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February 27, 2026 Letting

Notice to Bidders, Specifications and Proposal

Illinois Department of Transportation

Contract No. 76T66
GREENE County
Section 266BRR,(4,5)I
Route FAP 304
District 8 Construction Funds

Prepared by
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Checked by

(Printed by authority of the State of Illinois)

Illinois Department of Transportation

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. February 27, 2026 prevailing time at which time the bids will be publicly opened from the iCX SecureVault.

2. **DESCRIPTION OF WORK**. The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

   Contract No. 76T66
   GREENE County
   Section 266BRR,(4,5)I
   Route FAP 304
   District 8 Construction Funds

   Structural, mechanical and electrical repairs to the Joe Page Bridge in Hardin. (SN 031-0001)

3. **INSTRUCTIONS TO BIDDERS**. (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

   (b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS**. This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Gia Biagi,
Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2026

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction
(Adopted 1-1-22) (Revised 1-1-26)

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

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STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAP Route 304 (IL 16/100), Section 266BRR(4,5)I, Greene County, Contract No. 76T66, and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

FAP Route 304 (IL 16/100)
Section 266BRR(4,5)I
Greene County
Contract No. 76T66

LOCATION OF PROJECT

This project is located on IL 16/100 at the Joe Page Bridge in Hardin in Greene County.

DESCRIPTION OF PROJECT

This project consists of deck repairs, superstructure repairs, mechanical repairs, electrical repairs, fender repairs, addition of CCTV ,and all other necessary work required to complete the project.

SUBMITTAL OF EEO/LABOR DOCUMENTATION

Effective: April 2016

This work shall be done in accordance with Check Sheets No. 1, 3, and 5 of the IDOT Supplemental Specifications and Recurring Special Provisions and the “Weekly DBE Trucking Reports (BDE)” special provision, except as here-in modified.

PAYROLL AND STATEMENT OF COMPLIANCE:

Certified payroll (FORM SBE 48 OR AN APPROVED FACSIMILE) and the Statement of Compliance, (FORM SBE 348) shall be submitted by two methods:

1. By Mail (United States Postal Service): The ORIGINAL of the certified payroll and the Statement of Compliance for the Prime Contractor and each Subcontractor shall be submitted by mail to the Regional Engineer for District 8.
2. Electronically: Scan both the ORIGINAL of the certified payroll and the Statement of Compliance to the same PDF file, and email to the District at the email address designated by the District EEO Officer.

SBE 48 and SBE 348 forms shall be submitted weekly and will be considered late if received after midnight seven business days after the payroll ending date.

WEEKLY DBE TRUCKING REPORT:

The Weekly DBE Trucking Report (FORM SBE 723) shall be submitted electronically. Scan the form to a PDF file, and email to the District at the email address designated by the District EEO Officer.

SBE 723 forms shall be submitted weekly and will be considered late if received after midnight ten business days following the reporting period.

MONTHLY LABOR SUMMARY & MONTHLY CONTRACT ACTIVITY REPORTS:

The Monthly Labor Summary Report (MLSR) shall be submitted by one of two methods:

1. For contractors having IDOT contracts valued in the aggregate at $250,000 or less, the report may be typed or clearly handwritten using Form D8 PI0148. Submit the ORIGINAL report by mail to the Regional Engineer for District Eight. Contractors also have the option of using the method #2 outlined below.
2. For contractors having IDOT contracts valued in the aggregate at more than $250,000, the report must be submitted in a specific “Fixed Length Comma Delimited ASCII Text File Format”. This file shall be submitted by e-mail using specific file formatting criteria provided by the District EEO Officer. Contractors must submit a sample text file to District 8 for review at least 14 days prior to the start of construction.

The Monthly Contract Activity Report (MCAR) may be typed or clearly handwritten using Form D8 PI0149.

The MLSR and the MCAR shall be submitted concurrently. If the method of transmittal is method #1 above, then both the MLSR and the MCAR shall be mailed together in the same envelope. If the method of transmittal is method #2 above, then the MCAR shall be scanned to a .pdf file and attached to the email containing the MLSR .txt file.

The MLSR and MCAR must be submitted for each consecutive month, for the duration of the project, and will be considered late if received after midnight ten calendar days following the reporting period.

REQUEST FOR APPROVAL OF SUBCONTRACTOR:

The ORIGINAL and one copy of the Request for Approval of Subcontractor (FORM BC 260A) shall be submitted to the District at the IDOT Preconstruction Conference.

SUBSTANCE ABUSE PREVENTION PROGRAM CERTIFICATION:

The ORIGINAL and one copy of the Substance Abuse Prevention Program Certification (FORM BC 261) shall be submitted to the District at the IDOT Preconstruction Conference.

The Contractor is required to follow submittal procedures as provided by the EEO Officer at the preconstruction conference and to follow all revisions to those procedures as issued thereafter.

If a report is rejected, it is the Contractor's responsibility to make required adjustments and/or corrections and resubmit the report. Reports not submitted and accepted within the established timeframes will be considered late.

Disclosure of this information is necessary to accomplish the statutory purpose as outlined under 23CFR part 230 and 41CFR part 60.4 and the Illinois Human Rights Act. Disclosure of this information is REQUIRED. **Failure to comply with this special provision may result in the withholding of payments to the Contractor and/or cancellation, termination, or suspension of the contract in whole or part.**

This special provision must be included in each subcontract agreement.

ALL HARD COPY FORMS TO BE SUBMITTED TO:

Region 5 Engineer
Illinois Department of Transportation
ATTN: EEO/LABOR OFFICE
1102 Eastport Plaza Drive
Collinsville, IL 62234-6198

Compliance with this special provision shall be included in the cost of the contract, and no additional compensation will be allowed for any costs incurred.

TEMPORARY PAVEMENT

Description. This work shall consist of furnishing all materials, labor, and equipment necessary to construct full-depth HMA pavement on a prepared subgrade for use during construction staging which shall carry temporary traffic according to applicable portions of Sections 406 and 407 of the Standard Specifications, the plans, the special provisions, included herein or as otherwise directed by the Engineer.

Construction Requirements. Temporary pavement is intended to fill in the existing island west of the Joe Page Bridge as shown on the plans or as directed by the Engineer. The HMA material and overall thickness to be used for temporary pavement is shown in the mixture requirements table in the plans and all bituminous materials (prime coat) and/or (tack coat) shall be considered included in the unit price for this pay item.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE YARD for TEMPORARY PAVEMENT.

TEMPORARY PAVEMENT REMOVAL

Description: This work shall be performed in accordance with Section 440 of the Standard Specifications, except as herein modified.

Method of Measurement: This work shall be measured for payment in square yards, regardless of the type of temporary pavement removed and shall include removal of patching as used for traffic staging.

Basis of Payment: This work will be paid for at the contract unit price per SQUARE YARD for TEMPORARY PAVEMENT REMOVAL.

ISLAND REMOVAL

This work includes removal and disposal of existing concrete island within the limits shown in the plans or as directed by the Engineer. This item shall be performed in accordance with the applicable portions of Section 440 of the Standard Specifications.

This work will be paid for at the contract unit price per SQUARE FOOT for ISLAND REMOVAL measured as specified herein.

PAINT CURB

This work shall include all materials, labor, and equipment necessary to paint the concrete curb as shown in the plans and to the satisfaction of the Engineer. Surface preparation and paint application shall be in accordance with Section 780 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for PAINT CURB.

DEBRIS REMOVAL

Description. This work shall consist of furnishing all labor and equipment necessary to remove and dispose of debris accumulated on pier caps, and within the truss lower chords, as shown in the plans and as directed by the Engineer. This work shall be performed according to Article 202.03 of the Standard Specifications for removal of debris, which may include, but is not limited to, broken concrete, soil, and other foreign materials.

Care shall be taken to avoid damaging structural elements, including bearings, anchor bolts, and any adjacent steel or concrete surfaces. Any damage to the structure resulting from the debris removal operations shall be repaired to the Engineer's satisfaction at the Contractor's expense.

Method of Measurement. The volume of debris will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per LUMP SUM for DEBRIS REMOVAL.

STRUCTURAL STEEL REMOVAL

Description. This work shall consist of furnishing all labor and equipment necessary to remove and dispose of structural steel components as shown on the plans.

Construction Requirements. Components to be removed shall be removed in such a manner as to leave the remaining structural components undamaged and in proper condition for the use contemplated. Any damage to the portions remaining in service shall be repaired or replaced. Repairs or replacement shall be made as directed by the Engineer. The removed portions shall be disposed of according to Article 202.03 of the Standard Specifications.

Burning of existing rivets or bolts will only be allowed near steel surfaces which are to be removed and discarded. Burning of existing rivets or bolts will not be allowed for members that are to remain in place and for members that are to be removed and reinstalled. When burning of rivets or bolts is not allowed, the head of the rivet or bolt shall be sheared off, and the shank driven or drilled out. Extreme care shall be taken while removing the rivets or bolts so as not to damage the existing structural steel which is to remain. Unless noted otherwise on the plans, the cost of rivet and bolt removal shall be included in this item. All damage to existing members which are to remain shall be repaired or the member replaced to the satisfaction of the Engineer. Repair or replacement of damaged members shall be at the Contractor's expense and at no additional cost to the State.

Where structural steel to be removed is welded to members that are to remain in place, the Contractor shall use appropriate cutting methods approved by the Engineer. Care shall be taken to avoid gouging, nicking, or warping the steel surfaces that are to remain. Grinding and surface finishing shall be performed as necessary to restore a uniform surface free of sharp edges, notches, or weld spatter. Any damage to the remaining steel members shall be repaired or the member replaced, at the Contractor's expense, to the satisfaction of the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per POUND for STRUCTURAL STEEL REMOVAL.

STRUCTURAL STEEL REPAIR

Description. This work shall consist of furnishing all labor, equipment, and materials necessary to furnish, install, and paint steel repair plates and members, according to Section 505 and 506, and to remove and dispose of structural steel members as necessary according to Section 501 of the Standard Specifications, as indicated on the plans, and in this special provision. This work also consists of furnishing all labor, equipment, and materials necessary to clean and paint the existing structural steel at repair locations in accordance with the Cleaning and Painting Contact Surface Areas of Existing Steel Structures special provision.

Construction Requirements. If straightening is required for existing members designated for structural steel repairs, it shall be performed before connecting any new steel repair plates or members.

Where required to align with existing holes, field drilling of holes in new members shall be accomplished using existing holes as a template unless field measurements are used to verify the plan dimensions. Field drilling of new holes in existing members shall use the holes in the new material as a template. Burning of holes will not be permitted. All field drilling and grinding necessary to furnish and install the new steel plates and members shall be included in this item.

The removal and disposal of any existing members, bolts, or rivets necessary for the installation of the new members as shown in the plans shall be included in this item. Burning of existing rivets will only be allowed near steel surfaces which are to be removed and discarded. Burning of existing rivets will not be allowed for members that are to remain in place or for members that are to be removed and reinstalled. When burning of rivets is not allowed, the head of the rivet shall be sheared off, and the shank driven or drilled out. Extreme care shall be taken while removing the rivets so as not to damage the existing structural steel which is to remain. All damage to existing members which are to remain shall be repaired or the member replaced to the satisfaction of the Engineer. Repair or replacement of damaged members shall be at the Contractor's expense.

Before installing each bolt, all nicks, burrs, corrosion, scale, paint, and foreign substance shall be removed from inside the hole and from the surfaces around the hole with a power tool to ensure proper seating of the nut, bolt head, and washers. Holes in the existing material shall be inspected for fatigue cracking. Any cracking found shall be reported to the Engineer. Necessary repairs will be as directed by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per POUND for STRUCTURAL STEEL REPAIR.

BOLT REPLACEMENT

Description. This work shall consist of furnishing all labor, equipment, and materials necessary to remove, dispose, and replace defective fasteners with high strength bolts; install high strength bolts at locations of missing fasteners; and tighten existing defective fasteners.

Construction Requirements. Severely corroded fasteners not specified for replacement in the plans will be approved for replacement by the Engineer. The basis for replacement of a corroded fastener shall be the loss of section of the rivet head or the bolt head or nut. For rivets, if the least dimension of the rivet head is less than 75% of the original rivet dimension, replacement is required with the approval of the Engineer. For the following size bolts the dimensions as designated by the American Institute of Steel Construction below which replacement is required, with the approval of the Engineer, are:

7/8" Φ High Strength bolts:	"F" dimension less than 1" for bolt head or nut or "H" dimension less than 7/16" for the bolt head and "H" dimension less than 9/16" for the nut.
3/4" Φ High Strength bolts:	"F" dimension less than 7/8" for bolt head or nut or "H" dimension less than 3/8" for the bolt head and "H" dimension less than 1/2" for the nut.

where, F = width across flats of either the bolt head or nut

H = height of bolt head or nut

Burning of existing rivets or bolts will not be allowed for members that remain in place and for members that are to be removed and reinstalled. Instead, the head of the rivet or bolt shall be sheared off and the shank driven or drilled out.

Before installing each new bolt, all nicks, burrs, corrosion, scale, paint, and foreign substance shall be removed from inside the hole and from the surfaces around the hole with a power tool to ensure proper seating of the nut, bolt head, and washers. Holes in the existing material shall be inspected for fatigue cracking. Any cracking found shall be reported to the Engineer. Necessary repairs will be as directed by the Engineer.

Extreme care shall be taken while removing rivets or bolts so as not to damage the existing structural steel which is to remain. Damage to existing members which are to remain shall be repaired or the member replaced to the satisfaction of the Engineer. Repair or replacement of damaged members shall be at the Contractor's expense and at no additional cost to the State.

Upon completion of the connector replacement and tightening in accordance with the Standard Specifications, the new bolts and damaged coatings on existing steel shall be cleaned and painted in accordance with the Cleaning and Painting Contact Surface Areas of Existing Steel Structures special provision, and the cost shall be considered included in this pay item. The color of the top coat shall match the color of the existing steel.

Basis of Payment. This work will be paid for at the contract unit price per EACH for BOLT REPLACEMENT.

ACCESS LADDER

Description. This work shall consist of furnishing all labor, equipment, and materials necessary to remove and replace the access ladder and railing for the steel access platform providing access to the navigation lights. The work shall be done in accordance with OSHA standards, the Standard Specifications, the details shown in the plans, and as directed by the Engineer. If the Contractor chooses a different configuration than that shown on the plans, they shall submit detailed drawings and design calculations to the Engineer for review and approval.

Where access ladder and railing to be removed are welded to members that are to remain in place, the Contractor shall use appropriate cutting methods approved by the Engineer. Care shall be taken to avoid gouging, nicking, or warping the steel surfaces that are to remain. Grinding and surface finishing shall be performed as necessary to restore a uniform surface free of sharp edges, notches, or weld spatter. Any damage to the remaining steel members shall be repaired or the member replaced, at the Contractor's expense, to the satisfaction of the Engineer.

The ladder, railing, and associated attachments and hardware shall be galvanized after fabrication according to AASHTO M111 or M232 as applicable. Existing steel that will be contact with new steel will be cleaned and painted in accordance with the Cleaning and Painting Contact Surface Areas of Existing Steel Structures special provision for secondary connections.

Basis of Payment. This work will be paid for at the contract unit price per EACH for ACCESS LADDER.

CLEARING (SPECIAL)

Description. This work shall consist of furnishing all labor, equipment, and materials necessary to clear, trim, prune, and remove vegetation within the right-of-way to ensure safety and provide equipment access, as shown on the plans. Work shall conform to the applicable requirements of Sections 201 and 202 of the Standard Specifications, except as modified herein.

Vegetation removal is limited to the right-of-way adjacent to Spans 5 through 8.

Construction Requirements. Vegetation, including saplings, bushes, and trees, shall be trimmed or removed within the right-of-way line as directed by the Engineer. Work may include pruning for vertical and horizontal clearance and removal of trees and stumps to provide the required clear zone.

Tree removal and pruning shall be performed in accordance with Articles 201.04 and 201.05. Trees designated to remain by the Engineer shall be protected as specified in Article 201.05. All debris shall be disposed of in accordance with Article 202.03.

The Contractor shall coordinate with the Engineer for layout limits and staging to ensure the clearing is consistent with project needs. Clearing shall not begin until the area is reviewed and approved by the Engineer.

Method of Measurement. This work will not be measured for payment. No separate measurement will be made for the removal of individual trees, stumps, saplings, brush, or other vegetation, regardless of size or location.

Basis of Payment. This work will be paid for at the contract unit price per LUMP SUM for CLEARING (SPECIAL). No additional payment will be made for tree removal, regardless of quantity or size.

REMOVE AND REPLACE ANCHOR BOLTS

Description. This work shall consist of furnishing all labor, equipment, and materials necessary to remove, dispose, and replace defective, loose, or missing railing anchor bolts at the locations shown in the plans. Work includes drilling and epoxy grouting of new anchor bolts into existing concrete or steel members, as well as coordination with adjacent structural elements such as railing posts, FRP walkways, and braces.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Anchor Bolts	1006.09

Anchor bolts shall conform to ASTM F 1544 grade 55. Anchor bolts, nuts, and washers shall be hot-dip galvanized in accordance with AASHTO M232.

Construction Requirements. Burning of existing anchor bolts will not be permitted for members that are to remain in place or are to be removed and reinstalled. Instead, the anchor bolt head shall be sheared off, and the remaining shank drilled out. Alternative removal methods may be proposed by the Contractor and are subject to approval by the Engineer. Approved alternative methods shall be performed at the Contractor's expense and at no additional cost to the State.

Prior to installation, all holes and surrounding surfaces shall be cleaned of burrs, corrosion, paint, and foreign materials using power tools to ensure proper seating of nuts, washers, and bolt heads. Base plate holes shall be inspected for signs of cracking or damage. Any observed defects shall be reported to the Engineer. Repairs, if necessary, shall be performed as directed by the Engineer.

Extreme care shall be taken during removal of anchor bolts to avoid damaging existing structural steel and/or concrete that is to remain. Any damage to such members shall be repaired or replaced to the satisfaction of the Engineer at the Contractor's expense and at no additional cost to the State.

Anchor bolts shall be drilled and set in accordance with Article 509.06 of the Standard Specifications. Before installing anchor bolts with chemical adhesive, the depth and diameter of the holes shall be verified. Holes shall be kept dry and cleaned by blowing out dust and debris prior to installation.

After installation, the exposed end of the anchor shall be checked to confirm proper embedment. Anchor bolts shall project between 1/2 inch and 2 inches beyond the nut. Nuts shall be installed snug-tight by a few impacts of an impact wrench or the full effort of a worker using a standard spud wrench.

Upon completion of the anchor bolt replacement, the new bolts and damaged coatings on existing steel shall be cleaned and painted in accordance with the Cleaning and Painting Contact Surface Areas of Existing Steel Structures special provision, and the cost shall be considered included in this pay item. The color of the top coat shall match the color of the existing steel.

Basis of Payment. This work will be paid for at the contract unit price per EACH for REMOVE AND REPLACE ANCHOR BOLTS.

HANDRAIL REPAIRS

Description. This work shall consist of furnishing all labor, equipment, and materials necessary to replace existing fiber-reinforced polymer (FRP) railing posts and to perform welding repairs to the existing steel pipe railings, as shown on the plans and described in this special provision.

Construction Requirements. The Contractor shall exercise extreme care during the removal of existing railing posts to avoid damage to structural steel and FRP components that are to remain in place. Any damage to these members shall be repaired or replaced to the satisfaction of the Engineer, at no additional cost to the State.

New FRP railing posts shall be installed and connected to the existing railings in accordance with the manufacturer's recommendations.

Welding repairs to existing 1½-inch-diameter schedule 40 steel pipe railings shall be performed in accordance with Section 505 of the Standard Specifications.

All work shall include proper surface preparation, alignment, and secure fastening using 5/8-inch-diameter high-strength bolts at surface-mounted locations, as detailed in the plans.

Basis of Payment. This work will be paid for at the contract unit price per LUMP SUM for HANDRAIL REPAIRS.

FENDER SYSTEM

Description. This work shall consist of furnishing all labor, equipment, and materials necessary to repair or replace the existing fender system components and pile clusters, according to Sections 507 and 512 of the Standard Specifications, as indicated on the plans, and in this special provision.

Materials. Timber piles and wales shall be Southern Pine and shall be treated with preservatives. Timber piles shall conform to ASTM D 25 and Section 1007.08 of the Standard Specifications.

Galvanized sheet steel shall conform to ASTM A653 (CS, G210).

Epoxy grout shall conform to the requirements of Section 1025 of the Standard Specifications. Epoxy grout for underwater applications shall be submitted to the Engineer for approval.

Paint for Structural Steel. All structural steel shall be shop blast cleaned in accordance with SSPC-SP6, Commercial Blast Cleaning, and painted with one coat of inorganic zinc primer, followed by two 8 mil DFT shop coats of polyamide-cured coal-tar epoxy paint. The paint system shall conform to Military Specification MIL-P-23236D. The intermediate coat shall contrast with the primer coat and the black final coat.

Rejection of Piles. The Contractor shall assume full responsibility for all sound construction that is to remain, and any such sound work damaged by their operations shall be replaced at the Contractor's expense without compensation. Causes for rejection of piles will include not only defects in the timber discovered at the time of delivery, but also failure of the pile to stand up under subsequent handling and pile driving conditions due to the inherent unsuitability of the timber for piling or because of damage in handling prior to delivery. Any pile will be rejected as unsuitable if it fails by breaking or splitting during driving, even though the pile is properly handled and driven, and has suitable protection of the pile head. Piles failing under the conditions mentioned, or as directed by the Engineer, must be replaced with piles conforming to the requirements of these specifications at the Contractor's expense.

Construction Requirements. The Contractor shall field-verify all dimensions, including diameters, thickness, lengths, and widths, even when nominal sizes are indicated on the plans. The Contractor shall visit the site and field-verify the existing fender conditions. Every reasonable effort has been made to indicate and describe existing conditions at the project site with an acceptable degree of accuracy, but the Contractor is held responsible for performing their work under the actual field conditions. Payment for extra work will not be allowed because of reasonable discrepancies or differences, as herein described, which are encountered during construction.

Fabrication and construction of structural steel shall conform to the applicable requirements of Section 505 of the Standard Specifications. Welding shall be done according to the requirements of the AASHTO/AWS D1.5M/D1.5:2025 Bridge Welding Code.

Lengths of timber piles and wales shall be as indicated on the drawings, with no splicing allowed.

Treated timber shall be handled with rope slings, without dropping or breaking out fibers, bruising, or penetrating the surface with tools. Cuts and abrasions in the treated timbers shall be repaired according to Section 1007.13 of the Standard Specifications.

Holes for bolts shall be bored the same diameter as the bolt; holes bored in pressure-treated material shall be filled with preservative. Unused bore holes and spike holes shall be poured full of preservatives and plugged with tight-fitting treated plugs.

Countersinking and/or counterboring shall be done as specified in the plans. Horizontal recesses formed for countersinking shall be treated with preservative in accordance with Section 1007 of the Standard Specifications, and, after bolt is in place filled with hot pitch.

Pile heads, after cutting to receive caps and prior to placing caps, shall be treated to prevent decay. The sawed surface shall be thoroughly brush coated with two applications of preservative, followed by the 20 gage galvanized sheet steel cover as shown in the plans.

All removed material shall become the property of the Contractor and shall be properly disposed.

Pile Driving Equipment and Procedures. Pile drivers shall be equipped with leads affording free vertical movement for the hammer. Leads shall be stiff enough to resist bending during driving and shall be held rigidly in position by stiff braces or guys. The axis of leads and hammer shall coincide with the axis of piles as nearly as practicable.

Each driving hammer shall be a single acting steam, diesel, or air hammer of sufficient energy to assure driving the pile full length. Hammers shall be no larger than a Vulcan No. 1 with a maximum energy of 15,000 ft-lbs per blow. They shall be maintained in first-class condition and proper adjustment and shall be operated at the pressure needed for best results. A driving head shall be provided, properly proportioned and fitted, and having adequate cushioning material to prevent damage to the pile while holding energy loss to a suitable minimum. Should the Contractor provide a hammer not suitable, or a hammer and auxiliary equipment that causes damage to the piles, the cost of necessary changes will be at the Contractor's expense.

Driving shall be continuous to the indicated depth. Timber piles shall be driven to within 3 inches of designated locations shown on the drawings. All piles shall be driven with equipment which will positively support the pile during driving.

In all handling of the piles by the Contractor, in unloading, and throughout they work, they shall prevent damage to the piles, avoiding the use of cant hooks, peaveys, and pickaroons on the side surfaces, except at extreme ends. Nailing for temporary bracing and for other purposes shall be only as necessary and done in a way to minimize damage.

Cutting Off Timber Piles. Before being cut off, piles must be checked for position. Piles must be securely held in designated positions before being cut off. Cut-offs shall be guided using accurately set straight edges and cut at the slope indicated on the drawings.

Pile heads and damaged piles shall be removed from the site immediately and legally disposed of by the Contractor after being cut off, and shall not be dropped or thrown into the water, or left at the work site, including the river bank.

Basis of Payment. This work will be paid for at the contract unit price per LUMP SUM for FENDER SYSTEM.

TRAFFIC CONTROL PLAN
Effective: July 12, 1993 *Revised: May 12, 1997*

Traffic control shall be in accordance with the applicable sections of the "Standard Specifications for Road and Bridge Construction", the applicable guidelines contained in the "National Manual on Uniform Traffic Control Devices for Streets and Highways", Illinois Supplement to the National Manual of Uniform Traffic Control Devices, these special provisions, and any special details and highway standards contained herein and in the plans.

The Contractor shall provide two weeks notice to the Department prior to any lane closures.

Special attention is called to Articles 107.09 and 107.14 of the "Standard Specifications for Road and Bridge Construction" and the following highway standards relating to traffic control:

701001	701006	701311	701321	701501	701901
BLR 17	BLR 21				

In addition, the following special provisions will also govern traffic control for this project:

Traffic Control and Protection (Special)
Temporary Bridge Traffic Signal (Special)
Width Restriction Signing
Short Term and Temporary Pavement Markings
Temporary Concrete Barrier
Temporary Rumble Strips
Vehicle and Equipment Warning Lights
Work Zone Traffic Control Devices
Temporary Portable Bridge Traffic Signals

WIDTH RESTRICTION SIGNING

This work shall consist of width restriction signage as shown on the plans and as described herein.

All signs required will be supplied to the Contractor by the Department. The Contractor shall give the Department's Bureau of Operations two weeks notice for the signs. Contact Jean Slape at 618-394-2189. The Contractor shall pick up the signs at the T.M. Building in Fairview Heights and return them upon completion of the contract.

The Contractor shall furnish the posts and erect the signs at the locations shown on the plans as direct by the Engineer. The posts shall remain the property of the Contractor. The height to the bottom of the lowest sign shall not be less than 6 feet.

This work will be paid for at the contract unit price per LUMP SUM for WIDTH RESTRICTION SIGNING.

TRAFFIC CONTROL AND PROTECTION, (SPECIAL)

This work shall consist of coordinating, furnishing, installing, maintaining, monitoring, relocating, and removing all traffic control devices necessary for the purpose of regulating, warning, or directing traffic as shown in the plans. This work shall include payment for all items not covered by other highway standards or other pay items. This work shall be completed in accordance with Article 107.14 and Section 701; the road closure details in the plans; all applicable highway standards, the special provisions, and as specified herein.

The plan details present a plan for implementing the necessary traffic control for this work. The plans do not attempt to detail or define all construction conditions which may require additional installation of traffic control items to meet unforeseen needs. The Contractor may revise or modify the traffic control as shown in the plans to address any unforeseen needs upon written permission of the Engineer.

Existing regulatory traffic signage shall be removed or covered as needed. The Contractor shall furnish, install, and maintain all temporary signage as specified in the plans and highway standards. This work will not be paid for separately but will be governed by Article 107.25.

Method of Measurement. All traffic control and protection required by this provision will be measured for payment on a lump sum basis. This includes all traffic control necessary to construct the work as shown in the plans and provide for traffic control for any alterations, modifications, or additions necessary to accommodate the traffic control to construct the various work items shown in the plans.

Basis of Payment. This work will be paid for at the contract price per LUMP SUM for TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

COMPLETION DATE PLUS WORKING DAYS

This work shall be done in accordance with Section 108 and as herein specified.

The Contractor shall complete all work as shown on the plans, as described in the special provisions, and have the Joe Page Bridge and Illinois River open to all traffic by June 30, 2027. After the completion date, an additional ten working days will be allowed for punch list items or as directed by the Engineer when there is no traffic impact.

Liquidated Damages. Should the Contractor fail to complete the work required on or before the completion date, the Contractor shall be liable to the Department for liquidated damages, based on the original contract amount, in accordance with Article 108.09 for each calendar day of

overrun. The Department will deduct these liquidated damages from the monies due or to become due to the Contractor from the Department.

No additional compensation will be given for compliance with the completion date. The cost shall be considered included in the contract.

FULL CLOSURES OF THE JOE PAGE BRIDGE

The Contractor will be permitted to close one lane of traffic as shown in the contract plans and outlined in these provisions for the repair of the Joe Page Bridge. The lift span shall remain operational at all times with the exception of short-term intermittent closures. Short term intermittent closures of the lift span must be approved by the Engineer and will require coordination with bridge operations to fit the closure within windows of no barge traffic. Short term intermittent closures of the Joe Page Bridge, other than the lift span, may be necessary and must be approved by the Engineer. No closure can occur on the dates of the following events; approximate dates for these yearly events are provided:

- Mother's Day – May 10, 2026
- CEJHS and CHS Graduations – May 21 and 23, 2026
- Father's Day – June 21, 2026
- Great Illinois River Raft Race, Hardin – June 27, 2026
- Kampsville Summer Celebration – July 18, 2026
- St. Barbara Church Picnic, Batchtown – July 25 and 26, 2026
- St. Joseph Church Picnic, Meppen – August 1 and 2, 2026
- St. Mary Church Picnic, Brussels – August 8 and 9, 2026
- Calhoun County Fair – September 10 through 13, 2026
- Free Trappers Rendezvous, Hardin – September 26 and 27, 2026
- Old Settlers Day – October 10 and 11, 2026
- SFA Fall Dinner – October 18, 2026
- SFA Spring Dinner Auction, Hardin – March 21, 2027
- Mother's Day – May 9, 2027
- CEJHS and CHS Graduations – May 20 and 22, 2027
- Father's Day – June 20, 2027
- Great Illinois River Raft Race, Hardin – June 26, 2027

The extended full vehicular traffic closure of the Joe Page Bridge is necessary to replace the expansion joints at Pier 15 and the East Abutment, repair members at the structure's centerline, replace the floorbeam cover plate, replace/install the bridge surface course, and for the installation of final pavement markings. Any changes in lane closures or the closure of the Joe Page Bridge must be approved by the Engineer with 21 days' notice. Only one extended full closure (21 days maximum closure) is permitted, unless otherwise approved by the Engineer. The following date ranges which full closure can occur are as follows:

- March 23, 2026 – May 8, 2026
- June 1, 2026– June 20, 2026
- August 11, 2026 – September 9, 2026
- October 20, 2026 – October 31, 2026
- March 22, 2027 – May 7, 2027

- May 31, 2027 – June 18, 2027

Should the Contractor fail to reopen the bridge to at least one lane of traffic after the extended full closure, the Contractor shall be liable and shall pay to the Department $10,000, not as a penalty but as liquidated damages, for every day or portion thereof that the flow of traffic is impeded by the Contractor's operations. The Department will deduct these liquidated damages from any monies due or to become due to the Contractor from the Department.

REMOVAL OF THIN EPOXY POLYMER BRIDGE DECK OVERLAY

Description. This work consists of removing and properly disposing of thin epoxy polymer overlays on bridge decks in accordance with the Standard Specifications and this special provision at locations shown on the plans.

Construction. Remove the existing epoxy overlay with a fine-tooth mill. Provide fine tooth milling equipment that meets the minimum requirements below and consistently mills the surface in one or more passes to the required grade or cross section providing the required uniform textured surface. Do not impair surface drainage or create any areas that allow water to pond. Provide vacuum equipment to extract milled material and excess water from the bridge deck and pavement. Prevent dust from escaping into the air during the vacuuming operation.

Provide milling machines equipped with the following:

A. Automatically controlled and activated cutting drums,
B. Grade reference and transverse slope control capabilities, and
C. Minimum 3 foot wide cutting drums with teeth spacing at a maximum 5/16 inch.

Minimize damage to the underlying concrete substrate from the milling operation. Remove the epoxy overlay as close as possible to the barrier wall, and drain structures and bridge joints to avoid damage. Hand chip with a maximum 30 pound chipping hammer, hand grinder, scabbler, shot blaster, scarifier or other method approved by the Engineer to remove the epoxy overlay material from around the above mentioned features.

If a new thin epoxy polymer overlay is to be installed, perform all work in accordance with 20SP712B, Thin Epoxy Polymer Bridge Deck Overlay as appropriate. This includes shot blasting immediately prior to application.

Method of Measurement. The area will be measured and paid for based on actual deck surface area where the removal occurred.

Basis of Payment. This work will be measured and paid for at the contract unit price per SQUARE YARD for REMOVAL OF THIN EPOXY POLYMER BRIDGE DECK OVERLAY.

BRIDGE DECK CONCRETE SEALER

Effective: June 17, 2010 Revised: July 10, 2019

Description. This work shall consist of the surface preparation and application of a concrete sealer or protective coat upon the entire top surface of the deck and the tops and inside vertical faces of the parapets of the structure(s), as outlined in the contract.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Concrete Sealer	1026
(b) Protective Coat	1023

Concrete sealers shall be penetrating sealers from the Department's approved list of concrete sealers.

Construction Requirements. Surfaces which are to be sealed shall be thoroughly cleaned by brooming and blowing off with high pressure air. Mechanical scraping may also be required to assist in the removal of mud and other foreign material. The use of chemicals and other cleaning compounds to facilitate the removal of foreign materials shall be approved by the manufacturer or its representative before use. Traffic shall not be allowed on the cleaned surface prior to treatment. Cleaning and application equipment shall be fitted with suitable traps, filters, drip pans, and other devices to prevent oil and other foreign material from being deposited on the surface.

Deck drains shall be temporarily plugged before the bridge deck concrete sealer is applied to control run off. The material used to plug the drains shall be removed and disposed of upon the completion of the sealing treatment.

Existing pavement markings shall be temporarily covered prior to the application of the bridge deck concrete sealer. The temporary covering material used shall be such that it will not affect the marking's retroreflectivity when removed. After application of the bridge deck concrete sealer and prior to opening to traffic, all temporary coverings shall be removed.

For new concrete, sealing shall be performed after all grinding and/or saw cut grooving is completed and before the deck is marked and open to traffic.

The concrete surface moisture condition state shall be dry. Pavement moisture shall be checked by the following procedure. Tape the edges of a square foot of plastic to the pavement surface. Allow the plastic to stand for 15 minutes. After 15 minutes, observe the plastic for drops of moisture. If moisture is present and the drop sizes are larger than a pencil eraser, the pavement moisture is too high and bridge deck concrete sealer shall not be applied. Do not apply when inclement weather is anticipated within 12 hours.

Bridge deck surfaces shall be flooded using a distribution sprayer, roller, brush, or broom. Distribution sprayers shall include a skirting system to control overspray. Material shall be brushed or squeegeed for even distribution. When two applications are required, let the surface absorb the sealer and follow-up immediately with a second application before the surface dries; wet on wet method. Redistribute any puddles or free-standing material. The bridge deck concrete sealer shall be applied according to the manufacturer's instructions, and information provided on the approved list of concrete sealers. The final total coverage rate shall not exceed 400 sq. ft./gal.

Traffic will be allowed on the deck only after a treated area does not track.

Method of Measurement. This work will be measured for payment as follows:

Contract Quantities: When the project is constructed essentially to the lines, grades, or dimensions shown on the plans and the Contractor and the Engineer have agreed in writing that the plan quantities are accurate, no further measurement will be required, and payment will be made for the quantities shown in the contract for the various items involved, except if errors are discovered after work has been started, appropriate adjustments will be made.

When the plans or work have been altered or when disagreement exists between the Contractor and the Engineer as to the accuracy of the plan quantities, either party shall, before any work is started which could affect the measurement, have the right to request in writing and thereby cause the quantities involved to be measured. When plan quantities are revised by the issuance of revised plan sheets that are made part of the contract and the Contractor and Engineer have agreed in writing that the revised quantities are accurate, no further measurement will be required and payment will be made for the revised quantities shown.

Measured Quantities: The quantity shall be the actual coverage area in square foot of surfaces treated and shall include all surface preparation, material, and application costs.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE FOOT for BRIDGE DECK CONCRETE SEALER.

TEMPORARY BRIDGE TRAFFIC SIGNAL (SPECIAL)

This item shall include all temporary bridge traffic signals as shown on the plans for rehabilitation of Joe Page Bridge in Hardin as shown on the plans and according to the Engineer.

The temporary bridge traffic signals at the intersection of S. Park St/IL 100 shown on the plans and on the standard shall be span wire and not portable, and signal heads and video detection could be mounted to the bridge.

This work will be measured for payment as each, where each shall be defined as the entire traffic signal system, regardless of the number of signal heads for each signal set up, and shall include all labor, equipment, and materials required to supply and install the temporary bridge traffic signals.

This work will be paid for at the contract price per EACH for TEMPORARY BRIDGE TRAFFIC SIGNALS (SPECIAL)

MISCELLANEOUS ELECTRICAL WORK

Description. This work shall consist of furnishing, installing, and placing in satisfactory operating condition the complete electrical equipment for operation of the lift span, as indicated on the plans, called for in these special provisions, or as may be required for a complete bridge electrical work. This work shall be according to the applicable articles of Section 800 and the following.

The work shall include, but not be limited to the following tasks:

a) Replace existing power monitor, remote displays, and associated wiring as shown on the plans.
b) Modify the existing main motor drive and rotary cam limit switch (RCLS) settings as shown on the plans.
c) Replace existing fender marine navigation lights and associated wiring where shown on the plans.
d) Repair or replace existing span marine navigation lights as shown on the plans.

e) Replace existing main service disconnect switch enclosure as shown on the plans.
f) Repair existing warning and barrier gates as shown on the plans.
g) Provide and install public address speakers, handsets, and associated equipment as shown on the plans.
h) Replace lift span walkway pole-mounted light fixtures as shown on the plans.
i) Replace all outdoor receptacles as shown on the plans.
j) Replace all light switches located adjacent to warning and barrier gates.

The work shall meet the following requirements.

a) The following publications form a part of these Special Provisions by this reference and shall have the same force and effect as it printed here within full. Unless otherwise noted, the version of referenced standards or publications is the version in effect at the bid opening time for this contract.

    1) AASHTO LRFD Movable Highway Bridge Design Specifications.
    2) FHWA – Manual on Uniform Traffic Control Devices for Streets and Highways.
    3) NECA 1 – Standard Practice for Good Workmanship in Electrical Contracting.
    4) NETA – Standard for Acceptance Testing Specifications for Electrical Power Equipment & Systems.
    5) NFPA 70 – National Electrical Code.
    6) NFPA 70E – Electrical Safety Requirements for Employee Workspaces.
    7) All applicable state and local codes.

b) Additionally, all work shall comply with all additional requirements of the authorities having jurisdiction. It shall be the responsibility of the Contractor to contact the proper authorities prior to beginning work to determine all requirements, as well as to maintain relevant communications with such authorities throughout construction.

c) The Contractor shall obtain any required permits and approvals of all departments or agencies having jurisdiction.

d) The Contractor shall investigate spaces through which equipment must be moved. Arrange to have equipment shipped from manufacturer in crated sections of size suitable for moving through restricted available spaces.

e) The Contractor shall be responsible for any realignment and/or refastening of electrical equipment that is incorporated into the bridge machinery, such as motor encoders, motor speed switches, rotary cam limit switches and resolvers, limit switches, proximity switches and similar devices, that may be needed as a result of the required work.

f) Any incidental apparatus, appliance, material, or labor not herein specifically mentioned or included that may be found necessary to comply with the requirements of the related documents and referenced standards or codes shall be furnished by the Contractor just as if specifically mentioned in these specifications and without extra cost.

g) The Contractor shall be responsible for verifying and obtaining all field measurements as required for the proper dimension, details, and fabrication of enclosures, brackets, and adapters to fit existing conditions.

h) The Contractor shall exercise care in the removal of existing components. The Contractor shall give the Department the option of salvaging all components that are not intended to be reused.

i) The Contractor shall be responsible for coordinating any temporary power interruptions required to safely perform the work with the electric utility company and with the Department.

j) The Contractor shall bear full responsibility for all coordination of features, ratings, etc. of products as may be required to provide complete, operational, reliable, and safe system(s) and sub-system(s) in accordance with the requirements and intent of these contract documents.

k) The Contractor shall bear full responsibility for all coordination necessary to perform all work, including, but not limited to, coordination with and/or between suppliers, vendors, sub-contractors, trades, and the Department.

Qualifications. The Contractor and any subcontractors shall meet the following qualifications.

a) The Contactor shall be properly licensed by the State of Illinois and shall be primarily and regularly engaged in the installation and service of industrial and commercial electrical power distribution and control systems.
b) The Contractor shall have been in the business of installing and servicing industrial electrical power distribution and control systems for at least five continuous years as of the bid date.
c) The Contractor shall employ onsite supervisory personnel who are licensed electricians experienced in the installation and maintenance of industrial electrical power distribution and control systems.
d) All electrical work shall be performed by persons properly trained and qualified in the installation and maintenance of such systems.
e) Documentation demonstrating that the Contractor meets these requirements shall be submitted with the bid documents.

Materials. Materials shall be according to the following.

a) All items shall be handled, applied, or installed in strict accordance with manufacturer's recommendations and instructions and with these special provisions.
b) All products shall be properly protected until installation, including during shipment and storage.
c) All wire and cable shall be UL listed. All conductors shall be tinned copper per ASTM B8 with class B stranding. Solid and aluminum conductors shall not be used. Wire and cable shall be rated for wet locations, with XHHW-2 insulation. All wiring installed in exposed locations shall be furnished with a UV stabilized jacket, sunlight and weather-resistant. Wire and cable for general power and control circuits shall be rated 600 volts minimum. Wire and cable connecting variable speed drives and their associated motors shall be rated 2000 volts minimum. Multiconductor cables used for low power signaling and instrumentation circuits which may be rated 300 volts.
d) Power circuit conductors shall be size 12 AWG or larger. Control circuit conductors, except for signaling and instrumentation circuits, shall be size 14 AWG or larger. All conductors shall be sized based on the NEC and shall not be smaller than as indicated on the plans.
e) Control conductors for pulse generators, encoders, and resolvers shall be shielded in accordance with the respective device manufacturer's recommendations for the wiring

lengths and arrangements involved on this project. Contractor shall coordinate all wire and cable requirements with the control system vendor prior to purchase and installation of the bridge wiring system.

f) All type MC cable shall have continuous, interlocking, galvanized steel or aluminum armor. Type MC cable without an overall watertight jacket shall be used only inside walls or above ceilings in dry locations. Type MC cable shall not be used in exposed locations, except where indicated on the plans. Type MC cable used in exposed locations shall have an overall UV stabilized, sunlight, and weather-resistant jacket. Type MC cable used in exposed locations shall be Okonite C-L-X Type LA or approved equal.

g) Fiber optic cable utilized for bridge PLC control and CCTV system shall be according to Fiber Optic Cable, Single Mode section.

h) Public address system cable used to connect the handset units to the amplifier enclosures shall be eight-conductor cable composed of one 14 AWG twisted pair, one 14 AWG ground conductor, one 18 AWG control conductor, and two 18 AWG twisted pair. Cable shall be constructed with a PVC/nylon insulation and have a PVC outer jacket. System cable shall be rated 600V, 90 °C, type TC, UL listed for use in in outdoor installations in cable tray and aerial installations when supported by messenger. Cable shall be installed using a minimum bending radius of 10 times the outer diameter.

i) Public address loudspeaker cable used to connect amplifier enclosures or handsets to loudspeakers shall be two-conductor cable composed ofone 18 AWG twisted pair. Cable shall be constructed with a PVC insulation and have a PVC outer jacket. Speaker cable shall be rated 600V, 90 °C, type TC, UL listed for use in outdoor installations in cable channel/wireway.

j) All conduit runs for control circuits shall contain a minimum of 10% spare conductors, or as shown on the plans. Spare conductors shall be suitably terminated at both ends.

l) All junction boxes, pull boxes, terminal cabinets, and other miscellaneous wiring device boxes shall be sized as required by the NEC, and as appropriate to enclose all conductors and components for the equipment served. In wet/damp locations and installed outdoors, use surface-mounted boxes meeting the requirements of NEMA 250, UL50 and NEMA 4X type 316 stainless steel with stainless steel hinges and hardware. Doors shall be gasketed and weather-tight when closed. Copper-free cast aluminum, welded aluminum plate, or hot-dip galvanized cast iron may be used with the permission of the Engineer. In-ground pull boxes shall be concrete with a cast iron cover. Aluminum boxes shall not be used in direct contact with the ground or masonry. Aluminum boxes shall be isolated from all masonry with 1/8-inch neoprene shims. Conduit hubs in outdoor boxes, cabinets, and enclosures shall be gasketed and caulked with sealant, and shall be located on bottoms of boxes wherever practical. Top conduit entries shall not be permitted. Side entries shall be utilized only by written permission of the Engineer, on a case by case basis, and only where bottom entry is not practical.

Identification. The following identifications shall be made on specified equipment.

a) Conductor identification numbers shall be coordinated for consistency and accuracy with conductor numbers on the Contractor's approved wiring diagrams and shop drawings, field wiring diagrams, and any other diagrams containing the same respective conductor. Each conductor shall be assigned only one unique conductor number throughout the entire electrical or control system.

b) Conductor and cable labels shall be waterproof, non-smearing, and self-adhesive with machine-printed permanent lettering protected by a clear cover.

c) Conductors and cables shall be permanently and clearly tagged in accordance with the same numbers or designations appearing on the approved wiring diagrams at every terminal or connection, splice, and tap.
d) Each terminal of all terminal blocks shall be permanently marked with machine printed labels to show the same number or designation as appears on the wire connected thereto.
e) The Contractor shall number and tag spare conductors as such, and spare conductors shall be shown on all shop and record drawings.
f) All network cables, fiber optic cables, and individual fiber strands when broken out from a cable assembly shall be uniquely labeled in accordance with the Contractor's approved drawings.
g) All electrical equipment shall be clearly labeled as to function by engraved black on white plastic nameplates with minimum 1/4-inch-high letters, permanently attached with stainless steel machine screws. Equipment names shall be coordinated with the Contractor's approved shop drawings.
h) Provide and install all code-required cautionary signs and labels for new or modified equipment, including but not limited to arc flash warning labels and voltage labels.

