

**Illinois Department of Transportation (IDOT) Supplement to the
AASHTO Manual for Bridge Element Inspection (MBEI)**

**Illinois Department of Transportation
Bureau of Bridges and Structures**

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***Illinois Department of Transportation (IDOT) Supplement to the
AASHTO Manual for Bridge Element Inspection (MBEI)***

PREFACE

This document will serve as the Illinois Department of Transportation (IDOT) Supplement to the AASHTO Manual for Bridge Element Inspection (MBEI). This supplement includes IDOT's interpretation of the AASHTO MBEI, IDOT's Agency Defined Elements (ADE), conversion from the previously used Elements, and IDOT Policy as it relates to Element Level Inspections. The 2015 Illinois Bridge Element Inspection Manual (BEIM) is to be superseded by the AASHTO manual and this supplement.

This supplement is organized similar to the AASHTO manual and will state "No deviations" after each section or subsection where there are no deviations from the AASHTO MBEI, as shown in the [Table of Contents](#).

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INTRODUCTION

Element Level Inspection data is collected on all IDOT maintained bridges > 20.0 feet and on Non-IDOT maintained bridges located on the National Highway System (NHS) for use in the IDOT Enterprise Asset Management System (EAMS) and Bridge Management System (BMS).

The EAMS and BMS allow IDOT to:

1. Determine overall condition of a bridge
2. Determine specific elements in need of repair or replacement
3. Determine preservation and maintenance strategies and plan repair schedules
4. Define strategies to improve the condition state (CS) of an element to function as intended
5. Estimate costs and savings

The AASHTO Element Identification system as outlined in the AASHTO MBEI shall replace the IDOT Legacy Element Identification system for the purpose of national standardization. There are five (5) IDOT ADEs introduced in this supplement. Conversion tables are provided in [Appendix E](#) to convert IDOT Legacy Elements to AASHTO Elements.

SECTION 1: BACKGROUND

1.1—CONDITION ASSESSMENT PHILOSOPHY: MULTIPATH AND DEFECT CONCEPTS

No deviations.

1.2—NATIONAL BRIDGE ELEMENTS

No deviations.

1.3—BRIDGE MANAGEMENT ELEMENTS

No deviations.

1.4—AGENCY-DEVELOPED ELEMENTS

No deviations.

1.5—HOW TO USE THIS MANUAL

No deviations.

1.6—ORGANIZATION

There are five appendices to aid IDOT in the development of the data collection process.

These Appendices are as follows:

Appendix A—Agency-Defined Elements (ADEs)

Appendix B—Inspection Examples

Appendix C—Element Groupings

Appendix D—List of Feasible Actions by Material Type

Appendix E—Conversion Tables

SECTION 2: ELEMENT LOCATION MATRIX

Five (5) ADEs have been added to this section to give Inspectors a quick reference guide to the defined elements.

2.1—NATIONAL BRIDGE ELEMENTS (NBE)

2.1.1—Decks and Slabs

No deviations.

2.1.2—Railings

No deviations.

2.1.3—Superstructure

No deviations.

2.1.4—Bearings

No deviations.

2.1.5—Substructure

No deviations.

2.1.6—Culverts

| Element | Units | Steel | Prestressed Concrete | Reinforced Concrete | Timber | Masonry | Other |
|------------------|-------|-------|----------------------|---------------------|--------|---------|-------|
| Culvert Wingwall | each | 8241 | 8241 | 8241 | 8241 | 8241 | 8241 |

2.2—BRIDGE MANAGEMENT ELEMENTS (BME)

2.2.1—Joints

IDOT is using Element #306 for Neoprene Expansion Joint.

2.2.2—Approach Slabs

No deviations.

2.2.3—Wearing Surfaces, Protective Coatings, and Concrete Reinforcing Steel Protective System

| Element | Units | Element Number |
|--|-----------------------|----------------|
| Girder/Beam/Stringer End Below Open Joints | each | 8102 |
| Flexible Wearing Surface | area, ft ² | 8510 |
| Rigid Wearing Surface | area, ft ² | 8511 |
| Semi-Rigid Wearing Surface | area, ft ² | 8512 |

SECTION 3: DETAILED ELEMENT DESCRIPTIONS

Five (5) ADEs have been added and select NBEs and BMEs have been modified in this section to provide detailed element and defect descriptions.

3.1—ELEMENT LISTING BY MATERIAL

3.1.1—Reinforced Concrete

| DECKS AND SLABS | | | | | |
|------------------------|---|---|------------|------------------|-----------------------|
| 12 | Reinforced Concrete Deck | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the deck calculated from end to end and edge to edge of deck, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| 38 | Reinforced Concrete Slab | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the slab calculated from end to end and edge to edge of slab, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| 16 | Reinforced Concrete Top Flange | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the top flange calculated from end to end and edge to edge of deck, including any sidewalks, median areas, and accounting for any flares or ramps present. This quantity is for the top flange riding surface only. Girder web and bottom flange are to be evaluated by the appropriate girder element. | | | |
| SUPERSTRUCTURE | | | | | |
| 110 | Reinforced Concrete Open Girder/Beam | Classification: | NBE | Unit of Measure: | ft |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Sum of all of the lengths of each girder. For Precast Concrete Channel Beams, the quantity is the number of beams, not the number of legs, times the beam length. | | | |
| SUBSTRUCTURE | | | | | |
| 210 | Reinforced Concrete Pier Wall | Classification: | NBE | Unit of Measure: | ft |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Sum of the lengths of the pier walls measured along the skew angle. For trapezoidal pier walls, use the longest dimension of the pier wall. | | | |
| 215 | Reinforced Concrete Abutment | Classification: | NBE | Unit of Measure: | ft |
| | Description: | Reinforced concrete abutments, including the material retaining the embankment and monolithic/non-monolithic wingwalls and abutment extensions. For all reinforced concrete abutments regardless of protective systems. | | | |
| | Quantity Calculation: | Sum of the length of the abutment with monolithic/non-monolithic wingwalls and abutment extensions measured along the skew. | | | |
| CULVERTS | | | | | |
| 8241 | Culvert Wingwall | Classification: | ADE | Unit of Measure: | ea |
| | Description: | All culvert wingwalls of any material. | | | |
| | Quantity Calculation: | Include monolithic and non-monolithic culvert wingwalls. | | | |

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3.1.2—Prestressed Concrete

| DECKS AND SLABS | | | | | |
|------------------------|--|---|------------|------------------|-----------------------|
| 13 | Prestressed Concrete Deck | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the deck calculated from end to end and edge to edge of deck, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| 15 | Prestressed Concrete Top Flange | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the top flange calculated from end to end and edge to edge of deck, including any sidewalks, median areas, and accounting for any flares or ramps present. This quantity is for the top flange riding surface only. Girder web and bottom flange are to be evaluated by the appropriate girder element. | | | |
| CULVERTS | | | | | |
| 8241 | Culvert Wingwall | Classification: | ADE | Unit of Measure: | ea |
| | Description: | All culvert wingwalls of any material. | | | |
| | Quantity Calculation: | Include monolithic and non-monolithic culvert wingwalls. | | | |

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3.1.3—Steel

| DECKS AND SLABS | | | | | |
|------------------------|---|--|------------|------------------|-----------------------|
| 28 | Steel Deck with Open Grid | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the deck calculated from end to end and edge to edge of deck, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| 29 | Steel Deck with Concrete Filled Grid | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the deck calculated from end to end and edge to edge of deck, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| 30 | Steel Deck Corrugated/Orthotropic/Etc. | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the deck calculated from end to end and edge to edge of deck, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| SUPERSTRUCTURE | | | | | |
| 120 | Steel Truss | Classification: | NBE | Unit of Measure: | ft |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Sum of all of the lower chord lengths measured longitudinally along the travel way. | | | |
| 162 | Steel Gusset Plate Assembly | Classification: | NBE | Unit of Measure: | ea |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | No deviations. | | | |
| SUBSTRUCTURE | | | | | |
| 219 | Steel Abutment | Classification: | NBE | Unit of Measure: | ft |
| | Description: | Steel abutments, including the sheet material retaining the embankment, and monolithic/non-monolithic wingwalls and abutment extensions. For all abutments regardless of protective systems. | | | |
| | Quantity Calculation: | Sum of the length of the abutment with monolithic/non-monolithic wingwalls and abutment extensions measured along the skew. | | | |
| CULVERTS | | | | | |
| 8241 | Culvert Wingwall | Classification: | ADE | Unit of Measure: | ea |
| | Description: | All culvert wingwalls of any material. | | | |
| | Quantity Calculation: | Include monolithic and non-monolithic culvert wingwalls. | | | |

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3.1.4—Timber

| DECKS AND SLABS | | | | | |
|------------------------|------------------------------|---|------------|------------------|-----------------------|
| 31 | Timber Deck | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the deck calculated from end to end and edge to edge of deck, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| 54 | Timber Slab | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the slab calculated from end to end and edge to edge of slab, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| SUPERSTRUCTURE | | | | | |
| 135 | Timber Truss | Classification: | NBE | Unit of Measure: | ft |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Sum of all of the lower chord lengths measured longitudinally along the travel way. | | | |
| SUBSTRUCTURE | | | | | |
| 216 | Timber Abutment | Classification: | NBE | Unit of Measure: | ft |
| | Description: | Timber abutments, including the sheet material retaining the embankment, integral/non-integral wingwalls, and abutment extensions. For all abutments, regardless of protective systems. | | | |
| | Quantity Calculation: | Sum of the length of the abutment with integral/non-integral wingwalls and abutment extensions measured along the skew. | | | |
| CULVERTS | | | | | |
| 8241 | Culvert Wingwall | Classification: | ADE | Unit of Measure: | ea |
| | Description: | All culvert wingwalls of any material. | | | |
| | Quantity Calculation: | Include monolithic and non-monolithic culvert wingwalls. | | | |

