the inspector’s inventory update report will include 3 types of information:
* WinBolts value changes in the Changes2.db and Changes2.px files.
* inventory comments in the BIPPI field “Note Any Improvements Area.”
* text file describing edits.

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**Inspection Inventory: Update Paper Process (Authorities and Other Agencies)**

Bridge Inspection Inventory Updates are accomplished through the following process.

a. **New Bridge:** A complete set of Inventory Forms must be completed for a new bridge by using the Standard Forms.

   Clearly identify at the top of each form either “English” or “Metric” as the units of all measurements.

b. **Capital Project:** If the bridge has been replaced or rehabilitated since the last inspection, the contract plans should be used for the inventory update.
Bridge replacements and rehabilitations are characterized by new bridge elements as follows:

1) Bridge Replacement: all Deck, Superstructure and Substructure elements are new.
2) Superstructure Replacement: all the Deck and Superstructure elements (primary and secondary members, bearings, etc.) are new, but not all Substructure elements are new.
3) Deck Replacement: all the Deck elements (structural deck, railings, curbs, wearing surface, etc.) are new, but not all Superstructure and Substructure elements are new.
4) Deck Rehabilitation: the entire Deck was resurfaced, but the Structural Deck is not new, even though portions of the Structural Deck may have been rehabilitated or replaced.
5) General Rehabilitation: portions of the Deck, Superstructure and/or Substructure are new, but none are completely new.

If the condition of some elements has increased, but there are still many elements which are in poor condition, then the bridge probably has not been rehabilitated. Contract maintenance work such as painting or doing other work on many bridges is not rehabilitation.

If the bridge was replaced or rehabilitated, a complete inventory update and work history record are required.

A complete inventory update involves changing the information on every Inventory form as necessary. A couple of reminders include:

* Bridge Replacements
  - Year Built to be changed to the year the bridge was opened to traffic and the Year of Last Major Rehab to be set to “NNNN.”
* Bridge Rehabilitations require the Year of Last Major Rehab to be changed to the year the bridge was opened to traffic.
* Bridge Replacements or Rehabilitations
  - Load Posting should reflect the new conditions.
  - Check number of lanes.
  - Check Number of Main and Approach Spans.
  - Check number of Span Records on Span Inventory.

### Changing Inventory Item Values

Cross out the old data and clearly write the new data above it on the paper form. Write “ENGLISH” or “METRIC” at the top of the form to identify the units of measure used.

Blanks: Some Items need to be changed from an existing value to a blank. To change those fields which allow a blank value, write in the word “blank”.

Add Feature: If there are more features on the bridge than are recorded in the existing inventory, then a feature can be added by:

* using a copy of another Feature record or a blank Feature record write in the data for the new feature on the form.
* note in the “Bridge Improvements Comments” the number of additional Features being added.

Delete Feature: If there are fewer Features on the bridge than shown in the inventory:

* Complete the following fields on the Feature Intersected record (RC13) to be deleted: Region, County, BIN, Feature Number. For Feature Code, enter @@. For Transaction Type, enter “2.”
* note in the transmittal letter that one or more Features are being deleted for this BIN.

Highway and Railroad Features Carried/Crossed: Except for Complete Inventory Updates associated with new bridges and capital projects, the only Features Carried/Crossed data which the inspector should update is the Maximum and Minimum Vertical Clearances for each highway or railroad feature carried or crossed as described in the following section “f. Field Verification.”
Highway features will be linked to the highway database with the majority of data coming through the link. If an inspector believes that these descriptions should be changed, simply note it in the transmittal letter.

d. **Field Verification**: Each year there are Standard and Special inventory items which need to be checked for each bridge as part of the Field Verification part of an inspection which are independent of improvements having been made to a bridge. Mark any appropriate changes on the printed forms which display this information.

**Standard Checks include:**
- **Bridge Data**:
  - Maximum Vertical Clearance ON
  - Minimum Vertical Clearances ON
- **Intersected Features**
  - Maximum Vertical Clearance UNDER
  - Minimum Vertical Clearances UNDER
- **Spans Data**
  - Original Wearing Surface
  - Original Wearing Surface Still in Place and
  - Present Wearing Surface.

If a deck or superstructure has been replaced, then the Original Wearing Surface and Present Wearing Surface should be changed to reflect the new wearing surface type.

**Special Checks**

**Special Check 1 - Culvert/Frame/Arch**

*Concern*: In the past, there has been little direction provided for differentiating culverts, frames and arches. Individuals often used their personal judgment to assign General Types of Main Span (GTMS) and Span Design Types (SDTs.) For bridges with these GTMS and SDTs, the inspector is asked to reassign these values using the Bridge Inventory Manual.

*Special Instructions*: Also, please update the Standard Photos to show GTMS and SDTs.

**Special Check 2 - Bridge Length**

*Concern*: Bridge Length is greater than the sum of the span lengths by definition. If the Sum of the Span Lengths exceeds the Bridge Length or the Bridge Length by more than 110% of the sum of the Span Lengths then verify these lengths.

**Special Check 3 - Bridge Width**

*Concern*: Bridge Out-to-Out width is always greater than Curb-to-Curb Width. Wherever the Curb-to-Curb Width exceeds the Out-to-Out width, then verify these widths. Exception: This does not apply to culverts where out-to-out width is zero.

e. **Work History**: If a capital project was undertaken since the last inspection, a Work History Record must be completed. A capital project includes: bridge replacement, superstructure replacement, deck replacement, deck rehabilitation or general rehabilitation. Compare the latest work history record with that provided on the contract plans.

Complete the blank Work History record provided with the existing data.

Note in the transmittal letter that there is a Work History Record included.

f. **Other Changes**: The inspector may make additional changes needed or describe these changes in the transmittal letter.
V. Data Edit/Update_04 (Draft)

g. Finish Update:

Assemble the following three items:
* Transmittal Letter
* Inspection Forms
* Inventory Forms

Send to the Quality Control Engineer for processing.

Inspector’s Submission to QC Engineer: WinBolts

The inspector submits the BIPPI inspection and the inventory updates for one or more BINs to the QC Engineer by the normal BIPPI process of running the program TRANSFR3.exe. This generates an email to the QC Engineer and attaches both the inspection and inventory update files for each BIN in the Submission directory and the linked document files. If the files are too large to email, then the program stores the results in the Submission’s directory for later manual transfer by CD, FTP or network copy.

Inspector’s Submission to QC Engineer: Paper Process (Authorities)

The inspector submits the entire Bridge Inspection Report including the inventory updates to the Liaison Engineer.

QC Engineer’s Review

The QC Engineer is responsible for reviewing the entire Bridge Inspection Report including the inventory update. If someone other than the QC Engineer will review the inventory edits, then follow the procedure specified by your Regional Office.

QC Engineer’s Review: WinBolts Process

The QC Engineer can review the inventory update for the submitted bridges by using the following procedure:

a. Open WinBolts Program. From the WinBolts menu, select “Password.” Enter the password provided to you by your Liaison Engineer. You will be prompted to enter your Name. Enter the initial of your first name and your complete last name. If your GroupWise program is running, WinBolts will default to your User ID and simply accept it.

b. An Edits Window will appear. Left click the file to process box and a window will appear. Navigate to the Submits folder you are reviewing and select the FVChanges.db file.

c. A list of all the changes which the inspector submitted will appear. These are identified by table and Field; eg, Span Inventory, Span Design Type, along with the values being changed.

d. Double click the first BIN you want to review. This will cause WinBolts to switch to that BIN.

e. Review each of the WinBolts Screens on which changes were made. The changes will be displayed with a RED background. Click on a RED item and the history of recent changes to that data will be displayed in a drop down box. Opening the BIPPI program to review the inspection for this bridge may provide additional insights such as Improvement notes and/or scanned inventory forms.

f. Select the Perform Cross Checks option and WinBolts will compare data in various fields to ensure compatibility. The results will be displayed on the Edit Review Screen. There should be no errors identified. If there are, then select the Save Cross Checks option to save the error report to a text file and return the Submission to the inspector to address the errors.

g. Review the changes. If you disagree, you can make a change which will supersede the inspector’s change and identify you as the one having made the change. Any inventory data in WinBolts can be changed as appropriate; however, we ask you to change only the inventory data that was described earlier in this chapter. Changes to the Bridge Improvement Comments and the forms should be noted in the transmittal of the Submission; eg, email or cover letter.

QC Engineer’s Submission to RBIIC/BDSU
Inventory updates, whether paper or electronic, must accompany the corresponding inspections for the BINs being submitted. Submission numbering is defined in the Bridge Inspection Manual. Procedurally, there are differences between the two processes.

**QC Engineer's Submission to RBIIC/BDSU: WinBolts Process**

The QC Engineer submits one or more BIPPI inspections by running the TRANSFR3.exe program which automatically numbers the submission (can be overridden by the QC Engineer with a different submission number) and generates an email to the Liaison Engineer as described in the BIPPI Users Guide.

The Inventory update is also submitted using the TRANSFER3.exe program as follows:

a. it generates an email to either the RBIIC or the BDSU depending on the Region.

b. it zips all the inventory changes in the Submission directory (FVChanges.db, FVChanges.px, extracts the “Note Any Improvements Area” and linked files into one zipped file named with the QC Engineer’s Submission number; eg, FV09104.db or FV59102.db and a FV......px, for Region 9.

The QC Engineer reviews the Submission, adds any additional comments to the email or cover letter and sends it to the RBIIC either by: email, mailing a CD or passing the data through the FTP process.

**RBIIC Review**

The RBIIC reviews the electronic Submissions received from the QC Engineer.

Upon receipt of a Submission from the QC Engineer, we suggest:

a. create a new Submission folder in the FV Submissions 2002 directory of your PC named with the Submission number; eg, D:\FV Submissions 2002\02205\b. save the zipped file attached to the email to this directory; make sure the box “Use Folder Names” is NOT CHECKED
c. unzip the file to this same folder
d. move the email to the GroupWise “FV Submissions 2” folder

The RBIIC reviews each Submission as an entity; ie, all BINs are reviewed before the Submission is forwarded, following the same process as the QC Engineer with the following exceptions.

a. Having reviewed the entire Submission and either confirmed the changes or made appropriate changes to them, the RBIIC approves the changes by selecting each change, BIN or the entire Submission on the WinBolts Edit pop-up window and selects the appropriate “Approved” command button. This is used by the BDSU to know that the changes have been reviewed and approved.

b. For State bridges which incurred a capital project since the last inspection, the RBIIC will prepare an inventory update and include it as part of this Submission if it has not previously been submitted. If the inventory Update is added to the Submission, this should be noted in the email transmitting the Submission to the BDSU.

c. Forward the original email from the QC Engineer to the Main Office BDSU along with any additional comments and attach all the files in the Submission folder. It is important to include the inv_data.txt files as they identify which bridges are IPROBs. If there is an IPROB with any of the BINs included in the Submission, please note it in the email. If the files total a megabyte, then we suggest that you zip them together.

d. Save your email in your GroupWise folder: “Submissions Sent.”

Note, if the RBIIC has concern with one or more BIN updates, then the Submission should be held until all concerns are resolved and then the Submission should be approved and passed along to BDSU.

**BDSU Review**

BDSU reviews the inventory updates for each submission. The process used depends on whether the Submission was prepared using the electronic BIPPI/WinBolts process or the paper process. Both are described below.

**BDSU Review: WinBolts Process**
V. Data Edit/Update_04 (Draft)

BDSU will process the Submission received from either the QC Engineer or the RBIIC using the following procedure:

a. BDSU will receive the FV Submission by email from RBIICs/Inspectors and
   - save the email to a GroupWise folder named - FV Submissions (Year)
   - determine which Submissions have IPROBs
   - log receipt of Submission

BDSU Review: Paper Process

BDSU will then process the Submission received from the Liaison Engineer using the following procedure:

a. BDSU will receive the Submission
   - determine which Submissions have IPROBs
   - log receipt of Submission

BDSU Processing

This process enters the Updated data onto the Bridge Inventory. This is accomplished through the following procedure.

