

MOVEABLE BRIDGE ELEMENTS (ADEs)

El. No.	Element Name	Description	Units
840	Open Gearing	Defines all gears that are not enclosed in an oil tight, dust tight housing. Includes the rack or rack pinion. (Each gear and pinion set count as one unit)	Each
841	Speed Reducers	Defines gear sets that are mounted with shafts and bearings in dust proof, oil tight housing.	Each
842	Shafts	Defines the shafts that serve to transmit torque from one part to another.	Each
843	Shaft Bearings and Shaft Couplings	Defines the members that support the shafts or joins shafts together.	Each
844	Brakes	Defines the members including limit switches that are used to stop the span and hold the span in the open/closed positions.	Each
845	Emergency Drive and Back-Up Power Systems	Defines those members that function as a back-up drive and power system in case of failure of the main drive and/or power system.	Each
847	Hydraulic Power Units	Defines the pump, electric motor, valves, filters, oil reservoir, and accessories that make up the Hydraulic Power Unit. Any limit switches which assist in controlling the units are incidental to this item.	Each
848	Hydraulic Piping System	Defines the pipe, tubing, and flexible hose including fittings, manifolds, and piping supports which conduct fluids for a fluid power system.	Each
849	Hydraulic Cylinders/Motors/Rotary Actuators	Defines those components which convert fluid pressure into mechanical force and motion. Any limit switches that assist in controlling this element are incidental to this item.	Each
850	Machinery Base	Defines the independent frame/support that holds the machinery.	Each
860	Span Locks/Toe Locks/Heel Stops/Tail Locks	Defines all locks and motors used to drive the locks present on the structure. Limit switches which control the movement of the locks are incidental to this item.	Each
861	Live Load Shoes/Wedges/Strike Plates/Buffer Cylinders	Defines those elements used to transmit live load from the moveable span to the substructure, or to cushion the span while it is being closed.	Each
862	Counterweight Support	Defines the structural steel elements used to support the counterweight and attachments.	Each
863	Counterweight	Defines the counterweight and includes any balance blocks.	Each
864	Access Ladder and Platforms	Defines the members that make up the access ladder and platforms. Each access ladder and platform is counted as one item.	Each
865	Trunnion-Straight/Curved Rack	Defines the trunnions about which the leaf of a bascule bridge rotates, the curved rack mounted on the leaf, and straight rack mounted on the pier for a rolling bascule. Trunnion journals and bearings are incidental to this item.	Each
870	Transformers and Thyristors	Defines the members that step down the voltage of the incoming power to a level compatible with the bridge equipment.	Each
871	Submarine Cable	Defines the cable that is used to carry power and control signals from one pier to the other pier on a bridge.	Each
872	Conduit and Junction Boxes	Defines those members which enclose, support, and protect the power and control wiring. The quantity for this element will only be "1" for the entire bridge.	Each
873	Programmable Logic Controllers	Defines the general-purpose industrial microprocessor-based control systems.	Each
874	Control Console	Defines the console which controls the operation of the moveable bridge. This element includes interlocks, span limit switches, and span position indicator devices.	Each
880	Cables - Vertical Lift	Defines only those steel cables on a vertical lift bridge.	Each
881	Bridge Specific Equipment (Lift)	Defines those components found on Lift Bridges but not found on other types of moveable bridges such as sheaves, span guides, counterbalance chains, etc. The quantity for this element will be one (1) for each item.	Each
882	Bridge Specific Equipment (Swing)	Defines those components found on Swing Bridges but not found on other types of moveable bridges such as balance wheels, tracks, etc. The quantity for this element will be one (1) for each item.	Each
883	Bridge Specific Equipment (Pontoon)	Defines those components found on Pontoon Bridges but not found on other types of moveable bridges such as Pontoons, sheaves, open/close cables, winches, etc. The quantity for this element will be one (1) for each item.	Each
884	Bridge Specific Equipment (Bascule)	Defines those components found on Bascule Bridges but not found on other types of moveable bridges such as Trunnions, etc. The quantity for this element will be one (1) for each item.	Each
885	Barriers - Moveable Bridges	Defines the components that provides a physical barrier to vehicles while the bridge is in the open position and all equipment required to operate the barrier. All limit switches required to operate the barrier are incidental to this item.	Each
886	Traffic Warning Gates - Moveable Bridges	Defines the components that alert vehicular traffic to impending bridge operation. This element includes all equipment required to operate the traffic gate. Limit switches that control the operation of the traffic gate are incidental to this item.	Each
890	Traffic Signals	Defines the components that signals vehicular traffic when to stop and start.	Each
891	Navigational Light System	Defines the lights for navigation mounted on the bridge or fender system. This is not limited to lights on moveable bridges. This element includes clearance gauge lights and power system. Inspection should include the back-up power system.	Each
892	Fender System/Pier Protection	Defines those wood, steel, or concrete fender systems and/or pier protection systems in or around the bridge elements.	Each