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3.1.5—Masonry

| SUBSTRUCTURE | | | | | |
|---------------------|------------------------------|---|------------|------------------|-----------|
| 217 | Masonry Abutment | Classification: | NBE | Unit of Measure: | ft |
| | Description: | Those abutments constructed of block or stone, including integral/non-integral wingwalls and abutment extensions. The block or stone may be placed with or without mortar. For all abutments, regardless of protective systems. | | | |
| | Quantity Calculation: | Sum of the length of the abutment with integral/non-integral wingwalls and abutment extensions measured along the skew. | | | |
| CULVERTS | | | | | |
| 8241 | Culvert Wingwall | Classification: | ADE | Unit of Measure: | ea |
| | Description: | All culvert wingwalls of any material. | | | |
| | Quantity Calculation: | Include monolithic and non-monolithic culvert wingwalls. | | | |

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3.1.6—Other Materials

| DECKS AND SLABS | | | | | |
|------------------------|------------------------------|---|------------|------------------|-----------------------|
| 60 | Other Deck | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the deck calculated from end to end and edge to edge of deck, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| 65 | Other Slab | Classification: | NBE | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Area of the slab calculated from end to end and edge to edge of slab, including any sidewalks, median areas, and accounting for any flares or ramps present. | | | |
| SUPERSTRUCTURE | | | | | |
| 136 | Other Truss | Classification: | NBE | Unit of Measure: | ft |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | Sum of all of the lower chord lengths measured longitudinally along the travel way. | | | |
| SUBSTRUCTURE | | | | | |
| 218 | Other Abutments | Classification: | NBE | Unit of Measure: | ft |
| | Description: | Abutment systems, including the sheet material retaining the embankment, and integral/non-integral wingwalls and abutment extensions, constructed of materials not covered by other elements. For all abutments, regardless of protective systems. IDOT is using Element #218 for MSE Wall Abutments. | | | |
| | Quantity Calculation: | Sum of the length of the abutment with integral/non-integral wingwalls and abutment extensions measured along the skew. | | | |
| CULVERTS | | | | | |
| 8241 | Culvert Wingwall | Classification: | ADE | Unit of Measure: | ea |
| | Description: | All culvert wingwalls of any material. | | | |
| | Quantity Calculation: | Include monolithic and non-monolithic culvert wingwalls. | | | |

3.1.7—Bearings

No deviations.

3.1.8—Joints

| | | | | | |
|------------|------------------------------|--|------------|------------------|-----------|
| 306 | Other Joint | Classification: | BME | Unit of Measure: | ft |
| | Description: | Those joints that are not defined by any other joint element. IDOT is using Element #306 for Neoprene Expansion Joint. | | | |
| | Quantity Calculation: | No deviations. | | | |

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3.1.9—Wearing Surfaces, Protective Coatings, and Concrete Reinforcing Steel Protective System

| | | | | | |
|-------------|---|--|------------|------------------|-----------------------|
| 521 | Concrete Protective Coating | Classification: | BME | Unit of Measure: | ft² |
| | Description: | Concrete elements that have coating applied as part of the regular deck/slab sealing program. These coatings include silane/siloxane water proofers, crack sealers such as High Molecular Weight Methacrylate (HMWM), or any top coat barrier that protects concrete from deterioration and reinforcing steel from corrosion. Also includes waterproofing membranes. | | | |
| | Quantity Calculation: | No deviations. | | | |
| 520 | Concrete Reinforcing Steel Protective System | Classification: | BME | Unit of Measure: | ft² |
| | Description: | No deviations. | | | |
| | Quantity Calculation: | No deviations. | | | |
| | Note: | If top mat of reinforcement in deck/slab has protective system and bottom mat of reinforcement does not, use Element #520 based on top mat of reinforcement. This item is optional for all components except decks and slabs. | | | |
| 8102 | Steel Girder/Beam/Stringer End Below Open Joints | Classification: | ADE | Unit of Measure: | ea |
| | Description: | All steel beam/girder/stringer ends below open joints. | | | |
| | Quantity Calculation: | "Each" is defined as the end five (5) feet of the member and is for the Steel Protective Coating. | | | |
| 8510 | Flexible Wearing Surface | Classification: | ADE | Unit of Measure: | ft² |
| | Description: | All decks/slabs that have overlays made with flexible (asphaltic concrete) materials. | | | |
| | Quantity Calculation: | Should include the area of the deck/slab that is protected by this wearing surface. | | | |
| 8511 | Rigid Wearing Surface | Classification: | ADE | Unit of Measure: | ft² |
| | Description: | All decks/slabs that have overlays made with rigid (Portland cement) materials. | | | |
| | Quantity Calculation: | Should include the area of the deck/slab that is protected by this wearing surface. | | | |
| 8512 | Semi-Rigid Wearing Surface | Classification: | ADE | Unit of Measure: | ft² |
| | Description: | All decks/slabs that have overlays made with semi-rigid (epoxy and polyester) materials. | | | |
| | Quantity Calculation: | Should include the area of the deck/slab that is protected by this wearing surface. | | | |

3.2—ELEMENT COMMENTARY

3.2.1—General Commentary

No deviations.

3.2.2—Decks and Slabs

No deviations.

3.2.2.1

No deviations.

3.2.2.2

No deviations.

3.2.2.3

Composite decks for Steel Box Beams, Steel Composite Beams, and Precast Prestressed Concrete (PPC) I-Beams shall use Element #12—Reinforced Concrete Deck.

3.2.2.4

Precast Prestressed Concrete Deck/Box Beams and Post-Tensioned Segmental Box Beams shall use Element #15 – Prestressed Concrete Top Flange along with appropriate Superstructure Element.

Monolithic decks for Reinforced Concrete (RC) Tee Beams, Precast Concrete (PC) Channel Beams, Segmental Box Beams, and Cast-in-place Concrete Box Beams shall use Element #16—Reinforced Concrete Top Flange along with appropriate Superstructure Element.

3.2.3—Railings

No deviations.

3.2.3.1

No deviations.

3.2.3.2

No deviations.

3.2.3.3

Bridge rail consisting of multiple materials, such as a Reinforced Concrete Bridge Rail (Element #331) with a Metal Bridge Rail (Element #330) mounted on, shall have separate Elements for each material.

3.2.4—Superstructure

No deviations.

3.2.4.1

No deviations.

3.2.4.2 Girders

No deviations.

3.2.4.2.1 Precast Prestressed Concrete Deck/Box Beams

Precast Prestressed Concrete Deck/Box Beams shall use Element #104—PSC Closed Web/Box Girder along with the applicable Decks and Slabs Element.

3.2.4.3 Stringers

No deviations.

3.2.4.4 Trusses and Arches

No deviations.

3.2.4.5 Floor Beams

No deviations.

3.2.4.5.1

Transfer beams shall be treated as floor beams.

3.2.4.6 Miscellaneous Superstructure Elements

No deviations.

3.2.5—Bearings

No deviations.

3.2.6—Substructure Elements

No deviations.

3.2.6.1

Monolithic and non-monolithic wingwalls, up to the first construction joint (cold joint, water stop, etc.), shall be considered in the quantity and assessment of the abutment element. For wingwalls continuing as a retaining wall, the quantity shall be taken to the first joint not at the abutment.

3.2.6.2

Integral and non-integral wingwalls, up to the first construction joint (cold joint, water stop, etc.), shall be considered in the quantity and assessment of the abutment element. For wingwalls continuing as a retaining wall, the quantity shall be taken to the first joint not at the abutment. See Appendix B6 for a reinforced concrete abutment inspection example.

3.2.6.3

The quantity of the Abutment Caps will not be included with Pier Cap Elements.

3.2.6.4

Trapezoidal Pier Walls are to be quantified using the longest dimension of the wall.

3.2.6.5

Within a vaulted abutment, beams are to be included as part of the beam/girder quantity and curtain walls/wingwalls are to be included as part of the abutment quantity. See Appendix B5 for a concrete vaulted abutment inspection example.

3.2.6.6

For Pier Wall vs. single Column determination, if the ratio of the clear height to the longest dimension of a Pier Wall is not less than 2.5 then the Pier Wall shall be considered as a single Column. (AASHTO LRFD 5.11.4.1) See Appendix B7 for reinforced concrete hammerhead pier inspection examples.

3.2.6.7

For all Pier Wall, there will always be a Pier Cap regardless of whether the existing plans specify a Pier Cap is present. If there is no obvious marking of a Pier Cap in the existing plans, assume the top \pm 2 ft of the Pier Wall is to be quantified as Element #234–Reinforced Concrete Pier Cap. Note that a Pier Wall considered to be a single Column as stated in 3.2.6.6, shall not have an assumed Pier Cap within the top \pm 2 ft. See Appendix B8 for a reinforced concrete pier wall inspection example.

3.2.6.8

For a Girder/Truss system with 2 main support columns, there will not be a Pier Cap unless a wall exists between the columns with bearings on the wall from stringers/approach beams. See Appendix B9 for Girder/Truss bridge inspection examples.

3.2.7—Culverts

No deviations.

3.2.7.1

No deviations.

3.2.7.2

Environmental Factors for culverts shall be determined using the Substructure criteria except when the culvert is subject to contact loading (structure fill depth < 2.0'). When the culvert is subject to contact loading, the Environmental Factor shall be the worst of the three groups in [Section 3.13](#).

3.2.8—Joints

No deviations.

3.2.9—Wearing Surfaces, Protective Coatings, and Concrete Reinforcing Steel Protective Systems

No deviations.

3.2.9.1 Protective Coatings

Diaphragms, cross frames, stiffeners, gusset plates, etc. may be assumed to increase the total quantity of Element #515–Steel Protective Coating by 10%.

3.2.10—Approach Slabs

No deviations.

3.2.10.1

IDOT will no longer quantify bituminous pavement sections. Only reinforced concrete and prestressed concrete sections shall be quantified using Element #321–Reinforced Concrete Approach Slab and Element #320–Prestressed Concrete Approach Slab.

