State of Illinois
Illinois Department of Transportation

Supplement to the AASHTO Manual for Bridge Element Inspection

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

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Springfield, Illinois
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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 The 2015 Illinois Bridge Element Inspection Manual (BEIM) is to be superseded by the AASHTO manual and this supplement.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.				

3.1.2—Prestressed Concrete

DECKS AND SLABS						
13	**Prestressed Concrete Deck**		Classification:	**NBE**	Unit of Measure:	**ft^2**
	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:	**ft^2**
	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.				

3.1.3—Steel

DECKS AND SLABS						
28	**Steel Deck with Open Grid**		Classification:	**NBE**	Unit of Measure:	**ft^2**
	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:	**ft^2**
	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:	**ft^2**
	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.				

3.1.4—Timber

DECKS AND SLABS						
31	**Timber Deck**		Classification:	**NBE**	Unit of Measure:	**ft^2**
	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:	**ft^2**
	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.				

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.				

3.1.6—Other Materials

DECKS AND SLABS						
60	**Other Deck**		Classification:	**NBE**	Unit of Measure:	**ft^2**
	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:	**ft^2**
	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.				

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 ± 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 ± 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.

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 GOOD	CS 2 FAIR	CS 3 POOR	CS 4 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.			

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 GOOD	CS 2 FAIR	CS 3 POOR	CS 4 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.			

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 GOOD	CS 2 FAIR	CS 3 POOR	CS 4 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.			

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 GOOD	CS 2 FAIR	CS 3 POOR	CS 4 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.			

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 GOOD	CS 2 FAIR	CS 3 POOR	CS 4 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.			

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 GOOD	CS 2 FAIR	CS 3 POOR	CS 4 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.			

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

Defects for Wearing Surfaces

Defects	CS 1 GOOD	CS 2 FAIR	CS 3 POOR	CS 4 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 GOOD	CS 2 FAIR	CS 3 POOR	CS 4 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.

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.

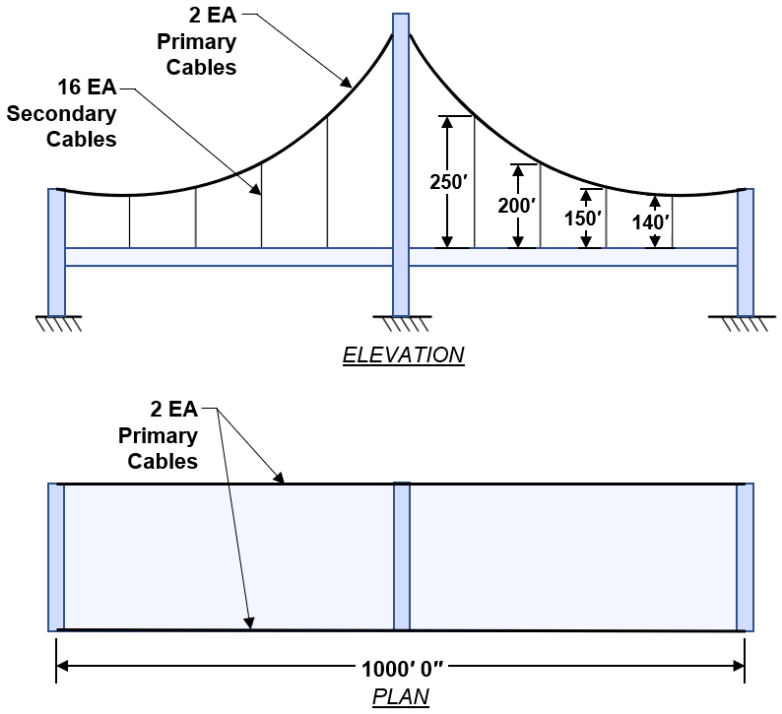

Figure B4-1—Elevation and Plan View for Suspension Bridge Example

B4.1—Element Quantities

B4.1.1—Superstructure

Steel Main Cables (Element 147) Quantity: (2 cables) × (1000 ft) = 2000 ft
Secondary Steel Cables (Element 148) Quantity: (250 ft + 200 ft + 150ft + 140 ft) × (4 sides) = 2960 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.