MOVEABLE BRIDGE ELEMENT GUIDE

840 Open Gearing

Element Number	Description	Unit
840	This element defines all gears that are not enclosed in an oil tight, dust tight housing. This element includes the rack or rack pinion. (Each gear and pinion set count as one unit.)	Each
Condition	Description	Feasible Action
1	Gears are properly aligned and lubricated; minimal wear or corrosion is present.	0 - Do Nothing
2	Minor misalignment, gear teeth pitting, wear, or corrosion is measurable, but operation of drive system not impacted.	0 - Do Nothing 1 - Realign
3	Major misalignment, gear teeth pitting, wear, or corrosion is extensive, operation of drive system may be affected. There may be minor cracking in the casting requiring structural review.	0 - Do Nothing 1 - Realign 2 - Replace Member
4	Major misalignment, gear teeth fractures may be present, operation of drive system threatened.	0 - Do Nothing 1 - Realign 2 - Replace Member

841 Speed Reducers

Element Number	Description	Unit
841	This element defines gear sets that are mounted with shafts and bearings in dust proof, oil tight housings.	Each
Condition	Description	Feasible Action
1	Gears are properly operating, and lubricant level is okay.	0 - Do Nothing
2	Minor backlash or teeth wear has caused minimum noise in the gears. Case cracks have occurred above oil level. Oil has been contaminated.	0 - Do Nothing 1 - Repair Cracks 2 - Replace Member 3 - Replace Oil 4 - Adjust Span Setup (Speed or Balance)
3	Moderate backlash or teeth wear has caused moderate noise in the gears. Case cracks have occurred at or above oil level. Oil has been contaminated.	0 - Do Nothing 1 - Repair Cracks 2 - Replace Member 3 - Replace Oil 4 - Adjust Span Setup (Speed or Balance)
4	Major backlash or teeth wear has caused major noise in the gears. Case cracks occurred below oil level.	0 - Do Nothing 1 - Repair Cracks 2 - Replace Member 3 - Adjust Span Setup (Speed or Balance)

842 Shafts

Element Number	Description	Unit
842	This element defines the shafts that serve to transmit torque from one part to another.	Each
Condition	Description	Feasible Action
1	Shafts/couplings are properly aligned, bearings are properly lubricated, shaft clearance at bearings is appropriate, and no cracks or corrosion are present.	0 - Do Nothing
2	Shafts are not properly aligned, bearings are not lubricated, or shaft clearance at bearings is not uniform. Minor corrosion may be present. Seals and gaskets show evidence of minor leaking.	0 - Do Nothing 1 - Lubricate Bearing
3	Measurable section loss is present. Minor cracks are evident in shaft or bearing supports. Seals and gaskets are not working. Shafts/couplings are not properly aligned.	0 - Do Nothing 1 - Lubricate Bearing 2 - Replace Seals & Gaskets 3 - Align Shafts
4	Significant section loss or major cracking threaten operation of bridge. Shafts/couplings are not properly aligned.	0 - Do Nothing 1 - Replace Member