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3.3—REINFORCED CONCRETE ELEMENTS

| Element No. | Element Name | Classification | Units of Measurement |
|----------------|------------------|----------------|----------------------|
| Culvert | | | |
| 8241 | Culvert Wingwall | ADE | ea |

Defects for Reinforced Concrete

| Defects | CS 1 | CS 2 | CS 3 | CS 4 |
|---|------------------|--|---|---|
| | GOOD | FAIR | POOR | SEVERE |
| Delamination/Spall/ Patched Area (1080) | No section loss. | Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. Section loss < 2%. | Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Section loss 3% to 10%. Does not warrant structural review. | Section loss > 10%. The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge. CS4 rating to remain until repair is complete. |
| Exposed Rebar (1090) | No section loss. | Section loss < 2%. | Section loss 3% to 10%. Does not warrant structural review. | |
| Efflorescence/ Rust Staining (1120) | No deviations. | | | |
| Cracking (RC) (1130) | No deviations. | | | |
| Abrasion/Wear (PSC/RC) (1190) | No deviations. | | | |
| Settlement (4000) | No deviations. | | | |
| Scour (6000) | No deviations. | | | |
| Damage (7000) | No deviations. | | | |

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3.4—PRESTRESSED CONCRETE ELEMENTS

| Element No. | Element Name | Classification | Units of Measurement |
|----------------|------------------|----------------|----------------------|
| Culvert | | | |
| 8241 | Culvert Wingwall | ADE | ea |

Defects for Prestressed Concrete Elements

| Defects | CS 1 | CS 2 | CS 3 | CS 4 |
|---|------------------|--|---|---|
| | GOOD | FAIR | POOR | SEVERE |
| Delamination/Spall/ Patched Area (1080) | No section loss. | Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. Section loss < 2%. | Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Section loss 3% to 10%. Does not warrant structural review. | Section loss > 10%. The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge. CS4 rating to remain until repair is complete. |
| Exposed Rebar (1090) | No section loss. | Section loss < 2%. | Section loss 3% to 10%. Does not warrant structural review. | |
| Exposed Prestressing (1100) | No section loss. | Section loss < 2%. | Section loss 3% to 10%. Does not warrant structural review. | |
| Efflorescence/ Rust Staining (1120) | No deviations. | | | |
| Cracking (PSC) (1110) | No deviations. | | | |
| Abrasion/Wear (PSC/RC) (1190) | No deviations. | | | |
| Distortion (1900) | No deviations. | | | |
| Settlement (4000) | No deviations. | | | |
| Scour (6000) | No deviations. | | | |
| Damage (7000) | No deviations. | | | |

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3.5—STEEL ELEMENTS

| Element No. | Element Name | Classification | Units of Measurement |
|----------------|------------------|----------------|----------------------|
| Culvert | | | |
| 8241 | Culvert Wingwall | ADE | ea |

Defects for Steel Elements

| Defects | CS 1 | CS 2 | CS 3 | CS 4 |
|-------------------|---|---|--|---|
| | GOOD | FAIR | POOR | SEVERE |
| Corrosion (1000) | No section loss. | Freckled rust. Corrosion of the steel has initiated. Section loss < 2%. | Pack rust is present, section loss 3% to 10%. Does not warrant structural review. | Section loss > 10%. The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge. CS4 rating to remain until repair is complete. |
| Cracking (1010) | No cracking. | Crack that has self-arrested or has been arrested with effective arrest holes, doubling plates, or similar. Section loss < 2%. | Identified crack that is not arrested. Section loss 3% to 10%. Does not warrant structural review. | |
| Connection (1020) | Connection is in place and functioning as intended. | Loose fasteners or pack rust without distortion is present but the connection is in place and functioning as intended. Section loss < 2%. | Missing bolts, rivets, or fasteners; broken welds; or pack rust with distortion. Section loss 3% to 10%. Does not warrant structural review. | |
| Distortion (1900) | No deviations. | | | |
| Settlement (4000) | No deviations. | | | |
| Scour (6000) | No deviations. | | | |
| Damage (7000) | No deviations. | | | |

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3.6—TIMBER ELEMENTS

| Element No. | Element Name | Classification | Units of Measurement |
|----------------|------------------|----------------|----------------------|
| Culvert | | | |
| 8241 | Culvert Wingwall | ADE | ea |

Defects for Timber Elements

| Defects | CS 1 | CS 2 | CS 3 | CS 4 |
|------------------------------------|------------------|--------------------|---|---|
| | GOOD | FAIR | POOR | SEVERE |
| Connection (1020) | No deviations. | | | |
| Decay/Section Loss (1140) | No section loss. | Section loss < 2%. | Section loss 3% to 10%. Does not warrant structural review. | Section loss > 10%. The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge. CS4 rating to remain until repair is complete. |
| Check/Shake (1150) | No deviations. | | | |
| Crack (Timber) (1160) | No deviations. | | | |
| Split/Delamination (Timber) (1170) | No deviations. | | | |
| Abrasion/Wear (Timber) (1180) | No deviations. | | | |
| Settlement (4000) | No deviations. | | | |
| Scour (6000) | No deviations. | | | |
| Damage (7000) | No deviations. | | | |

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3.7—MASONRY ELEMENTS

| Element No. | Element Name | Classification | Units of Measurement |
|----------------|------------------|----------------|----------------------|
| Culvert | | | |
| 8241 | Culvert Wingwall | ADE | ea |

Defects for Masonry Elements

| Defects | CS 1 | CS 2 | CS 3 | CS 4 |
|---|------------------|--|---|---|
| | GOOD | FAIR | POOR | SEVERE |
| Delamination/Spall/ Patched Area (1080) | No section loss. | Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. Section loss < 2%. | Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Section loss 3% to 10%. Does not warrant structural review. | Section loss > 10%. The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge. CS4 rating to remain until repair is complete. |
| Efflorescence/ Rust Staining (1120) | No deviations. | | | |
| Mortar Breakdown (Masonry) (1610) | No deviations. | | | |
| Split/Spall (Masonry) (1620) | No deviations. | | | |
| Patched Area (Masonry) (1630) | No deviations. | | | |
| Masonry Displacement (1640) | No deviations. | | | |
| Distortion (1900) | No deviations. | | | |
| Settlement (4000) | No deviations. | | | |
| Scour (6000) | No deviations. | | | |
| Damage (7000) | No deviations. | | | |

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3.8—OTHER MATERIAL ELEMENTS

| Element No. | Element Name | Classification | Units of Measurement |
|----------------|------------------|----------------|----------------------|
| Culvert | | | |
| 8241 | Culvert Wingwall | ADE | ea |

Defects for Other Material Elements

| Defects | CS 1 | CS 2 | CS 3 | CS 4 |
|---|--|---|---|---|
| | GOOD | FAIR | POOR | SEVERE |
| Corrosion (1000) | No section loss. | Freckled rust. Corrosion of the steel has initiated. Section loss < 2%. | Pack rust is present, section loss 3% to 10%. Does not warrant structural review. | Section loss > 10%. The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge. CS4 rating to remain until repair is complete. |
| Cracking (1010) | No section loss. | Crack that has self-arrested or has been arrested with effective arrest holes, doubling plates, or similar. Section loss < 2%. | Identified crack that is not arrested. Section loss 3% to 10%. Does not warrant structural review. | |
| Connection (1020) | Connection is in place and functioning as intended. No section loss. | Loose fasteners or pack rust without distortion is present but the connection is in place and functioning as intended. Section loss < 2%. | Missing bolts, rivets, or fasteners; broken welds; or pack rust with distortion. Section loss 3% to 10%. Does not warrant structural review. | |
| Delamination/ Spall/Patched Area (1080) | No section loss. | Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. Section loss < 2%. | Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Section loss 3% to 10%. Does not warrant structural review. | |
| Efflorescence/ Rust Staining (1120) | No deviations. | | | |
| Cracking (RC and Other) (1130) | No deviations. | | | |
| Deterioration (Other) (1220) | No deviations. | | | |

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| | |
|----------------------|----------------|
| Distortion (1900) | No deviations. |
| Settlement (4000) | No deviations. |
| Scour (6000) | No deviations. |
| Damage (7000) | No deviations. |

3.9—BEARINGS

No deviations.

3.10—JOINTS

No deviations.

**3.11—WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING
STEEL PROTECTIVE SYSTEMS**

| Element No. | Element Name | Classification | Units of Measurement |
|-------------|--|----------------|----------------------|
| 8102 | Steel Girder/Beam/Stringer End Below Open Joints | ADE | ea |
| 8510 | Flexible Wearing Surface | ADE | ft ² |
| 8511 | Rigid Wearing Surface | ADE | ft ² |
| 8512 | Semi-Rigid Wearing Surface | ADE | ft ² |

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Defects for Wearing Surfaces

| Defects | CS 1 | CS 2 | CS 3 | CS 4 |
|---|----------------|--------------|--|--|
| | GOOD | FAIR | POOR | SEVERE |
| Delamination/Spall/ Patched Area/Pothole (Wearing Surfaces) (3210) | None. | Delaminated. | Spalls less than or equal to 1 in. depth and less than or equal to 2 ft diameter. Or spalls greater than 1 in. depth and less than 6 in. diameter. | The wearing surface is no longer effective. |
| Crack (Wearing Surface) (3220) | None. | Any cracks. | Not applicable. | Not applicable. |
| Effectiveness (Wearing Surface) (3230) | No deviations. | | | |
| Damage (7000) | No deviations. | | | |

Defects for Steel Protective Coating

| Defects | CS 1 | CS 2 | CS 3 | CS 4 |
|---|----------------|-----------------|---|----------------------------|
| | GOOD | FAIR | POOR | SEVERE |
| Chalking (Steel Protective Coatings) (3410) | None. | Chalky Paint | Not applicable. | Not applicable. |
| Peeling/Bubbling/Cracking (Steel Protective Coatings) (3420) | None. | Not applicable. | Peeling topcoat of paint, not the primer | Exposure of bare metal. |
| Oxide Film Degradation Color/Texture Adherence (Steel Protective Coatings) (3430) | No deviations. | | | |
| Effectiveness (Steel Protective Coatings) (3440) | No deviations. | | | |
| Damage (7000) | No deviations. | | | |

3.12—SPATIAL AREA ESTIMATES DIAGRAMS

No deviations.

