142

November 6, 2026 Letting

Notice to Bidders, Specifications and Proposal

Illinois Department of Transportation

Contract No. 46676
Various Counties
Section STATEWIDE SIGN MAINT INT 26-13
Various Routes
District MT 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. November 6, 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. 46676
   Various Counties
   Section STATEWIDE SIGN MAINT INT 26-13
   Various Routes
   District MT Construction Funds

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)

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STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1st, 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 Various Routes, Section Statewide Sign Maintenance 26-13, Various Counties, Contract No. 46676, and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

Various Routes
Section Statewide Sign Maintenance 26-13
Various Counties
Contract No. 46676

LOCATION OF IMPROVEMENT:

The work to be done under this contract will be primarily on freeways, interstates, and major arterials throughout all 102 counties which consist of Adams, Alexander, Bond, Boone, Brown, Bureau, Calhoun, Carroll, Cass, Champaign, Christian, Clark, Clay, Clinton, Coles, Cook, Crawford, Cumberland, De Kalb, De Witt, Douglas, Du Page, Edgar, Edwards, Effingham, Fayette, Ford, Franklin, Fulton, Gallatin, Greene, Grundy, Hamilton, Hancock, Hardin, Henderson, Henry, Iroquois, Jackson, Jasper, Jefferson, Jersey, Jo Daviess, Johnson, Kane, Kankakee, Kendall, Knox, La Salle, Lake, Lawrence, Lee, Livingston, Logan, Macon, Macoupin, Madison, Marion, Marshall, Mason, Massac, McDonough, McHenry, McLean, Menard, Mercer, Monroe, Montgomery, Morgan, Moultrie, Ogle, Peoria, Perry, Piatt, Pike, Pope, Pulaski, Putnam, Randolph, Richland, Rock Island, Saline, Sangamon, Schuyler, Scott, Shelby, St. Clair, Stark, Stephenson, Tazewell, Union, Vermilion, Wabash, Warren, Washington, Wayne, White, Whiteside, Will, Williamson, Winnebago and Woodford in Illinois

DESCRIPTION OF IMPROVEMENTS:

The work shall consist of repairing or replacing damaged sign components, furnishing or furnishing and installing new signs and supports, or replacing damaged overhead sign structure components and end supports at locations described in a work order

COMPLETION DATE:

All work on this contract shall be completed on or before September 30, 2031. Should the Contractor fail to complete all work by September 30, 2031, the Contractor shall be liable in accordance with Article 108.09 with of the Standard Specifications.

WORK ORDERS

No work of any kind is to be performed by the Contractor unless a work order authorizing work has been issued by the Traffic Operations Engineer. A work order will show the date of issue, job number, location, code number(s), pay item(s), quantity of such pay item, and total cost. Only the amount of replacement or repairs shown on the work order is to be done by the Contractor. If at the time repairs are being made it appears that additional work is needed, a revised work order must be obtained. The Contractor will be responsible for all final field measurements prior to fabrication on all work orders. The Contractor shall notify the district contact at least 72 hours before beginning any work in the field and shall obtain permission to begin such work.

It shall be the Contractor's responsibility to verify all dimensions and conditions existing in the field prior to construction and ordering materials.

Some work orders may require that the Contractor complete the work outlined in the work order during a District's night-time hours.

Any damaged signs, supports, structures, or structure components being replaced shall become the property of the Contractor and this shall be reflected in the unit price of pay items.

Except as noted below, the Contractor shall complete all the work required on a work order within 75 days after the date of issue on the work order or its revision, unless otherwise extended in the work order or agreed in writing between the Contractor and the Engineer.

Unless otherwise extended on an individual work order, the erection of existing sign panels shall be accomplished within 30 days. Where sign panels are to be installed on new steel posts, a combination of new and existing steel posts, or on an overhead sign truss where truss repairs are involved and the Contractor cannot meet the 30-day deadline, the Contractor will be allowed to install the sign on temporary wood posts within the same 30-day period. The Contractor shall then have 45 additional days in which to fabricate and install the new steel posts, any required foundations, make any truss repairs, and re-erect the sign panel on the new posts or on the repaired truss.

The repair or re-erection of a signpost(s), where no new post(s) is involved, and the erection of an existing sign panel on the post(s) shall also be accomplished within 30 days. Installation of the panel on temporary supports will not be allowed.

FAILURE TO COMPLETE A WORK ORDER ON TIME:

Time is of the essence in the completion of each work order issued by the Department. Failure to make timely repairs will cause public inconvenience, endanger the public safety, and subject the Department to public criticism. All repairs shall be completed within the completion time designated for each work order. The Contractor may request the Engineer extend an individual work order. The Engineer may extend an individual work order completion date upon written notification to the Contractor.

The Contractor understands and agrees that performance will be expected in varying amounts and at various locations within the area designated in the contract in accordance with the work orders issued by the Engineer.

Should the Contractor fail to complete the work order within the completion time stipulated, the Contractor shall be liable to the Department for liquidated damages of $100.00 per day per work order. The Department will deduct these liquidated damages from the monies due or to become due to the Contractor from the Department. The time required by the Engineer to approve sign designs or inspect work will not be counted against the balance of days remaining for the Contractor to perform the work.

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

QUANTITIES

The quantities specified in this contract indicate the estimated amount of work required in a one-year period. This is merely an estimate to allow Contractors to establish unit prices and permit the Department to determine the low bidder. It shall be understood that the unit prices of this contract shall prevail throughout the period of this contract regardless of the quantity.

REIMBURSEMENT FROM THIRD PARTY FOR REPAIRS OR DAMAGES

The Department reserves the right to make recovery from third party or parties for damage to any part of the existing installations and no part of such recovery or recoveries shall inure to the benefit of the Contractor. To enable the Department to assess damages against said third party or parties, the Contractor shall, upon request, furnish the Engineer an itemized statement of the cost of any repairs to third party damage, separating the cost of labor, materials, and equipment.

LOCATING UNDERGROUND CABLE

At those locations, where concrete foundations are to be installed, the Contractor shall notify the district contact at least 72 hours before beginning any work in the field. The Contractor shall request that the Department find and mark all underground electric cable owned and maintained by the Department which may conflict with the construction operations. In the event the Contractor fails to notify the district contact and cable is damaged, the Contractor shall replace the entire length of cable or conductors in conduit, in a manner satisfactory to the district contact, at his/her own expense. Splicing below grade will not be permitted.

CONTRACTOR'S RESPONSIBILITY FOR DAMAGE

The Contractor shall be held responsible for damages resulting from the operations of their equipment or employees and of any damage to a sign or sign structure prior to final inspection by the district contact. The Contractor shall, at their own expense, restore any damaged property to a condition equal to that existing before damage was done by repairing, rebuilding, or replacing it as directed by the Engineer.

FINAL CLEANING UP

The final cleaning up shall conform to the requirements set forth in Article 104.06. Each time the Contractor accomplishes work at any location, they will be required to clean up the work area before payment for that work will be submitted. All costs due to compliance with this special provision will be included in the contract, and no additional compensation will be allowed.

TRAFFIC CONTROL AND PROTECTION

The Contractor shall arrange their work in a manner to keep interruptions to traffic flow at a minimum.Traffic control and protection shall conform to Article 107.09 and Section 701 and to the following standards as required by the Engineer.

Standards 701006, 701101, 701106, 701201, 701301, 701400, 701401, 701406, 701411, 70142, 701901

Additional traffic control and hour restrictions for closures may have to be imposed to facilitate the flow of traffic on certain sections of highways. Conformance to the traffic control and protection standards will not be paid for as a separate item but will be considered included with the various contract items. No additional compensation will be allowed. **T**his will also include traffic control and protection on interstates, freeways, expressways, and all major arterials**.**

FURNISH AND ERECT GRAFFITI RESISTANT SIGN PANEL

This work shall consist of furnishing and erecting an extruded graffiti resistant sign panel complete with reflectorized sign face, legend, and supplemental panels or plates on existing sign support(s) or overhead sign structure at the location(s) specified in the work order. The type, size, and content of legend requirements will be as specified below or in the work order. The aluminum extrusions and the installation shall be in accordance with the requirements of Sections 720 and 1091 of the Standard Specifications, as shown on the plans, and/or as directed by the Engineer.

All type III reflectorized guide signs, supplemental signs including route shields, and supplemental panels shall be fabricated using faces and legend of type ZZ retroreflective sheeting. This shall include mainline, ramp, crossroad interchange approach directional signing, and route markers. All signs shall be fabricated such that the copy or text and background material is applied in the preferred orientation for the maximum retro-reflectivity per the manufacturer's recommendation. Background sheeting and legend shall be provided by the same manufacturer.

This graffiti protection overlay shall ensure similar day-night appearance and not reduce retro-reflectivity as required by the sheeting called for in the contract, which shall be substantiated by supporting test results. All graffiti resistant films, when applied to the various types of reflective sheeting, must meet the same durability requirements as specified for that type of reflective sheeting. This work will be measured for payment in square feet from edge-to-edge (horizontally and vertically).

The Contractor shall package all signs to prevent damage during shipment.

This work will be paid for at the contract unit price per SQUARE FOOT for FURNISH AND ERECT GRAFFITI RESISTANT SIGN PANEL. This price shall include furnishing all materials, fabricating the sign panel (including sign face and sign legend), furnishing all mounting hardware (including any 4WF1.79 sign brackets required for overhead sign structure mounting), installing the sign panel on previously erected sign supports or sign structure, and removing any existing sign panel(s) as required for the proper installation of the new panel(s). Removal of any existing sign panel(s) will be paid for as Remove Sign Panel Type 1, 2 or 3.

FURNISH AND ERECT SIGN PANEL-LOGO

This work shall consist of installing LOGO service signage along the interstate. Typical layouts and sign designs are shown in the plans. Specific details and locations will be described in the work order(s).

No mounting on bridges or overhead sign structures will be required for this pay item. The supplemental business LOGO panels and mileage plates will be furnished by others and made available to the Contractor at the appropriate district sign shop or at a location agreed upon by the Contractor and Engineer. The supplemental panels and plates will be riveted onto the main sign panel as shown in the work order(s). In addition to the necessary holes in the sign panel for installation of the supplemental panels and plates, the Contractor shall also drill the upper left hole for all other possible supplemental business LOGO panels. (This is to facilitate spacing of future LOGO panels.)

This work will be paid for at the contract unit price per SQUARE FOOT for FURNISH AND ERECT SIGN PANEL - LOGO. This price shall include furnishing all materials, fabricating the sign panel (including sign face and sign legend), furnishing all mounting hardware, installing all supplemental LOGO panels and mileage plates, and installing the sign panel on previously erected sign supports.

The steel supports and concrete foundations for logo sign panels will be paid for as Structural Steel Sign Support-Breakaway, Structural Steel Sign Support-Breakaway Coupling Type, and Concrete Foundations respectively.

OVERHEAD SIGN STRUCTURE - END SUPPORT

This work will consist of replacing a damaged or deteriorated end support(s) for an overhead sign structure-span or cantilever. This work shall be done in accordance with the requirements of Sections 733 and as specified herein. Shop drawings for the new end support(s) will be provided by the Contractor and approved in writing before any new materials are ordered.

Materials shall meet the requirements of the sign structure detail sheets shown in the contract, conforming to the dimensions shown on the details attached to the work order and the applicable requirements of Section 1094.

This work shall include removing all grout, if grout is present, cleaning and painting the exposed anchor bolts, and installing a stainless-steel screen wire to enclose the void between the sign support base plates and the foundation. The exposed part of the anchor bolts shall be cleaned and painted with one coat of primer and meet the requirements of Section 4 and 5 of SSPC-PS25 for red iron oxide, zinc oxide, raw linseed oil, and alkyd primer. All debris resulting from this operation shall be removed from the right-of-way.

Any sign panels attached to the end support to be replaced shall be carefully removed and re-installed on the new end support as directed by the Engineer.

This work will be paid for at the contract unit price EACH for OVERHEAD SIGN STRUCTURE - END SUPPORT. This price shall include removing any damaged or deteriorated end support(s) from the right-of-way, providing shop drawings, furnishing all materials, fabricating and erecting the end-support(s), galvanizing the exposed steel, removing all grout, cleaning and painting the exposed anchor bolts, installing the wire cloth, removing and reinstalling any existing sign panels, installing a sign structure number, and providing all necessary traffic control. Removing and re-erecting the overhead sign structure will be paid for as Remove And Re-Erect Overhead Sign Structure-Span or Remove And Re-Erect Overhead Sign Structure-Cantilever.

BRIDGE MOUNTED SIGN SUPPORT

This work shall consist of removing and replacing bridge-mount sign support(s). The type and number shall be indicated in each individual work order. Materials shall meet the requirements of the bridge mount sign structure details shown in the contract, conforming to the dimensions shown on the detail sheets attached to the work order, and the applicable requirements of Section 1094.

The damaged bridge-mount support(s) shall become the property of the Contractor and shall be removed completely from the right-of-way. The bid price shall reflect any salvage value of the support(s) removed.

Shop drawings for the replacement bridge-mount sign support(s) will be provided by the Contractor and approved in writing before any new materials are ordered.

This work will be paid for at the contract unit price per EACH for BRIDGE MOUNTED SIGN SUPPORT, which price shall include removal of the damaged bridge support(s), providing shop drawings, and fabricating, furnishing, and erecting the support brackets, angles, and any other necessary hardware.

BREAKAWAY SLIP BASE CONNECTION BOLT SET

This work shall consist of furnishing a breakaway slip base connection bolt set for the installation of a structural steel sign support. The breakaway slip base connection bolt set shall meet the requirements of Section 727 of the Standard Specifications. The diameter and length of the bolt will be as specified in the work order. The size of the connection bolt set shall be determined by the size of the sign support and as specified in the work order. The Contractor shall deliver the breakaway connection bolt set to the location specified in the work order or the district sign shop in the district where the work order was issued.