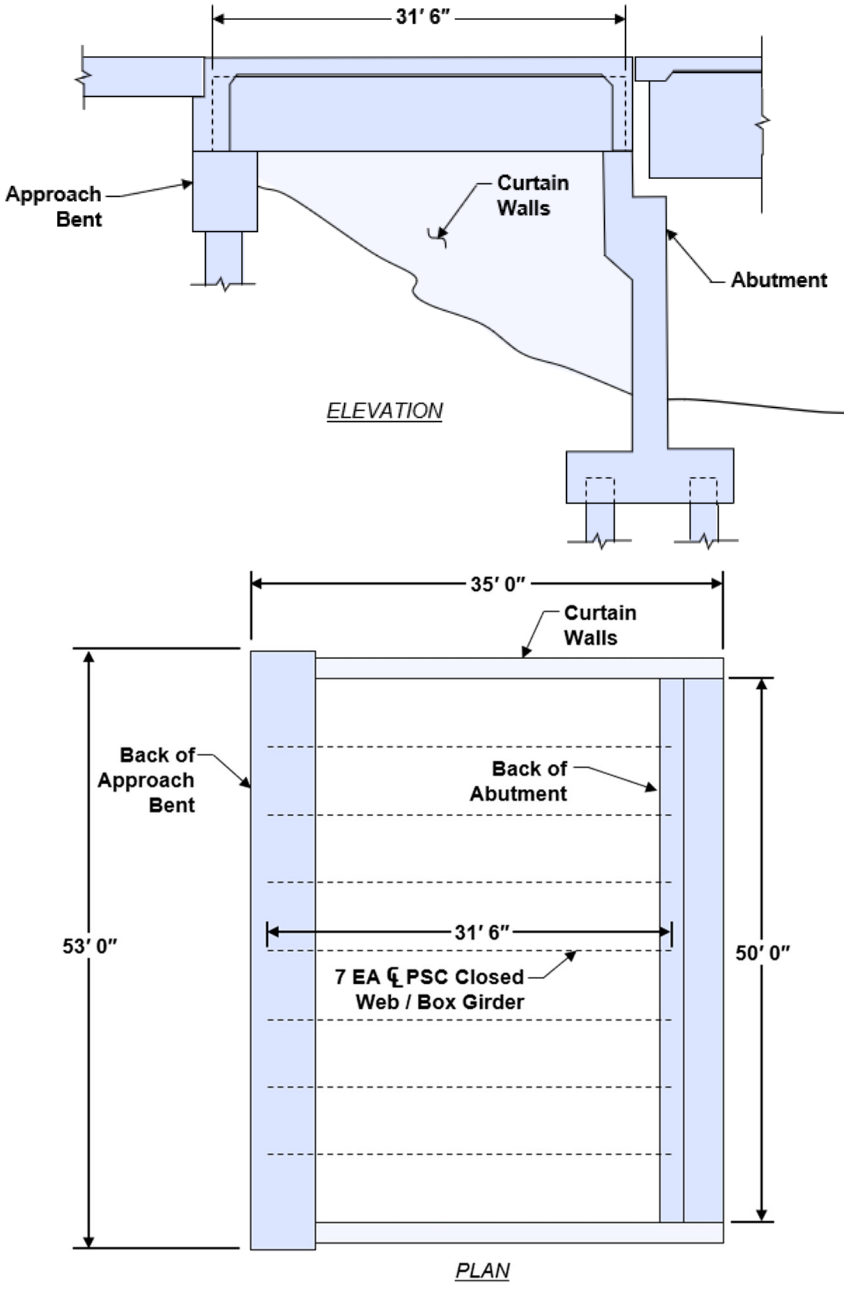

Figure B5-1—Elevation and Plan View for Concrete Vaulted Abutment Example

B5.1—Element Quantities

B5.1.1—Superstructure

Prestressed Concrete Closed Web/Box Girder (Element 104) Quantity: (31.5 ft × 7 girders) = 220.5 ft (round up to 221 ft)

B5.1.2—Substructure

Reinforced Concrete Abutment (Element 215) Quantity: 53 ft + 50 ft + (35 ft × 2 curtain walls) = 173 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.