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3.13—ENVIRONMENTAL FACTORS (SERVICE ENVIRONMENTS)

IDOT has developed criteria to determine the Environmental Factors based on the Average Daily Traffic (ADT) and the Average Daily Truck Traffic (ADTT) both on the bridge and under the bridge as it relates to the deterioration of the bridge elements.

Group I – Deck

Includes:

- Deck
- Steel superstructure elements below open deck joints including beam ends, end diaphragms, and bearings.
- Steel substructure elements below open deck joints including abutments and pier caps.

| Deck Environment | Description |
|------------------|----------------------|
| 1 – Benign | ADT On ≤ 1700 |
| 2 – Low | 1700 < ADT On ≤ 4100 |
| 3 – Moderate | 4100 < ADT On ≤ 9950 |
| 4 – Severe | ADT On > 9950 |

Group II – Superstructure

Includes all superstructure elements not included in Group I.

| Superstructure Environment | Description – Use worse environment case | |
|----------------------------|--|----------------------|
| | Case A | Case B |
| 1 – Benign | ADT Under ≤ 6200 | ADTT On ≤ 165 |
| 2 – Low | 6200 < ADT Under ≤ 14,800 | 165 < ADTT On ≤ 385 |
| 3 – Moderate | 14,800 < ADT Under ≤ 27,300 | 385 < ADTT On ≤ 1170 |
| 4 – Severe | ADT > 27,300 Under | ADTT On > 1170 |

Group III – Substructure

Includes all substructure elements not included in Group I.

| Substructure Environment | Description – Use worse environment case | |
|--------------------------|--|-------------------|
| | Case A | Case B |
| 1 – Benign | ADT Under ≤ 6,200 | Light Industry |
| 2 – Low | 6,200 < ADT Under ≤ 14,800 | Moderate Industry |
| 3 – Moderate | 14,800 < ADT Under ≤ 27,300 | Heavy Industry |
| 4 – Severe | ADT > 27,300 Under | - |

APPENDIX A: AGENCY-DEFINED ELEMENTS (ADES)

No deviations.

APPENDIX B: INSPECTION EXAMPLES

No deviations.

B1—TIMBER BRIDGE

No deviations.

B2—PRESTRESSED CONCRETE GIRDER BRIDGE

No deviations.

B3—STEEL TRUSS BRIDGE

No deviations.

B4—SUSPENSION BRIDGE STEEL CABLES

The subject of this example is a suspension bridge. The sketches in Figure B4-1 show bridge elements with relevant dimensions.

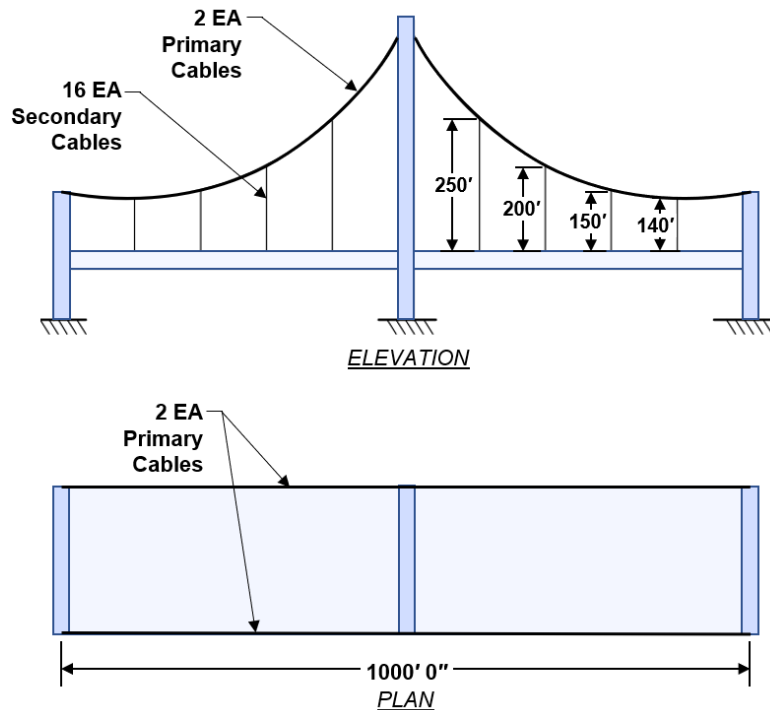


Figure B4-1—Elevation and Plan View for Suspension Bridge Example

B4.1—Element Quantities

B4.1.1—Superstructure

Steel Main Cables (Element 147) Quantity: $(2 \text{ cables}) \times (1000 \text{ ft}) = 2000 \text{ ft}$

Secondary Steel Cables (Element 148) Quantity: $(250 \text{ ft} + 200 \text{ ft} + 150 \text{ ft} + 140 \text{ ft}) \times (4 \text{ sides}) = 2960 \text{ ft}$

B5—CONCRETE VAULTED ABUTMENT

The subject of this example is a concrete vaulted abutment. The sketches in Figure B5-1 show bridge elements with relevant dimensions.

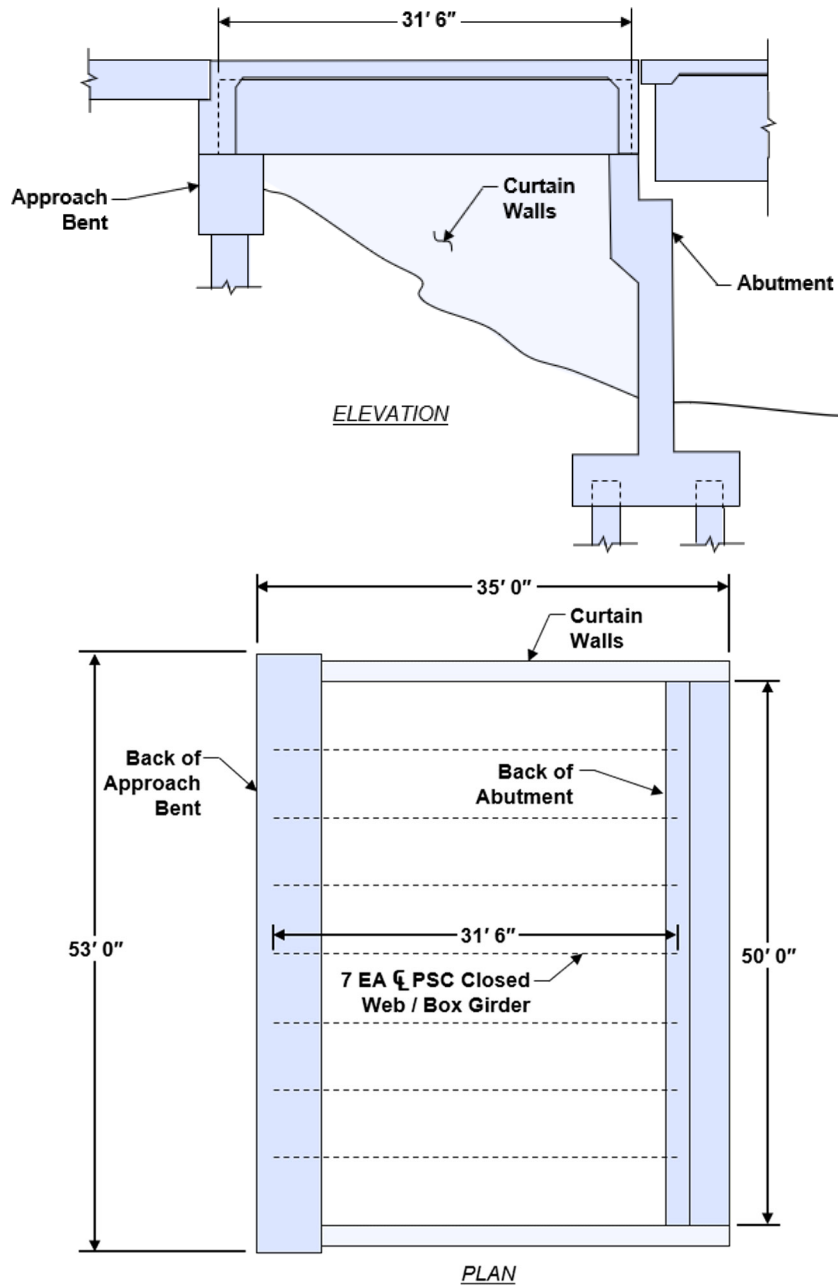


Figure B5-1—Elevation and Plan View for Concrete Vaulted Abutment Example

B5.1—Element Quantities

B5.1.1—Superstructure

Prestressed Concrete Closed Web/Box Girder (Element 104) Quantity: $(31.5 \text{ ft} \times 7 \text{ girders}) = 220.5 \text{ ft}$ (round up to 221 ft)

B5.1.2—Substructure

Reinforced Concrete Abutment (Element 215) Quantity: $53 \text{ ft} + 50 \text{ ft} + (35 \text{ ft} \times 2 \text{ curtain walls}) = 173 \text{ ft}$

B6—REINFORCED CONCRETE ABUTMENT

The subject of this example is a reinforced concrete abutment with non-integral wingwalls on the left side and retaining walls on the right side. The sketch in Figure B6-1 shows bridge elements with relevant dimensions.