843 Shaft Bearings and Shaft Couplings

Element Number	Description	Unit
843	This element defines the members that support the shafts or join shafts together.	Each
Condition	Description	Feasible Action
1	Couplings are properly aligned; bearings are properly lubricated; shaft clearance at bearings is appropriate, and no cracks or corrosion are present.	0 - Do Nothing
2	Couplings are not properly aligned, bearings are not lubricated; and shaft clearance at bearings is not uniform. Minor corrosion may be present. Seals and gaskets show evidence of minor leaking.	0 - Do Nothing 1 - Lubricate Bearing
3	Measurable section loss is present. Minor cracks are evident in shaft or bearing supports. Seals and gaskets are not working. Minor slack is evident in coupling.	0 - Do Nothing 1 - Lubricate Bearing 2 - Replace Seals & Gaskets 3 - Align Shafts
4	Significant section loss or major cracking threaten operation of bridge. Major slack is evident in coupling	0 - Do Nothing 1 - Replace Member

844 Brakes

Element Number	Description	Unit
844	This element defines the members including limit switches that are used to stop the span and hold the span in the open/closed positions.	Each
Condition	Description	Feasible Action
1	Clearances are normal, shoes do not show abnormal wear; shoes are clean; no oil or grease is present on shoes; and shoes do not have a glazed appearance. Brake wheel surface is clean and smooth. Brakes operate correctly. Moving parts are properly lubricated.	0 - Do Nothing
2	Brakes are operating properly; moving parts may need lubricating; oil may need to be changed, and minor corrosion or shoe wear may be evident.	0 - Do Nothing 1 - Lubricate and Fill Hydraulic Fluid
3	Brake operation needs improvement; measurable corrosion may be present; and moving parts may be sticking. Excessive shoe wear is evident.	0 - Do Nothing 1 - Lubricate and Fill Hydraulic Fluid 2 - Replace Shoes
4	Brakes are not functioning and require replacement.	0 - Do Nothing 1 - Replace Shoes 2 - Replace Member

845 Emergency Drive and Back Up Power System

Element Number	Description	Unit
845	This element defines those members that function as a back-up drive and power system in case of failure of the main drive and/or power system.	Each
Condition	Description	Feasible Action
1	System is operating properly.	0 - Do Nothing
2	System needs servicing.	0 - Do Nothing 1 - Service Member
3	System needs repair.	0 - Do Nothing 1 - Repair Member
4	System needs replacement.	0 - Do Nothing 1 - Replace Member

847 Hydraulic Power Units

Element Number	Description	Unit
847	This element defines the pump, electric motor, valves, filters, oil reservoir and accessories that make up the Hydraulic Power Unit. Any limit switches, which assist in controlling the Hydraulic Power Units, are incidental to this element.	Each
Condition	Description	Feasible Action
1	All components are clean, no leakage is present, and there is no build-up of dirt and debris. Fluid level in the reservoir is within the prescribed limits. Fluid conductors are free of abrasion, flattening or kinking. Gauge readings are within prescribed limits. Filters are clean. Hydraulic Power Unit is operating properly.	0 - Do Nothing
2	Hydraulic Power Unit is operating properly, but there is need for maintenance or servicing. There may be minor leakage of hydraulic fluid.	0 - Do Nothing 1 - Replace Fluids 2 - Repair Member
3	Hydraulic Power Unit is not operating properly; there is evidence that repairs may be needed. There may be moderate leakage of hydraulic fluid.	0 - Do Nothing 1 - Replace Fluids 2 - Repair Member
4	Hydraulic Power Unit is not operating or is operating poorly. Replacement of all or part of the Hydraulic Power Unit may be required.	0 - Do Nothing 1 - Replace Fluids 2 - Repair Member

848 Hydraulic Piping System

Element Number	Description	Unit
848	This element defines the pipe, tubing, and flexible hose including fittings, manifolds and piping supports, which conduct fluids for a fluid power system.	Each
Condition	Description	Feasible Action
1	Piping system is clean and shows no sign of leakage. Flexible hose is properly installed and aligned. Pipe, tubing and hoses are free of damage, corrosion, and abrasion.	0 - Do Nothing
2	Minor deterioration or corrosion present. There may be minor leakage of hydraulic fluid present. Maintenance may be required.	0 - Do Nothing 1 - Repair Member, Refill Fluids
3	Moderate deterioration or corrosion present. There may be minor to moderate leakage of hydraulic fluid present. Maintenance is required.	0 - Do Nothing 1 - Repair Member, Refill Fluids
4	There is significant leakage present. Repair or replacement required.	0 - Do Nothing 1 - Repair Member, Refill Fluids 2 - Replace Member