BDSU Processing: WinBolts Process

a. Prepare Update file
   - receive email with Update File.kpn
   - convert Update File.kpn to an Update File.txt
b. Upload the Text File using the BDMS application
c. Delete Update File and Text File
d. Delete email
e. Record that the Submission has been processed in the Inventory Tracking System.

3. RBIICs Inventory Updates

Quality control of the bridge inspection data is the responsibility of the Regional Bridge Inventory and Inspection Coordinator (RBIIC). The need for new inventory data is identified by: updating data to reflect bridge improvement projects, checking data, encountering problems with data, changing definition of values, etc.

Thus, this process does not actually change the data, but creates a Submission of changes which are sent to BDSU and are processed by them to change the corporate data. Each Submission is assigned a unique, 6 digit Submission Number using the following convention:

Digits 1 -3 “RBC” indicating the Submission was created by the RBIIC
Digit 4 Region: 1, 2, 3...0, N
Digit 5 the last digit of the current year; eg, 2003 would be “3”
Digit 6 & 7 the sequential number of the Submission for the year for your Region: 01, 02, 03... 99.
   Submissions greater than 99 should use 1a, 1b, 1c, etc. followed by 2a, 2b, 2c.....

Examples: RBC9301, RBC2313, etc.

RBIICs Inventory Update: WinBolts Process

The following 3 step process can be used.

1. Make data updates via WinBolts
2. Submit changes to the Bridge Data Systems Unit (BDSU) for processing against the Corporate database.
3. Archive the Submission.

The process used to make these inventory updates is the same as described in section “2. Inspection Inventory Updates” in the paragraph “f. Changing Inventory Item Values” with some variation required due to BIPPI not being used in the process.
V. Data Edit/Update_04 (Draft)

1. Make data updates via WinBolts
   a. Open WinBolts
   b. From the WinBolts menu, select “Password.” Enter the password provided to you by BDSU. You will be prompted to enter your Name. Enter the initial of your first name and your complete last name. If your GroupWise program is running, WinBolts will default to your User ID.
   c. An Edits Window will appear. Left click the “File to Process” field. A pop-up window will appear titled “Find File of Inventory Edits - OR Create a New File.” If you are starting a new file to transfer your updates to BDSU then in the box “File Name:” enter the Submission Number as name of a new file following the naming convention previously described; eg, RBC9201. A “.DB” file extension is added automatically to identify it as a Paradox file. If you have already created a file which has not yet been submitted, simply select it.
   d. Go to WinBolts screen, select the BIN you want to Edit and make the changes as appropriate. They will be saved to the selected file; eg, “RBC8201.DB” and will appear in the Edit window when you return to it. To select a BIN from this Edit list, simply double click the BIN and WinBolts will change to that BIN.

2. Submit changes to BDSU for processing against the Corporate database
   When you are ready to submit updates to BDSU, eg, once a week, send an email BDSU and attach the Submission files; eg, RBC901.DB and RBC9201.PX. We recommend filing the email in a GroupWise folder named “Inventory Submissions (Year).”

3. Archive the Submission
   Move the two Submission files; eg, RBC901.DB and RBC9201.PX from \Inventory Updates\ to the subdirectory \(Year) Updates\.

4. BDSU Inventory/Systemic Updates
   The Bridge Data Systems Unit (BDSU) is responsible for: a. processing all inventory updates to the corporate database, except Load Rating data. b. reviewing inventory updates submitted by others, and c. performing systemic checks on the data.

   Processing bridge inventory changes submitted by others includes:
   a. All updates to the Bridge Inventory data are reviewed by BDSU.
   b. Upon acceptance the BDSU reviewer processes the update to the corporate database.

   BDSU will periodically check the bridge inventory data for inconsistencies and will modify codes as necessary to reflect current practice. When the need for changes are identified, each affected Region, will be sent a list of the proposed changes and the RBIC asked to confirm the appropriateness of the change. Those changes approved by the RBIC will be made programmatically by BDSU.

5. Adding A New Bridge
   A BIN is generally retained for bridges that are reconstructed in the same general location, carrying and crossing the same features as the bridge they replace. If a bridge is replaced by two parallel bridges, the BINs for the new are the same first 6 digits as the old BIN with a different last digit. If two parallel bridges are replaced by a single bridge, the new bridge will be assigned the same BIN as the original two bridges with a last character of “0.”

   When a new bridge does not replace an existing bridge, a new BIN is added to The bridge inventory. The following steps are taken:
   a. Assign a Bridge Identification Number (BIN). (See Appendix “B”)
   b. Submit Bridge Inventory Forms
   c. Submit Bridge Inspection Forms

   a. Assign a Bridge Identification Number (BIN)
   A BIN can be assigned early in the project development process for the construction of new bridges. A request for a new BIN is made to the Bridge Data Systems Unit by completing and submitting a Bridge BIN Request Form. (See Appendix “B”)

   13
b. Submit Inventory Data
   For a new bridge, a complete set of inventory data is submitted to the BDSU via WinBolts or paper forms using the procedure described below or in section 2. Inspection Inventory Updates.

At PS&E, the RBIIC or BDSU personnel will obtain from the Designer, a preliminary set of the following inventory data: Identification (RC01), Structural Details (RC02), Safety and Utility (RC03), Inspection Responsibility (RC04), Feature Carried (RC12), Feature Crossed (RC13), Spans Inventory (RC15) and Work History (RC21.)

The Work History provides information about each bridge improvement project. The first Work History for a bridge provides information about its original construction, such as date, cost, contract number, etc.

c. Submit Inspection Data
   A complete set of inspection data is submitted through the Bridge Inspection Unit soon after construction is completed and the bridge is opened to traffic. This data is submitted through the Bridge Inspection Program - Pen Interface (BIPPI.)

The bridge inspection data can only be entered after the inventory data has been entered as the Inventory Data creates the computer records on which the inspection data is stored; eg, Inventory data establishes the number of span records to create.
6. Capital Project Updates

Bridges improved by capital projects may take several years to program, design and construct. The Bridge Inventory System enables the inventory data for the proposed projects to be recorded and updated separate from the existing bridge data. This separate data coding is named “Project Data.” Project data is typically entered at the time of PS&E.” Either the RBIIC or BDSU personnel can process Project Data via WinBolts. Main Office designers, Regional Office designers, and contract Managers/Reviewers should contact the BDSU to coordinate the generation and entry of this data.

The project data remains in the Project database until construction has been completed and the bridge is open to traffic. The Project data is then updated to reflect any changes and the current active data is replaced by the Project data.

To enter a proposed Project via WinBolts, follow the steps below:
* the RBIIC or BDSU personal can enter a Password and User ID in the same fashion required to make any edits.
* create a Submission in the same fashion required to make any edits.
* display the bridge for which a Project is being proposed.
* from the Data Source field, select “Project Data” from the drop down list
* select the Add/Delete option from the menu bar and then Add New Bridge (Note, while this is an existing bridge in the April and Current databases, this will be a new bridge for the Project Database.)
* you will be asked to enter the BIN for the project.
* enter the inventory data for the proposed project as you would for a New Bridge
* save the edits.
* submit the update in the same fashion required to make any edits.

To enter a proposed Project via paper forms, simply update a set of forms prepared for the existing project. Blank forms are available if preferred. All Project Record Code Numbers will be 50 higher than the forms indicate, ie, RC01 = RC51. Completed forms should be submitted to the RBIIC for Region designs or Regionally managed consultant designs or to BDSU for Main Office designs or Main Office managed consultant designs.

7. Closed /Reopened Bridge

If a bridge is closed to traffic for more than several days, then the closure should be reported to the BDSU on the Closed/Opened Bridge Report.

When the bridge is reopened to traffic the report should be resubmitted reflecting the opening.

BDSU will record the bridge is Closed or Reopened by the following process:
* enter a Password and User ID in the same fashion required to make any edits.
* create a Submission in the same fashion required to make any edits.
* display the bridge being Closed.
* edit the following fields as appropriate for the actions: Feature Code, Posted Load, Posting Date, Type Service On and Type Service Under
* save the edits.
* submit the update in the same fashion required to make any edits.
8. Deleting a Bridge

Bridges may be eliminated or replaced with a culvert or a structure that does not meet the definition of a bridge; a Railroad line may no longer be used and the bridge removed; or a bridge may be removed and an at-grade crossing constructed. In these cases, the bridge is deleted from BDMS by submitting a Bridge Deletion Report by email or memorandum, stating the reason for deletion.

BDSU will process the bridge deletion request.

BDSU will delete the bridge from the database by this process:
* enter a Password and User ID in the same fashion required to make any edits.
* create a Submission in the same fashion required to make any edits.
* display the bridge for which a Project is being proposed.
* select from the “Data Source” box drop down list “Current Data”
* select the Add/Delete option from the menu bar and then the Delete Bridge from the drop down list. Enter the BIN you want to delete. This will Delete the bridge from the Current database and all future April snapshots.
* save the edits
* process the update in the same fashion required to make any edits.

This process not only updates the Bridge Inventory, but it updates a Deleted Bridge table.

9. Load Rating Updates

Every highway bridge in New York State is analyzed to determine its structural capacity. This section first provides an overview of Load Rating to explain the differences in what appears to be similar data. It then describes how Load Rating data is updated in the Bridge Inventory.

Load Rating Overview

A comprehensive system has been established to determine how much live load each bridge can support. The Load Rating Unit of the Structures Division can be contacted for specific information on load rating data. The following description is presented solely for the purpose of understanding how the load rating data is entered and stored in the bridge inventory.

There are 3 levels of analysis:
- Level 1 Hand calculated or PE Certified computer analyses
- Level 2 Computer generated (Virtis or BLRS)
- Level 3 Computer generated indication of Load Rating ability used solely to provide to FHWA when neither a Level 1 or 2 rating is available.

The Level 1 is the most comprehensive and reliable analysis. It’s findings are used whenever they are available. Level 2 analyses are performed as a part of each biennial bridge inspection.

Load Rating Data Entry

The Structures Division Load Rating Unit enters all load rating data using their own Graphical User Interface within the BDMS application.

10. Scour Critical Updates (BSA)

The Bridge Safety Assurance Unit identifies bridges which have scour critical conditions. Their findings are stored in the bridge inventory and are entered using the BDMS application.

11. Fracture Critical Updates
The Bridge Safety Assurance Unit identifies data about fracture critical bridges. Once a year, prior to the preparation of the Federal File, they would transmit a list of fracture critical bridges to BDSU.

12. Diving Inspection

The Bridge Inspection Unit annually identifies the dates when all diving inspections have been performed during the year. This data is entered into BDMS using the BDMS application.

13. Historic Bridge Data Updates

The Environmental Analysis Bureau identifies bridges which are of historic significance and records associated data per bridge. This data is recorded in the Bridge Inventory extract and viewed through WinBolts.

Any changes to the Historic Bridge database are submitted to the Main Office Environmental Analysis Bureau. The EAB then review and approve the updates. The updates are then sent to BDSU for processing.

14. Work History - Contract Maintenance (Multiple BINs)

For multi-bridge contracts, where the same bridge work is performed on many bridges under one contract; eg, cleaning or painting; only a single work history record need be submitted to BDSU along with a list of all BINs. BDSU will then update the database.

15. BSA Vulnerability Updates

The Structures Division Bridge Safety Assurance Section provides monthly updates to the BDSU for processing into BDMS.
Appendix A- Bridge Abandonment/Deletion Report

Bridge Abandonment/Deletion Procedure
APP. A: BRIDGE ABANDONMENT/DELETION PROCEDURE

Purpose:
All bridges which carry a public highway or which carry moving loads over a public highway or waterway are included in the bridge inventory. These bridges remain in the bridge inventory until they are either:

1. abandoned,
2. demolished, or
3. replaced by structures which do not meet the definition of a bridge.

1. Abandoned bridges are barricaded to all traffic with permanent obstacles. The ramifications of abandoning a bridge are:
   * Abandoned bridges will no longer be inspected.
   * Abandoned bridges will remain in the inactive bridge file until they are demolished or replaced by a structure which does not meet the definition of a bridge.
   * Abandoned bridges are not reported to FHWA.
   * If at a later time an abandoned bridge is repaired or replaced, it can be reactivated in the database.