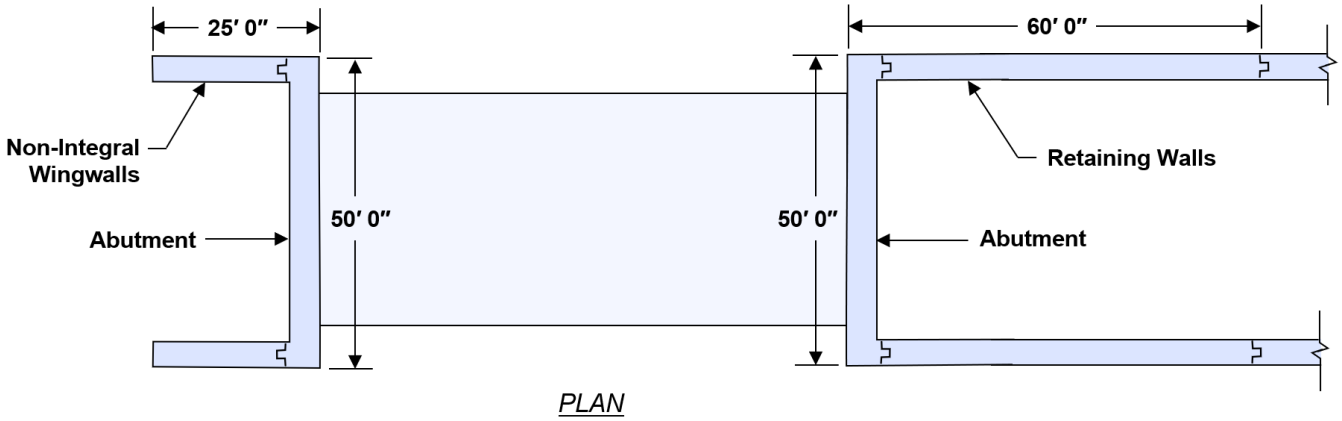

Figure B6-1—Plan View for Reinforced Concrete Abutment Example

B6.1—Element Quantities

B6.1.1—Substructure

Reinforced Concrete Abutment (Element 215) Quantity: (50 ft × 2 abutments) + (25 ft × 2 wingwalls) + (60 ft × 2 retaining walls) = 270 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.

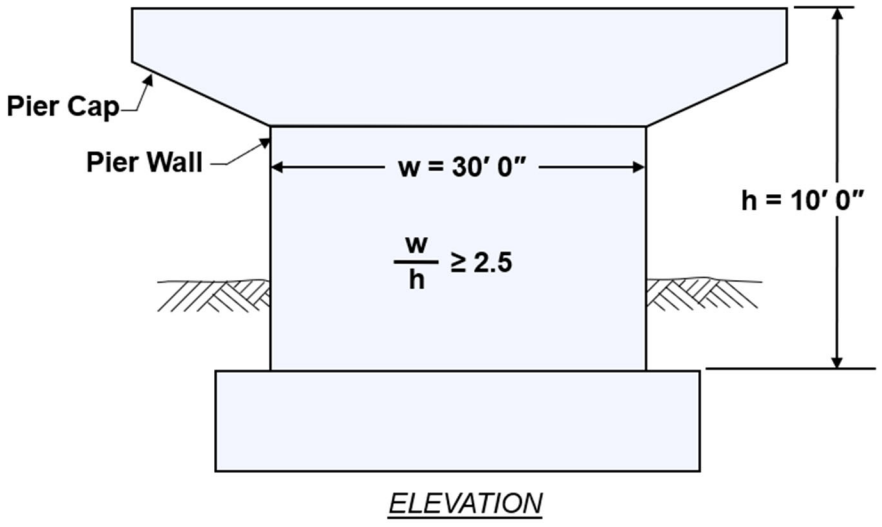

Figure B7-1A—Elevation View for Hammerhead Pier with Pier Wall Example

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

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.