A breakaway slip base connection bolt set shall consist of four bolts, twelve flat washers, and four hex nuts.

This work will be paid for at the contract unit price per EACH for BREAKAWAY SLIP BASE CONNECTION BOLT SET, which price shall include furnishing all necessary components to complete the installation for a breakaway slip base type connection for a structural steel sign support and delivery to the location or locations specified in the work order.

STRUCTURAL STEEL SIGN SUPPORT – BREAKAWAY COUPLING TYPE

This work shall consist of furnishing galvanized structural steel breakaway sign supports for ground-mounted signs and breakaway coupling assemblies of the sizes and lengths shown in the work order. The supports shall be attached to the breakaway coupling assembly previously cast within a concrete foundation. Breakaway coupling structural steel supports shall be used only for the installation of logo sign panels on I-70, 72, 270, and 255.

Materials shall meet the requirements of Articles 1006.04, 1006.08, and 1093.01 except all references to stub posts shall be omitted.

The fabrication of structural steel sign supports shall meet the requirements of Section 727.

The structural steel breakaway sign supports shall be erected in a vertical position on anchor bars previously cast within concrete foundations with the faces of the supports flush with the sign throughout the contact area. The supports shall be plumbed and brought to final grade by using shims as shown on the plans.The supports shall be connected to the anchor bars by means of a breakaway coupling assembly conforming to the requirements listed elsewhere in these special provisions.

Breakaway coupling assemblies shall be the "Break-Safe" system manufactured by Transco-Safety, Inc., 20 Jones Street, New Rochelle, New York 10801.

The breakaway couplings shall be manufactured from alloy steel meeting the requirements of AISI 4130H or 4340H and shall have a minimum tensile yield stress of l65,000 psi and an ultimate tensile range of l80,000 to 215,000 psi. The breakaway coupling shall have a tensile breaking load of between 47,000 and 57,000 pounds. The Rockwell C hardness shall be 26 minimum.

Hinge plates shall be alloy steel meeting the requirements of AISI 4340, AISI 4130, or an equivalent material and shall have a minimum tensile yield stress of 90,000 psi.

The hinge plates shall have tensile breaking load ranges as follows:

HI-1 16,400 - l9, 700 lbs. (l0WF21-14WF30)
HI-2 6,700 - 8,100 lbs. (6WF9-8WF20)

All bolts, nuts, and washers shall conform to AASHTO M1641.

Brackets shall be aluminum alloy meeting the requirements of ASTM B-221, Alloy 6061-T6, or an approved equal. The bracket shall incorporate a load-concentrating boss, which shall be stainless steel meeting the requirements of ASTM A-582, type 416, or approved equal.

Anchor plates shall be made from aluminum Alloy 6061-T6 or equivalent, having minimum yield strength of 35,000 psi.

Anchor bars shall be made from grade 60 steel, or equivalent material, with a minimum allowable tensile stress of 24,000 psi and shall conform to ASTM designation A-307. The anchor bars shall be hot dip galvanized in conformance with ASTM designation A-153.

Breakaway couplings shall be clean, dry, and free from all foreign material and shall be primed and coated with a coating ground from fully homogenized cellulose acetate butyrate plastic and appropriate coloring agents applied by an electrostatic spray process. The coating shall have a minimum thickness of .3 mils and be fused at a maximum temperature of 425° F. Chipped areas of the coated surface shall be repaired. After coating, all threaded surfaces shall be cleaned to allow them to function properly.

Location holes for the breakaway coupling shall be accurately positioned relative to the load concentration member in accordance with the approved shop drawings. All brackets shall be permanently labeled with bracket number to reflect the hole positioning.

The installation of the breakaway coupling assemblies shall be in accordance with the manufacturer's recommendations. The Contractor shall provide certification from the breakaway coupling assembly manufacturer that the assemblies meet all the requirements of these specifications. The Department reserves the right to test any component of the assembly and to reject any or all components failing to meet these specifications.

This work will be measured for payment in pounds of structural steel sign support erected in place. The weight of structural steel shall be computed based on the nominal weight per foot of the main post installed from the bottom to the top of the post. No allowance will be made for overrun and no deduction made for cuts, copes, and holes.

Bolts, screws, nuts, washers, shims, post brackets, and anchor bars will not be measured for payment but will be considered as included with this pay item.

This work will be paid for at the contract unit price per POUND for STRUCTURAL STEEL SIGN SUPPORT - COUPLING TYPE, which price shall include payment in full for furnishing and erecting the galvanized posts with all components as specified, including the breakaway coupling assemblies.

FURNISH BREAKAWAY COUPLING SET

Revised January 2003.

This work shall consist of furnishing a small or large breakaway coupling set for the installation of a structural steel sign support. The breakaway coupling set shall meet the requirements for breakaway coupling assemblies outlined in the Structural Steel Sign Support - Breakaway Coupling Type special provision. The size of the coupling set shall be determined by the size of the sign support and as specified in the work order. The Contractor shall deliver the breakaway coupling set to the location specified in the work order or the district sign shop in the district where the work order was issued.

A breakaway coupling set shall consist of four bolts and four couplers.

This work will be paid for at the contract unit price per EACH for FURNISH BREAKAWAY COUPLING SET, which price shall include furnishing all necessary components to complete the coupling type installation for a structural steel sign support and delivery to the location or locations specified in the work order.

FURNISH HINGE PLATE SET

This work shall consist of furnishing a small or large hinge plate set for breakaway coupling type installation for structural steel sign support. The hinge plate set shall meet the requirements for breakaway coupling assemblies outlined in the Structural Steel Sign Support - Breakaway Coupling Type special provision. The size of the hinge plate set shall be determined by the size of the sign support and as specified in the work order. The Contractor shall deliver the hinge plate set to the location specified in the work order or the district sign shop in the district where the work order was issued.

A hinge plate set shall consist of four hinge plates and a total of eight bolts, nuts, and washers.

This work will be paid for at the contract unit price per EACH for FURNISH HINGE PLATE SET, which price shall include furnishing all necessary components to complete the hinge type installation for a structural steel sign support and delivery to the location or locations specified in the work order.

RE-ERECT EXISTING STRUCTURAL STEEL SIGN SUPPORT – BREAKAWAY

This work shall consist of re-erecting an existing structural steel sign support on an existing stub post and torquing the fuse plate and base plate bolts. This item will only be used for those posts that have been knocked down and need no repair.

Any missing bolts or plates shall be replaced by the Contractor and shall be considered included with this pay item. Replacement bolts or plates shall meet the requirements of Article 727.

When the work order requires the Contractor to re-erect a sign support that was installed with a breakaway type coupling, the Contractor shall furnish a breakaway coupling set to complete the re-erection. The furnishing of the breakaway coupling set will be paid for as Furnish Breakaway Coupling Set.

This work will be paid for at the contract unit price per EACH for RE-ERECT EXISTING STRUCTURAL STEEL SIGN SUPPORT – BREAKAWAY, which price shall include all labor, materials, and equipment required to complete the work.

INSTALL SERVICE SIGN OR MILEAGE PLATE

This work shall consist of installing a service plate advertising gas, food, lodging, camping business establishment, or a mileage plate on a business logo panel.

The service plates are fabricated from flat sheet aluminum and will be furnished pre-drilled by the business establishments and made available to the Contractor at the district sign shop where work is being performed or at such other location agreed upon by the Engineer and the Contractor. Mileage plates are fabricated from flat sheet aluminum and will be furnished pre-drilled by the district sign shop and made available to the Contractor at the district sign shop where work is being performed or at such other location agreed upon by the Engineer and the Contractor.

The plates shall be installed using 3/16-inch aluminum rivets with 0.125 inch to 0.250 inch grip range to fully penetrate the sign panel extrusions and firmly attach the plates. Any plate damaged by the Contractor shall be replaced in exact kind at no cost to the Department. The business logo panel shall not be removed when installing a service or mileage plate. A minimum of six plates will be installed or removed on each work order calling for this pay item when the installation of service signs or mileage plates is the only work to be done.

This work will be paid for at the contract unit price per EACH for INSTALL SERVICE OR MILEAGE PLATE, which price shall include payment in full for installing a service or mileage plate on a previously erected business logo panel.

REMOVE SERVICE SIGN OR MILEAGE PLATE

This work shall consist of removing an existing service plate advertising a business establishment or a mileage plate from a previously erected business logo panel.

Extreme care shall be taken not to damage or mar the plate in any way. Any plate damaged by the Contractor shall be replaced in exact kind at no cost to the Department. The plates shall be delivered to the district sign shop where work is being performed or at another location agreed upon by the Engineer.

A minimum of six plates will be removed on each work order calling for this pay item when the removal of existing service signs or mileage plates is the only work to be done.

This work will be paid for at the contract unit price per EACH for REMOVE SERVICE OR MILEAGE PLATE, which price shall include payment in full for removing a service or mileage plate from a previously erected business logo panel.

TRANSFER SERVICE SIGNS

This work shall consist of removing an existing service sign advertising a business establishment from a previously or newly erected business logo panel and reinstalling the service sign on a newly erected business logo panel.

Extreme care shall be taken not to damage or mar the sign in any way. Any sign damaged by the Contractor shall be replaced in exact kind at no cost to the Department.

This work will be paid for at the contract unit price per EACH for TRANSFER SERVICE SIGN, which price shall include payment in full for removing an existing service sign from a previously erected business logo panel and reinstalling the existing service sign on a newly erected business logo panel. The cost of transferring existing mileage plates and directional arrows for the service signs shall be considered included with this pay item.

SIGN SUPPORT REPAIR

This work shall consist of repairing an existing breakaway sign support where the fuse plate has separated from the lower post, resulting in bending of the rear flange.

Any missing hardware shall be replaced by the Contractor and considered as included with the pay item. Replacement hardware shall meet the requirements of Article 727.

Care shall be taken to prevent damage or further damage to the sign. Any damage done by the Contractor to the existing sign shall be repaired by them at no cost to the State.

The post may be straightened by mechanical, or heat applied methods. There shall be no residual stress in the rear flange when the fuse plate is reattached. The fuse plate shall be attached before the rear reinforcement plates are attached.

When the work order requires the Contractor to repair a sign support that was installed with a breakaway type coupling, the Contractor shall furnish a breakaway coupling set to complete the repair of the sign support. The furnishing of the breakaway coupling set will be paid for as Furnish Breakaway Coupling Set.

This work will be paid for at the contract unit price per EACH for SIGN SUPPORT REPAIR. This price shall include straightening of the post, repair or replacement of the fuse plate, re-erection of the existing sign and post if they were removed to facilitate the support repair, attachment of the rear reinforcement plate, replacement of any necessary hardware, and all necessary painting.

REMOVE EXISTING SIGN SUPPORT

This work shall consist of removing existing steel sign supports. The support, including hardware, shall become the property of the Contractor.

This work will be paid for at the contract unit price per EACH for REMOVE EXISTING SIGN SUPPORT, which price shall include complete removal of the sign support, including hardware, from the right-of-way.

The removal of any concrete foundations will be paid for as Remove Concrete Foundation - Ground Mount.

TIGHTEN FUSE AND BASE PLATE

This work shall consist of tightening the bolts on the fuse plate and base plate of a structural steel breakaway sign support. The bolts shall be tightened in accordance with the sign support details shown in the contract. The tightening of the base and fuse plates for at least 16 structural steel breakaway sign supports will be included on each work order calling for this pay item.

The Contractor shall replace any missing bolts, nuts, or washers with new ones of the size specified on the sign support details shown in the contract. This work shall be considered included with this pay item. Replacement bolts, nuts, or washers shall meet the requirements of Article 727.

The work will be paid for at the contract unit price per EACH per sign support for TIGHTEN FUSE AND BASE PLATE. This price shall include payment in full for tightening all bolts on the fuse and base plate for a structural steel breakaway sign support and replacing any missing bolts, nuts, or washers on the fuse and base plate.

TEMPORARY WOOD POST

This work shall consist of furnishing and installing 4-in by 6-in wood posts as temporary sign supports for ground-mounted signs, utilizing direct burial. This work shall be done in accordance with the requirements of Section 730 and as specified herein.

Should a longer support than specified be necessary; the Contractor shall provide and install the longer support. The method for attaching the sign to the wood posts is shown in the plans.

The temporary wood post(s) shall be supplied in the quantity shown on the work order and shall be found at a specified offset near the permanent sign location. The height of the sign shall be a minimum of 3 feet from the top of pavement to the bottom of the sign and a minimum of 5 feet from the top of the ground to the bottom of the sign. The wood post(s) shall be removed and become the property of the Contractor when the permanent post(s) is installed.

This work will be paid for at the contract unit price per EACH for TEMPORARY WOOD POST, which price shall include payment in full for furnishing, erecting, drilling, and removing of wood post(s) and refilling the hole(s) to match the surrounding area

MOUNTING BRACKET – TYPE B

This work shall consist of furnishing a steel tubing bracket for mounting auxiliary panels on ground-mount signs of the sizes shown in the plans and attaching the bracket to existing sign supports at the location(s) specified in the work order. The bracket shall meet all requirements of the Exit Panel Detail Sheet – B.

This work will be paid for at the contract unit price per EACH for MOUNTING BRACKET - TYPE B, which price shall include payment in full for furnishing bracket with all components as specified and attaching it to existing sign supports.

MOUNTING BRACKET TYPE B REPAIR

This work shall consist of repairing the damaged or bent components of an existing mounting bracket - Type B. Care shall be taken to prevent damage or further damage to the existing sign. Any damage done by the Contractor to the existing sign; shall be repaired by them at no cost to the State. The bracket may be straightened by mechanical or heat-applied methods.