Replacement of Power Monitors.

a) Replace existing power monitor and remote displays with two power monitors with local displays for the existing bridge electrical service as indicated on the plans.

b) The Contractor shall be responsible for verifying existing service ratings and obtaining all field measurements as required for the proper dimension, details, and mounting to fit existing enclosures and conditions.

c) Power monitor shall be a utility grade, UL listed, multifunction power monitor suitable for use on a 480-volt AC, 60 hertz, three-phase, four-wire, grounded wye system. Other requirements are as follows:

    1) True RMS measurement.
    2) Accuracy of ±0.15% or better for voltage and current.
    3) ±0.05 Hz frequency accuracy at 60Hz.
    4) Maximum relative humidity of 95%, non-condensing.
    5) 90 to 265 VAC power supply.

d) The monitors shall be interfaced with the existing bus monitor such that a bus monitor fault will trigger the power monitor to record the instantaneous values for all channels including a date/time stamp.

e) All additional components required for proper installation and operation, including but not limited to instrument transformers, fuses, terminal blocks, and power supply surge suppression shall be included with the monitor.

Modification to Existing Motor Drive and RCLS Settings.

a) Perform modifications to the main motor drive and RCLS settings as indicated on the plans. Drive settings may require field adjustment to meet the desired deceleration time of the motor when closing the span. RCLS near closed contact may require field adjustment to adjust the motor deceleration pickup point.

Replacement of Fender Navigation Lighting.

a) Replace the existing fender navigation lights as indicated on the plans. Fender navigation luminaires shall satisfy USCG requirements. Other requirements are as follows:

    1) Heavy duty, marine type design with rain-tight, fully gasketed, cast aluminum housing and junction box.
    2) Pipe connecting luminaire housing and junction box shall be at least 1-1/2 inch diameter, schedule 40 galvanized steel pipe with length as required to meet USCG requirements.
    3) Fresnel glass lens red in color with nominal lens section of 180 degrees and inside and outside lens diameters of 7” and 8”, respectively.
    4) 120VAC LED with 100,000-hour LED lamp rating and dual lamp arrangement.
    5) Automatic transfer relay to switch power to backup lamp upon failure of the primary lamp.

Replacement and Repair of Span Navigation Lighting.

a) Replace the existing north span-mounted navigation light as indicated on the plans. Span navigation luminaires shall satisfy USCG requirements. Other requirements are as follows:

    1) Heavy duty, marine type design with rain-tight, fully gasketed, cast aluminum housing and base with ready access for lamp service.
    2) Pipe connecting luminaire housing and junction box shall be at least 2-inch diameter, schedule 40 galvanized steel pipe with length as required to meet USCG requirements.
    3) Fresnel glass lens, red lens with nominal section of 180° over green lens with nominal section of 360°. Inside and outside lens diameters of 7” and 8”, respectively.
    4) 120VAC LED with 100,000-hour LED lamp rating.

b) Repair the existing South span-mounted navigation light as indicated on the plans. All materials and hardware required to repair the light shall be provided by the Contractor.

c) The Contractor must provide temporary navigational lights or power to keep marine navigational lighting operational at all times during construction.

Replacement of Main Service Disconnect Switch.

a) Replace the existing main service disconnect switch as indicated on the plans. The enclosure shall be a fusible 3 phase, 4 wire, UL listed heavy-duty safety switch. Other requirements are as follows:

    1) Rated for 600VAC, 60Hz.
    2) NEMA 4X enclosure rated for outdoor use, manufactured with 316 stainless steel.
    3) Handle with provisions for padlocking the switch in the ON and OFF position. The handle shall have a mechanical interlock to prevent the door from opening when the switch is in the closed position.

b) The Contractor is responsible for supplying a keyed padlock and all hardware required to replace the disconnect switch.

c) The Contractor shall be responsible for all coordination with the electric utility company.

Repairs to Existing Traffic Gates.

a) Repair existing traffic gates as shown on the plans.

b) Flexible cable feeding cable arm from gate housing shall be 14-5 SOOW cable rated for 600V, 12 A, -40 °C to 90 °C.
c) Cable clamp shall be corrosion resistant stainless steel with rubber insulation.

Public Address System.

a) Provide and install public address (PA) system as indicated on the plans.
b) Intercoms shall be UL listed, 120VAC, single-party line indoor station with handset. Intercoms shall include amplifier and enclosure. Enclosure shall be NEMA 1 rated for indoor use, manufactured from 16-gauge steel.
c) Line balance unit shall connect near the electrical center of the system, adjacent to an indoor station, and in a relatively quiet area.
d) Speaker amplifier units shall be rated for outdoor use manufactured with 16-gauge steel, NRTL and UL listed. The amplifier shall be 120VAC, 12 W, analog single-party system.
e) Loudspeakers shall be constructed from weather and corrosion resistant material. Speakers shall include a compact integral 8-ohm driver with minimum 15 W rating, and a stainless-steel mounting bracket. Speakers shall be rated between 110 and 125 dB. Wall mounting bracket compatible with the speaker mounting bracket shall be provided by loudspeaker manufacturer.
f) The Contractor is responsible for providing all hardware necessary to properly mount all components of the PA system.

Replacement of Span Walkway Light Fixtures.

a) Replace all span walkway luminaires as shown on the plans. Luminaires shall be outdoor-rated LEDs rated for 120VAC, minimum 5,000 lumens, and 4000K LED color temperature.

Replacement of Outdoor Receptacles.

a) Replace all outdoor receptacles as shown on the plans. All receptacles shall be UL listed, NEMA 5-20R, heavy duty ground fault circuit interrupting duplex receptacles, and provided with NEMA 4X stainless steel duplex flip covers.

Replacement of Light Switches.

a) Replace all light switches at gate platforms. All light switches shall be heavy duty, corrosion resistant single-pole toggle switch rated for 120VAC and 20 A. All light switches shall be installed with a weatherproof 1-gang wall plate cover, rated for outdoor installation.

Coordination. Coordinate bridge electrical installation with all associated equipment and work as shown on the plans.

Construction Requirements

Submittals. The contract plans and special provisions depict the general intent and requirements of this contract but are not intended to be of sufficient detail to be used in lieu of shop drawings, layout drawings, and wiring diagrams generated by the Contractor. Additional detail development and coordination of components by the Contractor will be necessary to satisfy the requirements of the contract in general, and this section in particular, and shall be provided at no additional cost.
The following shall be submitted:

a) Contractor qualifications.
b) Catalog cuts and product data for each type of equipment, raceway, cable, conductor, fiber optic cable and accessories, aerial cable, junction box, and accessory proposed for

installation. Include dimensions and manufacturer's technical data on features, performance, electrical characteristics, ratings, and finishes.

c) Proposed schedules and installation procedures. Submit for approval prior to commencing work.
d) Proposed locations, wiring, panel layouts, and accessories for power monitoring equipment.
e) Electrical equipment and device mounting detail shop drawings.
f) Layout and installation drawings shall be developed to show proposed locations, dimensions, clearances to floors, walls, ceilings, structural members, and other nearby objects and equipment. In some cases, these drawings need not necessarily be to scale, but items must be shown in their proper relative positions and be dimensioned. Layout and installation drawings shall be submitted for approval prior to installation of the following: cabinets and equipment enclosures, conduit, light fixtures, switches, junction boxes, and any components for which mounting provisions have not been detailed on the contract plans or for any mounting provisions which are being proposed as an alternative to the provisions shown on the plans.
g) For all existing wiring that is modified, or new wiring, three-line and elementary point-to-point wiring diagrams shall be submitted for approval prior to installation of conduit, cables, and wiring. All conductors and cables shall be identified on the diagrams by wire numbers that match the same respective conductors or connections shown on other components or equipment shop drawings. Wiring diagrams are not intended to be to scale, but shall show raceways, cabinets, equipment enclosures, etc., and in their approximate geographic orientation to each other to the extent practical. Wire tabulations shall be provided for all wire numbers passing through or terminating at each junction box, terminal cabinet, and equipment cabinet. All boxes, cabinets, equipment and enclosures shall be included on the tabulation. Tabulation shall include device served and function of each conductor. Spares shall also be assigned wire numbers and listed.
h) Conduit layout diagrams and tabulations showing each raceway utilized, with all wire numbers installed therein, in tabular or spreadsheet format. Provide similar diagrams showing cabling for networked equipment.
i) Product and installation information on Contractor's proposed method of wire labeling.
j) At the completion and acceptance of the project, the Contractor shall develop and submit as built drawings. Submit PDF format files and CAD files. Provide hard copies for bridge operation and maintenance manuals as required.
k) Existing operation and maintenance manuals shall be updated to include all catalog cut sheets and user manuals (including manufacturer recommended maintenance) for each type of new equipment including but not limited to power distribution equipment, raceways, cables, conductors, boxes and cabinets, bridge control components, light fixtures, navigation lighting, CCTV system components, traffic gates, and public address system components. The Contractor shall also provide updated documentation for the main motor drive settings.

Maintaining Existing Facilities.

a) The Contractor shall conduct their operations in such a manner as to maintain the existing bridge electrical equipment, systems, raceways, cables, and conductors to remain.
b) The Contractor shall take extra care to not disturb the USGS monitoring station and related equipment located adjacent to the service equipment on the west approach.
c) The Contractor shall furnish and install any protective materials necessary to conform to the above requirements at no additional cost.
d) Any damage to existing facilities shall be repaired by the Contractor at no additional cost to the Department.

Connections to Existing Facilities. The Contractor shall make all connections required between the rehabilitated and new equipment and the existing circuits and apparatus to provide for proper operation of the span and its auxiliary equipment, in accordance with the requirements specified herein.

Cutting and Patching.

a) The Contractor shall perform all necessary drilling, cutting, and patching required to installing their work. All cutting of concrete, structural steel, sidewalks, floor slabs, walls, and other portions shall be done by skilled personnel. All conduits and pipe sleeves shall be properly grouted in the mortar.
b) After completion of all work, the Contractor shall repair all damage caused by their installation or removal of items and shall finish the job in a workmanlike manner satisfactory to the Engineer. Holes in the walls, ceiling, or floor shall be patched and finished to match the existing surfaces. Painted surfaces shall be repainted after being repaired.
c) All patching shall be done in a manner consistent with the building material being patched.
d) No structural members shall be removed, cut, drilled, or otherwise modified without the approval of the Engineer, and any such work shall be done in a manner as directed by the Engineer.

Installation.

a) Prior to doing any demolition or removal work, the Contractor shall verify that all conductors and current carrying parts of equipment are not energized, and all power feeds have been properly locked and tagged out and/or disconnected at the source.
b) The Contractor shall not weld to existing steel without prior approval of the Engineer.
c) Installers of PVC coated conduit shall be trained in the proper techniques for cutting, bending, threading, and repairing the PVC conduit. Plastic coated rigid metal conduit shall be installed using tools and methods which will not cause damage to the PVC coating. Any areas on the exterior of the conduit which have been damaged during installation shall be coated with an exterior patching compound as recommended by the conduit manufacturer.
d) Balance load among feeder conductors for each new and modified panelboard and connect loads as necessary to obtain reasonable load balance on each phase.
e) All branch and feeder circuits requiring a neutral shall be supplied with a dedicated neutral conductor. Neutrals shall not be shared by two or more phase conductors except where all conductors are serving a single piece of equipment.
f) Control enclosures, drive enclosures, and electrical equipment shall be installed to provide working clearances as required by the NEC.
g) The Contractor shall have the necessary training, tools, and connectors to properly terminate Ethernet cable and to perform testing.
h) Fitting requirements for flexible cable hose attachment shall be per the manufacturer's recommendations.
i) Strain relief grips shall be provided and installed for flexible cables and conduits where shown on the plans and where flexible cables and conduits are subject to movement.
j) The Contractor shall bear full responsibility for providing all temporary provisions as may be required to accomplish all work and to permit continued operation and use of existing equipment and facilities during prosecution of such work.
k) The Contractor shall keep the project premises and adjoining premises clean from excess material, debris, and rubbish caused by the Contractor’s operations at all times.

Field Testing.

a) The Contractor shall be responsible for performing all testing, inspections, and any resulting corrective work as may be necessary to ensure that all work is functioning properly, and as otherwise required elsewhere in these special provisions. All such testing, inspections, demonstrations, and any resulting remedial work, will be deemed a normal part of the contract work and will not be considered cause for delay or additional payment.
b) Voltmeters, ammeters, etc. shall be true RMS type. Where recording instruments are required, they shall be three phase, strip chart, or computer-based type. All tools and instruments shall be specifically designed for measuring the quantity in question and be maintained in properly calibrated condition.
c) Verify that all circuits are continuous and free of shorts, opens, or unintentional grounds, and all circuit conductors are properly terminated.
d) Check for proper tightening of mechanical lugs and terminals.
e) Verify correct operation and calibration of power monitoring equipment.
f) Prior to energizing any panelboard for the first time, verify that all bus connections are tightened to the torque levels recommended by the manufacturer and verify that the bus is free of short or unintentional grounds.
g) Supply voltages shall be measured and verified correct for the actual installed devices or equipment being served. Only after these preliminary checks may the circuit be energized.
h) Verify rotation direction and proper operation of all three phase motors including main drives, brakes, locks, and traffic gates.
i) Test and verify operation of traffic signals, gate warning lights, and navigation lights.
j) Verify operation of all bridge warning devices.
k) Ethernet cables shall be tested for continuity, length, data integrity, attenuation, and crosstalk. Cables that fail testing shall be replaced or re-terminated (if applicable) at the Contractor's expense. The installation shall be certified for use with the equipment to be installed.
l) Single mode fiber optic cable shall be tested according to Fiber Optic Cable, Single Mode special provision.

Warranty.

a) All product warranty certificates, and similar warranty information, shall be stored at a single location on the project site and be turned over to the Department prior to final acceptance of the bridge electrical installation.
b) Where registration is necessary as a condition of warranty coverage, warranties shall be registered to the Department.
c) Upon final acceptance of the completed bridge electrical installation by the Engineer, the Contractor shall warrant the satisfactory in-service operation of the completed bridge electrical installation, materials, products, and related components. This warranty shall extend for a minimum period of two years following the date of final acceptance of the bridge electrical installation.

Basis of Payment. This work will be paid for at the contract unit bid price per LUMP SUM for MISCELLANEOUS ELECTRICAL WORK.

MAINTENANCE OF BRIDGE ELECTRICAL SYSTEMS

Effective: The date that the Contractor's activities at the jobsite begin.

Replace Article 801.11 and Article 801.12 of the Standard Specifications with the following:

Effective the date that the Contractor's activities (electrical or otherwise) at the jobsite begin, the Contractor shall be responsible for proper operation and maintenance of all existing and proposed electrical systems which are part of or may be affected by the work until final acceptance or as otherwise determined by the Engineer.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the Engineer, a representative of IDOT, and a representative of any party responsible for maintaining any lighting systems which may be affected by the work. The Contractor shall request a date for the preconstruction inspection no less than fourteen days prior to the desired date of the inspection. The Contractor will document and note all deficiencies and submit for Engineer and Owner review. Existing electrical systems when depicted on the plans are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained. Contract documents shall indicate the circuit limits.

Maintenance of Existing Electrical Systems

Existing Marine Navigation Lighting Systems. Existing marine navigation lighting systems shall be defined as any marine navigation lighting system or part of a marine navigation lighting system in service at the time of contract letting. The contract drawings indicate the general extent of existing marine navigation lighting. But indicated or not, it remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications, and failure to do so will not be justification for extra payment or reduced responsibilities.

Existing Warning and Barrier Gate Systems. Existing warning and barrier gate systems shall be defined as any warning or barrier gate system, or part of, in service at the time of contract letting. The plans indicate the general extent of existing warning and barrier gates. But indicated or not, it remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications, and failure to do so will not be justification for extra payment or reduced responsibilities.

Existing Traffic Control Systems. Existing traffic control systems shall be defined as any traffic control system, or part of, in service at the time of contract letting. The plans indicate the general extent of any existing traffic signals. But indicated or not, it remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications, and failure to do so will not be justification for extra payment or reduced responsibilities.

Existing Roadway Lighting Systems. Existing roadway lighting systems shall be defined as any roadway lighting system or part of a roadway lighting system in service at the time of contract letting. The plans indicate the general extent of existing roadway lighting. But indicated or not, it

remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications, and failure to do so will not be justification for extra payment or reduced responsibilities.

Existing CCTV Systems. Existing CCTV systems shall be defined as any CCTV system, or part of any CCTV system, in service at the time of contract letting. It remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications, and failure to do so will not be justification for extra payment or reduced responsibilities.

Extent of Maintenance

Full Maintenance. If the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller or if the controller is modified in any way under the contract work, the Contractor shall maintain the entire controller and all associated circuits within the project limits such that bridge operability is maintained except during US Coast Guard authorized bridge outages. Equipment outside of the project limits shall be maintained and paid for under Article 109.04.

If the existing equipment is damaged by normal vehicular traffic and is beyond repair and cannot be re-set, the Contractor shall replace the equipment in kind in accordance with Article 109.04. If the equipment is damaged by any construction operations and is beyond repair and cannot be re-set, the Contractor shall replace the equipment in kind with no additional compensation.

Maintenance of Proposed Work

Proposed Work. The proposed systems shall be defined as any temporary or permanent system, or part of, which is to be constructed under this contract regardless of the project limits indicated in the plan.

The Contractor shall be fully responsible for maintenance of all items installed under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage by the motoring public, Contractor operations, vandalism, or other means. The cost of replacing or repairing any malfunctioning, damaged, or vandalized equipment shall be included in the cost of this item and will not be paid for separately.

Lighting System Maintenance Operations. The Contractor's responsibility shall include the maintenance of lighting units (including sign lighting), cable runs, and lighting controls. In the case of a pole knockdown or sign light damage, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service. The equipment shall then be re-set by the Contractor within the time limits specified herein.
If any existing equipment is damaged by normal vehicular traffic and is beyond repair and cannot be re-set, the Contractor shall replace the equipment in kind with payment made for such equipment under Article 109.04. If the equipment damaged by any construction operations and is beyond repair and cannot be re-set, the Contractor shall replace the equipment in kind and the cost of the equipment shall be included in the cost of this pay item and shall not be paid for separately.

The following chart lists the maximum response, service restoration, and permanent repair time that the Contractor will be allowed to perform corrective action on specific electrical equipment.

INCIDENT OR PROBLEM	SERVICE RESPONSE TIME[1]	SERVICE RESTORATION TIME[2]	PERMANENT REPAIR TIME[3]
Control Cabinet out	2 hours	12 hours	7 calendar days
Hanging mast arm	2 hours to clear	N/A	7 calendar days
Radio Problem	2 hours	12 hours	7 calendar days
Motorist caused damage or leaning light pole 10º or more	2 hours	12 hours	7 calendar days
Circuit out – Needs to reset breaker	2 hours	6 hours	N/A
Circuit out – cable trouble	2 hours	24 hours	21 calendar days
Outage of three or more successive roadway lights	2 hours	6 hours	7 calendar days
Marine navigation light outage	2 hours	12 hours	7 calendar days
Traffic lights	2 hours	12 hours	7 calendar days
Warning or Barrier gates	2 hours	12 hours	7 calendar days
Drive or span lock motors	2 hours	12 hours	7 calendar days
Machinery or motor brakes	2 hours	12 hours	7 calendar days
CCTV camera out	2 hours	24 hours	7 calendar days

Notes:

1. Service Response Time – Amount of time from initial notification to the Contractor until a contractor representative physically arrives at the location.
2. Service Restoration Time – Amount of time from the initial notification to the Contractor until the system is fully operational again. (In cases of motorist-caused damaged amount of time until the undamaged portions of the system are operational).
3. Permanent Repair Time – Amount of time from initial notification to the Contractor until the time permanent repairs are made. If the Contractor was required to make temporary repairs, the amount of time to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of $500 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the electrical maintenance contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the electrical maintenance contractor within one month after the incident will result in additional liquidated damages of $500 per month per occurrence. Unpaid bills will be deducted from any monies owed to the Contractor.

Damaged caused by the Contractor's operations shall be repaired at no additional cost to the contract.

Operation. Electrical systems are to remain in operation during construction per the table below.

SYSTEM[1]	ELECTRICAL OPERABILITY REQUIREMENTS[2]
Closed Circuit Television	At all times until newly installed CCTV system is fully operational
Bridge Operability for marine traffic	At all times except during US Coast Guard authorized bridge outages
Roadway Lighting	50% of bridge roadway lighting shall always be operable, with no outage of greater than two successive lights
Non-roadway Bridge Lighting	50% of non-roadway bridge lighting shall always be operable
Marine navigation lighting	At all times except during US Coast Guard authorized bridge outages
Marine radio	At all times
Warning and Barrier gates	One pair of warning or barrier gates per bridge side shall always be operational
Traffic Signals	At all times

Notes:

1. Temporary measures with the same functionality as the existing installed system may be utilized to meet operability requirements with written Engineer approval.
2. Based on construction needs, written approval may be sought from the Engineer for deviation from any of the electrical operability requirements.
3. The bridge shall remain operational for marine traffic throughout construction, except during bridge outages authorized by the U.S. Coast Guard. The Contractor shall exercise professional judgment to maintain bridge operability during construction, including the use of existing bridge backup power systems and any temporary measures deemed necessary by the Contractor. Bridge operability is defined as the bridge's ability to raise and lower upon request at all times to accommodate marine traffic, except during U.S. Coast Guard-authorized bridge outages. It is the Contractor's responsibility to determine, in coordination with IDOT, how best to operate the bridge during construction to adhere to the bridge operability requirement.

Method of Measurement. The Contractor shall demonstrate to the satisfaction of the Engineer that the electrical operability requirements have been met prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

Basis of Payment. This work will be paid for at the contract lump sum price for MAINTENANCE OF BRIDGE ELECTRICAL SYSTEMS.

REHABILITATION OF MECHANICAL OPERATING SYSTEMS

This section includes the rehabilitation of the high misalignment couplings, pinion and rack engagement, counterweight guides, and air buffers. Work to maintain and adjust span balance is also included.

All parts furnished by the Contractor shall be new and shall be as shown or an approved equal. In cases where a substitution is proposed, it will be the responsibility of the Contractor to prove equality of the substitution with the original Contract Drawings, including the submission of a sample for Engineer examination and/or a visit by the Engineer to the proposed manufacturing facility, all at the cost of the Contractor. The Contractor will also provide, at no additional cost, engineering analysis, and design modifications as may be necessitated by his proposed substitution.

Description Of Work

Provide all required materials and labor to complete the work as indicated on the Contract Drawings and as specified herein.

Existing machinery and associated components to be removed and/or modified are listed in the Contract Drawings. Upon removal, these parts shall be marked or tagged.

Tasks, machinery, equipment, parts, material and methods included in this section apply to the operating machinery of the entire bridge.

Work shall include furnishing, installing and adjusting bridge machinery, and making final adjustments to assure proper mechanical operation of the bridge, and shall include:

a. Installation of new, or modification of existing, stop discs at all high misalignment couplings.
b. Adjusting the eccentric rollers to improve rack and pinion engagement.
c. Replace counterweight guides (3 locations).
d. Rehabilitate air buffer piping.
e. Adjust and maintain span balance.

The Contractor shall:

a. Provide all apparatus, tools, devices, materials and labor to manufacture, paint, ship, install, erect, align, adjust, lubricate, and test the rehabilitated machinery components for the lift bridge in an approved manner as provided herein. Any apparatus, tools, devices, materials and labor, not specifically stated or included, which may be necessary for the work, shall be furnished by the Contractor.
b. Verify all dimensions. Dimensions shown in the plans are for reference and shall be verified in the field by the Contractor prior to purchase, manufacture or installation of all components and parts.

The electrical and structural aspects of this Bridge Rehabilitation are presented in the appropriate sections of these specifications and Contract Drawings.

Applicable Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. The latest revisions only shall be used for all references.

Where not otherwise specified herein, workmanship, materials, fabrication and erection of the bridge components shall be in accordance with the requirements of the 2023 3rd edition of the American Association of State Highway and Transportation Officials (AASHTO) LRFD "Movable Highway Bridge Design Specification", and all applicable interim revisions.

Other applicable standards:

a. American Society for Testing and Materials (ASTM)
b. American National Standards Institute (ANSI)
c. American Gear Manufacturer's Association (AGMA)
d. American Society of Mechanical Engineers (ASME)
e. Society of Automotive Engineers (SAE)
f. American Welding Society (AWS), Bridge Welding Code, D1.5
g. American Iron and Steel Institute (AISI)
h. American Institute of Steel Construction (AISC)
i. Association for Materials Protection & Performance (AMPP, formerly SSPC & NACE)
j. Occupational Safety and Health Administration (OSHA)

Submittals

Standard Items. The Contractor shall submit copies of producer or manufacturer data for all purchased components. These shall include specifications, tests and installation instructions for the following items, but not excluding other items or materials not specifically mentioned:

a. Mill reports, inspection reports and physical tests of all metals.
b. Bolts, nuts, washers, and other fasteners.
c. Paint.
d. Lubricants as endorsed by machinery manufacturers for year-round exposure at this bridge site.
e. Standard stocked or custom engineered manufactured/assembled items.
f. The Contractor shall prepare a complete list of all machinery items that require lubrication. The list shall contain the type of lubricant used and the date it was installed and lubricated by the Contractor, and shall be given to the Engineer prior to start up and testing of the machinery.

Shop Drawings. The Contractor shall submit shop drawings to the Engineer for approval. These shall include complete details, classification of materials, schedules for fabrication and shop assembly, procedures and diagrams showing sequence and details for erection and approval.

Shop drawings shall be given a suitable title to describe the parts detailed thereon, and each drawing shall be identified by the complete project name and number. Shop drawing submittals shall be complete and organized to allow the review and evaluation of logical groups of items, including the interfaces between adjacent, or connected parts, and shall include the following information:

a. Reference to the standard material specifications for each item.

b. The surface finish of machined surfaces and tolerances for each dimension for which a specific fit is required. A general tolerance block shall be used to define the tolerances of all other dimensions. Fits and finishes shall meet or exceed AASHTO or suggested manufacturer's specifications.

c. Quantity required. Note that quantities shall be for the entire bridge.

d. Heat treatment or specific hardness requirements where applicable.

e. All proprietary items shall be shown in outline on shop drawings, which shall also indicate the method and sequence, to be employed in assembly of bridge machinery. The suggested use of proprietary items does not imply a sole-source intent on the part of the IDOT when other equivalent competitive products exist.

f. Shop drawings shall show all external dimensions and clearances necessary for installation, operation and inspection of each item of machinery in the bridge.

g. For all items listed or described in this section, the Contractor shall furnish complete assembly diagrams showing each part contained within the item and the manufacturer's part number assigned to each part. The diagrams shall be sufficient to enable complete disassembly and reassembly of the item covered. In the event that any part is modified in any manner from the way it is described or delivered by its original manufacturer, the Contractor shall deliver a drawing which details each modification and the part shall be assigned a unique part number to preclude the supply of replacement parts not modified in similar fashion. The assembly drawings of each item shall, in addition to identifying and describing each internal part, contain:
   1. Dimensions of all principal elements within the item.
   2. Certified external dimensions affecting interfaces or installations.
   3. Gross weight.
   4. Capacity and normal operating ratings.
   5. Method and recommended type of lubrication, including location and type of fittings and provisions for adding, draining and checking the level of each lubricant employed.
   6. Inspection openings, seals, and vents, and
   7. Details of all turned bolts used to mount the machinery to its supports.

h. Machinery Data. The Contractor shall furnish complete data on the design and construction of any unit furnished as part of the machinery under this Contract, including material specifications, cross-section assembly drawings, detail drawings, and dimensions of principal elements.

i. Shop Bills of Materials. Complete shop bills of materials shall be included for all machinery parts. Bills of materials should be preferably shown on the shop plans for that particular assembly, element, or detail. If the bills are not shown on the shop drawings, prints of the bills shall be furnished for approval in the same manner as specified for the drawings, and shall be directly keyed to each shop drawing it refers to. The computed weight of each piece of machinery shall be stated on the shop drawing upon which it is detailed.

Assembly and Erection Drawings. Complete assembly and erection drawings shall be furnished. These drawings shall give identifying marks and essential dimensions for locating each part or assembled unit with respect to the bridge or foundation.

Approval Process. Shop drawings, which have not been approved, or require correction, shall be resubmitted until such time as they are acceptable to the Engineer, and such procedure shall not be considered a cause for delay. The Contractor shall bear all costs or damages that may result from the ordering or fabrication of any materials prior to the acceptance of the shop drawings. As a means of expediting delivery prior to acceptance of the shop drawings, the Contractor may request in writing from the Engineer approval to order raw materials of the correct type for later fabrication from accepted shop drawings. Such approval by the Engineer shall be in writing. After acceptance of the shop drawings, the Contractor shall supply the Engineer with additional copies of the accepted drawings as may be required.

To maximize the efficiency of the approval process, shop drawing submittals shall be organized into complete logical, functional groups of parts, to allow the review and evaluation of associated components and their interfaces with mating or adjacent parts.

Field Procedures. The Contractor shall submit detailed procedures for adjustment of the eccentric roller to improve rack and pinion engagement and the field adjustment of the air buffers. These detailed procedures shall be submitted to the Engineer for approval prior to construction.

Quality Control And Assurance

Source Quality Control. Materials and fabrication procedures are subject to inspection and testing in the mill, shop and field by the Engineer. Such inspections and tests will not relieve the Contractor of responsibility for providing materials and fabrications in compliance with specified requirements.

Verification of Dimensions. All details shown on the Contract Drawings are typical and apply to all similar locations, unless otherwise indicated. All dimensions and details shall be verified at the site before proceeding with any work and to avoid causing subsequent delay in work.

The Engineer shall be notified immediately for clarification whenever any portion of work is not clearly or accurately defined or dimensioned.

Certified Test Reports. As used herein, certified test reports refer to reports of tests conducted on previously manufactured materials or equipment intended for use on the Joe Page Bridge. Certification of truthfulness and accuracy shall be required by an authorized representative of the testing agency.

Factory Tests. As used herein, factory tests refer to tests required to be performed on the actual materials or equipment proposed for use. Results of the tests shall be submitted in accordance with the provisions of this Contract for laboratory test results. “Factory” tests shall be performed at the manufacturer’s plant or supplier’s premises, or at a separate, independent accredited test laboratory, if appropriate.

Quality Assurance Testing. The Engineer or designated engineering inspectors may select sample materials for quality assurance testing for specification compliance. Testing may be on-site, or by Departmental testing, or by an independent laboratory. Test results shall be furnished to the Engineer for reference, or for other applicable disposition if not in compliance.

Laboratory Tests. If the Contractor submits materials, machinery or other items for testing by an independent, accredited test laboratory, results of these tests shall be concurrently furnished to the Engineer and the Contractor for their inspection and approval. If materials or items do not

meet specifications or applicable standards, two more samples shall be submitted for retest. If one retest sample fails, the lot is rejectable. In the case of machinery or instruments, the item shall be repaired or adjusted no more than twice. If the item still fails to pass, a new, replacement item shall be furnished which does pass on its first test.

Warranty. The Contractor shall remedy defects due to substandard quality of work, erection, materials or design for a period of one year after final tests and acceptance have been made, at his own expense. The Contractor shall furnish a satisfactory guarantee to ensure correction of defects. If necessary, such defects may be corrected by other capable contractors, as approved by the Engineer, at the expense of the Contractor.

Machinery, Equipment And Material. All materials shall be new and conform to standard ASTM and other specifications included previously and indicated on the drawings and herein, or as may be otherwise applicable.

Brinell hardness and CVN toughness tests shall be made, and included on inspection reports, for castings and forgings for which hardness or toughness values are required on the drawings, and in the materials specifications or specified herein.

Steel for weldments and miscellaneous components shall be ASTM A 709 Grade 36 or A709 Grade 50 unless otherwise specified. Other weldable grades with a carbon equivalent of less than 0.45 per AWS D1.5, Appendix VIII4, may be selected, subject to approval. If different grades are to be welded together by various electrodes, their toughness and strength shall be pretested using the ILDOT welded notch toughness test. In general, welding materials and procedures shall conform to AWS D1.5, Structural Welding Code for Bridges.

No item shall be fabricated, machined, welded, cast or forged without sufficient advance notification to the Engineer to permit scheduling of required inspection. The Contractor shall furnish all facilities and provide for the free access at the plant or shop for the inspection of material and quality of work.

Standard Products. Machinery, materials and equipment shall be essentially the standard cataloged products of manufacturers regularly engaged in production of such machinery, materials or equipment. The manufacturer's design shall comply with the contract documents. Materials and equipment shall essentially duplicate items that have been in satisfactory commercial or industrial use at least five (5) years prior to bid opening. Where two units of the same class of machinery or equipment are required, these units shall be products of a single manufacturer; however, the component parts of the system need not be the products of the same manufacturer. Each major component of machinery or equipment shall have the manufacturer's name and address and the model and serial number on a nameplate, securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

Manufacturer's Recommendations. Where installation procedures, or any part thereof, are required to be in accordance with the recommendation of the manufacturer of the machinery, equipment or material being installed, printed copies of these recommendations shall be furnished to the Engineer prior to installation. Installation of the item will not be allowed to proceed until the recommendations are received.

Where periodic maintenance and lubrication practices are required by a component warranty of a manufacturer, printed copies of these recommendations shall be furnished to the Engineer prior

to installation. Installation of the item will not be allowed to proceed until the recommendations are received.

Electrodes for Welding. Electrodes for welding shall comply with AWS D1.5 regarding storage, appropriate welding parameters, and the electrode manufacturer's recommendations. For electrodes not listed or approved, they shall be tested prior to use for weldability, strength and CVN toughness. Test procedures shall be approved by the Engineer.

High Strength and Common Bolts, Nuts and Washers. Heavy and standard hexagonal head bolts, heavy and standard hexagonal nuts, and hardened washers shall comply with ASTM F 3125 Grade A325, ASTM A 563, Grade DH, and ASTM F 436 respectively. ASTM A 307 bolts shall not be used for the installation of any machinery on this contract.

High Strength Turned Bolts. Turned bolts up to 1.5" diameter shall be made from material and have a strength equal to ASTM F3125, Grade A325. Turned bolts larger than 1.5" diameter shall be made from material and have a strength equal to ASTM A449.

Steel Castings. Steel castings shall be ASTM A 148, Grade 80-50, unless otherwise specified. Steel castings of equal or greater strength and CVN toughness and corrosion resistance can be proposed where steel weldments are specified, subject to approval, by the Engineer.

Steel Weldments. Steel weldments for miscellaneous machinery supports and components shall be ASTM A 709 Grade 50, unless otherwise specified. Steel weldments of equal or greater strength and CVN toughness and corrosion resistance can be proposed where steel castings are specified, subject to approval by the Engineer.

Stainless Steel Piping and Fittings. All piping and fittings for the air buffers shall be stainless steel, Type 316, rated for 1500 psi minimum.

Details And Quality Of Work. In general, the machinery shall be finished, assembled, and adjusted in an approved manner and according to best machine-shop practice. The limits of dimensional accuracy, which are to be observed in machining the work, and the allowances for all metal fits, shall be placed on the Contractor's working drawings. Fits and finishes of machinery parts shall be as specified on the Contract Drawings or as specified in AASHTO.

Where surface finishes are indicated on the drawings or specified herein, the symbols used or finishes specified are in accordance with ANSI B 46.1 "Surface Texture". Values of roughness height are specified in micro-inches as an arithmetic average deviation from the mean line. Roughness specified is the maximum value, and any smoother finish will be satisfactory. Compliance with specified surface roughness will be determined by trained sense of feel and by visual inspection of the work compared to "Standard Roughness Comparisons" in accordance with the provisions of ANSI B 46.1. Values of roughness width and waviness are not specified, but shall be consistent with the general type of finish specified by the roughness height. Flaws such as scratches, ridges, holes, peaks, cracks or checks, which will make the part unsuitable, will be cause for rejection.

Where finish is not indicated or specified, the finish shall be that type which is most suitable for the application, and shall be consistent with the class of fit required. Parts of machinery in contact with other machinery parts or with supports shall be machined so as to provide even, true bearing. Surfaces in rotating or sliding contact with other surfaces shall be finished true to dimensions

given and highly polished. Surfaces to be machine-finished shall be indicated on shop drawings by symbols, which conform to ANSI B 46.1.

So far as practicable, all work shall be laid out to secure proper matching of adjoining unfinished surfaces. Where there is a large discrepancy between adjoining unfinished surfaces, they shall be machined or ground to secure proper alignment. Unfinished surfaces shall be true to the lines and dimensions shown on the shop drawings and shall be ground free of all projections and rough spots. Depressions, porosity, gouges or other anomalies in castings, forgings or weldments, or blank bolt holes not affecting the strength or usefulness of the parts may be repaired or reconditioned or filled in a manner approved by the Engineer.

Turned Bolts. The body of the turned bolts shall be finished to 63 microinches or better, as defined by AASHTO. Threads for the turned bolts and nuts shall conform to the Unified Thread Standards, coarse thread series with a Class 2A tolerance for bolts and Class 2B tolerance for nuts, in accordance with ANSI B 1.1 unless otherwise specified. Turned bolts are designated by their nominal thread size. The turned bolt body shall be 1/16th of an inch larger in diameter than the nominal size specified and shall have an LC6 fit with reamed holes. Threads shall be machine-cut, and conform to the Unified National Coarse (UNC) system of threading. The number of threads chosen shall correspond to the closest bolt diameter of the UNC system. Bolt head and nut bearing surfaces shall be flat and square with the axis of the bolt holes and shall be spot faced if necessary. Unless otherwise noted, bolt holes in machinery parts required for connecting to supporting steelwork may be sub-drilled in the shop smaller than the turned bolt diameter and shall be reamed together with supporting structural steel either during assembly or at erection, after the parts are correctly assembled and aligned. Positive type locking shall be provided. Double nuts are preferred. Where double nuts are used, heavy hex and jam nuts shall be used. Alternate locking methods shall be submitted to the Engineer for approval.

Welding. Welding required herein or called for on the Contract Drawings shall comply with AWS D1.5. Welded steel machinery parts shall be given a stress relief heat treatment prior to final machining. The Contractor shall submit a schedule of the proposed stress relief heat treatment to the Engineer for approval. For weldments with base metals not involving use of A709 Grade 50 joined with E7018 or ER70S-3 electrodes, the schedule shall include a description of the part and an explanation of the proposed heat treatment, including the rate of heating, the soaking temperature, the time at the soaking temperature, the rate of cooling, and the temperature at which the part is to be withdrawn from the chamber. Weldments of A709 Grade 50 shall be thermally stress-relieved by heating to 100°F per hour to 1100°F, holding for 1 hour per inch of maximum section thickness at 1100°F, then cooling at 100°F per hour to 600°F, then cooling in still air. Welds in all sheaves, sheave trunnion bearing pedestals, span lock guides and all machinery support mounting bracket weldments shall be 100% inspected by non-destructive methods. Acceptance criteria shall be that described in AWS D1.5 for tension welds in bridges.

Inspection And Testing. Inspection at the plant or shop will not relieve the Contractor from the responsibility of furnishing satisfactory materials and quality of work. Acceptance of a material or item shall not prevent subsequent rejection if material is found defective. The Contractor shall remedy defects due to substandard quality of work, erection, or materials for a period of one year after final tests and acceptance have been made, at his own expense. All design defects noted by the Contractor shall be reported immediately to the Engineer for appropriate disposition. The Contractor shall furnish a satisfactory guarantee to ensure correction of defects. If necessary, such defects may be corrected by other capable and approved contractors at the expense of the Contractor. The Contractor is further referred to Section 106, Control of Materials, IDOT *Standard*

Specifications for Road and Bridge Construction, for directions on treatment of unacceptable materials, testing and inspection.

Unless otherwise provided, the Contractor shall furnish without charge, test specimens required herein, and all labor, testing machines, tools and equipment necessary to prepare the specimens and to make the physical tests and analyses. Two copies of test reports and chemical analyses shall be furnished to the Engineer.

Execution

Delivery, Storage And Handling. All machinery items and material shall be delivered to the site in accordance with the approved schedule of work. Machinery items shall be properly protected until installation.

All machinery, materials and contingent items shall be properly protected for shipment and storage. Prior to shipment from the manufacturer's and/or fabricator's plant or plants, the Contractor shall prepare the various elements of the operating machinery for shipment. All large, bulky and/or heavy items shall be securely mounted on skids or pallets of ample size and strength to facilitate loading and unloading. All small parts shall be boxed in sturdy wood or heavy corrugated paperboard boxes. A packing list enclosed in a moisture-proof envelope and indicating the contents of each such box shall be securely attached to the outside of the container. The skid/pallet mounting and boxing shall be done in a manner that will prevent damage to the equipment during loading, shipment, unloading, storage and any associated and/or subsequent handling. Weatherproof covers shall be provided during shipment to protect any and all items shipped in open railway cars, trucks, or barges.

Material shall be stored so as to permit easy access for inspection and identification. Materials and items shall be protected from the ground by the use of pallets, platforms or other means. Material shall not be stored in a manner that would cause distortion or damage.

All machinery, materials and contingent items shall be properly protected for shipment and storage.

Assembled units shall be mounted on skids or otherwise crated for protection from weather, dirt and all other injurious conditions during shipment and storage as directed by the manufacturer. The Contractor shall submit advance information as to methods and materials that will be used for protection for approval by the Engineer.

All machinery units shall have lifting eye bolts or lifting holes properly sized for safe working loads and located to provide a balanced lift. Any eyebolts, special slings, strongbacks, skidding attachments or other devices used in loading the equipment at the manufacturer's and/or fabricator's plant or plants shall be furnished for unloading and handling at the destination.

Protection Of Items For Shipment. All machinery parts shall be cleaned of dirt, chips, grit, and all other injurious material prior to shipping and shall be given a coat of corrosion-inhibiting preservative.

Finished and unpainted metal surfaces that would be damaged by corrosion, shall be coated with a .030" minimum film thickness, as soon as practicable after finishing, of No-Ox-Id, A-Special, as manufactured by San-Chem Company, Chicago, Illinois, or approved equal. This coating shall be removed from all surfaces prior to installation, lubrication for operation, and from all surfaces prior

to painting after erection. If the anti-rust coating on any part becomes compromised prior to part installation, the coating shall be restored immediately.

If the anti-rust coating on any machinery part shall become broken or removed accidentally, or otherwise, it shall be restored immediately.

All machinery parts shall be completely protected from weather, dirt, and all other injurious conditions during manufacture, shipment, and while awaiting erection.

Erection. All parts of machinery shall be erected in accordance with erection marks and match-marks. Before final drilling or reaming, all parts shall be adjusted to exact alignment by means of shims furnished for each part. After final alignment and bolting, all parts shall operate smoothly.

Before erection, all finished surfaces which were coated by a rust-inhibiting coating shall have the coating removed with acetone, xylol, or other approved solvent. While machinery parts are being erected, they shall be covered by a sound, unpunctured, water-resistant tarpaulin or other durable waterproof covering when work on them is interrupted.
Bolt holes in structural steel for connecting machinery with turned bolts shall, in general, be drilled from the solid after final alignment of the machinery. Sufficient erection holes, subdrilled 1/8 to 1/4 of an inch undersize for temporary bolts, may be used for erection and alignment of the machinery. When the machinery is aligned in its final position, full-size holes for the permanent turned bolts shall be subdrilled and reamed; full-size bolts installed; and the temporary bolts removed.

Torques for all grades of bolts shall be proportioned to their yield strength and shall be indicated on the erection drawings. Turned bolt torque shall be 70% of yield strength.

The machinery shall be erected and adjusted by competent mechanics and millwrights skilled in the type of work involved. They shall be provided with all necessary precision measuring and leveling instruments as may be required. The machinery shall be erected with exactness so the various parts are truly aligned in their proper positions and, when entirely assembled, will operate smoothly without binding or undue looseness of the parts.

Throughout the installation, bolts and nuts shall be adjusted or tightened only with wrenches that fit; tightening with chisels and hammers will not be permitted.

The machinery and all machine-related elements, equipment or parts shall be assembled, erected, aligned, and adjusted at the bridge site and observed by the Engineer to whom the Contractor shall afford every opportunity and facility to satisfy himself that the work is being done in accordance with the Contract Drawings and specifications.

Alignment of all machinery is to be rechecked after all connections and drives have been installed and in operation for a minimum of 10 openings/closings.

The Contractor shall dispose of all removed materials pursuant to, and in accordance with, all pertinent existing legal and environmental requirements and guidelines for material disposal. IDOT or the Engineer shall identify any items to be retained. Retained items shall be delivered and stored as directed by IDOT, and all others shall be properly discarded.

Span Balancing. Span balance shall be maintained during all phases of construction, and includes balance monitoring throughout construction and all required weight changes to maintain the

balance requirements provided herein. The bridge design Engineer shall perform balance testing. All other activities shall be the responsibility of the Contractor.

Initial Span Balance. Prior to Construction, the Engineer shall evaluate the balance of the lift span by strain gauge balance testing. After determination of the balance condition, the Engineer will provide these results to the Contractor, along with adjustments if required to bring the lift span into acceptable balance as required below. The Engineer shall work with the Contractor in making these adjustments to achieve an acceptable balance condition as described below. This may include adding or removing weight from the counterweight to adjust the seated reaction or moving weight within the counterweight to adjust the transverse balance of the span and counterweight. The current balance condition is unknown; however, it is anticipated that weight will need to be removed from the counterweight, or temporary weight added to the lift span, to bring the balance condition within the acceptance criteria. The Engineer will re-test the lift span after adjustments have been made to obtain the initial balance condition for the start of construction.
Additional balance weights shall be furnished by the Contractor as required.

Maintaining Span Balance. Initial balancing shall establish the existing balance baseline. The Engineer shall develop and provide to the Contractor a balance spreadsheet template that will monitor the balance condition of the lift span throughout the duration of the construction phase, including the transverse balance of the lift span and counterweights. The Contractor shall be responsible for maintaining this spreadsheet by tracking the weight and location of all items added to, or subtracted from, the lift span and counterweights. The Contractor shall maintain the construction balance and adjust the final balance based upon the acceptance criteria below. Where the lift span is required to be maintained operational during the contract, it shall be maintained within the acceptable balance criteria listed below. This shall be accomplished by tracking the weight, as well as the transverse and longitudinal center of gravity locations, relative to the centerline of the bridge and counterweights. The spreadsheet shall reflect the actual work plan and shall be updated daily.

Permanent or temporary adjustments shall be made to maintain an acceptable balance condition at all times. For estimating purposes, assume 4,400 lbs will be added to the lift span due to structural steel repairs.

The Contractor shall provide, install, and remove temporary balance materials as needed. Temporary equipment and tools shall be removed from the lift span prior to each bridge opening unless they are accounted for in the balance spreadsheet.