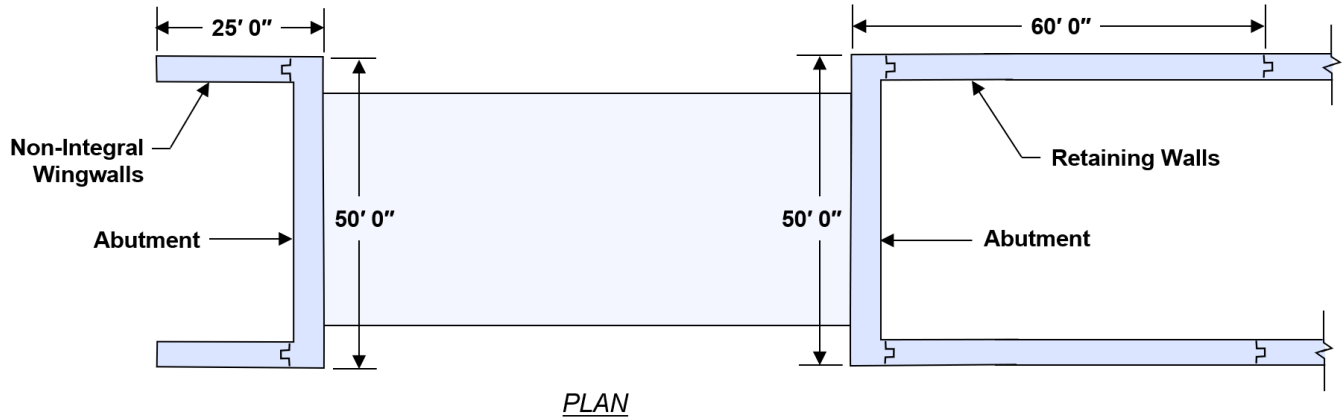


Figure B6-1—Plan View for Reinforced Concrete Abutment Example

B6.1—Element Quantities

B6.1.1—Substructure

Reinforced Concrete Abutment (Element 215) Quantity: $(50 \text{ ft} \times 2 \text{ abutments}) + (25 \text{ ft} \times 2 \text{ wingwalls})$
 $+ (60 \text{ ft} \times 2 \text{ retaining walls}) = 270 \text{ ft}$

B7—REINFORCED CONCRETE HAMMERHEAD PIER

The subject of this example is a reinforced concrete hammerhead pier. This example demonstrates the determination of a pier wall instead of a single column, as specified per 3.2.6.6. The sketch in Figure B7-1A shows bridge elements with relevant dimensions.

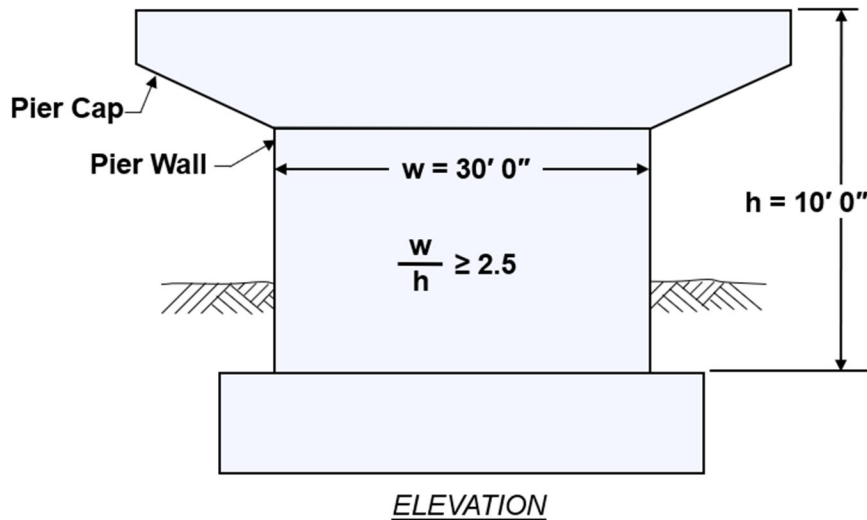


Figure B7-1A—Elevation View for Hammerhead Pier with Pier Wall Example

B7.1A—Element Quantities

The 30 ft Pier Wall is greater than 2.5 times the clear height of the pier of 10 ft. Therefore, the Pier Wall shall use Element 210.

B7.1A.1—Substructure

Reinforced Concrete Pier Wall (Element 210) Quantity: (12 ft) × (1 pier wall) = 30 ft

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The subject of this example is a reinforced concrete hammerhead pier. This example demonstrates the determination of a single column instead of a pier wall, as specified per 3.2.6.6. The sketch in Figure B7-1B shows bridge elements with relevant dimensions.

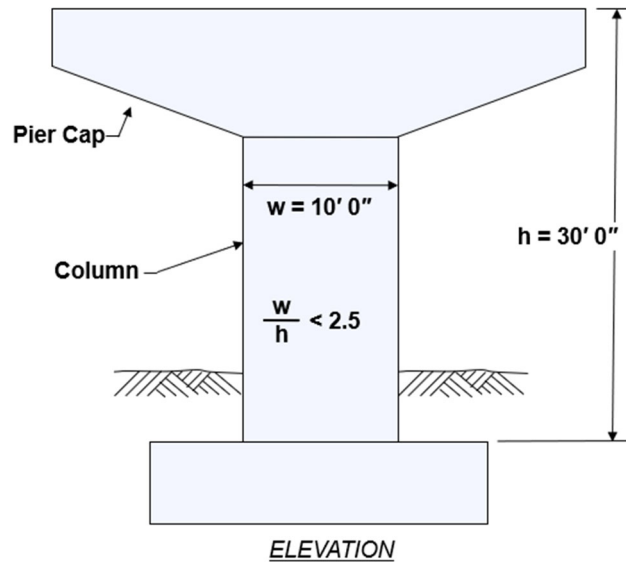


Figure B7-1B—Elevation View for Hammerhead Pier with Single Column Example

B7.1B—Element Quantities

The pier width of 10 ft is less than 2.5 times the clear height of 30 ft. Therefore, the wall shall be considered as a single Column and use Element 205.

B7.1B.1—Substructure

Reinforced Concrete Column (Element 205) Quantity: (1 pier) × (1 column per pier) = 1 column

B8—REINFORCED CONCRETE PIER WALL

The subject of this example is a reinforced concrete pier wall with no obvious marking of a pier cap in the existing plans. The top 2 ft of the pier wall is to be considered a pier cap as per 3.2.6.7. The sketch in Figure B8-1 shows bridge elements with relevant dimensions.

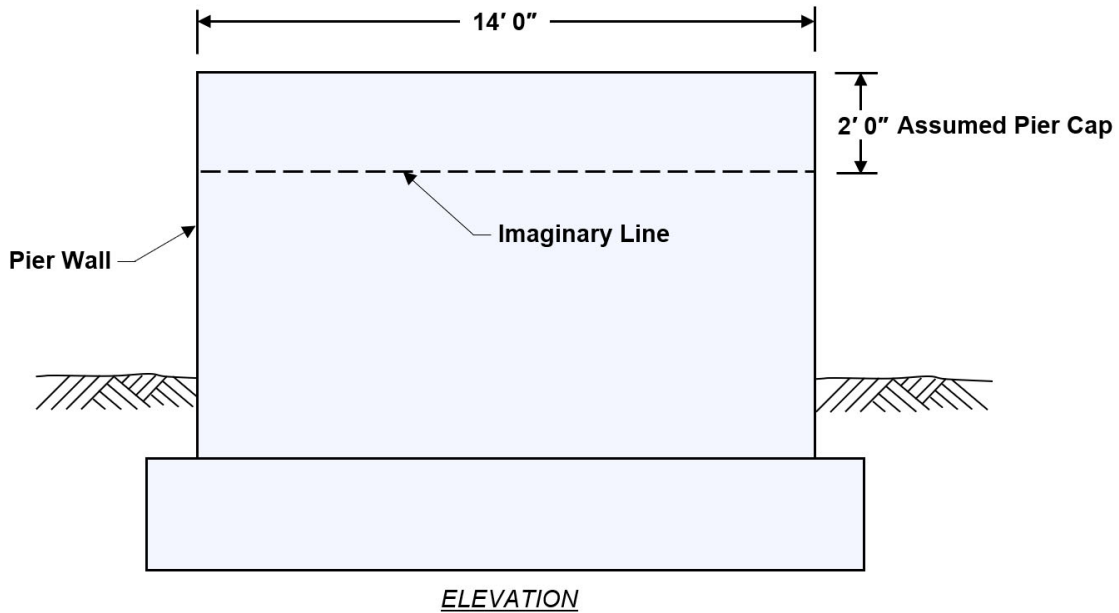


Figure B8-1—Elevation View for Reinforced Concrete Pier Wall Example

B9—GIRDER/TRUSS BRIDGE

The subject of this example is a Girder/Truss bridge with two (2) main support columns and a pier wall at Pier 2. This example illustrates the determination of no pier cap at Pier 2, as specified per 3.2.6.8. The sketch in Figure B9-1A shows bridge elements with relevant dimensions.