This work will be paid for at the contract unit price per EACH for MOUNTING BRACKET TYPE B REPAIR. This price shall include straightening of the bracket components, reattachment of the existing sign if it was removed to facilitate the bracket repair, reattachment of the bracket to the sign supports if the bracket was removed to facilitate repair, and all necessary painting.

REPLACE WALKWAY SUPPORT BRACKET

This work shall consist of furnishing all necessary material and labor to remove the damaged walkway support bracket and replace it with a new bracket of the same type and material as the existing. The size of the bracket required will be as indicated on the sign structure detail sheets attached to the work order.

This item does not include replacement or repair of any existing walkway or lighting fixtures.

Shop drawings for the replacement walkway support bracket will be provided by the Contractor and approved in writing before any new materials are ordered.

This work will be paid for at the contract unit price per EACH for REPLACE WALKWAY SUPPORT BRACKET and shall be payment in full for furnishing all materials, providing shop drawings, fabricating, and erecting this item complete in place.

SIGN PANEL BACKPLATE:

This work shall consist of furnishing and installing blank sign panels complete with reflectorized sign faces cut without legend or symbols and installing them within previously erected sign frames. The sign blanks shall be 0.125-inch thick 5052-H38 aluminum conforming to Section 1090 and the background sheeting shall be brown conforming to the type AP requirements of Section 1091.

This work will be paid for at the contract unit price per SQUARE FOOT for SIGN PANEL BACKPLATE, which shall include furnishing the sign backplate and installing it in a previously erected sign frame. The cost of removing an existing backplate from a frame assembly to installing the new backplate will not be paid for as a separate item but will be considered included in the contract. No additional compensation will be allowed.

REST AREA POST AND PANEL SIGN SYSTEM

The signs shall match signs previously installed in the rest area and meet the requirements of the following special provisions for the post and panel sign system. The system shall be the Series 325 manufactured by: Charleston Industries, Inc., 955 Estes Avenue, Elk Grove Village, IL 60007, 1-800-722-0209, in Illinois: (847) 228-7l50.

Alternate systems will be considered provided that the component parts are completely interchangeable with the previously installed signs. The Engineer's decision as to the acceptability of alternate systems will be final.

INSTALL REST AREA SIGN

This work shall consist of installing a new rest area sign provided by the Department at the site of installation or at the location specified on the work order. The sign may be installed on an existing or a new signpost and frame. All signs that are removed or replaced shall be returned to the location where the replacement sign was supplied.

This work will be paid for at the contract unit price per EACH for INSTALL REST AREA SIGN, which price shall include all necessary hardware, equipment, and labor required to complete the work order

SIGN FRAME – SERIES 325 (DOUBLE)

This work shall consist of furnishing and installing sign frames on two posts. The entire frame is to be slid into the slots in the posts and secured by tamperproof screws. The frame shall meet the requirements shown in the plans.

Frames will be measured for payment in feet. Such measurements are to be the outside perimeter of the frame.

This work will be paid for at the contract unit price per FOOT for SIGN FRAME – SERIES 325 (DOUBLE), which shall include furnishing the sign frame complete with all necessary hardware and installing it on previously erected posts.

SIGN FRAME – SERIES 325 (SINGLE)

This work shall consist of furnishing and installing sign frames on single posts. Brackets shall be welded to the frames as shown in the plans to accept a series 2l8 - center mounted post. The entire frame shall be bolted securely to the post. The frames shall meet the requirements shown on the plans.

Frames will be measured for payment in feet. Measurement shall be to the outside perimeter of the frame.

This work will be paid for at the contract unit price per FOOT for SIGN FRAME – SERIES 325 (SINGLE), which shall include furnishing the sign frame complete with all necessary hardware and installing it on a previously erected post.

SIGNPOSTS – SERIES 325 OR 218

This work shall consist of furnishing and installing series 325 posts for two-post installations and series 218 posts for single post installations, on existing concrete surfaces or by direct burial in concrete as specified in the plans. The posts shall meet the requirements shown in the plans.

All signpost lengths and elevations shall be field verified by the Contractor before ordering any material. The installations shall be by direct burial, in concrete foundations, or attached to concrete surfaces by base plates as noted on the sign layouts. All posts shall be true, plumb, and if two-post installations, parallel to each other. Spacing templates shall be utilized by the Contractor when installing two-post installations.

The concrete shall be class SI meeting the applicable portions of Section 503. The foundation shall be drilled to the dimensions shown in the plans. The post shall be installed plumb and centered in the hole before placement of the concrete. The hole above the foundation shall be filled with black dirt.

This work will be paid for at the contract unit price per FOOT for SIGN POST-SERIES 325 OR SIGN POST-SERIES 218, measured from the bottom of the post in the ground for direct burial or from the base plate where specified. This work shall include all necessary drilling, back-filling, seeding, disposal of excess earth, setting of the post, and furnishing all concrete. The cost of removing a frame assembly to install the new post will not be paid for as a separate item but will be considered included with the contract, and no additional compensation will be allowed.

BASE PLATE - SERIES 325 OR 218

This work shall consist of furnishing and installing base plates on series 325 posts for two-post installations and series 218 posts for single post installations. The base plates shall be factory welded to the posts as shown on the plans. The base plates shall be securely bolted to the foundations or to the concrete anchors with a 1/4-inch thick neoprene pad placed between the concrete and the base plate. The required concrete “J” bolts or concrete anchors, including their installation and the neoprene pads, shall be considered as included with this item.

This work will be paid for at the contract unit price per EACH for BASE PLATE-SERIES 325 OR BASE PLATE-SERIES 218, which work shall include furnishing and welding base plates to the posts and including the concrete "J" bolts, concrete anchors, and neoprene pads, as required.

Installation of the posts will be paid for under the pay item for Sign Post- Series 325 Or Sign Post-Series 218.

REMOVE EXISTING SIGNPOST

This work shall consist of removing an existing rest area signpost that is part of the post and panel sign system. The post, including any hardware not reused, shall become the property of the Contractor and the bid price shall reflect any salvage value.

This work will be paid for at the contract unit price per EACH for REMOVE EXISTING SIGNPOST, which shall include the complete removal of the signpost, including any concrete foundation and base plate, from the right-of-way.

The cost of removing and relocating a sign and frame assembly from an existing signpost to a new post(s) will not be paid for as a separate item but will be considered included in the contract, and no additional compensation will be allowed.

TEMPORARY SIGN SUPPORT REPAIR

This work shall consist of making temporary repairs to an existing breakaway sign support(s) until the replacement sign support has been installed so an existing sign panel may remain in service. The Contractor shall have the option of making repairs to the existing support, if that is feasible, by temporarily installing a used steel breakaway support that matches dimensions of the existing stub post or temporarily installing a wood sign support.

If the existing sign support is repaired, repairs shall be in accordance with the provisions for Sign Support Repair.

If a temporary wood sign support is installed, the wood sign support shall meet the provisions outlined under Temporary Wood Post.

Any missing hardware shall be replaced by the Contractor and considered as included with the pay item. Replacement hardware shall meet the requirements of Article 727 of the Standard Specifications.

Care shall be taken to prevent damage or further damage to the sign. Any damage done, by the Contractor, to the existing sign shall be repaired by them at no cost to the State.

The Contractor shall make the temporary sign support repairs within one week of notification.

This work will be paid for at the contract unit price per EACH for TEMPORARY SIGN SUPPORT REPAIR. This price shall include the removal and/or re-erection of the existing sign and providing the necessary traffic control.

REPAIR SIGN PANEL

This work shall consist of repairing a sign panel that has been damaged by vehicle impact where the sign has been damaged but not severe enough to require complete replacement of the sign panel. The Contractor shall be responsible for removing all dirt and debris from the face of the sign prior to re-erecting the sign panel. This work may require the assembly of extruded aluminum panels that have been pulled apart and the reattachment of any sign legend, shields, borders, overlay panels and end caps that may have come loose or fallen off the sign panel from vehicle impact. In some cases, the sign panel may have to be removed from the sign supports, have repairs completed, and then re-erected on the sign supports.

Extruded aluminum panels that have been pulled apart shall be re assembled using 3/8” stainless steel bolts installed at 24” spacing. Stainless steel bolts shall conform to ASTM A 276, type 304. Stainless steel locking nuts shall be used conforming to ASTM A 194 grade 8. Stainless steel washers shall conform to ASTM A 240, type 304. Any loose or fallen off sign legend, shields, borders, and overlay panels shall be reattached by the same method as the existing undamaged sign panel.

This work will be paid for at the contract unit price per EACH for REPAIR SIGN PANEL. This price shall include removing and re-erecting the sign panel, if necessary, to facilitate the repair of

the sign panel, making all required repairs to the sign legend, shields, borders and overlay panels to restores the sign to a serviceable condition, and providing the necessary traffic control.

REPLACE OVERHEAD SIGN WALKWAY

This work shall consist of removing and replacing the damaged portion of the existing walkway with a new walkway of the same type and material as the existing. Materials shall meet the requirements of the sign structure detail sheets shown in the contract; conform to the dimensions shown on the details attached to the work order, and conform to the applicable requirements of Section 1094. Fabrication of the walkway shall meet the requirements of the applicable portions of Section 733.

Any damaged lighting items in the damaged portion of the walkway shall be removed and become the property of the Contractor.

The replacement or repair of any damaged handrail, light support channels, or hardware shall be included in the cost of replacing the overhead sign walkway.

The removed portions of walkway shall become the property of the Contractor and shall be removed completely from the right-of-way.

All damaged walkway support brackets shall be paid for as Replace Walkway Support Bracket.

Shop drawings for the replacement walkway will be provided by the Contractor and approved in writing before any new materials are ordered.

The work will be measured for payment in feet of the overall length of the walkway installed, end-to-end.

This work will be paid for at the contract unit price per FOOT for REPLACE OVERHEAD SIGN WALKWAY, which shall include removal of the damaged portion of the existing walkway, providing shop drawings, furnishing the required new walkway, replacing as required the handrail, light support channels, and hardware, and removing the damaged walkway from the right-of-way. No electrical work will be required for this pay item.

SIGN SUPPORT BRACKET

Description: This work shall consist of furnishing, fabricating, and installing sign support extensions to attach additional sign panels to an existing sign panel.

Materials: Sign support extensions shall be aluminum according to Section 1006.29 of the Standard Specifications. The depth shall be 4 in., and the weight shall be a minimum of 1.79 lb./ft.

Installation: Three sign support extensions shall be used for sign panels with three existing posts or less. Four sign support extensions shall be used for sign panels with four or more existing posts. Sign support extensions shall extend from 4 ft below the top of the existing signpost to the

top of the new sign panel and shall be spaced as determined by the Engineer. Sign support extensions shall be clipped to the sign panels in accordance with Standard 720021.

Method of Measurement: Sign support extensions will be measured for payment in each.

Basis of Payment: This work will be paid for at the contract unit price per EACH for SIGN SUPPORT BRACKET.

REMOVE AND REINSTALL SIGN PANEL

This work shall consist of removing an existing sign panel from temporary sign supports and reinstalling it on an overhead sign structure. Where the temporary posts were installed by others, this work shall also consist of removing the temporary posts which will then become the property of the Contractor.

This work will be paid for at the contract unit price per SQUARE FOOT for REMOVE AND REINSTALL SIGN PANEL, which price shall include removing the existing sign panel from temporary supports, installing it on the overhead sign structure, furnishing all necessary mounting hardware to complete the installation, and removing any temporary supports.

RE-ERECT SIGN PANEL

This work shall consist of re-erecting a new or existing sign panel on new or existing posts. The sign panel shall be provided by the Department at the site of installation or at the location specified on the work order. The Contractor shall be responsible for removing all dirt and debris from the face of the sign prior to re-erecting the sign panel.

The replacement of any damaged or missing mounting hardware shall meet the requirements of Article 1090.03.

This work will be paid for at the contract unit price per SQUARE FOOT for RE-ERECT SIGN PANE**L**, which shall include all necessary hardware, equipment, and labor required to complete the work order.

REPLACE AND TIGHTEN SIGN MOUNTING CLIPS PER EACH SIGN

This work shall consist of replacing missing post clips and post clip bolts or tightening loose post clip bolts on signs mounted on overhead sign structures. Stainless steel bolts, nuts, and washers shall be used with aluminum post clips for all overhead - mounted signs.

Aluminum post clips shall conform to ASTM B 108, Alloy SG 70A-T 6. A flat washer shall be used under each nut to prevent gouging of the clip. Stainless steel bolts, nuts, and washers for fastening extruded aluminum sign panels to supports shall conform to ASTM A 276, type 304. Nuts shall conform to ASTM A 194 grade 8 and be of the self - locking type. Washers shall conform to ASTM A 240, type 304.

This work will be paid for at the contract unit price per EACH per sign location for REPLACE AND TIGHTEN CLIPS PER EACH SIGN.

REMOVE SIGN COMPLETE

This work shall consist of removing an existing ground-mounted sign and supports as shown in the work order. The removal items shall consist of the sign panel, exit panel, and the structural steel supports. The sign panel shall become the property of the State and be delivered to the district sign shop in the District in which the work is being performed. The supports, including hardware, shall become the property of the Contractor. The bid price shall reflect any salvage value for the supports and hardware.

Where the existing sign and supports are to be removed and replaced by a new sign and new supports, the new sign shall be completely installed prior to the removal of the existing sign. However, duplicate signs are not to exist for periods in excess of 24 hours.

This work will be paid for at the contract unit price per EACH for REMOVE SIGN COMPLETE. No additional compensation will be allowed.

The removal of any concrete foundations will be paid for as Remove Concrete Foundation-Ground Mount.

INTERNAL TRUSS DAMPER

This work shall consist of furnishing and installing a truss damper on an aluminum overhead sign structure-span or cantilever. The damper shall be attached to the overhead sign structure as indicated on the attached details. The damper design shall be like those shown in the plans. The Contractor shall submit shop drawings for the damper for approval prior to fabrication and before any materials are ordered.

