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Letting February 27, 2026

Notice to Bidders, Specifications and Proposal

Illinois Department of Transportation

Contract No. 62R23
WILL County
Section FAI 80 21 STRUCTURE 2
Route FAI 80
Project NHPP-8PC1(116)
District 1 Construction Funds

Prepared by

Checked by

F

(Printed by authority of the State of Illinois)

Illinois Department of Transportation

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. February 27, 2026 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. 62R23
   WILL County
   Section FAI 80 21 STRUCTURE 2
   Project NHPP-8PC1(116)
   Route FAI 80
   District 1 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 re-advertise 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 1 2022, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAI Route 80 (I-80), Project NHPP-8PC1(116), Section FAI 80 21 Structure 2, Will County, Contract No. 62R23, and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

FAI Route 80 (I-80)
Project NHPP-8PC1(116)
Section FAI 80 21 Structure 2
Will County
Contract No. 62R23

LOCATION OF PROJECT

The project is located along I-80 beginning at the west approach slab of the Des Plaines River Bridge in Joliet, Illinois at approximately Station 37+89 and extends in an easterly direction to the opposite approach slab at approximately Station 60+05. The project also consists of local roadway improvements under the Des Plaines River Bridge, which includes Lucas Street, Water Street, River Street, and Railroad Street/US Route 6.

DESCRIPTION OF PROJECT

The work consists of the replacement of the Des Plaines River Bridge including the realignment and reconstruction of the mainline pavement and related roadway elements, cross-road reconstruction, installation of an enclosed storm sewer system with drainage structures, detention ponds, earth excavation and embankment grading, installation of retaining and noise abatement walls, barrier and moment slab construction, bridge replacement, roadway lighting, ITS implementation, erosion and sediment control, landscaping, traffic control and protection, navigation lighting, traffic signals, detour routing, building removals, pavement marking and signing, and other related roadway items required to complete the project as indicated in the contract documentation.

PRE-BID SITE INSPECTION OF OZINGA PROPERTY

The Ozinga Property, located at 504 Railroad St in Joliet will be open for Contractor's inspection on February 11, 2026, between 9:00 AM and 12:00 PM local time. A representative of the State will be on hand during this stated time period. In the event the date or time is not suitable, an alternative inspection date and time can be arranged with IDOT's Bureau of Traffic Operations/Programs at 847-705-4424.

COOPERATION BETWEEN CONTRACTORS

The following should be added to Article 105.08:

The Department reserves the right to have work performed by other contractors and by Department forces and to permit public utility companies and others to perform work during the progress and within the limits of or adjacent to the work. The Contractor shall conduct its work in a manner and shall cooperate with such other parties to cause as little interference as possible with such other work and as the Department may also direct. If there is a difference of opinion as to the respective rights of the Contractor and others doing work within the limits of or adjacent to the work, the Engineer will decide the order and coordination of the work. The Engineer's decision shall be final and binding on the Contractor. The Contractor shall make no claims against the Department for additional compensation due to delays or other conditions created by the operations of such other parties.

Coordination with Other Contractors. The Contractor is advised that certain operations will involve coordination with department personnel and contractors currently performing work on or adjacent to this project for the Department and other agencies. The Contractor shall cooperate to the fullest extent with the Department and the contractors working on adjacent projects in compliance with Articles 105.07 and 105.08 of these Specifications.

The Contractor shall submit to the Engineer a daily work schedule for the purpose of coordinating the Contractor's activities for the next working day. The daily work schedule must be submitted by 3:00 PM the day prior. This schedule is necessary and shall be used by the Engineer to schedule inspections, material testing and checking of layout as part of the following day's work. Failure to submit a schedule may result in uninspected work and therefore considered unacceptable.

The daily schedule shall include the Contractor's or sub-contractor's planned work for that day including the location, description, scheduled work hours, and pay items of work to be performed. The schedule shall also include any material testing requests, layout check requests, and all traffic control measures to be implemented for that day's work.

The Department and the Engineer shall be notified in writing by the Contractor at least 48 hours prior to the start of any operation requiring cooperating with others. All other agencies, unless otherwise noted, will be notified in writing by the Contractor ten days prior to the start of any such operation. The Contractor shall make no claims against the Department for additional compensation due to delays or other conditions created by the operations of such other parties.

COORDINATION WITH ADJACENT AND/OR OVERLAPPING CONTRACTS

This contract abuts and/or overlaps with other concurrent contracts listed below. Each contract includes work items requiring close coordination between the various Contractors regarding the sequence and timing of execution of work items. This contract also includes critical work items that affect the future staging of traffic and completion dates of other contracts. These critical items along with completion dates are listed after each contract.

Will County Laraway Road Reconstruction and Widening project from US 52 to Cherry Hill Rd

Critical items affecting the above contract: Detour Coordination
Letting Date: May 2026

The Contractor is advised to coordinate with Will County and the Contractor to obtain the construction schedule of the above contract to incorporate the detour routes between 62R23 and the above contract.

Contract 62R22 -- I-80 at Center Street Interchange

Critical items affecting the above contract: MOT Coordination
Completion Date: October 31, 2028

Contract 62F94 -- I-80 at Chicago Street Interchange

Critical items affecting the above contract: MOT Coordination
Completion Date: October 31, 2028

Contract 62R21 & 62U89, 62X99, and 62Y00 -- Building Demolition

The completion date for contract 62R21, 62R89, 62X99, and 62Y00 shall be prior the beginning of contract 62R23 construction.

Contract 62Y06 – Tree Removal Contract

The completion date for contract 62Y06 shall be prior the beginning of contract 62R22 construction.

Contract 62R27 – Eastbound and Westbound I-80 (Houbolt Road to Joliet Junction Trail)

Contract 62R27 will furnish, install, maintain, relocate and remove a Smart Traffic Monitoring System for the I-80 corridor, including within these Contract limits. This system will include:

- Vehicle Detection Devices at approx. ½-mile spacing
- Portable Video Tower Stations at approx. ½-mile spacing
- Portable Changeable Message Signs (PCMS) at approx. 1-mile spacing and at existing Dynamic Message Sign (DMS) locations

The devices are located in the approaches to the Work Zones and within the Work Areas until the completion of Contract 62R27.

The Contractor shall coordinate and provide access to the 62R27 Contractor for the relocations, maintenance and removal of the devices. The Contractor shall provide written notification to the 62R27 Contractor a minimum of 14 calendar days prior to a device needing to be relocated.

The Contractor may have to temporarily widen embankments with sandbags or other temporary material to properly install the smart work zone devices on a level surface. The costs associated with temporarily widening embankments and restoring the embankment upon completion shall be according to Article 109.04 of the Standard Specifications

Any damage to the devices caused by the Contractor shall be repaired to the satisfaction of the Engineer.

Contract 62W64 - Intelligent Transportation Systems (ITS) Integration

Critical items affecting the above contract: The ITS Integration Contract will furnish and install ITS wiring and devices within the Contract Limits. The Contractor shall coordinate and provide access to the Work Areas to the ITS Integration Contractor to complete their work. Completion Date: April 30, 2029

Contract 60P55 - Various Moveable Bridges, Local Centralized Control and Operation

Critical items affecting the above contract: US-6 Moveable Bridges Fiber Relocation

IDOT Annual Bridge Inspections – The annual inspection of the I-80 over Des Plaines River bridges will be performed by the Department or its consultant in April / May of each year. The Contractor shall coordinate with the Department and make MOT and construction activity modifications to accommodate the scheduled inspection and provide the necessary daily lane closures for the inspection of both WB and EB directions. It is anticipated the inspections will be performed over a four-day period for each direction of travel and will occur in years 2026, 2027, and 2028. The cost for coordination, modifications required to MOT and construction activities, and installation and removal of daily lane closures (estimated 30 total) shall be included in the cost of Traffic Control and Protection (Expressways).

WINTER/LOW AIR TEMPERATURE WORK

No adjustment will be made in the contract unit prices for any concrete if winter or low air temperature work is necessary to meet the required completion dates specified in the contract.

WORK RESTRICTIONS DUE UNITED STATES COAST GUARD PERMIT

The Contractor is restricted from entering the Des Plaines River and/or any waters of the US until the permit is obtained from the United States Coast Guard, which is anticipated to be received on 9/1/26.

CONSTRUCTION ACCESS PLAN

Thirty days prior to the start of construction, the Contractor shall prepare a construction access plan that utilizes state and/or local owned roadways adjacent to or within the proposed contract work zone areas, for review and approval by the Engineer. The construction access plan shall be coordinated with the respective local agencies and adjacent Contractors, while accommodating suggested maintenance of traffic plans as well as the respective IDOT specifications and standards.

The construction access plan must include a schematic diagram of the construction access points and routes taken by construction vehicles and equipment throughout each of the respective stages of construction. In addition, the construction access plan must outline procedures and requirements for construction access entry and exit points, construction work zone perimeter controls, a plan for beam and material delivery, traffic control, surveillance, local construction time restrictions, and worker safety training.

Construction access and/or construction activities shall not interfere with access for residences and/or community facilities throughout construction. Residential and community facility access shall be maintained at all times. Temporary detours will be utilized as needed and coordinated with impacted local municipalities prior to their use. IDOT in coordination with local municipalities will establish procedures to notify the community in advance of detours and other changes to traffic patterns, including impacts to on-street parking.

The Contractor shall reference the suggested maintenance of traffic plans and relevant special provisions regarding the following traffic control items:

1. Detours or other changes in local access needed to maintain access to residences and community facilities during construction.
2. Local roadway rehabilitation both in advance of construction and after construction, as needed.
3. Adjustments to signal timing on state routes. Prior to construction, the Contractor will adjust signal timing on state routes to further enhance traffic flow on these major arterials, and to encourage though traffic to continue to use major state routes and arterial roadways.
4. The Contractor will coordinate with local municipalities on changes to signal timing during construction and local roadway repaving that may be needed in advance and following construction.

The following commitments must be adhered to by the contractor:

- Primary construction access on the west side of the Des Plaines River will use Center Street from I-80.
- Water, Shelby, and Patterson Roads will be used for secondary access points.
- Construction access will be prohibited on Lucas Street west of Water Street.

The construction access plan shall be approved by the Engineer prior to starting construction activities. Any proposed changes to the construction access plan must be approved by the Engineer. This work shall not be paid for separately but included in the cost for Traffic Control and Protection (Special).