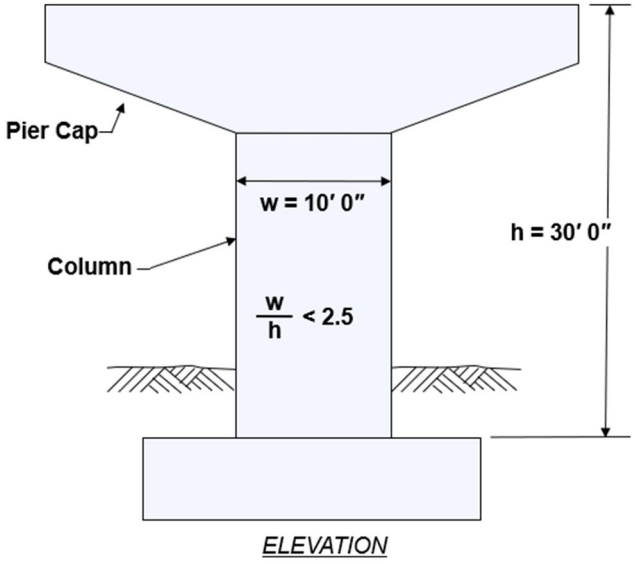

Figure B7-1B—Elevation View for Hammerhead Pier with Single Column Example

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.

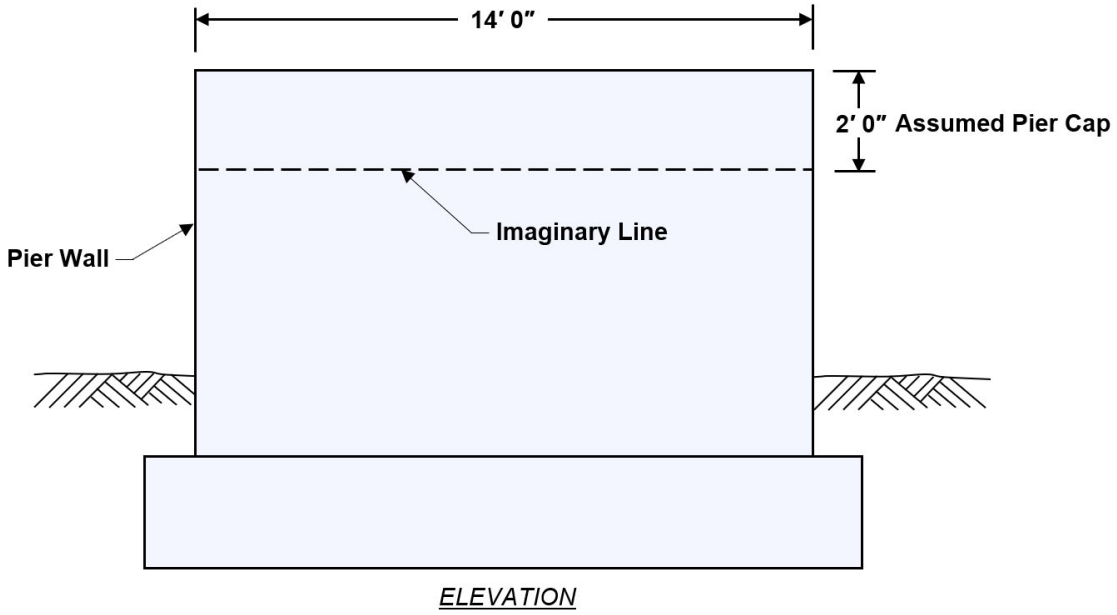

Figure B8-1—Elevation View for Reinforced Concrete Pier Wall Example

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.