2. Demolished or
3. Replaced with a structure which does not meet the definition of a bridge, the ramifications are:
   * bridge data is deleted from the bridge inventory.

If a bridge has been closed for 5 or more years, NYSDoT can administratively declare the bridge to be abandoned. However, the Owner should be contacted in writing to determine their intentions with regard to it’s disposition. Attached is a sample letter to the bridge owner.

Procedure:
1. Decision to Abandon or Delete a Bridge
The Regional Bridge Inventory and Inspection Coordinator (RBIIC) is responsible for identifying bridges for abandonment and deletion.

For State Owned Bridges:
   Abandoning a bridge requires authorization by the Regional Director or designee.

   Deleting a bridge can be initiated upon completion of a capital project which demolishes the bridge or replaces it with a structure which does not meet the definition of a bridge.

For Non-State Owned Bridges:
   Abandoning a bridge requires that the bridge owner be notified in writing of the intent to abandon the bridge, the ramifications and asked for their intention on what to do with the bridge. Attached is a sample letter to the bridge owner. The bridge owner should be allowed sufficient time to respond. If the bridge owner responds that they do not plan on doing anything with the bridge or if the bridge owner does not respond then the bridge can be administratively abandoned.

   Deleting a bridge can be initiated upon completion of a capital project to demolish the bridge or to replace it with a structure which does not meet the definition of a bridge.
2. Submission

Complete the Bridge Abandonment/Deletion Report as presented in this WordPerfect document and submit it by either email as an attachment or FAX it to:

For all bridges:  
Email:  
Steve Hubbard  
shubbard@dot.state.ny.us  
(518) 457-6945  
Tim Rudzinski  
trudzinski@dot.state.ny.us  
(518) 457-6945

FAX:  
(518) 457-6945

Regional Personnel as you deem appropriate:

Bridge Owner if not NYSDoT:

The subject of the Email/FAX should be: “BRIDGE ABANDONMENT/DELETION REPORT: BIN xxxxxxx”.

The Bridge Data Systems Unit will notify the RBIIC within 24 hours by email or FAX that the report has been received. The RBIIC will also be notified when the data has been loaded into BIIS. If you do not receive such a response or if you have questions implementing this procedure, please contact Steve Hubbard at (518) 457-2417 or Tim Rudzinski at (518) 457-1105.
A. GENERAL INFORMATION

BIN: ___________________ Region: __________ County: _________________________________

Feature Carried: ________________________________ _________________________________

Feature Intersected: ________________________________ _________________________________

Bridge Owner: ____________________

B. BRIDGE ABANDONMENT

For State Owned Bridges

Date RD Endorsed Abandonment: _______

For Non-State Owned Bridges

Date Written Notice Sent to Bridge Owner: _______

Bridge Owner Response:

☐ Owner agreed to Abandonment

☐ Owner did not respond to notification

C. BRIDGE DELETION

Reason for Deletion

☐ Bridge Demolished

☐ Bridge Replaced with one which does not meet the definition of a bridge

REMARKS:

Date Report Submitted: ___________ Report Prepared By: ________________________________
Appendix B – Assigning a New BIN

BIN Assignment Procedure
This appendix describes how a New BIN is assigned to a bridge. The following form can be emailed or snail mailed to the BDSU.

**BIN REQUEST:** ________________  
**Date Assigned:** ________  
**Assigned by:** __________

**TO:** Bridge Data Service Unit, 7-216

**FROM:**

**SUBJECT:** REQUEST FOR BIN (Bridge Identification Number)  
**SKETCH ATTACHED:** NO ___ YES: ___

**DATE:**

**cc:**

This form is used for assigning BINs. This form can be e-mailed to ekearnan@dot.state.ny.us with a cc: to shubbard@dot.state.ny.us if a sketch is not required; eg, all answers to question 9 are “NO.” If a sketch is required; either FAX to (518) 457-6945 or send by courier to the above address. A BIN will be assigned and the requestor will be notified in the same fashion the request was made. Use the NYS Bridge Inventory Manual for explanations and definitions of terms.

1. **Reason for requesting an BIN:** ____________________________________________________________

2. **Region:** ___  
**County Name:** ___________________________  
**Political Unit:** ___________________________

3. **Name of Highway or Feature Carried:** _______________________________________________________

4. **Name of Highway or Feature Crossed:** _______________________________________________________

5. **Does the bridge cross the NYS CANAL SYSTEM?** NO ___ YES ___ (If YES go to 9)

6. **Is the bridge on an INDIAN RESERVATION?** NO ___ YES ___ (If YES go to 9)

7. **Is the bridge owner a RAILROAD?** NO ___ YES ___ (If YES go to 9)

8. **Is the bridge owner: STATE?** NO ___ YES ___ or LOCAL, CITY, VILLAGE, TOWN or PRIVATE? NO ___ YES ___ or COUNTY? NO ___ YES ___ or PARKWAY, AUTHORITY or COMMISSION? NO ___ YES ___

9. **Is this bridge in a:**  
   **PARALLEL CONFIGURATION?** NO ___ YES ___ or  
   **BI-LEVEL STRUCTURE?** NO ___ YES ___ or  
   **RAMP?** NO ___ YES ___

If YES was picked for any part of question 9, then attach a 200 scale plan drawing with north arrow showing the bridge circled and any other bridges labeled by BIN or as proposed. All requests for the other BIN’s in parallel, ramp, or bi-level configurations must be attached as part of this request, since they must be processed as a unit. For a bi-level structure attach a 200 scale elevation drawing. The drawings must be cut to 8 ½” by 11”.

10. **Is this bridge a REPLACEMENT STRUCTURE?** NO ___ YES ___ or 

   **Does this structure already have a BIN?** NO ___ YES ___

   **If so enter BIN(s):** _____________________________

**Requestor:** ___________________________ ___________________________ ___________________________
BRIDGE IDENTIFICATION NUMBER ASSIGNMENT PROCEDURE

The BIN is assigned using the following process.

**Overview**

<table>
<thead>
<tr>
<th>DIGIT 1</th>
<th>DIGITS 2 - 6</th>
<th>DIGIT 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 State</td>
<td>SEQUENTIAL NUMBERS USING FIRST DIGIT</td>
<td>0 2 way</td>
</tr>
<tr>
<td>2 Local</td>
<td></td>
<td>1 - 2 1 way Parallel configuration</td>
</tr>
<tr>
<td>3 County</td>
<td></td>
<td>3 - 6 Stacked</td>
</tr>
<tr>
<td>4 Canal</td>
<td></td>
<td>7 Bi-level, lower level</td>
</tr>
<tr>
<td>5 Authority/Commission</td>
<td></td>
<td>8 Bi-level, upper level</td>
</tr>
<tr>
<td>6 Indian Reservation</td>
<td></td>
<td>9 Reserved, no longer used</td>
</tr>
<tr>
<td>7 Railroad</td>
<td></td>
<td>A - Z Ramps</td>
</tr>
</tbody>
</table>

1. Description of BIN

The Bridge Identification Number (BIN) is a unique seven character identifier with the first six characters being numeric and the seventh character being either numeric or alpha. BINs are initially assigned based on the logic presented in this section. Over time the conditions used to assign a BIN may change, but the original BIN is retained, therefore, one can not assume that the meaning of a BIN is retained.

BINs are assigned by the Bridge Data Systems Unit of the Structures Division.

2. When a new BIN is assigned vs an existing BIN retained:

A new 7 character BIN is assigned for:
- a. A new bridge on new alignment WHICH DOES NOT replace an existing bridge (except as noted in d.)
- b. A new bridge on close alignment to an existing bridge which is remaining in place.
- c. Construction or reconstruction of a multiple pipe culvert that originally did not qualify as a bridge, but now does.
- d. A new bridge which is in the same location as one which was removed and deleted from the Bridge Inventory some years before. For example, if a bridge was on the Bridge Inventory at one time and then the bridge was removed and deleted from the inventory and then a new bridge was built some years later, the new bridge would be assigned a new BIN.

The first 6 characters of a BIN are retained, but new last character assigned:
- a. A bridge that replaces two bridges in a PARALLEL configuration with a single bridge will be assigned a new BIN using the same first 6 digits. In this situation, record the change of the last digit of the BIN from a 1 or 2 to a 0 in the Work History comment field of the old BINs.
- b. A second bridge built next to an existing bridge in a PARALLEL configuration. Both bridges will share the first 6 digits of the existing BIN and the last digit of each BIN will change to reflect the parallel configuration. Record the change of the last digit of the BIN from 0 to 1 or 2 in the Work History comment field of the existing BIN.

The existing BIN will be retained for:
- a. A new bridge on existing or close alignment with an existing bridge which is replacing the existing bridge.
- b. An existing bridge which is being improved.

3. BIN Assignment

**Digit 1 - Owner**

1. State: any bridge owned/constructed by a NYS agency including NYSDoT, Parks and Recreation, DEC, etc.
2. Local: any bridge owned/constructed by a Town, City or Village
3. County: any bridge owned/constructed by a County
4 Canal: Any bridge which crosses the NYS Barge Canal.
5 Authority/Commission: any bridge owned/constructed by an authority or commission
6 Indian Reservation: any bridge constructed within the jurisdiction of an Indian Reservation. Here the
   RC01 Municipality Code must be coded as one of the Indian Reservations.
7 Railroad: any bridge which is owned/constructed by one of the 45 railroads operating in the state

The priority for assigning the first digit is prioritized as follows:
   Canal
   Indian Reservation
   Railroad
   State
   Local
   County

Digits 2 - 6
Sequentially assigned based on Digit 1

Digit 7
0 a single bridge serving two way traffic
1 a bridge in parallel configuration serving one way traffic in the Direction of Orientation of the bridge.

Parallel bridges are bridges which generally carry the same type of service passing over a common type of
service and have a positive opening between the superstructures. A designed joint, whether open or
filled does not constitute parallel structures. Divided highways which have discontinuous culverts in line
carrying the same flow of water, are considered to be in parallel configuration and are to be inventoried
accordingly.

The Direction of Orientation is described under RC01 Direction of Orientation.

The first six characters of the BIN for parallel bridges are the same. The last character of the BIN is
coded “1” for the Direction of Orientation and “2” for the opposite direction. Thus, for parallel bridges
carrying east - west routes, the eastbound structure is numbered “1” and the westbound structure is
numbered “2”; and for north - south routes, the northbound structure is numbered “1” and the
southbound structure is numbered “2”.

2 a bridge in parallel configuration serving one way traffic opposite the Direction or Orientation

3 - 6 Stacked bridges carry different service and share portions of substructure. For example, a highway
crosses over a RR which crosses over a ravine and the highway bridge and the RR bridge share at least
one pier.

Stacked, multi-level bridges crossing at the same location which share the same first 6 digits, but are
assigned a different last digit. The structure lowest in elevation is assigned a 3, the next lowest
structure assigned a 4, etc.

7 Bi-level, lower level

Bi-Level bridges carry two levels of traffic one on top of the other; eg. “double decked.” Bi-level bridges
share substructures and at least portions of the superstructure. For example, the upper and lower
levels of the George Washington bridge.
If the bridge has a bi-level configuration, each level is considered to be a separate bridge. The components of each bridge which solely serve one level are associated with that level. Components which serve both levels are split between the two levels. Portions serving solely the upper level are associated with the upper level. Portions which serve both levels are associated with the lower level; e.g., the portion of a pier supporting solely the upper level extends downward to the point where that same pier picks up the load for the lower level. At this point the rest of the pier is associated with the lower level.

The first six characters of the BIN for each level will be the same. The last character of the BIN will be coded “7” for the lower level structure and “8” for the upper level structure.