NOISE COMPLIANCE

This work shall be according to Article 107.35 of the Standard Specifications, with the following additions. Unless specifically approved in writing by the Engineer, no work that could be considered a noise nuisance, including but not limited to demolition activities, shall be performed during the period of 10 p.m. to 7 a.m.

When the Contractor requests to modify or deviate from the requirements of Article 107.35, the Contractor shall identify the intended construction activities, include noise mitigation techniques to be taken to monitor and minimize noise, and explicitly state the anticipated duration that noise levels will be elevated. All approved deviations shall be reported to the Department's designated construction outreach specialist in advance of starting the affected work activities. A minimum of five days' notice shall be provided for requested deviations which will require construction activities between 10 p.m. to 7 a.m. on three or more consecutive nights. Vehicle noise, including horns, back up warning signals and other abrupt noises, shall be minimized

The Engineer may elect to shut down any nuisance activity that was not previously approved or does not meet the Contractor obligations identified in the approval request.

This work will not be paid for separately. All obligations described herein are included in associated pay items. No extension of the completion date, waiver of penalties, or claims shall arise from any Contractor activity shut down enacted due to deficiencies described herein.

CONSTRUCTION VIBRATION MONITORING

Description. This work consists of monitoring buildings, structures, and utilities susceptible to vibration from construction activities. Additional monitoring, as determined by the Engineer, is included in the cost of this item.

The Contractor shall furnish monitoring equipment and all equipment and labor necessary to install and monitor adjacent buildings, and structures, for vibration. The Contractor shall designate as a minimum, two monitoring points at four locations for building and structure monitoring. In addition to the above, a minimum of two monitoring points on each seawall (west and east sides of Des Plaines River) within 30 feet of adjacent construction shall be designated for monitoring.

The proposed locations of vibration and displacement monitoring points are to be submitted to the Engineer for approval prior to the start of construction. The Contractor is solely responsible for determining the means, methods and sequences of construction, and may identify additional locations beyond those listed above for monitoring vibration. The cost for monitoring the additional locations identified by the Contractor is included in the cost for Construction Vibration Monitoring.

The Contractor shall coordinate with the Engineer and building, structure and utility owners to ensure the proposed monitoring locations are acceptable to the owners and accessible to both the Contractor and the Engineer at all times.

Vibration Monitoring. The Contractor shall employ the services of a qualified seismic monitoring consultant as approved by the Engineer. Monitoring point locations and frequency of data

collection shall be as determined by the Contractor's Consultant and are subject to the approval of the Engineer. All vibration monitoring devices (seismographs) shall be attached to the floor of the buildings or structures being monitored. Vibration monitoring shall be a continuous and uninterrupted process and must be in place prior to the start of any construction activity. All vibration monitors for the project shall be programmed to actuate an alarm when the threshold value or limiting value is reached. The alarm notification protocol shall consist of the immediate dialing of mobile telephone numbers of the Engineer (or his/her authorized representative) and the Contractor.

Response Values. The Contractor shall establish the response values, including both the Threshold Value and the Limiting Value, for each building and structure.

- Threshold Value: A threshold value is a warning value. If threshold values are achieved, the Contractor must stop the work, determine the best course of action to reduce the vibrations and implement corrective actions to the design and/or construction methods to avoid reaching limiting values.

- Limiting Value: A limiting value is an alarm value. If limiting values are achieved, construction work shall stop immediately, the adjacent structures shall be surveyed for signs of additional distress from pre-construction surveys, and corrective action shall be taken to revise the design and/or construction methods to protect the adjacent structures from damage.

If the threshold value or limiting value is reached, all vibration inducing work shall be stopped. The Contractor shall establish the horizontal/vertical distance limit requirements between the vibration monitoring point location and the source of the vibration-inducing work to determine which construction operations must be stopped. Work may resume upon implementation of the action plan and with the approval of the Engineer.

If the work is stopped because the threshold value or limiting value is reached there will be no additional compensation nor any additional time extensions granted. Any change in construction methods to avoid reaching the limiting value will not be grounds for additional compensation.

Displacement Monitoring. The Contractor shall provide the exact horizontal and vertical location of the displacement monitoring points to the Engineer prior to commencement of any construction activities. The data shall be presented in a tabular format and shall include horizontal positions (stations and offsets or Northing and Easting) as well as vertical elevation to a minimum of 0.01'.

Monitoring Frequency. During the beginning phase of each stage of demolition and construction, displacement monitoring shall be performed at the beginning and end of each workday at a minimum. These surveying intervals are the minimum required, and more frequent monitoring may be required by the Engineer as field conditions warrant.

If after a period of time resulting movement that are small in magnitude, monitoring frequency can be reduced to a frequency as established by the Engineer. If resulting movements become random in nature and/or large in magnitude, the frequency shall be increased as directed by the Engineer. The frequency of readings will be dictated by the phase of current construction but must be sufficient to detect serious movements so that corrective measures can be initiated immediately.

Monitoring readings for displacement shall be dated, recorded, and reported to the Engineer the same day the readings are taken. During demolition within 100 feet of a vibration monitoring point location, the Contractor shall report the results of the largest amplitude vibration to the Engineer on the same day. At all other times the vibration report shall be submitted weekly.

Construction Requirements. Before the start of construction, the Contractor will complete a preconstruction inspection of each of the adjacent structures and utilities listed above. Readily visible conditions and distress such as unusual cracks in concrete or masonry, obvious signs of leakage, settlement, etc. will be photographically recorded and documented. The Contractor will also make a video survey to provide a more complete general record of conditions in those areas. The interior survey shall include the first floor and basement (if existing) within 30 feet of the exterior wall closest to the project site and the two adjacent walls. The survey will be performed from grade without the use of magnification devices. At the conclusion of the pre-construction field work, a report shall be prepared by the Contractor presenting the observed existing conditions and shall include written, videotaped and photographic documentation. This record shall then be used by the Contractor as a basis for comparison to distresses that may occur after the survey. The locations of the displacement monitoring points shall be included in the report.

The Contractor will use the preconstruction report to aid in the selection of the displacement monitoring points. The Contractor must devise means and methods of construction that will not reach the established vibration response values. The Contractor is advised that particularly careful demolition requirements will be required at the edges of the excavation where the property line is immediately adjacent to the area of construction.

Corrective Measures. If, at any time, resulting vibrations meet or exceed the established response values or cause damage to facilities or property, the Contractor shall stop work immediately and initiate the necessary corrective measures as approved by the Engineer. Damage to the adjacent structures as a result of construction activity shall be corrected by the Contractor. No additional compensation shall be due to the Contractor for repairing these facilities. The Contractor will not be entitled to any claim of damages or delay for stopping the project construction activities to make corrective measures.

Submittals
The Contractor must submit a vibration and displacement control plan to the Engineer for approval. The plan must be approved by the Engineer and utility owner prior to the commencement of work. The plan must include, but is not limited to the following:

- Locations of all vibration monitoring points (vibration and displacement), including property address and property contact information.
- Procedure and outline for how the data will be provided to the Engineer.
- Product Data: Type of vibration monitor to be used. Include construction details, material descriptions, performance properties, dimensions of individual components and profiles.
    - List of the Contractor’s equipment to be used during demolition and construction operations.
    - Contact information for the vibration monitoring consultant and their staff.
    - Instrumentation plans, schedules, and details, including:
    - An instrumentation plan showing the type, location, and installation details of all instruments to be installed.
    - Daily monitoring reports.

  - Timetable that outlines the duration that each monitoring point will be maintained and checked.
  - Reports of all monitoring (at the required frequencies listed above) including a description of the associated construction activity. The reports shall include a tabular and graphical summary of all readings to date.
  - Submit at least 14 calendar days before construction begins.
- Qualification Data for the following:
  - Firm(s) installing instrumentation and collecting readings. Firms shall have experience installing and reading similar instrumentation on at least five projects over the last five years.
- Response value report establishing the response values for the threshold value and the limiting value for each building, structure and utility. Submit at least 14 calendar days before construction begins a "response plan" to detail how the Contractor will address any concerns with vibration or displacement. Describing immediate potential changes to construction activities/means and methods if response values are reached during construction.

Additional submittals include:

- Weekly reports of all vibration monitoring locations.
- Sample monitoring control plan for the Engineer to review and approve as a format for the formal Monitoring Report.

Method of Measurement. The work under this item as described herein will not be measured separately but will be paid for as lump sum.

Basis of Payment. This work will be paid at the contract unit price per LUMP SUM for CONSTRUCTION VIBRATION MONITORING, which payment shall be full compensation for all work described herein and as directed and approved by the Engineer.

WINTER WORK

No adjustment will be made in the contract unit prices for any concrete if winter work is necessary to meet the required completion dates specified in the contract.

CITY OF JOLIET REQUIREMENTS

Notification Of Residents. It shall be the responsibility of the Contractor to notify the residents a minimum of 24 hours in advance of paving operations on the respective streets/alleys. Notification shall consist of a "flyer" with information regarding the priming/paving to be hand delivered to each property affected.

This work shall not be paid separately but shall be considered included in the cost of the contract. The Contractor shall be responsible for all damage to public or private property done during paving operations. Failure to perform the above work satisfactorily shall result in the Contractor being liable for any damages attributable to non-notification.

Water Usage. The Contractor shall rent a water meter with a wireless read to record all water taken from the City's water distribution system. The City will issue monthly water bills based on the meters current read with the City's current utility rates. Upon completion of work, the Contractor shall return the water meter and submit payment to the City for the total volume of water supplied. A deposit is required at the time of pickup.

The Contractor shall not connect to any of the City's water distribution system without prior approval by the City. Connection may only be made at hydrants designated by the City for their use. The Contractor shall provide a list of hydrants they anticipate using for the City's review and approval.

The Contractor will be charged for water usage and meter rental in accordance with the rates found at https://www.joliet.gov/goverment/departments/public-utilities/bulk-water#Hydrant%20meter%20rental Rates correspond to non-resident commercial rates.

The Contractor shall be responsible for any damage to the City's water distribution system that are caused by the securing of water by the Contractor.

Water usage by the Contractor shall not be paid for separately but shall be included in the contract.