This work will be paid for at the contract unit price EACH for INTERNAL TRUSS DAMPER.

INTERNAL MEMBER TRUSS CLAMP

This work shall consist of furnishing and installing stainless steel internal member truss clamps on an aluminum overhead sign structure - span or cantilever. The clamp shall be attached at the joint of an interior member with the main top or bottom chords where a partial fracture of an internal member has occurred. The clamp design shall be like those shown in the plans. Shop drawings for the clamp shall be provided by the Contractor for approval prior to fabrication and before any materials are ordered.

This work will be paid for at the contract unit price per EACH for INTERNAL MEMBER TRUSS CLAMP.

REMOVE OVERHEAD SIGN STRUCTURE – WALKWAY

This work shall consist of the complete removal and disposal of the overhead sign structure external walkway, handrail, and related mounting hardware according to the requirements of Section 736 of the Standard Specifications and as specified on the work order. The removed overhead sign structure external walkway shall become the property of the Contractor and shall be completely disposed of off the right of way. Any salvage value of the elements to be removed shall be reflected in the Contractor's bid for the removal of the overhead sign structure walkway.

This work will be paid for at the agreed unit price per FEET for REMOVE OVERHEAD SIGN STRUCTURE - WALKWAY.

DRILL WEEP HOLE

This work shall consist of drilling weep holes as described in the work order,using a ¼ inch drill bit mounted on a portable electric drill.

The work will be paid for at the contract unit price per EACH for DRILL WEEP HOLE.

REMOVAL OF SIGN LIGHTING, NO SALVAGE

This item shall consist of disconnecting, removing, and disposing of existing sign lighting as specified herein. This pay item shall also include removal of the associated conduit, wire, and disconnect switch from the sign structure.

Luminaire removal shall be in accordance with Section 842. The cleaning and painting of sign structure caused by the removal of sign lighting and associated conduit shall be in accordance with Section 506 of the Standard Specifications for Road and Bridge Construction
.
The Contractor shall coordinate any electrical work with the Department's electrical maintenance contractor (EMC) prior to any work.

Prior to the removal of any equipment, the Contractor shall notify the Engineer to obtain the approval for equipment removal. No removal work shall be permitted until approved by the Engineer.

The removal of sign luminaires shall include all associated conduit, wire up to the handhole on the sign structure if existing otherwise up to the nearest feed to the sign lighting (junction box or light pole), disconnect switch, and hardware. All appurtenances shall become the property of the Contractor and shall be disposed of according to the Article 202.03.

This work will be paid for at the contract unit price per EACH for REMOVE EXISTING SIGN LIGHTING UNIT, NO SALVAGE.

METAL SCREEN

This work shall consist of cleaning and installing stainless steel screen wire to enclose the void between the sign support base plates and the foundation. The stainless steel mesh shall meet the requirements of Section 733 and be installed as shown in the details of Overhead Sign Structures Support Frame Base Sheet, OS-A-6A.

The work will be paid for at the contract unit price per EACH for METAL SCREEN.

OVERHEAD SIGN STRUCTURE – TRUSS ONLY

This work shall consist of furnishing and installing a type IA or IIA overhead sign structure-truss on or existing end supports at the location shown in the plans. This work shall include all labor, material, and equipment necessary for proper execution and completion of the work as shown on the plans and as herein specified. It shall include all work not specifically included in the contract documents which is reasonably and properly inferable and necessary for proper completion of the improvement. This work shall be done in accordance with Section 733, including providing all necessary mounting hardware and as specified herein.

The Contractor shall be responsible for field verifying the existing dimensions for the end supports to assure the proper fit for the replacement truss on the existing end supports.

Materials shall meet the requirements of the sign structure detail sheets shown in the contract, conforming to the dimensions shown on the details included in the contract and the applicable requirements of Section 1094.

The replacement overhead sign structure-span shall include the fabrication and installation of truss grating, to facilitate inspections, the entire length of the span conforming to the details shown in the contract. The cost of fabricating and installing the truss grating and the truss damper shall be included in the cost of fabricating and installing the replacement overhead sign structure-span.

Due to the downsizing of the overhead sign structures, a retrofit for the support frame at those locations where the existing end supports will be used is required. The retrofit for the existing end supports shall meet the requirements shown on the “Overhead Sign Structures Existing Support Frame Retrofit for Aluminum Truss” as shown on detail sheet OS-A-12 RETROFIT. The cost of the retrofit shall be included in the cost of fabricating and installing the replacement overhead sign structure-truss.

Shop drawings for the new structure will be provided by the Contractor and approved in writing before any new materials are ordered or fabrication is begun.

Before starting work, the Contractor shall provide an erection plan to the Engineer detailing the method of erection proposed to be followed and the amount and type of equipment proposed to be used. The plan shall be subject to the approval of the Engineer. The approval of the Engineer shall not be considered as relieving the Contractor of responsibility for the safety of the Contractor’s method or equipment or from carrying out the work in full.

Traffic control and protection shall be included under this pay item. It shall be understood that the freeway will be closed a maximum of 15 minutes to remove and re-erect the sign structure, and the time of the week allowed for closure will be as directed by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price per FOOT for OVERHEAD SIGN STRUCTURE- TRUSS ONLY of the type specified.

TIGHTEN SUPPORT ANCHOR BOLTS

This work shall consist of tightening the anchor bolts for an overhead sign structure support. For existing gaps between the base plate and the anchor bolt nuts less than 1/4 inch, the anchor bolt nut shall be firmly seated against the base plate of the overhead sign structure support to the satisfaction of the Engineer.

For existing gaps between the base plate and anchor bolt nuts equal to or greater than 1/4 inch, the threads above the nut shall be cleaned to allow raising of the nut approximately 1/4 inch. A U-shaped galvanized steel shim(s) of adequate thickness shall be inserted between the base plate and existing washer, and the anchor bolt nut shall be firmly seated against the shim(s) and base plate of the overhead sign structure support to the satisfaction of the Engineer.

After seating, the anchor nut shall be final torqued to the following specifications:

Anchor Bolt Threaded Diameter (inches)	Anchor Nut Torque (ft-lb)
1	380
1 1/8	540
1 1/4	760
1 1/2	1330
1 3/4	2100
2	3150
2 1/4	4610
2 1/2	6300

Any damage to anchor bolts or failure to reach the specified torque shall immediately be reported to the Engineer.

This work will be paid for at the contract unit price per EACH for TIGHTEN SUPPORT ANCHOR BOLTS.

TIGHTEN U-BOLT

This work shall consist of tightening existing U-bolts at the locations shown in the plans.

The U-bolts shall be tightened enough to bring the U-bolt against the tube and leave nuts/washers with less than 1/8-inch gap to the support or as directed by the Engineer. U-bolts that cannot be tightened but are loose shall be replaced. Replacement U-bolts shall be either 5/16" or 3/4" stainless steel U-bolts of the appropriate dimensions, two stainless steel washers, and two hexagon locknuts per bolt.

The 5/16-inch U-bolts are located at the connection of the walkway support and sign brackets to the truss and the 3/4-inch U-bolts are located at the connection of the overhead sign structure to the end support. The U-bolt, washers, and lock-nuts shall meet the requirements of Section 733 and the Overhead Sign Structure Base Sheet OS-A-1. All U-bolts shall be of sufficient length to fully engage the lock-nut.

The Contractor shall field verify dimensions prior to ordering any material.

This work will be paid for at the contract unit price per EACH for TIGHTEN U-BOLT.

FIBER WRAP

Description. This work shall consist of furnishing all materials, labor, equipment, and supervision necessary for the installation of externally bonded fiber reinforced polymer (FRP) reinforcement, field applied at the locations shown in the plans and as directed by the Engineer.

Materials. The FRP composite system shall be a proprietary system consisting of all associated fiber reinforcement and polymer adhesives/resins. FRP composites consisting of fiber reinforcement and polymers provided by more than one manufacturer are not allowed. The system shall be from one of the following companies:

Master Builders, Inc.	SIKA Corporation	R.J. Watson, Inc.
23700 Chagrin Blvd.	201 Polito Ave.	P.O. Box 85
Cleveland OH 44122	Lyndhurst NJ 07071	East Amherst NY 14051

The fabric for the FRP composite system shall be continuous filament woven fabric. Primary fibers for the fabric shall be electrical (E) glass fibers or carbon. Acceptable fabrics are:

Master Builders, Inc.	SIKA Corporation	R.J. Watson, Inc.
MBRACE CF 530	HEX 103C	SCH-41S
MBRACE EG 900	HEX 100G	SHE-51

The epoxy shall be supplied by the manufacturer as a part of the system designed for use with the selected fabric. Polyester resin shall not be allowed as a substitute for epoxy resin.

Submittals. The Contractor shall submit the following information for approval to the Department at least three weeks prior to beginning installation.

- Manufacturer's product data sheets indicating physical, mechanical, and chemical characteristics of all materials used in the FRP system. Information should include manufacturer's name and product number for all materials. Information shall include dry fabric thickness and minimum effective composite thickness per layer. For epoxy resins it shall include mix ratio by weight and volume, pot life, shelf life, resin gel time at proposed cure temperatures, mixing and application instructions & temperature ranges, and storage requirements. For painting, it shall include mixing instructions, application method, application temperature ranges, and storage requirements.
- Tensile properties of the composite material as determined by tensile testing in accordance with ASTM D 3039. Ultimate tensile strength and rupture strain values shall be determined by subtracting three standard deviations from the average values of 20 or more tensile tests.
- Manufacturer's installation instructions, maintenance instructions, and general recommendations regarding each material to be used. Installation instructions shall include curing procedures for the composite system if required.
- Manufacturer's material safety data sheets (MSDS) for all materials to be used.
- The material supplier's name, address, and phone number, and the name, telephone and fax number of a contact person employed by that company.
- Complete step-by-step procedures and specifications for repairs of any defects. Procedure shall specify that if a defective composite area is greater than 50 square inches, the defective area shall be repaired by removing and reapplying.
- Complete step-by-step procedures for repairs of any future defects or damage. Including recommendations for any periodic maintenance or inspections, if required. Also include recommended materials and procedures for future repainting including surface preparation.

Qualifications. The manufacturer/supplier must approve the applicator. A field representative who has completed the course of instruction (supported by the manufacturer / supplier) in the installation of the products specified in this section must be present onsite during installation of the FRP system.

Delivery, Storage, and Handling. The products shall be delivered and stored in original unopened containers. Containers must be clearly marked with legible and intact labels listing the manufacturer's name, brand name, product identification, and batch number.

Storage of fiber reinforcement and epoxies must be in areas protected from dust, moisture, and chemical exposure. Epoxies must be stored in areas with an ambient temperature between 50 and 75 °F and away from direct sunlight, flame sources, or other hazards. Epoxy resins must be stored separately from hardeners.

The fiber reinforcement must not be handled roughly. For specific hazards of resin components consult the manufacturer's MSDS.

Construction Details

Surface Preparation: The surface shall be free from fins, sharp edges, and protrusions that will cause voids behind the casing or that, in the opinion of the Engineer, will damage the fiber. The surfaces to receive the composite wrap shall be smooth and free of voids or undulations that would prevent full contact between the concrete and the wrap.

The contact surfaces shall be clean, free from oil, dirt, salt, etc., and completely dry at the time of application of the composite. High pressure cleaning that would damage the surface will not be allowed. Newly repaired or patched surfaces that have set and cured a minimum of seven days shall be coated with water-based epoxy paint or other approved sealer.

Application: The ambient temperature and the temperature of the epoxy resin components shall be between 55° F and 95° F at the time of mixing. Care shall be taken to ensure that the surface temperature of the concrete that the FRP system is being applied to is within the appropriate range for the epoxy resins. The composite shall be applied when the relative humidity is less than 85% and the surface temperature is more than 5° F above the dew point. Applications shall begin within one hour after the batch has been mixed.

The components of the epoxy resin shall be mixed with a mechanical mixer for a minimum of five minutes and applied uniformly to the fiber at a rate that shall ensure complete saturation of the fabric.

A primer of epoxy shall be applied to the surface to be wrapped.

The FRP composite shall be applied to the prepared surface by wrapping using methods that produce a uniform force that is distributed across the entire width of the fabric. The primary fibers of the fabric shall not deviate from a vertical line more than 1/2 inch per foot, and the transverse fibers shall be perpendicular to the primary. Entrapped air shall be released or rolled over before the epoxy sets.

Beam repairs called for in this project shall consist of a single layer of fabric with any necessary splice overlap installed with the primary fibers oriented at a right angle to the longitudinal axis of the beam, providing shear reinforcement. If additional layers are required by the Engineer or recommended by the manufacturer, successive layers of composite materials shall be placed before polymerization of the previous layer of epoxy is too complete to achieve complete bond between layers. If polymerization does occur between layers, the surface must be roughened using a light abrasive that will not damage the fiber.

After the last layer of fabric is installed, a final layer of epoxy shall be applied with care to ensure coating of all edges and seams.

The individual supervising the installation of the fiber wrap shall be the same individual noted in the approved Information and Installation manual. This individual shall be onsite full time when fiber wrap is being installed. This individual shall not be removed or reassigned from the project without the written permission of the Engineer.

The Contractor shall maintain a wrapping log. The wrapping log shall be available for review by the Engineer at all times. Upon completion of all wrapping, the Engineer shall be given a copy. The log shall provide material traceability and records for the wrapping of each beam. As a minimum the wrapping log shall contain:

- Project name, contract number, and bridge number.
- Material information including product description, date of manufacturer and lot or batch numbers, and location that products are installed.
- Daily fabrication, inspection, and verification data for the day’s construction. Include as a minimum the locations, composite thickness measurements, ambient temperature and

humidity readings at the beginning, middle and end of each shift (or at the beginning and end of installation), documentation of any required curing process, thickness of any paint or protective coating applied, and location of any damaged areas that are repaired.