849 Hydraulic Cylinders/Motors/Rotary Actuators

Element Number	Description	Unit
849	This element defines those components, which convert fluid pressure into mechanical force and motion. Any limit switches that assist in controlling this element are incidental to this element.	Each
Condition	Description	Feasible Action
1	Units are clean and no signs of excess leakage are present. Cylinder rods are not scored. Cylinder rod boots are connected and not damaged. Cylinder rods operate smoothly and freely. Bushings are not worn and are lubricated.	0 - Do Nothing
2	Units are operating properly, but there is need for maintenance or servicing. There may be minor leakage of hydraulic fluid. Unit anchors are loosening or wearing. Cylinder rod boots loose or damaged.	0 - Do Nothing 1 - Repair Member, Refill Fluids 2 - Service Member
3	Units are not operating properly; there is evidence that repairs may be needed. There may be moderate leakage of hydraulic fluid. Unit anchors are missing/unattached. Cylinder rod boots missing.	0 - Do Nothing 1 - Repair Member, Refill Fluids 2 - Service Member
4	Units are not operating or are operating poorly. Replacement may be required.	0 - Do Nothing 1 - Repair Member, Refill Fluids 2 - Replace Member

850 Machinery Base

Element Number	Description	Unit
850	This element defines the independent frame/support that holds the machinery.	Each
Condition	Description	Feasible Action
1	There is no evidence of active corrosion, and the paint system is sound and functioning as intended to protect the metal surface. Repairs are sound.	0 - Do Nothing
2	Paint system is showing signs of deterioration. Surface corrosion has or is forming. There may be exposed metal, but there is no active corrosion, which is causing loss of section. Unit anchors are loosening or wearing.	0 - Do Nothing 1 - Clean and Recoat 2 - Reattach Member
3	Corrosion may be present, but any section loss due to active corrosion does not yet warrant structural review. Movement of clevis pins may exceed desirable limits. Limited cracking may be present. Unit anchors are missing or unattached.	0 - Do Nothing 1 - Clean and Recoat 2 - Reattach Member 3 - Replace Member
4	Corrosion has caused section loss and is sufficient to warrant structural review to ascertain the impact on the ultimate strength and/or serviceability of the element. Movement of clevis pins may be excessive. Severe cracking may exist.	0 - Do Nothing 1 - Replace Member

860 Span Locks/Toe Locks/Heel Stops/Tail Locks

Element Number	Description	Unit
860	This element defines all locks and motors used to drive the locks present on the structure. Limit switches, which control the movement of the locks, are incidental to this item.	Each
Condition	Description	Feasible Action
1	Locks are operating properly, there are no signs of deterioration, wear, or distress. Clearances may not be within specifications.	0 - Do Nothing
2	Locks are operating properly; there are signs of limited deterioration or wear and clearances may not be within specifications. Lubrication may be needed. Maintenance may be required.	0 - Do Nothing 1 - Lubricate
3	Locks are not operating properly, there are signs of significant deterioration or wear, and clearances may not be within specifications. Repair may be required.	0 - Do Nothing 1 - Lubricate 2 - Reset Locks and Catches
4	Locks are not operating or are operating poorly. There is excessive deterioration or wear. Replacement may be required.	0 - Do Nothing 1 - Reset Locks and Catches 2 - Replace Member