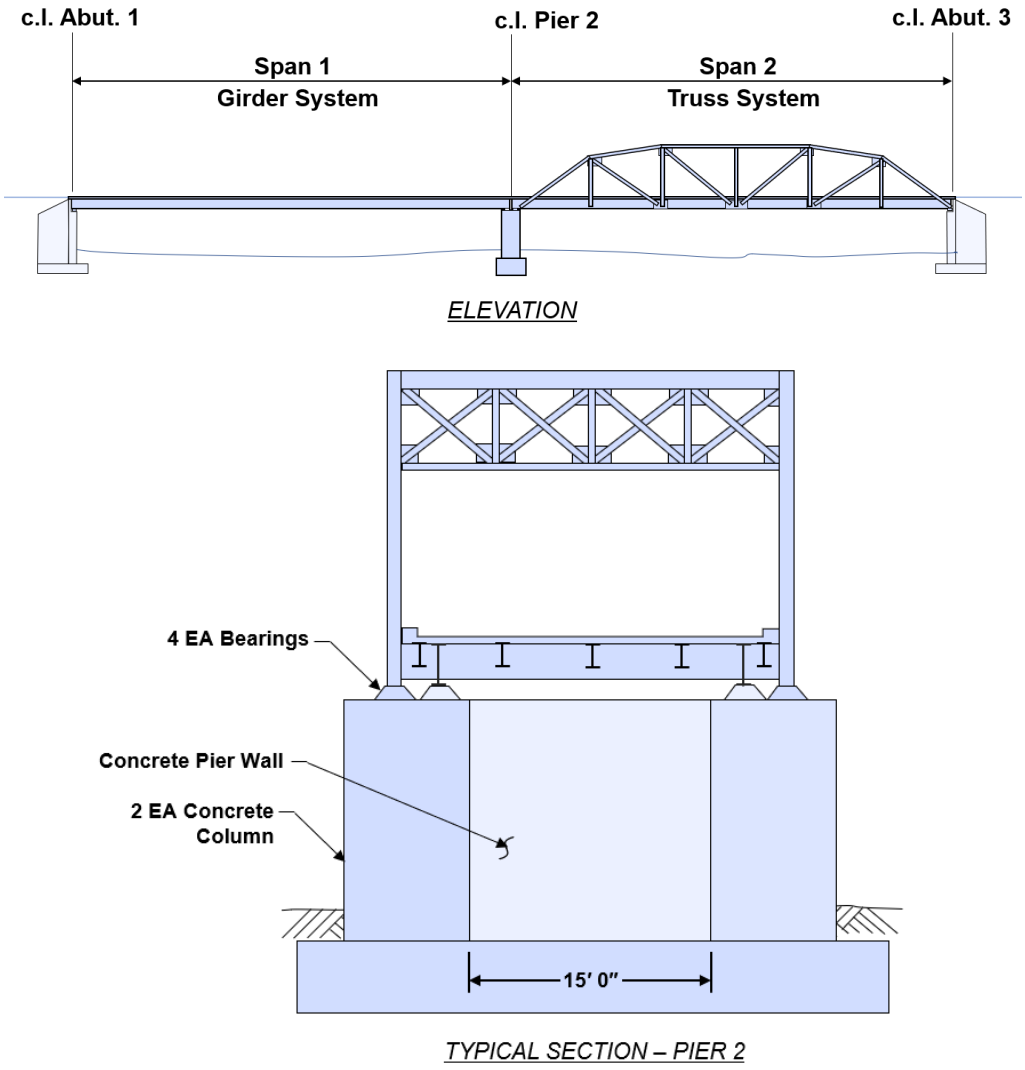

Figure B9-1A—Elevation View and Typical Section (Pier 2) for Girder/Truss Bridge with no Pier Cap Example

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.