Balance Requirements. The balance of the lift span shall be adjusted to meet the following requirements (all reactions listed are dead load only, no live loading):

a. At all times: The transverse balance of the bridge must be maintained after initial span balance is determined. The counterweight guide shoes and the rack/pinion backlash shall be monitored for change in position due to imbalance and weight adjusted as necessary.

b. During Construction, Bridge Operation Not Permitted. Bridge is in the Closed Position, with Span Locks Engaged: The lift span must be span heavy, with a minimum positive reaction at each end of 1,000 lbs with the bridge in the closed position.
c. During Construction, Bridge Operation Permitted: The lift span must be span heavy in the closed position, with a positive reaction at each end between 5,000 lbs and 10,000 lbs.
d. Final Balance Condition of Bridge Following Construction: The lift span must be span heavy in the closed position, with a positive reaction at each end between 7,000 lbs and

8,000 lbs. This value may be adjusted pending the results of the strain gauge testing and performance of the lift span during final balance testing.

Basis of Payment. This work will be paid for at the contract unit price per LUMP SUM for REFURBISHING OF OPERATING MACHINERY. This price shall include all labor, equipment and incidentals necessary to satisfactorily complete the work in accordance with the plans and specifications. This includes the removal of existing, and the installation and alignment of new components as indicated on the Mechanical Contract Drawings and Specifications.

AERIAL CABLE REPLACEMENT

Description. This work shall consist of removing existing aerial cables and designing, providing, and installing new aerial cables according to the contract plans and approved shop drawings. This work shall be according to these special provisions and the following:

The work shall meet the following requirements:

a) Aerial cable systems shall be designed according to requirements of National Electrical Safety Code C2-2012. Ice and wind loadings shall be considered in the design with no overstress in the cables or components.
b) The Contractor shall review the aerial cable design with all other involved parties to verify that the cable has adequate conductors, cables, and spares for the bridge control system, CCTV system, and all other supporting systems as shown on the plans and required by these special provisions.
c) System design and installation shall include all components required for proper grounding of structures and cables as required by the NEC.

Aerial Cable.

a) Provide UL type aerial cable(s) rated 600 volts, 90 °C, designed for bridge aerial cable or utility type applications.
b) Overall outer jacket shall be arctic rated, heavy duty, and UV-resistant LDPE per ICEA S-95-658, NMEA WC-70.
c) Conductors shall be annealed, uncoated copper in accordance with ASTM B-172/174 for 10 AWG and smaller or ASTM B-172 for 9AWG or larger, class K stranding, and section 2 of ICEA S-95-658.
d) Individual conductors and component cables shall be identified with a surface printed legend with a unique identification number/label.
e) Cables shall be continuous with no splices.
f) Power conductors shall be cabled separately from control and instrumentation conductors. Power conductors shall be grouped separately from control and instrumentation conductors to the extent practicable. All conductors to pulse generators, encoders, and resolvers shall be shielded and shall be in accordance with manufacturers' recommendations.

Terminal Cabinets.

a) Terminal cabinets shall be NEMA 4X stainless steel construction with an inner back plate for installing terminal blocks and related components.
b) Sufficient terminal blocks shall be installed for termination of all spare conductors and other conductors to be terminated inside the cabinet.
c) Terminal blocks for individual conductors shall be UL listed or recognized IEC style, rated for 600V, 90 °C. Terminal blocks shall be screw type, constructed from corrosion resistant materials and shall be suitable for solid or stranded copper wire. Provide all necessary mounting rails, end blocks, barriers, and accessories.
d) Provide modular, DIN rail-mounted, IEC style, screw type terminals for instrument cables. Terminal blocks shall include provisions for cable shields. Provide all necessary mounting rails, end blocks, barriers, and accessories.
e) Adequate space shall be provided on each side of each terminal block to allow an orderly arrangement of all leads to be terminated on the block.
f) All terminal blocks shall be clearly labeled with machine printed labels. All conductors and cables shall be consistently labeled in accordance with the requirements of Miscellaneous Electric Work special provision.
g) Cabinets shall include fiber optic termination housings as required for local fiber optic interconnections on the bridge.
h) Size cabinets as required by the NEC and as appropriate for the conductors and equipment served.

Hardware and Components.
a) Provide utility grade hardware and fittings of sufficient strength.
b) Provide only hardware and fittings made of galvanized steel, stainless steel, or non-corrosive metal.
c) Shackles and similar components shall be forged steel, hot-dip galvanized construction. Pins and bolts shall be high strength steel, hot-dip galvanized. Cotter pins and safety wire shall be stainless steel, sized as required.
d) Provide UL listed, NEMA 4X aerial cable grips (“Kellems” grips) to support the aerial cables at the aerial cable support hangers.

Construction Requirements.
a) Components to be removed shall be removed in such a manner as to leave existing aerial cable mounting plates, anchor shackles, support hangers, and other methods undamaged and in proper condition for the use contemplated. Any damage shall be repaired or replaced. Repairs or replacement shall be made as directed by the Engineer.
b) All abandoned aerial cables shall be removed completely. Aerial cables and all associated materials shall become the property of the Contractor and shall be removed and disposed from the jobsite at no additional cost.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for AERIAL CABLE REPLACEMENT.

FIBER OPTIC CABLE 12 FIBERS, SINGLE MODE

Description. This work shall consist of furnishing and installing single-mode, fiber optic cable of the number of fibers specified as shown in the plans and as directed by the Engineer. Other ancillary components required to complete the fiber optic cable plant, including but not limited to moisture and water sealants, cable caps, fan-out kits, pigtail connectors, optical patch cords, etc., shall be included in the cost of the fiber optic cable and will not be paid for separately.

Materials. The single-mode fiber optic cable shall incorporate a loose, buffer-tube design. The cable shall be an accepted product of the USDA Rural Utilities Service (RUS) 7 CFR 1755.900 and meet the requirements of ANSI/ICEA Standard for Fiber Optic Outside Plant Communications Cable, ANSI/ICEA S-87-640-1999 for a single sheathed, non-armored cable, and shall be new, unused, and of current design and manufacture.

Construction Requirements

Experience Requirements. Personnel involved in the installation, splicing, and testing of the fiber optic cables shall meet the following requirements:

a) A minimum of three years experience in the installation of fiber optic cables, including fusion splicing, terminating, and testing single mode fibers.
b) Install two systems where fiber optic cables are outdoors in conduit and where the systems have been in continuous satisfactory operation for at least two years. The Contractor shall submit as proof photographs or other supporting documents and the names, addresses, and telephone numbers of the operating personnel who can be contacted regarding the installed fiber optic systems.
c) One fiber optic cable system (which may be one of the two in the preceding paragraph), which the Contractor can arrange for demonstration to the Department's representatives and the Engineer.

Installers shall be familiar with the cable manufacturer's recommended procedures for installing the cable. This shall include knowledge of splicing procedures for equipment being used for this project and of all hardware such as breakout (furcation) kits and splice closures. The Contractor shall submit documented procedures to the Engineer for approval and for use in construction.

Personnel involved in testing shall have been trained by the manufacturer of the fiber optic cable test equipment to be used in fiber optic cable testing procedures. Proof of this training shall be submitted to the Engineer for approval. In addition, the Contractor shall submit documentation of the testing procedures and a copy of the test equipment operation manual for approval by the Engineer.

Installation in Raceways. The Contractor shall provide a cable-pulling plan, identifying where the cable will enter and the direction of pull. The plan shall address the physical protection of the cable during installation and during periods of downtime. The cable-pulling plan shall be provided to the Engineer for approval a minimum of 15 working days prior to the start of installation. The Engineer's approval shall be for the operation on the freeway and does not include an endorsement of the proposed procedures. The Contractor is responsible for the technical adequacy of the proposed procedures.

During cable pulling operations, the Contractor shall ensure that the minimum bending of the cable is maintained during the unreeling and pulling operations. Entry guide chutes shall be used to guide the cable into the conduit ports. Lubricating compound shall be used to minimize friction. Corner rollers (wheels), if used, shall not have radii less than the minimum installation-bending radius of the cable. A series array of smaller wheels can be used for accomplishing the bend if the cable manufacturers specifically approve the array.

The pulling tension shall be continuously measured and shall not be allowed to exceed the maximum tension specified by the manufacturer of the cable. Fuse links and breaks can be used to ensure that the cable tensile strength is not exceeded. The pulling system shall have an audible alarm that sounds whenever a pre-selected tension level is reached.

Where conduits containing fiber enter cabinets, vaults, and pull boxes, seal conduits with a removable mastic material to prevent entry by rodents.

Testing Requirements. The Contractor shall submit detailed test procedures for approval by the Engineer. All fibers (terminated and unterminated) shall be tested bi-directionally at both 1310 nm and 1550 nm with both an OTDR and a power meter with an optical source. For testing, intermediate breakout fibers may be concatenated and tested end-to-end. Any discrepancies between the measured results and these specifications will be resolved to the satisfaction of the Engineer.

Fibers which are not to be terminated shall be tested with a temporary fusion spliced pigtail fiber. **Mechanical splices or bare fiber adapters are not acceptable.**

The Contractor shall provide the date, time, and location of any tests required by this specification to the Engineer at least five days before performing the test. Upon completion of the cable installation, splicing, and termination, the Contractor shall test all fibers for continuity, events above 0.1 dB, and total attenuation of the cable. The test procedure shall be as follows:

A certified technician utilizing an OTDR and optical source/power meter shall conduct the installation test. The technician is directed to conduct the test using the standard operating procedures defined by the manufacturer of the test equipment. All fibers installed shall be tested in both directions.

At the completion of the test, the Contractor shall provide two copies of documentation of the test results to the Engineer. The test documentation shall be submitted as a bound copy and shall include the following:

a) Cable & Fiber Identification:
    1) Cable ID
    2) Cable Location (beginning and end point)
    3) Fiber ID, including tube and fiber color
    4) Wavelength
    5) Pulse Width (OTDR)
    6) Refractory Index (OTDR)
    7) Operator Name
    8) Date and Time
    9) Setup Parameters
    10) Range (OTDR)
    11) Scale (OTDR)

12) Setup Option chosen to pass OTDR “dead zone”

b) Test Results shall include:
   1) OTDR Test Results
   2) Total Fiber Trace
   3) Splice Loss/Gain
   4) Events > 0.10 dB
   5) Measured Length (Cable Marketing)
   6) Total Length (OTDR)
   7) Optical Source/Power Meter Total Attenuation (dB/km)

The following shall be the criteria for the acceptance of the cable:

a) The test results shall show that the dB/km loss does not exceed +3% of the factory test or 1% of the cable's published production loss. However, no event shall exceed 0.10 dB. If any event is detected above 0.10 dB, the Contractor shall replace or repair the fiber including that event point.
b) The total loss of the cable (dB), less events, shall not exceed the manufacturer's production specifications as follows: 0.5 dB/km at both 1310 and 1550 nm. If the total loss exceeds these specifications, the Contractor shall replace or repair that cable run at no additional cost to the state, both labor and materials. Elevated attenuation due to exceeding the pulling tension during installation shall require the replacement of the cable run at no additional cost to the State, including labor and materials.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for FIBER OPTIC CABLE 12 FIBERS, SINGLE MODE.

REMOVE EXISTING CONDUIT ATTACHED TO STRUCTURE

Description. This work shall consist of furnishing all labor and equipment necessary to remove the existing structure mounted conduit.

Construction Requirements. Components to be removed shall be removed in such a manner as to leave the existing structure undamaged. Any damage shall be repaired or replaced. Repairs or replacement shall be made as directed by the Engineer.

All abandoned conduits shall be removed completely. Conduit and all associated materials shall become the property of the Contractor and shall be removed and disposed from the jobsite at no additional cost.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for REMOVE EXISTING CONDUIT ATTACHED TO STRUCTURE.

REMOVE FIBER OPTIC CABLE FROM CONDUIT

Description. This work shall consist of removing existing fiber optic cable from conduit.

Construction Requirements. Fiber optic cable shall be disconnected from any splice cases, the communications end equipment, and fiber enclosures prior to removal. Fiber optic cable shall be removed from conduits, handholes, and junction boxes as directed by the Engineer. No removal work will be permitted without approval from the Engineer. All cables removed as part of this item shall become the property of the Contractor and shall be disposed according to Article 202.03 of the Standard Specifications.

Method of Measurement. This work will be measured for payment in place in feet. If two or more cables in a conduit are to be removed, each cable will be measured for payment separately.

Basis of Payment. This work will be paid for at the contract price per FOOT for REMOVE FIBER OPTIC CABLE FROM CONDUIT.

REFURBISHING OF OPERATING MACHINERY

This section includes the rehabilitation of the high misalignment couplings, pinion and rack engagement, counterweight guides, and air buffers. Work to maintain and adjust span balance is also included.

All parts furnished by the Contractor shall be new and shall be as shown or an approved equal. In cases where a substitution is proposed, it will be the responsibility of the Contractor to prove equality of the substitution with the original contract drawings, including the submission of a sample for Engineer examination and/or a visit by the Engineer to the proposed manufacturing facility, all at the cost of the Contractor. The Contractor will also provide, at no additional cost, engineering analysis, and design modifications as may be necessitated by their proposed substitution.

Description Of Work. Provide all required materials and labor to complete the work as indicated on the contract drawings and as specified herein.

Existing machinery and associated components to be removed and/or modified are listed in the contract drawings. Upon removal, these parts shall be marked or tagged.

Tasks, machinery, equipment, parts, material and methods included in this section apply to the operating machinery of the entire bridge.

Work shall include furnishing, installing and adjusting bridge machinery, and making final adjustments to assure proper mechanical operation of the bridge, and shall include:

f. Installation of new, or modification of existing, stop discs at all high misalignment couplings.
g. Adjusting the eccentric rollers to improve rack and pinion engagement.
h. Replace counterweight guides (three locations).

i. Rehabilitate air buffer piping.
j. Adjust and maintain span balance.

The Contractor shall:

c. Provide all apparatus, tools, devices, materials and labor to manufacture, paint, ship, install, erect, align, adjust, lubricate, and test the rehabilitated machinery components for the lift bridge in an approved manner as provided herein. Any apparatus, tools, devices, materials and labor, not specifically stated or included, which may be necessary for the work, shall be furnished by the Contractor.
d. Verify all dimensions. Dimensions shown in the plans are for reference and shall be verified in the field by the Contractor prior to purchase, manufacture or installation of all components and parts.

The electrical and structural aspects of this bridge rehabilitation are presented in the appropriate sections of these specifications and contract drawings.

Applicable Standards. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. The latest revisions only shall be used for all references.

Where not otherwise specified herein, workmanship, materials, fabrication and erection of the bridge components shall be in accordance with the requirements of the 2023 3rd edition of the AASHTO LRFD “Movable Highway Bridge Design Specification” and all applicable interim revisions.

Other applicable standards:

k. American Society for Testing and Materials (ASTM)
l. American National Standards Institute (ANSI)
m. American Gear Manufacturer's Association (AGMA)
n. American Society of Mechanical Engineers (ASME)
o. Society of Automotive Engineers (SAE)
p. American Welding Society (AWS), Bridge Welding Code, D1.5
q. American Iron and Steel Institute (AISI)
r. American Institute of Steel Construction (AISC)
s. Association for Materials Protection & Performance (AMPP, formerly SSPC & NACE)
t. Occupational Safety and Health Administration (OSHA)

Submittals

Standard Items. The Contractor shall submit copies of producer or manufacturer data for all purchased components. These shall include specifications, tests and installation instructions for the following items, but not excluding other items or materials not specifically mentioned:

g. Mill reports, inspection reports and physical tests of all metals.
h. Bolts, nuts, washers, and other fasteners.
i. Paint.
j. Lubricants as endorsed by machinery manufacturers for year-round exposure at this bridge site.
k. Standard stocked or custom engineered manufactured/assembled items.

l. The Contractor shall prepare a complete list of all machinery items that require lubrication. The list shall contain the type of lubricant used and the date it was installed and lubricated by the Contractor and shall be given to the Engineer prior to start up and testing of the machinery.

Drawings

Shop Drawings. The Contractor shall submit shop drawings to the Engineer for approval. These shall include complete details, classification of materials, schedules for fabrication and shop assembly, procedures and diagrams showing sequence and details for erection and approval.

Shop drawings shall be given a suitable title to describe the parts detailed thereon, and each drawing shall be identified by the complete project name and number. Shop drawing submittals shall be complete and organized to allow the review and evaluation of logical groups of items, including the interfaces between adjacent, or connected parts, and shall include the following information:

i. Reference to the standard material specifications for each item.

j. The surface finish of machined surfaces and tolerances for each dimension for which a specific fit is required. A general tolerance block shall be used to define the tolerances of all other dimensions. Fits and finishes shall meet or exceed AASHTO or suggested manufacturer's specifications.

k. Quantity required. Note that quantities shall be for the entire bridge.

l. Heat treatment or specific hardness requirements where applicable.

m. All proprietary items shall be shown in outline on shop drawings, which shall also indicate the method and sequence, to be employed in assembly of bridge machinery. The suggested use of proprietary items does not imply a sole-source intent on the part of the IDOT when other equivalent competitive products exist.

n. Shop drawings shall show all external dimensions and clearances necessary for installation, operation and inspection of each item of machinery in the bridge.

o. For all items listed or described in this section, the Contractor shall furnish complete assembly diagrams showing each part contained within the item and the manufacturer's part number assigned to each part. The diagrams shall be sufficient to enable complete disassembly and reassembly of the item covered. In the event that any part is modified in any manner from the way it is described or delivered by its original manufacturer, the Contractor shall deliver a drawing which details each modification, and the part shall be assigned a unique part number to preclude the supply of replacement parts not modified in similar fashion. The assembly drawings of each item shall, in addition to identifying and describing each internal part, contain:

8. Dimensions of all principal elements within the item.
9. Certified external dimensions affecting interfaces or installations.
10. Gross weight.
11. Capacity and normal operating ratings.

12. Method and recommended type of lubrication, including location and type of fittings and provisions for adding, draining and checking the level of each lubricant employed.
13. Inspection openings, seals, and vents, and
14. Details of all turned bolts used to mount the machinery to its supports.

p. Machinery Data. The Contractor shall furnish complete data on the design and construction of any unit furnished as part of the machinery under this Contract, including material specifications, cross-section assembly drawings, detail drawings, and dimensions of principal elements.

j. Shop Bills of Materials. Complete shop bills of materials shall be included for all machinery parts. Bills of materials should be preferably shown on the shop plans for that particular assembly, element, or detail. If the bills are not shown on the shop drawings, prints of the bills shall be furnished for approval in the same manner as specified for the drawings, and shall be directly keyed to each shop drawing it refers to. The computed weight of each piece of machinery shall be stated on the shop drawing upon which it is detailed.

Assembly and Erection Drawings. Complete assembly and erection drawings shall be furnished. These drawings shall give identifying marks and essential dimensions for locating each part or assembled unit with respect to the bridge or foundation.

Approval Process. Shop drawings, which have not been approved, or require correction, shall be resubmitted until such time as they are acceptable to the Engineer, and such procedure shall not be considered a cause for delay. The Contractor shall bear all costs or damages that may result from the ordering or fabrication of any materials prior to the acceptance of the shop drawings. As a means of expediting delivery prior to acceptance of the shop drawings, the Contractor may request in writing from the Engineer approval to order raw materials of the correct type for later fabrication from accepted shop drawings. Such approval by the Engineer shall be in writing. After acceptance of the shop drawings, the Contractor shall supply the Engineer with additional copies of the accepted drawings as may be required.

To maximize the efficiency of the approval process, shop drawing submittals shall be organized into complete logical, functional groups of parts, to allow the review and evaluation of associated components and their interfaces with mating or adjacent parts.

Field Procedures. The Contractor shall submit detailed procedures for adjustment of the eccentric roller to improve rack and pinion engagement and the field adjustment of the air buffers. These detailed procedures shall be submitted to the Engineer for approval prior to construction.

Quality Control and Assurance

Source Quality Control. Materials and fabrication procedures are subject to inspection and testing in the mill, shop and field by the Engineer. Such inspections and tests will not relieve the Contractor of responsibility for providing materials and fabrications in compliance with specified requirements.

a. Verification of Dimensions. All details shown on the contract drawings are typical and apply to all similar locations, unless otherwise indicated. All dimensions and details shall be verified at the site before proceeding with any work and to avoid causing subsequent delay in work.

b. The Engineer shall be notified immediately for clarification whenever any portion of work is not clearly or accurately defined or dimensioned.
c. Certified Test Reports. As used herein, certified test reports refer to reports of tests conducted on previously manufactured materials or equipment intended for use on the Joe Page Bridge. Certification of truthfulness and accuracy shall be required by an authorized representative of the testing agency.
d. Factory Tests. As used herein, factory tests refer to tests required to be performed on the actual materials or equipment proposed for use. Results of the tests shall be submitted in accordance with the provisions of this contract for laboratory test results. "Factory" tests shall be performed at the manufacturer's plant or supplier's premises, or at a separate, independent accredited test laboratory, if appropriate.
e. Quality Assurance Testing. The Engineer or designated engineering inspectors may select sample materials for quality assurance testing for specification compliance. Testing may be on-site, or by departmental testing, or by an independent laboratory. Test results shall be furnished to the Engineer for reference, or for other applicable disposition if not in compliance.
f. Laboratory Tests. If the Contractor submits materials, machinery or other items for testing by an independent, accredited test laboratory, results of these tests shall be concurrently furnished to the Engineer and the Contractor for their inspection and approval. If materials or items do not meet specifications or applicable standards, two more samples shall be submitted for retest. If one retest sample fails, the lot is rejectable. In the case of machinery or instruments, the item shall be repaired or adjusted no more than twice. If the item still fails to pass, a new, replacement item shall be furnished which does pass on its first test.
g. Warranty. The Contractor shall remedy defects due to substandard quality of work, erection, materials or design for a period of one year after final tests and acceptance have been made, at his own expense. The Contractor shall furnish a satisfactory guarantee to ensure correction of defects. If necessary, such defects may be corrected by other capable contractors, as approved by the Engineer, at the expense of the Contractor.

2.1 Machinery, Equipment and Material. All materials shall be new and conform to standard ASTM and other specifications included previously and indicated on the drawings and herein, or as may be otherwise applicable.
Brinell hardness and CVN toughness tests shall be made, and included on inspection reports, for castings and forgings for which hardness or toughness values are required on the drawings, and in the materials specifications or specified herein.

Steel for weldments and miscellaneous components shall be ASTM A 709 grade 36 or A709 grade 50 unless otherwise specified. Other weldable grades with a carbon equivalent of less than 0.45 per AWS D1.5, Appendix VIII4, may be selected, subject to approval. If different grades are to be welded together by various electrodes, their toughness and strength shall be pretested using the ILDOT welded notch toughness test. In general, welding materials and procedures shall conform to AWS D1.5, Structural Welding Code for Bridges.

No item shall be fabricated, machined, welded, cast or forged without sufficient advance notification to the Engineer to permit scheduling of required inspection. The Contractor shall furnish all facilities and provide for the free access at the plant or shop for the inspection of material and quality of work.

Standard Products. Machinery, materials and equipment shall be essentially the standard cataloged products of manufacturers regularly engaged in production of such machinery,

materials or equipment. The manufacturer's design shall comply with the contract documents. Materials and equipment shall essentially duplicate items that have been in satisfactory commercial or industrial use at least five years prior to bid opening. Where two units of the same class of machinery or equipment are required, these units shall be products of a single manufacturer; however, the component parts of the system need not be the products of the same manufacturer. Each major component of machinery or equipment shall have the manufacturer's name and address and the model and serial number on a nameplate, securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

Manufacturer's Recommendations. Where installation procedures, or any part thereof, are required to be in accordance with the recommendation of the manufacturer of the machinery, equipment or material being installed, printed copies of these recommendations shall be furnished to the Engineer prior to installation. Installation of the item will not be allowed to proceed until the recommendations are received.

Where periodic maintenance and lubrication practices are required by a component warranty of a manufacturer, printed copies of these recommendations shall be furnished to the Engineer prior to installation. Installation of the item will not be allowed to proceed until the recommendations are received.

Electrodes for Welding. Electrodes for welding shall comply with AWS D1.5 regarding storage, appropriate welding parameters, and the electrode manufacturer’s recommendations. For electrodes not listed or approved, they shall be tested prior to use for weldability, strength and CVN toughness. Test procedures shall be approved by the Engineer.

High Strength and Common Bolts, Nuts and Washers. Heavy and standard hexagonal head bolts, heavy and standard hexagonal nuts, and hardened washers shall comply with ASTM F 3125 grade A325, ASTM A 563, grade DH, and ASTM F 436 respectively. ASTM A 307 bolts shall not be used for the installation of any machinery on this contract.

High Strength Turned Bolts. Turned bolts up to 1.5” diameter shall be made from material and have a strength equal to ASTM F3125, grade A325. Turned bolts larger than 1.5” diameter shall be made from material and have a strength equal to ASTM A449.

Steel Castings. Steel castings shall be ASTM A 148, grade 80-50, unless otherwise specified. Steel castings of equal or greater strength and CVN toughness and corrosion resistance can be proposed where steel weldments are specified, subject to approval, by the Engineer.

Steel Weldments. Steel weldments for miscellaneous machinery supports and components shall be ASTM A 709 grade 50, unless otherwise specified. Steel weldments of equal or greater strength and CVN toughness and corrosion resistance can be proposed where steel castings are specified, subject to approval by the Engineer.

Stainless Steel Piping and Fittings. All piping and fittings for the air buffers shall be stainless steel, type 316, rated for 1500 psi minimum.

Details and Quality of Work. In general, the machinery shall be finished, assembled, and adjusted in an approved manner and according to best machine-shop practice. The limits of dimensional accuracy, which are to be observed in machining the work, and the allowances for all metal fits, shall be placed on the Contractor's working drawings. Fits and finishes of machinery parts shall be as specified on the contract drawings or as specified in AASHTO.

Where surface finishes are indicated on the drawings or specified herein, the symbols used or finishes specified are in accordance with ANSI B 46.1 "Surface Texture". Values of roughness height are specified in micro-inches as an arithmetic average deviation from the mean line. Roughness specified is the maximum value, and any smoother finish will be satisfactory. Compliance with specified surface roughness will be determined by trained sense of feel and by visual inspection of the work compared to "Standard Roughness Comparisons" in accordance with the provisions of ANSI B 46.1. Values of roughness width and waviness are not specified but shall be consistent with the general type of finish specified by the roughness height. Flaws such as scratches, ridges, holes, peaks, cracks or checks, which will make the part unsuitable, will be cause for rejection.

Where finish is not indicated or specified, the finish shall be that type which is most suitable for the application, and shall be consistent with the class of fit required. Parts of machinery in contact with other machinery parts or with supports shall be machined so as to provide even, true bearing. Surfaces in rotating or sliding contact with other surfaces shall be finished true to dimensions given and highly polished. Surfaces to be machine-finished shall be indicated on shop drawings by symbols, which conform to ANSI B 46.1.

So far as practicable, all work shall be laid out to secure proper matching of adjoining unfinished surfaces. Where there is a large discrepancy between adjoining unfinished surfaces, they shall be machined or ground to secure proper alignment. Unfinished surfaces shall be true to the lines and dimensions shown on the shop drawings and shall be ground free of all projections and rough spots. Depressions, porosity, gouges or other anomalies in castings, forgings or weldments, or blank bolt holes not affecting the strength or usefulness of the parts may be repaired or reconditioned or filled in a manner approved by the Engineer.

Turned Bolts. The body of the turned bolts shall be finished to 63 microinches or better, as defined by AASHTO. Threads for the turned bolts and nuts shall conform to the Unified Thread Standards, coarse thread series with a class 2A tolerance for bolts and class 2B tolerance for nuts, in accordance with ANSI B 1.1 unless otherwise specified. Turned bolts are designated by their nominal thread size. The turned bolt body shall be 1/16th of an inch larger in diameter than the nominal size specified and shall have an LC6 fit with reamed holes. Threads shall be machine-cut and conform to the Unified National Coarse (UNC) system of threading. The number of threads chosen shall correspond to the closest bolt diameter of the UNC system. Bolt head and nut bearing surfaces shall be flat and square with the axis of the bolt holes and shall be spot faced if necessary. Unless otherwise noted, bolt holes in machinery parts required for connecting to supporting steelwork may be sub-drilled in the shop smaller than the turned bolt diameter and shall be reamed together with supporting structural steel either during assembly or at erection, after the parts are correctly assembled and aligned. Positive type locking shall be provided. Double nuts are preferred. Where double nuts are used, heavy hex and jam nuts shall be used. Alternate locking methods shall be submitted to the Engineer for approval.

Welding. Welding required herein or called for on the contract drawings shall comply with AWS D1.5. Welded steel machinery parts shall be given a stress relief heat treatment prior to final machining. The Contractor shall submit a schedule of the proposed stress relief heat treatment to the Engineer for approval. For weldments with base metals not involving use of A709 grade 50 joined with E7018 or ER70S-3 electrodes, the schedule shall include a description of the part and an explanation of the proposed heat treatment, including the rate of heating, the soaking temperature, the time at the soaking temperature, the rate of cooling, and the temperature at which the part is to be withdrawn from the chamber. Weldments of A709 grade 50 shall be

thermally stress-relieved by heating to 100 °F per hour to 1100 °F, holding for 1 hour per inch of maximum section thickness at 1100 °F, then cooling at 100 °F per hour to 600 °F, then cooling in still air. Welds in all sheaves, sheave trunnion bearing pedestals, span lock guides and all machinery support mounting bracket weldments shall be 100% inspected by non-destructive methods. Acceptance criteria shall be that described in AWS D1.5 for tension welds in bridges.

Inspection and Testing. Inspection at the plant or shop will not relieve the Contractor from the responsibility of furnishing satisfactory materials and quality of work. Acceptance of a material or item shall not prevent subsequent rejection if material is found defective. The Contractor shall remedy defects due to substandard quality of work, erection, or materials for a period of one year after final tests and acceptance have been made, at their own expense. All design defects noted by the Contractor shall be reported immediately to the Engineer for appropriate disposition. The Contractor shall furnish a satisfactory guarantee to ensure correction of defects. If necessary, such defects may be corrected by other capable and approved contractors at the expense of the Contractor. The Contractor is further referred to Section 106 for directions on treatment of unacceptable materials, testing and inspection.

Unless otherwise provided, the Contractor shall furnish without charge, test specimens required herein, and all labor, testing machines, tools and equipment necessary to prepare the specimens and to make the physical tests and analyses. Two copies of test reports and chemical analyses shall be furnished to the Engineer.

Delivery, Storage and Handling. All machinery items and material shall be delivered to the site in accordance with the approved schedule of work. Machinery items shall be properly protected until installation.

All machinery, materials and contingent items shall be properly protected for shipment and storage. Prior to shipment from the manufacturer's and/or fabricator's plant or plants, the Contractor shall prepare the various elements of the operating machinery for shipment. All large, bulky and/or heavy items shall be securely mounted on skids or pallets of ample size and strength to facilitate loading and unloading. All small parts shall be boxed in sturdy wood or heavy corrugated paperboard boxes. A packing list enclosed in a moisture-proof envelope and indicating the contents of each such box shall be securely attached to the outside of the container. The skid/pallet mounting and boxing shall be done in a manner that will prevent damage to the equipment during loading, shipment, unloading, storage and any associated and/or subsequent handling. Weatherproof covers shall be provided during shipment to protect any and all items shipped in open railway cars, trucks, or barges.

Material shall be stored to permit easy access for inspection and identification. Materials and items shall be protected from the ground using pallets, platforms or other means. Material shall not be stored in a manner that would cause distortion or damage.

All machinery, materials and contingent items shall be properly protected for shipment and storage.

Assembled units shall be mounted on skids or otherwise crated for protection from weather, dirt, and all other injurious conditions during shipment and storage as directed by the manufacturer. The Contractor shall submit advance information as to methods and materials that will be used for protection for approval by the Engineer.

All machinery units shall have lifting eye bolts or lifting holes properly sized for safe working loads and located to provide a balanced lift. Any eyebolts, special slings, strongbacks, skidding attachments or other devices used in loading the equipment at the manufacturer's and/or fabricator's plant or plants shall be furnished for unloading and handling at the destination.

Protection of Items for Shipment. All machinery parts shall be cleaned of dirt, chips, grit, and all other injurious material prior to shipping and shall be given a coat of corrosion-inhibiting preservative.

Finished and unpainted metal surfaces that would be damaged by corrosion, shall be coated with a .030" minimum film thickness, as soon as practicable after finishing, of No-Ox-Id, A-Special, as manufactured by San-Chem Company, Chicago, Illinois, or approved equal. This coating shall be removed from all surfaces prior to installation, lubrication for operation, and from all surfaces prior to painting after erection. If the anti-rust coating on any part becomes compromised prior to part installation, the coating shall be restored immediately.

If the anti-rust coating on any machinery part shall become broken or removed accidentally, or otherwise, it shall be restored immediately.

All machinery parts shall be completely protected from weather, dirt, and all other injurious conditions during manufacture, shipment, and while awaiting erection.

Erection. All parts of machinery shall be erected in accordance with erection marks and match-marks. Before final drilling or reaming, all parts shall be adjusted to exact alignment by means of shims furnished for each part. After final alignment and bolting, all parts shall operate smoothly.

Before erection, all finished surfaces which were coated by a rust-inhibiting coating shall have the coating removed with acetone, xylol, or other approved solvent. While machinery parts are being erected, they shall be covered by a sound, unpunctured, water-resistant tarpaulin or other durable waterproof covering when work on them is interrupted.

Bolt holes in structural steel for connecting machinery with turned bolts shall, in general, be drilled from the solid after final alignment of the machinery. Sufficient erection holes, subdrilled 1/8 to 1/4 of an inch undersize for temporary bolts, may be used for erection and alignment of the machinery. When the machinery is aligned in its final position, full-size holes for the permanent turned bolts shall be subdrilled and reamed; full-size bolts installed; and the temporary bolts removed.

Torques for all grades of bolts shall be proportioned to their yield strength and shall be indicated on the erection drawings. Turned bolt torque shall be 70% of yield strength.

The machinery shall be erected and adjusted by competent mechanics and millwrights skilled in the type of work involved. They shall be provided with all necessary precision measuring and leveling instruments as may be required. The machinery shall be erected with exactness so the various parts are truly aligned in their proper positions and, when entirely assembled, will operate smoothly without binding or undue looseness of the parts.

Throughout the installation, bolts and nuts shall be adjusted or tightened only with wrenches that fit; tightening with chisels and hammers will not be permitted.

The machinery and all machine-related elements, equipment or parts shall be assembled, erected, aligned, and adjusted at the bridge site and observed by the Engineer to whom the Contractor shall afford every opportunity and facility to satisfy himself that the work is being done in accordance with the contract drawings and specifications.

Alignment of all machinery is to be rechecked after all connections and drives have been installed and in operation for a minimum of 10 openings/closings.

The Contractor shall dispose of all removed materials pursuant to, and in accordance with, all pertinent existing legal and environmental requirements and guidelines for material disposal. IDOT or the Engineer shall identify any items to be retained. Retained items shall be delivered and stored as directed by IDOT, and all others shall be properly discarded.

Span Balancing. Span balance shall be maintained during all phases of construction and includes balance monitoring throughout construction and all required weight changes to maintain the balance requirements provided herein. The Engineer shall perform balance testing. All other activities shall be the responsibility of the Contractor.

Initial Span Balance. Prior to Construction, the Engineer shall evaluate the balance of the lift span by strain gauge balance testing. After determination of the balance condition, the Engineer will provide these results to the Contractor, along with adjustments if required to bring the lift span into acceptable balance as required below. The Engineer shall work with the Contractor in making these adjustments to achieve an acceptable balance condition as described below. This may include adding or removing weight from the counterweight or moving weight within the counterweight. The current balance condition is unknown; however, it is anticipated that weight will need to be removed from the counterweight, or temporary weight added to the lift span, to bring the balance condition within the acceptance criteria. The Engineer will re-test the lift span after adjustments have been made to obtain the initial balance condition for the start of construction.

Additional balance weights shall be furnished by the Contractor as required.

Maintaining Span Balance. Initial balancing shall establish the existing balance baseline. The Engineer shall develop and provide to the Contractor a balance spreadsheet template that will monitor the balance condition of the bascule span throughout the duration of the construction phase. The Contractor shall be responsible for maintaining this spreadsheet by tracking the weight and location of all items added to, or subtracted from, the lift span and counterweights. The Contractor shall maintain the construction balance and adjust the final balance based upon the acceptance criteria below. Where the lift span is required to be maintained operational during the contract, it shall be maintained within the acceptable balance criteria listed below. This shall be accomplished by tracking the weight, as well as the transverse and longitudinal center of gravity locations, relative to the centerline of the bridge and counterweights. The spreadsheet shall reflect the actual work plan and shall be updated daily.

Permanent or temporary adjustments shall be made to maintain an acceptable balance condition at all times. For estimating purposes, assume 3,000 lbs will be added to the lift span due to structural steel repairs.

The Contractor shall provide, install, and remove temporary balance materials as needed. Temporary equipment and tools shall be removed from the lift span prior to each bridge opening unless they are accounted for in the balance spreadsheet.

Balance Requirements. The balance of the lift span shall be adjusted to meet the following requirements (all reactions listed are dead load only, no live loading):

a. During Construction, Bridge Operation Not Permitted. Bridge is in the closed position, with span locks engaged. The lift span must be span heavy, with a minimum positive reaction at each end of 1,000 lbs with the bridge in the closed position.
b. During Construction, Bridge Operation Permitted: The lift span must be span heavy in the closed position, with a positive reaction at each end between 5,000 lbs and 10,000 lbs.
c. Final Balance Condition of Bridge Following Construction: The lift span must be span heavy in the closed position, with a positive reaction at each end between 7,000 lbs and 8,000 lbs. This value may be adjusted pending the results of the strain gauge testing and performance of the lift span during final balance testing.

Refurbishing of Operating Machinery. This includes the removal of existing, and the installation and alignment of new components as indicated in these special provisions.

Basis of Payment. This work will be paid for at the contract unit bid price per LUMP SUM for REFURBISHING OF OPERATING MACHINERY. This price shall include all labor, equipment and incidentals necessary to satisfactorily complete the work in accordance with the plans and specifications.

CLOSED CIRCUIT TELEVISION CAMERA EQUIPMENT

Description. This work shall consist of removing existing closed circuit television camera equipment and furnishing, installing, and placing in satisfactory operating condition new closed circuit television camera equipment as indicated on the Plans. This work shall be according to these Special Provisions and the following:

General. Provide a closed-circuit television (CCTV) system using the most current version of system protocol and software at the time of installation. Provide compatible system components. The CCTV system shall operate over Ethernet LAN whereby the video switch (for monitors) and keyboard/mouse can communicate to the CCTV camera assemblies to receive high-quality color video and send pan/tilt/zoom control data. The furnishing, installation, and testing of all hardware, software, enclosures, and miscellaneous cabling between devices shall be included in this item.

Network Video Recorder (NVR). Provide a network video recorder (NVR) that is configurable via the use of one central GUI (Graphical User Interface). Supply a standard mouse and keyboard with the NVR for system configuration and management. Provide an NVR to comply with the following:

a) 16 or more IP video streams.
b) Redundant RAID storage system for IP video streams, playback, and export.
c) Solid state drive (SSD) for operating system storage to increase responsiveness.
d) Support recording in JPEG, MPEG-4, and H.264 IP streams.
e) Support H.264 Megapixel video streams up to 8 Megapixel resolution.
f) Automatic detection of IP cameras.
g) Operation on a 4th Generation Intel Core i5 processor or later and minimum 4 GB of RAM.

h) Windows 10 (or later) Ultimate 64-bit operating system.
i) Support of monitor walls, including cell layouts and cameras.
j) Supports attached storage (NAS) to extend video retention and ability to export recorded segments.
k) Support of Lightweight Directory Access Protocol (LDAP).
l) Operate at high video quality (4K resolution) without issues, such as video lagging or freezing.
m) System Requirements:

1) Network Interface:	Gigabit Ethernet (1000Base-T) ports (2x)
2) Processor:	Intel Core i5 64-bit CPU
3) Internal Storage:	12 TB or 30 days of video recording min., RAID-hot swappable drives,
4) USB Ports:	2 USB 2.0 ports / 1 USB 3.0 ports
5) Power Input:	100 to 240 volts AC, 60 Hz, auto ranging, internal power supply
6) Recording Throughput:	Up to 450 Mbps
7) IP Version:	IPv4 and IPv6

n) Video Requirements:

1) Video System:	NVIDIA Quadro P1000 (4 GB memory)
2) Maximum Resolution:	mDP 1.4 direct connect, HDR 5120 x 2880 at 60 Hz

o) Environmental Requirements:

1) Operating Temperature:	10°C to 35°C
2) Operating Humidity:	20% to 80%, noncondensing

Pan-Tilt-Zoom (PTZ) Camera. Provide Pan-Tilt-Cameras at the locations shown on the Plans to comply with the following:

a) Outdoor vandal and tamper resistant dome type camera with IK10 impact resistance rating.
b) Provided interior heater.
c) UL listed, rated IP67 water resistant and NEMA 4X enclosure rating, -40°C to 60°C operating temperature, 10 to 90% RH condensing operating humidity, and shock and vibration resistance complying with NEMA 4X and TS-2 paragraph 2.2.7-2.2.9.
d) Integrated Varizoom IR 200m to see in total darkness.
e) Surevision Technology, or approved equivalent, including up to 130 dB Wide Dynamic Range (WDR), advanced low light down to 0.035 lux (color), and 0.0195 lux (monochrome), and anti-bloom technology.
f) Provide progressive 1/1.8-inch CMOS sensor, up to 3840x2160 resolution at 30 frames per second, f/1.5 to f/3.4, 6.36-127mm focal length. Provide H.264 and MJPEG compression formats available for primary and secondary streams with selectable Unicast and Multicast protocols.
g) Provide min. 20x optical zoom and 12x digital zoom and delivering full frame rate HD images over the entire zoom range. Include a variable hi-speed pan and tilt drive, with 360° continuous pan and +30° to -90° tilt with additional features allowing user programmable preset viewing angles. Preset accuracy for pan and tilt function shall be within ±0.03º.
h) Provide compatible camera mounting accessories as required for structure mount and other camera installation as shown on the Plans. Mounting methods shall utilize stainless steel hardware as shown on the Plans.

i) Provide robust image stabilization, assuring a steady, clear image for installations subject to wind or vibration, allowing existing bridge structures to be used for camera mounting.
j) Support industry standard Power over Ethernet (PoE+) IEEE 802.3bt to supply power to the camera (with heaters on) over the network with RJ-45 connector for 100Base-TX and 1000Base-Tx.

CCTV Monitors. Provide industrial ultra high-definition LED monitors for viewing cameras that comply with the following:

a) Minimum 55-inch diagonal screen with LED backlight.
b) Ultra HD (3840 x 2160) resolution, 16:9 aspect ratio.
c) Response time of 8ms or faster.
d) Ultra-wide 178° (H) / 178° (V) viewing angle.
e) Minimum brightness rating of 450 cd/m2.
f) Operating temperature: 0°C to 40°C (32F to 104F).
g) HDMI, DVI, VGA, and S-Video inputs (coordinate with NVR outputs).
h) 100–240 volts, 50/60 Hz power.
i) VESA mountable.
a) Utilize existing ceiling or wall mount mounting brackets with mounting hardware. If existing mounts are incompatible, provide new heavy-duty ceiling or wall mounting brackets with mounting hardware. Secure new mounting brackets to a sturdy structural member. Provide power and video cables and all required accessories.

Ethernet Switch. Provide industrial Ethernet switches that comply with the following:

a) Provide minimum number of ports for the connected equipment plus one spare port per switch. Provide dynamic host configuration protocol (DHCP).
b) Provide minimum of two small form-factor pluggable (SFP) fiber optic ports fully compatible with fiber optic cable and connector type(s).
c) All Ethernet RJ45 and fiber optic ports must support Gigabit Ethernet speeds or higher.
d) Supports the use of industrial automation protocol Ethernet/IP (bridge control system switches only), and other protocols as required for compatibility with CCTV system equipment.
e) Supports the use of rapid spanning tree protocol (RSTP) 802.1w, IEEE 802.1x security standard for access control and authentication, simple network management protocol (SNMP) version 3, IEEE802.1q, quality of service (QoS) prioritization, and internet protocol version 4 or version 6 (IPv4 or IPv6).
f) Provide ethernet switches capable of being configured via integrated web server.
g) Provide alarm LED indicator and contact.
h) Provide memory card slot to backup configuration data and to provide Layer 2 or 3 functions, with a spare configured card.
i) Operate on 100-240VAC, 50/60Hz.
j) Provide operating temperature range of 0 to 60 degrees Celsius.

Power over Ethernet (PoE) Media Converter. Provide industrial Power over Ethernet (PoE) media converters that comply with the following:

a) DIN rail mount with all necessary hardware and brackets for mounting.
b) Provide minimum number of ports for the connected equipment. Provide IEEE 802.3bt 100W PoE+

c) Provide minimum of two small form-factor pluggable (SFP) fiber optic uplink ports fully compatible with fiber optic cable and connector type(s), where required.
d) All Ethernet RJ45 and fiber optic ports must support Gigabit Ethernet speeds or higher.
e) Support protocols as required for compatibility with CCTV system equipment.
f) Provide AC/DC power adapter rated 100 – 240 VAC, 50/60 Hz.
g) Wide operating temperature range, -40°C to 60°C.

Uninterruptible Power Supply. Provide uninterruptible power supplies (UPS) for CCTV system. Provide UPS to sustain operation during short-term power failures and power for an orderly shutdown to prevent loss of data during power failure.

Size the UPS to sustain a connected full load for a minimum of 5 minutes, or enough time for generator transfer, in the operating environment. Submit UPS sizing calculation with UPS product data submittal. For each UPS, include tabulation of connected load, run-time at full load, run-time at total connected load, and expected shut-down time for connected equipment in calculation. Provide a UPS to comply with the following additional requirements:

a) Suitable for standard EIA-310 rack mounting or DIN rail mounting.
b) Microprocessor controlled with LED or LCD status display.
c) Audible and visual alarms.
d) Computer grade sine wave power with 5 percent or less total harmonic distortion.
e) Regulated output to 120 V(ac) ± 3%
f) Frequency regulation ± 5% synchronized to utility, ± 0.5 Hz on battery.
g) Operating temperature range of -25 to 60 degrees Celsius for UPS located in outdoor/exposed enclosures; operating temperature range of 0 to 40 degrees Celsius for UPS in enclosures located in indoor (temperature controlled) areas.
h) Relative humidity operation range 0-90%.
i) Built in battery charger, with battery management to extend battery life.
j) Internal maintenance free, sealed type batteries.
k) Provisions for adding additional external batteries.
l) Lightning and surge tested to comply with ANSI/IEEE C62.41.
m) Forced air cooled by an internally mounted fan(s).
n) 10/100Mbit Ethernet communication option.