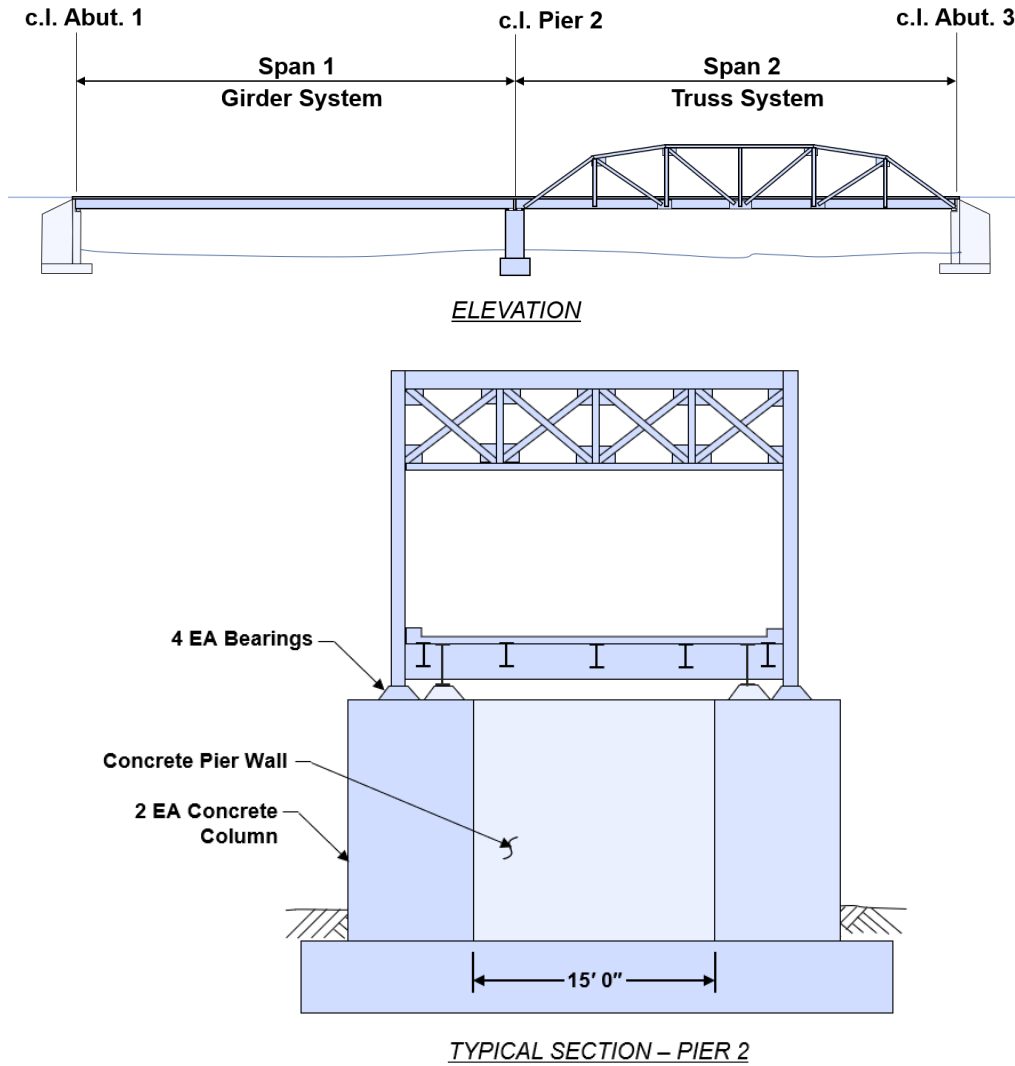


Figure B9-1A—Elevation View and Typical Section (Pier 2) for Girder/Truss Bridge with no Pier Cap Example

B9.1A—Element Quantities

Between the two columns of Pier 2, there is a Pier Wall with no bearings on the wall from the girders of Span 1. Therefore, the Pier Wall is not considered as a Pier Cap.

The subject of this example is a Girder/Truss bridge with two (2) main support columns and a pier wall at Pier 2. This example illustrates the determination of a pier cap at Pier 2, as specified per 3.2.6.8. The sketch in Figure B9-1B shows bridge elements with relevant dimensions.

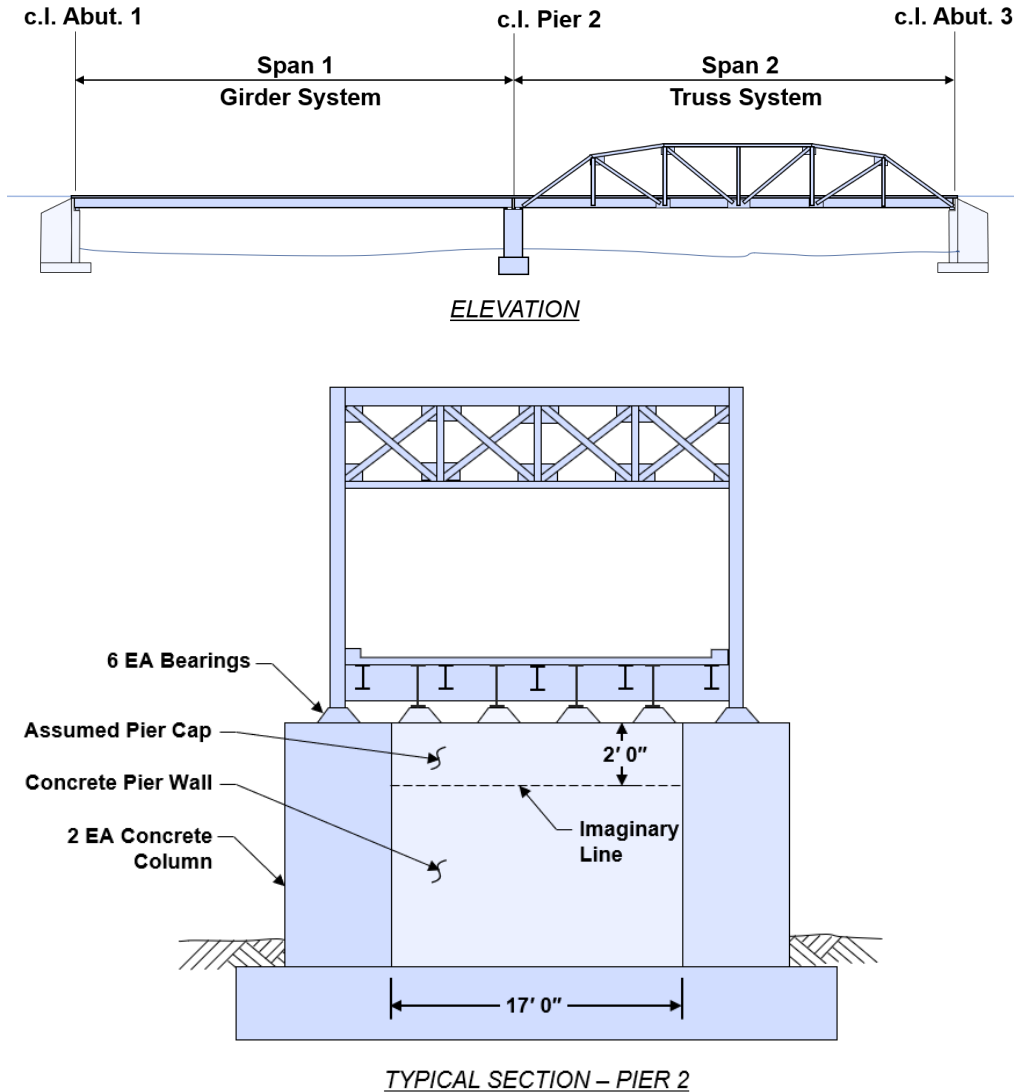


Figure B9-1B—Elevation View and Typical Section (Pier 2) for Girder/Truss Bridge with Pier Cap Example

B9.1B—Element Quantities

Between the two columns of Pier 2, there is a Pier Wall with bearings on the wall from the girders of Span 1. Therefore, the top 2 ft of the Pier Wall is considered as a Pier Cap.

APPENDIX C: ELEMENT GROUPINGS

No deviations.

APPENDIX D: MATERIALS AND FEASIBLE ACTIONS BY MATERIAL TYPE

No deviations.

APPENDIX E: CONVERSION TABLES

E1—GENERAL

In order to facilitate the conversion from the current IDOT Legacy Elements to the AASHTO Elements, the Bureau of Bridges and Structures has developed the following tables.

E2—IDOT LEGACY ELEMENTS CONVERTED TO AASHTO ELEMENTS

The table below provides direct conversion from the IDOT Legacy Elements to the AASHTO Elements. Note for several conversions, one (1) IDOT Legacy Element will split into two (2) AASHTO Elements. This split is denoted by the jagged line in the table. In addition, be aware that units do not always match after conversion. For conversions with unit changes, the Units of Measure value is bolded and italicized for clarity.

| IDOT Legacy Element | | | AASHTO Element | | |
|---------------------|--|------------------|----------------|--|------------------|
| # | Element | Units of Measure | # | Element | Units of Measure |
| 12 | Concrete Deck Bare | SF | 12 | Reinforced Concrete Deck | ft ² |
| 28 | Steel Deck Open Grid | SF | 28 | Steel Deck with Open Grid | ft ² |
| 29 | Steel Deck Concrete Filled Grid | SF | 29 | Steel Deck with Concrete Filled Grid | ft ² |
| 30 | Corrugated/Orthotropic/Etc. Deck | SF | 30 | Steel Deck Corrugated/Orthotropic/Etc. | ft ² |
| 31 | Timber Deck Bare | SF | 31 | Timber Deck | ft ² |
| 54 | Timber Slab Bare | SF | 54 | Timber Slab | ft ² |
| 102 | Lead Painted Steel Closed Web/Box Girder | SF | 102 | Steel Closed Web/Box Girder | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 104 | P/S Concrete Closed Web/Box Girder | LF | 104 | Prestressed Concrete Closed Web/Box Girder | ft |
| 105 | Concrete Closed Web/Box Girder | LF | 105 | Reinforced Concrete Closed Web/Box Girder | ft |
| 107 | Lead Painted Steel Open Girder | SF | 107 | Steel Open Girder/Beam | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 109 | P/S Concrete Open Girder | LF | 109 | Prestressed Concrete Open Girder | ft |
| 110 | Concrete Open Girder | LF | 110 | Reinforced Concrete Open Girder/Beam | ft |
| 111 | Timber Open Girder | LF | 111 | Timber Open Girder/Beam | ft |
| 113 | Lead Painted Steel Stringer | SF | 113 | Steel Stringer | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 117 | Timber Stringer | LF | 117 | Timber Stringer | ft |
| 120 | Unpainted Steel Bottom Chord Through Truss | SF | 120 | Steel Truss | ft |
| 135 | Timber Truss | LF | 135 | Timber Truss | ft |
| 141 | Lead Painted Steel Arch/Arch Tie | SF | 141 | Steel Arch | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 143 | P/S Concrete Arch/Arch Tie | LF | 143 | Prestressed Concrete Arch | ft |
| 144 | Concrete Arch/Arch Tie | LF | 144 | Reinforced Concrete Arch | ft |
| 146 | Timber Arch | LF | 146 | Timber Arch | ft |
| 147 | Primary Cable | LF | 147 | Steel Main Cables | ft |
| 148 | Secondary Cable | EA | 148 | Secondary Steel Cables | ft |