861 Live Load Shoes/Wedges/Strike Plates/Buffer Cylinders

Element Number	Description	Unit
861	This item defines those elements used to transmit live load from the movable span to the substructure, or to cushion the span while it is being closed.	Each
Condition	Description	Feasible Action
1	This element shows little or no deterioration. If a paint system is present, it is sound and functioning as intended to protect the metal. There is minimal corrosion. Vertical and horizontal alignments are within limits. Buffer is operating effectively.	0 - Do Nothing
2	The paint system, if present, may show minor to moderate corrosion with minimal pitting but still functioning as intended. The strike plate may have moved enough to cause minor cracking in the supporting concrete. Alignment of the live load shoe and strike plate is still within limits. Buffer may have lost some of its effectiveness. Shim plates may be loose.	0 - Do Nothing 1 - Clean and Coat
3	The paint system, if present, may show moderate to heavy corrosion with some pitting but still functioning as intended. The strike plate may have moved enough to cause moderate cracking in the supporting concrete. Alignment of the live load shoe and strike plate is still tolerable. There may be no contact with the live load shoe. Buffer has lost most of its effectiveness. Shim plates are loose or missing. Oiler may be empty, and buffer rod is beginning to corrode.	0 - Do Nothing 1 - Clean and Coat 2 - Lubricate
4	Advanced corrosion with section loss. There may be loss of section of the supporting member sufficient to warrant supplemental supports or load restrictions. Misalignment has occurred. Oiler may be empty, and buffer rod is frozen. Bridge is not seated fully or is seating too hard.	0 - Do Nothing 1 - Clean and Coat 2 - Realign Span 3 - Replace Member

862 Counterweight Support

Element Number	Description	Unit
862	This element defines the structural steel elements used to support the counterweight and attachments.	Each
Condition	Description	Feasible Action
1	There is no evidence of active corrosion, and the paint system is sound and functioning as intended to protect the metal surface.	0 - Do Nothing
2	There is little or no active corrosion. Surface corrosion has formed or is forming. The paint system may be chalking, peeling, curling or showing other early evidence of paint system distress, but there is no exposure of metal.	0 - Do Nothing 1 - Clean and Coat
3	Surface corrosion is prevalent. There may be exposed metal with active corrosion but any section loss due to corrosion does not yet warrant structural review.	0 - Do Nothing 1 - Clean and Coat 2 - Rehab Member
4	Corrosion has caused section loss and is sufficient to warrant structural review to ascertain the impact on the ultimate strength and/or serviceability of the element.	0 - Do Nothing 1 - Rehab Member 2 - Replace Member

863 Counterweight

Element Number	Description	Unit
863	This element defines the counterweight, and includes any balance blocks.	Each
Condition	Description	Feasible Action
1	The element shows little or no deterioration. There may be discoloration, efflorescence, and/or superficial cracking, but without effect on strength and/or serviceability.	0 - Do Nothing
2	Minor cracks and spalls may be present, but there is no exposed reinforcing or surface evidence of rebar corrosion.	0 - Do Nothing 1 - Clean Rebar; Patch/Seal
3	Some delaminations and/or spalls may be present and some reinforcing may be exposed. Corrosion of rebar may be present, but loss of section is incidental and does not significantly affect the strength and/or serviceability of either the element or the bridge.	0 - Do Nothing 1 - Clean Rebar; Patch/Seal 2 - Rehab Member
4	Deterioration is advanced. Corrosion of reinforcement and/or loss of concrete section is sufficient to warrant review to ascertain the effect on the strength and/or serviceability of either the element or the bridge.	0 - Do Nothing 1 - Clean Rebar; Patch/Seal 2 - Rehab Member 3 - Replace Member

864 Access Ladder and Platforms

Element Number	Description	Unit
864	This element defines the members that make up the access ladder and platforms. Each access ladder and platform is counted as one item.	Each
Condition	Description	Feasible Action
1	There is no evidence of active corrosion, and the paint system is sound and functioning as intended to protect the metal surface.	0 - Do Nothing
2	There is little or no active corrosion. Surface corrosion has formed or is forming. The paint system may be chalking, peeling, curling, or showing other early evidence of paint system distress, but there is no exposure of metal.	0 - Do Nothing 1 - Clean and Coat
3	Surface corrosion is prevalent. There may be exposed metal, but there is no active corrosion, which is causing loss of section.	0 - Do Nothing 1 - Clean and Coat 2 - Rehab Member
4	Corrosion has caused section loss and is sufficient to warrant structural review to ascertain the effect on the ultimate strength and/or serviceability of the element. Attachment anchors may be loose, cracked, or missing.	0 - Do Nothing 1 - Rehab Member 2 - Replace Member