HDMI Fiber Extender Kit. Provide an HDMI fiber extender kit for CCTV camera view display on multiple monitors that comply with the following:

a) UHD resolution up to 4K @ 60 Hz
b) Support High Dynamic Range (HDR)
c) Local HDMI port to connect to local display
d) Fiber optic port must support 10 Gigabit speeds or higher.
e) Extend HDMI signal up to 950 feet
f) 100-240 VAC, 50/60 Hz

Surge Protection Device. Provide a PoE surge protection device rated for Gigabit high PoE for each camera power over Ethernet connection with the following minimum requirements:

a) UL497B listed.
b) Provide transmission speeds up to and including 1000BaseT.
c) Total discharge current rating of 10 kiloamperes at 8/20 microseconds, 10 times with 3 minute intervals.

d) Peak pulse current rating of 100 amperes at 10/1000 microseconds, 300 times with 3 minute intervals.
e) Differential and common mode protection.
f) Operating temperature range of -25 to 60 degrees Celsius.

CCTV Junction Box. Provide a junction box for each CCTV camera with the following minimum requirements:

a) Stainless steel construction with NEMA 4X rating with an inner back plate for installing terminal blocks, media converters, and related components.
b) Sufficient terminal blocks shall be installed for termination of power conductors. Terminal blocks shall be UL listed or recognized IEC style, rated for 600V, 90 degrees C. Terminal blocks shall be screw type, constructed from corrosion resistant materials, and shall be suitable for solid or stranded copper wire. Provide all necessary mounting rails, end blocks, barrier, and accessories.
c) Adequate space shall be provided on each side of each terminal block and other equipment to allow an orderly arrangement of all leads to be terminated.
d) All terminal blocks shall be clearly labeled with machine printed labels. All conductors and cables shall be consistently labeled in accordance with the requirements of MISCELLANEOUS ELECTRICAL WORK.
e) Size cabinets as required by the NEC and as appropriate for the conductors, cables, and equipment served.

Ethernet Cable. Use Ethernet cable rated ANSI/TIA-568.2-D Category 6A, IEEE 802.3bt, ANSMI/NEMA WC-CC and suitable for installation in raceways, with high density polyethylene insulation, and sunlight and oil resistant PVC outer jacket, rated 300 volts. Use Ethernet cable with a 100% coverage shield, compatible with RJ45 connectors. Employ personnel with necessary training and use manufacturer recommended tools to terminate the cable and perform testing.

CONSTRUCTION REQUIREMENTS

Submittals. The Contract Plans and Special Provisions depict the general intent and requirements of this contract but are not intended to be of sufficient detail to be used in lieu of shop drawings, layout drawings, and wiring diagrams generated by the Contractor. Additional detail development and coordination of components by the Contractor will be necessary to satisfy the requirements of the contract in general, and this section in particular, and shall be provided at no additional cost.

The following shall be submitted:

a) Catalog cuts and product data for each type of equipment, junction box, and accessory proposed for installation. Include dimensions and manufacturer's technical data on features, performances, electrical characteristics, ratings, and finishes.
b) Proposed schedules and installation procedures, submit for approval prior to commencing work.
c) Proposed locations, field of view plan, and view description for each camera.
d) Proposed architecture with communication connections.
e) Proposed power wiring diagram.
f) Camera and junction box mounting detail shop drawings.

Installation. The Contractor shall install the complete CCTV system and verify proper operation prior to removing the existing CCTV system. All components and materials removed as part of the existing CCTV system shall be returned to IDOT maintenance personnel.

Warranty.

d) All product warranty certificates, and similar warranty information, shall be stored at a single location on the project site and be turned over to the Department prior to final acceptance of the bridge electrical installation.

e) Where registration is necessary as a condition of warranty coverage, warranties shall be registered to the Department.

f) Upon final acceptance of the CCTV system by the Engineer, the Contractor shall warrant the satisfactory in-service operation of CCTV system, materials, products, and related components. This warranty shall extend for a minimum period of two years following the date of final acceptance of the bridge electrical installation.

Basis of Payment. This work will be paid for at the contract lump sum price for CLOSED CIRCUIT TELEVISION CAMERA EQUIPMENT.

STATUS OF UTILITIES TO BE ADJUSTED

NO UTILITIES TO BE ADJUSTED

The above represents the best information of the Department and is only included for the convenience of the bidder. The applicable provisions of Sections 102, 103, and Articles 105.07 and 107.20 of the Standard Specifications for Road and Bridge Construction shall apply.

If any utility adjustment or removal has not been completed when required by the Contractor's operation, the Contractor should notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's operations were affected.

CLEANING AND PAINTING CONTACT SURFACE AREAS OF EXISTING STEEL STRUCTURES

Effective: June 30, 2003 Revised: October 23, 2020

Description. This work shall consist of the surface preparation and painting of existing steel structures in areas that will be in contact with new steel.

The existing steel at primary connections (faying surfaces) shall be prepared and primed as specified herein prior to connecting new structural steel to the existing structure.

The existing steel at secondary connections shall be prepared, and if bare metal is exposed, primed as specified herein prior to connecting new structural steel to the existing structure.

General. The existing coatings shall be assumed to contain lead and may also contain other toxic metals. Any plans that may be furnished for the work, and any dimensions or other information given regarding a structure, are only for the purpose of assisting bidders in determining the type and location of steel to be cleaned and painted. It is the responsibility of the Contractor to verify this information and the accuracy of the information provided shall in no way affect the price bid for structural steel.

Materials. The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material must be tested and approved before use.

The paint materials shall meet the requirements of the following articles of the Standard Specification:

Item	Article
a) Organic Zinc Rich Primer	1008.05
b) Aluminum Epoxy Mastic	1008.03

Submittals:

a) Manufacturer's application instructions and product data sheets. Copies of the paint manufacturer's application instructions and product data sheets shall be furnished to the Engineer at the field site before steel cleaning begins.

b) Waste Management Plan. The Waste Management Plan shall address all aspects of waste handling, storage, testing, hauling and disposal. Include the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. Submit the name and qualifications of the laboratory proposed for Toxicity Characteristic Leaching Procedure (TCLP) analysis.

c) Quality Control (QC) Program. The QC Program shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings.

Construction Requirements. The Contractor shall perform first line, in process QC inspections. The Contractor shall implement the submitted and accepted QC Program to ensure that the work

accomplished complies with these specifications. The designated Quality Control inspector shall be onsite full time during any operations that affect the quality of the coating system (e.g., surface preparation, coating mixing and application, and evaluations between coats and upon completion of the work). The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 30 foot-candles (325 LUX). Illumination for cleaning and priming, including the working platforms, access, and entryways shall be at least 20 foot-candles (215 LUX).

The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Painted surfaces damaged by any Contractor's operation shall be removed and repainted, as directed by the Engineer, at the Contractor's expense.

Weather Conditions. Surfaces to be primed after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to ensure that dust, dirt, or moisture does not come in contact with surfaces cleaned prior to painting. Surfaces painted shall be protected until the coating is sufficiently cured to protect itself from damage.

Restrictions on ambient conditions shall be as per the coating manufacturer’s written specifications.

Surface Preparation: Prior to making connections or painting, all loose abrasives, paint, and residue shall be contained, collected, removed from the surface area and properly disposed of as specified later in this specification.

Soluble Salt Remediation. The Contractor shall implement surface preparation procedures and processes that will remove chloride from the surfaces to levels below 7 micrograms per square centimeter. Surfaces that may be contaminated with chloride include, but are not limited to, expansion joints and all areas that are subject to roadway splash or runoff such as fascia beams and stringers. Surfaces shall be tested for chlorides at a frequency of five tests per bearing line, with tests performed on both the beams and diaphragms/cross-frames at expansion joints.

Methods of chloride removal may include, but are not limited to, hand washing, steam cleaning, or pressure washing with or without the addition of a chemical soluble salt remover as approved by the coating manufacturer and scrubbing before or after initial paint removal. The Contractor may also elect to clean the steel and allow it to rust overnight followed by recleaning, or by utilizing blends of fine and coarse abrasives during blast cleaning, wet abrasive/water jetting methods of preparation, or combinations of the above. If steam or water cleaning methods of chloride removal are utilized over surfaces where the coating has been completely removed, and the water does not contact any lead containing coatings, the water does not have to be collected. The Contractor shall provide the proposed procedures for chloride remediation in the Surface Preparation/Painting Plan.

Upon completion of the chloride remediation steps, the Contractor shall use cell methods of field chloride extraction and test procedures (e.g., silver dichromate) accepted by the Engineer, to test representative surfaces that were previously rusted (e.g., pitted steel) for the presence of remaining chlorides. Remaining chloride levels shall be no greater than 7µg/sq cm as read

directly from the surface without any multiplier applied to the results. The testing must be performed, and the results must be acceptable, prior to painting each day.

A minimum of 5 tests per 1000 sq. ft. (93 sq m) or fraction thereof completed in a given day, shall be conducted at project start up. If results greater than 7 µg/sq cm are detected, the surfaces shall be recleaned and retested at the same frequency. If acceptable results are achieved on three consecutive days in which testing is conducted, the test frequency may be reduced to 1 test per 1000 sq. ft. (93 sq. m) prepared each day provided the chloride remediation process remains unchanged. If unacceptable results are encountered, or the methods of chloride remediation are changed, the Contractor shall resume testing at a frequency of 5 tests per 1000 sq. ft. (93 sq. m).

Following successful chloride testing the chloride test areas shall be cleaned as specified below.

Painted surfaces of new steel damaged by abrasive blasting or by the Contractor's operations shall be repainted, as directed by the Engineer, at the Contractor's expense.

a) Primary Connections. Primary connections shall be defined as faying (contact) surfaces of high-strength bolted connections specifically noted in plans.

   The surfaces of existing steel in all areas that will be in direct contact with new steel shall be prepared according to SSPC-SP15, Commercial Grade Power Tool Cleaning using vacuum-shrouded power tools equipped with HEPA filtration. The surface preparation shall remove all rust, mill scale, and existing paint from the contact surface. At the Contractors option, vacuum blast cleaning according to SSPC-SP6, Commercial Blast Cleaning may be substituted for SSPC-SP15 at no additional cost to the Department. The surface profile for primary connection surfaces shall be 1.5 to 3.5 mils (38 to 90 microns).

b) Secondary Connections. Secondary connections shall be defined as all surface areas of existing members that will be in contact with new steel except as previously defined as primary connections.

   These surfaces of existing steel in all areas that will be in direct contact with new steel shall be prepared according to SSPC-SP3, Power Tool Cleaning using vacuum-shrouded power tools equipped with HEPA filtration. The surface preparation shall remove all loose rust, loose mill scale, and loose, checked, alligatored and peeling paint from the contact surface. At the Contractors option, vacuum blast cleaning according to SSPC-SP6, Commercial Blast Cleaning or SSPC-SP15, Commercial Grade Power Tool Cleaning may be substituted for SSPC-SP3 at no additional cost to the Department. The surface profile for abrasive blast cleaning and Commercial Grade Power Tool Cleaning shall be 1.5 to 3.5 mils (38 to 90 microns).

Painting. The manufacturer’s written instructions shall be followed for paint storage, mixing, thinning, application, ambient conditions, and drying times between coats. The surface shall be free of dirt, dust, and debris prior to the application of any coat. The coatings shall be applied as a continuous film of uniform thickness free of defects including, but not limited to, runs, sags, overspray, dryspray, pinholes, voids, skips, misses, and shadow-through. Defects such as runs and sags shall be brushed out immediately during application.

The Engineer will approve surface preparation prior to priming.

a) For Primary connections the surface of the prepared steel cleaned to bare metal shall be primed with an organic zinc rich primer between 3.5 and 5.0 mils (90 and 125 microns) dry film thickness.

b) For Secondary Connections the surface of the prepared steel cleaned to bare metal shall be painted with either one coat of epoxy mastic between 5 and 7 mils (125 microns to 180 microns) in thickness or one coat of an organic zinc rich primer between 3.5 and 5.0 mils (90 and 125 microns) in thickness. Areas not cleaned to bare metal need not be painted.

For primary connections, the primer on the surface of the prepared steel shall cure according to the manufacturers instructions prior to connecting new structural steel to the existing structure. For secondary connections, the primer on the surface of the prepared steel need only be dry to touch prior to connecting new steel to the existing structure.

The surrounding coating at each prepared location shall be feathered for a minimum distance of 1 1/2 in. (40 mm) to achieve a smooth transition between the prepared areas and the existing coating.

Collection, Temporary Storage, Transportation and Disposal of Waste. The Contractor and the Department are considered to be co-generators of the waste.

The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. The Contractor shall provide for Engineer review and acceptance a Waste Management Plan that addresses all aspects of waste handling, storage, and testing, and provides the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. The Department will not perform any functions relating to the waste other than provide EPA identification numbers, provide the Contractor with the emergency response information, the emergency response telephone number required to be provided on the manifest, and to sign the waste manifest. The Engineer will obtain the identification numbers from the state and federal environmental protection agencies for the bridge(s) to be painted and furnish those to the Contractor.

All surface preparation/paint residues shall be collected daily and deposited in all-weather containers supplied by the Contractor as temporary storage. The storage area shall be secure to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g., fenced in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g., securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Waste shall be collected and transferred to bulk containers taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. Transfer into roll-off boxes shall be planned to minimize the need for workers to enter the roll-off box.

No residues shall remain on uncontained surfaces overnight. Waste materials shall not be removed through floor drains or by throwing them over the side of the bridge. Flammable materials shall not be stored around or under any bridge structures.

The all-weather containers shall meet the requirements for the transportation of hazardous materials and as approved by the Department. Acceptable containers include covered roll-off

boxes and 55-gallon drums (17H). The Contractor shall insure that no breaks and no deterioration of these containers occurs and shall maintain a written log of weekly inspections of the condition of the containers. A copy of the log shall be furnished to the Engineer upon request. The containers shall be kept closed and sealed from moisture except during the addition of waste. Each container shall be permanently identified with the date that waste was placed into the container, contract number, hazardous waste name and ID number, and other information required by the IEPA.

The Contractor shall have each waste stream sampled for each project and tested by TCLP and according to EPA and disposal company requirements. The Engineer shall be notified in advance when the samples will be collected. The samples shall be collected and shipped for testing within the first week of the project, with the results due back to the Engineer within 10 days. The costs of testing shall be considered included in this work. Copies of the test results shall be provided to the Engineer prior to shipping the waste.

The existing paint removed, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of the TCLP results. The waste shall be transported by a licensed hazardous waste transporter, treated by an IEPA permitted treatment facility to a non-hazardous special waste and disposed of at an IEPA permitted disposal facility in Illinois.

The treatment/disposal facilities shall be approved by the Engineer and shall hold an IEPA permit for waste disposal and waste stream authorization for this cleaning residue. The IEPA permit and waste stream authorization must be obtained prior to beginning cleaning, except that if necessary, limited paint removal will be permitted in order to obtain samples of the waste for the disposal facilities. The waste shall be shipped to the facility within 90 days of the first accumulation of the waste in the containers. When permitted by the Engineer, waste from multiple bridges in the same contract may be transported by the Contractor to a central waste storage location(s) approved by the Engineer in order to consolidate the material for pick up, and to minimize the storage of waste containers at multiple remote sites after demobilization. Arrangements for the final waste pickup shall be made with the waste hauler by the time blast cleaning operations are completed or as required to meet the 90-day limit stated above.

The Contractor shall submit a waste accumulation inventory table to the Engineer no later than the 5th day of the month. The table shall show the number and size of waste containers filled each day in the preceding month and the amount of waste shipped that month, including the dates of shipments.

The Contractor shall prepare a manifest supplied by the IEPA for off-site treatment and disposal before transporting the hazardous waste off-site. The Contractor shall prepare a land ban notification for the waste to be furnished to the disposal facility. The Contractor shall obtain the handwritten signature of the initial transporter and date of the acceptance of the manifest. The Contractor shall send one copy of the manifest to the IEPA within two working days of transporting the waste off-site. The Contractor shall furnish the generator copy of the manifest and a copy of the land ban notification to the Engineer. The Contractor shall give the transporter the remaining copies of the manifest.

All other project waste shall be removed from the site according to Federal, State and Local regulations, with all waste removed from the site prior to final Contractor demobilization.

The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each

day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.

The Contractor is responsible for the payment of any fines and undertaking any clean up activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal.

Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each bridge site.

It is understood and agreed that the cost of all work outlined above, unless otherwise specified, has been included in the bid, and no extra compensation will be allowed.

Basis of Payment: This work will be considered included in the cost of "Furnishing and Erecting Structural Steel", "Erecting Structural Steel", or "Structural Steel Repair", as applicable, according to the Standard Specifications, unless otherwise specified on the plans.

CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES

Effective: October 2, 2001
Revised: April 22, 2016

Description. This work shall consist of the containment, collection, temporary storage, transportation and disposal of waste from lead paint removal projects. Waste requiring containment and control includes, but is not limited to, old paint, spent abrasives, corrosion products, mill scale, dirt, dust, grease, oil, salts, and water used for cleaning the surface of existing lead coatings prior to overcoating.

General. The existing coatings contain lead and may also contain other toxic metals. This specification provides the requirements for containment and for the protection of the public, and the environment from exposure to harmful levels of toxic metals that may be present in the paint being removed or repaired. The Contractor shall take reasonable and appropriate precautions to protect the public from the inhalation or ingestion of dust or debris from the operations, and is responsible for the clean-up of all spills of waste at no additional cost to the Department.

The Contractor shall comply with the requirements of this Specification and all applicable Federal, State, and Local laws, codes, and regulations, including, but not limited to the regulations of the United States Environmental Protection Agency (USEPA), Occupational Safety and Health Administration (OSHA), and Illinois Environmental Protection Agency (IEPA). The Contractor shall comply with all applicable regulations even if the regulation is not specifically referenced herein. If a Federal, State, or Local regulation is more restrictive than the requirements of this Specification, the more restrictive requirements shall prevail.

Submittals. The Contractor shall submit for Engineer review and acceptance, the following drawings and plans for accomplishing the work. The submittals shall be provided within 30 days of execution of the contract unless given written permission by the Engineer to submit them at a

later date. Work cannot proceed until the submittals are accepted by the Engineer. Details for each of the plans are presented within the body of this specification. The Contractor shall also maintain on site, copies of the standards and regulations referenced herein (list provided in appendix 1).

Containment Plans. The containment plans shall include drawings, equipment specifications, and calculations (wind load, air flow and ventilation when negative pressure is specified. The plans shall include copies of the manufacturer's specifications for the containment materials and equipment that will be used to accomplish containment and ventilation.

When required by the contract plans, the submittal shall provide calculations that assure the structural integrity of the bridge when it supports the containment and the calculations and drawings shall be signed and sealed by a Structural Engineer licensed in the state of Illinois.

When working over the railroad or navigable waterways, the Department will notify the respective agencies that work is being planned. Unless otherwise noted in the plans, the Contractor is responsible for follow up contact with the agencies, and shall provide evidence that the railroad, Coast Guard, Corps of Engineers, and other applicable agencies are satisfied with the clearance provided and other safety measures that are proposed.

Environmental Monitoring Plan. The Environmental Monitoring Plan shall address the visual inspections and clean up of the soil and water that the Contractor will perform, including final project inspection and cleanup. The plan shall address the daily visible emissions observations that will be performed and the corrective action that will be implemented in the event emissions or releases occur. When high volume ambient air monitoring is required, an Ambient Air Monitoring Plan shall be developed. The plan shall include:

- Proposed monitor locations and power sources in writing. A site sketch shall be included, indicating sensitive receptors, monitor locations, and distances and directions from work area.
- Equipment specification sheet for monitors to be used, and a written commitment to calibrate and maintain the monitors.
- Include a procedure for operation of monitors per 40 CFR 50, Appendix B, including use of field data chain-of-custody form. Include a sample chain of custody form.
- Describe qualifications/training of monitor operator.
- The name, contact information (person's name and number), and certification of the laboratory performing the filter analysis. Laboratory shall be accredited by one of the following: 1) the American Industrial Hygiene Association (AIHA) for lead (metals) analysis, 2) Environmental Lead Laboratory Accreditation Program (ELLAP) for metals analysis, 3) State or federal accreditation program for ambient air analysis or, 4) the EPA National Lead Laboratory Accreditation Program (NLLAP) for lead analysis. The laboratory shall provide evidence of certification, a sample laboratory chain-of-custody form, and sample laboratory report that provides the information required by this specification. The laboratory shall also provide a letter committing to do the analysis per 40 CFR 50, Appendix G. If the analysis will not be performed per 40 CFR Appendix G, a proposed alternate method shall be described, together with the rationale for using it. The alternate method can not be used unless specifically accepted by the Engineer in writing.

Waste Management Plan. The Waste Management Plan shall address all aspects of handling, storage, testing, hauling and disposal of all project waste, including waste water. Include the names, addresses, and a contact person for the proposed licensed waste haulers and

disposal facilities. Submit the name and qualifications of the laboratory proposed for Toxicity Characteristic Leaching Procedure (TCLP) analysis. If the use of abrasive additives is proposed, provide the name of the additive, the premixed ratio of additive to abrasive being provided by the supplier, and a letter from the supplier of the additive indicating IEPA acceptance of the material. Note that the use of any steel or iron based material, such as but not limited to grit, shot, fines, or filings as an abrasive additive is prohibited. The plan shall address weekly inspections of waste storage, maintaining an inspection log, and preparing a monthly waste accumulation inventory table.

Contingency Plan. The Contractor shall prepare a contingency plan for emergencies including fire, accident, failure of power, failure of dust collection system, failure of supplied air system or any other event that may require modification of standard operating procedures during lead removal. The plan shall include specific procedures to ensure safe egress and proper medical attention in the event of an emergency.

When the Engineer accepts the submittals, the Contractor will receive written notification. The Contractor shall not begin any work until the Engineer has accepted the submittals. The Contractor shall not construe Engineer acceptance of the submittals to imply approval of any particular method or sequence for conducting the work, or for addressing health and safety concerns. Acceptance of the plans does not relieve the Contractor from the responsibility to conduct the work according to the requirements of Federal, State, or Local regulations, this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.

Quality Control (QC) Inspections. The Contractor shall perform first line, in process QC inspections of all environmental control and waste handling aspects of the project to verify compliance with these specification requirements and the accepted drawings and plans. The Contractor shall use the IDOT Environmental Daily Report form to record the results of the inspections. Alternative forms (paper or electronic) will be allowed provided they furnish equivalent documentation as the IDOT form, and they are accepted as part of the QC Program submittal. The completed reports shall be turned into the Engineer before work resumes the following day. Contractor QC inspections shall include, but not be limited to the following:

- Proper installation and continued performance of the containment system(s) in accordance with the approved drawings.
- Visual inspections of emissions into the air and verification that the cause(s) for any unacceptable emissions is corrected.
- Set up, calibration, operation, and maintenance of the regulated area and high volume ambient air monitoring equipment, including proper shipment of cassettes/filters to the laboratory for analysis. Included is verification that the Engineer receives the results within the time frames specified and that appropriate steps are taken to correct work practices or containment in the event of unacceptable results.
- Visual inspections of spills or deposits of contaminated materials into the water or onto the ground, pavement, soil, or slope protection. Included is verification that proper cleanup is undertaken and that the cause(s) of unacceptable releases is corrected.
- Proper implementation of the waste management plan including laboratory analysis and providing the results to the Engineer within the time frames specified herein.
- Proper implementation of the contingency plans for emergencies.

The personnel providing the QC inspections shall poses current SSPC-C3 certification or equal, including the annual training necessary to maintain that certification (SSPC-C5 or equal), and shall provide evidence of successful completion of 2 bridge lead paint removal projects of similar or greater complexity and scope that have been completed in the last 2 years. References shall include the name, address, and telephone number of a contact person employed by the bridge owner. Proof of initial certification and the current annual training shall also be provided.

Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all of the QC monitoring inspections that are undertaken. The presence or activity of Engineer observations in no way relieves the Contractor of the responsibility to provide all necessary daily QC inspections of its own and to comply with all requirements of this Specification.

Containment Requirements. The Contractor shall install and maintain containment systems surrounding the work for the purpose of controlling emissions of dust and debris according to the requirements of this specification. Working platforms and containment materials that are used shall be firm and stable and platforms shall be designed to support the workers, inspectors, spent surface preparation media (e.g., abrasives), and equipment during all phases of surface preparation and painting. Platforms, cables, and other supporting structures shall be designed according to OSHA regulations. If the containment needs to be attached to the structure, the containment shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.

The containment shall be dropped in the event of sustained winds of 40 mph (64 kph) or greater and all materials and equipment secured.

The Contractor shall provide drawings showing the containment system and indicating the method(s) of supporting the working platforms and containment materials to each other and to the bridge. When the use of negative pressure and airflow inside containment is specified, the Contractor shall provide all ventilation calculations and details on the equipment that will be used for achieving the specified airflow and dust collection.

When directed in the contract plans, the Contractor shall submit calculations and drawings, signed and sealed by a Structural Engineer licensed in the state of Illinois, that assure the structural integrity of the bridge under the live and dead loads imposed, including the design wind loading.

When working over railroads, the Contractor shall provide evidence that the proposed clearance and the safety provisions that will be in place (e.g., flagman) are acceptable to the railroad. In the case of work over navigable waters, the Contractor shall provide evidence that the proposed clearance and provisions for installing or moving the containment out of navigation lanes is acceptable to authorities such as the Coast Guard and Army Corps of Engineers. The Contractor shall include plans for assuring that navigation lighting is not obscured, or if it is obscured, that temporary lighting is acceptable to the appropriate authorities (e.g., Coast Guard) and will be utilized.

Engineer review and acceptance of the drawings and calculations shall not relieve the Contractor from the responsibility for the safety of the working platforms and containment, and for providing ample ventilation to control worker and environmental exposures. After the work platforms and containment materials are erected additional measures may be needed to ensure worker safety according to OSHA regulations. The Contractor shall institute such measures at no additional cost to the Department.

Containment for the cleaning operation of this contract is defined as follows:

- The containment system shall maintain the work area free of visible emissions of dust and debris according to all provisions of this Specification, with no debris permitted outside of the regulated area at any time. All debris within the regulated area and within the containment shall be collected at the end of the last shift each day, and properly stored in sealed containers. Cleaning shall be accomplished by HEPA vacuuming unless it is conducted within a containment that is designed with a ventilation system capable of collecting the airborne dust and debris created by sweeping and blowing with compressed air. The ventilation system shall be in operation during the cleaning.

- The containment systems shall comply with the specified SSPC Guide 6 classifications as presented in Table 1 for the method of paint removal utilized.

- TSP-lead in the air at monitoring locations selected by the Contractor shall comply with the requirements specified herein.

The Contractor shall take appropriate action to avoid personnel injury or damage to the structure from the installation and use of the containment system. If the Engineer determines that there is the potential for structural damage caused by the installed containment system, the Contractor shall take appropriate action to correct the situation.

In addition to complying with the specific containment requirements in Table 1 for each method of removal, the Contractor shall provide and maintain coverage over the ground in the areas to be cleaned. This coverage shall be capable of catching and containing surface preparation media, paint chips, and paint dust in the event of an accidental escape from the primary containment. The containment materials shall be cleaned of loose material prior to relocation or dismantling. Acceptable methods of cleaning include blowing down the surfaces with compressed air while the ventilation system is in operation, HEPA vacuuming, and/or wet wiping. If paint chips or dust is observed escaping from the containment materials during moving, all associated operations shall be halted and the materials and components recleaned.

The containment systems shall also meet the following requirements:

a) Dry Abrasive Blast Cleaning - Full Containment with Negative Pressure (SSPC Class 1A)

The enclosure shall be designed, installed, and maintained to sustain maximum anticipated wind forces, including negative pressure. Flapping edges of containment materials are prohibited and the integrity of all containment materials, seams, and seals shall be maintained for the duration of the project. Airflow inside containment shall be designed to provide visibility and reduce worker exposures to toxic metals according to OSHA regulations and as specified in Table 1 and its accompanying text. When the location of the work on the bridge, or over lane closures permit, the blast enclosure shall extend a minimum of 3 ft. (1 m) beyond the limits of surface preparation to allow the workers to blast away from, rather than into the seam between the containment and the structure. The blast enclosure shall have an airlock or resealable door entryway to allow entrance and exit from the enclosure without allowing the escape of blasting residue.

If recyclable metallic abrasives are used, the Contractor shall operate the equipment in a manner that minimizes waste generation. Steps shall also be taken to minimize dust

generation during the transfer of all abrasive/paint debris (expendable or recyclable abrasives) for recycling or disposal. Acceptable methods include, but are not limited to vacuuming, screw or belt conveyance systems, or manual conveyance. However manual conveyance is only permitted if the work is performed inside a containment that is equipped with an operating ventilation system capable of controlling the dust that is generated.

Appropriate filtration shall be used on the exhaust air of dust collection and abrasive recycling equipment as required to comply with IEPA regulations. The equipment shall be cleaned/maintained, enclosed, or replaced if visible dust and debris are being emitted and/or the regulated area or high volume monitor lead levels are not in compliance.

Areas beneath containment connection points that were shielded from abrasive blast cleaning shall be prepared by vacuum blast cleaning or vacuum-shrouded power tool cleaning after the containment is removed.

b) Vacuum Blast Cleaning within Containment (SSPC-Class 4A)

Vacuum blasting equipment shall be fully automatic and capable of cleaning and recycling the abrasive. The system shall be designed to deliver cleaned, recycled blasting abrasives and provide a closed system containment during blasting. The removed coating, mill scale, and corrosion shall be separated from the abrasive, and stored for disposal.

The Contractor shall attach containment materials around and under the work area to catch and contain abrasive and waste materials in the event of an accidental escape from the vacuum shroud. This containment is in addition to the ground covers specified earlier.

It is possible that the close proximity of some structural steel members, such as the end diaphragms or end cross-frames underneath transverse deck expansion joints, preclude the use of the vacuum blasting equipment for the removal of the old paint. For surfaces that are inaccessible for the nozzles of the vacuum blasting equipment, the Contractor shall remove the paint by means of full containment inside a complete enclosure as directed by the Engineer.

c) Vacuum-Shrouded Power Tool Cleaning within Containment (SSPC-Class 3P)

The Contractor shall utilize power tools equipped with vacuums and High Efficiency Particulate Air (HEPA) filters. The Contractor shall attach containment walls around the work area, and install containment materials beneath the work area to catch and contain waste materials in the event of an accidental escape from the vacuum shroud. This containment is in addition to the ground covers specified earlier and shall be installed within 10 ft. (3m) of the areas being cleaned.

d) Power Tool Cleaning without Vacuum, within Containment (SSPC-Class 2P)

When the use of power tools without vacuum attachments is authorized by the Engineer, the Contractor shall securely install containment walls and flooring around the work area to capture and collect all debris that is generated. The containment material requirements for this Class 2P are similar to Class 3P used for vacuum-shrouded tools, but the supporting structure will be more substantial in Class 2P to better secure the containment materials from excessive movement that could lead to the loss of waste paint chips and debris. Containment

beneath the work shall be within 10 ft. (3m) of the areas being cleaned, and is in addition to the ground covers specified earlier.

Water Washing, Water Jetting or Wet Abrasive Blast Cleaning within Containment (SSPC Class 2W-3W)

Water washing of the bridge for the purpose of removing chalk, dirt, grease, oil, bird nests, and other surface debris, and water jetting or wet abrasive blast cleaning for the purpose of removing paint and surface debris shall be conducted within a containment designed, installed, and maintained in order to capture and contain all water and waste materials. The containment shall consist of impermeable floors and lower walls to prevent the water and debris from escaping. Permeable upper walls and ceilings are acceptable provided the paint chips, debris, and water, other than mists, are collected. A fine mist passing through the permeable upper walls is acceptable, provided the environmental controls specified below are met. If paint chips, debris, or water, other than mists, escape the containment system, impermeable walls and ceilings shall be installed.

When water is used for surface cleaning, the collected water shall be filtered to separate the particulate from the water. Recycling of the water is preferred in order to reduce the volume of waste that is generated. The water after filtration shall be collected and disposed of according to the waste handling portions of this specification.

When a slurry is created by injecting water into the abrasive blast stream, the slurry need not be filtered to separate water from the particulate.

Environmental Controls and Monitoring. The Contractor shall prepare and submit to the Engineer for review and acceptance, an Environmental Monitoring Plan. The purpose of the plan is to address the observations and equipment monitoring undertaken by the Contractor to confirm that project dust and debris are not escaping the containment into the surrounding air, soil, and water.

a) Soil and Water. Containment systems shall be maintained to prevent the escape of paint chips, abrasives, and other debris into the water, and onto the ground, soil, slope protection, and pavements. Releases or spills of, paint chips, abrasives, dust and debris that have become deposited on surrounding property, structures, equipment or vehicles, and bodies of water are unacceptable. If there are inadvertent spills or releases, the Contractor shall immediately shut down the emissions-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

Water booms, boats with skimmers, or other means as necessary shall be used to capture and remove paint chips or project debris that falls or escapes into the water.

At the end of each workday at a minimum, the work area inside and outside of containment, including ground tarpaulins, shall be inspected to verify that paint debris is not present. If debris is observed, it shall be removed by hand and HEPA-vacuuming. If wet methods of preparation are used, the damp debris can remain overnight provided it is protected from accidental release by securely covering the waste, folding the waste into the ground tarps, or by other acceptable methods. Prior to commencing work the next day, the debris from the folded ground tarps shall be removed.

Upon project completion, the ground and water in and around the project site are considered to have been properly cleaned if paint chips, paint removal media (e.g., spent abrasives), fuel, materials of construction, litter, or other project debris have been removed.

NOTE: All project debris must be removed even if the debris (e.g.,spent abrasive and paint chips) was a pre-existing condition.

b) Visible Emissions. The Contractor shall conduct observations of visible emissions and releases on an ongoing daily basis when dust-producing activities are underway, such as paint removal, clean up, waste handling, and containment dismantling or relocation. Note that visible emissions observations do not apply to the fine mist that may escape through permeable containment materials when wet methods of preparation are used.

Visible emissions in excess of SSPC-TU7, Method A (Timing Method), Level 1 (1% of the workday) are unacceptable. In an 8-hour workday, this equates to emissions of a cumulative duration no greater than 5 minutes.. This criterion applies to scattered, random emissions of short duration. Sustained emissions from a given location (e.g., 1 minute or longer), regardless of the total length of emissions for the workday, are unacceptable and action shall be initiated to halt the emission.

If unacceptable visible emissions or releases are observed, the Contractor shall immediately shut down the emission-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

c) Ambient Air Monitoring. The Contractor shall perform ambient air monitoring according to the following:

- Monitor Siting. The Contractor shall collect and analyze air samples to evaluate levels of TSP-lead if there are sensitive receptors within 5 times the height of the structure or within 1000 ft. (305 m) of the structure, whichever is greater. If sensitive receptors are not located within these limits, monitoring is not required. Sensitive receptors are areas of public presence or access including, but not limited to, homes, schools, parks, playgrounds, shopping areas, livestock areas, and businesses. The motoring public is not considered to be a sensitive receptor for the purpose of ambient air monitoring.

  The Contractor shall locate the monitors according to Section 7.3 of SSPC-TU-7, in areas of public exposure and in areas that will capture the maximum pollutant emissions resulting from the work. The Contractor shall identify the recommended monitoring sites in the Ambient Air Monitoring Plan, including a sketch identifying the above. The monitors shall not be sited until the Engineer accepts the proposed locations. When possible, monitors shall be placed at least 30 feet (9 m) away from highway traffic.

- Equipment Provided by Contractor. The Contractor shall provide up to 4 monitors per work site and all necessary calibration and support equipment, power to operate them, security (or arrangements to remove and replace the monitors daily), filters, flow chart recorders and overnight envelopes for shipping the filters to the laboratory. The number of monitors required will be indicated in the Plan Notes. Each monitor shall be tagged with the calibration date.

- Duration of Monitoring. Monitoring shall be performed for the duration of dust-producing operations (e.g., paint removal, waste handling, containment clean-up and movement, etc.) or a minimum of 8 hours each day (when work is performed).

  The monitoring schedule shall be as follows:

  1. For dry abrasive blast cleaning monitoring shall be conducted full time during all days of dust-producing operations (e.g., paint removal, waste handling, containment movement, etc.).
  2. For wet abrasive blast cleaning, water jetting, or power tool cleaning, monitoring shall be conducted for the first 5 days of dust producing operations. If the results after 5 days are acceptable, monitoring may be discontinued. If the results are unacceptable, corrective action shall be initiated to correct the cause of the emissions, and monitoring shall continue for an additional 5 days. If the results are still unacceptable, the Engineer may direct that the monitoring continue full time.

     When monitoring is discontinued, if visible emissions are observed and/or the Contractor's containment system changes during the course of the project, then air monitoring will again be required for a minimum of two consecutive days until compliance is shown.

- Background Monitoring. Background samples shall be collected for two days prior to the start of work while no dust producing operations are underway to provide a baseline. The background monitoring shall include one weekday and one weekend day. The background monitoring shall coincide with the anticipated working hours for the paint removal operations, but shall last for a minimum of 8 hours each day.

- Monitor Operation and Laboratory Analysis.

  The Contractor shall calibrate the monitors according to the manufacturer's written instructions upon mobilization to the site and quarterly. Each monitor shall be tagged with the calibration date, and calibration information shall be provided to the Engineer upon request.

  All ambient air monitoring shall be performed by the Contractor according to the accepted Ambient Air Monitoring Plan and according to EPA regulations 40 CFR Part 50 Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method), and 40 CFR Part 50 Appendix G, Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air.

  Filters shall be placed in monitors and monitors operated each day prior to start of dust-producing operations and the filters removed upon completion each day. The Contractor shall advise the Engineer in advance when the filters will be removed and replaced. The monitor operator shall record the following information, at a minimum, on field data and laboratory chain-of-custody forms (or equivalent):

  1. Monitor location and serial number
  2. Flow rate, supported by flow charts
  3. Start, stop times and duration of monitoring
  4. Work activities and location of work during the monitoring period

5. Wind direction/speed

For the first 5 days of monitoring, the Contractor shall submit the filters, field data and laboratory chain-of-custody forms together with the flow chart recorders (i.e. monitor flow rate and the duration of monitoring) on a daily basis in an overnight envelope to the laboratory for analysis. The laboratory must provide the Engineer with written results no later than 72 hours after the completion of each day's monitoring. At the discretion of the Engineer, if the initial 5 days of monitoring on full time monitoring projects is acceptable, the filters may be sent to the laboratory every 3 days rather than every day. Written results must be provided to the Engineer no later than 5 days after the completion of monitoring for the latest of the 3 days.

- Ambient Air Monitoring Results. The laboratory shall provide the report directly to the Engineer with a copy to the contractor. The report shall include:

1. Monitor identification and location
2. Work location and activities performed during monitoring period
3. Monitor flow rate, duration, and volume of air sampled
4. Laboratory methods used for filter digestion / analysis
5. Sample results for the actual duration of monitoring
6. Sample results expressed in terms of a 24 hour time weighted average. Assume zero for period not monitored.
7. Comparison of the results with the acceptance criteria indicating whether the emissions are compliant.
8. Field data and chain-of-custody records used to derive results.

Should revised reports or any information regarding the analysis be issued by the laboratory directly to the Contractor at any time, the contractor shall immediately provide a copy to the Engineer and advise the laboratory that the Engineer is to receive all information directly from the laboratory.

- Acceptance Criteria. TSP-lead results at each monitor location shall be less than 1.5 μg/cu m per calendar quarter converted to a daily allowance using the formulas from SSPC- TU7 as follows, except that the maximum 24-hour daily allowance shall be no greater than 6 μg/cu m.

The formula for determining a 24-hour daily value based on the actual number of paint disturbance days expected to occur during the 90-day quarter is:

DA = (90 ÷ PD) x 1.5 μg/cu m, where

DA is the daily allowance, and
PD is the number of preparation days anticipated in the 90-day period
If the DA calculation is > 6.0 μg/cu m, use 6.0 μg/cu m.

Regulated Areas. Physically demarcated regulated area(s) shall be established around exposure producing operations at the OSHA Action Level for the toxic metal(s) present in the coating. The Contractor shall provide all required protective clothing and personal protective equipment for personnel entering into a regulated area. Unprotected street clothing is not permitted within the regulated areas.

Hygiene Facilities/Protective Clothing/Blood Tests. The Contractor shall provide clean lavatory and hand washing facilities according to OSHA regulations and confirm that employees wash hands, forearms, and face before breaks. The facilities shall be located at the perimeter of the regulated area in close proximity to the paint removal operation. Shower facilities shall be provided when workers' exposures exceed the Permissible Exposure Limit. Showers shall be located at each bridge site, or if allowed by OSHA regulations, at a central location to service multiple bridges. The shower and wash facilities shall be cleaned at least daily during use.

All wash and shower water shall be filtered and containerized. The Contractor is responsible for filtration, testing, and disposal of the water.

The Contractor shall make available to all IDOT project personnel a base line and post project blood level screening for lead and zinc protoporphyrin (ZPP) (or the most current OSHA requirement) levels as determined by the whole blood lead method, utilizing the Vena-Puncture technique. This screening shall be made available every 2 months for the first 6 months, and every 6 months thereafter.

The Contractor shall provide IDOT project personnel with all required protective clothing and equipment, including disposal or cleaning. Clothing and equipment includes but is not limited to disposable coveralls with hood, booties, disposable surgical gloves, hearing protection, and safety glasses. The protective clothing and equipment shall be provided and maintained on the job site for the exclusive, continuous and simultaneous use by the IDOT personnel. This equipment shall be suitable to allow inspection access to any area in which work is being performed.

All handwash and shower facilities shall be fully available for use by IDOT project personnel.

Site Emergencies.

a) Stop Work. The Contractor shall stop work at any time the conditions are not within specifications and take the appropriate corrective action. The stoppage will continue until conditions have been corrected. Standby time and cost required for corrective action is at the Contractor's expense. The occurrence of the following events shall be reported in writing to IDOT and shall require the Contractor to automatically stop lead paint removal and initiate clean up activities.

    - Airborne lead levels at any of the high volume ambient air monitoring locations that exceed the limits in this specification, or airborne lead in excess of the OSHA Action Level at the boundary of the regulated area.
    - Break in containment barriers.
    - Visible emissions in excess of the specification tolerances.
    - Loss of negative air pressure when negative air pressure is specified (e.g., for dry abrasive blast cleaning).
    - Serious injury within the containment area.
    - Fire or safety emergency
    - Respiratory system failure
    - Power failure

b) Contingency Plans and Arrangements. The Engineer will refer to the contingency plan for site specific instructions in the case of emergencies.

The Contractor shall prepare a contingency plan for emergencies including fire, accident, failure of power, failure of dust collection system, failure of supplied air system or any other event that may require modification of standard operating procedures during lead removal. The plan shall include specific procedures to ensure safe egress and proper medical attention in the event of an emergency. The Contractor shall post the telephone numbers and locations of emergency services including fire, ambulance, doctor, hospital, police, power company and telephone company on clean side of personnel decontamination area.

A two-way radio, or equal, as approved by the Engineer, capable of summoning emergency assistance shall be available at each bridge during the time the Contractor's personnel are at the bridge site under this contract. The following emergency response equipment described in the contingency plan (generic form attached) shall be available during this time as well: an appropriate portable fire extinguisher, a 55 gal (208 L) drum, a 5 gal (19 L) pail, a long handled shovel, absorbent material (one bag).

A copy of the contingency plan shall be maintained at each bridge during cleaning operations and during the time the Contractor's personnel are at the bridge site under this contract. The Contractor shall designate the emergency coordinator(s) required who shall be responsible for the activities described.

An example of a contingency plan is included at the end of this Special Provision.

Collection, Temporary Storage, Transportation and Disposal of Waste. The Contractor and the Department are considered to be co-generators of the waste.

The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. The Contractor shall provide for Engineer review and acceptance a Waste Management Plan that addresses all aspects of waste handling, storage, and testing, and provides the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. The Department will not perform any functions relating to the waste other than provide EPA identification numbers, provide the Contractor with the emergency response information, the emergency response telephone number required to be provided on the manifest, and to sign the waste manifest. The Engineer will obtain the identification numbers from the state and federal environmental protection agencies for the bridge(s) to be painted and furnish those to the Contractor.

All surface preparation/paint residues shall be collected daily and deposited in all-weather containers supplied by the Contractor as temporary storage. The storage area shall be secure to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g., fenced in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g., securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Waste shall be collected and transferred to bulk containers taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. Transfer into roll-off boxes shall be planned to minimize the need for workers to enter the roll-off box.

No residues shall remain on surfaces overnight, either inside or outside of containment. Waste materials shall not be removed through floor drains or by throwing them over the side of the bridge. Flammable materials shall not be stored around or under any bridge structures.

The all-weather containers shall meet the requirements for the transportation of hazardous materials and as approved by the Department. Acceptable containers include covered roll-off boxes and 55-gallon drums (17H). The Contractor shall insure that no breaks and no deterioration of these containers occurs and shall maintain a written log of weekly inspections of the condition of the containers. A copy of the log shall be furnished to the Engineer upon request. The containers shall be kept closed and sealed from moisture except during the addition of waste. Each container shall be permanently identified with the date that waste was placed into the container, contract number, hazardous waste name and ID number, and other information required by the IEPA.

The Contractor shall have each waste stream sampled for each project and tested by TCLP and according to EPA and disposal company requirements. The Engineer shall be notified in advance when the samples will be collected. The samples shall be collected and shipped for testing within the first week of the project, with the results due back to the Engineer within 10 days. Testing shall be considered included in the pay item for "Containment and Disposal of Lead Paint Cleaning Residues." Copies of the test results shall be provided to the Engineer prior to shipping the waste.

Waste water generated from bridge washing, hygiene purposes, and cleaning of equipment shall be filtered on site to remove particulate and disposed of at a Publicly Owned Treatment Works (POTW) according to State regulations. The Contractor shall provide the Engineer with a letter from the POTW indicating that they will accept the waste water. If the POTW allows the filtered water to be placed into the sanitary sewer system, the Contractor shall provide a letter from the POTW indicating that based on the test results of the water, disposal in the sanitary sewer is acceptable to them. Water shall not be disposed of until the above letter(s) are provided to, and accepted by, the Engineer.

If approved abrasive additives are used that render the waste non-hazardous as determined by TCLP testing, the waste shall be classified as a non-hazardous special waste, transported by a licensed waste transporter, and disposed of at an IEPA permitted disposal facility in Illinois.

When paint is removed from the bridge without the use of abrasive additives, the paint, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of the TCLP results. The waste shall be transported by a licensed hazardous waste transporter, treated by an IEPA permitted treatment facility to a non-hazardous special waste and disposed of at an IEPA permitted disposal facility in Illinois.

The treatment/disposal facilities shall be approved by the Engineer, and shall hold an IEPA permit for waste disposal and waste stream authorization for this cleaning residue. The IEPA permit and waste stream authorization must be obtained prior to beginning cleaning, except that if necessary, limited paint removal will be permitted in order to obtain samples of the waste for the disposal facilities. The waste shall be shipped to the facility within 90 days of the first accumulation of the waste in the containers. When permitted by the Engineer, waste from multiple bridges in the same contract may be transported by the Contractor to a central waste storage location(s) approved by the Engineer in order to consolidate the material for pick up, and to minimize the storage of waste containers at multiple remote sites after demobilization. Arrangements for the final waste pickup shall be made with the waste hauler by the time blast cleaning operations are completed or as required to meet the 90 day limit stated above.