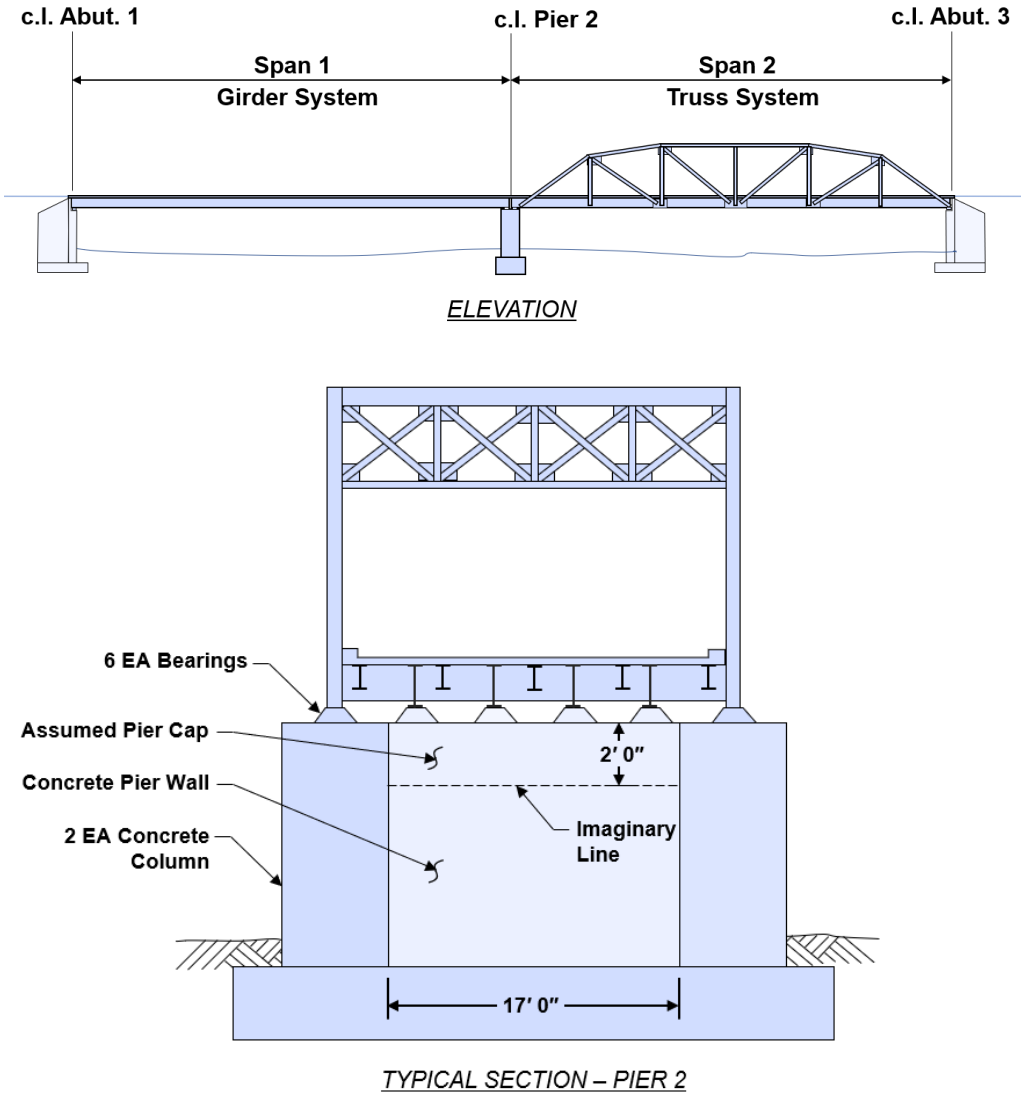

Figure B9-1B—Elevation View and Typical Section (Pier 2) for Girder/Truss Bridge with Pier Cap Example

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***

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

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

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***

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	$***ft^2***$

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	***ft²***
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	***ft²***
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	***ft²***
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	***ft²***
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	***ft²***
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	***ft²***
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	ft²
8182	Non-Lead Painted Steel Deck Truss Below Deck Joints	***SF***	120	Steel Truss	***ft***
			515	Steel Protective Coating	ft²
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	ft²

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	$\boldsymbol{ft^2}$
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

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***

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