865 Trunnion-Straight/Curved Rack

Element Number	Description	Unit
865	This element defines the trunnions about which the leaf of a bascule bridge rotates, the curved rack mounted on the leaf and straight rack mounted on the pier for a rolling bascule. Trunnion journals and bearings are incidental.	Each
Condition	Description	Feasible Action
1	Minimal wear or corrosion is present, alignment and lubrication is good.	0 - Do Nothing
2	Minor misalignment has occurred; lubrication may be needed; teeth wear or corrosion is measurable, but operation is not affected.	0 - Do Nothing 1 - Lubricate
3	Major misalignment has occurred; wear or corrosion is extensive; operation of drive system may be affected.	0 - Do Nothing 1 - Lubricate 2 - Realign
4	Major misalignment has occurred; teeth fractures may be present; operation of drive system is threatened.	0 - Do Nothing 1 - Lubricate 2 - Realign 3 - Replace Member

870 Transformers and Thyristors

Element Number	Description	Unit
870	This element defines the members that step down the voltage of the incoming power to a level compatible with the bridge equipment.	Each
Condition	Description	Feasible Action
1	There are no signs of corrosion, oil leakage or any deteriorated condition at the transformer. There are no blown fuses at the transformer.	0 - Do Nothing
2	There are minor signs of corrosion and/or oil leakage.	0 - Do Nothing 1 - Clean and Coat
3	There are moderate signs of corrosion and/or oil leakage.	0 - Do Nothing 1 - Clean and Coat 2 - Rehab Member
4	There are major signs of corrosion and/or oil leakage. A fuse at the transformer may be blown.	0 - Do Nothing 1 - Rehab Member 2 - Replace Member

871 Submarine Cable

Element Number	Description	Unit
871	This element defines the cable that is used to carry power and control signals from one pier to the other pier on a bridge.	Each
Condition	Description	Feasible Action
1	The cable is firmly attached to the pier wall and protected. There is no chafing of the outer protective coating. Cable is properly grounded.	0 - Do Nothing
2	The cable has some loose attachments to the pier wall. There is chafing of the outer protective coating.	0 - Do Nothing 1 - Replace Member
3	The cable is not firmly attached to the pier wall. There is moderate deterioration of the outer protective coating. Cable is not properly grounded.	0 - Do Nothing 1 - Replace Member
4	There is significant deterioration to the outer protective coating, or the cable is not functioning properly. Minimal spare wires are available; cable may need replacing.	0 - Do Nothing 1 - Replace Member

872 Conduit and Junction Boxes

Element Number	Description	Unit
872	This element defines those members, which enclose, support and protect the power and control wiring. The quantity for this element will only be one (1) for the entire bridge.	Each
Condition	Description	Feasible Action
1	There is no evidence of corrosion; supports are tight and firmly anchored into concrete or attached to structural steel. Junction box cover gaskets are intact and provide a good seal. Less connections and terminal strips are not tight. Between 2% and 10% of the conduit is in poor condition.	0 - Do Nothing
2	There is major corrosion, supports are broken or missing; junction box is badly deteriorated, and conduit may be broken. Connections and terminal strips are not tight. Between 2% and 10% of the conduit is in poor condition.	0 - Do Nothing 1 - Repair Member 2 - Replace Member
3	There is major corrosion, supports are broken or missing; junction box is badly deteriorated, and conduit may be broken. Between 10% and 25% of the conduit is in poor condition.	0 - Do Nothing 1 - Repair Member 2 - Replace Member
4	There is major corrosion, supports are broken or missing, junction box badly deteriorated, and conduit may be broken. 25% or more of the conduit is in poor condition.	0 - Do Nothing 1 - Rehab Member 2 - Replace Member

873 Programmable Logic Controllers

Element Number	Description	Unit
873	This element defines the general-purpose industrial microprocessor-based control systems.	Each
Condition	Description	Feasible Action
1	Diagnostic display or bridge tender reports do not indicate equipment malfunction; air filters are clean; and there is no accumulation of dirt and dust. Wiring connections are all tight. Controlled item is operating properly through entire range of movement and smoothly ramps and seats.	0 - Do Nothing
2	Air filters are not clean, there is accumulation of dirt and dust, lights on controller may not work.	0 - Do Nothing 1 - Clean Member; Replace Filters
3	Air filters missing, large accumulation of dirt and dust, lights on controller are not working. Wiring connections are not tight. Controlled item may not be operating properly through entire range of movement or may not ramp or seat properly.	0 - Do Nothing 1 - Clean Member; Replace Filters; Tighten Connections
4	The diagnostic display or bridge tender indicate malfunctions, the programmable logic controller is not working. Controlled item may be slamming/not moving.	0 - Do Nothing 1 - Repair Member