The Contractor shall submit a waste accumulation inventory table to the Engineer no later than the 5th day of the month. The table shall show the number and size of waste containers filled each day in the preceding month and the amount of waste shipped that month, including the dates of shipments.

The Contractor shall prepare a manifest supplied by the IEPA for off-site treatment and disposal before transporting the hazardous waste off-site. The Contractor shall prepare a land ban notification for the waste to be furnished to the disposal facility. The Contractor shall obtain the handwritten signature of the initial transporter and date of the acceptance of the manifest. The Contractor shall send one copy of the manifest to the IEPA within two working days of transporting the waste off-site. The Contractor shall furnish the generator copy of the manifest and a copy of the land ban notification to the Engineer. The Contractor shall give the transporter the remaining copies of the manifest.

All other project waste shall be removed from the site according to Federal, State and Local regulations, with all waste removed from the site prior to final Contractor demobilization.

The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.

The Contractor is responsible for the payment of any fines and undertaking any clean up activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal.

Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each bridge site.

Basis of Payment. The soil, water, and air monitoring, containment, collection, temporary storage, transportation, testing and disposal of all project waste, and all other work described herein will be paid for at the contract lump sum price for CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES at the designated location. Payment will not be authorized until all requirements have been fulfilled as described in this specification, including the preparation and submittal of all QC documentation, submittal of environmental monitoring and waste test results, and disposal of all waste.

Appendix 1 – Reference List

The Contractor shall maintain the following reference standards and regulations on site for the duration of the project:

- Illinois Environmental Protection Agency – Information Statement on the Removal of Lead-Based Paint from Exterior Surfaces, latest revision
- Illinois Environmental Protection Act
- SSPC Guide 6, Guide for Containing Debris Generated During Paint Removal Operations
- 29 CFR 1926.62, Lead in Construction
- 40 CFR Part 50, Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method)
- 40 CFR Part 50, Appendix G, Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air
- SSPC Guide 16, Guide to Specifying and Selecting Dust Collectors
- SSPC TU-7, Conducting Ambient Air, Soil, and Water Sampling Activities During Surface Preparation and Paint Disturbance Activities.

Table 1
Containment Criteria for Removal of Paint Containing Lead and Other Toxic Metals[1]

Removal Method	SSPC Class[2]	Containment Material Flexibility	Containment Material Permeability[3]	Containment Support Structure	Containment Material Joints[4]
Hand Tool Cleaning	3P[6]	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed
Power Tool Cleaning w/ Vacuum	3P[6]	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed
Power Tool Cleaning w/o Vacuum	2P	Rigid or Flexible	Permeable or Impermeable	Rigid or Flexible	Fully or Partially Sealed
Water Jetting Wet Ab Blast Water Cleaning[7]	2W-3W	Rigid or Flexible	Permeable and Impermeable[7]	Rigid, Flexible, or Minimal	Fully and Partially Sealed
Abrasive Blast Cleaning	1A	Rigid or Flexible	Impermeable	Rigid or Flexible	Fully Sealed
Vacuum Blast Cleaning	4A[6]	Rigid or Flexible	Permeable	Minimal	Partially Sealed

Table 1 (Continued)
Containment Criteria for Removal of Paint Containing Lead and Other Toxic Metals[1]

Removal Method	SSPC Class[2]	Containment Entryway	Ventilation System Required[5]	Negative Pressure Required	Exhaust Filtration Required
Hand Tool Cleaning	3P[6]	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/ Vacuum	3P[6]	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/o Vacuum	2P	Overlapping or Open Seam	Natural	No	No
Water Jetting Wet Ab Blast Water Cleaning[7]	2W-3W	Overlapping or Open Seam	Natural	No	No
Abrasive Blast Cleaning	1A	Airlock or Resealable	Mechanical	Yes	Yes
Vacuum Blast Cleaning	4A[6]	Open Seam	Natural	No	No

Notes:

[1]This table provides general design criteria only. It does not guarantee that specific controls over emissions will occur because unique site conditions must be considered in the design. Other combinations of materials may provide controls over emissions equivalent to or greater than those combinations shown above.

[2]The SSPC Classification is based on SSPC Guide 6. Note that for work over water, water booms or boats with skimmers must be employed, where feasible, to contain spills or releases. Debris must be removed daily at a minimum.

[3]Permeability addresses both air and water as appropriate. In the case of water removal methods, the containment materials must be resistant to water. Ground covers should always impermeable, and of sufficient strength to withstand the impact and weight of the debris and the equipment used for collection and clean-up. Ground covers must also extend beyond the containment boundary to capture escaping debris.

[4] If debris escapes through the seams, then additional sealing of the seams and joints is required.

[5]When “Natural” is listed, ventilation is not required provided the emissions are controlled as specified in this Special Provision, and provided worker exposures are properly controlled. If unacceptable emissions or worker exposures to lead or other toxic metals occur, incorporate a ventilation system into the containment.

[6]Ground covers and wall tarpaulins may provide suitable controls over emissions without the need to completely enclose the work area.

[7]This method applies to water cleaning to remove surface contaminants, and water jetting (with and without abrasive) and wet abrasive blast cleaning where the goal is to remove paint. Although both permeable and impermeable containment materials are included, ground covers and the lower portions of the containment must be water impermeable with fully sealed joints, and of sufficient strength and integrity to facilitate the collection and holding of the water and debris for proper disposal. If water or debris, other than mist, escape through upper sidewalls or ceiling areas constructed of permeable materials, they shall be replaced with impermeable materials. Permeable materials for the purpose of this specification are defined as materials with openings measuring 25 mils (1 micron) or less in greatest dimension.

A. Containment Components - The basic components that make up containment systems are defined below. The components are combined in Table 1 to establish the minimum containment system requirements for the method(s) of paint removal specified for the Contract.

1. Rigidity of Containment Materials - Rigid containment materials consist of solid panels of plywood, aluminum, rigid metal, plastic, fiberglass, composites, or similar materials. Flexible materials consist of screens, tarps, drapes, plastic sheeting, or similar materials. When directed by the Engineer, do not use flexible materials for horizontal surfaces directly over traffic lanes or vertical surfaces in close proximity to traffic lanes. If the Engineer allows the use of flexible materials, The Contractor shall take special precautions to completely secure the materials to prevent any interference with traffic.

2. Permeability of Containment Materials - The containment materials are identified as air impenetrable if they are impervious to dust or wind such as provided by rigid panels, coated solid tarps, or plastic sheeting. Air penetrable materials are those that are formed or woven to allow air flow. Water impermeable materials are those that are capable of containing and controlling water when wet methods of preparation are used. Water permeable materials allow the water to pass through. Chemical resistant materials are those resistant to chemical and solvent stripping solutions. Use fire retardant materials in all cases.

3. Support Structure - Rigid support structures consist of scaffolding and framing to which the containment materials are affixed to minimize movement of the containment cocoon. Flexible support structures are comprised of cables, chains, or similar systems to which the containment materials are affixed. Use fire retardant materials in all cases.

4. Containment Joints - Fully sealed joints require that mating surfaces between the containment materials and to the structure being prepared are completely sealed. Sealing measures include tape, caulk, Velcro, clamps, or other similar material capable of forming a continuous, impenetrable or impermeable seal. When materials are overlapped, a minimum overlap of 8 in. (200 mm) is required.

5. Entryway - An airlock entryway involves a minimum of one stage that is fully sealed to the containment and which is maintained under negative pressure using the ventilation system of the containment. Resealable door entryways involve the use of flexible or rigid doors capable of being repeatedly opened and resealed. Sealing methods include the use of zippers, Velcro, clamps, or similar fasteners. Overlapping door tarpaulin entryways consist of two or three overlapping door tarpaulins.

6. Mechanical Ventilation - The requirement for mechanical ventilation is to ensure that adequate air movement is achieved to reduce worker exposure to toxic metals to as low as feasible according to OSHA regulations (e.g., 29 CFR 1926.62), and to enhance visibility. Design the system with proper exhaust ports or plenums, adequately sized ductwork, adequately sized

discharge fans and air cleaning devices (dust collectors) and properly sized and distributed make-up air points to achieve a uniform air flow inside containment for visibility. The design target for airflow shall be a minimum of 100 ft. (30.5m) per minute cross-draft or 60 ft. (18.3 m) per minute downdraft. Increase these minimum airflow requirements if necessary to address worker lead exposures. Natural ventilation does not require the use of mechanical equipment for moving dust and debris through the work area.

7. Negative Pressure - When specified, achieve a minimum of 0.03 in. (7.5 mm) water column (W.C.) relative to ambient conditions, or confirm through visual assessments for the concave appearance of the containment enclosure.

8. Exhaust Ventilation - When mechanical ventilation systems are used, provide filtration of the exhaust air, to achieve a filtration efficiency of 99.9 percent at 0.02 mils (0.5 microns).

HAZARDOUS WASTE
CONTINGENCY PLAN
FOR
LEAD BASED PAINT REMOVAL PROJECTS

Bridge No.: _____
Location: _____
USEPA Generator No.: _____
IEPA Generator No.: _____

Note:

1. A copy of this plan must be kept at the bridge while the Contractor's employees are at the site.

2. A copy of the plan must be mailed to the police and fire departments and hospital identified herein.

Primary Emergency Coordinator

Name: _____
Address: _____
City: _____
Phone: (Work) _____
(Home) _____

Alternate Emergency Coordinator

Name: _____
Address: _____
City: _____
Phone: (Work) _____
(Home) _____

Emergency Response Agencies

POLICE:

1. State Police (if bridge not in city) Phone:_____

   District No. _____

   Address: _____

2. County Sheriff _____Phone: _____

   County: _____

   Address: _____

3. City Police _____Phone: _____

   District No. _____

   Address: _____

Arrangements made with police: (Describe arrangements or refusal by police to make arrangements):

_____

_____

FIRE:

1. City _____ Phone: _____

   Name: _____

   Address: _____

2. Fire District _____ Phone: _____

   Name: _____

   Address: _____

3. Other _____ Phone: _____

   Name: _____

   Address: _____

Arrangements made with fire departments: (Describe arrangements or refusal by fire departments to make arrangements):

_____

_____

HOSPITAL:

Name: _____ Phone: _____

Address: _____

Arrangements made with hospital: (Describe arrangements or refusal by hospital to make arrangements):

_____

_____

Properties of waste and hazard to health:

Places where employees working:

Location of Bridge:

Types of injuries or illness which could result:

Appropriate response to release of waste to the soil:

Appropriate response to release of waste to surface water:

Emergency Equipment at Bridge

Emergency Equipment List	Location of Equipment	Description of Equipment	Capability of Equipment
1. Two-way radio	Truck		Communication
2. Portable Fire Extinguisher	Truck		Extinguishes Fire
3. Absorbent Material	Truck		Absorbs Paint or Solvent Spills
4. Hand Shovel	Truck		Scooping Material
5. 55 Gallon (208 L) Drum	Truck		Storing Spilled Material
6. 5 Gallon (19 L) Pail	Truck		Storing Spilled Material

Emergency Procedure

1. Notify personnel at the bridge of the emergency and implement emergency procedure.

2. Identify the character, source, amount and extent of released materials.

3. Assess possible hazards to health or environment.

4. Contain the released waste or extinguish fire. Contact the fire department if appropriate.

5. If human health or the environment is threatened, contact appropriate police and fire department. In addition, the Emergency Services and Disaster Agency needs to be called using their 24-hour toll free number (800-782-7860) and the National Response Center using their 24-hour toll free number (800-824-8802).

6. Notify the Engineer that an emergency has occurred.

7. Store spilled material and soil contaminated by spill, if any, in a drum or pail. Mark and label the drum or pail for disposal.

8. Write a full account of the spill or fire incident including date, time, volume, material, and response taken.

9. Replenish stock of absorbent material or other equipment used in response.

BRIDGE DECK THIN POLYMER OVERLAY

Effective: May 7, 1997 Revised: June 28, 2024

Description. This work shall consist of furnishing and installing a bridge deck thin polymer overlay (TPO). TPO is a concrete deck overlay consisting of a concrete deck treatment followed by two layers of hybrid polymer epoxy-urethane each containing a blend of hard aggregate, resulting in an overlay thickness of 3/8 inch as defined herein. The overlay is intended to fill and repair cracks, seal the deck concrete, provide the specified friction, resist wearing, and withstand traffic loads, extreme changes in weather conditions, and deformations due to structure loading and temperature changes.

This work shall also include the final surface preparation of the existing concrete deck by shot blasting after all repairs have been completed and cured as specified.

The Department maintains a Qualified Product List for thin polymer overlays. This list can be found on the Department's web site under Bridge Deck Thin Polymer Overlay Systems. The supplier of the material shall be selected from this list and shall furnish a technical representative at the job site during overlay placement to provide recommendations on technical aspects of the installation of the bridge deck thin polymer overlay.

Materials. The manufacturer of the materials shall supply a Safety Data Sheet (SDS) detailing the appropriate safety and handling considerations. These SDS shall be prominently displayed at the storage site and all workers shall be thoroughly familiar with safety precautions before handling the material.

The concrete deck treatment consists of a two-part polymer (components A + B), free of any fillers or volatile solvents, and formulated to be mixed at a ratio specified by the overlay team personnel. Provide material having viscosity conforming to AASHTO M235, Grade 1 and surface tension that will effectively fill and repair cracks, seal the deck concrete, and serve as a primer that enhances the bonding of the epoxy-urethane and aggregate to the concrete deck. Use concrete deck treatment material that is compatible with the epoxy-urethane and aggregate and approved by the overlay installer.

(a) Concrete Deck Treatment. The concrete deck treatment consists of a two-part polymer (components A + B), free of any fillers or volatile solvents, and formulated to be mixed at a ratio specified by the overlay team personnel. Provide material having viscosity conforming to AASHTO M235, Grade 1, and the AASHTO MP35, Table 1 properties of compressive strength (24 hrs.), tensile strength (7 days), tensile elongation (7 days), water absorption, Shore D hardness, and be 100% solids and have a surface tension that will effectively fill and repair cracks, seal the deck concrete, and serve as a primer that enhances the bonding of the epoxy-urethane and aggregate to the concrete deck. Use concrete deck treatment material that is compatible with the epoxy-urethane and aggregate and approved by the overlay installer.

(b) Epoxy Resin Binder. The binder shall consist of a two-part exothermic epoxy resin which holds the aggregate firmly in position and conforms to the requirements of AASHTO MP35, Table 1. The epoxy resin shall be packaged in suitable, well-sealed containers, clearly labeled as to the type of material and the ratio of components to be mixed by volume. Each packaged component shall display the type (resin or hardener), brand name, name of the manufacturer, lot number, temperature range for storage, expiration date, and quantity. Each container shall

be labeled with the appropriate caution warnings regarding contact with the component. The epoxy resin binder manufacturer shall ensure that the material is suitable for temperatures that will be experienced at the time of placement. The epoxy resin binder shall be on the Department's current "Qualified Product List for Bridge Deck Thin Polymer Overlay Systems".

(c) Aggregate. The aggregate shall contain less than 0.2 percent moisture and be clean and free of dust. The aggregate shall have a Mohs scale hardness greater than 6 and shall consist of bauxite, crushed porphyry, aluminum oxide, or other similarly hard, durable, angular-shaped aggregate, as recommended by the manufacturer and approved by the Engineer. Wet bottom boiler coal slag shall not be used.

The aggregate shall conform to AASHTO MP35, Section 6.2.

At the pre-construction conference, the Contractor shall provide the Engineer with the source of the material that will be used. The manufacturer shall furnish samples of resin material and aggregate as required by the Engineer.

Equipment. The equipment used shall be subject to the approval of the Engineer and shall meet the following requirements:

(a) Surface Preparation Equipment. Surface preparation equipment shall be according to the applicable portions of Section 1100 and the following:

(1) Mechanical Scarifying Equipment. Scarifying equipment shall be a power-operated, mechanical scarifier capable of uniformly scarifying or removing the existing concrete surface and new patches to the depths required satisfactorily. Other types of removal devices may be used if their operation is suitable, and they can be demonstrated to the satisfaction of the Engineer.

(2) Shotblasting Equipment. The blasting medium shall be steel shot. The size and hardness of the shot, the flow of the shot, the forward speed, and the number of passes shall be as recommended by the manufacturer. The shot-blasting equipment shall be capable of removing weak concrete at the surface, including the microfractured concrete surface layer remaining because of mechanical scarification, and shall have oil traps. The cleaning residue shall be contained and removed by the shot-blasting equipment.

(3) Hand-Held Blast Cleaning Equipment. Blast cleaning using hand-held equipment shall be performed by abrasive blasting. Hand-held blast cleaning equipment shall have oil traps.

(4) Power-Driven Hand Tools. Power-driven hand tools will be permitted. Jackhammers shall be lighter than the nominal 45-pound (20 kg) class. Jackhammers or chipping hammers shall not be operated at angles over 45 degrees, measured from the surface of the slab.

(b) Pull-off Test Equipment. Equipment used to perform pull-off testing shall be either approved by the Engineer or obtained from one of the following approved sources:

James Equipment	Germann Instruments, Inc.
007 Bond Tester	BOND-TEST Pull-off System
800-426-6500	847-329-9999

SDS Company
DYNA Pull-off Tester
805-238-3229

Pull-off test equipment shall include all miscellaneous equipment and materials to perform the test and clean the equipment, as indicated in the Illinois Pull-off Test (Surface or Overlay Method). Before the start of testing, the Contractor shall submit to the Engineer a technical data sheet and material safety data sheet for the epoxy used to perform the testing. For solvents used to clean the equipment, a material safety data sheet shall be submitted.

(c) Overlay Application Equipment. For mechanical applications, the equipment shall consist of an epoxy distribution system, aggregate dispersing equipment, sweeper broom or vacuum truck, and a source of lighting if work is to be performed at night. The epoxy distribution system shall thoroughly blend the epoxy components so that the resulting product has the same material properties as certified in the Materials section. The Engineer reserves the right to sample from the epoxy distribution system at any time during placement operations. The aggregate spreader shall be propelled in such a manner as to uniformly apply the aggregate so that 100 percent of the epoxy material is covered to excess. The sweeper broom or vacuum truck shall be self-propelled. Equipment shall provide compressed air that is free from oil and water.

For hand applications, the equipment shall consist of calibrated containers, a paddle-type mixer, squeegees or rollers, and a broom. All equipment shall be suitable for mixing and placement according to the epoxy manufacturer's recommendations.

Construction. All hot-mix asphalt removal and deck repairs shall be performed and cured according to the Special Provision for "Deck Slab Repair" before any surface preparation operations. The thin polymer overlay shall not be placed on any concrete surface that is less than 28 days old.

(a) Surface Preparation.

(1) Bridge Deck Scarification. When specified, concrete bridge deck scarification shall be performed to the depth noted on the plans. Sidewalks, curbs, drains, reinforcement, and/or existing transverse and longitudinal joints that are to remain in place shall be protected from damage during scarification and cleaning operations. All damage caused by the Contractor shall be corrected at the Contractor's expense, to the satisfaction of the Engineer.

The scarification work shall consist of removing the designated concrete deck surface using mechanical scarifying equipment. In areas of the deck that are not accessible to the scarifying equipment, power-driven hand tools will be permitted.

A trial section located on the existing deck surface will be designated by the Engineer. The Contractor shall demonstrate that the equipment, personnel, and methods of operation are capable of producing results that are satisfactory to the Engineer. The trial section will consist of an area of approximately 30 sq. ft. (3 sq m).

Once the settings are established, they shall not be changed without the permission of the Engineer. The removal shall be verified, as necessary, at least every 16 ft. (5 m) along

the cutting path. If concrete is being removed below the desired depth, the equipment shall be reset or recalibrated.

All areas designated to be scarified shall be scarified uniformly to the depth as specified on the plans but shall not exceed 1 in. (25 mm). Concrete removal below the specified depth shall be replaced at the Contractor's expense, to the satisfaction of the Engineer.

(2) Deck Patching. After bridge deck scarification, the deck shall be thoroughly cleaned of broken concrete and other debris. The Engineer will sound the scarified deck and all unsound areas will be marked for removal and repairs. All designated patching shall be completed according to the Special Provision for "Deck Slab Repair."

Patching shall be completed before final surface preparation. Patches shall be struck off and then roughened with a suitable stiff bristled broom or wire brush to provide a rough texture design to promote bonding to the overlay. Hand finishing of the patch surface shall be kept to a minimum to prevent overworking of the surface.

(3) Final Surface Preparation. Final surface preparation shall consist of the operation of shot-blasting equipment to remove any weak concrete at the surface, including the microfractured concrete surface layer remaining because of mechanical scarification. Any areas determined by the Engineer to be inaccessible to the shot blasting equipment shall be thoroughly blast-cleaned with hand-held equipment.

Final surface preparation shall also include the cleaning of all dust, debris, and concrete fines from the deck surface including vertical faces of curbs and barrier walls up to a height of 1 in. (25 mm) above the overlay. Compressed air shall be used for this operation. When using compressed air, the air stream must be free of oil. Any grease, oil, or other foreign matter that rests on or has absorbed into the concrete shall be removed completely.

After the final surface preparation has been completed and before placement of the overlay, the prepared deck surface will be tested by the Engineer according to the Illinois Pull-off Test (Surface Method). The Contractor shall provide the test equipment.

a. Start-up Testing. Before the first overlay placement, the Engineer will evaluate the shot-blasting method. The start-up area shall be a minimum of 600 sq. ft. (56 sq. m). After the area has been prepared, six random test locations will be determined by the Engineer, and tested according to the Illinois Pull-off Test (Surface Method).

   The average of the six tests shall be a minimum of 175 psi (1,200 kPa) and each test shall have a minimum strength of 160 psi (1,100 kPa). If the criteria are not met, the Contractor shall adjust the shotblasting method. Start-up testing will be repeated until satisfactory results are attained.

   Once an acceptable shot-blasting procedure (speed, size of shot, etc.) is established, it shall be continued for the balance of the work. The Contractor may, with permission of the Engineer, change the shotblasting procedure or equipment, in which case additional start-up testing will be required.

b. Lot Testing. After start-up testing has been completed, the following testing frequency will be used. For each structure, each stage will be divided into lots of not more than

4500 sq. ft. (420 sq m). Three random test locations will be determined by the Engineer, and tested according to the Illinois Pull-off Test (Surface Method).

The average of the three tests shall be a minimum of 175 psi (1,200 kPa) and each test shall have a minimum strength of 160 psi (1,100 kPa). In the case of a failing individual test or a failing average of three tests, the Engineer will determine the area that requires additional surface preparation by the Contractor. Additional test locations will be determined by the Engineer.

In addition to start-up and lot testing, the Department may require surface pull-off testing of areas inaccessible to shot-blasting equipment and blast cleaning with hand-held equipment. The Engineer will determine each test location, and each test shall have a minimum strength of 175 psi (1,200 kPa).

(b) Application of Overlay

(1) Overlay Placement. The handling and mixing of the epoxy resin and hardening agent shall be performed safely to achieve the desired results according to the manufacturer's written recommendations. Overlay materials shall not be placed when ambient air temperatures are below 55°F (13°C) or above 90°F (32°C), or when deck temperature is below 60°F (16°C). All components shall have a temperature no less than 60°F (16°C) immediately before mixing and placement. Overlay materials shall not be placed when rain is forecast within 24 hours of application.

There shall be no visible moisture present on the surface of the concrete at the time of application of the thin polymer overlay. A plastic sheet left taped in place for a minimum of two hours, according to ASTM D 4263, shall be used to identify moisture in the deck.

Construction traffic shall not be allowed on any portion of the deck that has been shotblasted or on the overlay without approval from the Engineer. Overlay placement shall begin as soon as possible after the surface preparation operation. In no case shall the time between surface preparation and application of the first lift exceed 24 hours.

The polymer overlay shall consist of a two-course application of epoxy and aggregate. Each of the two courses shall consist of a layer of epoxy covered with a layer of aggregate in sufficient quantity to completely cover the epoxy. The total thickness of the overlay shall not be less than 1/4 inch (6 mm). The dry aggregate shall be applied in such a manner as to cover the epoxy mixture completely within five minutes of application. The dry aggregate shall be sprinkled or dropped vertically in a manner such that the level of the epoxy mixture is not disturbed. First course applications that do not receive enough aggregate before the gel time shall be removed and replaced. A second course applied with insufficient aggregate may be left in place but will require additional applications before opening to traffic.

The preceding course of thin polymer overlay shall be cured until brooming or vacuuming can be performed without tearing or otherwise damaging the surface before the application of succeeding courses. No traffic or equipment shall be permitted on the overlay surface during the curing period.

After the curing period, all loose aggregate shall be removed by brooming or vacuuming before the next overlay course is applied. This procedure is repeated until the minimum overlay thickness is achieved.

Unless otherwise specified, the thin polymer overlay courses may be applied over the expansion joints and joint seals of the bridge deck. The expansion joints and joint seals shall be protected by a bond breaker. Before opening any application to traffic, the overlay over each joint shall be removed.

Before opening to traffic, at least one pull-off test location per lane, per 100 feet (30 m) of bridge length will be designated by the Engineer. Pull-off testing shall be performed according to the Illinois Pull-off Test (Overlay Method). The Contractor shall provide the test equipment. Each test shall have a minimum strength of 150 psi (1,000 kPa). Unacceptable test results will require removal and replacement of the overlay at the Contractor's expense, and the locations will be determined by the Engineer.

The thickness of the overlay shall be verified to be at least 1/4 inch (6 mm) thick, as measured from the deck surface to the top of the resin. Cores from pull-off tests shall be used to determine overlay thickness. Thin areas shall be re-coated and re-tested at no additional cost to the Department.

If additional applications are required due to deficient thickness or insufficient aggregate, the Engineer may require additional pull-off strength tests to verify the Contractor's procedures.

Pull-off test locations, thickness test locations, and any de-bonded areas shall be repaired before final acceptance.

(2) Curing. The Contractor shall plan and prosecute the work to provide at least eight hours of curing or the minimum cure as prescribed by the manufacturer before opening that section to public or construction traffic.

(3) Storage and Handling. Resin materials shall be stored in their original containers inside a heated warehouse in a dry area. Storage temperatures shall be maintained between 60 – 90°F (16 – 32°C)

The resin material shall be stored on the job site in a trailer, protected from moisture, and maintained within a temperature range of 60 – 90°F (16 – 32°C).

Protective gloves and goggles shall be provided by the Contractor to workers who are directly exposed to the resin material. Product Safety Data Sheets from the manufacturer shall be provided for all workers by the Contractor.

All aggregates shall be stored in a dry environment and shall be protected from contaminants on the job site. Aggregate that is exposed to rain or other moisture shall be rejected.

Method of Measurement. The area of scarification on the bridge deck will be measured for payment in square yards (square meters).

The area of thin polymer overlay will be measured in square yards (square meters) of horizontal deck area, completed and accepted.

Basis of Payment. This work shall be paid for at the contract unit price per square yard (square meter) for BRIDGE DECK THIN POLYMER OVERLAY of the thickness specified.

The concrete bridge deck scarification will be paid for at the contract unit price per square yard (square meter) for CONCRETE BRIDGE DECK SCARIFICATION of the thickness specified.

STRUCTURAL ASSESSMENT REPORTS FOR CONTRACTOR'S MEANS AND METHODS

Effective: March 6, 2009 Revised October 5, 2015

Description. This item shall consist of preparing and submitting, to the Engineer for approval, Structural Assessment Reports (SARs) for proposed work on structure(s) or portions thereof. Unless noted otherwise, a SAR shall be required when the Contractor's means and methods apply loads to the structure or change its structural behavior. A SAR shall be submitted and approved prior to beginning the work covered by that SAR. Separate portions of the work may be covered by separate SARs which may be submitted at different times or as dictated by the Contractor's schedule.

Existing Conditions. An Existing Structure Information Package (ESIP) will be provided by the Department to the Contractor upon request. This package will typically include existing or "As-Built" plans, and the latest National Bridge Inspection Standards (NBIS) inspection report. The availability of structural information from the Department is solely for the convenience and information of the Contractor and shall not relieve the Contractor of the duty to make, and the risk of making, examinations and investigations as required to assess conditions affecting the work. Any data furnished in the ESIP is for information only and does not constitute a part of the Contract. The Department makes no representation or warranty, express or implied, as to the information conveyed or as to any interpretations made from the data.

Removal SARs. A SAR for removal of existing structures, or portions thereof, shall demonstrate that the Contractor's proposed means and methods to accomplish the work do not compromise the structural adequacy of the bridge, or portions thereof that are to remain in service, at any time during the work activities being performed. Each phase of the operation shall be accounted for, as well as the existing condition of the structure.

Construction SARs. A SAR for new construction or for construction utilizing existing components shall demonstrate that the Contractor's proposed means and methods to accomplish the work do not compromise the structural adequacy of the bridge or portions thereof at any time during the work activities being performed. For construction activities applying less than 10 tons (9 metric tons) of total combined weight of equipment and stockpiled materials on the structure at any one time, a SAR submittal shall not be required provided the Contractor submits written verification to the Engineer stating the applied loads do not exceed this threshold. The verification shall be submitted prior to the start of the activity. This SAR exemption shall not relieve the Contractor from responsibility for the structure. A SAR shall be submitted in all cases where the existing structure is posted for less than legal loads or the Contract plans indicate a live load restriction is in place.

Requirements

a) General. All work specified shall be performed according to the Contract plans, Special Provisions and/or Standard Specifications governing that work.

Submittals for falsework and forming for concrete construction shall be according to Articles 503.05 and 503.06 and does not require a SAR. Moving construction equipment across a structure, or portions thereof, open to traffic shall be addressed according to Article 107.16 and does not require a SAR. Operating equipment on an in-service structure and/or using a portion of an in-service structure as a work platform shall require a SAR and Article 107.16 shall not apply.

The Contractor may move vehicles across the existing bridge without a SAR after closure and prior to removal of any portion of the structure provided:

- The vehicles satisfy the requirements of Section 15-111 of the Illinois Vehicle Code (described in the IDOT document "Understanding the Illinois Size & Weight Laws") or of the Federal Highway Administration document "Bridge Formula Weights" (available at: http://www.ops.fhwa.dot.gov/freight/publications/brdg_frm_wghts/index.htm)
- The Contractor submits written verification to the Engineer stating the vehicles meet these requirements. The verification shall be submitted prior to allowing the vehicles on the structure.

This SAR exemption shall not relieve the Contractor from responsibility for the structure. This SAR exemption shall not be allowed where the existing structure is posted for less than legal loads or the Contract plans indicate a live load restriction is in place. No stockpiling of material is allowed under this exemption.

All SARs shall detail the procedures and sequencing necessary to complete the work in a safe and controlled manner. When appropriate, supporting design calculations shall be provided verifying the following:

- The effects of the applied loads do not exceed the capacity at Operating level for any portions of the structure being utilized in the demolition of the structure provided those portions are not to be reused.
- The effects of the applied loads do not exceed the capacity at Inventory level for new construction or for portions of the existing structure that are to be reused.
- The condition of the structure and/or members has been considered.

See AASHTO Manual for Bridge Evaluation for further information on determining the available capacities at the Operating and Inventory levels.

b) Confidential Documents. Due to the sensitivity of the inspection reports and bridge condition reports to bridge security, the following confidentiality statement applies to these reports:

"Reports used by the Contractor and the contents thereof are the property of the Department, and are subject to the control of the Department in accordance with State and Federal law. The distribution, dissemination, disclosure, duplication or release of these reports or the content thereof in any manner, form or format without the express permission of the keeper of this record is prohibited. The owner is the official keeper of these records, except for state owned bridges, where the official keeper of these records is the Regional Engineer."

c) Submittals. The Contractor shall be pre-approved to prepare SAR(s) or shall retain the services of a pre-qualified engineering firm to provide these services. Pre-approval of the Contractor will be determined by the Illinois Department of Transportation and will allow SAR(s) preparation by the Contractor unless otherwise noted on the plans. For engineering firms, pre-qualification shall be according to the Department in the category of "Highway Bridges-Typical" unless otherwise noted on the plans. Firms involved in any part of the project (plan development or project management) will not be eligible to provide these services. Evidence of pre-approval/pre-qualification shall be submitted with all SAR(s). The SAR(s) shall be prepared and sealed by an Illinois Licensed Structural Engineer. The Contractor shall submit SAR(s), complete with working drawings and supporting design calculations, to the Engineer for approval, at least 30 calendar days prior to start of that portion of the work.

At a minimum a Structural Assessment Report shall include the following:

1. A plan outlining the procedures and sequence for the work, including staging when applicable.
2. A demolition plan (when removal is included as an item of work in the contract) including details of the proposed methods of removal.
3. A beam erection plan (when beam erection is included as an item of work in the contract) including details of the proposed methods of erection.
4. Pertinent specifications for equipment used during the work activity.
5. The allowable positions for that equipment during the work activity.
6. The allowable positions and magnitudes of stockpiled materials and/or spoils, if planned to be located on the structure.
7. Design and details for temporary shoring and/or bracing, if required by the Contractor's means and methods.

Approval or acceptance of a Structural Assessment Report shall not relieve the Contractor of any responsibility for the successful completion of the work.

Revisions to the Contractor's means and methods resulting in no increased load effects to the structure, as determined by the Contractor's Structural Engineer, shall not require a SAR resubmittal. However, the Contractor's Structural Engineer shall submit to the Engineer written verification that there is no increased load effect. The written verification shall specify the revisions and shall be submitted prior to the start of the revised activities.

The Contractor shall be responsible for following the approved SAR related to the work involved.

Method of Measurement. Structural Assessment Reports will not be measured for payment.

Basis of payment. Structural Assessment Reports will not be paid for separately but shall be considered as included in the contract unit price(s) for the work item(s) specified.

HOT DIP GALVANIZING FOR STRUCTURAL STEEL

Effective: June 22, 1999 Revised: June 28, 2024

Description. This work shall consist of surface preparation and hot dip galvanizing all structural steel specified on the plans and painting of galvanized structural steel when specified on the plans.

Materials. Fasteners shall be ASTM F 3125, Grade 325, Type 1, High Strength bolts with matching nuts and washers.

Fabrication Requirements. Hot-dip galvanizing shall be indicated on the shop drawings. The fabricator shall coordinate with the galvanizer to incorporate additional steel details required to facilitate galvanizing of the steel. These additional details shall be indicated on the shop drawings.

Additional temporary stiffeners may be added at the contractor's expense as necessary to prevent distortion of the girders during galvanizing. The contractor shall coordinate with the fabricator and the galvanizer to determine if additional stiffeners are necessary, and where these shall be placed. Any proposed changes shall be submitted to the Engineer for approval prior to making any changes and documented on the shop drawings.

Temporary stiffener angles shall be bolted to each side of the splice ends of each girder segment to prevent distortion during galvanizing. Temporary stiffener angles shall bolt or fit tight against top and bottom flanges and include spacer tubes to minimize damage to galvanizing during removal.

To ensure identification after galvanizing, piece marks shall be supplemented with metal tags for all items where fit-up requires matching specific pieces.

After fabrication (cutting, welding, drilling, etc.) is complete, all holes shall be deburred and all fins, scabs or other surface/edge anomalies shall be ground or repaired per ASTM A6. The items shall then be cleaned per Steel Structures Painting Council's Surface Preparation Specification SSPC-SP1 (Solvent Cleaning) and SSPC-SP6 (Commercial Blast Cleaning). All surfaces shall be inspected to verify no fins, scabs or other similar defects are present.

The Contractor shall consult with the galvanizer to ensure proper removal of grease, paint and other deleterious materials prior to galvanizing.

Surface Preparation and Hot Dip Galvanizing

General. Surfaces of the structural steel specified on the plans shall be prepared and hot dip galvanized as described herein.

Cleaning Structural Steel. If rust, mill scale, dirt, oil, grease or other foreign substances have accumulated prior to galvanizing, steel surfaces shall be cleaned by a combination of caustic cleaning and cleaning according to SSPC-SP8 (Pickling).

Special attention shall be given to the cleaning of corners and reentrant angles.

Surface Preparation. A flux shall be applied to all steel surfaces to be galvanized. Any surfaces which will receive field-installed stud shear connectors shall not be galvanized within 2 in. (50 mm) of the stud location. Either the entire area receiving studs or just individual stud locations may be left ungalvanized. The following steel surfaces of bearings shall not be galvanized: stainless steel surfaces, surfaces which will be machined (except for fixed bearing sole plates), and surfaces which will have TFE, elastomer, or stainless steel parts bonded to them.

The cleaned surfaces shall be galvanized within 24 hours after cleaning, unless otherwise authorized by the Engineer.

Application of Hot Dip Galvanized Coating. Steel members, fabrications and assemblies shall be galvanized by the hot dip process in the shop according to AASHTO M 111.

Bolts, nuts, and washers shall be galvanized according to ASTM F 2329.

All steel shall be safeguarded against embrittlement according to ASTM A 143. Water quenching or chromate conversion coating shall not be used on any steel work that is to be painted. All galvanized steel work shall be handled in such a manner as to avoid any mechanical damage and to minimize distortion.

Beams and girders shall be handled, stored and transported with their webs vertical and with proper cushioning to prevent damage to the member and coating. Members shall be supported and externally stiffened during galvanizing to prevent permanent distortion.

Hot Dip Galvanized Coating Requirements. Coating weight, surface finish, appearance and adhesion shall conform to requirements of ASTM A 385, ASTM F2329, AASHTO M 111 or AASHTO M 232, as appropriate.

Any high spots of zinc coating, such as metal drip lines and rough edges, left by the galvanizing operation in areas that are to be field connected or in areas that are to be painted shall be removed by cleaning per SSPC-SP2 (Hand Tool Cleaning) or SSPC-SP3 (Power Tool Cleaning). The zinc shall be removed until it is level with the surrounding area, leaving at least the minimum required zinc thickness.

Shop assemblies producing field splices shall provide 1/8 in. (3 mm) minimum gaps between ends of members to be galvanized. At field splices of beams or girders, galvanizing exceeding 0.08 in. (2 mm) on the cross-sectional (end) face shall be partially removed until it is 0.04 in. to 0.08 in. (1 to 2 mm) thick.

Testing of Hot Dip Galvanized Coating. Inspection and testing of hot dip galvanized coatings shall follow the guidelines provided in the American Galvanizers Association publication "*Inspection of Products Hot Dip Galvanized After Fabrication".* Sampling, inspection, rejection and retesting for conformance with requirements shall be according to AASHTO M 111 or AASHTO M 232, as applicable. Coating thickness shall be measured according to AASHTO M 111, for magnetic thickness gage measurement or AASHTO M 232, as applicable.

All steel shall be visually inspected for finish and appearance.

Bolts, nuts, washers, and steel components shall be packaged according to ASTM F 2329. Identity of bolts, nuts and washers shall be maintained for lot-testing after galvanizing according to Article 505.04(f)(2) for high strength steel bolts.

A notarized certificate of compliance with the requirements listed herein shall be furnished. The certificate shall include a detailed description of the material processed and a statement that the processes used met or exceeded the requirements for successful galvanizing of the surface, where applicable. The certificate shall be signed by the galvanizer.

Repair of Hot Dip Galvanized Coating. Surfaces with inadequate zinc thickness shall be repaired in the shop according to ASTM A 780 and AASHTO M 111.

Surfaces of galvanized steel that are damaged after the galvanizing operation shall be repaired according to ASTM A 780 whenever damage exceeds 3/16 in. (5 mm) in width and/or 4 in. (100 mm) in length. Damage that occurs in the shop shall be repaired in the shop. Damage that occurs during transport or in the field shall be repaired in the field.

Connection Treatment. All bolt holes shall be reamed or drilled to their specified diameters after galvanizing. All bolts shall be installed after galvanizing.

Surface Preparation and Painting

Surface Preparation. When galvanized steel surfaces are specified to be painted they shall be clean and free of oil, grease, and other foreign substances. Surface preparation necessary to provide adequate adhesion of the coating shall be performed according to ASTM D6386. Surface preparation shall include, but not be limited to the following:

- All galvanized steel surfaces that are to be painted shall be cleaned according to SSPC-SP1 (Solvent Cleaning). After cleaning, all chemicals shall be thoroughly rinsed from the surface with a suitable solvent. The steel shall be allowed to completely dry prior to coating application.

- All galvanized steel surfaces that are to be painted shall be checked for the presence of chromate conversion coating according to ASTM D 6386 Appendix X1. Surfaces where chromate conversion coating is found shall be cleaned according to the same appendix and blown down with clean, compressed air according to ASTM D 6386 Section 6.1.

- All galvanized steel surfaces that are to be painted shall be checked for the presence of wet storage stain. Surfaces where wet storage stain is found shall be cleaned, rinsed and completely dried according to ASTM D 6386 Section 6.2.

- Following galvanizing, thickness readings shall verify the acceptable thickness of the galvanizing according to AASHTO M111/ASTM A123.

Paint Requirements. The paint materials (epoxy intermediate coat and aliphatic urethane finish coat) shall meet the requirements of the Articles 1008.05(d) and (e) of the Standard Specification.

All paint materials for the shop and field shall be supplied by the same manufacturer, and samples of components submitted for approval by the Department, before use.

Paint storage, mixing, and application shall be according to Section 506 of the Standard Specifications and the paint manufacturer's written instructions and product data sheets. In the event of a conflict the Contractor shall advise the Engineer and comply with the Engineer's written resolution. Until a resolution is provided, the most restrictive conditions shall apply.

Shop Application of the Paint System. The areas to be painted shall receive one full coat of an epoxy intermediate coat and one full coat of an aliphatic urethane finish coat. The film thickness of each coat shall be according to Article 506.09(f)(2).

Construction Requirements. The contact surfaces of splice flange connections (mating flange faces and areas under splice bolt heads and nuts) shall be free of paint prior to assembly. If white rust is visible on the mating flange surfaces, the steel shall be prepared by hand wire brushing or brush-off blasting according to SSPC-SP7. Power wire brushing is not allowed.

After field erection, the following areas shall be prepared by cleaning according to SSPC-SP1 (Solvent Cleaning), tie- or wash-coated if applicable, and then painted or touched up with the paint specified for shop application (the intermediate coat and/or the finish coat):

- exposed unpainted areas at bolted connections
- areas where the shop paint has been damaged
- any other unpainted, exposed areas as directed by the Engineer.

Special Instructions. Painting Date/System Code. At the completion of the work, the Contractor shall stencil in contrasting color paint the date of painting the bridge and the paint type code from the Structure Information and Procedure Manual for the system used according to Article 506.10(i). The code designation for galvanizing is "V". If painting of the structural steel is not specified then the word "PAINTED" may be omitted, the month and year shall then correspond to the date the stencil is applied.

Basis of Payment. The cost of all surface preparation, galvanizing, painting and all other work described herein shall be considered as included in the unit price bid for the applicable pay items to be galvanized and painted, according to the Standard Specifications.

PREFORMED BRIDGE JOINT SEAL

Effective: December 21, 2016 Revised: June 28, 2024

Description. This work shall consist of furnishing all labor, equipment and materials necessary to prepare the joint opening and install preformed bridge joint seal(s) at the locations specified. Unless otherwise detailed on the plans or specified herein, the maximum rated movement for this joint type is 4 inches (100 mm).

Materials: Unless otherwise specified, one of the following prefabricated joint seals will be permitted.

(a) Preformed Pre-compressed, Silicone Coated, Self-Expanding Sealant System. This Sealant system shall be comprised of three components: 1) cellular polyurethane foam impregnated with hydrophobic 100% acrylic, water-based emulsion, factory coated with highway-grade,

fuel resistant silicone; 2) field-applied epoxy adhesive primer, 3) field-injected silicone sealant bands.

The preformed, pre-compressed silicone joint seal shall, as a minimum, be according to the following:

- The joint seal shall be held in place by a non-sag, high modulus silicone adhesive.
- The joint seal shall be compatible with the epoxy and header material.
- The joint seal shall withstand the effects of vertical and lateral movements, skew movements and rotational movement without adhesive or cohesive failure.
- The joint seal shall be designed so that, the material is capable of movement of +50%, -50% (100% total) of nominal material size. The gland shall not contain any open, unsealed joints along its length it its final condition.
- Changes in plane and direction shall be executed using factory fabricated transition assemblies fabricated to the angle(s) specified on the plans. The transitions shall be watertight at the inside and outside corners through the full movement of the product.
- The depth of the joint shall be recessed 3/4 in. (19 mm) below the riding surface throughout the normal limits of joint movement.
- The joint seal shall be resistant to ultraviolet rays.
- The joint seal shall be resistant to abrasion, oxidation, oils, gasoline, salt, and other materials that may be spilled on or applied to the surface.
- The manufacturer shall certify that the joint composition shall be free of any waxes or wax compounds; asphalts or asphalt compounds.

The joint material shall meet the following physical properties:

Property	Requirement	Test Method
Tensile Strength of Silicone Coating (min)	140 psi	ASTM D 412
UV Resistance of Joint System	No Changes--2000 Hours	ASTM G155-00A
Density of Cellular Polyurethane Foam (Unconfined)	4.0 lb/ cu ft (200kg/cu m)	ASTM D545
Heat Aging Effects (Silicone Coating)	No cracking, chalking	ASTM C 792
Joint System Operating temp range (min)	-40° F to 185° F	ASTM C 711

The adhesive shall be a two-component, 100% solid, modified epoxy meeting the requirements of ASTM C881, Type I, Grade 3, Class B & C. The adhesive shall also have the following properties:

Property	Requirement	Test method
Tensile Strength	2,500 psi (24 MPa) min.	ASTM D638
Compressive Strength	7000 psi (48 MPa) min.	ASTM D695
Bond Strength (Dry Cure)	2000 psi (28MPa) min	ASTM C882
Water Absorption	0.1% by weight	ASTM D570

The silicone band adhesive shall have the following properties:

Property	Requirement	Test Method
Movement Capability	+50/-50%	ASTM C 719
Elongation at Break	>600%	ASTM D 5893
Slump	≤=0.3"	ASTM D 2202
Hardness (Shore A) max.	20	ASTM C 661
Tack free time (max)	60 minutes	ASTM C 679
Heat Aging Effects	No cracking, chalking	ASTM C 792
Resilience	≥ 75%	ASTM D5329
Bond	0% Adhesive or Cohesive Failure after 5 cycles @100%extension	ASTM D 5329

(b) Preformed Silicone Joint Seal. The preformed silicone joint seal used for this item shall conform to the following specifications:

Table 1
Physical Properties of Preformed Silicone Gland

Property	Requirement	Test Method
Rated Movement Capability	+2 ¼ inch total	N/A
Tensile Strength, psi.	1000 min	ASTM D 412
Elongation	400% min	ASTM D 412
Tear (die B)	100 ppi. min	ASTM D 624
Hardness Durometer (Shore A).	55 +/- 5 max	ASTM D 2240
Compression set at 212°F, 70 hrs	30% max	ASTM D 395
Heat Aged Properties	5pt max loss on Durometer	ASTM D 573
Tensile and Elongation % Loss	10 % max	

The color of the preformed silicone seal shall be black, made by the addition of Carbon Black fillers which increases UV resistance, tensile strength, and abrasion wear properties.

