ITEMS INCLUDED IN SPAN (RC15)

Span Number
Intersecting Features by Span
Material Type
Protective Coating Type
Composite Action
Simple, Continuous, Suspended, Curved
Superstructure Type (Span Design Type)
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.

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

PROCEDURE:
Record the span number of the span being inventoried. The span number should be right justified.

CODING:
Accepts numeric characters: 1 – 999

ITEM: Features Intersecting Spans

PROCEDURE:
Record the feature or features that cross under the bridge span being inventoried. A maximum of 4 intersecting features can be entered for each span of the bridge being inventoried.
For example, a bridge has 3 features passing underneath it. The first feature is a highway, the second a stream and the third is a railroad. The bridge is a 5 span bridge and the second listed feature (stream) passes under span 1, the entry on the form should indicate that feature 3 is the intersecting feature for span 1. (Enter code 003 in the first “intersecting span feature” on the form). If more than one feature intersects a single span then they should be listed in order on the Inventory Form Record RC15.

CODING:
000 – 100

ITEM: Material Type
NYSDoT

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

CODING:

1 - Steel - Bridge was built with mild structural steel that was commonly used at the time of construction. Commonly used grades have been A7, A373, A36, A440, A441, A572, A709.

2 - Weathering Steel - Bridge was built with ASTM A242, A588 or A709 "W" grade steel. This code is also used for painted weathering steel bridges.

3 - Special Steel - Bridge was built using steel with a special chemical composition and/or special heat treatment (quenched and tempered plate). Usually A514 or A517 grade.

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 as used for culverts.

6 - Wrought Iron or Cast Iron - Normally seen only on bridges built before 1900.

7 - Aluminum

8 - Timber

9 - Masonry

A - Concrete, Unreinforced

B - Concrete, Reinforced

C - Concrete, Unknown - Use this to indicate if the presence of 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
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 - The superstructure has a lead-based topcoat or non lead-based topcoat applied over existing lead-based paint.

2 - Painted, Not Lead-Based - The superstructure is completely painted with non-lead based paint.

3 - Painted, Unknown - The superstructure is painted, but it is not known if lead is present in the paint.

4 - Unpainted (No Coating) - The superstructure is not painted and has no other coating (e.g., weathering steel).

5 - Galvanized or Metalized - The primary members are hot-dip or mechanically galvanized. Also use this item for any flame sprayed coating system or aluminized surface.

6 - Bituminous Based Coating

7 - Concrete Coated - A concrete coating has been sprayed on the primary members, or the primary members have been encased in concrete.

8 - Coating Containing Asbestos - Use this item if the coating contains asbestos, even if it also fits another description.

9 - Other Coating – For any coating that 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 the original contract letting date.

ITEM: Composite Action
NYSDoT

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

CODING:

1 - Non-composite - No primary member composite action. A jack arch is considered to be non-composite unless shear connectors are present. Prestressed bridges with concrete surfaces epoxied in place are considered to be non-composite if there are no stirrups extending into the deck.
2 - Composite

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

N - Not Applicable – Applies when there is no separate structural deck, such as a slab bridge or culvert.

**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. If none of the following apply, such as for culverts, code this item N.

**CODING:**

1 - Simple Span
2 - Simple Span - Curved Stringer

3 - Simple Span - Cont. for Live Load
Use code only if the structure was originally designed for this condition. This category would include prestressed bridges that have been designed as simple span for dead load and continuous for live load.

4 - Simple Span - Retrofitted for Live Load Continuity
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
The cantilever span is supporting an adjacent span seated on bearings.

8 - Anchor Span - for Cantilever Span
The span adjacent to a cantilever span.

9 - Cantilever Span - for Fixed, Pinned or Hinged Span
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
At least one end of the suspended span is supported by a fixed hanger.

B - Suspended Span - Expansion Hanger
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 or Seated
The span does not fit into any of the other suspended span categories.

F - Suspended Span – Seated
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
The span is hinged, by a pin, at either end.
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. See the sketches for clarification.

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  
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
Design Type Illustrations

Type 01 - Slab, Solid
Solid reinforced concrete structural slab, rarely greater than 18” (450 mm) deep, usually with the slab functioning as the structural deck/wearing surface. Requires Plans to differentiate from 02 Slab, Voided.