874 Control Console

Element Number	Description	Unit
874	This element defines the console, which controls the operation of the movable bridge. This element includes interlocks, span limit switches and span position indicator devices.	Each
Condition	Description	Feasible Action
1	There is no corrosion or paint failure, the console area is clear of foreign objects, all switches operate properly, all bypass switches are locked or sealed to prevent inadvertent operation, there are no burned out pilot light lamp or missing or broken lamp lenses.	0 - Do Nothing
2	There is some corrosion or paint failure, the console is not clear of foreign objects. Loose/entangled wires or improperly labeled/tagged wires.	0 - Do Nothing 1 - Clean and Paint
3	There is heavy corrosion or paint failure, there are burned out pilot light lamps, missing or broken lamp lenses. Missing electrical covers, broken breakers. Some bypasses are on with remaining bypass switches locked and sealed.	0 - Do Nothing 1 - Clean and Paint 2 - Repair Member
4	The switches/breakers do not operate properly, the bypass switches are not locked or sealed.	0 - Do Nothing 1 - Repair Member 2 - Replace Member

880 Cables - Vertical Lift

Element Number	Description	Unit
880	This element defines only those steel cables on a vertical lift bridge.	Each
Condition	Description	Feasible Action
1	Little or no corrosion. No signs of distress in strand or anchor sockets.	0 - Do Nothing
2	Surface or freckled rust has formed or is forming. No signs of distress in strand or anchor sockets.	0 - Do Nothing 1 - Clean and Lubricate
3	Corrosion may be present, but any section loss is incidental and does not affect the strength or serviceability of element or bridge. Cable strands may be worn. Cable banding/clamps, if any, may show some loosening or slipping. Cable anchor devices may be loosening.	0 - Do Nothing 1 - Clean and Lubricate
4	Corrosion is advanced. Cable strands may be broken or severely abraded. Anchors show signs of slippage. Section loss or other deterioration is sufficient to warrant analysis to determine impact member strength and/or serviceability of both element and bridge.	0 - Do Nothing 1 - Rehab Member; Lubricate 2 - Replace Member

881 Bridge Specific Equipment (Lift)

Element Number	Description	Unit
881	This element defines those components found on Lift Bridges, but not found on other types of movable bridges such as sheaves, span guides, counterbalance chains, etc. The quantity for this element will be one (1) for each item.	Each
Condition	Description	Feasible Action
1	There is no need for any maintenance or repair.	0 - Do Nothing
2	There is need for maintenance.	0 - Do Nothing 1 - Service Member
3	There is need for repair.	0 - Do Nothing 1 - Repair Member
4	There is need for replacement or rehabilitation.	0 - Do Nothing 1 - Repair Member 2 - Replace Member

882 Bridge Specific Equipment (Swing)

Element Number	Description	Unit
882	This element defines those components found on Swing Bridges, but not found on other types of movable bridges such as balance wheels and tracks. The quantity for this element will be one (1) for each item.	Each
Condition	Description	Feasible Action
1	There is no need for any maintenance or repair.	0 - Do Nothing
2	There is need for maintenance.	0 - Do Nothing 1 - Service Member
3	There is need for repair.	0 - Do Nothing 1 - Repair Member
4	There is need for replacement or rehabilitation.	0 - Do Nothing 1 - Repair Member 2 - Replace Member

883 Bridge Specific Equipment (Pontoon)

Element Number	Description	Unit
883	This element defines those components found on Pontoon Bridges, but not found on other types of movable bridges such as Pontoons, sheaves, open/close cables, winches, etc. The quantity for this element will be one (1) for each item.	Each
Condition	Description	Feasible Action
1	There is no need for any maintenance or repair.	0 - Do Nothing
2	There is need for maintenance.	0 - Do Nothing 1 - Service Member
3	There is need for repair.	0 - Do Nothing 1 - Repair Member
4	There is need for replacement or rehabilitation.	0 - Do Nothing 1 - Repair Member 2 - Replace Member