The locking adhesive shall be non-sag, high modulus silicone adhesive conforming to the following specifications:

Table 2
Physical Properties of the Silicone Locking Adhesive

Property	Requirement	Test Method
Tensile Strength, psi.	200 min	ASTM D 412
Elongation, %	450 min	ASTM D 412
Tack Free Time, minutes.	20 max.	ASTM C 679
Cure Time ¼" bead, hrs	24 max	ASTM C 679
Resistance to U.V.	No cracking, chalking,or degradation	ASTM C793
VOC (g/L)	55	ASTM D 3960

Any rips, tears, or bond failure will be cause for rejection.

The two-part epoxy primer shall be supplied for application to the vertical faces of the joint opening. The supplied primer shall be equally as effective when bonded to concrete or steel. This primer shall meet the following criteria:

Table 3
Physical Properties of Preformed Silicone Joint System Primer

Property	Requirement	Test Method
Viscosity (cps)	44	ASTM D 2196
Color	Light Amber	Visual
Solids (%)	41	ASTM D 4209
Specific Gravity	0.92	ASTM D 1217
Product Flash Point (◦F, T.C.C.)	48	ASTM D 56
Package Stability	N/A	One year in tightly sealed containers
Cleaning	N/A	Mineral Spirits
VOC (g/L)	520	ASTM D 3960

(c) Preformed Inverted EPDM Joint Seal. The preformed inverted EPDM joint seal used for this item shall conform to the following specifications:

Table 1
Physical Properties of Preformed Silicone Gland

Property	Requirement	Test Method
Rated Movement Capability	Up To 5 inch total	N/A
Tensile Strength, psi.	1200 psi min	ASTM D 412
Elongation	400 % min	ASTM D 412
Tear (Die C)	150 pli. min	ASTM D 624
Durometer Content	50 +/- 5 max	ASTM D 2240
Water Resistance (70 hrs @ 100c)	10% max	ASTM D 471
Ozone Resistance	100 min	ASTM D 1171
Color	Black	Visual

Table 2
Physical Properties of the V-Epoxy-R

V-Epoxy-R adhesive meets the requirements of ASTM C881 Type III, Grade 2. The adhesive shall also have the following properties:

Property	Requirement	Test Method
Color	Gray	Visual
Viscosity	45,000 CP (typ.)	N/A
Gel Time (minutes)	30 min.	ASTM C 881
Shelf Life (Separate Sealed Containers)	12 Months	N/A
Resistance to U.V.	No cracking, chalking,or degradation	ASTM C793
VOC (g/L)	55	ASTM D 3960

Any rips, tears, or bond failure will be cause for rejection.

(d) Bonded Preformed Joint Seal. This joint system shall consist of preformed elastomeric seal bonded to the side walls of the joint opening using an adhesive as specified by the Manufacturer of the joint seal.

The bonded preformed joint seal shall be according to Table 1 of ASTM D2628 with the following exceptions: Compression set shall not be over 40 percent when tested according to Method B (Modified) of ASTM D 395 after 70 hours at 212 ºF (100 ºC). The Compression-Deflection requirement will not apply to the bonded preformed joint seal.

The adhesive shall be epoxy base, dual component, which resists salt, diluted acids, alkalis, solvents, greases, oils, moisture, sunlight and weathering. Temperatures up to 200 ºF (93 ºC) shall not reduce bond strength. At 68 ºF (20 ºC), the bond strength shall be a minimum of 1000 psi (6.9 MPa) within 24 hours.

Any primers or cleaning solutions used on the faces of the joint or on the profile of the sides of the bonded preformed joint seal shall be supplied by the manufacturer of the bonded preformed joint seal.

Any additional installation materials and adhesive for splicing joint sections shall be as supplied by the manufacturer of the preformed joint seal.

The Contractor shall submit the Manufacturer's material certification documentation stating that their materials meet the applicable requirements of this specification for the joint seal(s) installed.

CONSTRUCTION REQUIREMENTS

General. The Contractor shall furnish the Engineer with the manufacturer's product information and installation procedures at least two weeks prior to installation.

The minimum ambient air temperature in which the joint seal can be installed is 40° F (4.4° C) and rising, except for bonded preformed joint seals which shall not be installed when temperatures below 50 ºF (10 ºC) are predicted within a 48-hour period.

The joint surface shall be completely dry before installing the Joint Seal. For newly placed concrete, the concrete shall be fully cured and allowed to dry out a minimum of seven additional days prior to placement of the seal. Cold, wet, inclement weather will require an extended drying time.

The Joint Seal shall not be installed immediately after precipitation or if precipitation is forecasted for the day. Joint preparation and installation of Joint Seal shall be done during the same day.

Surface Preparation. Surface preparation shall be according to the joint seal manufacturer's written instructions.

After surface preparation is completed, the joint shall be cleaned of debris using compressed air with a minimum pressure of 90 psi (620 kPa). The air compressor shall be equipped with traps to prevent the inclusion of water and/or oil in the air line. The compressed air shall be according to the cleanliness requirements of ASTM D 4285.

When priming is required per the manufacturer's instruction, this operation shall immediately follow cleaning.

Joint Installation. The Joint installation shall be per the manufacturer's instructions; special attention shall be given to ensure the joint seal is properly recessed below the top of the riding surface as recommended by the manufacturer.

For bonded joint seals the seal shall be inserted into the joint and held tightly against both sides of the joint until sufficient bond strength has been developed to resist the expected expansion forces.

Opening to traffic. As these joint systems are supposed to be recessed below the top of the riding surface, there should be no restriction, based on the joint seal installation, on when these joints can be reopened to traffic.

Method of Measurement. The installed preformed joint seal will be measured for payment in feet (meters) measured along the centerline of joint, from out to out of the deck, no measurement will be made for joint material used to turn up into the parapet, sidewalk, or median.

Basis of Payment. The preformed bridge joint seal will be paid for at the contract unit price per foot (meter) for PREFORMED JOINT SEAL, of the design movement specified, rounded to the nearest half inch (13 mm).

CEMENT, FINELY DIVIDED MINERALS, ADMIXTURES, CONCRETE, AND MORTAR (BDE)

Effective: January 1, 2025 Revised: January 1, 2026

Revise the first paragraph of Article 285.05 of the Standard Specifications to read:

"**285.05 Fabric Formed Concrete Revetment Mat.** The grout shall consist of a mixture of cement, fine aggregate, and water so proportioned and mixed as to provide a pumpable slurry. Fly ash or ground granulated blast furnace (GGBF) slag, and concrete admixtures may be used at the option of the Contractor. The grout shall have an air content of not less than 6.0 percent nor more than 9.0 percent of the volume of the grout. The mix shall obtain a compressive strength of 2500 psi (17,000 kPa) at 28 days according to Article 1020.09."

Revise Article 302.02 of the Standard Specifications to read:

"**302.02 Materials.** Materials shall be according to the following.

	Item	Article/Section
(a)	Cement	1001
(b)	Water	1002
(c)	Hydrated Lime	1012.01
(d)	By-Product, Hydrated Lime	1012.02
(e)	By-Product, Non-Hydrated Lime	1012.03
(f)	Lime Slurry	1012.04
(g)	Fly Ash	1010
(h)	Soil for Soil Modification (Note 1)	1009.01
(i)	Bituminous Materials (Note 2)	1032

Note 1. This soil requirement only applies when modifying with lime (slurry or dry).

Note 2. The bituminous materials used for curing shall be emulsified asphalt RS-2, CRS-2, HFE 90, or HFE 150; rapid curing liquid asphalt RC-70; or medium curing liquid asphalt MC-70 or MC-250."

Revise Article 312.07(c) of the Standard Specifications to read:

"(c) Cement ..... 1001"

Add Article 312.07(i) of the Standard Specifications to read:

"(i) Ground Granulated Blast Furnace (GGBF) Slag ..... 1010"

Revise the first paragraph of Article 312.09 of the Standard Specifications to read:

"**312.09 Proportioning and Mix Design.** At least 60 days prior to start of placing CAM II, the Contractor shall submit samples of materials to be used in the work for proportioning and testing. The mixture shall contain a minimum of 200 lb (120 kg) of cement per cubic yard (cubic meter). Cement may be replaced with fly ash or ground granulated blast furnace (GGBF) slag according to Article 1020.05(c)(1) or 1020.05(c)(2), respectively, however the minimum cement content in the mixture shall be 170 lbs/cu yd (101 kg/cu m). Blends of coarse and fine aggregates will be

permitted, provided the volume of fine aggregate does not exceed the volume of coarse aggregate. The Engineer will determine the proportions of materials for the mixture according to the "Portland Cement Concrete Level III Technician Course" manual. However, the Contractor may substitute their own mix design. Article 1020.05(a) shall apply, and a Level III PCC Technician shall develop the mix design."

Revise Article 352.02 of the Standard Specifications to read:

"**352.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Cement (Note 1)	1001
(b) Soil for Soil-Cement Base Course	1009.03
(c) Water	1002
(d) Bituminous Materials (Note 2)	1032

Note 1. Bulk cement may be used for the traveling mixing plant method if the equipment for handling, weighing, and spreading the cement is approved by the Engineer.

Note 2. The bituminous materials used for curing shall be emulsified asphalt RS-2, CRS-2, HFE 90, or HFE 150; rapid curing liquid asphalt RC-70; or medium curing liquid asphalt MC-70 or MC-250."

Revise Article 404.02 of the Standard Specifications to read:

"**404.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Cement	1001
(b) Water	1002
(c) Fine Aggregate	1003.08
(d) Bituminous Material (Tack Coat)	1032.06
(e) Emulsified Asphalts (Note 1) (Note 2)	1032.06
(f) Fiber Modified Joint Sealer	1050.05
(g) Additives (Note 3)	

Note 1. When used for slurry seal, the emulsified asphalt shall be CQS-1h according to Article 1032.06(b).

Note 2. When used for micro-surfacing, the emulsified asphalt shall be CQS-1hP according to Article 1032.06(e).

Note 3. Additives may be added to the emulsion mix or any of the component materials to provide the control of the quick-traffic properties. They shall be included as part of the mix design and be compatible with the other components of the mix.

Revise the last sentence of the fourth paragraph of Article 404.08 of the Standard Specifications to read:

"When approved by the Engineer, the sealant may be dusted with fine sand, cement, or mineral filler to prevent tracking."

Revise Note 2 of Article 516.02 of the Standard Specifications to read:

"Note 2. The sand-cement grout mix shall be according to Section 1020 and shall be a 1:1 blend of sand and cement comprised of a Type I, IL, or II cement at 185 lb/cu yd (110 kg/cu m). The maximum water cement ratio shall be sufficient to provide a flowable mixture with a typical slump of 10 in. (250 mm)."

Revise Note 2 of Article 543.02 of the Standard Specifications to read:

"Note 2. The grout mixture shall be 6.50 hundredweight/cu yd (385 kg/cu m) of cement plus fine aggregate and water. Fly ash or ground granulated blast furnace (GGBF) slag may replace a maximum of 5.25 hundredweight/cu yd (310 kg/cu m) of the cement. The water/cement ratio, according to Article 1020.06, shall not exceed 0.60. An air-entraining admixture shall be used to produce an air content, according to Article 1020.08, of not less than 6.0 percent nor more than 9.0 percent of the volume of the grout. The Contractor shall have the option to use a water-reducing or high range water-reducing admixture."

Revise Article 583.01 of the Standard Specifications to read:

"**583.01 Description.** This work shall consist of placing cement mortar along precast, prestressed concrete bridge deck beams as required for fairing out any unevenness between adjacent deck beams prior to placing of waterproofing membrane and surfacing."

Revise Article 583.02(a) of the Standard Specifications to read:

"(a) Cement .....1001"

Revise the first paragraph of Article 583.03 of the Standard Specifications to read:

" **583.03 General.** This work shall only be performed when the air temperature is 45 °F (7 °C) and rising. The mixture for cement mortar shall consist of three parts sand to one part cement by volume. The amount of water shall be no more than that necessary to produce a workable, plastic mortar."

Revise Article 606.02(h) of the Standard Specifications to read:

"(h) Fibers (Note 1) .....1014"

Revise Note 1 in Article 606.02(h) of the Standard Specifications to read:

"Note 1. Fibers, when required, shall only be used in the concrete mixture for slipform applications."

Revise the third paragraph in Article 606.10 of the Standard Specifications to read:

"Welded wire fabric shall be 6 x 6 in. (150 x 150 mm) mesh, #4 gauge (5.74 mm), 58 lb (26 kg) per 100 sq ft (9 sq m)."

Revise Article 1001.01(d) of the Standard Specifications to read:

"(d) Rapid Hardening Cement. Rapid hardening cement shall be according to the Bureau of Materials Policy Memorandum "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants", and ASTM C 1600, Type URH, Type VRH, or Type RH-CAC. It shall be used according to Article 1020.04 or when approved by the Engineer. The Contractor shall submit a report from the manufacturer or an independent lab that contains results for testing according to ASTM C 1600 which shows the cement meets the requirements of either Type URH, Type VRH, or Type RH-CAC. Test data shall be less than 1 year old from the date of submittal.

Revise Article 1001.01(e) of the Standard Specifications to read:

"(e) Other Cements. Other cements shall be according to the Bureau of Materials Policy Memorandum "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants", and ASTM C 1157 or ASTM C 1600, as applicable. Other cements shall be used according to Article 1020.04 or when approved by the Engineer. For cements according to ASTM C 1157, the Contractor shall submit a report from the manufacturer or an independent lab that contains results of tests which shows the cement meets the requirements Type GU, HE, MS, MH, or LH. For cements according to ASTM C 1600, the Contractor shall submit a report from the manufacturer or an independent lab that contains results of tests which shows the cement meets the requirements Type MRH or GRH. Test data shall be less than 1 year old from the date of submittal."

Revise Article 1002.02 of the Standard Specifications to read:

"**1002.02 Quality**. Water used with cement in concrete or mortar and water used for curing concrete shall be clean, clear, and free from sugar. In addition, water shall be tested and evaluated for acceptance according to one of the following options.

OPTION 1.

(a) Acceptable limits for acidity and alkalinity when tested according to ITP T 26.

(1) Acidity -- 0.1 Normal NaOH ..... 2 ml max.*
(2) Alkalinity -- 0.1 Normal HCI..... 10 ml max.*
*To neutralize 200 ml sample.

(b) Acceptable limits for solids when tested according to the following.

(1) Organic (ITP T 26)..... 0.02% max.
(2) Inorganic (ITP T 26) ..... 0.30% max.
(3) Sulfate (SO4) (ASTM D 516-82) ..... 0.05% max.
(4) Chloride (ASTM D 512)..... 0.06% max.

(c) The following tests shall be performed on the water sample and on deionized water. The same cement and sand shall be used for both tests.

(1) Unsoundness (ASTM C 151).
(2) Initial and Final Set Time (ASTM C 266).
(3) Strength (ASTM C 109).

The test results for the water sample shall not deviate from the test results for the deionized water, except as allowed by the precision in the test method.

OPTION 2. Water shall meet the requirements ASTM C 1602 Tables 1 and 2 as outlined in Sections 5.1, 5.2, and 5.4."

Revise Note 2/ in Article 1003.01(b) of the Standard Specifications to read:

"2/ Applies only to sand. Sand exceeding the colorimetric test standard of 11 (Illinois Modified AASHTO T 21) will be checked for mortar making properties according to Illinois Modified ASTM C 87 and shall develop a compressive strength at the age of 14 days when using Type I, IL, or II cement of not less than 95 percent of the comparable standard.

Revise the second sentence of Article 1003.02(e)(1) of the Standard Specifications to read:

"The test will be performed with Type I, IL, or II portland cement having a total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.90 percent or greater."

Revise the first sentence of the second paragraph of Article 1003.02(e)(3) of the Standard Specifications to read:

"The ASTM C 1293 test shall be performed with Type I, IL, or II portland cement having a total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.80 percent or greater."

Revise the second sentence of Article 1004.02(g)(1) of the Standard Specifications to read:

"The test will be performed with Type I, IL, or II portland cement having a total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.90 percent or greater."

Add the following Section to the Standard Specifications.

"**SECTION 1014. FIBERS FOR CONCRETE**

1014.01 General. Fibers used in concrete shall be Type II or Type III (polyolefin or carbon) according to ASTM C 1116. The testing required for Type II fibers or Type III polyolefin fibers shall be performed by an independent lab a minimum of once every five years, and the test results provided to the Department. Manufacturers of Type III carbon fibers shall provide materials certification documentation not more than 6 years old a minimum of once every 5 years to the Department. The Department will maintain a qualified product list. The method of inclusion of fibers into concrete mixtures shall be according to the manufacturer's specifications.

At the discretion of the Engineer, the concrete mixture shall be evaluated in a field demonstration for fiber clumping, ease of placement, and ease of finishing. The field demonstration shall consist of a minimum 2 cu yd (1.5 cu m) trial batch placed in a 12 ft x 12 ft (3.6 m x 3.6 m) slab.

1014.02 Concrete Gutter, Curb, Median and Paved Ditch. Fibers shall be Type III. Fibers shall have a minimum length of 1/2 in. (13 mm) and a maximum length of 0.75 in. (19 mm). The

maximum dosage rate in the concrete mixture shall not exceed 1.5 lb/cu yd (0.9 kg/cu m). The minimum dosage rate shall be per the manufacturer's recommendation.

1014.03 Concrete Inlay or Overlay. Fibers shall be Type III. Fibers shall have a minimum length of 1.0 in. (25 mm), a maximum length of 2 1/2 in. (63 mm), and a maximum aspect ratio (length divided by the equivalent diameter of the fiber) of 150. The maximum dosage rate shall not exceed 5.0 lb/cu yd (3.0 kg/cu m). The minimum dosage rate shall be per the manufacturer's recommendation.

1014.04 Bridge Deck Fly Ash, Ground Granulated Blast Furnace (GGBF) Slag, High Reactivity Metakaolin, or Microsilica (Silica Fume) Concrete Overlay. Fibers shall be Type III. The dosage rate shall be a minimum of 3.0 lb/cu yd (1.8 kg/cu m), unless a field demonstration according to Article 1014.01 indicates that a lower dosage rate is necessary. Based on the results of the field demonstration, the Department has the option to reduce the dosage rate of fibers, but the dosage will not be reduced to less than 2.0 lb / cu yd (1.2 kg/cu m).

1014.05 Bridge Deck Latex Concrete Overlay. Fibers shall be Type II or III. Fibers shall have a minimum length of 0.75 in. (19 mm), a maximum length of 1.75 in. (45 mm), and an aspect ratio (length divided by the equivalent diameter of the fiber) of between 70 and 100. The dosage rate shall be a minimum of 3.0 lb/cu yd (1.8 kg/cu m), unless a field demonstration according to Article 1014.01 indicates that a lower dosage rate is necessary. Based on the results of the field demonstration, the Department has the option to reduce the dosage rate of fibers, but the dosage will not be reduced to less than 2.0 lb/cu yd (1.2 kg/cu m)."

Add the following Section to the Standard Specifications:

"**SECTION 1015. HIGH PERFORMANCE SHOTCRETE**

1015.01 Packaged Shotcrete With Aggregate. The packaged shotcrete with aggregate shall be a pre-blended dry combination of materials for the wet-mix shotcrete method according to ASTM C 1480, Type FA or CA, Grade FR, Class I. The fibers shall be Type III according to Article 1014.01. The cement and finely divided minerals in the mixture shall be a minimum 6.65 cwt/cu yd (395 kg/cu m), and the portland cement shall not be below 4.70 cwt/cu yd (279 kg/cu m). Microsilica is required in the mixture and shall be a minimum of 5 percent by weight (mass) of cementitious material, and a maximum of 10 percent. Strength requirements shall be according to ASTM C 1480 except that the strength at 28 days shall be at least 4000 psi (27,500 kPa). Strength testing shall be according to ASTM C 1140. The air content as shot shall be 4.0 – 8.0 percent when tested according to AASHTO T 152, and the coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm).

The packaged shotcrete shall have a water soluble chloride ion content of less than 0.15% by weight of cementitious material when tested according to ASTM C 1218 or AASHTO T 260.

The testing according to ASTM C 1480, ASTM C 1140, AASHTO 152, and ASTM C 1218 or AASHTO T 260 shall be performed by an independent lab a minimum of once every 5 years, and the test results shall be provided to the Department. The Department will maintain a qualified product list. Batching and mixing shall be per the manufacturer's recommendations.

1015.02 Packaged Shotcrete Without Aggregate. The packaged shotcrete that does not include pre-blended aggregate shall be according to Article 1015.01, except the added aggregate shall be according to Articles 1003.02 and 1004.02. The aggregate gradation shall be according

to the manufacturer. The Department will maintain a qualified product list. Batching and mixing shall be per the manufacturer's recommendations."

Revise Section 1017 of the Standard Specifications to read:

"SECTION 1017. PACKAGED, DRY, COMBINED MATERIALS FOR MORTAR AND CONCRETE

1017.01 Mortar. The mortar shall be high-strength according to ASTM C 387 and shall have a minimum 80.0 percent relative dynamic modulus of elasticity when tested according to AASHTO T 161. For prestressed concrete applications, the mortar shall have a water-soluble chloride ion content of less than 0.06 percent by weight of cementitious material when tested according to ASTM C 1218 or AASHTO T 260; and for non-prestressed concrete applications, the water soluble chloride content shall be less than 0.15 percent by weight of cementitious material. The testing according to ASTM C 387, AASHTO T 161, and either ASTM C 1218 or AASHTO T 260 shall be performed by an independent lab a minimum of once every five years, and the test results shall be provided to the Department. The Department will maintain a qualified product list. Mixing of the high-strength mortar shall be according to the manufacturer's specifications.

1017.02 Concrete. The materials, testing, and preparation of aggregate for the "high slump" packaged concrete mixture shall be according to ASTM C 387. The mixture shall be air entrained, the slump shall be 5-10 in. (125-250 mm), and the coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). Strength requirements shall be according to ASTM C 387 except that the strength at 28 days shall be at least 4000 psi (27,500 kPa). The "high slump" packaged concrete mixture shall have a water soluble chloride ion content of less than 0.15% by weight of cementitious material when tested according to ASTM C 1218 or AASHTO T 260. The testing according to ASTM C 387, and either ASTM C 1218 or AASHTO T 260 shall be performed by an independent lab a minimum of once every 5 years, and the test results shall be provided to the Department. The Department will maintain a qualified product list. Mixing shall be per the manufacturer's recommendations.

1017.02 Self-Consolidating Concrete. The materials, testing, and preparation of aggregate for the "self-consolidating concrete" packaged concrete mixture shall be according to ASTM C 387. The mixture shall be air entrained, it should be uniformly graded, and the coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). Strength requirements shall be according to ASTM C 387 except that the strength at 28 days shall be at least 4000 psi (27,500 Pa). Slump flow range shall be 22 in. (550 mm) minimum to 28 in. (700 mm) maximum when tested according to AASHTO T 347. The visual stability index shall be a maximum of 1 when tested according to AASHTO T 351. At the option of the manufacturer, either the J-Ring value shall be a maximum of 2 in. (50 mm) when tested according to AASHTO T 347 or the L-Box blocking ratio shall be a minimum of 80 percent when tested according AASHTO T 419. The hardened visual stability index shall be a maximum of 1 when tested according to AASHTO R 81.

The "self -consolidating concrete" packaged concrete mixture shall have a water soluble chloride ion content of less than 0.15 percent by weight of cementitious material when tested according to ASTM C 1218 or AASHTO T 260.

The testing according to ASTM C 387, AASHTO T 347, AASHTO T 351, AASHTO T 419, AASHTO R 81, ASTM C 1218 and AASHTO T 260 shall be performed by an independent lab a minimum of once every 5 years, and the test results shall be provided to the Department. The

Department will maintain a qualified product list. Mixing shall be per the manufacturer's recommendations."

Revise Article 1018.01 of the Standard Specifications to read:

"**1018.01 Requirements.** The rapid hardening mortar or concrete shall be according to ASTM C 928 and shall have successfully completed and remain current with the AASHTO Product Eval and Audit Rapid Hardening Concrete Patching Materials (RHCP) testing program. R1, R2, or R3 concrete shall be air entrained, the slump shall be 5-10 in. (125-250 mm), and the coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). For prestressed concrete applications, the mortar or concrete shall have a water-soluble chloride ion content of less than 0.06 percent by weight of cementitious material when tested according to ASTM C 1218 or AASHTO T 260; and for non-prestressed concrete applications, the water soluble chloride content shall be less than 0.15 percent by weight of cementitious material. The Department will maintain a qualified product list. Mixing of the mortar or concrete shall be according to the manufacturer's specifications.."

Revise Article 1019.02 of the Standard Specifications to read:

"**1019.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Cement	1001
(b) Water	1002
(c) Fine Aggregate for Controlled Low-Strength Material (CLSM)	1003.06
(d) Fly Ash	1010
(e) Ground Granulated Blast Furnace (GGBF) Slag	1010
(f) Admixtures (Note 1)	

Note 1. The air-entraining admixture may be in powder or liquid form. The air content produced by the admixture shall be 15-25 percent when incorporated into Mix 2 or an equivalent mixture as determined by the Department and tested according to AASHTO T 121 or AASHTO T 152. The testing according to AASHTO T 121 or AASHTO T 152 shall be performed by an independent lab a minimum of once every five years, and the test results shall be provided to the Department. The Department will maintain a qualified product list."

Revise the third paragraph of Article 1019.04 of the Standard Specifications to read:

"The Engineer will instruct the Contractor to adjust the proportions of the mix design in the field as needed to meet the design criteria, provide adequate flowability, maintain proper solid suspension, or other criteria established by the Engineer."

Revise Article 1019.05 of the Standard Specifications to read:

"**1019.05 Department Mix Design.** The Department mix design shall be Mix 1, 2, or 3 and shall be proportioned to yield approximately one cubic yard (cubic meter).

Mix 1	
Cement	50 lb (30 kg)
Fly Ash – Class C or F, and/or GGBF Slag	125 lb (74 kg)
Fine Aggregate – Saturated Surface Dry	2900 lb (1720 kg)
Water	50-65 gal (248-322 L)
Air Content	No air is entrained

Mix 2	
Cement	125 lb (74 kg)
Fine Aggregate – Saturated Surface Dry	2500 lb (1483 kg)
Water	35-50 gal (173-248 L)
Air Content	15-25 %

Mix 3	
Cement	40 lb (24 kg)
Fly Ash – Class C or F, and/or GGBF Slag	125 lb (74 kg)
Fine Aggregate – Saturated Surface Dry	2500 lb (1483 kg)
Water	35-50 gal (179-248 L)
Air Content	15-25 %"

Revise Article 1020.04, Table 1, Note (8) of the Standard Specifications to read:

"(8) In addition to the Type III portland cement, 100 lb/cu yd of ground granulated blast-furnace slag and 50 lb/cu yd of microsilica (silica fume) shall be used. For an air temperature greater than 85 ºF, the Type III portland cement may be replaced with Type I, IL, or II portland cement."

Revise Article 1020.04, Table 1 (Metric), Note (8) of the Standard Specifications to read:

"(8) In addition to the Type III portland cement, 60 kg/cu m of ground granulated blast-furnace slag and 30 kg/cu m of microsilica (silica fume) shall be used. For an air temperature greater than 30 ºC, the Type III portland cement may be replaced with Type I, IL, or II portland cement."

Revise Note 9 of Table 1 of Article 1020.04 of the Standard Specifications to read:

"(9) The cement shall be a rapid hardening according to Article 1001.01(d). Minimum or maximum cement factor may be adjusted when approved by the Engineer."

Revise the second paragraph of Article 1020.05(a) of the Standard Specifications to read:

"For a mix design using a portland-pozzolan cement, portland blast-furnace slag cement, portland-limestone cement, or replacing portland cement with finely divided minerals per Articles 1020.05(c) and 1020.05(d), the Contractor may submit a mix design with a minimum portland cement content less than 400 lbs/cu yd (237 kg/cu m), but not less than 375 lbs/cu yd (222 kg/cu m), if the mix design is shown to have a minimum relative dynamic modulus of elasticity of 80 percent determined according to AASHTO T 161.

Testing shall be performed by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete."

Revise the first sentence of the first paragraph of Article 1020.05(b) of the Standard Specifications to read:

"Corrosion inhibitors and concrete admixtures shall be according to the qualified product lists."

Delete the fourth and fifth sentences of the second paragraph of Article 1020.05(b) of the Standard Specifications.

Revise Article 1020.05(b)(5) of the Standard Specifications to read:

"(5) For Class PP-4 concrete, a high range water-reducing admixture, retarder, and/or hydration stabilizer may be used in addition to the air-entraining admixture. The Contractor also has the option to use a water-reducing admixture with the high range water-reducing admixture. An accelerator shall not be used. A mobile portland cement concrete plant shall be used to produce the patching mixture.

For PP-5 concrete, a non-chloride accelerator, high range water-reducing admixture, retarder, hydration stabilizer, and/or air-entraining admixture may be used. The accelerator, high range water-reducing admixture, retarder, hydration stabilizer, and/or air-entraining admixture shall be per the Contractor's recommendation and dosage. The qualified product list of concrete admixtures shall not apply. A mobile portland cement concrete plant shall be used to produce the patching mixture."

Revise second paragraph of Article 1020.05(b)(10) of the Standard Specifications to read:

"When calcium nitrite is used, it shall be added at the rate of 4 gal/cu yd (20 L/cu m) and shall be added to the mix immediately after all compatible admixtures have been introduced to the batch. Other corrosion inhibitors shall be added per the manufacturer's specifications."

Delete the third paragraph of Article 1020.05(b)(10) of the Standard Specifications.

Revise Article 1020.15(b)(1)c. of the Standard Specifications to read:

"c. The minimum portland cement content in the mixture shall be 375 lbs/cu yd (222 kg/cu m). When the total of organic processing additions, inorganic processing additions, and limestone addition exceed 5.0 percent in the cement, the minimum portland cement content in the mixture shall be 400 lbs/cu yd (237 kg/cu m). For a drilled shaft, foundation, footing, or substructure, the minimum portland cement may be reduced to as low as 330 lbs/cu yd (196 kg/cu m) if the concrete has adequate freeze/thaw durability. The Contractor shall provide freeze/thaw test results according to AASHTO T 161, and the relative dynamic modulus of elasticity of the mix design shall be a minimum of 80 percent. Testing shall be performed by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete. Freeze/thaw testing will not be required for concrete that will not be exposed to freezing and thawing conditions as determined by the Engineer."

Revise Article 1021.01 of the Standard Specifications to read:

"**1021.01 General.** Admixtures shall be furnished in liquid or powder form ready for use. The admixtures shall be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer, the date of manufacture, and trade name of the material. Containers shall be readily identifiable as to manufacturer, the date of manufacture, and trade name of the material they contain.

Concrete admixtures shall be on one of the Department's qualified product lists. Unless otherwise noted, admixtures shall have successfully completed and remain current with the AASHTO Product Eval and Audit Concrete Admixture (CADD) testing program. For admixture submittals to the Department; the product brand name, manufacturer name, admixture type or types, an electronic link to the product's technical data sheet, and the NTPEP testing number which contains an electronic link to all test data shall be provided. In addition, a letter shall be submitted certifying that no changes have been made in the formulation of the material since the most current round of tests conducted by AASHTO Product Eval and Audit. After 28 days of testing by AASHTO Product Eval and Audit, air-entraining admixtures may be provisionally approved and used on Departmental projects. For all other admixtures, unless otherwise noted, the time period after which provisionally approved status may be earned is 6 months.

The manufacturer shall include the following in the submittal to the AASHTO Product Eval and Audit CADD testing program: the manufacturing range for specific gravity, the midpoint and manufacturing range for residue by oven drying, and manufacturing range of pH. The submittal shall also include an infrared spectrophotometer trace no more than five years old.

For air-entraining admixtures according to Article 1021.02, the specific gravity allowable manufacturing range established by the manufacturer shall be according to AASHTO M 194. For residue by oven drying and pH, the allowable manufacturing range and test methods shall be according to AASHTO M 194.

For admixtures according to Articles 1021.03, 1021.04, 1021.05, 1021.06, 1021.07, and 1021.08, the pH allowable manufacturing range established by the manufacturer shall be according to ASTM E 70. For specific gravity and residue by oven drying, the allowable manufacturing range and test methods shall be according to AASHTO M 194.

All admixtures, except chloride-based accelerators, shall contain a maximum of 0.3 percent chloride by weight (mass) as determined by an appropriate test method. To verify the test result, the Department will use Illinois Modified AASHTO T 260, Procedure A, Method 1.

Prior to final approval of an admixture, the Engineer reserves the right to request a sample for testing. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 5.65 cwt/cu yd (335 kg/cu m). For freeze-thaw testing, the Department will perform the test according to Illinois Modified AASHTO T 161. The flexural strength test will be performed according to AASHTO T 177. If the Engineer decides to test the admixture, the manufacturer shall submit AASHTO T 197 water content and set time test results on the standard cement used by the Department. The manufacturer may select their lab or an independent lab to perform this testing. The laboratory is not required to be accredited by AASHTO.

Random field samples may be taken by the Department to verify an admixture meets specification. A split sample will be provided to the manufacturer if requested. Admixtures that do not meet specification requirements or an allowable manufacturing range established by the manufacturer shall be replaced with new material."

Revise Article 1021.03 of the Standard Specifications to read:

"**1021.03 Retarding and Water-Reducing Admixtures.** The admixture shall be according to the following.

(a) Retarding admixtures shall be according to AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).

(b) Water-reducing admixtures shall be according to AASHTO M 194, Type A.

(c) High range water-reducing admixtures shall be according to AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding)."

Revise Article 1021.05 of the Standard Specifications to read:

"**1021.05 Self-Consolidating Admixtures.** Self-consolidating admixture systems shall consist of either a high range water-reducing admixture only or a high range water-reducing admixture combined with a separate viscosity modifying admixture. The one or two component admixture system shall be capable of producing a concrete that can flow around reinforcement and consolidate under its own weight without additional effort and without segregation.

High range water-reducing admixtures shall be according to AASHTO M 194, Type F.

Viscosity modifying admixtures shall be according to AASHTO M 194, Type S (specific performance)."

Revise Article 1021.06 of the Standard Specifications to read:

"**1021.06 Rheology-Controlling Admixture.** Rheology-controlling admixtures shall be capable of producing a concrete mixture with a lower yield stress that will consolidate easier for slipform applications used by the Contractor. Rheology-controlling admixtures shall be according to AASHTO M 194, Type S (specific performance)."

Revise Article 1021.07 of the Standard Specifications to read:

"**1021.07 Corrosion Inhibitor.** The corrosion inhibitor shall be according to one of the following.

(a) Calcium Nitrite. Corrosion inhibitors shall contain a minimum 30 percent calcium nitrite by weight (mass) of solution and shall comply with either the requirements of AASHTO M 194, Type C (accelerating) or the requirements of ASTM C 1582. The corrosion inhibiting performance requirements of ASTM C 1582 shall not apply.

(b) Other Materials. The corrosion inhibitor shall be according to ASTM C 1582.

For submittals requiring testing according to ASTM M 194, Type C (accelerating), the admixture shall meet the requirements of the AASHTO Product Eval and Audit CADD testing program according to Article 1021.01.

For submittals requiring testing according to ASTM C 1582, a report prepared by an independent laboratory accredited by AASHTO re:source for portland cement concrete shall be provided. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications. However, ASTM G 109 test information specified in ASTM C 1582 is not required to be from an independent accredited lab. All other information in ASTM C 1582 shall be from an independent accredited lab. Test data and other information required to be submitted to AASHTO Product Eval and Audit according to Article 1021.01, shall instead be submitted directly to the Department."

Add Article 1021.08 of the Standard Specifications as follows:

"**1021.08 Other Specific Performance Admixtures.** Other specific performance admixtures shall, at a minimum, be according to AASHTO M 194, Type S (specific performance). The Department also reserves the right to require other testing, as determined by the Engineer, to show evidence of specific performance characteristics.

Initial testing according to AASHTO M 194 may be conducted under the AASHTO Product Eval and Audit CADD testing program according to Article 1021.01, or by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete. In either case, test data and other information required to be submitted to AASHTO Product Eval and Audit according to Article 1021.01, shall also be submitted directly to the Department. The independent accredited lab report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications."

Add Article 1021.09 of the Standard Specifications as follows:

"**1021.09 Latex Admixtures**. The latex admixture shall be a uniform, homogeneous, non-toxic, film-forming, polymeric emulsion in water to which all stabilizers have been added at the point of manufacture. The latex admixture shall not contain any chlorides and shall contain 46-49 percent solids.

In lieu of meeting the requirements of Article 1021.01, the Contractor shall submit a manufacturer's certification that the latex emulsion meets the requirements of FHWA Research Report RD-78-35, Chapter VI. The certificate shall include the date of manufacture of the latex admixture, batch or lot number, quantity represented, manufacturer's name, and the location of the manufacturing plant. The latex emulsion shall be sampled and tested in accordance with RD-78-35, Chapter VII, Certification Program.

The latex admixture shall be packaged and stored in containers and storage facilities which will protect the material from freezing and from temperatures above 85°F (30°C). Additionally, the material shall not be stored in direct sunlight and shall be shaded when stored outside of buildings during moderate temperatures."

Revise Article 1024.01 of the Standard Specifications to read:

"**1024.01 Requirements for Grout.** The grout shall be proportioned by dry volume, thoroughly mixed, and shall have a minimum temperature of 50 °F (10 °C). Water shall not exceed the minimum needed for placement and finishing.

Materials for the grout shall be according to the following.

Item	Article/Section
(a) Cement	1001
(b) Water	1002
(c) Fine Aggregate	1003.02
(d) Fly Ash	1010
(e) Ground Granulated Blast Furnace (GGBF) Slag	1010
(f) Concrete Admixtures	1021"

Revise Note 1 of Article 1024.02 of the Standard Specifications to read:

"Note 1. Nonshrink grout shall be according to ASTM C 1107.

For prestressed concrete applications, the nonshrink grout shall have a water soluble chloride ion content of less than 0.06 percent by weight of cementitious material when tested according to ASTM C 1218 or AASHTO T 260; and for non-prestressed concrete applications, the water soluble chloride ion content shall be less than 0.15 percent by weight of cementitious material. The testing according to ASTM 1107, and either ASTM C 1218 or AASHTO T 260 shall be performed by an independent lab a minimum of once every five years, and the test results shall be provided to the Department. The Department will maintain a qualified product list. Mixing of the nonshrink grout shall be according to the manufacturer's specifications."

Revise Article 1029.02 of the Standard Specifications to read:

" **1029.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Cement	1001
(b) Fly Ash	1010
(c) Ground Granulated Blast Furnace (GGBF) Slag	1010
(d) Water	1002
(e) Fine Aggregate	1003
(f) Concrete Admixtures	1021
(g) Foaming Agent (Note 1)	

Note 1. The manufacturer shall submit infrared spectrophotometer trace and test results indicating the foaming agent meets the requirements of ASTM C 869 in order to be on the Department's qualified product list. Submitted data/results shall not be more than five years old."

Revise the second paragraph of Article 1103.03(a)(4) the Standard Specifications to read:

"The dispenser system shall provide a visual indication that the liquid admixture is actually entering the batch, such as via a transparent or translucent section of tubing or by independent check with an integrated secondary metering device. If approved by the Engineer, an alternate indicator may be used for admixtures dosed at rates of

25 oz/cwt (1630 mL/100 kg) or greater, such as accelerating admixtures, corrosion inhibitors, and viscosity modifying admixtures."

Revise Article 1103.04 of the Standard Specifications to read:

" **1103.04 Mobile Portland Cement Concrete Plants.** The mobile concrete plant shall be according to AASHTO M 241 and the Bureau of Materials Policy Memorandum "Approval of Volumetric Mobile Mixers for Concrete". The mixer shall be capable of carrying sufficient unmixed materials to produce not less than 6 cu yd (4.6 cu m) of concrete."

Revise the first two sections of Check Sheet #11 "Subsealing of Concrete Pavements" of the Recurring Special Provisions to read:

"Description. This work shall consist of filling voids beneath rigid and composite pavements with cement grout.

Materials. Materials shall be according to the following Articles/Sections of the Standard Specifications:

Item	Article/Section
(a) Cement	1001
(b) Water	1002
(c) Fly Ash	1010
(d) Ground Granulated Blast Furnace (GGBF) Slag	1010
(e) Admixtures	1021
(f) Packaged Rapid Hardening Mortar or Concrete	1018"

Revise the Materials section of Check Sheet #28 "Portland Cement Concrete Inlay or Overlay" of the Recurring Special Provisions to read:

"Materials. Materials shall be according to the following Articles/Sections of the Standard Specifications.

Item	Article/Section
(a) Portland Cement Concrete (Note 1)	1020
(b) Fibers for Concrete	1014
(c) Protective Coat	1023.01

Note 1. Class PV concrete shall be used, except the cement factor for central mixed concrete shall be 6.05 cwt/cu yd (360 kg/cu m). A cement factor reduction according to Article 1020.05(b)(8) of the Standard Specifications will be permitted. CA 5 shall not be used and CA 7 may only be used for overlays that are a minimum of 4.5 in. (113 mm) thick. The Class PV concrete shall have a minimum flexural strength of 550 psi (3800 kPa) or a minimum compressive strength of 3000 psi (20,700 kPa) at 14 days."

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017 Revised: April 1, 2019

Revise Article 107.40(b) of the Standard Specifications to read:

"(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

(1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.

(2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.

(3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days."

Revise Article 107.40(c) of the Standard Specifications to read:

"(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

(1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

(2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the Contractor's yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

(3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13."

Revise Article 108.04(b) of the Standard Specifications to read:

"(b) No working day will be charged under the following conditions.

(1) When adverse weather prevents work on the controlling item.

(2) When job conditions due to recent weather prevent work on the controlling item.

(3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.

(4) When delays caused by utility or railroad adjustments prevent work on the controlling item.

(5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.

(6) When any condition over which the Contractor has no control prevents work on the controlling item."

Revise Article 109.09(f) of the Standard Specifications to read:

"(f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited."

Add the following to Section 109 of the Standard Specifications.

"**109.13 Payment for Contract Delay.** Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

(a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.

(b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.

(1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to $5,000,000	One Project Superintendent
Over $ 5,000,000 - up to $25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over $25,000,000 - up to $50,000,000	One Project Manager, One Project Superintendent, One Engineer, and One Clerk
Over $50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid for according to Article 109.04.

When an extended traffic control adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

DECK SLAB REPAIR

Effective: January 1, 2026

Add the following Section 530 to the Standard Specifications:

"**SECTION 530. DECK SLAB REPAIR**

530.01 Description. This work shall consist of the removal of existing hot-mix asphalt (HMA) surface and loose and deteriorated concrete from a bridge deck, and the replacement with new concrete to the existing top of deck.

Work will be classified as follows.

Removal Type	Description
HMA Surface Removal	Removal of the HMA surface from the concrete bridge deck.
Deck Slab Repair (Partial)	Removal and replacement of the concrete deck, at least 3/4 in. (20 mm) but not more than 1/2 of the concrete deck thickness.
Deck Slab Repair (Full Depth, Type I)	Removal and replacement of the concrete deck to full depth, for an area 1 ft x 1 ft (300 mm x 300 mm) to 5 sq ft (0.5 sq m).
Deck Slab Repair (Full Depth, Type II)	Removal and replacement of the concrete deck to full depth, for an area greater than 5 sq ft (0.5 sq m).

530.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement Concrete (Note 1)	1020
(b) Reinforcement Bars	508

Note 1. Class PP-1, PP-2, PP-3, PP-4, PP-5, or BS concrete shall be used unless otherwise noted on the plans.

530.03 Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Concrete Equipment	1020.03
(b) Finishing Equipment	503.03

(c) Hydrodemolition Equipment 1101.11
(e) Hydro-Scarification Equipment (Note 1)

Note 1. Hydro-scarification equipment shall consist of filtering and pumping units operating with a computerized, self-propelled robotic machine capable of removing unsound concrete in a single pass to the specified depth and operating at a 16,000 psi (110 MPa) minimum water pressure with a 55 gal/min (208 L/min) minimum water flow rate.

CONSTRUCTION REQUIREMENTS

530.04 General. Sidewalks, curbs, drains, reinforcement, existing transverse and longitudinal joints, and other appurtenances which are to remain in place shall be protected from damage during removal and cleaning operations.

The Contractor shall control the runoff water generated by the various construction activities in such a manner as to minimize, to the maximum extent practicable, the discharge of untreated effluent into adjacent waters, and shall properly dispose of the solids generated according to Article 202.03. The Contractor shall submit a water management plan to the Engineer specifying the control measures to be used. The control measures shall be in place prior to the start of runoff water generating activities. Runoff water shall not be allowed to constitute a hazard to adjacent or underlying roadways, waterways, drainage areas or railroads nor be allowed to erode existing slopes.

530.05 HMA Surface Removal. The existing HMA surface and waterproofing membrane shall be removed and disposed of according to Articles 440.04 and 440.06, except milling equipment will not be allowed if the deck is to receive a waterproofing membrane system. Removal of the HMA surface by the use of radiant or direct heat will not be permitted. If the HMA surface or waterproofing membrane contains asbestos fibers, removal shall be according to the Recurring Special Provision “Asbestos Waterproofing Membrane or Asbestos Hot-Mix Asphalt Surface Removal”.

530.06 Concrete Removal. Concrete shall be removed, as determined by the Engineer, in areas of loose, disintegrated, and unsound concrete. Areas designated for partial depth repair in which unsound concrete is found to extend below half the concrete deck thickness shall be removed to full depth.

A concrete saw shall be used to provide vertical edges 3/4 in. (20 mm) deep around the perimeter of the area to be patched. Where reinforcement bars lack sufficient concrete cover, the depth shall be reduced as directed by the Engineer. A saw cut will not be required if the deck is to get an overlay, or along the face of the curb, parapet or joint, or when sharp vertical edges are provided by hydrodemolition.

(a) Partial-Depth. The loose and unsound concrete shall be removed using power-driven hand tools or hydrodemolition equipment. Power-driven hand tools include jackhammers less than or equal to the nominal 45 lb (20 kg) class. Chipping hammers heavier than the nominal 15 lb (7 kg) class shall not be used for removing concrete from below reinforcing bars, or for removal within 1 ft (300 mm) of existing beams, girders, or other structural members that are to remain in service. Jackhammers and chipping hammers

shall not be operated at an angle less than 45 degrees measured from the surface of the deck.

(b) Full Depth. Full depth removal shall be performed according to Article 501.05 except that hydraulic impact equipment may be permitted in areas of full depth removal more than 1 ft (300 mm) away from the edges of existing beams, girders or other supporting structural members or more than 1 ft (300 mm) from the boundaries of full depth repairs.