Protection of Property and Surface Structures. Trees, shrubbery, fences, poles, right-of-way pins, and all other property and surface structures shall be protected during construction operations unless the Engineer authorizes their removal for purposes of construction. Any fences, poles, or other man-made surface improvements, which are moved or disturbed by the Contractor, shall be restored to the original conditions, after construction is completed, at the Contractor's expense. Any trees, shrubbery, or other vegetation, which are approved for removal or ordered for removal by the Engineer in order to facilitate construction operations, shall be removed completely, including stumps and roots, by the Contractor. Responsibility for any damage or claims for damage caused by construction operations to shrubbery or other landscape improvements, which were not authorized for removal by the Engineer, shall be assumed by the Contractor.

Interruption To Utilities. The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures may be determined. Prior to proceeding with trench excavation, the Contractor shall contact all utility companies in the area to aid in locating their underground services.

The Contractor shall take all reasonable precautions against damage to existing utilities. However, in the event of a break in an existing watermain, gas main, sewer or underground cable, the Contractor shall immediately notify the responsible official of the organization operating the utility interrupted. The Contractor shall lend all possible assistance in restoring services and shall assume all cost, charges, or claims connected with the interruption and repair of such services.

Structure Protection. Temporary support, adequate protection, and maintenance of all underground and surface structures, drains, sewers, and other obstructions encountered in the progress of the work shall be furnished by the Contractor at their expense and under the direction of the Engineer. The structure, which may have been disturbed, shall be restored to its prior condition upon completion of the work.

Storm Sewer Post Televising. All storm sewers located on City of Joliet owned roads shall be televised.

The Contractor shall provide the Department of Public Works a post construction, PACP coded, color video record and a type written transcription of the internal inspection of the newly constructed storm sewer system. This shall be submitted prior to final approval and acceptance of the system. Video inspection must be coded by a PACP certified technician. All public and private lines equal to and larger than 8" in diameter shall be televised.

All cleaning or televising operations must be coordinated prior to the commencement of the work with the Department of Public Works. The storm sewer pipe must be televised with 95% or more of the storm pipe visible. Any cleaning operations must be accompanied with a vactor at the downstream manhole to ensure no debris passes downstream. All storm sewer, defects, and observations must be coded in the television report. When the proposed storm sewer system is to connect to an existing storm sewer system abutting the project limits, the existing storm sewer must also be televised at least 100 feet past the new connection and reported. The Contractor shall coordinate the televising of existing contiguous sewers with the Director of Public Works. Costs associated with this work shall be included in the cost of storm sewer pipe installation.

Video inspection and database shall be fully compatible with PACP V 7.0.2 format with all header information filled out. Each video inspection shall be labeled with USMH-DSMH. The Contractor must submit the PDF reports, video inspection, and Microsoft Access V07 database (all data files and tables shall be linked to the pipe segment ID number) to the City of Joliet.

The cost for storm sewer post televising shall be included in the respective storm sewer pay items requiring storm sewer post televising.

Sewer Flow Control: This work shall include control of sanitary sewer flow during construction activities. The Contractor shall be fully responsible for maintaining sewer service during these operations and shall not be allowed to backup or flood any sewer system user, building or property. The Contractor shall be solely liable for property damages that result from the work being performed.

During sewer cleaning operations, only 25% of the internal pipe diameter flow or "limited sewage flow" is acceptable. Flows shall be reduced by plugging, blocking, manually operating pump stations or bypass pumping. During sewer televising operations, only 5% of the internal pipe diameter flow is acceptable. During manhole installation, manhole rehabilitation, and point repairs, no flows will be allowed.

Since complete stoppage or bypassing of flow may be required during installation of new sewers, point repairs, and manhole rehabilitation work, the Contractor may be required to submit drawings and complete design data showing methods and equipment to be utilized in bypass and dewatering operations. The bypass plan shall include the following information:

1. Location of temporary sewer plugs and bypass discharge lines indicated on plans
2. Capacities of pumps, prime movers, and standby equipment
3. Type of standby power source
4. Traffic control plan

When pumping and bypassing is required, the Contractor shall furnish all temporary pumps, conduits, and other equipment to divert the flow of sewage around the sewer section in which work is to be performed. The bypass system shall have sufficient capacity to handle existing flow

plus additional flow that may occur during peak flow periods or from precipitation. The Contractor shall construct bypass system of material to prevent leakage during pumping operation.

The Contractor shall equip all engines with mufflers and/or enclose to keep noise level less than 50 decibels, or 10 decibels above ambient noise levels when measured at building closest to noise source.

The Contractor shall maintain sufficient labor, equipment, and materials onsite to ensure continuous and successful operation of bypass and dewatering systems including the following:

1. Keep standby pumps fueled and operational at all times
2. Maintain onsite sufficient number of valves, tees, elbows, connections, tools, sewer plugs, piping, and other parts or system hardware to ensure immediate repair or modification of any part of system as necessary.
3. Provide piping, joints, and accessories designed to withstand at least twice the maximum system pressure or 50 psi, whichever is greater.
4. In areas where flows are bypassed, all discharge flow shall be returned to the sanitary sewer. No bypassing to ground surface, receiving waters, storm drains, or bypassing which results in groundwater contamination or potential health hazards shall be permitted.

In the event sewage is released into a storm drainage system or street, the Contractor shall immediately stop the release, notify IEPA, and take all necessary actions to clean up and disinfect spillage to satisfaction of the Engineer.

During plugging or bypass pumping operations, the Contractor shall utilize sewer plugs specifically designed so that all or any portion of sewage can be released. During sewer flow control operations, reduce flow to comply with requirements as describe above. After cleaning, inspection, installation, or rehabilitation work has been completed, restore the flow to normal. All plugging, bypass pumping and sewer flow control operations shall be considered incidental to the Contract and shall not be compensated for separately.

The cost for sewer flow control, including all labor and equipment required shall be included in the respective pay items requiring sewer flow control.

GIS General Requirements. The Contractor is to provide real-time utility and infrastructure asset data for utilities owned by the City of Joliet, for delivery into the City of Joliet's geographic information system (GIS) for the water distribution system and the sanitary sewer system. The Contractor is required to utilize GPS equipment to obtain selected project datapoints, assets, and real-time as-built utility information during construction. This work will not be paid for separately but shall be included in the contract unit price of the pay item for which it is required.

Equipment Requirements: Equipment requirements for data collection shall include GPS rovers that meet the minimum accuracy and real-time GIS integration requirements. Equipment used to collect this data shall be properly calibrated and capable of meeting a minimum accuracy of 10 mm horizontally and 20 mm vertically (Trimble R2, DA2, or equal).

The Department of Public Utilities carries some inventory of these GPS rovers that are available to contractors completing work in the city as inventory allows. See the City GPS Loaner Policy for additional information.

In addition to the GPS rover, a dedicated smart phone or tablet with 5G cellular connectivity to be provided by the Contractor is needed for the GPS unit to communicate. A training video will be provided showing how to operate the GPS unit; however the City will not provide technical support of operation of the GPS units. If support is needed, contractors can hire a GIS consultant approved by the City who is knowledgeable of the process.

The GPS equipment shall integrate and utilize the ESRI ArcGIS field maps application (downloadable from App Store and Google Play) with a city provided project map. The Contractor will provide real-time connectivity and data updates using a cellular data connection with the GPS unit. GPS units must be able to deliver real time, cellular networked data to an ESRI ArcGIS online portal established by the City. The Contractor will have access to collected data and can utilize this GIS information to assist them throughout the project. The Contractor will use a city provided ESRI license.

Setup and Collection Requirements: Contractor shall obtain survey data during or immediately after installation of the utility. For open trench and exposed water main or sewer utilities, data points shall be obtained at intervals of 50 feet and at directional changes with a minimum of two points. Utilities that are bored (trenchless) will be surveyed at the exposed pit locations at both ends and along the boring route with depths manually inputted every 10 feet from the above ground locating devices. For water and sanitary services, data points shall be obtained at intervals of 10 feet and at directional changes with a minimum of two points.

Data collection with the GPS device shall be completed by the Contractor on a real-time basis as the project is being constructed. The Contractor shall verify that data is being collected in real-time in the provided GIS portal (simple website link) on a regular basis, no less than two times per day.

Contractor shall have a surveyor establish GPS control points, and the Contractor shall check in daily (beginning of day) to verify and maintain calibration of the device.

At least 95% of collected data must meet GPS accuracy requirements. Data not meeting this standard will be required to be exposed and surveyed again until this standard is met.

Data Collection Features: The following features are required to be collected by the Contractor during construction for the purpose of delivering GIS digital as-builts:

- Water main, services, fittings, valves, hydrants, corporation stops, curb stops, structures, b-boxes, and related features (horizontal, vertical elevation, top of pipe, sizes, and model data)
- Proposed sanitary sewer, services, manholes, cleanouts, and related features (horizontal, vertical elevation, top of pipe, sizes, model data)
- Exposed sanitary services (horizontal, vertical elevation, sizes, regardless of type)
- Connections to existing utilities
- Any other proposed or modified underground utility work or related feature.

Final GPS survey code and data input requirements will be provided at project start-up.

Submittals: Digital data collection will be conducted in real-time during construction and visible within the ArcGIS Online portal. No final GIS package delivery will be required of the Contractor (final as-built survey is still required).

The City will finalize data collection by completing final utility connected linework for the purpose of delivering GIS feature classes or shapefiles compatible with ESRI. Utility lines connected shall include all identified attributes. If needed, the Contractor will assist the City and clarify final pipe data and connections within GIS.

Data Acceptance: At time of project completion, the City will verify that all data has been collected satisfactorily. Failure to do so will be grounds for not accepting the project or releasing the surety until the data is satisfactory. If, at any time, the Contractor fails to perform this work, the City reserves the right to utilize an outside provider and charge the work to the project owner prior to releasing the surety and/or accepting the project.

The cost of providing GIS entry, including all labor and equipment required, shall be included in the respective pay items requiring GIS entry.

Sanitary Test Requirements: Inspection of sanitary sewer improvements throughout the City of Joliet will be performed to ensure that the project is being constructed in accordance with the approved final engineering plans, and to determine if minimum construction and material standards are achieved. If the Contractor desires to deviate from the approved plan or does not feel that minimum construction standards are being satisfied, he/she is responsible for contacting the City immediately. The City of Joliet will not accept a substandard product and will not be responsible for any additional cost incurred by the contractor as a result. The following tests shall be required for sanitary sewer improvements in the City of Joliet. An authorized representative of the City of Joliet shall supervise all tests. All tests shall be scheduled a minimum of 48 hours in advance.