Coating System Application: A final coating is required to protect the fibers from the elements, specifically UV radiation and to give the final aesthetic effect. After 96 hours from final application of epoxy, if the final epoxy coat is completely polymerized, the exterior surface of the composite wrap shall be cleaned and roughened by a light abrasive. Care should be taken during the roughening process so that the fibers are not damaged. All cleaned and roughened surfaces shall be dry before painting.

The area to be painted shall receive a total dry film thickness of no less than 4 mils.

Laboratory Testing. The Contractor shall prepare and furnish to the Department one 12" x 12" sample of the cured composite system for each separate repair.

The Department will randomly test the samples at their discretion and will furnish the Contractor results of all tests made. The Department will precondition the samples at 140 °F for 48 hours. Five 3/4" x 9" coupons will be cut from each sample and tested in accordance with ASTM D3039. Test results will include ultimate tensile strength, tensile modules, and percent elongation.

If the average of the five coupons fails to meet the specified requirements, two additional coupons will be taken from the same sample. If the average of the seven samples also fails, the Department will test the sample made prior to the failed sample and the sample made after the failed sample. This process will continue until the limits of the defective work are identified.

After the defective area is identified, the Contractor shall reapply the entire composite system to the defective area.

Field Inspection. The Engineer will inspect the cured composite system for defects consisting of external abrasions or blemishes, delaminations, voids, external cracks, chips, cuts, loose fibers, foreign inclusions, depressible raised areas, or fabric wrinkles. The following repair criteria shall apply.

- All defects greater than 1" long or a defective area greater than 1 square inch shall be repaired in accordance with the approved information and installation manual.
- If the number of defects of any size within an individual repair exceeds ten, the repair shall either be repaired or replaced as directed by the Engineer.

Method of Measurement. This work will be measured for payment in place, and the area computed in square feet.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE FOOT for FIBER WRAP.

FURNISH AND INSTALL SADDLE SHIM BLOCK

This work shall consist of furnishing and installing new saddle shim blocks with 1/8" fabric or neoprene pad, new truss to end support U-bolts, washers and locknuts.

The saddle shim block shall be either ASTM B-26 Alloy 356-F or ASTM B-209 Alloy 6061-T651 made to match the chords outside diameter and original shim block thickness. The replacement saddle shim block shall be a width and length as shown on the saddle shim detail in the plans with four holes drilled to match the existing U-bolt hole locations.

The horizontal chord shall be lifted just enough to slide the saddle shim and neoprene or fabric pad in place. Extreme care shall be taken when making this lift, and jacks with radiused contact faces or softeners shall be used to distribute loads evenly and not permanently deform the chords.

This work will be paid for at the contract unit price per EACH for FURNISH AND INSTALL SADDLE SHIM BLOCK. I.

REPLACE HANDRAIL SUPPORT

This work shall consist of replacing a damaged or deteriorated handrail support. The handrail support shall be fabricated in accordance with the requirements of Section 733 and Overhead Sign Structures Aluminum Handrail Details Base Sheet OS-A-11. Shop drawings for the replacement handrail supports will be provided by the Contractor and approved in writing before ordering any materials.

This work will be paid for at the contract unit price per EACH for REPLACE HANDRAIL SUPPORT

REPAIR HANDRAIL LOCKING PIN CONNECTION

This work shall consist of reaming the existing handrail locking pin hole to obtain the proper alignment for the installation of the locking pin and installing an oversized stainless steel locking pin. The locking pin with attached safety chain shall meet the material requirements of the details shown on Overhead Sign Structures Base Sheet OS-A-11. The Contractor shall attach the locking pin safety chain to the angle of the handrail post hinge with a stainless steel screw in lieu of welding the locking pin safety chain to the handrail post hinge pin.

This work will be paid for at the contract unit price per EACH for REPAIR HANDRAIL LOCKING PIN CONNECTION.

FURNISH & INSTALL HANDRAIL

This work shall consist of furnishing and installing new or a replacement handrail on an overhead sign structure. The work shall be performed and measured in accordance with Section 733.

The length required will be as shown on the plans and shall be verified by the Contractor before ordering any material. Shop drawings for the handrail will be provided by the Contractor and approved in writing before ordering any materials. Materials shall meet the requirements of Section 733 of the Standard Specifications.

This work will be paid for at the contract unit price per FOOT for FURNISH AND INSTALL HANDRAIL.

TIGHTEN CANTILEVER CONNECTION

This work shall consist of tightening all the mounting bolts of the top collar and the bottom mounting plate for the connections of the cantilever support and the aluminum overhead sign structure at the locations shown in the plans. This procedure is not specifically intended to close existing gaps between mounting plates but to tighten those bolts that are loose.

All bolts used to assemble the top collar and the bottom mounting plate shall be systematically tightened in accordance with the applicable requirements of Section 733 of the Standard Specifications or as directed by the Engineer. Bolts that cannot be tightened, but are loose, shall be replaced with bolts meeting the applicable requirements of Section 733 of the Standard Specifications. If a gap exists between the bottom mounting plate on the support and the truss plate, an aluminum or stainless steel shim of geometry approved by the Engineer shall be inserted to fill the gap between the mounting plate and the truss plate to avoid bending of the mounting plates when tightening the bolts.

The Contractor shall loosen the bolts in the bottom mounting plate and the top collar prior to installing the shims. The Contractor shall raise the truss slightly (approximately 1/4”) by use of a crane or jacks (procedures similar to those outlined in the Relocate Saddle Shim Block special provision to avoid damage to chords), insert the shims, and lower the truss. After shimming, the bolts shall be systematically tightened in accordance with the applicable requirements of Section 733 of the Standard Specifications or as directed by the Engineer. Bolts that are damaged and cannot be reused shall be replaced with bolts meeting the applicable requirements of Article 1006.08 of the Standard Specifications.

This work will be paid for at the contract unit price per EACH for TIGHTEN CANTILEVER CONNECTION. Each cantilever shall be considered as having two connections.

TIGHTEN END SUPPORT CONNECTION

This work shall consist of tightening all the mounting bolts of the top and the bottom connections of the end support for a Vierendeel overhead sign structure at the locations shown in the plans. All bolts used to assemble the top and bottom connections of the end supports for a Vierendeel overhead sign structure shall be systemically tightened in accordance with the applicable requirements of Section 733 of the Standard Specifications or as directed by the Engineer. Bolts that cannot be tightened but are loose shall be replaced.

The replacement bolts shall be of the appropriate diameter, high strength, and with two washers and a lock-nut. The bolts shall be of sufficient length to fully engage the lock-nut. Replacement bolts, nuts, and washers shall meet the applicable requirements of Article 1006.08, except that all hardware shall be hot dipped galvanized according to ASSHTO M 111.

This work will be paid for at the contract unit price per EACH for TIGHTEN END SUPPORT CONNECTION.

OVERHEAD SIGN SUPPORT GROUT REPAIR

This work shall consist of removing essentially all grout between the base plates and the foundation, cleaning and painting the exposed anchor bolts, and installing a stainless steel screen wire to enclose the void between the sign support base plates and the foundation. The stainless steel mesh shall meet the requirements of Section 733 and be installed as shown on the detail, Overhead Sign Structures Support Frame Base Sheet OS-A-6A.

The exposed part of the anchor bolts shall be cleaned and painted with one coat of primer. The primer shall meet the requirements of Section 4 and 5 of SSPC-PT25 for red iron oxide, zinc oxide, raw linseed oil, and alkyd primer.

All debris resulting from this operation shall be removed from the right-of-way.

Basis of Payment: This work will be paid for at the contract unit price EACH for OVERHEAD SIGN SUPPORT GROUT REPAIR.

FURNISH AND INSTALL WALKWAY TIE DOWN BOLTS

This work shall consist of furnishing and installing missing walkway tie down bolts, field drilling any necessary holes in the walkway for the installation of the bolts, and tightening loose bolts at the locations shown in the plans. The size and number of the tie down bolts shall be as shown on Overhead Sign Structures Base Sheet OS-A-10 or as shown on the shop fabrication drawings for each overhead sign structure available from the district office.

Walkway tie down bolts not of a sufficient length to fully engage the lock-nut shall be replaced whenever possible with longer bolts of sufficient length to fully engage the lock-nut. Walkway tie down bolts that cannot be tightened shall be replaced.

All bolts, nuts, and washers used to attach the walkway to the sign structures shall be stainless steel. The stainless steel bolts, nuts, and washers shall meet the applicable requirements of Section 733. All bolts shall be of sufficient length to fully engage the lock-nut.

This work will be paid for at the contract unit price per EACH overhead sign structure location for FURNISH AND INSTALL WALKWAY TIE DOWN BOLTS.

REPLACE WALKWAY SUPPORT BRACKET BOLT

This work shall consist of replacing the existing deteriorated walkway support bracket bolts for a Vierendeel overhead sign structure at the locations shown in the plans. The bolts furnished shall be ½" diameter, high strength, and with 2 washers and a lock-nut. The bolts shall be of sufficient length to fully engage the lock-nut.

Replacement bolts, nuts, and washers shall be according to Article 1006.08, except that all hardware shall be hot dipped galvanized according to AASHTO M 111. Samples of the bolts, washers, and nuts shall be submitted to the Bureau of Materials and Physical Research for approval prior to installation.

This work will be paid for at the contract unit price per EACH for REPLACE WALKWAY SUPPORT BRACKET BOLT.

SAFETY CHAIN

This work shall consist of removing a defective existing safety chain from the walkway, furnishing, and installing a new one. The chain shall be 3/16" diameter, type 304L Stainless steel, with approximately 12 links per foot. The safety chain shall be furnished and installed on the walkway and walkway support bracket as shown on the Overhead Sign Structures Aluminum Handrail Details Base Sheet OS-A-11.

For those locations where the chain must be attached to the walkway support bracket and the walkway support bracket is located behind the sign, the "Alternate Safety Chain Attachment" method shall be used.

This work will be paid for at the contract unit price per EACH for SAFETY CHAIN.

REPLACE U-BOLT

This work shall consist of replacing missing or damaged U-bolts. Replacement U-bolts shall be either 5/16” or 3/4” stainless steel U-bolts of the appropriate dimensions, two stainless steel washers, and two hexagon locknuts per bolt. This work may also include field drilling any holes necessary in the appropriate members for the installation of the U-bolts.

The 5/16-inch U-bolts are located at the connection of the walkway support and sign brackets to the truss, and the 3/4-inch U-bolts are located at the connection of the overhead sign structure to the end support. The U-bolt, washers, and lock nuts shall meet the requirements of Section 733 and the Overhead Sign Structure Base Sheet, OS-A-1. All U-bolts shall be of sufficient length to fully engage the locknut.

The Contractor shall field verify dimensions prior to ordering any material.

This work will be paid for at the contract unit price per EACH for REPLACE U-BOLT. ,

RELOCATE SADDLE SHIM BLOCK

This work shall consist of loosening or removing the two U-bolts on the lower horizontal chord and saddle shim as necessary, lifting the lower horizontal chord if required, relocating the saddle shim and neoprene or fabric pad to its proper alignment, and retightening the U-bolt lock nuts as necessary to secure the truss in place.

The horizontal chord shall be lifted just enough to slide the saddle shim and neoprene or fabric pads back in place. Extreme care shall be taken when making this lift, and jacks with radiused contact faces or softeners shall be used to distribute loads evenly and not permanently deform the chords. If missing, a replacement 1/8-inch neoprene pad will be provided by the Contractor and placed between the saddle shim and lower horizontal chord.

If the existing U-bolt is damaged and cannot be reused, it shall be replaced and paid for in accordance with the Replace U-Bolt special provision.

This work will be paid for at the contract unit price per EACH for RELOCATE SADDLE SHIM BLOCK.

REPLACE HAND-HOLE COVER BOLT

This work shall consist of replacing a missing or damaged hand-hole cover mounting bolt at the locations shown in the plans and as directed by the Engineer. All damaged bolts shall be drilled out, and the hole re-tapped. The replacement hand-hole cover mounting bolt shall be in accordance with the requirements of Section 733 and Highway Standard OS-A-6, “Overhead Sign Structures Support Frame for Aluminum Truss Detail”.

This work will be paid for at the contract unit price per EACH for REPLACE HANDHOLE COVER BOLT.

REPLACE HANDHOLE COVER

This work shall consist of replacing a missing handhole cover at the locations shown in the plans and as directed by the Engineer. Any missing or damaged mounting bolts, that are not salvageable, shall be replaced. All broken bolts shall be drilled out, and the hole re-tapped. The handhole cover and mounting hardware shall be fabricated in accordance with the requirements of Section 733 and Highway Standard OS-A-6, “Overhead Sign Structures Support Frame for Aluminum Truss Detail”.

This work will be paid for at the contract unit price per EACH for REPLACE HANDHOLE COVER.

REPLACE SPLICE FLANGE BOLT

This work shall consist of furnishing and installing a missing or replacing an undersized stainless steel splice flange bolt complete with stainless steel washers and lock nut for an aluminum overhead sign structure or a galvanized bolt complete with nut and lock washer for a Vierendeel painted steel overhead sign structure. The size of the bolt shall be as shown on the shop fabrication drawings for the overhead sign structure available from the district office.

This work will be paid for at the contract unit price per EACH for REPLACE SPLICE FLANGE BOLT.

REMOVE ELECTRIC SERVICE

Description: This work shall consist of the disconnections, removal, and disposal of the existing electric connection to the sign lighting. Removal of the existing sign luminaires and other electrical components are included under the various pay items. This work shall also consist of reconnecting the electrical circuit to keep all highway lighting operational.