Forms for full depth repair may be supported by hangers with adjustable bolts or by blocking from the beams below. When approved by the Engineer, forms for Type I patches may be supported by No. 9 (3.8 mm) wires or other devices attached to the reinforcement bars.

Exposed reinforcement bars and newly exposed concrete shall be blast cleaned. If the Engineer determines the bond between existing concrete and reinforcement bars within the patch area has been destroyed, the concrete adjacent to the bar shall be removed to a depth that will permit new concrete to bond to the entire periphery of the exposed bar. A minimum of 1 in. (25 mm) clearance will be required. If the Engineer enlarges a designated removal area due to deterioration beyond the limits previously designated, a new saw cut shall be made around the extended area before additional removal is begun. The removal area shall not be enlarged solely to correct debonded reinforcement or deficient lap lengths.

530.07 Reinforcement Treatment. Care shall be exercised during concrete removal to protect the reinforcement bars and structural steel from damage. Damage to the reinforcement bars or structural steel to remain in place shall be repaired or replaced. Existing reinforcement bars shall remain in place and loose bars shall be tied. Reinforcing bars which have been removed with the patch or lost at least 25 percent of their original cross-sectional area due to corrosion shall be supplemented by new in-kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical splicer capable of developing in tension at least 125 percent of the yield strength of the existing bar shall be used when it is not feasible to provide the minimum bar lap. No welding of bars will be permitted.

530.08 Cleaning. After concrete removal and reinforcement repairs, the repair areas shall be cleaned of dust and debris. Once the initial cleaning is completed, the repair areas shall be blast cleaned to a roughened appearance free from concrete fines and foreign matter.

Exposed reinforcement bars shall be free of dirt, detrimental scale, paint, oil, or other foreign substances which may reduce bond with the concrete. Loose, scaling rust shall be removed by rubbing with burlap, wire brushing, blast cleaning, or another method approved by the Engineer.

Dust, concrete fines, debris, and water resulting from the blast cleaning shall be confined and immediately removed. If concrete placement does not follow immediately after the final cleaning, the area shall be protected with anchored polyethylene sheeting.

530.09 Placing. Concrete placement shall be according to Articles 503.07, 503.16, 1020.14(b), and the following.

The patch area shall be cleaned to the satisfaction of the Engineer and shall be thoroughly wetted and maintained in a dampened condition with water for at least 12 hours before placement of the concrete. Excess water shall be removed by compressed air or by vacuuming prior to the beginning of concrete placement. Water shall not be applied to the surface within one hour before or at any time during placement of the concrete.

When an overlay system is not specified, the patches shall be finished according to Article 503.16(a), followed by a light brooming.

530.10 Curing and Protection. Concrete patches shall be cured according to Articles 1020.13(a)(3) or (a)(5). The curing period shall be three days for Class PP-1, PP-2, PP-3, PP-4, and PP-5 concrete, and seven days for Class BS concrete. When the air temperature is below 55º F (13º C), the Contractor shall cover the patch according to Article 1020.13(d)(1) with minimum R12 insulation.

A 72 hour minimum drying period shall be required before placing waterproofing or HMA surfacing.

530.11 Opening to Traffic. No traffic will be permitted on a patch until after the cure period and the concrete has obtained a minimum compressive strength of 4000 psi (27.6 MPa) or flexural strength of 675 psi (4.65 MPa). Construction equipment will be permitted on a patch during the cure period if the concrete has obtained the minimum required strength when the specimens are cured with the patch.

530.12 Method of Measurement. HMA surface removal and deck slab repair will be measured for payment in place and the area computed in square yards (square meters).

530.13 Basis of Payment. HMA surface removal will be paid for at the contract unit price per square yard (square meter) for HOT-MIX ASPHALT SURFACE REMOVAL (DECK).

Areas removed and replaced up to and including a depth of half the concrete deck thickness will be paid for at the contract unit price per square yard (square meter) for DECK SLAB REPAIR (PARTIAL). Areas removed and replaced to a depth greater than half the concrete deck thickness will be paid for at the contract unit price per square yard (square meter) for DECK SLAB REPAIR (FULL DEPTH, of the type specified).

Concrete protected according to Article 1020.13(d) will be paid according to Article 503.22.

Reinforcement bars repaired in-kind, as approved by the Engineer, will be paid according to Article 109.04."

HOT-MIX ASPHALT (BDE)

Effective: January 1, 2024 Revised: January 1, 2026

Add the following to the end of Article 406.06(c) of the Standard Specifications:

"The amount of HMA binder course placed shall be limited to that which can be surfaced during the same construction season."

Revise the fifteenth through eighteenth paragraphs of Article 406.14 of the Standard Specifications to read:

"The mixture used in constructing acceptable HMA test strips will be paid for at the contract unit price. Unacceptable HMA test strips shall be removed and replaced at no additional cost to the Department."

Revise the first and second paragraphs of Articles 1030.06(c)(2) of the Standard Specifications to read:

"(2) Personnel. The Contractor shall provide a QC Manager who shall have overall responsibility and authority for quality control. This individual shall maintain active certification as a Hot-Mix Asphalt Level II technician.

In addition to the QC Manager, the Contractor shall provide sufficient personnel to perform the required visual inspections, sampling, testing, and documentation in a timely manner. Mix designs shall be developed by personnel with an active certification as a Hot-Mix Asphalt Level III technician. Technicians performing mix design testing and plant sampling/testing shall maintain active certification as a Hot-Mix Asphalt Level I technician. The Contractor may provide a technician trainee who has successfully completed the Department's "Hot-Mix Asphalt Trainee Course" to assist in the activities completed by a Hot-Mix Asphalt Level I technician for a period of one year after the course completion date. The Contractor may also provide a Gradation Technician who has successfully completed the Department's "Gradation Technician Course" to run gradation tests only under the supervision of a Hot-Mix Asphalt Level II Technician. The Contractor shall provide a Hot-Mix Asphalt Density Tester who has successfully completed the Department's "Nuclear Density Testing" course to run all nuclear density tests on the job site."

Add Article 1030.06(d)(3) to the Standard Specifications as follows:

"(3) The Contractor shall take possession of any Department HMA mixture samples or density specimens upon notification by the Engineer. The Contractor shall collect the HMA mixture samples or density specimens from the location designated by the Engineer and may add these materials to RAP stockpiles according to Section 1031."

Revise the second paragraph of Articles 1030.07(a)(11) and 1030.08(a)(9) of the Standard Specifications to read:

"When establishing the target density, the HMA maximum theoretical specific gravity (G_{mm}) will be based on the running average of four available Department test results

for that project. If less than four G_{mm} test results are available, an average of all available Department test results for that project will be used. The initial G_{mm} will be the last available Department test result from a QMP project. If there is no available Department test result from a QMP project, the Department mix design verification test result will be used as the initial G_{mm}."

Revise the Quality Control Limits table in Article 1030.09(c) to read:

"CONTROL LIMITS						
Parameter	IL-19.0, IL-9.5, IL-9.5FG, IL-19.0L, IL-9.5L		SMA-12.5, SMA-9.5		IL-4.75	
	Individual Test	Moving Avg. of 4	Individual Test	Moving Avg. of 4	Individual Test	Moving Avg. of 4
% Passing: 1/						
1/2 in. (12.5 mm)	± 6 %	± 4 %	± 6 %	± 4 %		
3/8 in. (9.5mm)			± 4 %	± 3 %		
# 4 (4.75 mm)	± 5 %	± 4 %	± 5 %	± 4 %		
# 8 (2.36 mm)	± 5 %	± 3 %	± 4 %	± 2 %		
# 16 (1.18 mm)			± 4 %	± 2 %	± 4 %	± 3 %
# 30 (600 µm)	± 4 %	± 2.5 %	± 4 %	± 2.5 %		
Total Dust Content # 200 (75 µm)	± 1.5 %	± 1.0 %			± 1.5 %	± 1.0 %
Asphalt Binder Content	± 0.3 %	± 0.2 %	± 0.2 %	± 0.1 %	± 0.3 %	± 0.2 %
Air Voids 2/	± 1.2 %	± 1.0 %	± 1.2 %	± 1.0 %	± 1.2 %	± 1.0 %
Field VMA 3/	-0.7 %	-0.5 %	-0.7 %	-0.5 %	-0.7 %	-0.5 %

1/ Based on washed ignition oven or solvent extraction gradation.

2/ The air voids target value shall be 3.2 to 4.8 percent.

3/ Allowable limit below minimum design VMA requirement."

Revise Article 1030.09(g)(2) of the Standard Specifications to read:

"(2) The Contractor shall complete split verification sample tests listed in the Limits of Precision table in Article 1030.09(h)(1)."

In the Supplemental Specifications, replace the revision for the end of the third paragraph of Article 1030.09(h)(2) with the following:

"When establishing the target density, the HMA maximum theoretical specific gravity (G_{mm}) will be the Department mix design verification test result."

Replace the last sentence of the fourth paragraph of Article 1030.10 of the Standard Specifications with the following:

"The mixture test results shall meet the requirements of Article 1030.05(d), except tensile strength and TSR testing will only be conducted on the first use of a mix design for the year and

Hamburg wheel tests will only be conducted on High ESAL mixtures. To be considered acceptable to remain in place, the Department's mixture test results shall meet the acceptable limits stated in Article 1030.09(i)(1). In addition, no visible pavement distress such as, but not limited to, segregation, excessive coarse aggregate fracturing outside of growth curves, excessive dust balls, or flushing shall be present as determined by the Engineer."

Revise the tenth paragraph of Article 1030.10 of the Standard Specifications to read:

"Production is not required to stop after a test strip has been constructed."

Replace the eleventh paragraph of Article 1030.10 of the Standard Specifications with the following:

"If an initial Hamburg wheel or I-FIT test fails to meet the requirements of Article 1030.05(d), the Department will verify the results by testing the retained gyratory cylinders. Upon notification by the Engineer of a Hamburg wheel or I-FIT test failure on the retained gyratory cylinders, the Contractor shall substitute an approved mix design, submit a new mix design for mix verification testing according to Article 1030.05(d), or pave 250 tons with or without an adjustment and resample for Department Hamburg wheel and I-FIT testing as directed by the Engineer. Paving may continue as long as all other mixture criteria is being met. If Hamburg wheel or I-FIT tests on the resampled HMA fail, production of the affected mixture shall cease and the Contractor shall substitute an approved mix design or submit a new mix design for mix verification testing according to Article 1030.05(d)."

ILLINOIS WORKS APPRENTICESHIP INITIATIVE – STATE FUNDED CONTRACTS (BDE)

Effective: June 2, 2021 Revised: April 2, 2024

Illinois Works Jobs Program Act (30 ILCS 559/20-1 et seq.). For contracts having an awarded contract value of $500,000 or more, the Contractor shall comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules. The goal of the Illinois Apprenticeship Works Initiative is that apprentices will perform either 10% of the total labor hours actually worked in each prevailing wage classification or 10% of the estimated labor hours in each prevailing wage classification, whichever is less. Of this goal, at least 50% of the labor hours of each prevailing wage classification performed by apprentices shall be performed by graduates of the Illinois Works Pre-Apprenticeship Program, the Illinois Climate Works Pre-Apprenticeship Program, or the Highway Construction Careers Training Program.

The Contractor may seek from the Department of Commerce and Economic Opportunity (DCEO) a waiver or reduction of this goal in certain circumstances pursuant to 30 ILCS 559/20-20(b). The Contractor shall ensure compliance during the term of the contract and will be required to report on and certify its compliance. An apprentice use plan, apprentice hours, and a compliance certification shall be submitted to the Engineer on forms provided by the Department and/or DCEO.

PAVEMENT MARKING (BDE)

Effective: April 1, 2025 Revised: November 1, 2025

Revise the fourth sentence of the fourth paragraph of Article 780.05 of the Standard Specifications to read:

"Grooves for letters and symbols shall be cut in a rectangular shape or in the shape of the proposed marking so the entire marking will fit within the limits of the grooved area."

Revise the last sentence of the third paragraph of Article 780.08 of the Standard Specifications to read:

"The Contractor shall install the preformed plastic pavement markings according to the manufacturer's recommendations."

Revise the second sentence of the first paragraph of Article 780.13 of the Standard Specifications to read:

"In addition, thermoplastic, preformed plastic, epoxy, preformed thermoplastic, polyurea, and modified urethane pavement markings will be inspected following a winter performance period that extends from November 15 to April 1 of the next year."

PERFORMANCE GRADED ASPHALT BINDER (BDE)

Effective: January 1, 2023

Revise Article 1032.05 of the Standard Specifications to read:

"**1032.05 Performance Graded Asphalt Binder.** These materials will be accepted according to the Bureau of Materials Policy Memorandum, "Performance Graded Asphalt Binder Qualification Procedure." The Department will maintain a qualified producer list. These materials shall be free from water and shall not foam when heated to any temperature below the actual flash point. Air blown asphalt, recycle engine oil bottoms (ReOB), and polyphosphoric acid (PPA) modification shall not be used.

When requested, producers shall provide the Engineer with viscosity/temperature relationships for the performance graded asphalt binders delivered and incorporated in the work.

(a) Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 "Standard Specification for Performance Graded Asphalt Binder" for the grade shown on the plans and the following.

Test	Parameter
Small Strain Parameter (AASHTO PP 113) BBR, ΔTc, 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5 °C min.

(b) Modified Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans.

Asphalt binder modification shall be performed at the source, as defined in the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.”

Modified asphalt binder shall be safe to handle at asphalt binder production and storage temperatures or HMA construction temperatures. Safety Data Sheets (SDS) shall be provided for all asphalt modifiers.

(1) Polymer Modification (SB/SBS or SBR). Elastomers shall be added to the base asphalt binder to achieve the specified performance grade and shall be either a styrene-butadiene diblock, triblock copolymer without oil extension, or a styrene-butadiene rubber. The polymer modified asphalt binder shall be smooth, homogeneous, and be according to the requirements shown in Table 1 or 2 for the grade shown on the plans.

Table 1 - Requirements for Styrene-Butadiene Copolymer (SB/SBS) Modified Asphalt Binders		
Test	Asphalt Grade SB/SBS PG 64-28 SB/SBS PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SB/SBS PG 76-22 SB/SBS PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

Table 2 - Requirements for Styrene-Butadiene Rubber (SBR) Modified Asphalt Binders		
Test	Asphalt Grade SBR PG 64-28 SBR PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SBR PG 76-22 SBR PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
Toughness ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	110 (12.5) min.	110 (12.5) min.
Tenacity ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	75 (8.5) min.	75 (8.5) min.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	40 min.	50 min.

(2) Ground Tire Rubber (GTR) Modification. GTR modification is the addition of recycled ground tire rubber to liquid asphalt binder to achieve the specified performance grade. GTR shall be produced from processing automobile and/or truck tires by the ambient grinding method or micronizing through a cryogenic process. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall not contain free metal particles, moisture that would cause foaming of the asphalt, or other foreign materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois Modified AASHTO T 27 “Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates” or AASHTO PP 74 “Standard Practice for Determination of Size and Shape of Glass Beads Used in Traffic Markings by Means of Computerized Optical Method”, a 50 g sample of the GTR shall conform to the following gradation requirements.

Sieve Size	Percent Passing
No. 16 (1.18 mm)	100
No. 30 (600 µm)	95 ± 5
No. 50 (300 µm)	> 20

GTR modified asphalt binder shall be tested for rotational viscosity according to AASHTO T 316 using spindle S27. GTR modified asphalt binder shall be tested for original dynamic shear and RTFO dynamic shear according to AASHTO T 315 using a gap of 2 mm.

The GTR modified asphalt binder shall meet the requirements of Table 3.

Table 3 - Requirements for Ground Tire Rubber (GTR) Modified Asphalt Binders		
Test	Asphalt Grade GTR PG 64-28 GTR PG 70-22	Asphalt Grade GTR PG 76-22 GTR PG 76-28 GTR PG 70-28
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

(3) Softener Modification (SM). Softener modification is the addition of organic compounds, such as engineered flux, bio-oil blends, modified vegetable oils, glycol amines, and fatty acid derivatives, to the base asphalt binder to achieve the specified performance grade. Softeners shall be dissolved, dispersed, or reacted in the asphalt binder to enhance its performance and shall remain compatible with the asphalt binder with no separation. Softeners shall not be added to modified PG asphalt binder as defined in Articles 1032.05(b)(1) or 1032.05(b)(2).

An Attenuated Total Reflectance-Fourier Transform Infrared spectrum (ATR-FTIR) shall be collected for both the softening compound as well as the softener modified asphalt binder at the dose intended for qualification. The ATR-FTIR spectra shall be collected on unaged softener modified binder, 20-hour Pressurized Aging Vessel (PAV) aged softener modified binder, and 40-hour PAV aged softener modified binder. The ATR-FTIR shall be collected in accordance with Illinois Test Procedure 601. The electronic files spectral files (in one of the following extensions or equivalent: *.SPA, *.SPG, *.IRD, *.IFG, *.CSV, *.SP, *.IRS, *.GAML, *.[0-9], *.IGM, *.ABS, *.DRT, *.SBM, *.RAS) shall be submitted to the Central Bureau of Materials.

Softener modified asphalt binders shall meet the requirements in Table 4.

Table 4 - Requirements for Softener Modified Asphalt Binders	
Test	Asphalt Grade SM PG 46-28 SM PG 46-34 SM PG 52-28 SM PG 52-34 SM PG 58-22 SM PG 58-28 SM PG 64-22
Small Strain Parameter (AASHTO PP 113) BBR, ΔTc, 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5°C min.
Large Strain Parameter (Illinois Modified AASHTO T 391) DSR/LAS Fatigue Property, Δ|G*|peak τ, 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	≥ 54 %

The following grades may be specified as tack coats.

Asphalt Grade	Use
PG 58-22, PG 58-28, PG 64-22	Tack Coat"

Revise Article 1031.06(c)(1) and 1031.06(c)(2) of the Standard Specifications to read:

"(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin ABR shall not exceed the amounts listed in the following table.

HMA Mixtures - RAP/RAS Maximum ABR % 1/ 2/			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface 3/
30	30	30	10
50	25	15	10
70	15	10	10
90	10	10	10

1/ For Low ESAL HMA shoulder and stabilized subbase, the RAP/RAS ABR shall not exceed 50 percent of the mixture.

2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

3/ The maximum ABR percentages for ground tire rubber (GTR) modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.

(2) FRAP/RAS. When FRAP is used alone or FRAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the following table.

HMA Mixtures - FRAP/RAS Maximum ABR % 1/ 2/			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface 3/
30	55	45	15
50	45	40	15
70	45	35	15
90	45	35	15
SMA	- -	- -	25
IL-4.75	- -	- -	35

1/ For Low ESAL HMA shoulder and stabilized subbase, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.

2/ When FRAP/RAS ABR exceeds 20 percent for all mixes, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

3/ The maximum ABR percentages for GTR modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes."

Add the following to the end of Note 2 of Article 1030.03 of the Standard Specifications.

"A dedicated storage tank for the ground tire rubber (GTR) modified asphalt binder shall be provided. This tank shall be capable of providing continuous mechanical mixing throughout and/or recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ±0.40 percent."

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2024 Revised: April 1, 2024

Revise the first paragraph of Article 669.04 of the Standard Specifications to read:

"**669.04 Regulated Substances Monitoring.** Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities. The excavated soil and groundwater within the work areas shall be managed as either uncontaminated soil, hazardous waste, special waste, or non-special waste.

As part of the regulated substances monitoring, the monitoring personnel shall perform and document the applicable duties listed on form BDE 2732 "Regulated Substances Monitoring Daily Record (RSMDR)"."

Revise the first two sentences of the nineteenth paragraph of Article 669.05 of the Standard Specifications to read:

"The Contractor shall coordinate waste disposal approvals with the disposal facility and provide the specific analytical testing requirements of that facility. The Contractor shall make all arrangements for collection, transportation, and analysis of landfill acceptance testing."

Revise the last paragraph of Article 669.05 of the Standard Specifications to read:

"The Contractor shall select a permitted landfill facility or CCDD/USFO facility meeting the requirements of 35 Ill. Admin. Code Parts 810-814 or Part 1100, respectively. The Department will review and approve or reject the facility proposed by the Contractor based upon information provided in BDE 2730. The Contractor shall verify whether the selected facility is compliant with those applicable standards as mandated by their permit and whether the facility is presently, has previously been, or has never been, on the United States Environmental Protection Agency (U.S. EPA) National Priorities List or the Resource Conservation and Recovery Act (RCRA) List of Violating Facilities. The use of a Contractor selected facility shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth."

Revise the first paragraph of Article 669.07 of the Standard Specifications to read:

"**669.07 Temporary Staging.** Soil classified according to Articles 669.05(a)(2), (b)(1), or (c) may be temporarily staged at the Contractor's option. All other soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) shall be managed and disposed of without temporary staging to the greatest extent practicable. If circumstances beyond the Contractor's control require temporary staging of these latter materials, the Contractor shall request approval from the Engineer in writing.

Topsoil for re-use as final cover which has been field screened and found not to exhibit PID readings over daily background readings as documented on the BDE 2732, visual staining or odors, and is classified according to Articles 669.05(a)(2), (a)(3), (a)(4), (b)(1), or (c) may be temporarily staged at the Contractor's option."

Add the following paragraph after the sixth paragraph of Article 669.11 of the Standard Specifications.

"The sampling and testing of effluent water derived from dewatering discharges for priority pollutants volatile organic compounds (VOCs), priority pollutants semi-volatile organic compounds (SVOCs), or priority pollutants metals, will be paid for at the contract unit price per each for VOCS GROUNDWATER ANALYSIS using EPA Method 8260B, SVOCS GROUNDWATER ANALYSIS using EPA Method 8270C, or RCRA METALS GROUNDWATER ANALYSIS using EPA Methods 6010B and 7471A. This price shall include transporting the sample from the job site to the laboratory."

Revise the first sentence of the eight paragraph of Article 669.11 of the Standard Specifications to read:

"Payment for temporary staging of soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) to be managed and disposed of, if required and approved by the Engineer, will be paid according to Article 109.04."

SHORT TERM AND TEMPORARY PAVEMENT MARKINGS (BDE)

Effective: April 1, 2024 Revised: April 2, 2024

Revise Article 701.02(d) of the Standard Specifications to read:

"(d) Pavement Marking Tapes (Note 3) .....1095.06"

Add the following Note to the end of Article 701.02 of the Standard Specifications:

"Note 3. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape."

Revise Article 703.02(c) of the Standard Specifications to read:

"(c) Pavement Marking Tapes (Note 1) .....1095.06"

Add the following Note to the end of Article 703.02 of the Standard Specifications:

"Note 1. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape."

Revise Article 1095.06 of the Standard Specifications to read:

"**1095.06 Pavement Marking Tapes.** Type I white or yellow marking tape shall consist of glass spheres embedded into a binder on a foil backing that is precoated with a pressure sensitive adhesive. The spheres shall be of uniform gradation and distributed evenly over the surface of the tape.

Type IV tape shall consist of white or yellow tape with wet reflective media incorporated to provide immediate and continuing retroreflection in wet and dry conditions. The wet retroreflective media shall be bonded to a durable polyurethane surface. The patterned surface shall have approximately 40 ± 10 percent of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed reflective elements or particles.

Blackout tape shall consist of a matte black, non-reflective, patterned surface that is precoated with a pressure sensitive adhesive.

(a) Color. The white and yellow markings shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

Color	Daylight Reflectance %Y
White	65 min.
Yellow *	36 - 59

*Shall match Aerospace Material Specification Standard 595 33538 (Orange Yellow) and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

(b) Retroreflectivity. The white and yellow markings shall be retroreflective. Reflective values measured in accordance with the photometric testing procedure of ASTM D 4061 shall not be less than those listed in the table below. The coefficient of retroreflected luminance, R_L, shall be expressed as average millicandelas/footcandle/sq ft (millicandelas/lux/sq m), measured on a 3.0 x 0.5 ft (900 mm x 150 mm) panel at 86 degree entrance angle.

Coefficient of Retroreflected Luminance, R_L, Dry					
Type I			Type IV		
Observation Angle	White	Yellow	Observation Angle	White	Yellow
0.2°	2700	2400	0.2°	1300	1200
0.5°	2250	2000	0.5°	1100	1000

Wet retroreflectance shall be measured for Type IV under wet conditions according to ASTM E 2177 and meet the following.

Wet Retroreflectance, Initial R_L	
Color	R_L 1.05/88.76
White	300
Yellow	200

(c) Skid Resistance. The surface of Type IV and blackout markings shall provide a minimum skid resistance of 45 BPN when tested according to ASTM E 303.

(d) Application. The pavement marking tape shall have a precoated pressure sensitive adhesive and shall require no activation procedures. Test pieces of the tape shall be applied according to the manufacturer's instructions and tested according to ASTM D 1000, Method A, except that a stiff, short bristle roller brush and heavy hand pressure will be substituted for the weighted rubber roller in applying the test pieces to the metal test panel. Material tested as directed above shall show a minimum adhesion value of 750 g/in. (30 g/mm) width at the temperatures specified in ASTM D 1000. The adhesive shall be resistant to oils, acids, solvents, and water, and shall not leave objectionable stains or residue after removal. The material shall be flexible and conformable to the texture of the pavement.

(e) Durability. Type IV and blackout tape shall be capable of performing for the duration of a normal construction season and shall then be capable of being removed intact or in large sections at pavement temperatures above 40 °F (4 °C) either manually or with a roll-up device without the use of sandblasting, solvents, or grinding. The Contractor shall provide a manufacturer’s certification that the material meets the requirements for being removed after the following minimum traffic exposure based on transverse test decks with rolling traffic.

(1) Time in place - 400 days
(2) ADT per lane - 9,000 (28 percent trucks)
(3) Axle hits - 10,000,000 minimum

Samples of the material applied to standard specimen plates will be measured for thickness and tested for durability in accordance with ASTM D 4060, using a CS-17 wheel and 1000-gram load, and shall meet the following criteria showing no significant change in color after being tested for the number of cycles indicated.

Test	Type I	Type IV	Blackout
Minimum Initial Thickness, mils (mm)	20 (0.51)	65 (1.65) 1/ 20 (0.51) 2/	65 (1.65) 1/ 20 (0.51) 2/
Durability (cycles)	5,000	1,500	1,500

1/ Measured at the thickest point of the patterned surface.

2/ Measured at the thinnest point of the patterned surface.

The pavement marking tape, when applied according to the manufacturer's recommended procedures, shall be weather resistant and shall show no appreciable fading, lifting, or

shrinkage during the useful life of the marking. The tape, as applied, shall be of good appearance, free of cracks, and edges shall be true, straight, and unbroken.

(f) Sampling and Inspection.

(1) Sample. Prior to approval and use of Type IV pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The independent laboratory test report shall state the lot tested, the manufacturer's name, and the date of manufacture.

After initial approval by the Department, samples and certification by the manufacturer shall be submitted for each subsequent batch of Type IV tape used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, the manufacturer's name, and the date of manufacture.

(2) Inspection. The Contractor shall provide a manufacturer's certification to the Engineer stating the material meets all requirements of this specification. All material samples for acceptance tests shall be taken or witnessed by a representative of the Bureau of Materials and shall be submitted to the Engineer of Materials, 126 East Ash Street, Springfield, Illinois 62704-4766 at least 30 days in advance of the pavement marking operations."

SIGN PANELS AND APPURTENANCES (BDE)

Effective: January 1, 2025 Revised: January 1, 2026

Add Article 720.02(c) of the Standard Specifications to read:

"(c) Aluminum Epoxy Mastic .....1008.03"

Revise the second and third paragraphs of Article 720.02 of the Standard Specifications to read:

"The sign mounting support channel shall be manufactured from steel or aluminum and shall be according to Standard 720001.

Steel support channels shall be according to ASTM A 1011 (A 1011M), ASTM A 635 (A 635M), ASTM A 568 (A 568M), or ASTM A 684 (A 684M), and shall be galvanized. Galvanizing shall be according to ASTM A 653 (A 653M) when galvanized before fabrication, and AASHTO M 111 (M 111M) when galvanized after fabrication. Field or post fabricated drilled holes shall be spot painted with one coat of aluminum epoxy mastic paint prior to installation."

Revise the fifth paragraph of Article 720.02 of the Standard Specifications to read:

"The stainless steel banding for mounting signs or sign support channels to light or signal standards shall be according to ASTM A 240 (A 240M) Type 302 stainless steel."

Revise the first sentence of the tenth paragraph of Article 720.03 of the Standard Specifications to read:

"The backs of all sign panels shall be marked in a manner designed to last as long as the sign face material, in letters and numerals at least 3/8 in. (9.5 mm) but no more than 3/4 in. (19 mm) in height with the month and year of manufacture, the name of the sign manufacturer, the name of the sign sheeting manufacturer, the method of manufacture ("screened", "EC film", "direct applied", or "digital print"), and the initials IDOT."

Revise the first sentence of the fourth paragraph of Article 1091.03(a)(10) of the Standard Specifications to read:

"Transparent colors screened, or transparent acrylic electronic cutting films, or digital printing on white sheeting, shall meet the minimum initial coefficient of retroreflection values of the 0.2 degree observation angle, -4.0 degree entrance angle values as listed in the previous tables for the color being applied."

Add the following after the fourth paragraph of Article 1091.03(a)(10) of the Standard Specifications:

"Digitally printed signs shall be produced using digital print technologies and ink systems, products and processes that comply with the sheeting manufacturer's recommendation. The digitally printed signs shall be fabricated with a full sign protective overlay film designed to provide a smooth surface needed for retroreflectivity, and to protect the sign from fading and UV degradation. The overlaminate shall comply with the sheeting manufacturer's recommendations to ensure proper adhesion and transparency."

Add the following after the third paragraph of Article 1106.01 of the Standard Specifications:

"Digitally printed signs may omit protective overlay film."

STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004 Revised: November 1, 2025

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)
Structural Steel
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, welded reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of $10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. The following documentation shall be furnished to the Engineer.

(a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.

(b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

SCA = Q X D

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in lb (kg)
D = price factor, in dollars per lb (kg)

$D = MPI_M - MPI_L$

Where: MPI_M = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

MPI_L = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items will be derived from submitted documentation.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the MPI_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the MPI_L and MPI_M in excess of five percent, as calculated by:

Percent Difference = $\{(MPI_L - MPI_M) \div MPI_L\} \times 100$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

STRUCTURAL REPAIR OF CONCRETE (BDE)

Effective: January 1, 2026

Add the following Section 532 to the Standard Specifications:

"**SECTION 532. STRUCTURAL REPAIR OF CONCRETE**

532.01 Description. This work shall consist of repairing concrete on a bridge substructure, culvert, retaining wall, or other structure.

532.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement Concrete (Note 1)	1020
(b) R1, R2, or R3 Concrete	1018
(c) Packaged, Dry, Combined Materials for Concrete	1017.02, 1017.03
(d) High Performance Shotcrete	1015
(e) Reinforcement Bars	1006.10
(f) Anchor Bolts	1006.09
(g) Water	1002
(h) Curing Compound	1022.01
(i) Cotton Mats	1022.02
(j) Protective Coat	1023
(k) Epoxy (Note 2)	1025
(l) Mechanical Bar Splicers	508.06(c)
(m) Polymer Modified Portland Cement Mortar (Note 3)	

Note 1. The concrete shall be Class SI, except the cement and finely divided minerals shall be a minimum 6.65 cwt/cu yd (395 kg/cu m) with no reductions permitted, the cement shall not be below 4.70 cwt/cu yd (279 kg/cu m), the coarse aggregate shall be a CA 16, the strength shall be a minimum 4000 psi (27,500 kPa) at 28 days, and the slump shall be 5-10 in. (125-250 mm). A self-consolidating concrete mixture will also permitted. Slump flow range, visual stability index, J-Ring, L-Box, and hardened visual stability index requirements shall be according to Article 1020.04.

Note 2. ASTM C 881, Type IV, Grade 2 or 3, Class A, B, or C may also be used.

Note 3. Polymer modified portland cement mortar shall be a packaged product consisting of cementitious materials, fine aggregate, and a polymer modifier; and shall have successfully completed and remain current with the AASHTO Product Eval and Audit Rapid Hardening Concrete Patching Materials (RHCP) testing program. The mortar shall be a workable mix capable of bonding and holding its own plastic weight when mixed and placed according to manufacturer's instructions on vertical and overhead surfaces. It shall have a minimum compressive strength of 1,500 psi (10,300 kPa) at 24 hours, 4,000 psi (27,500 kPa) at 7 days, and 5,000 psi (34,500 kPa) at 28 days when tested according to ASTM C 109 or AASHTO T 106. In addition, the mortar shall have a minimum bond strength of 1,500 psi (10,300 kPa) at 7 days when tested according to ASTM C 882. For prestressed concrete applications, the mortar shall have a water-soluble chloride ion content of less than 0.06 percent by weight of cementitious material when tested according to ASTM C 1218 or AASHTO T 260; and for non-prestressed concrete applications, the water-soluble chloride ion content shall be less than 0.15 percent by weight of cementitious material. The Department will maintain a Qualified Product List of Polymer Modified Portland Cement Mortar.

532.03 Equipment. Equipment shall be according to Article 503.03 and the following.

Item	Article/Section
(a) Hydrodemolition Equipment	1101.11
(b) High Performance Shotcrete Equipment (Note1)	

Note 1. The batching, mixing, pumping, hose, nozzle, and auxiliary equipment shall be for the wet-mix shotcrete method and meet the requirements of ACI 506R.

CONSTRUCTION REQUIREMENTS

532.04 General. The repair method shall be either formed concrete repair or shotcrete according to the following.

(a) Formed Concrete Repair. For formed concrete repair, a subsequent patch to repair the placement point after initial concrete placement will not be allowed. As an example, this may occur in a vertical location located at the top of the repair.

Formed concrete repair shall not be used for overhead applications except as noted for polymer modified portland cement mortar.

Polymer modified portland cement mortar shall only be used for repairs between 3/8 in. (10 mm) and 2 in. (50 mm) deep on horizontal, vertical, and overhead surfaces.

(b) Shotcrete. Shotcrete shall not be used for any repair greater than 6 in. (150 mm) in depth, except in horizontal applications where the shotcrete may be placed from above in one lift.

Shotcrete shall not be used for column repairs greater than 4 in. (100 mm) in depth, unless the shotcrete mixture contains 3/8 in. (9.5 mm) aggregate.

The Contractor shall provide a current copy of ACI 506R to the Engineer a minimum of one week prior to the start of construction.

The shotcrete personnel who perform the work shall have current American Concrete Institute (ACI) nozzlemen certification for vertical wet and overhead wet applications, except one individual may be in training. This individual shall be adequately supervised by a certified ACI nozzlemen as determined by the Engineer and a copy of the nozzlemen certificate(s) provided to the Engineer.

532.05 Temporary Shoring or Cribbing. When a temporary shoring or cribbing support system is required, the Contractor shall provide details and computations, prepared and sealed by an Illinois Licensed Structural Engineer, to the Department for approval. Whenever possible, the support system shall be installed prior to starting the associated concrete removal. If no system is specified, but during the course of removal the need for temporary shoring or cribbing becomes apparent or is directed by the Engineer due to a structural concern, the Contractor shall not proceed with any further removal work until an approved support system is installed.

532.06 Concrete Removal. The Contractor shall provide ladders or other appropriate equipment for the Engineer to mark the removal areas. Repair configurations will be kept simple, and squared corners will be indicated whenever possible. The repair perimeter shall be sawed a depth of 1/2 in. (13 mm) or less, as required to avoid cutting the reinforcement. If the concrete is broken or removed beyond the limits of the initial saw cut, the new repair perimeter shall be recut. The areas to be repaired shall have all loose, unsound concrete removed completely by the use of hydrodemolition equipment or chipping hammer with a 15 lb. (7 kg) maximum class. The concrete removal shall extend along the reinforcement bar until the reinforcement is free of bond inhibiting corrosion. Reinforcement bars with 50 percent or more exposed area shall be undercut to a depth of 3/4 in. (19 mm) or the diameter of the reinforcement bar, whichever is greater.

The minimum repair depth shall be 1 in. (25 mm). The substrate profile shall be ± 1/16 in. (± 1.5 mm). The perimeter of the repair area shall have a vertical face.

If sound concrete is encountered before existing reinforcement bars are exposed, further removal of concrete shall not be performed unless the minimum repair depth is not met.

If a repair is located at the ground line, any excavation required below the ground line to complete the repair shall be included in this work.

Once concrete removal has started, the Contractor shall have 14 calendar days to complete each repair location.

The Engineer shall be notified of concrete removal that exceeds 6 in. (150 mm) in depth, one fourth the cross section of a structural member, more than half the vertical column reinforcement is exposed in a cross section, more than six consecutive reinforcement bars are exposed in any direction, within 1.5 in. (38 mm) of a bearing area, or other structural concern. Excessive deterioration or removal may require further evaluation of the structure or installation of temporary shoring and cribbing support system.

532.07 Surface Preparation. Prior to placing the concrete or shotcrete, the Contractor shall blast clean the repair area and exposed reinforcement to provide a surface that is free of oil, dirt, and loose material.

The repair area and perimeter vertical face shall have a rough surface. Just prior to concrete or shotcrete placement, the repair area shall be saturated with water to a saturated surface-dry condition. Any standing water shall be removed.

If a succeeding layer of shotcrete is to be applied, the initial shotcrete surface and remaining exposed reinforcement shall be free of curing compound, oil, dirt, loose material, rebound, and overspray. Preparation may be by lightly brushing or blast cleaning if the previous shotcrete surface was less than 36 hours prior. If more than 36 hours prior, the surface shall be prepared by blast cleaning.

532.08 Reinforcement. Exposed reinforcement bars shall be cleaned of concrete and corrosion by blast cleaning. After cleaning, exposed reinforcement will be evaluated to determine if replacement or additional reinforcement bars are required.

Reinforcing bars that have been cut or have lost 25 percent or more of their original cross-sectional area shall be supplemented by new in kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical bar splicer shall be used when it is not feasible to provide the minimum bar lap. No welding of bars will be permitted.

Intersecting reinforcement bars shall be tightly secured to each other using 0.006 in. (0.15 mm) or heavier gauge tie wire and shall be adequately supported to minimize movement during concrete placement or application of shotcrete.

Where the depth of concrete removal is greater than 8 in. (205 mm) and there is no existing reinforcement extending into the repair area, the Contractor shall anchor the new concrete to the existing concrete with 3/4 in. (19 mm) diameter hook bolts spaced at 15 in. (380 mm) maximum centers both vertically and horizontally, and a minimum of 12 in. (305 mm) away from the perimeter of the repair according to Section 584.

532.09 Repair Methods. Within 3 calendar days of the surface preparation and after the repair areas are approved by the Engineer, the concrete or shotcrete shall be placed according to the following.

(a) Formed Concrete Repair. Falsework and forms shall be according to Articles 503.05 and Article 503.06. Formwork shall provide a smooth and uniform concrete finish and shall approximately match the existing concrete structure. Air vents may be provided to reduce voids and improve surface appearance. The Contractor may use exterior mechanical vibration, as approved by the Engineer, to release air pockets. The concrete shall be Class SI concrete; packaged R1, R2, or R3 concrete; packaged, dry, combined materials for concrete; or polymer modified portland cement mortar. The concrete shall be placed and consolidated according to Article 503.07.

Curing shall be according to Article 1020.13.

The surfaces of the completed repair shall be finished according to Article 503.15.

(b) Shotcrete. In the field, shotcrete shall be tested for air content according to Illinois Modified AASHTO T 152 or AASHTO T 152. The sample shall be obtained from the discharge end of the nozzle by shooting a pile large enough to scoop a representative

amount for filling the air meter measuring bowl. Shotcrete shall not be shot directly into the measuring bowl for testing.

Compressive strength shall be according to ASTM C 1140, except the test panel shall be cured according to Article 1020.13(a)(3) or (5) while stored at the jobsite and during delivery to the laboratory. At the discretion of the Engineer, the test panel may be reduced to 18x18x3.5 in. (457x457x89 mm).

The method of alignment control (i.e., ground wires, guide strips, depth gages, depth probes, and formwork) to ensure the specified shotcrete thickness and reinforcing bar cover is obtained shall be according to ACI 506R. Ground wires shall be removed after completion of cutting operations. Guide strips and formwork shall be of dimensions and a configuration that do not prevent proper application of shotcrete. Metal depth gauges shall be cut 1/4 in. (6 mm) below the finished surface. All repaired members shall be restored as close as practicable to their original dimensions.

Air temperature limits according to the first paragraph of Article 1020.14(b) shall apply in cold weather. Shotcrete shall not be applied when the air temperature is greater than 90 °F (32 °C). The applied shotcrete shall have a minimum temperature of 50 °F (10 °C) and a maximum temperature of 90 °F (32 °C). The shotcrete shall not be applied during periods of rain unless protective covers or enclosures are installed. If necessary, lighting shall be provided to provide a clear view of the shooting area.

The shotcrete shall be applied according to ACI 506R and shall be done in a manner that does not result in cold joints, laminations, sandy areas, voids, sags, or separations. In addition, the shotcrete shall be applied in a manner that results in maximum densification of the shotcrete. Shotcrete which is identified as being unacceptable while still plastic shall be removed and re-applied.

The nozzle shall normally be at a distance of 2-5 ft. (0.6-1 m) from the receiving surface and shall be oriented at right angles to the receiving surface. Exceptions to this requirement will be permitted to fill corners, encase large diameter reinforcing bars, or as approved by the Engineer. For any exception, the nozzle shall never be oriented more than 4 degrees from the surface. Care shall be taken to keep the front face of the reinforcement bar clean during shooting operations. Shotcrete shall be built up from behind the reinforcement bar. Accumulations of rebound and overspray shall be continuously removed prior to application of new shotcrete. Rebound material shall not be incorporated in the work.

Whenever possible, shotcrete shall be applied to the full thickness in a single layer. When two or more layers are required, the minimum number shall be used and shall be done in a manner without sagging or separation. A flash coat (i.e. a thin layer of up to 1/4 in. (6 mm) applied shotcrete) may be used as the final lift for overhead applications.

Prior to application of a succeeding layer of shotcrete, the initial layer of shotcrete shall be prepared according to the surface preparation and reinforcement bar cleaning requirements. Upon completion of the surface preparation and reinforcement bar treatment, water shall be applied according to the surface preparation requirements unless

the surface is moist. The second layer of shotcrete shall then be applied within 30 minutes.

Shotcrete shall be cut back to line and grade using trowels, cutting rods, screeds or other suitable devices. The shotcrete shall be allowed to stiffen sufficiently before cutting. For depressions, cut material may be used for small areas. Rebound material shall not be incorporated in the work. For the final finish, a wood float or a manufacturer approved finishing aid shall be used to approximately match the existing concrete texture.

Contractor operations for curing shall be continuous with shotcrete placement and finishing operations. Curing shall be accomplished using wetted cotton mats, membrane curing, or a combination of both. Cotton mats shall be applied according to Article 1020.13(a)(5), except the exposed layer of shotcrete shall be covered within 10 minutes after finishing and wet curing shall begin immediately. Curing compound shall be applied according to Article 1020.13(a)(4), except the curing compound shall be applied as soon as the shotcrete has hardened sufficiently to prevent marring the surface, and each of the two separate applications shall be applied in opposite directions to ensure coverage. Note 5 of the Index Table in Article 1020.13 shall also apply.

When a shotcrete layer is to be covered by a succeeding shotcrete layer within 36 hours, the repair area shall be protected by wet curing with either burlap or cotton mats until the succeeding layer is applied. Intermittent hand fogging may be used for the first hour and a half if wet curing with mats begins within 10 minutes after fogging has ceased.

The curing period shall be for 7 days, except when there is a succeeding layer of shotcrete. In this instance, the initial shotcrete layer shall be cured until the surface preparation and reinforcement bar treatment is started.

The concrete or shotcrete shall not be placed when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40 °F (4 °C). All repaired members shall be restored as close as practicable to their original dimensions.

If temperatures below 45 °F (7 °C) are forecast during the curing period, Protection Method I according to Article 1020.13(d)(1) or Protection Method II according to Article 1020.13(d)(2) shall be used.

532.10 Protective Coat. Protective coat shall be applied to the completed repair at reinforcement bar locations with less than 3/4 in. (19 mm) of cover according to Article 503.19, except blast cleaning shall be performed to remove curing compound.

532.11 Inspection. After curing but no sooner than 28 days after placement of concrete or shotcrete, the Contractor shall provide ladders or other necessary equipment for the Engineer to inspect the repaired areas.

A repaired area with cracks, voids, or delamination shall be considered as nonconforming. Any of the following shall be cause for removal and replacement of a repaired area.

(a) A single surface crack greater than 0.01 in. (0.25 mm) in width and greater than 12 in. (300 mm) in length.

(b) Two or more surface cracks greater than 0.01 in. (0.25 mm) in width that total greater than 24 in. (600 mm) in length.

(c) Map cracking in one or more regions totaling 15 percent or more of the gross surface area of the repair.

(d) Two or more surface voids with least dimension of 3/4 in. (19 mm) each.

(e) A repaired area not within 1/4 in. (6 mm) of the original dimensions.

Cracks greater than 0.007 in. (0.2 mm) in width shall be repaired with epoxy according to Section 590. For cracks less than or equal to 0.007 in. (0.2 mm) in width, the epoxy shall be applied to the surface of the crack as determined by the Engineer. Voids shall be repaired according to Article 503.15.

532.12 Method of Measurement. This work will be measured for payment in place and the area computed in square feet (square meters). For a repair at a corner, both sides will be measured.

532.13 Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES or STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES.

Concrete protected according to Article 1020.13(d) will be paid according to Article 503.22.

When not specified to be paid for elsewhere, the work to design, install, and remove the temporary shoring and cribbing will be paid according to Article 109.04.

With the exception of reinforcement damaged by the Contractor, supplemental reinforcement bars, mechanical bar splicers, hook bolts, and protective coat will be paid according to Article 109.04."

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

"**109.14 Subcontractor and Disadvantaged Business Enterprise Payment Reporting.** The Contractor shall report all payments made to the following parties:

(a) first tier subcontractors;

(b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;

(c) material suppliers or trucking firms that are part of the Contractor's submitted DBE utilization plan.

The report shall be made through the Department's on-line subcontractor payment reporting system within 21 days of making the payment."

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017
Revised: April 1, 2019

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

"This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than $10,000	25%
$10,000 to less than $20,000	20%
$20,000 to less than $40,000	18%
$40,000 to less than $60,000	16%
$60,000 to less than $80,000	14%
$80,000 to less than $100,000	12%
$100,000 to less than $250,000	10%
$250,000 to less than $500,000	9%
$500,000 to $750,000	8%
Over $750,000	7%"

SUBMISSION OF BIDDERS LIST INFORMATION (BDE)

Effective: January 2, 2025 Revised: March 2, 2025

In accordance with 49 CFR 26.11(c) all DBE and non-DBEs who bid as prime contractors and subcontractors shall provide bidders list information, including all DBE and non-DBE firms from whom the bidder has received a quote or bid to work as a subcontractor, whether or not the bidder has relied upon that bid in placing its bid as the prime contractor.