Air Test: All sanitary sewers shall pass an air test in conformance with Section 31 of the “Standard Specifications for Water and Sewer Construction in Illinois”. The sewer shall be tested at an initial pressure of 3.5 psig above the level of the ground water, and the time for a pressure drop of 1 psi shall be determined. The time for the pressure drop to occur shall not be less than that specified by the “Standard Specifications for Water and Sewer Construction in Illinois”.

Pressure Testing: All sanitary force mains will be tested utilizing the “Standard Specifications for Water and Sewer Construction in Illinois” specifications.

Vacuum Testing: All sanitary manholes (public and private) shall be tested for leakage by vacuum testing in accordance with ASTM C-1244. One copy of the written inspection reports shall be furnished to the City of Joliet.

Deflection Test: All PVC sanitary sewers shall pass a mandrel test in conformance with Section 31 of the “Standard Specifications for Water and Sewer Construction in Illinois”.

Televising: The Contractor shall provide the Department of Public Utilities a post construction PACP coded, color video record and a type written transcription of the internal inspection of the newly constructed sewer system. This shall be submitted prior to final approval and acceptance of the system. Video inspection must be coded by a PACP certified technician. All public and private lines equal to and larger than 8” in diameter shall be televised. All cleaning or televising operations must be coordinated prior to the commencement of the work with the Department of Public Utilities. The sewer pipe must be televised with 95% or more of the sanitary pipe visible. Any cleaning operations must be accompanied with a vactor at the downstream manhole to

ensure no debris passes downstream. The Contractor must rotate the lens of the camera to look at all services. All service connections, defects, and observations must be coded in the television report. When the proposed sanitary sewer system is to connect to an existing sanitary sewer system abutting the property, the existing sewer must also be televised and reported. The Contractor shall coordinate the televising of existing contiguous sewers with the Director of Public Utilities. Costs associated with this work shall be borne by the contractor. Video inspection and database shall be fully compatible with PACP V 7.0.2 format with all header information filled out. Each video inspection shall be labeled with USMH-DSMH. The Contractor must submit the PDF reports, video inspection, and Microsoft Access V07 database (all data files and tables shall be linked to the pipe segment ID number) to the City of Joliet.

Acceptance Inspection: Prior to City acceptance of public sewers, the City of Joliet Public Utilities Department must inspect and approve the improvement. A punch list of items that require corrective action will be generated, and the contractor will coordinate resolution efforts and schedule a re-inspection. Following approval, the acceptance process may proceed. Acceptance inspections will be coordinated through the Department of Public Utilities.

Maintenance Inspection: Prior to the release of a maintenance guarantee, the City of Joliet Department of Public Utilities will re-inspect and approve the condition of the sewer improvement. This inspection is performed after a minimum of one year, at the contractor's request, or following notification from the financial lending institution that the expiration date for the maintenance letter of credit is approaching. A punch list of items that require corrective action will be generated, and the contractor will coordinate resolution efforts and schedule a re-inspection. Following approval, the maintenance guarantee will be released. The release of the maintenance guarantee shall be coordinated with the Public Works and Utilities Department.

The cost for sanitary test requirements, including all labor and equipment required, shall be included in the respective pay items requiring sanitary test requirements.

Water System Inspection: The mandatory inspection of water main improvements throughout the City of Joliet will be performed to ensure that the project is being constructed in accordance with the approved final engineering plans, and to determine if minimum construction and material standards are achieved. If the Contractor desires to deviate from the approved plan or does not feel that minimum construction standards are being satisfied, he/she is responsible for contacting the City immediately. The City of Joliet will not accept a substandard product and will not be responsible for any additional cost incurred by the Contractor as a result.

NOTE: Only City of Joliet personnel may operate public water main facilities. The Contractor is not permitted to open, close, or adjust any public water valve for any reason. If an emergency situation arises, the Contractor shall contact the City of Joliet Public Utilities Department immediately.

Water System Testing Requirements. A representative of the City of Joliet Public Utilities Department shall witness all tests. All tests shall be scheduled 48-hours in advance. The following is a list of tests, which shall be required for water distribution system improvements in the City of Joliet. Water testing procedures can change, so the Contractor should discuss the testing process with field staff, prior to construction to see if the requirements are accurate.

1. Install new water main but do not install corporation stops, service lines, curb stops, or service boxes; conduct pressure test, leakage test; and disinfection of new water main;

flush main; after acceptance for use put main into service (while existing main continues to function): Install corporation stops, curb stops, and new service boxes; and connect new service box to existing service lines

2. After a water main has been installed and before the water main has been placed into operation, the Contractor shall “bag” or cover fire hydrants. The bag shall not be removed until after the main has become operational. All hydrants shall be placed to face the road.

3. Hydrostatic tests:
   - Where any section of a water line is provided with concrete thrust blocking for fittings, do not make hydrostatic tests until at least five days after installation of the concrete thrust blocking, unless otherwise directed by the Engineer.
   - Devise a method for disposal of wastewater from hydrostatic tests and for disinfection, as approved in advance by the Engineer.

4. Pressure tests:
   - Subject the new water mains and service lines, including valves and hydrants, to a hydrostatic pressure of 150 psi, meeting AWWA C600 requirements.
   - Test pressure shall not vary by more than ±5 psi for the duration of the test.
   - Carefully examine exposed pipe, joints, fittings, and valves.
   - Replace or remake joints showing visible leakage.
   - Remove cracked pipe, defective pipe, and cracked or defective joints, fittings, and valves. Replace with sound material and repeat the test until results are satisfactory.
   - Make repair and replacement without additional cost to the Owner.
   - Use only solid stainless full-body repair clamps as approved by the Engineer.

5. Leakage test:
   - Conduct a metered leakage test after the pressure test has been satisfactorily completed.
   - Duration of each leakage test: Two hours.
   - Subject the new water mains, including valves and hydrants, to a hydrostatic pressure of 150 psi.
   - Test pressure shall not vary by more than ±5 psi for the duration of the test.
   - Install water meter approved by the Engineer.
   - Provide double check valve assembly between water meter and existing water main.
   - Maximum allowable leakage: As recorded by a meter approved by the Engineer, with leakage to not exceed the number of gallons per hour (gph) as determined by the following formula:
     - gph = LD (P½)/133,200
     - in which: L = Length of pipe test, in feet
     - D = Diameter of water main, in inches
     - P = Average pressure, in pounds per square inch (gage)
   - Should any test of pipe disclose leakage greater than the maximum allowable amount, locate and repair the defective joint or joints and then repeat the 24-hour metered leakage test until the leakage is within the specified allowance at no additional cost to the Owner.

6. Time for making test:

- Except for joint material setting, or where concrete reaction backing necessitates a 5 day delay, pipelines jointed with rubber gaskets, mechanical, or push-on joints, or couplings may be subjected to hydrostatic pressure, inspected, and tested for leakage at any time after partial completion of backfill.
- Perform the pressure and leakage tests satisfactorily prior to requesting the Engineer to witness the official tests.
- Notify the Engineer at least 48 hours prior to the time of the requested official tests.
- Depending on traffic conditions, public hazard, or other reasons, the Engineer may direct when to conduct the tests and may order the tests to be made in relatively short sections of water mains.

The cost for water system testing, including all labor and equipment required shall be included in the respective pay items requiring water system testing.

Water System Inspection Requirements: The following are the required inspections for any new water system enhancement:

1. Notice: The Contractor shall contact the City of Joliet Public Utilities Department a minimum of 48-hours in advance of a scheduled inspection.
2. Acceptance Inspection: Prior to city acceptance of a public water main, the City of Joliet Public Utilities Department must inspect and approve the improvement. A punch list of items, which require corrective action, will be generated, and the Contractor will coordinate resolution efforts and schedule a re-inspection. Following approval, the acceptance process may proceed. Acceptance proceedings will be coordinated through the Joliet Public Utilities Department.
3. Maintenance Inspection: Prior to the release of a maintenance guarantee, the City of Joliet Public Utilities Department must inspect and approve the condition of the water main. This inspection is performed a minimum of one year from the date of city acceptance of the improvements. This will be at the Contractor's request or following notification from the financial lending institution that the expiration date for the maintenance letter of credit is approaching. A punch list of items, which require corrective action, will be generated, and the Contractor will coordinate resolution efforts and schedule a re-inspection. Following approval, the maintenance guarantee will be released. The release of the maintenance guarantee shall be coordinated with the Public Works and Utilities Department.
4. B-Boxes: Upon completion of the project, the B-boxes will be adjusted to grade and checked to see if they are operational without altering the shutoff key. Locations of the B-box with GPS point and measurements to the property lines shall be supplied to the Public Utilities Department and shown on the as-built plans for the project. The Public Utilities Department will issue a charge for locating B-Boxes. B-box locations shall be stamped on the curb/sidewalk with a "W".

The cost for water system inspection, including all labor and equipment required shall be included in the respective pay items requiring water system inspection.

RAILROAD COORDINATION

The Department has identified the demolition of the stage 1 bridge over CSX Railroad as a critical path item for this project. In addition to the requirements described in the individual railroad permit, the Contractor shall complete and submit the following within the prescribed time periods set forth below.

Requirement No. 1: Submit to the Engineer to obtain the necessary approvals within ten calendar days after contract execution for the following:

1. Demolition Plan for the Stage 1 I-80 Bridge CSX railroad
2. Railroad Right-of-Entry Permit
3. RR Protection Liability Insurance
4. Any additional railroad permit requirements described in the special provisions needed for demolition.

Requirement No. 2: Submit to the Engineer to obtain the necessary approvals within thirty (30) calendar days after Contract Execution for the following:

1. In-stream-work plans for work in the DesPlaines River

WORK RESTRICTIONS

Prior to the actual beginning and completion of the various stages of construction and traffic control and protection, the Contractor will be required to provide lane closures and barricade systems, for preparation work such as pavement marking removal, temporary lane marking, placing temporary concrete barrier, relocating existing guardrail, etc. These lane closures and barricade systems, including barricades, drums, cones, lights, signs, flaggers, etc., shall be provided in accordance with the details in the Plans and these Special Provisions and as approved by the Engineer.

The Contractor shall submit a schedule and Maintenance of Traffic Plan to the Engineer at least 30 days in advance of any stage changes, extended ramp closures, extended lane closures or full expressway closures.