Type 02 - Slab, Voided (P/S)
Description: Adjacent, prestressed, reinforced concrete structural slab, with 2 or 3 circular voids, rarely greater than 18” (450 mm) deep, usually with a cast-in-place structural deck/wearing surface. Requires Plans to differentiate from 01 Slab Solid.

Type 03 - Box, Adjacent (P/S)
Description: Adjacent, precast concrete or steel, box shaped, voided, sections, usually with a cast-in-place structural deck. Up to 4’ (1.2m) deep.

Type 04 - Box, Spread (P/S)
Description: Spaced, precast concrete or steel, box shaped voided, sections with a cast-in-place structural deck.

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.
Top; Quad Tee
Bottom; C.I.P. Tee

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. Also includes NEBT sections.

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.

Type 08 - Segmental Box
Description: Precast sections encompassing the entire cross-section of the bridge, which are then post tensioned together. A cast-in-place wearing surface may be included.
Type 09 - Rolled Beam, Multi-Girder
Description: Rolled steel “I” beams with a cast-in-place structural deck/wearing surface.

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.

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 a cast-in-place concrete deck. There may be a separate 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 supporting a cast-in-place concrete deck. There may be a separate wearing surface. The type 12 configuration is far more common for jack arch decks.

Type 17 - Deck Truss
Description: Trusses support a floorbeam system placed at the top chord with a structural deck supported by the floorbeam system.
Top: Cross Section, Truss deck
Bottom: Elev. View, Deck Truss

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.
Top: Cross Section, Thru Truss (Overhead Bracing)
Bottom: Elev. View, Thru Truss

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: 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.

#1 Elev. View, Truss Combination
#2 Cross Section, Truss Combination

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 composed of curved steel plates supported on concrete substructures. The surface can be smooth but is usually 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.

Type 31 - Movable, Swing
Description: A span which can be mechanically rotated 90° to provide unlimited temporary vertical clearance for navigation.

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.

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. Suspender ropes transfer the loads from the deck and the stiffening truss to the main cables.

**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.

**Type 39 - Tunnel**
Description: A Tunnel is an underground passage constructed through a natural obstruction (mountain, river, etc.), which carries railroad or vehicular traffic.

**Type 40 - Single Box Culvert**
Description: A structure with a rectangular cross-section which carries a highway or a railroad over a stream or drainage facility. There is usually an embankment between the culvert and the roadway. It may be cast-in-place or be composed of adjacent precast units (as illustrated).

**Type 41 - Multiple Pipe Culvert (FHWA)**
Description: The superstructure is composed of multiple circular or elliptical pipes. The pipes may be steel or concrete. The maximum opening of any single pipe is below 20’. However, the “A” dimension must exceed 20’, and “B” must be less than “C”, for the structure to be considered a bridge.
Type 42 - Single/Multiple Pipe Culvert  
(FHWA/NYS)  
Description: Same as type 41 (see previous description), except that at least one of the pipes has a maximum opening which exceeds 20 feet.

Type 43 - Multiple Box Culvert  
Description: Same as type 40 (see previous description), except that this type has multiple spans acting continuously.

Type 44 - Timber Beam  
Description: This type is composed of solid or laminated timber beams. The deck planks are often transverse to the beams, but can also be parallel. In the latter case, the deck planks are post-tensioned together with steel rods.

Type 00 - Other  
Description: Use this to indicate that the type does not match any of the given choices.

Type XX - Unknown  
Description: This code should only be used if the primary members cannot be seen and plans are unavailable.

ITEM: Fracture Critical  
NYSDoT  

PROCEDURE:  
Record whether the span being inventoried is fracture critical or has fracture critical components as defined by the current edition of the New York State DOT Bridge Manual. Two and three girder systems are to be considered fracture critical, with the following exceptions:

- The structure designed with heavy bracing to provide an alternate load path. In other words, if a girder fractures, the bracing is substantial enough to enable the other girder(s) to withstand the applied load.
- A three girder system which supports only one traffic lane.