8 Bi-level, upper level

9 No longer used

A - Z Ramps connected to a parent structure
Ramp structures are defined as bridge spans connected to a parent bridge. Each ramp structure has the same first six characters of the BIN as the parent bridge to which it is connected. The last character of the BIN is assigned letters “A” - “Z” for each of the ramp structures. Looking in “Direction of Orientation” from the beginning of the parent structure, letter each ramp structure beginning with letter “A” and continue in a clockwise direction around the parent structure.

For parallel bridges with ramps, looking in the Direction of Orientation from the parent parallel bridge with the last digit being “1,” ramps connecting either parallel bridge will be designated beginning with the letter “A” and continuing thru the alphabet in a clockwise direction.

If the bridge is not in a parallel configuration, or not a bi-level structure, or is not a ramp structure, then the last character of the BIN is assigned a “0”.

The priority for assigning the seventh digit is prioritized as follows:
- Ramps to parent bridges
- Stacked, multi-level bridges
- Bi-level bridges
- Parallel configuration bridges
- Single bridges serving Two way traffic
Appendix C – Closed Reopened Bridge Report

Closed Bridge/Reopened Bridge Procedure
C. CLOSED BRIDGE/REOPENED BRIDGE PROCEDURE

Purpose:
The closing of a bridge for more than a couple of days is important to Executive Management, as well as, to those responsible for routing oversize/overweight vehicles and issuing permits. It is equally important to report the reopening of bridges that have been closed. This procedure identifies who should be notified, what information is needed and how to submit the information.

The closing of a bridge for any length of time raises question with the importance of the bridge and its priority for Federal and State funding. Therefore, the intent of the Owner on what will be done with the bridge; eg, repair, replace or remove, is important to identify at the time of closing or shortly thereafter.

A closed bridge will continue to be inspected until it is Abandoned or Deleted from the Bridge Inventory.

Procedure:
The Regional Bridge Inventory and Inspection Coordinator (RBIIC) will: 1. complete the Closed Bridge (or Reopened Bridge) Report as presented in this WordPerfect document and 2. submit it by email as an attachment or FAX it to the following people:

For all bridges: Email  FAX
Steve Hubbard  shubbard@dot.state.ny.us  (518) 457-6945
Tim Rudzinski  trudzinski@dot.state.ny.us  (518) 457-6945
Regional Personnel as you deem appropriate:

For State Bridges only, please also send the report to:
Scott Lagace  slagace@dot.state.ny.us  (518) 485-7826
Kent Destefanis  kdestefanis@dot.state.ny.us  (518) 485-7826
Kola Majekodumi  kmajek@dot.state.ny.us  (518) 457-0367
Mark White  mwhite@dot.state.ny.us  (518) 457-0367
Jane Yu  jyu@dot.state.ny.us  (518) 457-0367
Steve Conklin  scoklin@dot.state.ny.us  (518) 457-0367
Paul Lyons  plyons@dot.state.ny.us  (518) 457-0367

The subject of the Email/FAX should be: “CLOSED (or REOPENED) BRIDGE REPORT: BIN xxxxxxx”.

The Bridge Data Systems Unit will notify the RBIIC within 24 hours by email or FAX that the report has been received. The RBIIC will also be notified when the data has been loaded into BIIS. If you do not receive such a response or if you have questions implementing this procedure, please contact Ed Kearnan at the above addresses or call him at (518) 457-1403.
Instructions:
The following information should be reported as contained in WinBolts:
Region Feature Carried Feature Intersected
County

The following terms are defined in the Bridge Inventory Manual:
Posting Date Type of Service On Feature Description
Feature Code Type of Service Under

The following terms are defined as follows:
State Bridges: Are bridges which the Region reports as State bridges for capital program planning and reporting; i.e., any bridge for which NYSDoT has Ownership or Maintenance Responsibility.
Detour Route: Provide a clear and concise description of any established detour route over which our Permits folks should direct full size vehicles. A map should be attached for difficult to describe routes. If a detour route has not yet been established, submit the report without this information to ensure timely reporting.
BINs on Detour Route: Any BINs located on the established Detour Route.
Detour Route Limitations: Describe any restrictions along the established Detour route which would affect routing oversize vehicles; such as load, height or width restrictions.
Date Closed: The Date the bridge was closed to traffic
Date RBIIC Notified: The Date that RBIIC was notified that the bridge was closed to traffic.
NYSDoT Notified By: The name of the person and the agency who notified NYSDoT of the Bridge Closing.
Anticipated Reopening Date: Best guess at when bridge might be reopened to traffic.
Date Report Submitted: The Date the Report was submitted to the Bridge Data Systems Unit.
Report Prepared By: Name of person preparing this report.
Date Reopened: The Date the bridge was reopened to traffic.
Remarks: Use this area for supplemental information.

Any questions on how to complete this report should be directed to Steve Hubbard at (518) 457-2417.
NYSDoT
CLOSED BRIDGE REPORT

A. GENERAL INFORMATION

BIN: __________ Region: __________ County: ________________________________________

Feature Carried: _________________________________________________________________

Feature Intersected: ______________________________________________________________

Detour Route: _________________________________________________________________

BINs on Detour Route: 1. __________ 2. __________ 3. __________ 4. __________

Detour Route Limitations: _______________________________________________________

Date Closed: _______________ Date RBIIC Notified: __________ NYSDoT Notified By: __________

B. TYPE CLOSURE (Reference: Bridge Inventory Manual)

( ) 1. Closed to all use during construction with traffic accommodated on site; eg, temporary bridge, use of parallel bridge, etc.
   Feature Code: "60", Posted Load: "98", Posting Date: Mo. _______ Yr. _______

( ) 2. Closed to all use resulting from structural deficiencies.
   Feature Code: "60", Posted Load: "99", Posting Date: Mo. _______ Yr. _______

( ) 3. Closed to its primary use, but is still open for another service.
   Feature Code: "61", Posted Load: "99", Posting Date: Mo. _______ Yr. _______

( ) 4. Closed to its primary use for other than structural deficiencies.
   Type Service On: ______, Feature Code: ______, Description: ___________________________
   Posted Load: "00", Posting Date: Mo. ______, Yr. ______

( ) 5. Abandoned - Feature Code: "60", Posted Load: "99", Posting Date: Mo. _______ Yr. _______
   Type Service On: "0", Type Service Under: __________________________

C. STATUS OF CLOSURE

( ) 1. Temporary, awaiting repairs or rehabilitation       Anticipated Reopening Date: __________

( ) 2. Temporary, awaiting replacement       Anticipated Reopening Date: __________

( ) 3. Permanent, awaiting bridge removal

( ) 4. Owner contacted but, disposition unknown or undecided

( ) 5. Other (Specify) __________________________

REMARKS:

Date Report Submitted: _______________ Report Prepared By: ___________________________

Form 5/01
A. GENERAL INFORMATION

BIN: ______________ Region: ______________ County: __________________________________________

Feature Carried: _______________________________________________________________________

Feature Intersected: ____________________________________________________________________

Date Reopened: __________ Date RBIIC Notified: __________ NYSDoT Notified By: ______________

B. NEW CLASSIFICATION - (Reference: Bridge Inventory Manual)

Feature Code: ______________

Posted Load: ______________

Posting Date: Mo. ______ Yr. _______

Type Service On: ______________

C. STATUS OF OPENING

( ) 1. Temporary, repairs made

( ) 2. Permanent repairs made (Inventory Update required)

( ) 3. Permanent, rehabilitation (Inventory Update required)

( ) 4. Permanent, replacement (Inventory Update required)

( ) 5. Other: ____________________________________________________________

REMARKS:

Date Report Submitted: __________ Report Prepared By: ________________________________
Appendix D – Load Posting Change Procedure

Load Posting Change Procedures for BDMS
D. LOAD POSTING CHANGE PROCEDURE

Purpose:
A change in the Posted Load on a bridge is important to those responsible for routing oversize/overweight vehicles, as well as, issuing Permits. It is equally important to report the removal of Load Postings. If a bridge posting is changed due to the reopening of a previously closed bridge, then use the Reopened Bridge Report instead of this report. This procedure identifies who should be notified, what information is needed and how to submit the information.

Procedure:
Whomever identifies a change in Load Postings should immediately notify the Regional Bridge Inventory and Inspection Coordinator (RBIIc). The RBIIc will: 1. complete the Load Posting Report as presented in this WordPerfect document and 2. submit it by email or FAX to all the following people. NOTE: Due to the speed of electronic submissions, it is no longer necessary to phone in this information.

For All Bridges: Email FAX
Steve Hubbard shubbard@dot.state.ny.us (518) 457-6945
Tim Rudzinski trudzinski@dot.state.ny.us (518) 457-6945

Regional Personnel as appropriate:

For State Bridges Only, please also send to:
Scott Lagace slagace@dot.state.ny.us (518) 485-7826
Kent Destefanis kdestefanis@dot.state.ny.us (518) 485-7826
Kola Majekodumi kmajekki@dot.state.ny.us (518) 457-0367
Mark White mwhite@dot.state.ny.us (518) 457-0367
Jane Yu jyu@dot.state.ny.us (518) 457-0367
Steve Conklin sconklin@dot.state.ny.us (518) 457-0367
Paul Lyons plyons@dot.state.ny.us (518) 457-0367

The subject of the Email/FAX should be: “LOAD POSTING CHANGE: BIN xxxxxxx”.

The Bridge Data Systems Unit (BDSU) will notify the RBIIc within 24 hours by email or FAX that the report has been received. The RBIIc will also be notified when the data has been loaded into BIIIS. If you do not receive such a response or if you have questions implementing this procedure, please contact Tim Rudzinski at (518) 457-1105 or Steve Hubbard at (518) 457-2417.

Instructions:
The following information should be reported as contained in WinBolts:
Region Feature Carried Date Posted
County Feature Crossed Posted Load
Owner

The following terms are defined in the Bridge Inventory Manual:
Date Posted Posted Load

The following terms are defined as:
Report Submitted: The Date this Report was prepared and the name of the person preparing the report.
# NYSDoT LOAD POSTING REPORT

## A. GENERAL INFORMATION (BIIS)

<table>
<thead>
<tr>
<th>BIN:</th>
<th>Region:</th>
<th>County:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feature Carried:</th>
<th>Feature Intercepted:</th>
<th>Owner:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## B. POSTING DATA

<table>
<thead>
<tr>
<th>Date Posted</th>
<th>Posted Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month  Year</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Old Posting:</th>
<th>New Posting:</th>
<th>Date RBIIC Notified:</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>_____ _____</td>
<td>_________________</td>
</tr>
</tbody>
</table>

**REMARKS:**

---

**Report Submitted Date:** ________________  **By:** ________________________________

---

Form 5/01
Appendix E – FHWA Coding Guide

FHWA Coding Guide Excerpts
Appendix E - FHWA Coding Guide Excerpts

This Appendix presents excerpts from the FHWA Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, December 1995, describing the algorithms for calculating the following items:

1. NBI Structural Evaluation
2. NBI Deck Geometry
3. NBI Underclearances, Vertical and Horizontal
4. NBI Waterway Adequacy
5. NBI Approach Roadway Alignment
6. Sufficiency Rating
7. Structurally Deficient
8. Functionally Obsolete

NBI Items 67, 68, 69, 71, and 72 - Indicate the Appraisal Ratings

The items in the Appraisal Section are used to evaluate a bridge in relation to the level of service which it provides on the highway system of which it is a part. The structure will be compared to a new one which is built to current standards for that particular type of road as further defined in this section except for Item 72 - Approach Roadway Alignment. See Item 72 for special criteria for rating that item.