Disconnection and removal of the existing sign luminaires and other electrical components shall meet the requirements of Section 845 of the Standard Specifications. All lights and other electrical components removed shall become the property of the Contractor and salvaged or disposed of off right-of-way in a manner approved by the Engineer.

The Contractor must disconnect the existing power feed to the sign lighting units and remove the wiring back to the nearest location where the sign lighting is spliced to the roadway lighting circuit. The Contractor must provide all materials and labor required to maintain operation of the existing lighting circuit.

Abandoned underground electric cables shall be removed with conduit and duct to a depth of 1 foot below ground level, and the hole shall be backfilled. Cables in unit duct may be removed from the duct and become property of the Contractor. The empty duct shall be removed to a depth of 1 foot below ground level and the hole backfilled.

When a sign truss location is wired in series between light poles and the existing sign truss foundation will be removed, new unit duct will be required and paid for between the light poles according to Section 816 to maintain operation of the existing lighting circuit. Removal of the old electric cables and duct between each light pole and the old truss foundation will be as specified herein. When a sign truss location is wired in series between light poles and the existing sign truss foundation will be re-used to set the new overhead sign structure, the Contractor may use the new end supports as a handhole/junction box to maintain operation of the existing lighting circuit.

Although lighting is not to be provided on the new trusses at this time, the Contractor shall be required to install all conduit and ground rods during construction of the new foundations as detailed on the base sheets for the support frames, end columns, and foundations.

Any open conduit stubs in the end supports shall be capped by the Contractor after removal of the existing electrical components.

Method of Measurement: Disconnection, removal, and disposal of the existing electric connection to the sign lighting and reconnecting the electrical circuit to keep all highway lighting operational will be measured for payment as each. This work in its entirety at each sign truss location will be considered one each.

Basis of Payment: This work will be paid at the contract unit price per EACH for REMOVE ELECTRIC SERVICE.

RELOCATE ELECTRIC SERVICE:

This work shall consist of disconnecting, reconnecting, and relocating electrical service to the sign lighting for an overhead sign structure to be relocated. The Contractor shall disconnect the electric cable to the sign lighting, pull and coil the cable so it will not be damaged during removal of the overhead sign structure, remove the end supports, and remove the existing concrete foundations.

Once the new concrete foundation has been constructed and the new end supports for the overhead sign structure has been erected, the electric cable for the sign lighting shall be relocated and extended from the existing foundation to the new foundation. It may be necessary to extend or relocate the existing conduit and cable to the new concrete foundation. The splicing of conduit will be permitted, if necessary, for extending the conduit to the relocated concrete foundation. If the existing cable is of insufficient length to reach the new concrete foundation, it may be necessary to replace a section of the existing cable. No underground splicing of cable will be

permitted. After all connections have been completed to the satisfaction of the Engineer, electric service shall be restored to the overhead sign structure and tested for proper operation.

Basis of Payment: This work will be paid for at the contract unit price per EACH for RELOCATE ELECTRIC SERVICE.

ELECTRICAL SERVICE DISCONNECT

The electric service disconnect equipment assembly shall be UL labeled, suitable for use as service equipment. Stainless steel strut type channel shall be used to support the disconnect. Electric utility charges will be paid separately and are not part of this item.

Installation: The electrical service disconnect shall be installed as shown in the plans. All work shall be fully coordinated with the electric utility company by the Contractor.

Materials. The service disconnect shall be a heavy-duty, enclosed circuit breaker type safety switch, UL listed as suitable for service entrance application, continuously rated for 30 amperes. The enclosure shall be NEMA 4X stainless steel, tamper proof with provisions for locking in the ON and OFF positions, and interlocking to prevent the door from opening when the breaker is ON.

Circuit breaker shall be 2-pole, 120/240 volt, thermal magnetic bolt-on type with a minimum interrupt capacity of 25,000 symmetrical amperes at 240 volts. Breakers shall be lockable in the off position for lockout/tag-out compliance. Bus bars, connectors, and lugs shall be copper, insulated and isolated, and configured to prevent shorted conditions from tightening terminations. Lugs and connectors shall be rated for 75°C. Overall bus sections shall be configured behind an insulating barrier shield which is removable for access to connections. The circuit breakers and bus may be part of an approved panel board assembly.

Service disconnect surge protective device (SPD) shall be equipped with a NEMA 4X rated enclosure and suitable for 240/120 volt single phase 60Hz, AC electrical service. SPD shall have minimum short-circuit current rating of 100kA with LED operating indicators. SPD shall be rated –25 to 60°C and shall be UL listed per UL 1449.

Conduit, wire, grounding electrodes, and weather head to complete the installation of the service disconnect shall be included as part of this item, as required and as indicated in accordance with the Standard Specifications.

Combination ground and neutral bar shall be configured with separate ground and neutral sections and spare terminals. The heads of grounding screws shall be painted green. The heads of neutral screws shall be painted white.

A plastic laminated layout and circuit diagram shall be affixed to the interior side of the enclosure door.

A 2-color engraved plastic nameplate, attached with screws and engraved as indicated, shall be provided for the circuit breaker.

The exact mounting height for the electrical service disconnect shall be field determined and marked by the Engineer

Electrical service shall be of the voltage indicated. Where 120 volt service is indicated, service drop cable shall be installed accordingly and lighting main breaker and all other service appurtenances shall be included regardless of the service voltage applied to the installation. Electrical service shall be paid for separately.

The electric service disconnect equipment assembly shall be UL labeled, suitable for use as service equipment.

Stainless steel strut type channel shall be used to support the disconnect.

Electric Utility charges will be paid separately and are not part of this item.

Installation: The electrical service disconnect shall be installed as shown in the Plans. All work shall be fully coordinated with the electric utility company by the Contractor.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for ELECTRICAL SERVICE DISCONNECT, which shall be payment in full for the work.

TIGHTEN SPLICE FLANGE

This work shall consist of tightening all bolts/nuts of one splice flange for an overhead sign structure at the location shown in the schedule of locations for each district.

All bolts used to assemble the overhead sign truss splice flange shall be systematically tightened in accordance with the applicable requirements of Section 733 of the Standard Specifications or as directed by the Engineer. This procedure is not specifically intended to close existing gaps between flanges but to tighten those bolts that are loose. Splice flange bolts not of sufficient length to fully engage the lock-nut shall be replaced whenever possible with longer bolts of sufficient length to fully engage the lock-nut. Replacement bolts shall meet the applicable requirements of Section 733.

This work will be paid for at the contract unit price per EACH for TIGHTEN SPLICE FLANGE.

DRILLED SHAFTS

Effective: October 5, 2015 Revised: October 27, 2023

Revise Section 516 of the Standard Specifications to read:

"SECTION 516. DRILLED SHAFTS

516.01 Description. This work shall consist of constructing drilled shaft foundations.

516.02 Materials. Materials shall be according to the following.

	Item	Article/Section
(a)	Portland Cement Concrete (Note 1)	1020
(b)	Reinforcement Bars	1006.10
(c)	Grout (Note 2)	1024.01
(d)	Permanent Steel Casing	1006.05(d)
(e)	Slurry (Note 3)	

Note 1. When the soil contains sulfate contaminates, ASTM C 1580 testing will be performed to assess the severity of sulfate exposure to the concrete. If the sulfate contaminate is >0.10 to < 0.20 percent by mass, a Type II (MH) cement shall be used. If the sulfate contaminate is >0.20 to < 2.0 percent by mass, a Type V cement shall be used. If the sulfate contaminate is ≥ 2.0 percent by mass, refer to ACI 201.2R for guidance.

Note 2. The sand-cement grout mix shall be according to Section 1020 and shall be two to five parts sand and one part Type I or II cement. The maximum water cement ratio shall be sufficient to provide a flowable mixture with a typical slump of 10 in. (250 mm).

Note 3. Slurry shall be bentonite, emulsified polymer, or dry polymer, and shall be approved by the Engineer.

516.03 Equipment. Equipment shall be according to the following.

	Item	Article/Section
(a)	Concrete Equipment	1020.03
(b)	Drilling Equipment (Note 1)	
(c)	Hand Vibrator	1103.17(a)
(d)	Underwater Concrete Placement Equipment	1103.18

Note 1. The drilling equipment shall have adequate capacity, including power, torque and down thrust, to create a shaft excavation of the maximum diameter specified to a depth of 20 percent beyond the depths shown on the plans.

516.04 Submittals. The following information shall be submitted on form BBS 133.

(a) Qualifications. At the time of the preconstruction conference, the Contractor shall provide the following documentation.

(1) References. A list containing at least three projects completed within the three years prior to this project's bid date which the Contractor performing this work has installed drilled shafts of similar diameter, length, and site conditions to those shown in the plans. The list of projects shall contain names and phone numbers of owner's representatives who can verify the Contractor's participation on those projects.

(2) Experience. Name and experience record of the drilled shaft supervisor, responsible for all facets of the shaft installation, and the drill operator(s) who will be assigned to this project. The supervisor and operator(s) shall each have a minimum of three years experience in the construction of drilled shafts.

(b) Installation Procedure. A detailed installation procedure shall be submitted to the Engineer for acceptance at least 28 days prior to drilled shaft construction and shall address each of the following items unless otherwise directed by the Engineer in writing.

(1) Equipment List. List of proposed equipment to be used including cranes, drill rigs, augers, belling tools, casing, vibratory hammers, core barrels, bailing buckets, final cleaning equipment, slurry equipment, tremies, or concrete pumps, etc.

(2) General Sequence. Details of the overall construction operation sequence, equipment access, and the sequence of individual shaft construction within each substructure bent or footing group. The submittal shall address the Contractor's proposed time delay and/or the minimum concrete strength necessary before initiating a shaft excavation adjacent to a recently installed drilled shaft.

(3) Shaft Excavation. A site specific step by step description of how the Contractor anticipates the shaft excavation to be advanced based on their evaluation of the subsurface data and conditions expected to be encountered. This sequence shall note the method of casing advancement, anticipated casing lengths, tip elevations and diameters, the excavation tools used and drilled diameters created. The Contractor shall indicate whether wet or dry drilling conditions are expected and if groundwater will be sealed from the excavation.

(4) Slurry. When the use of slurry is proposed, details on the types of additives to be used and their manufacturers shall be provided. In addition, details covering the measurement and control of the hardness of the mixing water, agitation, circulation, de-sanding, sampling, testing, and chemical properties of the slurry shall be submitted.

(5) Shaft Cleaning. Method(s) and sequence proposed for the shaft cleaning operation.

(6) Reinforcement Cage and Permanent Casing. Details of reinforcement placement including rolling spacers to be used and method to maintain proper elevation and location of the reinforcement cage within the shaft excavation during concrete placement. The method(s) of adjusting the reinforcement cage length and permanent casing if rock is encountered at an elevation other than as shown on the plans. As an option, the Contractor may perform soil borings and rock cores at the drilled shaft locations to determine the required reinforcement cage and permanent casing lengths.

(7) Concrete Placement. Details of concrete placement including proposed operational procedures for free fall, tremie or pumping methods. The sequence and method of casing removal shall also be stated along with the top of pour elevation, and method of forming through water above streambed.

(8) Mix Design. The proposed concrete mix design(s).

(9) Disposal Plan. Containment and disposal plan for slurry and displaced water. Containment and disposal plan for contaminated concrete pushed out of the top of the shaft by uncontaminated concrete during concrete placement.

(10) Access and Site Protection Plan. Details of access to the drilled shafts and safety measures proposed. This shall include a list of casing, scaffolding, work platforms, temporary walkways, railings, and other items needed to provide safe access to the drilled shafts. Provisions to protect open excavations during non-working hours shall be included.

The Engineer will evaluate the drilled shaft installation procedure and notify the Contractor of acceptance, need for additional information, or concerns with the installation's effect on the existing or proposed structure(s).

CONSTRUCTION REQUIREMENTS

516.05 General. Excavation for drilled shaft(s) shall not proceed until written authorization is received from the Engineer. The Contractor shall be responsible for verification of the dimensions and alignment of each shaft excavation as directed by the Engineer.

Unless otherwise approved in the Contractor's installation procedure, no shaft excavation, casing installation, or casing removal with a vibratory hammer shall be made within four shaft diameters center to center of a shaft with concrete that has a compressive strength less than 1500 psi (10,300 kPa). The site-specific soil strengths and installation methods selected will determine the actual required minimum spacing, if any, to address vibration and blow out concerns.

Lost tools shall not remain in the shaft excavation without the approval of the

Engineer. Blasting shall not be used as a method of shaft excavation.

516.06 Shaft Excavation Protection Methods. The construction of drilled shafts may involve the use of one or more of the following methods to support the excavation during the various phases of shaft excavation, cleaning, and concrete placement dependent on the site conditions encountered. Surface water shall not flow uncontrolled into the shaft excavation, however water may be placed into the shaft excavation in order to meet head pressure requirements according to Articles 516.06(c) and 516.13.

The following are general descriptions indicating the conditions when these methods may be used.

(a) Dry Method. The dry construction method shall only be used at sites where the groundwater and soil conditions are suitable to permit the drilling and dewatering of the excavation without causing subsidence of adjacent ground, boiling of the base soils,

squeezing, or caving of the shaft side walls. The dry method shall consist of drilling the shaft excavation, removing accumulated water, cleaning the shaft base, and placing the reinforcement cage and concrete in a predominately dry excavation.

Slurry Method. The slurry construction method may be used at sites where dewatering the excavation would cause collapse of the shaft sidewalls or when the volume and head of water flowing into the shaft is likely to contaminate the concrete during placement resulting in a shaft defect. This method uses slurry, or in rare cases water, to maintain stability of the shaft sidewall while advancing the shaft excavation. After the shaft excavation is completed, the slurry level in the shaft shall be kept at an elevation to maintain stability of the shaft sidewall, maintain stability of the shaft base, and prevent additional groundwater from entering the shaft. The shaft base shall be cleaned, the reinforcement cage shall be set, and the concrete shall be discharged at the bottom of the shaft excavation, displacing the slurry upwards.