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| IDOT Legacy Element | | | AASHTO Element | | |
|---------------------|---|------------------|----------------|---|------------------|
| # | Element | Units of Measure | # | Element | Units of Measure |
| 152 | Lead Painted Steel Floor Beam | SF | 152 | Steel Floor Beam | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 154 | P/S Concrete Floor Beam | LF | 154 | Prestressed Concrete Floor Beam | ft |
| 155 | Concrete Floor Beam | LF | 155 | Reinforced Concrete Floor Beam | ft |
| 156 | Timber Floor Beam | LF | 156 | Timber Floor Beam | ft |
| 161 | Lead Painted Steel Pin and/or Hanger | EA | 161 | Steel Pin and Pin & Hanger Assembly or both | ea |
| 162 | Lead Painted Steel Gusset Plate | EA | 162 | Steel Gusset Plate Assembly | ea |
| 202 | Lead Painted Steel Column | SF | 202 | Steel Column | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 204 | P/S Concrete Column | SF | 204 | Prestressed Concrete Column | ea |
| 205 | Concrete Column | SF | 205 | Reinforced Concrete Column | ea |
| 206 | Timber Column | EA | 206 | Timber Column | ea |
| 210 | Concrete Pier Wall | SF | 210 | Reinforced Concrete Pier Wall | ft |
| 211 | Other Pier Wall | SF | 211 | Other Pier Wall | ft |
| 215 | Concrete Abutment and Wingwall | SF | 215 | Reinforced Concrete Abutment | ft |
| 216 | Timber Abutment and Wingwall | SF | 216 | Timber Abutment | ft |
| 218 | Other Abutment and Wingwall | SF | 218 | Other Abutments | ft |
| 225 | Lead Painted Steel Pile Extension | SF | 225 | Steel Pile | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 226 | Prestressed Concrete Pile Extension | SF | 226 | Prestressed Concrete Pile | ea |
| 227 | Reinforced Concrete Pile Extension | SF | 227 | Reinforced Concrete Pile | ea |
| 228 | Timber Pile Extension | LF | 228 | Timber Pile | ea |
| 231 | Lead Painted Steel Pier or Abutment Cap | SF | 231 | Steel Pier Cap | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 233 | P/S Concrete Pier or Abutment Cap | LF | 233 | Prestressed Concrete Pier Cap | ft |
| 234 | Concrete Pier or Abutment Cap | LF | 234 | Reinforced Concrete Pier Cap | ft |
| 235 | Timber Pier or Abutment Cap | LF | 235 | Timber Pier Cap | ft |
| 240 | Steel Culvert | LF | 240 | Steel Culvert | ft |
| 241 | Concrete Culvert | LF | 241 | Reinforced Concrete Culvert | ft |
| 243 | Other Culvert | LF | 243 | Other Culvert | ft |
| 300 | Strip Seal Expansion Joint | LF | 300 | Strip Seal Expansion Joint | ft |
| 301 | Pourable Joint Seal | LF | 301 | Pourable Joint Seal | ft |
| 302 | Preformed Joint Seal | LF | 302 | Compression Joint Seal | ft |
| 303 | Modular Joints | LF | 303 | Assembly Joint with Seal (Modular) | ft |
| 304 | Open Expansion Joint | LF | 304 | Open Expansion Joint | ft |
| 305 | Finger Joints without Trough | LF | 305 | Assembly Joint without Seal | ft |
| 310 | Elastomeric Bearing | EA | 310 | Elastomeric Bearing | ea |
| 311 | Moveable Steel Bearings Below Discontinuous Deck Joints | EA | 311 | Movable Bearing | ea |

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| IDOT Legacy Element | | | AASHTO Element | | |
|---------------------|--|------------------|----------------|--|------------------|
| # | Element | Units of Measure | # | Element | Units of Measure |
| 312 | Enclosed/Concealed Bearing or Bearing System | EA | 312 | Enclosed/Concealed Bearing | ea |
| 313 | Fixed Bearing | EA | 313 | Fixed Bearing | ea |
| 314 | Pot Bearing | EA | 314 | Pot Bearing | ea |
| 320 | P/S Concrete Approach Span | SF | 320 | Prestressed Concrete Approach Slab | ft ² |
| 321 | Concrete Approach Slab | SF | 321 | Reinforced Concrete Approach Slab | ft ² |
| 330 | Metal Bridge Railing | LF | 330 | Metal Bridge Railing | ft |
| 331 | Concrete Bridge Railing | LF | 331 | Reinforced Concrete Bridge Railing | ft |
| 332 | Timber Bridge Railing | LF | 332 | Timber Bridge Railing | ft |
| 333 | Other Bridge Railing | LF | 333 | Other Bridge Railing | ft |
| 8013 | Concrete Deck Unprotected w/ HMA Overlay | SF | 12 | Reinforced Concrete Deck | ft ² |
| | | | 8510 | Flexible Wearing Surface | ft ² |
| 8014 | Concrete Deck Protected w/ HMA Overlay | SF | 12 | Reinforced Concrete Deck | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| | | | 8510 | Flexible Wearing Surface | ft ² |
| 8018 | Concrete Deck Protected w/ Thin Overlay | SF | 12 | Reinforced Concrete Deck | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| | | | 8512 | Semi-Rigid Wearing Surface | ft ² |
| 8022 | Concrete Deck Protected w/ Rigid Overlay | SF | 12 | Reinforced Concrete Deck | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| | | | 8511 | Rigid Wearing Surface | ft ² |
| 8026 | Concrete Deck Protected w/ Coated Bars | SF | 12 | Reinforced Concrete Deck | ft ² |
| | | | 520 | Concrete Reinforcing Steel Protective System | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| 8027 | Concrete Deck Protected w/ Cathodic Protection | SF | 12 | Reinforced Concrete Deck | ft ² |
| | | | 520 | Concrete Reinforcing Steel Protective System | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| 8032 | Timber Deck with HMA Overlay | SF | 31 | Timber Deck | ft ² |
| | | | 8510 | Flexible Wearing Surface | ft ² |
| 8033 | Concrete Deck Protected w/ Coated Bars w/PPC Panel | SF | 12 | Reinforced Concrete Deck | ft ² |
| | | | 520 | Concrete Reinforcing Steel Protective System | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| 8034 | Precast Concrete Deck Bare | SF | 13 | Prestressed Concrete Deck | ft ² |
| 8035 | Precast Concrete Deck Unprotected w/ HMA Overlay | SF | 13 | Prestressed Concrete Deck | ft ² |
| | | | 8510 | Flexible Wearing Surface | ft ² |

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| IDOT Legacy Element | | | AASHTO Element | | |
|---------------------|---|------------------|----------------|--|------------------|
| # | Element | Units of Measure | # | Element | Units of Measure |
| 8036 | Precast Concrete Deck Protected w/HMA Overlay | SF | 13 | Prestressed Concrete Deck | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| | | | 8510 | Flexible Wearing Surface | ft ² |
| 8038 | Concrete Slab Bare | SF | 38 | Reinforced Concrete Slab | ft ² |
| 8039 | Concrete Slab Unprotected w/ HMA Overlay | SF | 38 | Reinforced Concrete Slab | ft ² |
| | | | 8510 | Flexible Wearing Surface | ft ² |
| 8040 | Concrete Slab Protected w/ HMA Overlay | SF | 38 | Reinforced Concrete Slab | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| | | | 8510 | Flexible Wearing Surface | ft ² |
| 8044 | Concrete Slab Protected w/ Thin Overlay | SF | 38 | Reinforced Concrete Slab | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| | | | 8511 | Rigid Wearing Surface | ft ² |
| 8048 | Concrete Slab Protected w/ Rigid Overlay | SF | 38 | Reinforced Concrete Slab | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| | | | 8511 | Rigid Wearing Surface | ft ² |
| 8052 | Concrete Slab Protected w/ Coated Bars | SF | 38 | Reinforced Concrete Slab | ft ² |
| | | | 520 | Concrete Reinforcing Steel Protective System | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| 8053 | Concrete Slab Protected w/ Cathodic Protection | SF | 38 | Reinforced Concrete Slab | ft ² |
| | | | 520 | Concrete Reinforcing Steel Protective System | ft ² |
| | | | 521 | Concrete Protective Coating | ft ² |
| 8055 | Timber Slab with HMA Overlay | SF | 54 | Timber Slab | ft ² |
| | | | 8510 | Flexible Wearing Surface | ft ² |
| 8056 | Precast Concrete Deck w/ Rigid 5" Overlay (SF) | SF | 60 | Other Deck | ft ² |
| | | | 8511 | Rigid Wearing Surface | ft ² |
| 8057 | Steel Deck Concrete Filled Grid w/ HMA Overlay (SF) | SF | 29 | Steel Deck with Concrete Filled Grid | ft ² |
| | | | 8510 | Flexible Wearing Surface | ft ² |
| 8101 | Unpainted Steel Closed Web/Box Girder | SF | 102 | Steel Closed Web/Box Girder | ft |
| 8103 | Non-Lead Painted Steel Closed Web/Box Girder | SF | 102 | Steel Closed Web/Box Girder | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8106 | Unpainted Steel Open Girder | SF | 107 | Steel Open Girder/Beam | ft |
| 8112 | Unpainted Steel Stringer | SF | 113 | Steel Stringer | ft |