The following work restrictions apply:

- Restriction No. 1: Compensatory storage along SB US-6 shall not be constructed during I-80 over Des Plaines River Bridge Pier 1 construction.
- Restriction No. 2: Resurfacing on US-6 shall start after the completion of I-80 over Des Plaines River Bridge Pier 1 construction.
- Restriction No. 3: Temporary ramp, shoulder, or lane closures will not be allowed, according to “KEEPING THE EXPRESSWAY OPEN TO TRAFFIC Special Provision”, On the weekend of the major races at the Chicagoland Speedway / Route 66 Raceway in Joliet. A minimum of two traffic lanes shall be provided to allow unencumbered traffic

along I-80 during the NASCAR race event. it is estimated that the race event will occur in late June/early July in 2026, 2027, and 2028, and additional events may be scheduled. The Contractor shall contact the Chicagoland Speedway to obtain actual race event dates at 888.629.7223. The Contractor will not be granted any additional compensation or extension of time for any delays incurred by these events.

- Commencement Date 1: The Contractor shall complete the switch to the stage 4 traffic configuration no earlier than October 1, 2027, to coincide with Contracts 62R22 and 62F94 traffic shift to their stage 4 traffic configurations.
- Commencement Date 2: The Contractor shall complete the switch to the stage 5 traffic configuration no earlier than January 2, 2028, to coincide with Contracts 62R22 and 62F94 traffic shift to their stage 5 traffic configurations.

The cost of this work will not be paid for separately but shall be considered included in the cost for Traffic Control and Protection (Expressways).

MAINTENANCE OF ROADWAYS (D1)

Effective: September 30, 1985 Revised: November 1, 1996

Beginning on the date that work begins on this project, the Contractor shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer but shall not include snow removal operations. Traffic control and protection for maintenance of roadways will be provided by the Contractor as required by the Engineer.

If items of work have not been provided in the contract, or otherwise specified for payment, such items including the accompanying traffic control and protection required by the Engineer will be paid for in accordance with Article 109.04 of the Standard Specifications.

STATUS OF UTILITIES (D1)

Effective: June 1, 2016 Revised: April 1, 2025

Utility companies and/or municipal owners located within the construction limits of this project have provided the following information regarding their facilities and the proposed improvements. The tables below contain a description of specific conflicts to be resolved and/or facilities which will require some action on the part of the Contractor to proceed with work. Each table entry includes an identification of the action necessary and, if applicable, the estimated duration required for the resolution.

Utilities To Be Adjusted. Conflicts noted below have been identified by following the suggested staging plan included in the contract. The company has been notified of all conflicts and will be required to obtain the necessary permits to complete their work; in some instances, resolution will be a function of the construction staging. The responsible agency must relocate, or complete new installations as noted below; this work has been deemed necessary to be complete for the Contractor to then work in the stage under which the item has been listed.

Pre-Stage

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
RR St/ US 6 Sta 214+54 25' RT. to Sta 221+43 25' RT.	Gas Line	Underground gas line (4") running along RR St/ US 6	Nicor	TBD
Kiep Avenue From Lucas Street to Dead End South of I-80	Gas Line	Gas Line (2") running along Kiep Avenue	Nicor	TBD
Duncan Street From River Street to Water Street	Gas Line	Gas Line (2") running along Duncan Street	Nicor	TBD
Water St. Sta. 304+59 27' LT to Sta. 304+59 19' RT	Gas Line	Gas Line (2") running across Water Street	Nicor	TBD
Water St. From Lucas St. to South St.	Gas Line	Gas Line (2") running along Water Street	Nicor	TBD
River St./ Lucas St. From River St. to Des Plaines St.	Gas Line	Gas Line (2") running along Lucas Street	Nicor	TBD
River St. From Water St. to Des Plaines St.	Gas Line	Gas Line (2") running along Water Street	Nicor	TBD
Des Plaine St. From South St. to Proposed Ramp A	Gas Line	Gas Line (4") running along Des Plaine Street and RW 7A	Nicor	TBD

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
Joliet St. Sta. 700+15 22' LT to Sta. 700+86 22' LT	Gas Line	Gas Line running along Joliet St	Nicor	TBD
Joliet St. Sta. 601+75 19' LT to Sta. 602+24 20' LT	Gas Line	Gas Line (2'') running along Joliet Street	Nicor	TBD
Water St. Alley South of I-80 to Lucas Street	Telephone Line	Underground telecommunication cable (1.75") crossing I-80	AT&T	TBD
River St./ Lucas St. Sta. 103+38 14' RT to Sta. 106+90 13' LT	Aerial Line	Aerial Line going along Lucas Street	ComEd	TBD
Duncan St. River St. to Des Plaine St.	Aerial Line	Aerial Line running along Duncan Street	ComEd	TBD
Kiep Ave. Lucas St. to Cul-de-Sac	Aerial Line	Aerial Line running along Kiep Avenue	ComEd	TBD
Des Plaine St. Duncan St. to Lucas St.	Aerial Line	Aerial Line running along Des Plaine St Street	ComEd	TBD
Alleyway Duncan St. to Lucas St.	Aerial Line	Aerial Line running along the alleyway between River Street and Kiep Avenue	ComEd	TBD
Alleyway Duncan St. to Lucas St.	Aerial Line	Aerial Line running along the alleyway between Kiep Avenue and Water Street	ComEd	TBD

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
River St. Duncan St. to Davis St.	Aerial Line	Aerial Line running along River Street	Comcast	TBD
Water St. Duncan St. to Davis St.	Aerial Line	Aerial Line running along River Street	Comcast	TBD
Duncan St. River St. to Water St.	Aerial Line	Aerial Line running along Duncan Street	Comcast	TBD
Kiep Ave. Lucas St. to Cul-de-Sac	Aerial Line	Aerial Line running along Kiep Avenue	Comcast	TBD

Pre-Stage: __TBD__ Days Total Installation

The following contact information is what was used during the preparation of the plans as provided by the Agency/Company responsible for resolution of the conflict.

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	E-mail address
AT&T	Steve Pesola	(630) 573-5703 or (815) 412-5255	sp9653@att.com
ComEd	Mark Saccomonto	(832) 629-0045	Mark.Saccomonto@ComEd.com
Nicor	Sakibul Forah	(630) 388-2903	sforah@southernco.com
Comcast	Calvin Howard	(312) 907-8229	Calvin_Howard@comcast.com

Utilities To Be Watched and Protected. The areas of concern noted below have been identified by following the suggested staging plan included for the contract. The information provided is not a comprehensive list of all remaining utilities, but those which during coordination were identified as ones which might require the Contractor to take into consideration when making the determination of the means and methods that would be required to construct the proposed improvement. In some instances, the Contractor will be responsible to notify the owner in advance of the work to take place so necessary staffing on the owner's part can be secured.

Pre-Stage

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER

The following contact information is what was used during the preparation of the plans as provided by the owner of the facility.

Agency/Company Responsible to Resolve Conflict	**Name of contact**	**Phone**	**E-mail address**
IDOT			

The above represents the best information available to the Department and is included for the convenience of the bidder. The days required for conflict resolution should be considered in the bid as this information has also been factored into the timeline identified for the project when setting the completion date. The applicable portions of the Standard Specifications shall apply.

Estimated duration of time provided above for the first conflicts identified will begin on the date of the executed contract regardless of the status of the utility relocations. The responsible agencies will be working toward resolving subsequent conflicts in conjunction with the Contractor's activities in the number of days noted.

The estimated relocation duration must be part of the progress schedule submitted by the contractor. A utility kickoff meeting will be scheduled between the Department, the Contractor. and the utility companies when necessary.

The Contractor is responsible for contacting JULIE (or DIGGER/CUAN within the City of Chicago) prior to any excavation work. Please note that IDOT electrical facilities are not part of the one-call locating services, such as JULIE or DIGGER.

If the contract requires the services of an electrical contractor, it is the Contractor's responsibility, at their own expense, to locate existing IDOT electrical facilities before commencing work. For contracts that do not require an electrical contractor, the Contractor may request one free locate of IDOT electrical facilities by contacting the Department's electrical maintenance contractor. Additional locate requests will be at the contractor's expense.

The Department's electrical maintenance contractor must be notified at least 72 hours in advance of the work by calling 773-287-7600 or emailing dispatch@meade100.com to arrange for the locating of underground electrical facilities.

Please note, the marking of underground facilities does not absolve the contractor of their responsibility to repair or replace any facilities damaged during construction at their expense.

PUBLIC CONVENIENCE AND SAFETY (D1)

Effective: May 1, 2012 Revised: July 15, 2012

Add the following to the end of the fourth paragraph of Article 107.09:

"If the holiday is on a Saturday or Sunday, and is legally observed on a Friday or Monday, the length of holiday period for Monday or Friday shall apply."

Add the following sentence after the Holiday Period table in the fourth paragraph of Article 107.09:

"The length of holiday period for Thanksgiving shall be from 5:00 AM the Wednesday prior to 11:59 PM the Sunday after"

Delete the fifth paragraph of Article 107.09 of the Standard Specifications:

"On weekends, excluding holidays, roadways with average daily traffic of 25,000 or greater, all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical."

PROGRESS SCHEDULE

Description**.** Time is of the essence in this contract. It may be necessary for the Contractor to work longer hours, use additional crews, and work during weekends to complete the work within the required time limit. The Contractor shall submit a critical path method (CPM) progress schedule as described below for the Engineer's approval before the work can be started. The Contractor will not be allowed any compensation for working longer hours or using extra shifts; and working on weekends or during holidays; working during winter months, etc. to meet the specified completion date.

This work shall consist of preparing, revising, and updating a detailed progress scheduled based upon the critical path method (CPM). This work shall also consist of performing time impact analysis of the progress schedule based upon the various revisions and updates as they occur.

Requirements. The software shall produce an electronic progress schedule for submission to the department that is 100% compatible with Primavera SureTrak 3.0 Project Manager, published by Primavera Systems, Inc. and Primavera P6.

Format. The electronic schedule format shall contain the following:

a. Project Name: (Optional).
b. Template: Construction.
   i. Type: Provide Primavera P6.xer native file format and a pdf file during each
   ii. submittal.
c. Planning Unit: Days (calendar working).
d. Number/Version: Original or updated number.

e. Start Date: Not later than ten days after execution of the contract.
f. Must Finish Date: Completion date for completion date contracts.
g. Project Title: Contract number.
h. Company Name: Contractor's name.