(b) Temporary Casing Method. Temporary casing shall be used when either the dry or slurry methods provide inadequate support to prevent sidewall caving or excessive deformation of the shaft excavation. Temporary casing may be used with slurry or be used to reduce the flow of water into the excavation to allow dewatering and concrete placement in a dry shaft excavation. Temporary casing shall not be allowed to remain permanently without the approval of the Engineer.

During removal of the temporary casing, the level of concrete in the casing shall be maintained at a level such that the head pressure inside the casing is a minimum of 1.25 times the head pressure outside the casing, but in no case is less than 5 ft (1.5 m) above the bottom of the casing. Casing removal shall be at a slow, uniform rate with the pull in line with the shaft axis. Excessive rotation of the casing shall be avoided to limit deformation of the reinforcement cage. In addition, the slump requirements during casing removal shall be according to Article 516.12.

When called for on the plans, the Contractor shall install a permanent casing as specified. Permanent casing may be used as a shaft excavation support method or may be installed after shaft excavation is completed using one of the above methods. After construction, if voids are present between the permanent casing and the drilled excavation, the voids shall be filled with grout by means of tremie(s) or concrete pump which shall be lowered to the bottom of the excavation. The contractor's means and methods for grout placement shall fill the annular void(s) between the permanent casing and the surrounding earth material to restore and provide lateral earth resistance to the shaft. Grout yield checks shall be performed by the contractor for submittal to the Engineer. Permanent casing shall not remain in place beyond the limits shown on the plans without the specific approval of the Engineer.

When the shaft extends above the streambed through a body of water and permanent casing is not shown, the portion above the streambed shall be formed with removable casings, column forms, or other forming systems as approved by the Engineer. The forming system shall not scar or spall the finished concrete or leave in place any forms or casing within the removable form limits as shown on the plans unless approved as part of the installation procedure. The forming system shall not be removed until the concrete has attained a minimum compressive strength of 2500 psi (17,200 kPa) and cured for a minimum of 72 hours. For shafts extending through water, the concrete shall be protected from water action after placement for a minimum of seven days.

516.07 Slurry. When slurry is used, the Contractor shall provide a technical representative of the slurry additive manufacturer at the site prior to introduction of the slurry into the first shaft where slurry will be used, and during drilling and completion of a minimum of one shaft to adjust the slurry mix to the specific site conditions. During construction, the level of the slurry shall be maintained a minimum of 5 feet (1.5 m) above the height required to prevent caving of the shaft excavation. In the event of a sudden or significant loss of slurry in the shaft excavation, the construction of that foundation shall be stopped and the shaft excavation backfilled or supported by temporary casing, until a method to stop slurry loss, or an alternate construction procedure, has been approved by the Engineer.

(a) General Properties. The material used to make the slurry shall not be detrimental to the concrete or surrounding ground. Mineral slurries shall have both a mineral grain size that remains in suspension and sufficient viscosity and gel characteristics to transport excavated material to a suitable screening system. Polymer slurries shall have sufficient viscosity and gel characteristics to transport excavated material to suitable screening systems or settling tanks. The percentage and specific gravity of the material used to make the slurry shall be sufficient to maintain the stability of the excavation and to allow proper concrete placement.

If approved by the Engineer, the Contractor may use water and excavated soils as drilling slurry. In this case, the range of acceptable values for density, viscosity and pH, as shown in the following table for bentonite slurry shall be met.

When water is used as the slurry to construct rock sockets in limestone, dolomite, sandstone or other formations that are not erodible, the requirements for slurry testing shall not apply if the entire fluid column is replaced with fresh water after drilling. To do so, fresh water shall be introduced at the top of the shaft excavation and existing water used during drilling shall be pumped out of the shaft excavation from the bottom of the shaft excavation until the entire volume of fluid has been replaced.

(b) Preparation. Prior to introduction into the shaft excavation, the manufactured slurry admixture shall be pre-mixed thoroughly with clean, fresh water and for adequate time in accordance with the slurry admixture manufacturer's recommendations. Slurry tanks of adequate capacity shall be used for slurry mixing, circulation, storage and treatment. No excavated slurry pits will be allowed in lieu of slurry tanks without approval from the Engineer. Adequate desanding equipment shall be provided to control slurry properties during the drilled shaft excavation in accordance with the values provided in Table 1.

(c) Quality Control. Quality control tests shall be performed on the slurry to determine density, viscosity, sand content and pH of freshly mixed slurry, recycled slurry and slurry in the shaft excavation. Tests of slurry samples from within two feet of the bottom and at mid-height of the shaft excavation shall be conducted in each shaft excavation during the excavation process to measure the consistency of the slurry. A minimum of four sets of tests shall be conducted during the first eight hours of slurry use on the project. When a series of four test results do not change more than 1% from the initial test, the testing frequency may be decreased to one set every four hours of slurry use. Reports of all tests, signed by an authorized representative of the Contractor, shall be furnished to theEngineer upon completion of each drilled shaft. The physical properties of the slurry shall be as shown in Table 1.

The slurry shall be sampled and tested less than 1 hour before concrete placement. Any heavily contaminated slurry that has accumulated at the bottom of the shaft shall be removed. The contractor shall perform final shaft bottom cleaning after suspended solids have settled from the slurry. Concrete shall not be placed if the slurry does not have the required physical properties.

Table 1 – SLURRY PROPERTIES				
	Bentonite	Emulsified Polymer	Dry Polymer	Test Method
Density, lb/cu ft (kg/cu m) (at introduction)	65.2 ± 1.6[1] (1043.5 ± 25.6)	63 (1009.0) max.	63 (1009.0) max.	ASTM D 4380
Density, lb/cu ft (kg/cu m) (prior to concrete placement)	67.0 ± 3.5[1] (1073.0 ± 56.0)	63 (1009.0) max.	63 (1009.0) max.	ASTM D 4380
Viscosity[2], sec/qt (sec/L)	46 ± 14 (48 ± 14)	38 ± 5 (40 ± 5)	65 ± 15 (69 ± 16)	ASTM D 6910
pH	9.0 ± 1.0	9.5 ± 1.5	9.0 ± 2.0	ASTM D 4972
Sand Content, percent by volume (at introduction)	4 max.	1 max.	1 max.	ASTM D 4381
Sand Content, percent by volume (prior to concrete placement)	10 max.	1 max.	1 max.	ASTM D 4381
Contact Time[3], hours	4 max.	72 max.	72 max	

Note 1. When the slurry consists of only water and excavated soils, the density shall not exceed 70 lb/cu ft (1121 kg/cu m).
Note 2. Higher viscosities may be required in loose or gravelly sand deposits. Note 3. Contact time is the time without agitation and sidewall cleaning.

516.08 Obstructions. An obstruction is an unknown isolated object that causes the shaft excavation method to experience a significant decrease in the actual production rate and requires the Contractor to core, break up, push aside, or use other means to mitigate the obstruction. Subsurface conditions such as boulders, cobbles, or logs and buried infrastructure such as footings, piling, or abandoned utilities, when shown on the plans, shall not constitute an obstruction. When an obstruction is encountered, the Contractor shall notify the Engineer immediately and upon concurrence of the Engineer, the Contractor shall mitigate the obstruction with an approved method.

516.09 Top of Rock. The top of rock will be considered as the point where rock, defined

as bedded deposits and conglomerate deposits exhibiting the physical characteristics and difficulty of rock removal as determined by the Engineer, is encountered which cannot be drilled with augers and/or underreaming tools configured to be effective in the soils indicated in the contract documents.

516.10 Design Modifications. If the top of rock elevation differs from that shown on the plans by more than 10 percent of the length of the drilled shaft above the rock, the Engineer shall be contacted to determine if any drilled shaft design changes may be required. In addition, if the type of soil or rock encountered is not similar to that shown in the subsurface exploration data, the Contractor may be required to extend the drilled shaft length(s) beyond those specified in the plans. In either case, the Engineer will determine if revisions are necessary and the extent of the modifications required.

516.11 Excavation Cleaning and Inspection. Materials removed or generated from the shaft excavations shall be disposed of according to Article 202.03.

After excavation, each shaft shall be cleaned. For a drilled shaft terminating in soil, the depth of sediment or debris shall be a maximum of 1 1/2 in. (38 mm). For a drilled shaft terminating in rock, the depth of sediment or debris shall be a maximum of 1/2 in. (13 mm).

A shaft excavation shall be overreamed when, in the opinion of the Engineer, the sidewall has softened, swelled, or has a buildup of slurry cake. Overreaming may also be required to correct a shaft excavation which has been drilled out of tolerance. Overreaming may be accomplished with a grooving tool, overreaming bucket, or other approved equipment. Overreaming thickness shall be a minimum of 1/2 in. (13 mm) and a maximum of 3 in. (75 mm).

516.12 Reinforcement. This work shall be according to Section 508 and the following.

The shaft excavation shall be cleaned and inspected prior to placing the reinforcement cage. The reinforcement cage shall be completely assembled prior to drilling and be ready for adjustment in length as required by the conditions encountered. The reinforcement cage shall be lifted using multiple point sling straps or other approved methods to avoid reinforcement cage distortion or stress. Cross frame stiffeners may be required for lifting or to keep the reinforcement cage in proper position during lifting and concrete placement.

The Contractor shall attach rolling spacers to keep the reinforcement cage centered within the shaft excavation during concrete placement and to ensure that at no point will the finished shaft have less than the minimum concrete cover(s) shown on the plans. The rolling spacers or other approved non-corrosive spacing devices shall be installed within 2 ft (0.6 m) of both the top and bottom of the drilled shaft and at intervals not exceeding 10 ft (3 m) throughout the length of the shaft to ensure proper reinforcement cage alignment and clearance for the entire shaft. The number of rolling spacers at each level shall be one for each 1.0 ft (300 mm) of shaft diameter, with a minimum of four rolling spacers at each level. For shafts with different shaft diameters throughout the length of the excavation, different sized rolling spacers shall be provided to ensure the reinforcement cage is properly positioned throughout the entire length of the shaft.

When a specific concrete cover between the base of the drilled shaft and the reinforcement cage is shown on the plans, the bottom of the reinforcement cage shall be supported so that the proper concrete cover is maintained.

If the conditions differ such that the length of the shaft is increased, additional longitudinal bars shall be either mechanically spliced or lap spliced to the lower end of the reinforcement cage and confined with either hoop ties or spirals. The Contractor shall have additional reinforcement available or fabricate the reinforcement cages with additional length as necessary to make the required adjustments in a timely manner as dictated by the encountered conditions. The additional reinforcement may be non-epoxy coated.

516.13 Concrete Placement. Concrete work shall be performed according to the following.

Throughout concrete placement the head pressure inside the drilled shaft shall be at least
1.1 times the head pressure outside the drilled shaft.

Concrete placement shall begin within 1 hour of shaft cleaning and inspection. The pour shall be made in a continuous manner from the bottom to the top elevation of the shaft as shown on the contract plan or as approved in the Contractor's installation procedure. Concrete placement shall continue after the shaft excavation is full and until 18 in. (450 mm) of good quality, uncontaminated concrete is expelled at the top of shaft. Vibration of the concrete will not be allowed when the concrete is displacing slurry or water. In dry excavations, the concrete in the top 10 ft (3 m) of the shaft shall be vibrated.

When using temporary casing or placing concrete under water or slurry, a minimum of seven days prior to concrete placement, a 4 cu yd (3 cu m) trial batch of the concrete mixture shall be performed to evaluate slump retention. Temporary casing shall be withdrawn before the slump of the concrete drops below 6 in. (150 mm). For concrete placed using the slurry method of construction, the slump of all concrete placed shall be a minimum of 6 in. (150 mm) at the end of concrete placement.

Devices used to place concrete shall have no aluminum parts in contact with concrete.

When the top of the shaft is at the finished elevation and no further concrete placement above the finished elevation is specified, the top of the shaft shall be level and finished according to Article 503.15(a).

Concrete shall be placed by free fall, tremie, or concrete pump subject to the following conditions.

(a) Free Fall Placement. Concrete shall only be placed by free fall when the rate of water infiltration into the shaft excavation is less than 12 in. (300 mm) per hour and the depth of water in the shaft excavation is less than 3 in. (75 mm) at the time of concrete placement.

Concrete placed by free fall shall fall directly to the base without contacting the reinforcement cage, cross frame stiffeners, or shaft sidewall. Drop chutes may be used to direct concrete to the base during free fall placement.

Drop chutes used to direct placement of free fall concrete shall consist of a smooth tube. Concrete may be placed through either a hopper at the top of the tube or side openings as the drop chute is retrieved during concrete placement. The drop chute shall be supported so that free fall does not exceed 60 ft (18.3 m) for conventional concrete or 30 ft (9.1 m) for self-consolidating concrete. If placement cannot be satisfactorily accomplished by free fall in the opinion of the Engineer, either a tremie or pump shall be used to accomplish the pour.

(b) Tremie and Concrete Pump Placement. Concrete placement shall be according to Article 503.08, except the discharge end of the steel pipe shall remain embedded in the concrete a minimum of 10 ft (3.0 m) throughout concrete placement when displacing slurry or water.

516.14 Construction Tolerances. The following construction tolerances shall apply to all drilled shafts.

(a) Center of Shaft. The center of the drilled shaft shall be within 3 in. (75 mm) of the plan station and offset at the top of the shaft.

(b) Center of Reinforcement Cage. The center of the reinforcement cage shall be within 1 1/2 in. (40 mm) of plan station and offset at the top of the shaft.