The bidders list information shall be submitted with the bid using the link provided within the "Integrated Contractor Exchange (iCX)" application of the Department's "EBids System".

SUBMISSION OF PAYROLL RECORDS (BDE)

Effective: April 1, 2021 Revised: November 2, 2023

FEDERAL AID CONTRACTS. Revise the following section of Check Sheet #1 of the Recurring Special Provisions to read:

"STATEMENTS AND PAYROLLS

The payroll records shall include the worker's name, social security number, last known address, telephone number, email address, classification(s) of work actually performed, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof), daily and weekly number of hours actually worked in total, deductions made, and actual wages paid.

The Contractor and each subcontractor shall submit certified payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers, last known addresses, telephone numbers, and email addresses shall not be included on weekly submittals. Instead, the payrolls need only include an identification number for each employee (e.g., the last four digits of the employee's social security number). The submittals shall be made using LCPtracker Pro software. The software is web-based and can be accessed at https://lcptracker.com/. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option ("No Work", "Suspended", or "Complete") selected."

STATE CONTRACTS. Revise Item 3 of Section IV of Check Sheet #5 of the Recurring Special Provisions to read:

"3. Submission of Payroll Records. The Contractor and each subcontractor shall, no later than the 15th day of each calendar month, file a certified payroll for the immediately preceding month to the Illinois Department of Labor (IDOL) through the Illinois Prevailing Wage Portal in compliance with the State Prevailing Wage Act (820 ILCS 130). The portal can be found on the IDOL website at https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Prevailing-Wage-Portal.aspx. Payrolls shall be submitted in the format prescribed by the IDOL.

In addition to filing certified payroll(s) with the IDOL, the Contractor and each subcontractor shall certify and submit payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers shall not be included on weekly submittals. Instead, the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee's social security number). In addition, starting and ending times of work each day may be omitted from the payroll records submitted. The submittals shall be made using LCPtracker Pro software. The software is web-based and can be accessed at https://lcptracker.com/. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option ("No Work", "Suspended", or "Complete") selected."

SURVEYING SERVICES (BDE)

Effective: April 1, 2025

Delete the fourth paragraph of Article 667.04 of the Standard Specifications.

Delete Section 668 of the Standard Specifications.

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION

Effective: August 1, 2012 Revised: February 2, 2017

In addition to the Contractor's equal employment opportunity (EEO) affirmative action efforts undertaken as required by this Contract, the Contractor is encouraged to participate in the incentive program described below to provide additional on-the-job training to certified graduates of the IDOT pre-apprenticeship training program, as outlined in this Special Provision.

IDOT funds, and various Illinois community colleges operate, pre-apprenticeship training programs throughout the State to provide training and skill-improvement opportunities to promote the increased employment of minority groups, disadvantaged persons and women in all aspects of the highway construction industry. The intent of this IDOT Pre-Apprenticeship Training Program Graduate (TPG) special provision (Special Provision) is to place these certified program graduates on the project site for this Contract in order to provide the graduates with meaningful on-the-job training. Pursuant to this Special Provision, the Contractor must make every reasonable effort to recruit and employ certified TPG trainees to the extent such individuals are available within a practicable distance of the project site.

Specifically, participation of the Contractor or its subcontractor in the Program entitles the participant to reimbursement for graduates' hourly wages at $15.00 per hour per utilized TPG trainee, subject to the terms of this Special Provision. Reimbursement payment will be made even though the Contractor or subcontractor may also receive additional training program funds from other non-IDOT sources for other non-TPG trainees on the Contract, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving reimbursement from another entity through another program, such as IDOT through the TPG program. With regard to any IDOT funded construction training program other than TPG, however, additional reimbursement for other IDOT programs will not be made beyond the TPG Program described in this Special Provision when the TPG Program is utilized.

No payment will be made to the Contractor if the Contractor or subcontractor fails to provide the required on-site training to TPG trainees, as solely determined by IDOT. A TPG trainee must begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee must remain on the project site through completion of the Contract, so long as training opportunities continue to exist in the relevant work classification. Should a TPG trainee's employment end in advance of the completion of the Contract, the Contractor must promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor must supply a written report for the reason the TPG trainee involvement terminated, the hours completed by the TPG trainee on the Contract, and the number of hours for which the incentive payment provided under this Special Provision will be, or has been claimed for the separated TPG trainee.

Finally, the Contractor must maintain all records it creates as a result of participation in the Program on the Contract, and furnish periodic written reports to the IDOT District EEO Officer that document its contractual performance under and compliance with this Special Provision. Finally, through participation in the Program and reimbursement of wages, the Contractor is not relieved of, and IDOT has not waived, the requirements of any federal or state labor or employment law applicable to TPG workers, including compliance with the Illinois Prevailing Wage Act.

Method of Measurement: The unit of measurement is in hours.

Basis of Payment: This work will be paid for at the contract unit price of $15.00 per hour for each utilized certified TPG Program trainee (TRAINEES TRAINING PROGRAM GRADUATE). The estimated total number of hours, unit price, and total price must be included in the schedule of prices for the Contract submitted by Contractor prior to beginning work. The initial number of TPG trainees for which the incentive is available for this contract is **3**.

The Department has contracted with several educational institutions to provide screening, tutoring and pre-training to individuals interested in working as a TPG trainee in various areas of common construction trade work. Only individuals who have successfully completed a Pre-Apprenticeship Training Program at these IDOT approved institutions are eligible to be TPG trainees. To obtain a list of institutions that can connect the Contractor with eligible TPG trainees, the Contractor may contact: HCCTP TPG Program Coordinator, Office of Business and Workforce Diversity (IDOT OBWD), Room 319, Illinois Department of Transportation, 2300 S. Dirksen Parkway, Springfield, Illinois 62764. Prior to commencing construction with the utilization of a TPG trainee, the Contractor must submit documentation to the IDOT District EEO Officer for the Contract that provides the names and contact information of the TPG trainee(s) to be trained in each selected work classification, proof that that the TPG trainee(s) has successfully completed a Pre-Apprenticeship Training Program, proof that the TPG is in an Apprenticeship Training Program approved by the U.S. Department of Labor Bureau of Apprenticeship Training, and the start date for training in each of the applicable work classifications.

To receive payment, the Contractor must provide training opportunities aimed at developing a full journeyworker in the type of trade or job classification involved. During the course of performance of the Contract, the Contractor may seek approval from the IDOT District EEO Officer to employ additional eligible TPG trainees. In the event the Contractor subcontracts a portion of the contracted work, it must determine how many, if any, of the TPGs will be trained by the subcontractor. Though a subcontractor may conduct training, the Contractor retains the responsibility for meeting all requirements imposed by this Special Provision. The Contractor must also include this Special Provision in any subcontract where payment for contracted work performed by a TPG trainee will be passed on to a subcontractor.

Training through the Program is intended to move TPGs toward journeyman status, which is the primary objective of this Special Provision. Accordingly, the Contractor must make every effort to enroll TPG trainees by recruitment through the Program participant educational institutions to the extent eligible TPGs are available within a reasonable geographic area of the project. The Contractor is responsible for demonstrating, through documentation, the recruitment efforts it has undertaken prior to the determination by IDOT whether the Contractor is in compliance with this Special Provision, and therefore, entitled to the Training Program Graduate reimbursement of $15.00 per hour.

Notwithstanding the on-the-job training requirement of this TPG Special Provision, some minimal

off-site training is permissible as long as the offsite training is an integral part of the work of the contract, and does not compromise or conflict with the required on-site training that is central to the purpose of the Program. No individual may be employed as a TPG trainee in any work classification in which he/she has previously successfully completed a training program leading to journeyman status in any trade, or in which he/she has worked at a journeyman level or higher.

TEMPORARY CONCRETE BARRIER (BDE)

Effective: January 1, 2026

Add the following to Article 704.02 of the Standard Specifications:

"(f) Type C Reflector .....1097.02(c)"

TEMPORARY RUMBLE STRIPS (BDE)

Effective: April 1, 2025

Revise Article 701.15(k) of the Standard Specifications to read:

"(k) Temporary Rumble Strips. Temporary rumble strips provide an audible and tactile warning to alert motorists of an approaching work zone or change in driving pattern or highway condition. The number and spacing of temporary rumble strips installed per set shall be as shown in Standard 701901. Temporary rumble strips shall be applied to the pavement according to the manufacturer's recommendations.

Breakage or significant permanent deformation of the strip shall constitute failure. Compaction or slipping of material that reduces the effectiveness of the audible or vibration warnings shall constitute failure.

Upon completion of the project, or as directed by the Engineer, temporary rumble strips shall be entirely removed using a method that does not permanently damage the pavement surface."

Revise Article 701.19(e) of the Standard Specifications to read:

"(e) Temporary rumble strips will be measured as each, where each is defined as a set of six temporary rumble strips across a single lane of pavement, and each set of temporary rumble strips will be measured for payment once per location."

Revise Article 1106.03 of the Standard Specifications to read:

"**1106.03 Temporary Rumble Strips.** Temporary rumble strips shall be black or white. Temporary rumble strips shall be constructed of a flexible, pliant, impact-resistant material capable of supporting a load of 6000 lb (2700 kg). Temporary rumble strips shall be 1/4 in. (6 mm) to 1 in. (25 mm) thick and 4 in. (100 mm) to 6 in. (150 mm) wide. Temporary rumble strips shall

be weather resistant and, through normal traffic wear, show no appreciable fading, lifting, tearing, rollback, or other signs of poor adhesion."

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021 Revised: November 1, 2022

Add the following paragraph after the first paragraph of Article 701.08 of the Standard Specifications:

"The Contractor shall equip all vehicles and equipment with high-intensity oscillating, rotating, or flashing, amber or amber-and-white, warning lights which are visible from all directions. In accordance with 625 ILCS 5/12-215, the lights may only be in operation while the vehicle or equipment is engaged in construction operations."

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020 Revised: January 1, 2026

Add the following to Article 701.03 of the Standard Specifications:

"(q) Temporary Sign Supports .....1106.02"

Revise Article 701.03(p) of the Standard Specifications to read:

"(p) Detectable Pedestrian Channelizing Barricades ..... 1106.02(m)"

Revise the third paragraph of Article 701.14 of the Standard Specifications to read:

"For temporary sign supports, the Contractor shall provide a FHWA eligibility letter for each device used on the contract. The letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support per the manufacturer's specifications."

Revise the first paragraph of Article 701.15 of the Standard Specifications to read:

" **701.15 Traffic Control Devices.** For devices that must meet crashworthiness standards, the Contractor shall provide a manufacturer's self-certification or a FHWA eligibility letter for each Category 1 device and a FHWA eligibility letter for each Category 2 and Category 3 device used on the contract. The self-certification or letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device."

Revise the first six paragraphs of Article 1106.02 of the Standard Specifications to read:

" **1106.02 Devices.** Work zone traffic control devices and combinations of devices shall meet crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices shall be MASH compliant.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices shall be MASH compliant.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices manufactured after December 31, 2019 shall be MASH compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350, may be used on contracts let before December 31, 2029. Category 3 devices shall be crash tested for Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as sign supports, speed feedback displays, arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. It is preferable for Category 4 devices manufactured after December 31, 2019 to be MASH-16 compliant; however, there are currently no crash tested devices in this category, so it remains exempt from the NCHRP 350 or MASH compliance requirement.

For each type of device, when no more than one MASH compliant is available, an NCHRP 350 compliant device may be used, even if manufactured after December 31, 2019."

Revise the first paragraph of Section 1106.02(a) of the Standard Specifications to read:

"(a) Lights. Lights shall meet the requirements of Chapter 13 of the "Equipment and Materials Standards of the Institute of Transportation Engineers," 1998, Institute of Transportation Engineers, and shall be visible on a clear night from a distance of 3000 ft (900 m). Lights are classified as follows."

Revise Articles 1106.02(g), 1106.02(k), 1106.02(l), and 1106.02(m) of the Standard Specifications to read:

"(g) Truck Mounted/Trailer Mounted Attenuators. The attenuator shall be approved for use at Test Level 3. Test Level 2 may be used for normal posted speeds less than or equal to 45 mph.

(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast and be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that

test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.

(l) Movable Traffic Barrier. The movable traffic barrier shall be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis.

(m) Detectable Pedestrian Channelizing Barricades. The top panel or handrail shall be continuous and there should be at least a 2 in. (50 mm) gap between the hand trailing edge and its support. When visible to vehicular traffic, the top rail shall have alternating white and orange retroreflective stripes sloping at 45 degrees. The bottom panel shall be continuous and have alternating white and orange retroreflective stripes sloping at 45 degrees. Barricade stripes shall be 6 in. (150 mm) in width. The predominant color for other barricade components shall be white, orange, or silver."

PROJECT LABOR AGREEMENT

Effective: May 18, 2007 Revised: April 1, 2025

Description. The Illinois Project Labor Agreements Act, 30 ILCS 571, states that the State of Illinois has a compelling interest in awarding public works contracts so as to ensure the highest standards of quality and efficiency at the lowest responsible cost. A project labor agreement (PLA) is a form of pre-hire collective bargaining agreement covering all terms and conditions of employment on a specific project that is intended to support this compelling interest. It has been determined by the Department that a PLA is appropriate for the project that is the subject of this contract. The PLA document, provided below, only applies to the construction site for this contract. It is the policy of the Department on this contract, and all construction projects, to allow all contractors and subcontractors to compete for contracts and subcontracts without regard to whether they are otherwise parties to collective bargaining agreements.

The Department reserves the right to rescind the PLA requirement from this project in the event FHWA disapproves of the inclusion of the PLA terms for this project. The contractor, by bidding, agrees that any recission of the PLA requirement shall not constitute grounds for the withdrawal of its bid and further agrees to remove the PLA requirement from this contract upon notice from the Department should such be necessary at a later date.

Execution of Letter of Assent. A copy of the PLA applicable to this project is included as part of this special provision. As a condition of the award of the contract, the successful bidder and each of its subcontractors shall execute a “Contractor Letter of Assent”, in the form attached to the PLA as Exhibit A. The successful bidder shall submit a Subcontractor’s Contractor Letter of Assent to the Department prior to the subcontractor’s performance of work on the project. Upon request, copies of the applicable collective bargaining agreements will be provided by the appropriate signatory labor organization at the pre-job conference.

Quarterly Reporting. Section 37 of the Illinois Project Labor Agreements Act requires the Department to submit quarterly reports regarding the number of minorities and females employed under PLAs. To assist in this reporting effort, the Contractor shall provide a quarterly workforce participation report for all minority and female employees working under the PLA of this contract. The data shall be reported on Construction Form BC 820, Project Labor Agreement (PLA) Workforce Participation Quarterly Reporting Form available on the Department’s website https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/idot-forms/bc/bc-820.pdf.

The report shall be submitted no later than the 15th of the month following the end of each quarter (i.e., April 15 for the January – March reporting period). The form shall be emailed to DOT.PLA.Reporting@illinois.gov or faxed to (217) 524-4922.

Any costs associated with complying with this provision shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

Illinois Department of Transportation
PROJECT LABOR AGREEMENT

This Project Labor Agreement ("PLA" or "Agreement") is entered into this_____ day of _____, 2024, by and between the Illinois Department of Transportation ("IDOT" or "Department") in its proprietary capacity, and each relevant Illinois AFL-CIO Building Trades signatory hereto as determined by the Illinois AFL-CIO Statewide Project Labor Agreement Committee on behalf of each of its affiliated members (individually and collectively, the "Unions"). This PLA shall apply to Construction Work (as defined herein) to be performed by IDOT's Prime Contractor and each of its subcontractors of whatever tier ("Subcontractor" or "Subcontractors") on Contract No. (hereinafter, the "Project").

ARTICLE 1 - INTENT AND PURPOSES

1.1 This PLA is entered into in accordance with the Project Labor Agreement Act ("Act", 30 ILCS 571). It is mutually understood and agreed that the terms and conditions of this PLA are intended to promote the public interest in obtaining timely and economical completion of the Project by encouraging productive and efficient construction operations; by establishing a spirit of harmony and cooperation among the parties; and by providing for peaceful and prompt settlement of any and all labor grievances or jurisdictional disputes of any kind without strikes, lockouts, slowdowns, delays, or other disruptions to the prosecution of the work. The parties acknowledge the obligations of the Contractors and Subcontractors to comply with the provisions of the Act. The parties will work with the Contractors and Subcontractors within the parameters of other statutory and regulatory requirements to implement the Act's goals and objectives.

1.2 As a condition of the award of the contract for performance of work on the Project, IDOT's Prime Contractor and each of its Subcontractors shall execute a "Contractor Letter of Assent", in the form attached hereto as Exhibit A, prior to commencing Construction Work on the Project. The Contractor shall submit a Subcontractor's Contractor Letter of Assent to the Department prior to the Subcontractor's performance of Construction Work on the Project. Upon request copies of the applicable collective bargaining agreements will be provided by the appropriate signatory labor organization consistent with this Agreement and at the pre-job conference referenced in Article III, Section 3.1.

1.3 Each Union affiliate and separate local representing workers engaged in Construction Work on the Project in accordance with this PLA are bound to this agreement by the Illinois AFL-CIO Statewide Project Labor Agreement Committee which is the central committee established with full authority to negotiate and sign PLAs with the State on behalf of all respective crafts. Upon their signing the Contractor Letter of Assent, the Prime Contractor, each Subcontractor, and the individual Unions shall thereafter be deemed a party to this PLA. No party signatory to this PLA shall, contract or subcontract, nor permit any other person, firm, company, or entity to contract or subcontract for the performance of Construction Work for the Project to any person, firm, company, or entity that does not agree in writing to become bound for the term of this Project by the terms of this PLA prior to commencing such work and to the applicable area-wide collective bargaining agreement(s) with the Union(s) signatory hereto.

1.4 It is understood that the Prime Contractor(s) and each Subcontractor will be considered and accepted by the Unions as separate employers for the purposes of collective bargaining, and it is further agreed that the employees working under this PLA shall constitute a bargaining unit separate and distinct from all others. The parties hereto also agree that this PLA shall be applicable solely with respect to this Project, and shall have no bearing on the interpretation of any other collective bargaining agreement or as to the recognition of any bargaining unit other than for the specific purposes of this Project.

1.5 In the event of a variance or conflict, whether explicit or implicit, between the terms and conditions of this PLA and the provisions of any other applicable national, area, or local collective bargaining agreement, the terms and conditions of this PLA shall supersede and control. For any work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, the National Agreement of the International Union of Elevator Constructors, and for any instrument calibration work and loop checking performed under the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, the preceding sentence shall apply only with respect to Articles I, II, V, VI, and VII.

1.6 Subject to the provisions of paragraph 1.5 of this Article, it is the parties' intent to respect the provisions of any other collective bargaining agreements that may now or hereafter pertain, whether between the Prime Contractor and one or more of the Unions or between a Subcontractor and one or more of the Unions. Accordingly, except and to the extent of any contrary provision set forth in this PLA, the Prime Contractor and each of its Subcontractors agrees to be bound and abide by the terms of the following in order of precedence: (a) the applicable collective bargaining agreement between the Prime Contractor and one or more of the Unions made signatory hereto; (b) the applicable collective bargaining agreement between a Subcontractor and one or more of the Unions made signatory hereto; or (c) the current applicable area collective bargaining agreement for the relevant Union that is the agreement certified by the Illinois Department of Labor for purposes of establishing the Prevailing Wage applicable to the Project. The Union will provide copies of the applicable collective bargaining agreements pursuant to part (c) of the preceding sentence to the Prime Contractor. Assignments by the Contractors or Subcontractors amongst the trades shall be consistent with area practices; in the event of unresolved disagreements as to the propriety of such assignments, the provisions of Article VI shall apply.

1.7 Subject to the limitations of paragraphs 1.4 to 1.6 of this Article, the terms of each applicable collective bargaining agreement as determined in accordance with paragraph 1.6 are incorporated herein by reference, and the terms of this PLA shall be deemed incorporated into such other applicable collective bargaining agreements only for purposes of their application to the Project.

1.8 To the extent necessary to comply with the requirements of any fringe benefit fund to which the Prime Contractor or Subcontractor is required to contribute under the terms of an applicable collective bargaining agreement pursuant to the preceding paragraph, the Prime Contractor or Subcontractor shall execute all "Participation Agreements" as may be reasonably required by the Union to accomplish such purpose; provided, however, that such Participation Agreements shall, when applicable to the Prime Contractor or Subcontractor solely as a result of this PLA, be amended as reasonably necessary to reflect such fact. Upon written notice in the form of a lien of a Contractor's or Subcontractor's delinquency from any applicable fringe benefit fund, IDOT will withhold from the Contractor's periodic pay request an amount sufficient to extinguish any delinquency obligation of the Contractor or Subcontractor arising out of the Project.

1.9 In the event that the applicable collective bargaining agreement between a Prime Contractor and the Union or between the Subcontractor and the Union expires prior to the completion of this Project, the expired applicable contract's terms will be maintained until a new applicable collective bargaining agreement is ratified. The wages and fringe benefits included in any new applicable collective bargaining agreement will apply on and after the effective date of the newly negotiated collective bargaining agreement, except to the extent wage and fringe benefit retroactivity is specifically agreed upon by the relevant bargaining parties.

ARTICLE II – APPLICABILITY, RECOGNITION, AND COMMITMENTS

2.1 The term Construction Work as used herein shall include all "construction, demolition, rehabilitation, renovation, or repair" work performed by a "laborer or mechanic" at the "site of the work" for the purpose of "building" the specific structures and improvements that constitute the Project. Terms appearing within quotation marks in the preceding sentence shall have the meaning ascribed to them pursuant to 29 CFR Part 5 and Illinois labor laws.

2.2 By executing the Letters of Assent, Prime Contractor and each of its Subcontractors recognizes the Unions signatory to this PLA as the sole and exclusive bargaining representatives for their craft employees employed on the jobsite for this Project. Unions who are signatory to this PLA will have recognition on the Project for their craft.

2.3 The Prime Contractor and each of its Subcontractors retains and shall be permitted to exercise full and exclusive authority and responsibility for the management of its operations, except as expressly limited by the terms of this PLA or by the terms and conditions of the applicable collective bargaining agreement.

2.4 Except to the extent contrary to an express provision of the relevant collective bargaining agreement, equipment or materials used in the Project may be pre-assembled or pre-fabricated, and there shall be no refusal by the Union to handle, transport, install, or connect such equipment or materials. Equipment or materials delivered to the job-site will be unloaded and handled promptly without regard to potential jurisdictional disputes; any such disputes shall be handled in accordance with the provisions of this PLA.

2.5 The parties are mutually committed to promoting a safe working environment for all personnel at the job-site. It shall be the responsibility of each employer to which this PLA applies to provide and maintain safe working conditions for its employees, and to comply with all applicable federal, state, and local health and safety laws and regulations.

2.6 The use or furnishing of alcohol or drugs and the conduct of any other illegal activity at the job-site is strictly prohibited. The parties shall take every practical measure consistent with the terms of applicable collective bargaining agreements to ensure that the job-site is free of alcohol and drugs.

2.7 All parties to this PLA agree that they will not discriminate against any employee based on race, creed, religion, color, national origin, union activity, age, gender or sexual orientation and shall comply with all applicable federal, state, and local laws.

2.8 In accordance with the Act and to promote diversity in employment, IDOT will establish, in cooperation with the other parties, the apprenticeship hours which are to be performed by minorities and females on the Project. IDOT shall consider the total hours to be performed by these underrepresented groups, as a percentage of the workforce, and create aspirational goals for each Project, based on the level of underutilization for the service area of the Project (together "Project Employment Objectives"). IDOT shall provide a quarterly report regarding the racial and gender composition of the workforce on the Project.

Persons currently lacking qualifications to enter apprenticeship programs will have the opportunity to obtain skills through basic training programs as have been established by the Department. The parties will endeavor to support such training programs to allow participants to obtain the requisite qualifications for the Project Employment Objectives.

The parties agree that all Contractors and Subcontractors working on the Project shall be encouraged to utilize the maximum number of apprentices as permitted under the terms of the applicable collective bargaining agreements to realize the Project Employment Objectives.

The Unions shall assist the Contractor and each Subcontractor in efforts to satisfy Project Employment Objectives. A Contractor or Subcontractor may request from a Union specific categories of workers necessary to satisfy Project Employment Objectives. The application of this section shall be consistent with all local Union collective bargaining agreements, and the hiring hall rules and regulations established for the hiring of personnel, as well as the apprenticeship standards set forth by each individual Union.

2.9 The parties hereto agree that engineering consultants and materials testing employees, to the extent subject to the terms of this PLA, shall be fully expected to objectively and responsibly perform their duties and obligations owed to the Department without regard to the potential union affiliation of such employees or of other employees on the Project.

2.10 This Agreement shall not apply to IDOT employees or employees of any other governmental entity.

ARTICLE III - ADMINISTRATION OF AGREEMENT

3.1 In order to assure that all parties have a clear understanding of the PLA, and to promote harmony, at the request of the Unions a post-award pre-job conference will be held among the Prime Contractor, all Subcontractors and Union representatives prior to the start of any Construction Work on the Project. No later than the conclusion of such pre-job conference, the parties shall, among other matters, provide to one another contact information for their respective representatives (including name, address, phone number, facsimile number, e-mail). Nothing herein shall be construed to limit the right of the Department to discuss or explain the purpose and intent of this PLA with prospective bidders or other interested parties prior to or following its award of the job.

3.2 Representatives of the Prime Contractor and the Unions shall meet as often as reasonably necessary following award until completion of the Project to assure the effective implementation of this PLA.

3.3 Any notice contemplated under Article VI and VII of this Agreement to a signatory labor organization shall be made in writing to the Local Union with copies to the local union's International Representative.

ARTICLE IV - HOURS OF WORK AND GENERAL CONDITIONS

4.1 The standard work day and work week for Construction Work on the Project shall be consistent with the respective collective bargaining agreements. In the event Project site or other job conditions dictate a change in the established starting time and/or a staggered lunch period for portions of the Project or for specific crafts, the Prime Contractor, relevant Subcontractors and business managers of the specific crafts involved shall confer and mutually agree to such changes as appropriate. If proposed work schedule changes cannot be mutually agreed upon between the parties, the hours fixed at the time of the pre-job meeting shall prevail.

4.2 Shift work may be established and directed by the Prime Contractor or relevant Subcontractor as reasonably necessary or appropriate to fulfill the terms of its contract with the Department. If used, shift hours, rates and conditions shall be as provided in the applicable collective bargaining agreement.

4.3 The parties agree that chronic and/or unexcused absenteeism is undesirable and must be controlled in accordance with procedures established by the applicable collective bargaining agreement. Any employee disciplined for absenteeism in accordance with such procedures shall be suspended from all work on the Project for not less than the maximum period permitted under the applicable collective bargaining agreement.

4.4 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, employment begins and ends at the Project site; employees shall be at their place of work at the starting time; and employees shall remain at their place of work until quitting time.

4.5 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, there shall be no limit on production by workmen, no restrictions on the full use of tools or equipment, and no restrictions on efficient use of manpower ortechniques of construction other than as may be required by safety regulations.

4.6 The parties recognize that specialized or unusual equipment may be installed on the Project. In such cases, the Union recognizes the right of the Prime Contractor or Subcontractor to involve the equipment supplier or vendor's personnel in supervising the setting up of the equipment, making modifications and final alignment, and performing similar activities that may be reasonably necessary prior to and during the start-up procedure in order to protect factory warranties. The Prime Contractor or Subcontractor shall notify the Union representatives in advance of any work at the job-site by such vendor personnel in order to promote a harmonious relationship between the equipment vendor's personnel and other Project employees.

4.7 For the purpose of promoting full and effective implementation of this PLA, authorized Union representatives shall have access to the Project job-site during scheduled work hours. Such access shall be conditioned upon adherence to all reasonable visitor and security rules of general applicability that may be established for the Project site at the pre-job conference or from time to time thereafter.

ARTICLE V – GRIEVANCE PROCEDURES FOR DISPUTES ARISING UNDER A PARTICULAR COLLECTIVE BARGAINING AGREEMENT

5.1 In the event a dispute arises under a particular collective bargaining agreement specifically not including jurisdictional disputes referenced in Article VI below, said dispute shall be resolved by the Grievance/Arbitration procedure of the applicable collective bargaining agreement. The resulting determination from this process shall be final and binding on all parties bound to its process.

5.2 Employers covered under this Agreement shall have the right to discharge or discipline any employee who violates the provisions of this Agreement. Such discharge or discipline by a contractor or subcontractor shall be subject to Grievance/Arbitration procedure of the applicable collective bargaining agreement only as to the fact of such violation of this agreement. If such fact is established, the penalty imposed shall not be disturbed. Work at the Project site shall continue without disruption or hindrance of any kind as a result of a Grievance/Arbitration procedure under this Article.

5.3 In the event there is a deadlock in the foregoing procedure, the parties agree that the matter shall be submitted to arbitration for the selection and decision of an Arbitrator governed under paragraph 6.8.

ARTICLE VI –DISPUTES: GENERAL PRINCIPLES

6.1 This Agreement is entered into to prevent strikes, lost time, lockouts and to facilitate the peaceful adjustment of jurisdictional disputes in the building and construction industry and to prevent waste and unnecessary avoidable delays and expense, and for the further purpose of at all times securing for the employer sufficient skilled workers.

6.2 A panel of Permanent Arbitrators are attached as addendum (A) to this agreement. By mutual agreement between IDOT and the Unions, the parties can open this section of the agreement as needed to make changes to the list of permanent arbitrators.

The arbitrator is not authorized to award back pay or any other damages for a miss assignment of work. Nor may any party bring an independent action for back pay or any other damages, based upon a decision of an arbitrator.

6.3 The PLA Jurisdictional Dispute Resolution Process ("Process") sets forth the procedures below to resolve jurisdictional disputes between and among Contractors, Subcontractors, and Unions engaged in the building and construction industry. Further, the Process will be followed for any grievance or dispute arising out of the interpretation or application of this PLA by the parties except for the prohibition on attorneys contained in 6.11. All decisions made through the Process are final and binding upon all parties.

DISPUTE PROCESS

6.4 Administrative functions under the Process shall be performed through the offices of the President and/or Secretary-Treasurer of the Illinois State Federation of Labor, or their designated representative, called the Administrator. In no event shall any officer, employee, agent, attorney, or other representative of the Illinois Federation of Labor, AFL- CIO be subject to any subpoena to appear or testify at any jurisdictional dispute hearing.

6.5 There shall be no abandonment of work during any case participating in this Process or in violation of the arbitration decision. All parties to this Process release the Illinois State Federation of Labor ("Federation") from any liability arising from its action or inaction and covenant not to sue the Federation, nor its officers, employees, agents or attorneys.

6.6 In the event of a dispute relating to trade or work jurisdiction, all parties, including the employers, Contractors or Subcontractors, agree that a final and binding resolution of the dispute shall be resolved as follows:

(a) Representatives of the affected trades and the Contractor or Subcontractor shall meet on the job site within two (2) business days after receiving written notice in an effort to resolve the dispute. (In the event there is a dispute between local unions affiliated with the same International Union, the decision of the General President, or his/her designee, as the internal jurisdictional authority of that International Union, shall constitute a final and binding decision and determination as to the jurisdiction of work.)

(b) If no settlement is achieved subsequent to the preceding Paragraph, the matter shall be referred to the local area Building & Construction Trades Council, which shall meet with the affected trades within two (2) business days subsequent to receiving written notice. In the event the parties do not wish to avail themselves of the local Building & Construction Trades Council, the parties may elect to invoke the services of their respective International Representatives with no extension of the time limitations. An agreement reached at this Step shall be final and binding upon all parties.

(c) If no settlement agreement is reached during the proceedings contemplated by Paragraphs “a” or “b” above, the matter shall be immediately referred to the Illinois Jurisdictional Dispute Process for final and binding resolution of said dispute. Said referral submission shall be in writing and served upon the Illinois State Federation of Labor, or the Administrator, pursuant to paragraph 6.4 of this agreement. The Administrator shall, within three (3) days, provide for the selection of an available Arbitrator to hear said dispute within this time period. Upon good cause shown and determined by the Administrator, an additional three (3) day extension for said hearing shall be granted at the sole discretion of the Administrator. Only upon mutual agreement of all parties may the Administrator extend the hearing for a period in excess of the time frames contemplated under this Paragraph. Business days are defined as Monday through Friday, excluding contract holidays.

6.7 The primary concern of the Process shall be the adjustment of jurisdictional disputes arising out of the Project. A sufficient number of Arbitrators shall be selected from list of approved Arbitrators as referenced Sec. 6.2 and shall be assigned per Sec. 6.8. Decisions shall be only for the Project and shall become effective immediately upon issuance and complied with by all parties. The authority of the Arbitrator shall be restricted and limited specifically to the terms and provisions of Article VI and generally to this Agreement as a whole.

6.8 Arbitrator chosen shall be randomly selected based on the list of Arbitrators in Sec. 6.2 and geographical location of the jurisdictional dispute and upon his/her availability, and ability to conduct a Hearing within two (2) business days of said notice. The Arbitrator may issue a "bench" decision immediately following the Hearing or he/she may elect to only issue a written decision, said decision must be issued within two (2) business days subsequent to the completion of the Hearing. Copies of all notices, pleadings, supporting memoranda, decisions, etc. shall be provided to all disputing parties and the Illinois State Federation of Labor.

Any written decision shall be in accordance with this Process and shall be final and binding upon all parties to the dispute and may be a "short form" decision. Fees and costs of the arbitrator shall be divided evenly between the contesting parties except that any party wishing a full opinion and decision beyond the short form decision shall bear the reasonable fees and costs of such full opinion. The decision of the Arbitrator shall be final and binding upon the parties hereto, their members, and affiliates.

In cases of jurisdictional disputes or other disputes between a signatory labor organization and another labor organization, both of which is an affiliate or member of the same International Union, the matter or dispute shall be settled in the manner set forth by their International Constitution and/or as determined by the International Union's General President whose decision shall be final and binding upon all parties. In no event shall there be an abandonment of work.

6.9 In rendering a decision, the Arbitrator shall determine:

(a) First, whether a previous agreement of record or applicable agreement, including a disclaimer agreement, between National or International Unions to the dispute or agreements between local unions involved in the dispute, governs;

(b) Only if the Arbitrator finds that the dispute is not covered by an appropriate or applicable agreement of record or agreement between the crafts to the dispute, he shall then consider the established trade practice in the industry and prevailing practice in the locality. Where there is a previous decision of record governing the case, the Arbitrator shall give equal weight to such decision of record, unless the prevailing practice in the locality in the past ten years favors one craft. In that case, the Arbitrator shall base his decision on the prevailing practice in the locality. Except, that if the Arbitrator finds that a craft has improperly obtained the prevailing practice in the locality through raiding, the undercutting of wages or by the use of vertical agreements, the Arbitrator shall rely on the decision of record and established trade practice in the industry rather than the prevailing practice in the locality; and,

(c) Only if none of the above criteria is found to exist, the Arbitrator shall then consider that because efficiency, cost or continuity and good management are essential to the well being of the industry, the interests of the consumer or the past practices of the employer shall not be ignored.

(d) The arbitrator is not authorized to award back pay or any other damages for a mis-assignment of work. Nor may any party bring an independent action for back pay or any other damages, based upon a decision of an arbitrator.

6.10 The Arbitrator shall set forth the basis for his/her decision and shall explain his/her findings regarding the applicability of the above criteria. If lower ranked criteria are relied upon, the Arbitrator shall explain why the higher-ranked criteria were not deemed applicable. The Arbitrator's decision shall only apply to the Project. Agreements of Record, for other PLA projects, are applicable only to those parties signatory to such agreements. Decisions of Record are those that were either attested to by the former Impartial Jurisdictional Disputes Board or adopted by the National Arbitration Panel.

6.11 All interested parties, as determined by the Arbitrator, shall be entitled to make presentations to the Arbitrator. Any interested labor organization affiliated to the PLA Committee and party present at the Hearing, whether making a presentation or not, by such presence shall be deemed to accept the jurisdiction of the Arbitrator and to agree to be bound by its decision. In addition to the representative of the local labor organization, a representative of the labor organization's International Union may appear on behalf of the parties. Each party is responsible for arranging for its witnesses. In the event an Arbitrator's subpoena is required, the party requiring said subpoena shall prepare the subpoena for the Arbitrator to execute. Service of the subpoena upon any witness shall be the responsibility of the issuing party.

Attorneys shall not be permitted to attend or participate in any portion of a Hearing.

The parties are encouraged to determine, prior to Hearing, documentary evidence which may be presented to the Arbitrator on a joint basis.

6.12 The Order of Presentation in all Hearings before an Arbitrator shall be

I. Identification and Stipulation of the Parties
II. Unions(s) claiming the disputed work presents its case
III. Union(s) assigned the disputed work presents its case
IV. Employer assigning the disputed work presents its case
V. Evidence from other interested parties (i.e., general contractor, project manager, owner)
VI. Rebuttal by union(s) claiming the disputed work
VII. Additional submissions permitted and requested by Arbitrator VIII. Closing arguments by the parties

6.13 All parties bound to the provisions of this Process hereby release the Illinois State Federation of Labor and IDOT, their respective officers, agents, employees or designated representatives, specifically including any Arbitrator participating in said Process, from any and all liability or claim, of whatsoever nature, and specifically incorporating the protections provided in the Illinois Arbitration Act, as amended from time to time.

6.14 The Process, as an arbitration panel, nor its Administrator, shall have any authority to undertake any action to enforce its decision(s). Rather, it shall be the responsibility of the prevailing party to seek appropriate enforcement of a decision, including findings, orders or awards of the Arbitrator or Administrator determining non-compliance with a prior award or decision.

6.15 If at any time there is a question as to the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process, the primary responsibility for any determination of the arbitrability of a dispute and the jurisdiction of the Arbitrator shall be borne by the party requesting the Arbitrator to hear the underlying jurisdictional dispute. The affected party or parties may proceed before the Arbitrator even in the absence or one or more stipulated parties with the issue of jurisdiction as an additional item to be decided by the Arbitrator. The Administrator may participate in proceedings seeking a declaration or determination that the underlying dispute is subject to the jurisdiction and process of the Illinois Jurisdictional Dispute Resolution Process. In any such proceedings, the non-prevailing party and/or the party challenging the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process shall bear all the costs, expenses and attorneys' fees incurred by the Illinois Jurisdictional Dispute Resolution Process and/or its Administrator in establishing its jurisdiction.

ARTICLE VII - WORK STOPPAGES AND LOCKOUTS

7.1 During the term of this PLA, no Union or any of its members, officers, stewards, employees, agents or representatives shall instigate, support, sanction, maintain, or participate in any strike, picketing, walkout, work stoppage, slow down or other activity that interferes with the routine and timely prosecution of work at the Project site or at any other contractor's or supplier's facility that is necessary to performance of work at the Project site. Hand billing at the Project site during the designated lunch period and before commencement or following conclusion of the established standard workday shall not, in itself, be deemed an activity that interferes with the routine and timely prosecution of work on the Project.

7.2 Should any activity prohibited by paragraph 7.1 of this Article occur, the Union shall undertake all steps reasonably necessary to promptly end such prohibited activities.

7.2.A No Union complying with its obligations under this Article shall be liable for acts of employees for which it has no responsibility or for the unauthorized acts of employees it represents. Any employee who participates or encourages any activity prohibited by paragraph 7.1 shall be immediately suspended from all work on the Project for a period equal to the greater of (a) 60 days; or (b) the maximum disciplinary period allowed under the applicable collective bargaining agreement for engaging in comparable unauthorized or prohibited activity.

7.2.B Neither the PLA Committee nor its affiliates shall be liable for acts of employees for which it has no responsibility. The principal officer or officers of the PLA Committee will immediately instruct, order and use the best efforts of his office to cause the affiliated union or unions to cease any violations of this Article. The PLA Committee in its compliance with this obligation shall not liable for acts of its affiliates. The principal officer or officers of any involved affiliate will immediately instruct, order or use the best effort of his office to cause the employees the union represents to cease any violations of this Article. A union complying with this obligation shall not be liable for unauthorized acts of employees it represents. The failure of the Contractor to exercise its rights in any instance shall not be deemed a waiver of its rights in any other instance.

During the term of this PLA, the Prime Contractor and its Subcontractors shall not engage in any lockout at the Project site of employees covered by this Agreement.

7.3 Upon notification of violations of this Article, the principal officer or officers of the local area Building and Construction Trades Council, and the Illinois AFL-CIO Statewide Project Labor Agreement Committee as appropriate, will immediately instruct, order and use their best efforts to cause the affiliated union or unions to cease any violations of this Article. A Trades Council and the Committee otherwise in compliance with the obligations under this paragraph shall not be liable for unauthorized acts of its affiliates.

7.4 In the event that activities in violation of this Article are not immediately halted through the efforts of the parties, any aggrieved party may invoke the special arbitration provisions set forth in paragraph 7.5 of this Article.

7.5 Upon written notice to the other involved parties by the most expeditious means available, any aggrieved party may institute the following special arbitration procedure when a breach of this Article is alleged:

7.5.A The party invoking this procedure shall notify the individual designated as the Permanent Arbitrator pursuant to paragraph 6.8 of the nature of the alleged violation; such notice shall be by the most expeditious means possible. The initiating party may also furnish such additional factual information as may be reasonably necessary for the Permanent Arbitrator to understand the relevant circumstances. Copies of any written materials provided to the arbitrator shall also be contemporaneously provided by the most expeditious means possible to the party alleged to be in violation and to all other involved parties.

7.5.B Upon receipt of said notice the Permanent Arbitrator shall set and hold a hearing within twenty-four (24) hours if it is contended the violation is ongoing, but not before twenty-four (24) hours after the written notice to all parties involved as required above.

7.5.C The Permanent Arbitrator shall notify the parties by facsimile or any other effective written means, of the place and time chosen by the Permanent Arbitrator for this hearing. Said hearing shall be completed in one session. A failure of any party or parties to attend said hearing shall not delay the hearing of evidence or issuance of an Award by the Permanent Arbitrator.

7.5.D The sole issue at the hearing shall be whether a violation of this Article has, in fact, occurred. An Award shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one shall be issued within fifteen (15) days, but its issuance shall not delay compliance with, or enforcement of, the Award. The Permanent Arbitrator may order cessation of the violation of this Article, and such Award shall be served on all parties by hand or registered mail upon issuance.

7.5.E Such Award may be enforced by any court of competent jurisdiction upon the filing of the Award and such other relevant documents as may be required. Facsimile or other hardcopy written notice of the filing of such enforcement proceedings shall be given to the other relevant parties. In a proceeding to obtain a temporary order enforcing the Permanent Arbitrator's Award as issued under this Article, all parties waive the right to a hearing and agree that such proceedings may be ex parte. Such agreement does not waive any party's right to participate in a hearing for a final order of enforcement. The Court's order or orders enforcing the Permanent Arbitrator's Award shall be served on all parties by hand or by delivery to their last known address or by registered mail.

7.6 Individuals found to have violated the provisions of this Article are subject to immediate termination. In addition, IDOT reserves the right to terminate this PLA as to any party found to have violated the provisions of this Article.

7.7 Any rights created by statue or law governing arbitration proceedings inconsistent with the above procedure or which interfere with compliance therewith are hereby waived by parties to whom they accrue.

7.8 The fees and expenses of the Permanent Arbitrator shall be borne by the party or parties found in violation, or in the event no violation is found, such fees and expenses shall be borne by the moving party.

ARTICLE VIII – TERMS OF AGREEMENT

8.1 If any Article or provision of this Agreement shall be declared invalid, inoperative or unenforceable by operation of law or by any of the above mentioned tribunals of competent jurisdiction, the remainder of this Agreement or the application of such Article or provision to persons or circumstances other than those as to which it has been held invalid, inoperative or unenforceable shall not be affected thereby.

8.2 This Agreement shall be in full force as of and from the date of the Notice of Award until the Project contract is closed.

8.3 This PLA may not be changed or modified except by the subsequent written agreement of the parties. All parties represent that they have the full legal authority to enter into this PLA. This PLA may be executed by the parties in one or more counterparts.

8.4 Any liability arising out of this PLA shall be several and not joint. IDOT shall not be liable to any person or other party for any violation of this PLA by any other party, and no Contractor or Union shall be liable for any violation of this PLA by any other Contractor or Union.

8.5 The failure or refusal of a party to exercise its rights hereunder in one or more instances shall not be deemed a waiver of any such rights in respect of a separate instance of the same or similar nature.

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Addendum A

IDOT Slate of Permanent Arbitrators

1. Bruce Feldacker
2. Thomas F. Gibbons
3. Edward J. Harrick
4. Brent L. Motchan
5. Robert Perkovich
6. Byron Yaffee
7. Glenn A. Zipp

Exhibit A - Contractor Letter of Assent

(Date)

To All Parties:

In accordance with the terms and conditions of the contract for Construction Work on [Contract No.], this Letter of Assent hereby confirms that the undersigned Prime Contractor or Subcontractor agrees to be bound by the terms and conditions of the Project Labor Agreement established and entered into by the Illinois Department of Transportation in connection with said Project.

It is the understanding and intent of the undersigned party that this Project Labor Agreement shall pertain only to the identified Project. In the event it is necessary for the undersigned party to become signatory to a collective bargaining agreement to which it is not otherwise a party in order that it may lawfully make certain required contributions to applicable fringe benefit funds, the undersigned party hereby expressly conditions its acceptance of and limits its participation in such collective bargaining agreement to its work on the Project.

(Authorized Company Officer)

(Company)

REVISIONS TO THE ILLINOIS PREVAILING WAGE RATES

The Prevailing rates of wages are included in the Contract proposals which are subject to Check Sheet #5 of the Supplemental Specifications and Recurring Special Provisions. The rates have been ascertained and certified by the Illinois Department of Labor for the locality in which the work is to be performed and for each craft or type of work or mechanic needed to execute the work of the Contract. As required by Prevailing Wage Act (820 ILCS 130/0.01, et seq.) and Check Sheet #5 of the Contract, not less than the rates of wages ascertained by the Illinois Department of Labor and as revised during the performance of a Contract shall be paid to all laborers, workers and mechanics performing work under the Contract. Post the scale of wages in a prominent and easily accessible place at the site of work.

If the Illinois Department of Labor revises the prevailing rates of wages to be paid as listed in the specification of rates, the contractor shall post the revised rates of wages and shall pay not less than the revised rates of wages. Current wage rate information shall be obtained by visiting the Illinois Department of Labor web site at http://www.state.il.us/agency/idol/ or by calling 312-793-2814. It is the responsibility of the contractor to review the rates applicable to the work of the contract at regular intervals in order to insure the timely payment of current rates. Provision of this information to the contractor by means of the Illinois Department of Labor web site satisfies the notification of revisions by the Department to the contractor pursuant to the Act, and the contractor agrees that no additional notice is required. The contractor shall notify each of its subcontractors of the revised rates of wages.