884 Bridge Specific Equipment (Bascule)

Element Number	Description	Unit
884	This element defines those components found on Bascule Bridges, but not found on other types of movable bridges such as Trunnions, etc. The quantity for this element will be one (1) for each item.	Each
Condition	Description	Feasible Action
1	There is no need for any maintenance or repair.	0 - Do Nothing
2	There is need for maintenance.	0 - Do Nothing 1 - Service Member
3	There is need for repair.	0 - Do Nothing 1 - Repair Member
4	There is need for replacement or rehabilitation.	0 - Do Nothing 1 - Repair Member 2 - Replace Member

885 Barriers - Moveable Bridges

Element Number	Description	Unit
885	This element defines the component that provides a physical barrier to vehicles, while the bridge is in the open position and all equipment required to operate the barrier. All limit switches required to operate the barrier are incidental to this element.	Each
Condition	Description	Feasible Action
1	There is no need for any maintenance or repair.	0 - Do Nothing
2	There is need for maintenance.	0 - Do Nothing 1 - Service Member
3	There is need for repair.	0 - Do Nothing 1 - Repair Member
4	There is need for replacement or rehabilitation.	0 - Do Nothing 1 - Repair Member 2 - Replace Member

886 Traffic Warning Gates - Moveable Bridges

Element Number	Description	Unit
886	This element defines the components that alert vehicular traffic to impending bridge operation. This element includes all equipment required to operate the traffic gate. Limit switches that control the operation of the traffic gate, if present, are incidental to this item.	Each
Condition	Description	Feasible Action
1	There is no need for any maintenance or repair.	0 - Do Nothing
2	There is need for maintenance.	0 - Do Nothing 1 - Service Member
3	There is need for repair.	0 - Do Nothing 1 - Repair Member
4	There is need for replacement or rehabilitation.	0 - Do Nothing 1 - Repair Member 2 - Replace Member

890 Traffic Signals

Element Number	Description	Unit
890	This element defines the component that signals vehicular traffic when to stop and start.	Each
Condition	Description	Feasible Action
1	There is no need for any maintenance or repair.	0 - Do Nothing
2	There is need for maintenance.	0 - Do Nothing 1 - Service Member
3	There is need for repair.	0 - Do Nothing 1 - Repair Member
4	There is need for replacement or rehabilitation.	0 - Do Nothing 1 - Repair Member 2 - Replace Member

891 Navigational Light System

Element Number	Description	Unit
891	This element defines the lights for navigation, mounted on the bridge or fender system and is not limited to lights on movable bridges. This element includes clearance gauge lights and power system. Inspection should include the back-up power system.	Each
Condition	Description	Feasible Action
1	Lights are operational, lenses are clean and not broken, and there is no evidence of corrosion.	0 - Do Nothing
2	There is some evidence of corrosion and some lights may be burned out.	0 - Do Nothing 1 - Replace Bulbs
3	There is evidence of corrosion, several lights may be burned out, some lens and/or fixtures may be damaged or broken.	0 - Do Nothing 1 - Replace Bulbs 2 - Repair Member
4	Lights are not operational.	0 - Do Nothing 1 - Replace Bulbs 2 - Repair Member 3 - Replace Member

892 Fender System/Pier Protection

Element Number	Description	Unit
848	This element defines those wood, steel, or concrete fender systems and/or pier protection systems in or around the bridge elements.	Each
Condition	Description	Feasible Action
1	Fender/pier protection system in place and fully functional.	0 - Do Nothing
2	There is minor damage or deterioration to fender/pier protection system.	0 - Do Nothing 1 - Rehab Member
3	There is moderate damage or deterioration to fender/pier protection system.	0 - Do Nothing 1 - Rehab Member
4	There is major damage or deterioration to fender/pier protection system.	0 - Do Nothing 1 - Rehab Member 2 - Replace Member