(c) Vertical Plumbness of Shaft. The out of vertical plumbness of the shaft shall not exceed **1.5 percent.**

(d) Vertical Plumbness of Reinforcement Cage. The out of vertical plumbness of the shaft reinforcement cage shall not exceed 0.83 percent.

(e) Top of Shaft. The top of the shaft shall be no more than 1 in. (25 mm) above and no more than 3 in. (75 mm) below the plan elevation.

(f) Top of Reinforcement Cage. The top of the reinforcement cage shall be no more than 1 in. (25 mm) above and no more than 3 in. (75 mm) below the plan elevation.

(g) Bottom of shaft. Excavation equipment and methods used to complete the shaft excavation shall have a nearly planar bottom. The cutting edges of excavation equipment used to create the bottom of shafts in rock shall be normal to the vertical axis of the shaft within a tolerance of 6.25 percent.

516.15 Method of Measurement. This work will be measured for payment in place and the volume computed in cubic yards (cubic meters). The volume will be computed using the plan diameter of the shaft multiplied by the measured length of the shaft. The length of shaft in soil will be computed as the difference in elevation between the top of the drilled shaft shown on the plans, or as installed as part of the Contractor's installation procedure, and the bottom of the shaft or the top of rock (when present) whichever is higher. The length of shaft in rock will be computed as the difference in elevation between the measured top of rock and the bottom of the shaft.

When permanent casing is specified, it will be measured for payment in place, in feet (meters). Permanent casing installed at the Contractor's option will not be measured for payment.

Reinforcement furnished and installed will be measured for payment according to Article 508.07.

516.16 Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) for DRILLED SHAFT IN SOIL, and/or DRILLED SHAFT IN ROCK.

Permanent casing will be paid for at the contract unit price per foot (meter) for PERMANENT CASING.

Reinforcement furnished and installed will be paid for according to Article 508.08.

Obstruction mitigation will be paid for according to Article 109.04."

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 HCl ..... 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."

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010 Revised: January 1, 2025

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term "equipment" refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted according to the table below.

Horsepower Range	Model Year and Older
50-99	2003
100-299	2002
300-599	2000
600-749	2001
750 and up	2005

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (https://www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel),
or verified by the California Air Resources Board (CARB) (http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm); or

b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not

available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices 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. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be $1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected. Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000 Revised: July 2, 2026

1. OVERVIEW AND GENERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory. Award of the contract is conditioned on meeting the requirements of 49 CFR Part 26, and failure by the Contractor to carry out the requirements of Part 26 is a material breach of the contract and may result in the termination of the contract or such other remedies as the Department deems appropriate.

2. CONTRACTOR ASSURANCE. All assurances set forth in FHWA 1273 are hereby incorporated by reference and will be physically attached to the final contract and all subcontracts.

3. CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. The Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies and that, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform ___0.00____% of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work in accordance with the requirements of 49 CFR 26.53 and SBE Memorandum No. 24-02.

4. IDENTIFICATION OF CERTIFIED DBE. Information about certified DBE Contractors can be found in the IL UCP Directory. Bidders can obtain additional information and assistance with identifying DBE-certified companies at the Department's website or by contacting the Department's Bureau of Small Business Enterprises at (217) 785-4611.

   PLEASE NOTE: *As of October 3, 2025, the U.S. Department of Transportation issued an Interim Final Rule requiring all existing DBE and ACDBE certifications to be re-evaluated for social and economic disadvantage without consideration of race or gender. As of March 24, 2026, the ILUCP has completed reevaluation of those firms that submitted required information by January 31, 2026. DBE and ACDBE Certifications appearing in the IL UCP directory as certified have been recertified under the current federal regulations and may be counted for DBE goal credit. DBE and ACDBE firms appearing in this directory as ineligible have not submitted required documentation for reevaluation to date. Ineligible firms cannot currently be counted for DBE goal credit, but HAVE NOT BEEN DECERTIFIED and may still submit documentation to be reevaluated. All firms decertified under the October 3, 2025 Interim Final Rule reevaluation process have been removed from the Directory. Additional information regarding the IFR and the current status of the DBE/ACDBE program can be found at https://idot.illinois.gov/doing-business/certifications/dbe.html.*

PLEASE BE ADVISED THAT A FIRM THAT IS INDICATED AS INELIGIBLE CANNOT BE USED FOR GOAL CREDIT. IT IS THE RESPONSIBILITY OF THE PRIME CONTRACTOR TO VERIFY THAT ANY FIRM RELIED UPON FOR DBE GOAL CREDIT IN A UTILIZATION PLAN IS CURRENTLY CERTIFIED AND CAN BE COUNTED FOR GOAL CREDIT AT THE TIME OF BID.

5. BIDDING PROCEDURES. Compliance with this Special Provision and SBE Policy Memorandum 24-02 is a material bidding requirement. The following shall be included with the bid.

   (a) DBE Utilization Plan (form SBE 2026) documenting enough DBE participation has been obtained to meet the goal, or a good faith effort has been made to meet the goal even though the efforts did not succeed in obtaining enough DBE participation to meet the goal.

   (b) Applicable DBE Participation Statement (form SBE 2023, 2024, and/or 2025) for each DBE firm the bidder has committed to perform the work to achieve the contract goal.

   The required forms and documentation shall be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

   The Department will not accept a bid if it does not meet the bidding procedures set forth herein and the bid will be declared non-responsive. A bidder declared non-responsive for failure to meet the bidding procedures will not give rise to an administrative reconsideration. In the event the bid is declared non-responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

6. UTILZATION PLAN EVALUATION. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate, and adequately document the bidder has committed to DBE participation sufficient to meet the goal, or that the bidder has made good faith efforts to do so, in the event the bidder cannot meet the goal, in order for the Department to commit to the performance of the contract by the bidder.

   The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the Department determines, based upon the documentation submitted, that the bidder has made a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A and the requirements of SBE 2026.

   If the Department determines that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan of that determination in accordance with SBE Policy Memorandum 24-02.

7. CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work the bidder commits to have performed by the specified DBEs and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE firms. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising

the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific guidelines for counting goal credit are provided in 49 CFR Part 26.55. In evaluating Utilization Plans for award the Department will count goal credit as set forth in Part 26 and in accordance with SBE Policy Memorandum 24-02.

8. CONTRACT COMPLIANCE. The Contractor must utilize the specific DBEs listed to perform the work and supply the materials for which each DBE is listed in the Contractor's approved Utilization Plan, unless the Contractor obtains the Department's written consent to terminate the DBE or any portion of its work. The DBE Utilization Plan approved by SBE is a condition-of-award, and any deviation to that Utilization Plan, the work set forth therein to be performed by DBE firms, or the DBE firms specified to perform that work, must be approved, in writing, by the Department in accordance with federal regulatory requirements. Deviation from the DBE Utilization Plan condition-of-award without such written approval is a violation of the contract and may result in termination of the contract or such other remedy the Department deems appropriate. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan.

   (a) NOTICE OF DBE PERFORMANCE. The Contractor shall provide the Engineer with at least three days advance notice of when all DBE firms are expected to perform the work committed under the Contractor's Utilization Plan.

   (b) SUBCONTRACT. If awarded the contract, the Contractor is required to enter into written subcontracts with all DBE firms indicated in the approved Utilization Plan and must provide copies of fully executed DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

   (c) PAYMENT TO DBE FIRMS. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goal has been paid to the DBE. The Contractor shall document and report all payments for work performed by DBE certified firms in accordance with Article 109.11 of the Standard Specifications. All records of payment for work performed by DBE certified firms shall be made available to the Department upon request.

   (d) FINAL PAYMENT. After the performance of the final item of work or trucking, or delivery of material by a DBE and final payment to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement (form SBE 2115) to the Engineer. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages.

   (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation

demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

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."

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2024 Revised: April 1, 2026

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 fourth paragraph of Article 669.10 of the Standard Specifications.

"Regulated substances monitoring will be measured for payment per calendar day, where 4 or more hours of monitoring activities is defined as 1.0 calendar day and less than 4 hours of monitoring activities is defined as 0.5 calendar day."

Revise the second paragraph of Article 669.11 of the Standard Specification to read:

"Regulated substances monitoring, including completion of form BDE 2732 for each day of work, will be paid for at the contract unit price per calendar day for REGULATED SUBSTANCES MONITORING. In no case will more than 1.0 calendar day be paid on a given calendar day."

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: November 1, 2026

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 the first paragraph of Article 703.04 of the Standard Specifications to read:

"**703.04 Short Term Pavement Markings.** Before the lane is opened to traffic, short term pavement markings shall be installed between all lanes open to traffic. Center line or lane line markings shall consist of an abbreviated pattern of single stripes 4 ft (1.2 m) in length and 6 in. (150 mm) wide at a maximum spacing of 40 ft (12 m) between stripes. Center lines on two-lane highways shall be yellow and lane lines separating two or more lanes of traffic moving in the same direction shall be white. Edge line markings shall be applied on multilane divided highways and other highways with a paved shoulder greater than 4 ft (1.2 m) wide. Edge line markings shall consist of stripes 4 ft (1.2 m) in length and 6 in. (150 mm) wide at intervals of 50 ft (15 m) on ramps and 200 ft (60 m) on mainline installed at approximately a 45 degree diagonal pointing in the direction of traffic. Short term pavement markings on the final wearing surface shall be transversely offset from the permanent pavement marking location as directed by the Engineer. Short term pavement markings shall be removed within five calendar days after permanent pavement markings are installed."

Revise the first paragraph of Article 703.05 of the Standard Specifications to read:

"**703.05 Temporary Pavement Marking.** When an intermediate course cannot be overlaid or if the final surface cannot be permanently marked within the time restrictions listed above, the full standard markings shall be installed with temporary pavement markings. Temporary lane line, edge line, and center line markings shall be a minimum of 6 in. (150 mm) wide and of the same color as shown on the plans for the permanent markings. Other temporary markings shall be of the same color and dimensions as shown on the plans for the permanent markings."

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."

SPEED DISPLAY TRAILER (BDE)

Effective: April 2, 2014 Revised: January 1, 2022

Revise the last paragraph of Article 701.11 of the Standard Specifications to read:

"When not being utilized to inform and direct traffic, sign trailers, speed display trailers, arrow boards, and portable changeable message boards shall be treated as nonoperating equipment."

Add the following to Article 701.15 of the Standard Specifications:

"(m) Speed Display Trailer. A speed display trailer is used to enhance safety of the traveling public and workers in work zones by alerting drivers of their speed, thus deterring them from driving above the posted work zone speed limit."

Add the following to Article 701.20 of the Standard Specifications:

"(k) When speed display trailers are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard.

For all other speed display trailers, this work will be paid for at the contract unit price per calendar month or fraction thereof for each trailer as SPEED DISPLAY TRAILER."

Add the following to Article 1106.02 of the Standard Specifications:

"(o) Speed Display Trailer. The speed display trailer shall consist of a LED speed indicator display with self-contained, one-direction radar mounted on an orange see-through trailer. The height of the display and radar shall be such that it will function and be visible when located behind concrete barrier.

The speed measurement shall be by radar and provide a minimum detection distance of 1000 ft (300 m). The radar shall have an accuracy of ±1 mile per hour.

The speed indicator display shall face approaching traffic and shall have a sign legend of "YOUR SPEED" immediately above or below the speed display. The sign letters shall be between 5 and 8 in. (125 and 200 mm) in height. The digital speed display shall show two digits (00 to 99) in mph. The color of the changeable message legend shall be a yellow legend on a black background. The minimum height of the numerals shall be 18 in. (450 mm), and the nominal legibility distance shall be at least 750 ft (250 m).

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the work zone posted speed limit is exceeded. The speed indicator shall have a maximum speed cutoff. On roadway facilities with a normal posted speed limit greater than or equal to 45 mph, the detected speeds of vehicles traveling more than 25 mph over the work zone speed limit shall not be displayed. On facilities with normal posted speed limit of less than 45 mph, the detected speeds of vehicles traveling

more than 15 mph over the work zone speeds limit shall not be displayed. On any roadway facility if detected speeds are less than 25 mph, they shall not be displayed. The display shall include automatic dimming for nighttime operation.

The speed indicator measurement and display functions shall be equipped with the power supply capable of providing 24 hours of uninterrupted service."

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 – STATE CONTRACT (BDE)

Effective: April 1, 2021 Revised: April 1, 2026

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 Certified Transcript of Payroll Portal in compliance with the State Prevailing Wage Act (820 ILCS 130). The portal can be found on the IDOL website at https://labor.illinois.gov. 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.

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021 Revised: November 1, 2026

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; green, 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."

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012 Revised: January 2, 2025

The following applies to all Disadvantaged Business Enterprise (DBE) trucks on the project, whether they are utilized for DBE goal credit or not.

The Contractor shall notify the Engineer at least three days prior to DBE trucking activity.

The Contractor shall submit a weekly report of DBE trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Sunday through Saturday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports 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.

WOOD SIGN SUPPORT (BDE)

Effective: November 1, 2023

Add the following to Article 730.02 of the Standard Specifications:

"(c) Preservative Treatment 1007.12"

Revise the first paragraph of Article 730.03 of the Standard Specifications to read:

"**730.03 General.** Wood sign supports shall be treated. When the 4 x 6 in. (100 x 150 mm) posts are used, they shall be modified to satisfy the breakaway requirements by drilling 1 1/2 in. (38 mm) diameter holes centered at 4 and 18 in. (100 and 450 mm) above the groundline and perpendicular to the centerline of the roadway."

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."

WORK ZONE WIDTH RESTRICTION (BDE)

Effective: July 1, 2026

Revise the second paragraph of Article 701.06 of the Standard Specifications to read:

"Where the clear width through a work zone will be 17.5 ft (5.34 m) or less, the Contractor shall notify the Engineer at least 21 days in advance of implementing the traffic control for that restriction."

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.