Items 67, 68, 69, 71, and 72 will be coded with a 1-digit code that indicates the appraisal rating for the item. The ratings and codes are as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Not applicable</td>
</tr>
<tr>
<td>9</td>
<td>Superior to present desirable criteria</td>
</tr>
<tr>
<td>8</td>
<td>Equal to present desirable criteria</td>
</tr>
<tr>
<td>7</td>
<td>Better than present minimum criteria</td>
</tr>
<tr>
<td>6</td>
<td>Equal to present minimum criteria</td>
</tr>
<tr>
<td>5</td>
<td>Somewhat better than minimum adequacy to tolerate being left in place as is</td>
</tr>
<tr>
<td>4</td>
<td>Meets minimum tolerable limits to be left in place as is</td>
</tr>
<tr>
<td>3</td>
<td>Basically intolerable requiring high priority of corrective action</td>
</tr>
<tr>
<td>2</td>
<td>Basically intolerable requiring high priority of replacement</td>
</tr>
<tr>
<td>1</td>
<td>This value of rating code not used</td>
</tr>
<tr>
<td>0</td>
<td>Bridge closed</td>
</tr>
</tbody>
</table>

The FHWA Edit/Update computer program calculates values for Items 67, 68, and 69 according to the tables provided in this manual. These tables and the table for Item 71 shall be used by all evaluators to rate these items. They have been developed to closely match the descriptions for the appraisal evaluation codes of 0 to 9. The tables shall be used in all instances to evaluate the item based on the designated data in the inventory, even if a table value does not appear to match the descriptive codes. For unusual cases where the site data does not exactly agree with the table criteria, use the most appropriate table to evaluate the item. The code of N is not valid for use with Items 67 and 72.

Completed bridges not yet opened to traffic, if rated, shall be appraised as if open to traffic. Design values, for example ADT, shall be used for the evaluation. The data provided will include a code of G for Item 41 - Structure Open, Posted, or Closed to Traffic.

NBI ITEM 67: Structural Evaluation

This item is calculated by the Edit/Update Program based on Table 1, and need not be coded by the bridge inspector.
The following specifications are used by the Edit/Update Program:

- For structures other than culverts, the lowest of the codes obtained from Item 59 - Superstructure, Item 60 - Substructure, or Table 1 is used.
- For culverts, the lowest of the codes obtained from Item 62 - Culverts, or Table 1 is used.
- If Item 59, Item 60 or Item 62 is coded 1, then Item 67 is equal to zero (0), regardless of whether the structure is actually closed. However, if the structure is closed, it does not mean that this value is zero (0) unless the overall condition and appraisal ratings indicate that a code of 0 is appropriate.

Table 1 Notes:
1. Use the lower rating code for values between those listed in the table.
2. Inventory Ratings are shown in metric tons with decimal point.
3. To use Table 1, the Inventory Rating must be the coded MS rating or its equivalent. If the comparable MS equivalent is not calculated for the controlling rating, using a factor to determine the MS equivalent is acceptable even though converting other rating loads to an MS equivalent is not a constant.
4. All bridges with Item 26 - Functional Class coded Interstate, Freeway or Expressway shall be evaluated using the ADT column of >5000 regardless of the actual ADT on the bridge.

<table>
<thead>
<tr>
<th>Structural Evaluation Rating Code</th>
<th>Inventory Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Daily Traffic (ADT)</td>
<td></td>
</tr>
<tr>
<td>0-500</td>
<td>501-5000</td>
</tr>
<tr>
<td>9</td>
<td>&gt;32.4 (MS18)*</td>
</tr>
<tr>
<td>8</td>
<td>32.4 (MS18)</td>
</tr>
<tr>
<td>7</td>
<td>27.9 (MS15.5)</td>
</tr>
<tr>
<td>6</td>
<td>20.7 (MS11.5)</td>
</tr>
<tr>
<td>5</td>
<td>16.2 (MS9)</td>
</tr>
<tr>
<td>4</td>
<td>10.8 (MS6)</td>
</tr>
<tr>
<td>3</td>
<td>Inventory rating less than value in rating code of 4 and requiring corrective action.</td>
</tr>
<tr>
<td>2</td>
<td>Inventory rating less than value in rating code of 4 and requiring replacement.</td>
</tr>
<tr>
<td>0</td>
<td>Bridge closed due to structural condition.</td>
</tr>
</tbody>
</table>

*MS Designation (typical)

**NBI ITEM 68: Deck Geometry**

This item is calculated by the Edit/Update Program and need not be coded by the bridge inspector. The overall rating for deck geometry includes two evaluations: (a) the curb-to-curb or face-to-face of rail bridge width using Table 2A, B, C or D and (b) the minimum vertical clearance over the bridge roadway.
using Table 2E. The lower of the codes obtained from these tables is used by the Edit/Update Program. When an individual table lists several deck geometry rating codes for the same roadway width under a specific ADT, the lower code is used. (For example, Table 2A lists deck geometry rating codes of 6, 7 and 8 for a 13.4 meter roadway width and an ADT of >5000. Use the code of 6.) For values between those listed in the tables, the lower code is used.

The curb-to-curb or face-to-face of rail dimension shall be taken from Item 51 - Bridge Roadway Width, Curb-to-curb. Item 53 - Minimum Vertical Clearance Over Bridge Roadway is used to evaluate the vertical clearance.

For culverts which have Item 51 - Bridge Roadway Width coded 0000, the Deck Geometry code will be equal to N.

The values provided in the tables are for rating purposes only. Current design standards must be used for structure design or rehabilitation.

Table 2A & 2B. Rating by Comparison of ADT - Item 29 and Bridge Roadway Width, Curb-to-Curb - Item 51

<table>
<thead>
<tr>
<th>Deck Geometry Rating Code</th>
<th>TABLE 2A</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>TABLE 2B</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bridge Roadway Width 2 Lanes; 2 Way Traffic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bridge Roadway Width 1 Lane; 2-Way Traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADT (Both Directions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ADT (Both Directions)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0-100</td>
<td>101-400</td>
<td>401-1000</td>
<td>1001-2000</td>
<td>2001-5000</td>
<td>&gt;5000</td>
<td>0-100</td>
<td>&gt;100</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>&gt;9.8</td>
<td>&gt;11.0</td>
<td>&gt;12.2</td>
<td>&gt;13.4</td>
<td>&gt;13.4</td>
<td>&gt;13.4</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>9.8</td>
<td>11.0</td>
<td>12.2</td>
<td>13.4</td>
<td>13.4</td>
<td>13.4</td>
<td>&lt;4.9</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>8.5</td>
<td>9.8</td>
<td>11.0</td>
<td>12.2</td>
<td>13.4</td>
<td>13.4</td>
<td>4.6</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix E - FHWA Coding Guide Excerpts

<table>
<thead>
<tr>
<th>Width Code</th>
<th>Rating Code 3</th>
<th>Rating Code 2</th>
<th>Rating Code 1</th>
<th>Rating Code 0</th>
<th>Rating Code -</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>7.3</td>
<td>8.5</td>
<td>9.1</td>
<td>10.4</td>
<td>12.2</td>
</tr>
<tr>
<td>5</td>
<td>6.1</td>
<td>7.3</td>
<td>7.9</td>
<td>8.5</td>
<td>10.4</td>
</tr>
<tr>
<td>4</td>
<td>5.5</td>
<td>6.1</td>
<td>6.7</td>
<td>7.3</td>
<td>8.5</td>
</tr>
<tr>
<td>3</td>
<td>4.9</td>
<td>5.5</td>
<td>6.1</td>
<td>6.7</td>
<td>7.9</td>
</tr>
<tr>
<td>2</td>
<td>Any width less than required for a rating code of 3 and structure is open.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Bridge Closed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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* Use value in parentheses for bridges longer than 60 meters.

Notes
1. Use the lower rating code for values between those listed in the table.
2. Dimensions are in meters.
3. For 1 lane of one-way traffic Table 2A is used.
4. For 3 or more undivided lanes of 2-way traffic, use Table 2C, Other Multilane Divided Facilities.
5. Do not use Table 2B for code 9 and for codes 8 through 4 inclusive when the ADT >100. Single lane bridges less than 4.9 meters wide carrying 2-way traffic are always appraised at 3 or below if they carry more than an ADT of 100.
6. One-lane bridges 4.90 meters and greater in roadway width, which are not ramps, are evaluated as a 2-lane bridge using Table 2A.

Table 2C & 2D. Rating by Comparison of Number of Lanes - Item 28
and Bridge Roadway Width, Curb-to-Curb - Item 51

<table>
<thead>
<tr>
<th>Deck Geometry Rating Code</th>
<th>TABLE 2C</th>
<th></th>
<th>TABLE 2D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bridge Roadway Width</td>
<td>Other Multilane</td>
<td>Bridge Roadway Width</td>
</tr>
<tr>
<td></td>
<td>2 or More Lanes</td>
<td>Divided Facilities</td>
<td>1-Way Traffic</td>
</tr>
<tr>
<td></td>
<td>2 Lanes</td>
<td>3 or more Lanes</td>
<td>2 Lanes</td>
</tr>
<tr>
<td>9</td>
<td>&gt;12.8</td>
<td>&gt;3.7N+7.3</td>
<td>&gt;12.8</td>
</tr>
<tr>
<td>8</td>
<td>12.8</td>
<td>3.7N+7.3</td>
<td>12.8</td>
</tr>
<tr>
<td>7</td>
<td>12.2</td>
<td>3.7N+6.1</td>
<td>11.6</td>
</tr>
<tr>
<td>6</td>
<td>11.6</td>
<td>3.7N+4.9</td>
<td>11.0</td>
</tr>
<tr>
<td>5</td>
<td>11.0</td>
<td>3.7N+4.3</td>
<td>10.1</td>
</tr>
<tr>
<td>4</td>
<td>10.4</td>
<td>3.4N+3.7</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>(8.8)*</td>
<td>(3.4N+2.1) *</td>
<td>9.1</td>
</tr>
<tr>
<td>3</td>
<td>10.1</td>
<td>3.4N+3.4</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>(8.5)*</td>
<td>(3.4N+1.8) *</td>
<td>8.2</td>
</tr>
<tr>
<td>2</td>
<td>Any width less than required for a rating code of 3 and structure is open.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Bridge Closed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Use value in parentheses for bridges longer than 60 meters.
N = Total number of lanes of traffic on the structure.

Notes
1. Use the lower rating code for values between those listed in the tables.
2. Dimensions are in meters.
3. Use Table 2C, Other Multilane Divided Facilities, for 3 or more undivided lanes of 2-way traffic.
### Appendix E - FHWA Coding Guide Excerpts

#### Table 2E. Rating by Comparison of Minimum Vertical Clearance over Bridge Roadway - Item 53 and Functional Classification - Item 26

<table>
<thead>
<tr>
<th>Deck Geometry Rating Code</th>
<th>Minimum Vertical Clearance</th>
<th>Functional Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Interstate and Other Divided Freeways</td>
</tr>
<tr>
<td>9</td>
<td>&gt;5.18</td>
<td>&gt;5.02</td>
</tr>
<tr>
<td>8</td>
<td>5.18</td>
<td>5.02</td>
</tr>
<tr>
<td>7</td>
<td>5.10</td>
<td>4.72</td>
</tr>
<tr>
<td>6</td>
<td>5.02</td>
<td>4.41</td>
</tr>
<tr>
<td>5</td>
<td>4.80</td>
<td>4.34</td>
</tr>
<tr>
<td>4</td>
<td>4.57</td>
<td>4.26</td>
</tr>
<tr>
<td>3</td>
<td>Vertical clearance less than value in rating code of 4 and requiring corrective action.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Vertical clearance less than value in rating code of 4 and requiring replacement.</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Bridge Closed</td>
<td></td>
</tr>
</tbody>
</table>

* Use value in parentheses for bridges longer than 60 meters.

**Notes**
1. Use the lower rating code for values between those listed in the table.
2. Dimensions are in meters.

**NBI ITEM 69: Underclearances, Vertical and Horizontal**

This item is calculated by the Edit/Update Program and need not be coded by the bridge inspector.

Vertical and horizontal underclearances are measured from the through roadway to the superstructure or substructure units, respectively. Code "N" is used unless the bridge is over a highway or railroad. The vertical underclearance is evaluated using Table 3A. The horizontal underclearance is evaluated using Table 3B. The lower of the codes obtained from Table 3A and Table 3B is used by the Edit/Update Program. Bridges seldom are closed due to deficient underclearances, however, these bridges may be good candidates for rehabilitation or replacement.