Calendars.

Completion Date Contracts. The base calendar shall show the proposed working days of the week and the proposed number of work hours per day.

Schedule Development**.** The detailed schedule shall incorporate the entire contract time. The minimum number of activities shown on the schedule shall represent the work incorporating the pay items whose aggregate contract value constitutes 80% of the total contract value. These pay items shall be determined by starting with the pay item with the largest individual contract value and adding subsequent pay item contract values in descending order until 80% of the contract value has been attained. Any additional activities required to maintain the continuity of the schedule logic shall also be shown.

No schedule or updates containing negative total float will be accepted.

The following shall be depicted in the schedule for each activity:

a. Activity Identification (ID) Numbers. The Contract shall utilize numerical designations to identify each activity. Numbering of activities shall be in increments of no less than ten digits.
b. A description of the work represented by the activity (maximum 45 characters). The use of descriptions referring to a percentage of a multi-element item (i.e., construct deck 50%) shall not be used. Separate activities shall be included to represent different elements of multi-element items (i.e., forms, reinforcing, concrete, etc.). Multiple activities with the same work description shall include a location as part of the description.
c. Proposed activity duration shall be shown in whole days. The Contractor shall provide production rates to justify the activity duration. Schedule duration shall be contiguous and not interruptible.
d. Duration of all major activities included in the Contractor's work.
e. Identification of all precedent relationships between the Contractor's activities, as well as those of subcontractors, utilities, and the Department, based on a thorough review of the contract documents, showing the interface between separate contractor's work.
f. Estimated crew sizes, equipment, production rates, and similar data used to arrive at adequate durations and sequences.
g. Activity descriptions and durations for preparation and processing of shop drawings; preparation and review of required coordination drawings; conducting any required testing or inspections; obtaining product data and samples; and fabrication, delivery and installation/erection of products, materials and equipment.

The schedule shall indicate the sequence and interdependence of activities required for the prosecution of the work. The schedule logic shall not be violated.

Activities should be broken down such that each activity encompasses a single operation or tightly integrated operations in a single, contiguous, and continuous area of the project, with no activity exceeding $200,000 without the consent of the Engineer.

Total float shall be calculated as finish float. The schedule shall be calculated using retained logic. The Contractor shall not sequester float by calendar manipulations or extended duration. Float is not for the exclusive use or benefit of either the Department or the Contractor.

A schedule narrative that describes the critical path(s) of the project, outlines the Contractor's approach to complete the work, defines the project calendars and identifies critical resources. Updated schedule narratives will also be required for each monthly update and revised baseline schedules.

Activity description shall be descriptive to identify its intent, including location of work. Activity durations for construction activities in excess of 30 calendar days will not be allowed.

The Contractor shall provide additional schedule tasks as requested to assist the Engineer with communicating how its work will impact local communities and traffic.

The Contractor is responsible for verifying the nature and status of all utility relocation work before preparing the baseline schedule. The Contractor shall take appropriate measures to ensure that construction operations do not interfere with utility facilities and relocation work. the baseline schedule shall reflect construction sequencing, which coordinates with all utility relocation work. The Contractor shall be required to adjust the order of its work from time to time, in response to coordination with utility relocation work, and shall prepare revised baseline schedule(s) reflecting the changes in compliance with this specification, as directed by the Engineer.

Tabular Reports.

a. The following tabular reports will be required with each schedule submission:
    1. Classic Gantt
    2. Pert with Time Scale

b. The heading of each tabular report shall include, but not be limited to, the project name, contract number, contractor name, report date, data date, report title and page number.

c. Each of the tabular reports shall also contain the following minimum information for each activity.
    1. Activity ID
    2. Activity Description
    3. Original Duration (calendar day/working day)
    4. Remaining Duration (calendar day/working day)
    5. Activity Description
    6. Early Start Date
    7. Late Start Date
    8. Early Finish Date
    9. Late Finish Date
    10. Percent Complete

11. Total Float
12. Calendar ID
13. Work performed by DBE subcontractors and trainees shall be shown in the Gantt report.

d. Reports shall be printed in color on 11 in. x 17 in. (minimum) size sheets. The classic Gantt shall show all columns, bars, column headings at the top, time scale at the top, and shall show relationships.

Submission Requirements. The initial schedule shall be submitted prior to starting work but no later than five calendar days after execution of the contract. Updated schedules shall be submitted according to Article 108.02 except that monthly updates will be required according to the following Monthly Schedule Update section.

Updating.

a. The Contractor shall not make any changes to the original duration, activity relationships, constraints, costs, add or delete activities, or alter the schedule's logic when updating the schedule.

b. The originally approved baseline CPM schedule shall only be changed based on a change order that extends the contract duration. All updates will be plotted against the "baseline schedule or approved revised schedule." If the Contractor believes any such changes result in an overall increase in the contract time, the Contractor will immediately submit a request for extension of time along with the changed progress schedule and a detailed justification for the time extension request in accordance with Article 108.08.

c. The updated information will include the original schedule detail and the following additional information:
    1. Actual start dates
    2. Actual finish dates
    3. Activity percent completion
    4. Remaining duration of activities in progress
    5. Identified or highlighted critical activities

d. The Contractor shall submit scheduling documents in the same formats and number as indicated in this section.

e. The Engineer shall withhold progress payments if the Contractor does not submit scheduled updates as required.

f. Upon receipt of the CPM schedule update, the Engineer will review the schedule for conformance with the contract documents and degree of detail. The Engineer, within 14 days after receipt of the updated CPM schedule and supporting documents, will approve or reject it with written comments. If the updated CPM schedule is rejected, the Contractor must submit a revised updated CPM schedule within seven days after the date of rejection.

g. The updated progress schedule must accurately represent the project's status.

Contractor Changes to the Schedule. The Contractor shall comply with the following requirements regarding proposed changes to the approved baseline CPM schedule:

a. If the Contractor proposes to make any changes in the approved baseline CPM schedule, the Contractor shall notify the Engineer in writing, stating the reasons for the change, identifying each changed activity (including duration and interrelationships between activities), and providing a diskette of the proposed changed schedule. Every effort must be made by the Contractor to retain the original activity ID numbers.
b. The Engineer has the authority to approve or disapprove the proposed change in the baseline CPM schedule and shall do so in writing within ten days after receipt to the Contractor's submission.
c. If the Engineer approves the change in the baseline. All monthly updates will be plotted against the new "revised schedule."
d. If the Engineer approves a portion of the change to the baseline CPM schedule, the Contractor shall submit a revised CPM schedule incorporating such change(s) within ten days after approval along with a written description of the change(s) to the schedule.

Recovery Schedule.

a. The Contractor shall maintain an adequate work force and the necessary materials, supplies and equipment to meet the current approved baseline CPM schedule. If the Contractor, in the judgment of the Engineer, is failing to meet the approved CPM schedule including any contract milestones, the Contractor shall submit a recovery schedule.
b. The recovery schedule shall set forth a plan to eliminate the schedule slippage (negative float). The plan must be specific to show the methods to achieve the recovery of time, i.e., increasing manpower, working overtime, weekend work, employing multiple shifts. All costs associated with implementing the recovery schedule shall be borne by the Contractor.
c. Upon receipt of the CPM recovery schedule, the Engineer will review the schedule for conformance with the contract documents and degree of detail. The Engineer will approve the schedule or reject it with written comments within 14 days of receipt of the recovery schedule and supporting documents. If the detailed CPM recovery schedule is rejected, the Contractor must submit a revised CPM recovery schedule within seven days of the date of rejection.

Revised Schedule. The Engineer may direct the Contractor to revise the approved CPM schedule. Reasons for such direction may include, but are limited to, the following: changes in the work, rephrasing of the project or any phase, a change in the duration of the project or phase, and acceleration of the project or phase.

a. The Engineer will direct the Contractor to provide a revised CPM schedule in writing.
b. The Contractor will provide the revised CPM schedule within ten days of receipt of the Engineer's written direction.
c. The Engineer has the authority, in its sole discretion, to approve or reject the revised CPM schedule and will do so in writing within ten days after receipt of the Contractor's

submission. If the Engineer approves the revised schedule, such schedule will be designated the new “target schedule.”

The schedule shall be submitted in the sorted by activity layout (SORT4). The activities on the schedule shall be plotted using early start, late start, early finish, late finish, and total finish.

For every schedule submission, the Contractor shall submit to the Engineer, four USB thumb drives of all schedule data. Included on the thumb drives shall be all the tabular and graphic reports, network diagrams, and bar chart data. In addition, four plots of the USB thumb drives will be approved initial or revised progress schedule for the contract. The approval will be documented by the Engineer on a corresponding plot of the schedule and returned to the Contractor.

Four copies of each schedule submission shall be printed in color on 11 in. x 17 in. (minimum) size sheets showing all columns, bars, column headings at the top, time scale at the top, and showing relationships.

The schedule shall indicate the critical path to contract completion. Only one controlling item shall be designated at any point in time on the schedule.

Acceptance or approval of any progress schedule by the Engineer shall not be construed to imply approval of any method of construction, sequence of construction, or any implied or stated rate of production. Acceptance will not function as a waiver of the obligation of the Contractor to complete the work in accordance with the contract proposal, plans, and specifications, modify any rights or obligations of the Department as set forth in the contract, nor imply any obligation of a third party. Acceptance shall not be construed to modify or amend the contract or the time limit(s) therein. Acceptance shall not relieve the Contractor of the responsibility for the accuracy of any of the information included on the schedule. Failure of the Contractor to include in the schedule any element of work required for the performance of the contract, any sequence of work required by the contract, or any known or anticipated condition affecting the work shall not excuse the Contractor from completing all work required within the time limit(s) specified in the contract notwithstanding acceptance of the schedule by the Engineer.

Monthly Schedule Update (MSU). After acceptance of the Contractor's baseline schedule, the Contractor shall monitor progress of the work and update the schedule 30 calendar days from the date of acceptance and every 30 calendar days thereafter no later than the 10th calendar day of each month thereafter to reflect actual progress. Completed work must not be removed from the MSU. The MSU will be used as the basis for reviewing the Contractor’s monthly progress. The purpose of the MSU is to report progress in accordance with the latest accepted schedule and is not to be used to revise the schedule logic, resources, durations or constraints. If the Engineer is going to reject a MSU, the Engineer will call a meeting with the Contractor and CM in order to discuss the deficiencies in an attempt to more quickly reach resolution and obtain an acceptable MSU.