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 or flexural members with tension components where 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
NYSDoT

PROCEDURE:
Record the most critical fatigue category present in the primary members of the span being inventoried, as defined by AASHTO. 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 upgrade codes should be used only when the governing detail was upgraded by an approved repair procedure. When using any of the three upgrade codes, record the category that applied for the detail before the upgrade. For example, if an AASHTO category D detail was upgraded to an AASHTO category C detail, it should be recorded as: D, E, and E' details - upgraded.

Not applicable may only be used for structures built of materials where fatigue does not apply. These would include concrete, masonry and wood.

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
NYSDoT

PROCEDURE:
Record whether details are present which can cause steel primary members to be susceptible to damage from out-of-plane bending.

Report FHWA-PA-89-022 entitled “Manual for Inspecting Bridges for Fatigue Damage Conditions” provides excellent guidance for identifying conditions where out-of-plane bending may be an issue. Generally, out-of-plane bending occurs when differential deflections between adjacent members cause stress concentrations due to weak axis (out-of-plane) bending which can lead to cracking. Narrow web gaps at connection plates and stiffeners used as connection plates are details which are especially susceptible to this phenomenon.

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, either the web must be flexible enough to allow the induced deflection to be accommodated, 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, so out-of-plane...
distortion is not an issue. 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 without cracking.

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**
NYSDoT

**PROCEDURE:**
Record whether the span being inventoried is considered load path redundant.

Use the following codes to 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. May only be used in cases where this multiple load path condition has been confirmed through engineering design.
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. May only be used in cases where this multiple load path condition has been confirmed through engineering design.
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**
NYSDoT

**PROCEDURE:**
The method used to assemble the main structural members as it relates to Internal Redundancy, which enables a main member to redistribute applied loads through multiple internal elements. In other words, a member that is internally redundant will not fail if one of its individual components fails.

A built-up riveted girder has high internal redundancy because a crack cannot propagate from one of its internal elements to another. Conversely, a welded plate girder has a no internal redundancy because a crack can easily propagate from one element to another.
The codes, Internally Redundant, Not Specified Above and Internally Non-Redundant, Not Specified Above, apply mainly to concrete structures. 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 where flange plates were tack welded together to aid in fabrication. Another example is a riveted, built-up plate girder with an attachment which is welded to more than one plate. 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, which 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. “N” should be used to record tunnels, culverts, rigid frames, etc., where structural redundancy is not a factor. “U” should be used only if primary members are not accessible for inspection and plans are not available.

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 non-parallel substructures 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:**
0.0 - 999.9 - Metric Units
0 - 9999 – U.S. Customary 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:**

See Coding Chart on following page:
Pier Type Descriptions

01 - No Pier
Solid concrete shaft supports superstructure.

02 - Solid, Concrete
Similar to Solid, Concrete above, but constructed of unreinforced stonework or brickwork. This does not include aesthetic treatments on reinforced concrete.

03 - Solid, Masonry
Superstructure members supported by individual columns.

04 - Individual Columns
Concrete pier with a solid shaft and cap beam. The cap beam cantilevers out beyond either side of the shaft.

05 - Hammerhead
Concrete pier with a solid shaft and cap beam. The cap beam reinforcement extends into cap beam and is lapped with cap beam reinforcement to resist the applied moments at the beam/column interface.

06 - Rigid Frame, Concrete
Steel cap beam is welded or bolted to steel columns to resist the applied moments at the beam/column interface.

07 - Rigid Frame, Steel
Concrete cap beam is supported by columns, but no designed moment resistance is provided at the beam/column interface.

08 - Concrete Columns with Concrete Cap Beam
Steel cap beam is supported by concrete columns, but no designed moment resistance is provided at the beam/column interface.

09 - Concrete Columns with Steel Cap Beam
Concrete pier with a "V" shaped shaft. The shaft may be solid or consist of members inclined to form a "V" shape.

10 - "V" Bent, Concrete
Steel pier composed of columns inclined to form a "V" shape.

11 - "V" Bent, Steel
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.

12 - Pile Bent, Steel
Same as above, except that the bent is composed of Cast-in-Place concrete piles.

13 - Pile Bent, Concrete Filled Tubular Steel
Same as above, except that the bent is composed of pre-cast concrete piles.