Item 54 - Minimum Vertical Underclearance, Item 55 - Minimum Lateral Underclearance on Right, and Item 56 - Minimum Lateral Underclearance on Left are used to evaluate this item. The functional classification used in the table is for the underpassing route. Therefore, the functional classification is obtained from the record for the route "under" the bridge (see Item 5 - Inventory Route). If the underpassing route is not on a Federal-aid system, is not a defense route, or is not otherwise important, an "under" record may not be available. If no "under" record exits, it is assumed that the route under the bridge is a major or minor collector or a local road for the purpose of using Tables 3A and 3B.

**Table 3A. Rating by Comparison of Minimum Vertical Underclearance**

---

**Bridge Inventory Manual**

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#### Item 54 and Functional Classification of Underpassing Route - Item 26

<table>
<thead>
<tr>
<th>Underclearance Rating Code</th>
<th>Functional Class</th>
<th>Minimum Vertical Clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Interstate and Other Freeways</td>
<td>Other Principal and Minor Arterial</td>
</tr>
<tr>
<td>9</td>
<td>&gt;5.18</td>
<td>&gt;5.02</td>
</tr>
<tr>
<td>8</td>
<td>5.18</td>
<td>5.02</td>
</tr>
<tr>
<td>7</td>
<td>5.10</td>
<td>4.72</td>
</tr>
<tr>
<td>6</td>
<td>5.02</td>
<td>4.41</td>
</tr>
<tr>
<td>5</td>
<td>4.80</td>
<td>4.34</td>
</tr>
<tr>
<td>4</td>
<td>4.57</td>
<td>4.26</td>
</tr>
<tr>
<td>3</td>
<td>Underclearance less than value in rating code of 4 and requiring corrective action.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Underclearance less than value in rating code of 4 and requiring replacement.</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Bridge Closed</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

1. Use the lower rating code for values between those listed in the tables.
2. Dimensions are in meters.
3. The functional classification of the underpassing route shall be used in the evaluation. If an "under" record is not coded, the underpassing route shall be considered a major or minor collector or a local road.
## Table 3B. Rating by Comparison of Minimum Lateral Underclearances Right & Left - Items 55 & 56 and Functional Classification of Underpassing Route - Item 26

<table>
<thead>
<tr>
<th>Underclearance Rating Code</th>
<th>Minimum Vertical Clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Functional Class</td>
</tr>
<tr>
<td></td>
<td>Principal Arterial-Interstate, Freeways or Expressways</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>&gt;9.1</td>
</tr>
<tr>
<td>8</td>
<td>9.1</td>
</tr>
<tr>
<td>7</td>
<td>5.5</td>
</tr>
<tr>
<td>6</td>
<td>1.8</td>
</tr>
<tr>
<td>5</td>
<td>1.5</td>
</tr>
<tr>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td>3</td>
<td>Underclearance less than value in rating code of 4 and requiring corrective action.</td>
</tr>
<tr>
<td>2</td>
<td>Underclearance less than value in rating code of 4 and requiring replacement.</td>
</tr>
<tr>
<td>0</td>
<td>Bridge Closed</td>
</tr>
</tbody>
</table>

### Notes
1. Use the lower rating code for values between those listed in the tables.
2. Dimensions are in meters.
3. When acceleration or deceleration lanes or ramps are provided under 2-way traffic, use the value from the right ramp column to determine code.
4. The functional classification of the underpassing route shall be used in the evaluation. If an "under" record is not coded, the underpassing route shall be considered a major or minor collector or a local road.
Appendix E - FHWA Coding Guide Excerpts

NBI Item 71 - Waterway Adequacy

This item appraises the waterway opening with respect to passage of flow through the bridge. The following codes shall be used in evaluating waterway adequacy (interpolate where appropriate). Site conditions may warrant somewhat higher or lower ratings than indicated by the table (e.g., flooding of an urban area due to a restricted bridge opening). Where overtopping frequency information is available, the descriptions given in the table for chance of overtopping mean the following:

Remote    - greater than 100 years  
Slight     - 11 to 100 years        
Occasional - 3 to 10 years         
Frequent   - less than 3 years

Adjectives describing traffic delays mean the following:

Insignificant - Minor inconvenience. Highway passable in a matter of hours.  
Significant   - Traffic delays of up to several days.  
Severe        - Long term delays to traffic with resulting hardship.

<table>
<thead>
<tr>
<th>Functional Classification</th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Arterials</td>
<td>Bridge not over a waterway.</td>
<td></td>
</tr>
<tr>
<td>Freeways or Expressways</td>
<td>Chance of overtopping is remote.</td>
<td></td>
</tr>
<tr>
<td>Interstates, Freeways, or Expressways, Collectors, Locals</td>
<td>Bridge deck above roadway approaches. Slight chance of overtopping roadway approaches.</td>
<td></td>
</tr>
<tr>
<td>Collector's Arterials and Major Collectors, Locals</td>
<td>Slight chance of overtopping bridge deck and roadway approaches.</td>
<td></td>
</tr>
<tr>
<td>Collector's Arterials and Major Collectors, Locals</td>
<td>Occasional overtopping of roadway approaches with insignificant traffic delays.</td>
<td></td>
</tr>
</tbody>
</table>
### Functional Classification

<table>
<thead>
<tr>
<th>Principal Arterials - Interstates, Freeways, or Expressways</th>
<th>Principal Arterials and Minor Arterials and Major Collectors</th>
<th>Minor Collectors, Locals</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Bridge deck above roadway approaches. Occasional overtopping of roadway approaches with significant traffic delays.</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>Occasional overtopping of bridge deck and roadway approaches with significant traffic delays.</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>3</td>
<td>Frequent overtopping of bridge deck and roadway approaches with significant traffic delays.</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>Occasional or frequent overtopping of bridge deck and roadway approaches with severe traffic delays.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Bridge closed.</td>
</tr>
</tbody>
</table>

### NBI Item 72 - Approach Roadway Alignment

Code the rating based on the adequacy of the approach roadway alignment. This item identifies those bridges which do not function properly or adequately due to the alignment of the approaches. It is not intended that the approach roadway alignment be compared to current standards but rather to the existing highway alignment. This concept differs from other appraisal evaluations. The establishment of set criteria to be used at all bridge sites is not appropriate for this item. The basic criteria is how the alignment of the roadway approaches to the bridge relate to the general highway alignment for the section of highway the bridge is on. The individual structure shall be rated in accordance with the general appraisal rating guide described on page 453 in lieu of specific design values. The approach roadway alignment will be rated intolerable (a code of 3 or less) only if the horizontal or vertical curvature requires a substantial reduction in the vehicle operating speed from that on the highway section. A very minor speed reduction will be rated a 6, and when a speed reduction is not required, the appraisal code will be an 8.

Additional codes may be selected between these general values.

For example, if the highway section requires a substantial speed reduction due to vertical or horizontal alignment, and the roadway approach to the bridge requires only a very minor additional speed reduction at the bridge, the appropriate code would be a 6. This concept shall be used at each bridge site. Speed reductions necessary because of structure width and not alignment shall not be considered in evaluating this item.

### Sufficiency Rating Formula and Example

The sufficiency rating formula described herein is a method of evaluating highway bridge data by calculating four separate factors to obtain a numeric value which is indicative of bridge sufficiency to remain in service. The result of this method is a percentage in which 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient or deficient bridge.
Appendix E - FHWA Coding Guide Excerpts

An asterisk prefix is used to identify a sufficiency rating that was calculated even though some essential data was missing or coded incorrectly. The Edit/Update Program will substitute a value for the unusable data (which will not lower the rating) and calculate the sufficiency rating. The asterisk is dropped when the unusable data is corrected. It is normal that all culverts with Bridge Roadway Width, Curb-to-Curb - Item 51 coded '0000' will have an asterisk prefixed sufficiency.

Sufficiency Rating Formula

1. Structural Adequacy and Safety (55% maximum)
   a. Only the lowest rating code of Item 59, 60, or 62 applies.
      If Item 59 (Superstructure Rating) or
      Item 60 (Substructure Rating) is
      ≤ 2 then A = 55%
      = 3 A = 40%
      = 4 A = 25%
      = 5 A = 10%
      If Item 59 and Item 60 = N and
      Item 62 (Culvert Rating) is
      ≤ 2 then A = 55%
      = 3 A = 40%
      = 4 A = 25%
      = 5 A = 10%
   b. Reduction for Load Capacity:
      Calculate using the following formulas where
      IR is the Inventory Rating (MS Loading) in tons

\[
F = (32.4 - IR)^{1.5} \times 0.3254
\]
Figure 2. Reduction for Load Capacity

or use Figure 2:

\[ B = (32.4 - IR)^{1.5} \times 0.3254 \text{ or} \]

If \((32.4 - IR) \leq 0\), then \(B = 0\)

"B" shall not be less than 0% nor greater than 55%.

\[ S_1 = 55 - (A + B) \]

\(S_1\) shall not be less than 0% nor greater than 55%.

2. Serviceability and Functional Obsolescence (30% maximum)
   a. Rating Reductions (13% maximum)

   If #58 (Deck Condition) is
   
   \[ \leq 3 \text{ then } A = 5\% \]
   \[ = 4 \text{ then } A = 3\% \]
   \[ = 5 \text{ then } A = 1\% \]

   If #67 (Structural Evaluation) is
   
   \[ \leq 3 \text{ then } B = 4\% \]
   \[ = 4 \text{ then } B = 2\% \]
   \[ = 5 \text{ then } B = 1\% \]

   If #68 (Deck Geometry) is
   
   \[ \leq 3 \text{ then } C = 4\% \]
   \[ = 4 \text{ then } C = 2\% \]
   \[ = 5 \text{ then } C = 1\% \]

   If #69 (Underclearances) is
   
   \[ \leq 3 \text{ then } D = 4\% \]
   \[ = 4 \text{ then } D = 2\% \]
   \[ = 5 \text{ then } D = 1\% \]

   If #71 (Waterway Adequacy) is
   
   \[ \leq 3 \text{ then } E = 4\% \]
   \[ = 4 \text{ then } E = 2\% \]
   \[ = 5 \text{ then } E = 1\% \]

   If #72 (Approach Road Alignment) is
   
   \[ < 3 \text{ then } F = 4\% \]
   \[ = 4 \text{ then } F = 2\% \]
   \[ = 5 \text{ then } F = 1\% \]

   \[ J = (A + B + C + D + E + F) \]
   \(J\) shall not be less than 0% nor greater than 13%.

   b. Width of Roadway Insufficiency (15% maximum)

   Use the sections that apply:

   (1) applies to all bridges;
   (2) applies to 1-lane bridges only;
   (3) applies to 2 or more lane bridges;
   (4) applies to all except 1-lane bridges.

   Also determine X and Y:

   \[ X \text{ (ADT/Lane)} = \frac{\text{Item 29 (ADT)}}{\text{first 2 digits of #28 (Lanes)}} \]

   \[ Y \text{ (Width/Lane)} = \frac{\text{Item 51 (Bridge Rdwy. Width)}}{\text{Bridge Inventory Manual}} \]

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   December, 2003
first 2 digits of #28 (Lanes)

*A value of 10.9 Meters will be substituted when Item 51 is coded 0000 or not numeric.