Basis of Payment. This work will not be paid for separately but shall be considered as included in the costs of the various items of work in the contract.

COMPLETION DATE PLUS WORKING DAYS (D1)

Effective: September 30, 1985 Revised: January 1, 2007

Revise Article 108.05 (b) of the Standard Specifications as follows:

"When a completion date plus working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on, **October 31, 2028,** except as specified herein.

The Contractor will be allowed to complete all clean-up work and punch list items within **10** working days after the completion date for opening the roadway to traffic. Under extenuating circumstances, the Engineer may direct that certain items of work, not affecting the safe opening of the roadway to traffic, may be completed within the working days allowed for clean up work and punch list items. Temporary lane closures for this work may be allowed at the discretion of the Engineer."

The completion date for Building Removal With Asbestos Abatement shall be 90 calendar days after the Contractor receives possession of the property from IDOT.

Article 108.09 or the special provision for "Failure to Complete the Work on Time", if included in this contract, shall apply to both the completion date and the number of working days.

COMPLETION DATE FOR STAGE 3 WORK

The Contractor shall complete all stage 3 work on or before **10/01/2027**. The Contractor shall complete all work to accommodate two lanes of westbound I-80 traffic on the proposed westbound I-80 over the Des Plaines River Bridge on or before **10/1/2027**.

COMPLETION DATE FOR STAGE 4 WORK

The Contractor shall complete all stage 4 work on or before **1/2/2028.** The Contractor shall complete all work to accommodate two lanes of eastbound and westbound I-80 traffic on the proposed westbound I-80 over the Des Plaines River Bridge on or before **1/2/2028**.

COMPLETION DATE FOR STAGE 5 WORK

The Contractor shall complete all stage 5 work on or before **09/30/2028**. The Contractor shall complete all work to accommodate three lanes of eastbound and westbound I-80 traffic on or before **09/30/2028**.

COMPLETION DATE FOR STAGE 6 WORK

The Contractor shall complete all stage 6 work on or before **10/31/2028**. The Contractor shall complete all work for 62R23 on or before **10/31/2028**.

FAILURE TO COMPLETE STAGE 3 WORK

Should the Contractor fail to complete the work on or before the completion dates as specified in the special provision for "Completion Date for Stage 3 Work", or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of **$15,000**, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

In fixing the damages as set out herein, the desire is to establish a certain mode of calculation for the work since the Department's actual loss, in the event of delay, cannot be predetermined, would be difficult of ascertainment, and a matter of argument and unprofitable litigation. This said mode is an equitable rule for measurement of the Department's actual loss and fairly takes into account the loss of use of the roadway if the project is delayed in completion. The Department shall not be required to provide any actual loss to recover these liquidated damages provided herein, as said damages are very difficult to ascertain. Furthermore, no provision of this clause shall be construed as a penalty, as such is not the intention of the parties.

A calendar day is every day shown on the calendar and starts at 12:00 midnight and ends at the following 12:00 midnight, 24 hours later.

FAILURE TO COMPLETE STAGE 4 WORK

Should the Contractor fail to complete the work on or before the completion dates as specified in the special provision for "Completion Date for Stage 4 Work", or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of **$15,000**, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

In fixing the damages as set out herein, the desire is to establish a certain mode of calculation for the work since the Department's actual loss, in the event of delay, cannot be predetermined, would be difficult of ascertainment, and a matter of argument and unprofitable litigation. This said mode is an equitable rule for measurement of the Department's actual loss and fairly takes into account the loss of use of the roadway if the project is delayed in completion. The Department shall not be required to provide any actual loss to recover these liquidated damages provided herein, as said damages are very difficult to ascertain. Furthermore, no provision of this clause shall be construed as a penalty, as such is not the intention of the parties.

A calendar day is every day shown on the calendar and starts at 12:00 midnight and ends at the following 12:00 midnight, 24 hours later.

FAILURE TO COMPLETE STAGE 5 WORK

Should the Contractor fail to complete the work on or before the completion dates as specified in the special provision for “Completion Date for Stage 5 Work”, or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of **$15,000**, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

In fixing the damages as set out herein, the desire is to establish a certain mode of calculation for the work since the Department’s actual loss, in the event of delay, cannot be predetermined, would be difficult of ascertainment, and a matter of argument and unprofitable litigation. This said mode is an equitable rule for measurement of the Department’s actual loss and fairly takes into account the loss of use of the roadway if the project is delayed in completion. The Department shall not be required to provide any actual loss to recover these liquidated damages provided herein, as said damages are very difficult to ascertain. Furthermore, no provision of this clause shall be construed as a penalty, as such is not the intention of the parties.

A calendar day is every day shown on the calendar and starts at 12:00 midnight and ends at the following 12:00 midnight, 24 hours later.

FAILURE TO COMPLETE STAGE 6 WORK

Should the Contractor fail to complete the work on or before the completion dates as specified in the special provision for “Completion Date for Stage 6 Work”, or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of **$20,000**, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

In fixing the damages as set out herein, the desire is to establish a certain mode of calculation for the work since the Department’s actual loss, in the event of delay, cannot be predetermined, would be difficult of ascertainment, and a matter of argument and unprofitable litigation. This said mode is an equitable rule for measurement of the Department’s actual loss and fairly takes into account the loss of use of the roadway if the project is delayed in completion. The Department shall not be required to provide any actual loss to recover these liquidated damages provided herein, as said damages are very difficult to ascertain. Furthermore, no provision of this clause shall be construed as a penalty, as such is not the intention of the parties.

A calendar day is every day shown on the calendar and starts at 12:00 midnight and ends at the following 12:00 midnight, 24 hours later.

FAILURE TO COMPLETE THE WORK ON TIME (D1)

Effective: September 30, 1985 Revised: January 1, 2007

Should the Contractor fail to complete the work on or before the completion date as specified in the Completion Date Plus Working Days special provision, or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of **$10,000**, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

In fixing the damages as set out herein, the desire is to establish a certain mode of calculation for the work since the Department's actual loss, in the event of delay, cannot be predetermined, would be difficult of ascertainment, and a matter of argument and unprofitable litigation. This said mode is an equitable rule for measurement of the Department's actual loss and fairly takes into account the loss of use of the roadway if the project is delayed in completion. The Department shall not be required to provide any actual loss in order to recover these liquidated damages provided herein, as said damages are very difficult to ascertain. Furthermore, no provision of this clause shall be construed as a penalty, as such is not the intention of the parties.

A calendar day is every day shown on the calendar and starts at 12:00 midnight and ends at the following 12:00 midnight, 24 hours later.

EMBANKMENT II (D1)

Effective: March 1, 2011 Revised: November 1, 2013

Description. This work shall be according to Section 205 of the Standard Specifications except for the following.

Material. Reclaimed asphalt shall not be used within the ground water table or as a fill if ground water is present. The RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications". Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

CONSTRUCTION REQUIREMENTS

Samples. Embankment material shall be sampled and tested before use. The Contractor shall identify embankment sources, and provide equipment as the Engineer requires, for the collection of samples from those sources. Samples will be furnished to the Geotechnical Engineer a minimum of three weeks prior to use in order that laboratory tests for compaction can be performed. Embankment material placement cannot begin until tests are completed.

Placing Material. In addition to Article 202.03, broken concrete, reclaimed asphalt with no expansive aggregate, or uncontaminated dirt and sand generated from construction or demolition activities shall be placed in 6 inches lifts and disked with the underlying lift until a uniform homogenous material is formed. This process also applies to the overlaying lifts. The disk must have a minimum blade diameter of 24 inches.

When embankments are to be constructed on hillsides or existing slopes that are steeper than 3H:1V, steps shall be keyed into the existing slope by stepping and benching as shown in the plans or as directed by the Engineer.

Compaction. Soils classification for moisture content control will be determined by the Soils Inspector using visual field examination techniques and the IDH Textural Classification Chart.

When tested for density in place each lift shall have a maximum moisture content as follows.

a) A maximum of 110% of the optimum moisture for all forms of clay soils.
b) A maximum of 105% of the optimum moisture for all forms of clay loam soils.

Stability. The requirement for embankment stability in Article 205.04 will be measured with a dynamic cone penetrometer (DCP) according to the test method in the IDOT Geotechnical Manual. The penetration rate must be equal or less than 1.5 inches per blow.

Basis of Payment. This work will not be paid separately but will be considered as included in the various items of excavation.

TEMPORARY PAVEMENT (D1)

Effective: March 1, 2003 Revised: April 10, 2008

Description. This work shall consist of constructing a temporary pavement at the locations shown on the plans or as directed by the engineer.

The Contractor shall use either PCC according to Sections 353 and 354 of the Standard Specifications or HMA according to Sections 355, 356, and 406 of the Standard Specifications, and other applicable HMA special provisions as contained herein. The HMA mixtures to be used shall be specified in the plans. The thickness of the temporary pavement shall be as described in the plans. The Contractor shall have the option of constructing either material type if both PCC and HMA are shown in the plans.

Articles 355.08 and 406.11 of the Standard Specifications shall not apply.

The removal of the temporary pavement, if required, shall conform to Section 440 of the Standard Specification.

Method of Measurement. Temporary pavement will be measured in place, and the area computed in square yards.

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

Removal of temporary pavement will be paid for at the contract unit price per SQUARE YARD for PAVEMENT REMOVAL.

AGGREGATE SURFACE COURSE FOR TEMPORARY ACCESS (D1)

Effective: April 1, 2001 Revised: January 2, 2007

Revise Article 402.10 of the Standard Specifications to read:

"**402.10 For Temporary Access.** The Contractor shall construct and maintain aggregate surface course for temporary access to private entrances, commercial entrances and roads according to Article 402.07 and as directed by the Engineer.

The aggregate surface course shall be constructed to the dimensions and grades specified below, except as modified by the plans or as directed by the Engineer.

(a) Private Entrance. The minimum width shall be 12 ft. The minimum compacted thickness shall be 6 in. The maximum grade shall be eight percent, except as required to match the existing grade.
(b) Commercial Entrance. The minimum width shall be 24 ft. The minimum compacted thickness shall be 9 in. The maximum grade shall be 6%, except as required to match the existing grade.
(c) Road. The minimum width shall be 24 ft. The minimum compacted thickness shall be 9 in. The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

Maintaining the temporary access shall include relocating and/or regrading the aggregate surface coarse for any operation that may disturb or remove the temporary access. The same type and gradation of material used to construct the temporary access shall be used to maintain it.