14 - Pile Bent, Concrete
A trestle bent is composed of a steel cap beam supported by three dimensional steel trusses which act as columns.

15 - Pile Bent, Timber
Same as above, except that the bent is composed of timber piles.

16 - Trestle Bent, Steel
Same as above, except that the bent is composed of timber piles.

17 - Trestle Bent, Timber
00 - Other

Pier Type: Sketches

The following sketches illustrate the various Pier Types.

Elev View ; #3 Solid Masonary

Elev View ; #3 Solid Masonary
Elv. View; #4 Individual Columns

Elev View; #5 Hammerhead

View #6 Concrete Rigid Frame

Elev View; #7 Steel Rigid Frame

Elev View; #8 Concrete Columns w/ Concrete Cap Beams

Elev View; #9 Concrete Columns w/ Steel Cap Beam
Elev. View #: 10A V-Bent Concrete  Solid

Elev. View #: 10B V-Bent Concrete W/Void

Elev. View #: 10C V-Bent Concrete W/ Recess

Elev. View #: 11 V-Bent, Steel

Elev. View #: 12 Pile Bent, Steel
#13 Pile Bent, Concrete Filled
#14 Pile Bent, Concrete
#15 Pile Bent, Timber

Elev. View #: 16 Trestle Bent, Steel
#17 Trestle Bent Timber
ITEM: Pier Height
NYSDoT

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
NYSDoT

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
NYSDoT

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.

CODING:
See chart below:

<table>
<thead>
<tr>
<th>PIER JOINT TYPE</th>
<th>EXPANSION</th>
<th>CODING</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Finger</td>
<td>02</td>
<td>NA</td>
</tr>
<tr>
<td>Sliding Plate</td>
<td>03</td>
<td>NA</td>
</tr>
<tr>
<td>Filled, Elastic Material</td>
<td>04</td>
<td>22</td>
</tr>
<tr>
<td>Open with Trough</td>
<td>05</td>
<td>NA</td>
</tr>
<tr>
<td>Open</td>
<td>06</td>
<td>23</td>
</tr>
<tr>
<td>Elastomeric (Transflex, Wabo-Flex) (See BD 75-60 A, G)</td>
<td>07</td>
<td>27</td>
</tr>
<tr>
<td>Sealed - Embedded Membrane (RR)</td>
<td>08</td>
<td>24</td>
</tr>
<tr>
<td>Other</td>
<td>09</td>
<td>25</td>
</tr>
<tr>
<td>Unknown</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Armored Elastomeric (See BD 80-64 A, B, C)</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>Armored Compression Seal (See BD 80-61, BD 80-63)</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Compression Seal</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>Modular</td>
<td>14</td>
<td>NA</td>
</tr>
<tr>
<td>Strip Seal with Integral Armoring Angle</td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td>Strip Seal - Extrusion Anchored to Deck, No Elastomeric Concrete</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Strip Seal - Extrusion Embedded in Elastomeric Concrete</td>
<td>17</td>
<td>33</td>
</tr>
<tr>
<td>Strip Seal - Type Unknown</td>
<td>18</td>
<td>34</td>
</tr>
<tr>
<td>Sawed and Filled</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:
Enter the appropriate code that corresponds to the type of railing being inventoried. If the code is not listed then use the “Other” code.

CODING:
Active Railing Codes in BDMS database for RC15 Span Rails.
00 = Other
01 = None (no railing)
02 = Steel (Conforms to AASHTO Standards)
03 = Steel (Does not conform with AASHTO Standards)
04 = Aluminum (Conforms to AASHTO Standards)
05 = Aluminum (Does not conform with AASHTO Standards)
06 = Cable
07 = Concrete, including, but not limited to; Parapets less than 70mm high without bridge rail, Parapets less than 70mm high with an attached discontinuous railing, or with any Aluminum Railing System.
08 = Link Fence
09 = Steel Baustrade
10 = Concrete Baustrade
11 = Pipe
12 = Timber (Conforming to AASHTO Standards)

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 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>Elastomeric, 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 structural component which is designed to span between stringers, girders, or floorbeams, 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 for 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 average width.

If there is no median, record this Item with "00.0".

CODING:
Accepts numeric characters 00.0 – 99.9