(1) Use when the last 2 digits of #43 (Structure Type) are not equal to 19 (Culvert):
If(#51 + 0.6 meters) < #32 (Approach Roadway Width) G = 5%

(2) For 1-lane bridges only, use Figure 3 or the following:
If the first 2 digits of #28 (Lanes) are equal to 01 and
\[
Y < 4.3 \quad \text{then} \quad H = 15\% \\
H = 15 \left( \frac{5.5 - Y}{1.2} \right) \% \\
Y \geq 4.3 \ \text{and} \ < 5.5
\]
\[
Y \geq 5.5 \quad \text{H} = 0\%
\]

(3) For 2 or more lane bridges. If these limits apply, do not continue on to (4) as no lane width reductions are allowed.
If the first 2 digits of #28
\[
= 02 \text{ and } Y \geq 4.9, \text{ then } \quad H = 0\% \\
= 03 \text{ and } Y \geq 4.6, \quad H = 0\% \\
= 04 \text{ and } Y \geq 4.3, \quad H = 0\% \\
\geq 05 \text{ and } Y \geq 3.7 \quad H = 0\%
\]

(4) For all except 1-lane bridges, use Figure 3 or the following:
If Y < 2.7 and X > 50 \quad \text{then } \quad H = 15\%
Y < 2.7 and X \leq 50 \quad H = 7.5\%
Y \geq 2.7 and X \leq 50 \quad H = 0\%

If X > 50 but \leq 125 and
\[
Y < 3.0 \quad \text{then} \quad H = 15\% \\
Y \geq 3.0 < 4.0 \quad H = 15 \left(4-Y\right)\% \\
Y \geq 4.0 \quad H = 0\%
\]

If X > 125 but \leq 375 and
\[
Y < 3.4 \quad \text{then} \quad H = 15\% \\
Y \geq 3.4 < 4.3 \quad H = 15 \left(4.3-Y\right)\% \\
Y \geq 4.3 \quad H = 0\%
\]
Appendix E - FHWA Coding Guide Excerpts

If $X > 375$ but $\leq 1350$ and $Y < 3.7$ then
$$H = 15 \left[ \frac{9 - Y}{1.2} \right] \%$$

If $Y \geq 4.9$ then $H = 0\%$

If $X > 1350$ and $Y < 4.6$ then $H = 15\%$

If $Y \geq 4.9$ then $H = 0\%$

$G + H$ shall not be less than 0% nor greater than 15%.

Figure 3. Width of Roadway Insufficiency
Appendix E - FHWA Coding Guide Excerpts

c. Vertical Clearance Insufficiency - (2% maximum)
   If #100 (STRAHNET Highway Designation) > 0 and
   #53 (VC over Deck) ≥ 4.87 then I = 0%
   #53 < 4.87     I = 2%

   If #100 = 0 and
   #53 ≥ 4.26       then I = 0%
   #53 < 4.26          I = 2%

   \[ S_2 = 30 - [ J + (G + H) + I ] \]
   \( S_2 \) shall not be less than 0% nor greater than 30%.

3. Essentiality for Public Use (15% maximum)
   a. Determine
   \[ K = \left[ \frac{S_1 + S_2}{85} \right] \]
   b. Calculate:
   \[ A = 15 \left[ \frac{#29(ADT) \times #19(DetourLength)}{320,000 \times K} \right] \]
   "A" shall not be less than 0% nor greater than 15%.

c. STRAHNET Highway Designation:
   If #100 is > 0     then B = 2%
   If #100 = 0         B = 0%

   \[ S_3 = 15 - (A + B) \]
   \( S_3 \) shall not be less than 0% nor greater than 15%.

4. Special Reductions (Use only when \( S_1 + S_2 + S_3 \) ≥ 50)
   a. Detour Length Reduction, use Figure 4 or the following:
      \[ A = (#19)^4 \times (7.9 \times 10^{-9}) \]
      "A" shall not be less than 0% nor greater than 5%.

   b. If the 2nd and 3rd digits of #43 (Structure Type, Main) are equal to 10, 12, 13, 14, 15, 16, or 17;
      then B = 5%

   c. If 2 digits of #36 (Traffic Safety Features) = 0 then C = 1%
      If 3 digits of #36 = 0          C = 2%
      If 4 digits of #36 = 0          C = 3%

   \[ S_4 = A + B + C \]
   \( S_4 \) shall not be less than 0% nor greater than 13%.
Appendix E - FHWA Coding Guide Excerpts

Sufficiency Rating = \( S_1 + S_2 + S_3 - S_4 \)

The Rating shall not be less than 0% nor greater than 100%.

Example Calculation of Sufficiency Rating

1. Structural Adequacy and Safety
   \( A = 10\% \)
   \( B = [32.4 - (19.8 \text{ metric tons})]^{1.5} \times 0.3254 = 14.6 \)
   \( S_1 = 55 - (10 + 14.6) = 30.4 \)

2. Serviceability and Functional Obsolescence
   \( A = 3\%, \ B = 1\%, \ C = 4\%, \ D = \text{NA}, \ E = \text{NA}, \ F = \text{NA} \)
   \( J = (3 + 1 + 4) = 8\% \)
   \( X = 18500 \)
   \( Y = 7.9 \text{ m} = 3.95 \)
   \( G = \begin{cases} 5 & \text{if } (7.9 + 0.6) < 12.2 \\ \text{Not Applicable} & \text{if } X = 9250 \text{ and } Y = 3.95 \end{cases} \)
   \( I = 0 \)
   \( S_2 = 30 - [8 + (15) + 0] = 7.0 \)

3. Essentiality For Public Use
   \( K = \frac{30.4 + 7.0}{85} = 0.44 \)
   \( A = 15 \left[ \frac{18,500 \times 12.8\text{Km}}{320,000 \times 0.44} \right] = 25.2 \text{(however, maximum allowable = 15)} \)
   \( B = 0 \)
   \( S_3 = 15 - (15 + 0) = 0 \)

4. Special Reductions
   \( S_1 + S_2 + S_3 = (30.4 + 7.0 + 0.0) = 37.4 < 50 \)
   \( S_4 = \text{NA} \)

SUFFICIENCY RATING = 30.4 + 7.0 + 0.0 = 37.4

Bridge Inventory Manual

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Figure 4. Special Reduction for Detour Length

\[ Y = M X^4 \]

- \( M = 7.9 \times 10^{-9} \)
- \( Y = \text{Reduction} \)
- \( X = \text{Detour Length} \)
Appendix E - FHWA Coding Guide Excerpts

Bridge Inventory Manual       December, 2003

********** IDENTIFICATION **********
(1) STATE NAME - YOUR STATE NAME   CODE   999
(8) STRUCTURE NUMBER
(5) INVENTORY ROUTE (OR UNDER) - ON   131000640
(2) HIGHWAY AGENCY DISTRICT   03
(3) COUNTY CODE   075
(4) PLACE CODE   59767
(6) FEATURES INTERSECTED - SR 772, ROARING LION R. *
(7) FACILITY CARRIED - STATE ROUTE 44
(9) LOCATION   9.7 KM SW. OF RICHMOND
(11) MILEPOINT/ KILOMETERPOINT   0036.008
(12) BASE HIGHWAY NETWORK - PART OF NET   CODE   1
(13) LBS INVENTORY ROUTE & SUBROUTE   #000000277503
(16) LATITUDE   35 Deg 27 Min 18.55 Sec
(17) LONGITUDE   081 Deg 05 Min 50.65 Sec
(98) BORDER BRIDGE STATE CODE   988 % SHARE   50 %
(99) BORDER BRIDGE STRUCTURE NO.   #ABC003790243009

********** STRUCTURE TYPE AND MATERIAL **********
(43) STRUCTURE TYPE MAIN - MATERIAL - STEEL   CODE   309
(44) STRUCTURE TYPE APPR - MATERIAL - STEEL   CODE   303
(45) NUMBER OF SPANS IN MAIN UNIT   002
(46) NUMBER OF APPROACH SPANS   004
(107) DECK STRUCTURE TYPE - CONCRETE C-1-P   CODE   1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE - CONCRETE   CODE   1
B) TYPE OF MEMBRANE - NONE   CODE   0
C) TYPE OF DECK PROTECTION - UNKNOWN   CODE   0

********** AGE AND SERVICE **********
(27) YEAR BUILT   1948
(106) YEAR RECONSTRUCTED   0000
(42) SERVICE: ON - HIGHWAY-PEDESTRIAN   CODE   56
UNDER - HIGHWAY-WATERWAY   CODE   5
(28) LANES: ON STRUCTURE   02 UNDER STRUCTURE   02
(29) AVERAGE DAILY TRAFFIC   019500
(30) YEAR OF ADT   1993 (109) TRUCK ADT   05 %
(19) Bypass, Detour Length   013 KM

********** GEOMETRIC DATA **********
(48) MAXIMUM SPAN   0097.5 M
(49) STRUCTURE LENGTH   00312.0 M
(50) CURB OR SIDEWALK: LEFT 00.0 M RIGHT 02.5 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB   007.9 M
(52) DECK WIDTH OUT TO OUT   011.8 M
(32) APPROACH ROADWAY WIDTH (W/SHOULders)   12.2 M
(35) BRIDGE MEDIAN - NO MEDIAN   CODE   0
(34) SKEW   00 DEG
(35) STRUCTURE FLOODED NO
(10) INVENTORY ROUTE TOTAL HORIZ CLEAR   07.9 M
(53) MIN VERT CLEAR OVER BRIDGE ROWS   00.99 M
(54) MIN VERT CLEAR OVER ROADWAY   010.66 M
(55) MIN LAT UNDERCLEAR RT REF - HIGHWAY   06.2 M
(56) MIN LAT UNDERCLEAR LT   00.0 M

********** NAVIGATION DATA **********
(38) NAVIGATION CONTROL - BR PERMIT REQ   CODE   1
(11) PIER PROTECTION - FUNCTIONING   CODE   2
(39) NAVIGATION VERTICAL CLEARANCE   18.3 M
(115) VERTICAL BRIDGE NAV MIN VERT CLEAR   CODE   1
(40) NAVIGATION HORIZONTAL CLEARANCE   057.2 M

********** STRUCTURE INVENTORY AND APPRAISAL **********
OMB No. 2125-0501

SUFFICIENCY RATING = 37.4
STATUS = STRUCTURALLY DEFICIENT

********** CLASSIFICATION **********
(112) NBIS BRIDGE LENGTH - YES
(104) HIGHWAY SYSTEM - ROUTE ON NHS   1
(25) FUNCTIONAL CLASS - OTHER PRIM ART URBAN   14
(100) DEFENSE HIGHWAY - NOT DEFENSE   0
(101) PARALLEL STRUCTURE - NONE EXISTS   N
(102) DIRECTION OF TRAFFIC - 2 WAY   2
(103) TEMPORARY STRUCTURE - NOT TEMPORARY   N
(105) FEDERAL LANDS HIGHWAYS - NOT APPLICABLE   0
(110) DESIGNATED NATIONAL NETWORK - PART OF NET   1
(20) TOLL- ON FREE ROAD   3
(21) MAINTAIN - STATE HIGHWAY AGENCY   01
(22) OWNER - STATE HIGHWAY AGENCY   01
(37) HISTORICAL SIGNIFICANCE - NOT ELIGIBLE   5

********** CONDITION **********
(58) DECK   4
(59) SUPERSTRUCTURE   5
(60) SUBSTRUCTURE   6
(61) CHANNEL & CHANNEL PROTECTION   8
(62) CULVERTS   N

********** LOAD RATING AND POSTING **********
(31) DESIGN LOAD - H-15 OR M-13.5   2
(63) OPERATING RATING METHOD - LOAD FACTOR   1
(64) OPERATING RATING - MS-16   25.2
(65) INVENTORY RATING METHOD - LOAD FACTOR   1
(66) INVENTORY RATING - MS-11   19.8
(70) BRIDGE POSTING - POSTING REQUIRED   2
(41) STRUCTURE OPEN, POSTED OR CLOSED - P
DESCRIPTION - POSTED FOR LOAD

********** APPRAISAL **********
(67) STRUCTURAL EVALUATION   5
(68) DECK GEOMETRY   3
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL   6
(71) WATERWAY ADEQUACY   N
(72) APPROACH ROADWAY ALIGNMENT   8
(36) TRAFFIC SAFETY FEATURES   1100
(113) SOUR CRITICAL BRIDGES   8

********** PROPOSED IMPROVEMENTS **********
(75) TYPE OF WORK - REPLACE FOR DEFICIENCY   CODE   311
(76) LENGTH OF STRUCTURE IMPROVEMENT   00317.0 M
(94) BRIDGE IMPROVEMENT COST   $ 4,200,000
(95) ROADWAY IMPROVEMENT COST   $ 300,000
(96) TOTAL PROJECT COST   $ 5,000,000
(114) YEAR OF IMPROVEMENT COST ESTIMATE   1995
(115) YEAR OF FUTURE ADT   025600
(115) YEAR OF FUTURE ADT   2014

********** INSPECTIONS **********
(90) INSPECTION DATE 03/94 (91) FREQUENCY 12 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFIR DATE
A) FRACTURE CRIT DETAIL - YES - 06 MO A)   09/94
B) UNDERWATER INSPE - NO - __ MO B)   ___
C) OTHER SPECIAL INSPE - NO - __ MO C)   ___
ITEM: Structurally Deficient

Structurally Deficient is an FHWA term used to identify bridges which meet the following criteria:

NBI Item 58 - Deck Rating ≤ 4 or
NBI Item 59 - Superstructure Rating ≤ 4 or
NBI Item 60 - Substructure Rating ≤ 4 or
NBI Item 62 - Culvert and Retaining Wall Rating ≤ 4 or

An appraisal rating of 2 or less for
NBI Item 67 - Structural Condition Rating ≤ 2 or
NBI Item 71 - Waterway Adequacy Rating ≤ 2

ITEM: Functionally Obsolete

Functionally Obsolete is an FHWA term used to identify bridges which meet the following criteria:

NBI Item 68 - Deck Geometry Rating ≤ 3 or
NBI Item 69 - Underclearances Rating ≤ 3 or
NBI Item 72 - Approach Roadway Alignment Rating ≤ 3 or

Any bridge classified as structurally deficient is excluded from the functionally obsolete category.