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| IDOT Legacy Element | | | AASHTO Element | | |
|---------------------|---|------------------|----------------|---|------------------|
| # | Element | Units of Measure | # | Element | Units of Measure |
| 8118 | Non-Lead Painted Steel Open Girder | SF | 107 | Steel Open Girder/Beam | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8119 | Non-Lead Painted Steel Stringer | SF | 113 | Steel Stringer | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8121 | Lead Painted Steel Bottom Chord Through Truss | SF | 120 | Steel Truss | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8122 | Non-Lead Painted Steel Bottom Chord Through Truss | SF | 120 | Steel Truss | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8123 | Non-Lead Painted Steel Through Truss Excluding Bottom Chord | SF | 120 | Steel Truss | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8124 | Non-Lead Painted Steel Deck Truss | SF | 120 | Steel Truss | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8125 | Unpainted Steel Through Truss Excluding Bottom Chord | SF | 120 | Steel Truss | ft |
| 8126 | Lead Painted Steel Through Truss Excluding Bottom Chord | SF | 120 | Steel Truss | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8128 | Non-Lead Painted Steel Arch/Arch Tie | SF | 141 | Steel Arch | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8129 | Non-Lead Painted Steel Floor Beam | SF | 152 | Steel Floor Beam | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8130 | Unpainted Steel Deck Truss | SF | 120 | Steel Truss | ft |
| 8131 | Lead Painted Steel Deck Truss | SF | 120 | Steel Truss | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8140 | Unpainted Steel Arch/Arch Tie | SF | 141 | Steel Arch | ft |
| 8142 | P/S Concrete Segmental Box Girder | LF | 15 | Prestressed Concrete Top Flange | ft ² |
| | | | 104 | Prestressed Concrete Closed Web/Box Girder | ft |
| 8151 | Unpainted Steel Floor Beam | SF | 152 | Steel Floor Beam | ft |
| 8160 | Unpainted Steel Pin and/or Hanger | EA | 161 | Steel Pin and Pin & Hanger Assembly or both | ea |
| 8162 | Non-Lead Painted Steel Pin and/or Hanger | EA | 161 | Steel Pin and Pin & Hanger Assembly or both | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 8163 | Non-Lead Painted Steel Gusset Plate | EA | 162 | Steel Gusset Plate Assembly | ea |
| | | | 515 | Steel Protective Coating | ft ² |

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| IDOT Legacy Element | | | AASHTO Element | | |
|---------------------|--|------------------|----------------|--|------------------|
| # | Element | Units of Measure | # | Element | Units of Measure |
| 8171 | Unpainted Steel Closed Web/Box Girder Ends Including Diaphragms Below Deck Joints | EA | 8102 | Steel Beam/Girder/Stringer End Below Open Joints | ea |
| 8172 | Lead Painted Steel Closed Web/Box Girder Ends Including Diaphragms Below Deck Joints | EA | 8102 | Steel Beam/Girder/Stringer End Below Open Joints | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 8173 | Non-Lead Painted Steel Closed Web/Box Girder Ends Including Diaphragms Below Deck Joints | EA | 8102 | Steel Beam/Girder/Stringer End Below Open Joints | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 8174 | Unpainted Steel Open Girder Ends Including Diaphragms Below Deck Joints | EA | 8102 | Steel Beam/Girder/Stringer End Below Open Joints | ea |
| 8175 | Lead Painted Steel Open Girder Ends Including Diaphragms Below Deck Joints | EA | 8102 | Steel Beam/Girder/Stringer End Below Open Joints | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 8176 | Non-Lead Painted Steel Open Girder Ends Including Diaphragms Below Deck Joints | EA | 8102 | Steel Beam/Girder/Stringer End Below Open Joints | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 8177 | Unpainted Steel Stringer Ends Including Diaphragms Below Deck Joints | EA | 8102 | Steel Beam/Girder/Stringer End Below Open Joints | ea |
| 8178 | Lead Painted Steel Stringer Ends Including Diaphragms Below Deck Joints | EA | 8102 | Steel Beam/Girder/Stringer End Below Open Joints | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 8179 | Non-Lead Painted Steel Stringer Ends Including Diaphragms Below Deck Joints | EA | 8102 | Steel Beam/Girder/Stringer End Below Open Joints | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 8180 | Unpainted Steel Deck Truss Below Deck Joints | SF | 120 | Steel Truss | ft |
| 8181 | Lead Painted Steel Deck Truss Below Deck Joints | SF | 120 | Steel Truss | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8182 | Non-Lead Painted Steel Deck Truss Below Deck Joints | SF | 120 | Steel Truss | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8190 | Unpainted Steel Floor Beam Below Deck Joints | SF | 152 | Steel Floor Beam | ft |
| 8191 | Lead Painted Steel Floor Beam Below Deck Joints | SF | 152 | Steel Floor Beam | ft |
| | | | 515 | Steel Protective Coating | ft ² |

**Illinois Department of Transportation (IDOT) Supplement to the
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| IDOT Legacy Element | | | AASHTO Element | | |
|---------------------|---|------------------|----------------|-----------------------------------|------------------|
| # | Element | Units of Measure | # | Element | Units of Measure |
| 8192 | Non-Lead Painted Steel Floor Beam Below Deck Joints | SF | 152 | Steel Floor Beam | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8200 | Non-Lead Painted Steel Column | SF | 202 | Steel Column | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 8201 | Unpainted Steel Column | SF | 202 | Steel Column | ea |
| 8209 | MSE Abutment and Wingwall | SF | 218 | Other Abutments | ft |
| 8220 | Non-Lead Painted Steel Abutment and Wingwall | SF | 219 | Steel Abutment | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8221 | Lead Painted Steel Abutment and Wingwall | SF | 219 | Steel Abutment | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8222 | Unpainted Steel Abutment and Wingwall | SF | 219 | Steel Abutment | ft |
| 8224 | Unpainted Steel Pile | SF | 225 | Steel Pile | ea |
| 8230 | Unpainted Steel Pier or Abutment Cap | SF | 231 | Steel Pier Cap | ft |
| 8236 | Non-Lead Painted Steel Pier or Abutment Cap | SF | 231 | Steel Pier Cap | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8246 | Non-Lead Painted Steel Pile Extension | SF | 225 | Steel Pile | ea |
| | | | 515 | Steel Protective Coating | ft ² |
| 8270 | Unpainted Steel Pier or Abutment Cap Below Deck Joints | SF | 231 | Steel Pier Cap | ft |
| 8271 | Lead Painted Steel Pier or Abutment Cap Below Deck Joints | SF | 231 | Steel Pier Cap | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8272 | Non-Lead Painted Steel Pier or Abutment Cap Below Deck Joints | SF | 231 | Steel Pier Cap | ft |
| | | | 515 | Steel Protective Coating | ft ² |
| 8306 | Finger Joints With Trough | LF | 305 | Assembly Joint without Seal | ft |
| 8307 | Neoprene Expansion Joint | LF | 300 | Strip Seal Expansion Joint | ft |
| 8308 | Continuous Seal Neoprene Expansion Joint | LF | 300 | Strip Seal Expansion Joint | ft |
| 8316 | Moveable Steel Bearings Below Continuous Decks | EA | 311 | Movable Bearing | ea |
| 8323 | Approach Pavement | EA | 321 | Reinforced Concrete Approach Slab | ft ² |
| 8401 | Steel Closed Web/Box Girder | LF | 102 | Steel Closed Web/Box Girder | ft |
| 8402 | Steel Bottom Chord Through Truss | LF | 120 | Steel Truss | ft |
| 8403 | Steel Through Truss Excluding Bottom Chord | LF | 120 | Steel Truss | ft |
| 8404 | Steel Deck Truss | LF | 120 | Steel Truss | ft |
| 8406 | Steel Open Girder | LF | 107 | Steel Open Girder/Beam | ft |

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| IDOT Legacy Element | | | AASHTO Element | | |
|---------------------|--------------------------------|------------------|----------------|---|------------------|
| # | Element | Units of Measure | # | Element | Units of Measure |
| 8407 | Steel Arch/Arch Tie | LF | 141 | Steel Arch | ft |
| 8408 | Steel Floor Beam | LF | 152 | Steel Floor Beam | ft |
| 8409 | Steel Column or Pile Extension | LF | 202 | Steel Column | ea |
| 8410 | Steel Pier or Abutment Cap | LF | 231 | Steel Pier Cap | ft |
| 8411 | Steel Pin and/or Hanger | EA | 161 | Steel Pin and Pin & Hanger Assembly or both | ea |
| 8412 | Steel Stringer | LF | 113 | Steel Stringer | ft |
| 8413 | Steel Gusset Plate | EA | 162 | Steel Gusset Plate Assembly | ea |
| 8414 | Steel Pile | LF | 225 | Steel Pile | ea |

**Illinois Department of Transportation (IDOT) Supplement to the
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E3—ELIMINATED IDOT LEGACY ELEMENTS

The below table provides IDOT Legacy Elements, previously classified as ADEs, to be eliminated from use.

| Eliminated IDOT Legacy Element | | |
|---------------------------------------|---|-------------------------|
| # | Element | Units of Measure |
| 8058 | Sidewalk (SF) | SF |
| 8108 | Keyway | LF |
| 8237 | P/S Concrete Beam Ends Including Diaphragms Under Deck Joints | EA |
| 8238 | Concrete Beam Ends Including Diaphragms Under Deck Joints | EA |
| 8239 | Timber Deck Runners | LF |
| 8322 | Concrete Approach Beam | SF |
| 8360 | Abutment Settlement | EA |
| 8361 | Abutment Scour | EA |
| 8362 | Pier Settlement | EA |
| 8363 | Pier Scour | EA |
| 8460 | Culvert Settlement | EA |
| 8461 | Culvert Scour | EA |