NBI Item 67 - Structural Condition Rating ≤ 3 or
NBI Item 71 - Waterway Adequacy Rating ≤ 3 or

Changes:

Significant Changes to Last Version of Manual
* Bridge Inspection items were not described in the prior version

Possible Future Enhancements:
* Scour Critical field is stored in RC07 can be removed form RC05 when a comprehensive review can be made of all the places the data is being used.
<table>
<thead>
<tr>
<th>Record Codes</th>
<th>Feature</th>
<th>Units</th>
<th>Inventory Form</th>
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<td>Bridge Identification, Structural, Safety &amp; Utility Items</td>
<td>English</td>
<td>BD 205b (12/90)</td>
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<td>Metric</td>
<td>BD 205M (10/00)</td>
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<td>04, 12, 13</td>
<td>Inspection Responsibility, Feature Carried, &amp; Feature Intersected Items</td>
<td>English</td>
<td>BD 204a</td>
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<td>BD 204M (1/99)</td>
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<td>Posting Items</td>
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<td>BD 200a (12/90)</td>
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# New York State Department of Transportation
## Structures Design and Construction Division
### Bridge Data Systems

### BRIDGE INVENTORY FORM RECORD CODES 01, 02, 03

**ALWAYS ENTER TX CODE, COL. 120:**
2 = Update, 3 = Create

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<th>LATITUDE MIN.</th>
<th>LONGITUDE DEG.</th>
<th>LONGITUDE MIN.</th>
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<th>MAINT. RESPONS.</th>
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<th>YEAR BUILT</th>
<th>LAST RECON</th>
<th>ADQ.</th>
<th>ORDER NO.</th>
<th>YEAR ACQ.</th>
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<th>ATTACH. TO.</th>
<th>H S</th>
<th>BIN</th>
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### STRUCTURAL TRANSACTION

Gen TYP MAIN SPAN | Gen TYP APPR. SPAN | NO MAIN SPANS | NO. APPR. SPANS | NO. OF RAMPS | DESN LOAD | LENGTH MAX SPAN | TOTAL BRIDGE LENGTH | APPR. ROAD WIDTH | OUT TO OUT | CURB | SIDEWALK | MEDIAN |
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### SAFETY AND UTILITY TRANSACTION

Guide Rail Type | Curb Type | Tran Term | Med Trans | Rail Type | Core Rail | Utilities | Lights |
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### Required

- Preliminary Original
- Preliminary Copy
- Final Original

- New
- Replacement
- Rehabilitation
- Update

- Prepared By | Date
- Reviewed By | Date

Dec 2003
### Bridge Identification Transaction

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<th>No. of Ramps</th>
<th>Design Load</th>
<th>Length Max Span</th>
<th>Total Bridge Length</th>
<th>Appr. Road Width</th>
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### Safety and Utility Transaction

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<th>Curb Trans</th>
<th>Rail Type</th>
<th>Med Bar</th>
<th>Rail Way</th>
<th>Utilities</th>
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### Required

- Always enter TX Code, Col. 120:
  - 8 = Update, 9 = Create
### Inspection Responsibility Transaction

**Primary Inspection Responsibility (P.I.R.)**

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### Secondary Inspection Responsibility (S.I.R.)

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### Feature Carried Transaction

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<th>Future ADT</th>
<th>Year Future ADT</th>
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### Feature Intersected Transaction

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<th>Year Future ADT</th>
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<th>FED Aid Sys</th>
<th>FUNC CLS</th>
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## NYS DEPT. OF TRANSPORTATION
## BRIDGE INSPECTION REPORT

### SHEET __ OF __

<table>
<thead>
<tr>
<th>DATE</th>
<th>MO</th>
<th>DA</th>
<th>YE</th>
<th>YEAR</th>
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### RC - BIN

<table>
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<tr>
<th>TEAM LEADER</th>
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<tbody>
<tr>
<td>Signature</td>
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### P.E. NUMBER STATE ASST TEAM LEADER

### RAMP BRIDGE ATTACHED TO SPAN BIN

### INSPECTION AGENCY TYPE OF INSPECTION

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<td>3-IN DEPTH</td>
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### STATE HWY. NO. MILEPOINT: POLIT. UNIT:

### FEATURE(S) CARRIED:

### FEATURE(S) CROSSED:

### TOTAL SPANS: BRIDGE ORIENTED: YEAR BUILT:

### BRIDGE TYPE:

### AADT/yr:

### VERTICAL CLEARANCE AND LOAD POSTINGS

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<th>IN</th>
<th>UNDER</th>
<th>FT</th>
<th>IN</th>
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### ABUTMENTS:

- Joint with deck
- Bearings, anchor bolts, pads
- Bridge seat and pedestals
- Backwall
- Stem (breastwall)
- Erosion or scour
- Footings
- Piles
- Recommendation

### WINGWALLS:

- Walls
- Footings
- Erosion or scour
- Piles

### APPROACHES:

- Drainage
- Embankment
- Settlement
- Erosion
- Pavement
- Guide railing

### STREAM CHANNEL:

- Stream alignment
- Erosion and scour
- Waterway opening
- Bank protection

### GENERAL RECOMMEND

### ACCESS CATEGORY:

- FLAG ISSUED?
- NONE
- RED STRUCTURAL
- YELLOW STRUCTURAL
- SAFETY

### BRIEF REASON

### Vulnerability Reassessment Review

**Recommended?**

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### REVIEWED BY

### P.E. NUMBER

### DATE
### POSTING TRANSACTION

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<th>DATE LOAD POSTED</th>
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Contract No.

- Preliminary Original
- Preliminary Copy
- Final Original

Letting Date

Opening Date

Prepared By

Date

Reviewed By

Date

BD 200a (12/90)
FEDERAL RATING FORM

NYS DEPT. of TRANSPORTATION         RC-BIN

BRIDGE INSPECTION REPORT

TEAM LEADER

SHEET ___ OF ___

ASST TEAM LEADER

DATE

MO  DAY  YEAR

13  14  15  16  17  18

FEATURE CARRIED:

FEATURE CROSSED:

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Comments:

Notes: 1). See attached explanations for Federal Item Nos. a) 58- Deck, 59- Superstructure, 60- Substructure; b) 61- Channel and Channel Protection; c) 62- Culverts.

2). Item Nos. 58, 59, and 60 shall be coded N for all culverts.

3). A rating or an N must be entered for all Federal Items. Blanks are not acceptable.
### BRIDGE INVENTORY FORM RECORD CODES 13-F3 & F4

**NEW YORK STATE DEPARTMENT OF TRANSPORTATION**  
**STRUCTURES DESIGN AND CONSTRUCTION DIVISION**  
**BRIDGE DATA SYSTEMS**

**ALWAYS ENTER TX CODE, COL. 120:**  
2 = Update, 3 = Create

#### FEATURE INTERSECTED TRANSACTION

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<th>HORIZ. CLEARANCE</th>
<th>MIN. VC.</th>
<th>NAVIGATION</th>
<th>VEL. OF CURRENT</th>
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#### FEATURE INTERSECTED TRANSACTION

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**BD 199a — GOLD**
# Appendix F- Edit/Update Forms

## Bridge Inventory Form Record Code 15

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### Always Enter

TX CODE, COL. 120:

2 = Update, 3 = Create

## Span Inventory Transaction

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**BD 196a**

---

Page 10 of 12

Dec 2003
### NYS DEPT. OF TRANSPORTATION
BRIDGE INSPECTION REPORT

#### SHEET OF __________

**DATE**
- **M**
- **D**
- **Y**

**RC-BIN**

**TEAM LEADER:**

**ASST TEAM LEADER:**

**OThERS:**

**Features carried:**

**Features crossed:**

#### DECK ELEMENTS

| SPAN NO. | Wearing Surface | Curbs | Sidewalks | Railing & Parapet | Supports | Gratings | Median Strip | Mono Deck Surf | Bridge Deck | Structural Member | Secondary Member | Paint | Joints | Recommendations | Top of pier | Span held | Pier columns | Pier beam | Foulings | Erosion or scour | Piles | Rails | Acoustic Absorption | Lighting 1st, 2nd, and fixtures | Sign Support | Utilities and Ladder
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**DIVING INSPECTION REQUIRED?**

**YES**

**NO**

*If yes, indicate year of last diving inspection*

**SPECIAL EMPHASIS INSPECTION REQUIRED:***

**YES**

**NO**

#### NON-REDUNDANT/FRACTURE CRITICAL

**PIN AND HANGERS**

**FATIGUE-PRONE WELDS(AASHTO D, E or E')**

**NON-CATEGORIZED FATIGUE-PRONE DETAILS**

**OTHERS (SPECIFY)**

**RECOMMEND FURTHER INVESTIGATION**

**1 = NO**

**2 = YES**

**REMARKS**

**Field Notes:**

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<tr>
<th>Date</th>
<th>Time of Arrival</th>
<th>Time of Departure</th>
<th>Temp (°C)</th>
<th>Weather Conditions</th>
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**BD 195M - YELLOW**
### BRIDGE INVENTORY FORM RECORD CODE 21

#### WORK HISTORY TRANSACTION

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#### COMMENTS

1. 105
2. 105
3. 105
4. 105
5. 105

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BD 210a — PIN
Appendix G – Bridge Standard Abbreviations

State Touring Route Numbers for Named Roads
# Appendix G- State Touring Route Numbers for Named Roads

## Purpose:
This appendix provides a list of State Touring Route numbers for Parkways and other roadways commonly referred to by name.

<table>
<thead>
<tr>
<th>Route Number</th>
<th>Common Name</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>981P</td>
<td>Bear Mountain State Parkway</td>
<td>BMP</td>
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<tr>
<td>907A</td>
<td>Belt System - Cross Island Parkway</td>
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<td>907B</td>
<td>Belt System - Laurelton Parkway</td>
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<td>907C</td>
<td>Belt System - Shore Parkway</td>
<td>BSHP</td>
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<tr>
<td>907D</td>
<td>Belt System - Southern Parkway</td>
<td>BSOP</td>
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<tr>
<td>907E</td>
<td>Bethpage State Parkway</td>
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<td>907F</td>
<td>Bronx Pelham Parkway</td>
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<td>907G</td>
<td>Bronx River Parkway (Outside NYC)</td>
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<td>907H</td>
<td>Bronx River Parkway (In NYC)</td>
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<td>Cross Bay Parkway</td>
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<td>Grand Central Parkway</td>
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<td>907P</td>
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<td>Heckscher State Parkway/Combined with Southern State Parkway</td>
<td>HSP/907T</td>
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<td>907V</td>
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<td>Hutchinson River Parkway (Outside NYC)</td>
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<td>Lake Welch Parkway</td>
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<td>Loop Parkway</td>
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