When use of the temporary access is discontinued, the aggregate shall be removed and utilized in the permanent construction or disposed of according to Article 202.03."

Add the following to Article 402.12 of the Standard Specifications:

"Aggregate surface course for temporary access will be measured for payment as each for every private entrance, commercial entrance, or road constructed for the purpose of temporary access. If a residential drive, commercial entrance, or road is to be constructed under multiple stages, the aggregate needed to construct the second or subsequent stages will not be measured for payment but shall be included in the cost per each of the type specified."

Revise the second paragraph of Article 402.13 of the Standard Specifications to read:

"Aggregate surface course for temporary access will be paid for at the contract unit price per EACH for TEMPORARY ACCESS (PRIVATE ENTRANCE), TEMPORARY ACCESS (COMMERCIAL ENTRANCE) or TEMPORARY ACCESS (ROAD).

Partial payment of each amount bid for temporary access, of the type specified, will be paid according to the following schedule:

(a) Upon construction of the temporary access, 60% of the contract unit price per each, of the type constructed, will be paid.
(b) Subject to the approval of the Engineer for the adequate maintenance and removal of the temporary access, the remaining 40% of the pay item will be paid upon the permanent removal of the temporary access."

HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D1)

Effective: November 1, 2019 Revised: January 1, 2026

Add the following to the end of Article 406.06(c) of the Standard Specifications:

"The amount of HMA binder course placed shall be limited to that which can be surfaced during the same construction season."

Revise the fifteenth through eighteenth paragraphs of Article 406.14 of the Standard Specifications to read:

"The mixture used in constructing acceptable HMA test strips will be paid for at the contract unit price. Unacceptable HMA test strips shall be removed and replaced at no additional cost to the Department."

Revise Article 1004.03(c) to read:

"(c) Gradation. The coarse aggregate gradations shall be as listed in the following table.

Use	Size/Application	Gradation No.
Class A-1, A-2, & A-3	3/8 in. (10 mm) Seal	CA 16 or CA 20
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & A-3	Cover Coat	CA 14
HMA High ESAL	IL-19.0; Stabilized Subbase IL-19.0	CA 11 1/
	SMA 12.5 2/	CA 13 4/, CA 14, or CA 16
	SMA 9.5 2/	CA 13 3/4/ or CA 16 3/
	IL-9.5	CA 16, CM 13 4/
	IL-9.5FG	CA 16
HMA Low ESAL	IL-19.0L	CA 11 1/
	IL-9.5L	CA 16

1/ CA 16 or CA 13 may be blended with the CA 11.
2/ The coarse aggregates used shall be capable of being combined with the fine aggregates and mineral filler to meet the approved mix design and the mix requirements noted herein.
3/ The specified coarse aggregate gradations may be blended.
4/ CA 13 shall be 100% passing the 1/2 in. (12.5mm) sieve."

Revise Article 1004.03(e) of the Standard Specifications to read:

"(e) Absorption. For SMA the coarse aggregate shall also have water absorption ≤ 2.0%."

Revise the "High ESAL" portion of the table in Article 1030.01 to read:

"High ESAL	Binder Courses	IL-19.0, IL-9.5, IL-9.5FG, IL-4.75, SMA 12.5, SMA 9.5 Stabilized Subbase IL-19.0
	Surface Courses	IL-9.5, IL-9.5FG, SMA 12.5, SMA 9.5"

Revise Note 2. and add Note 6 to Article 1030.02 of the Standard Specifications to read:

"Item	Article/Section
(g)Performance Graded Asphalt Binder (Note 6)	1032
(h) Fibers (Note 2)	

Note 2. A stabilizing additive such as cellulose or mineral fiber shall be added to the SMA mixture according to Illinois Modified AASHTO M 325. The stabilizing additive shall meet the fiber quality requirements listed in Illinois Modified AASHTO M 325. Prior to approval and use of fibers, the Contractor shall submit a notarized certification by the producer of these materials stating they meet these requirements. Reclaimed asphalt shingles (RAS) may be used in SMA mixtures designed with an SBA polymer modifier as a fiber additive if the mix design with RAS included meets AASHTO T305 requirements. The RAS shall be from a certified source that produces either type I or type 2. Material shall meet requirements noted herein and the actual dosage rate will be determined by the Engineer.

Note 6. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay, except where modified herein. The asphalt binder shall be a SBS PG 76-22 for IL-4.75, except where modified herein.."

Revise table in Article 1030.05(a) of the Standard Specifications to read:

"MIXTURE COMPOSITION (% PASSING) [1/]												
Sieve Size	IL-19.0 mm		SMA 12.5		SMA 9.5		IL-9.5mm		IL-9.5FG		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max	min	max
1 1/2 in (37.5 mm)												
1 in. (25 mm)		100										
3/4 in. (19 mm)	90	100		100								
1/2 in. (12.5 mm)	75	89	80	100		100		100		100		100
3/8 in. (9.5 mm)				65	90	100	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	60	75[6/]	90	100
#8 (2.36 mm)	20	42	16	24 [4/]	16	32[4/]	34 [5/]	52 [2/]	45	60[6/]	70	90
#16 (1.18 mm)	15	30					10	32	25	40	50	65
#30 (600 μm)			12	16	12	18			15	30		
#50 (300 μm)	6	15					4	15	8	15	15	30
#100 (150 μm)	4	9					3	10	6	10	10	18
#200 (75 μm)	3.0	6.0	7.0	9.0 [3/]	7.5	9.5 [3/]	4.0	6.0	4.0	6.5	7.0	9.0 [3/]
#635 (20 μm)			≤ 3.0		≤ 3.0							
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		1.0		1.0		1.0

1/ Based on percent of total aggregate weight.
2/ The mixture composition shall not exceed 44% passing the #8 (2.36 mm) sieve for surface courses with Ndesign = 90.
3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.
4/ When establishing the adjusted job mix formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.
5/ When establishing the AJMF the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34%.
6/ When the mixture is used as a binder, the maximum shall be increased by 0.5% passing."

Revise Article 1030.05(b) of the Standard Specifications to read:

(b) Volumetric Requirements. The target value for the air voids of the HMA shall be 4.0%, for IL-4.75 and SMA mixtures it shall be 3.5%, and for stabilized subbase it shall be 3.0% at the design number of gyrations. The voids in the mineral aggregate (VMA) and voids filled

with asphalt binder (VFA) of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the following requirements.

	Voids in the Mineral Aggregate (VMA), % Minimum for Ndesign				
Mix Design	30	50	70	80	90
IL-19.0		13.5	13.5		13.5
IL-9.5		15.0	15.0		
IL-9.5FG		15.0	15.0		
IL-4.75[1/]		18.5			
SMA-12.5[1/2/5/]				17.0[3/]/16.0[4/]	
SMA-9.5[1/2/5/]				17.0[3/]/16.0[4/]	
IL-19.0L	13.5				
IL-9.5L	15.0				

1/ Maximum draindown shall be 0.3% according to Illinois Modified AASHTO T 305.
2/ The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30°F.
3/ Applies when specific gravity of coarse aggregate is ≥ 2.760.
4/ Applies when specific gravity of coarse aggregate is < 2.760.
5/ For surface course, the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone. For binder course, coarse aggregate shall be crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone”

Revise the last paragraph of Article 1102.01 (a) (5) of the Standard Specifications to read:

“IL-4.75 and SMA mixtures which contain aggregate having absorptions greater than or equal to 2.0%, or which contain steal slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours.”

Revise the first and second paragraphs of Articles 1030.06(c)(2) of the Standard Specifications to read:

“(2) Personnel. The Contractor shall provide a QC manager who shall have overall responsibility and authority for quality control. This individual shall maintain active certification as a hot-mix asphalt level II technician.

In addition to the QC manager, the Contractor shall provide sufficient personnel to perform the required visual inspections, sampling, testing, and documentation in a timely manner. Mix designs shall be developed by personnel with an active certification as a hot-mix asphalt level III technician. Technicians performing mix design testing and plant sampling/testing shall maintain active certification as a hot-mix asphalt level I technician. The Contractor may provide a technician trainee who has successfully completed the Department’s “Hot-Mix Asphalt Trainee Course” to assist in the activities completed by a hot-mix asphalt level I technician for a period of one year after the course completion date. The Contractor may also provide a gradation technician who has successfully completed the Department's "Gradation Technician Course" to run gradation tests only under the supervision of a hot-mix asphalt level II technician. The Contractor shall provide a hot-mix asphalt density tester who has successfully completed the Department's "Nuclear Density Testing” course to run all nuclear density tests on the job site.”

Add Article 1030.06(d)(3) to the Standard Specifications to read:

"(3) The Contractor shall take possession of any Department unused backup or dispute resolution HMA mixture samples or density specimens upon notification by the Engineer. The Contractor shall collect the HMA mixture samples or density specimens from the location designated by the Engineer and may add these materials to RAP stockpiles according to Section 1031."

Revise the second paragraph of Articles 1030.07(a)(11) and 1030.08(a)(9) of the Standard Specifications to read:

"When establishing the target density, the HMA maximum theoretical specific gravity (Gmm) will be based on the running average of four available Department test results for that project. If less than four Gmm test results are available, an average of all available Department test results for that project will be used. The initial Gmm will be the last available Department test result from a QMP project. If there is no available Department test result from a QMP project, the Department mix design verification test result will be used as the initial Gmm."

Revise the Quality Control Limits table in Article 1030.09(c) to read:

CONTROL LIMITS						
Parameter	IL-19.0, IL-9.5, IL-9.5FG, IL-19.0L, IL-9.5L		SMA-12.5, SMA-9.5		IL-4.75	
	Individual Test	Moving Avg. of 4	Individual Test	Moving Avg. of 4	Individual Test	Moving Avg. of 4
% Passing: 1/						
1/2 in. (12.5 mm)	± 6 %	± 4 %	± 6 %	± 4 %		
3/8 in. (9.5mm)			± 4 %	± 3 %		
# 4 (4.75 mm)	± 5 %	± 4 %	± 5 %	± 4 %		
# 8 (2.36 mm)	± 5 %	± 3 %	± 4 %	± 2 %		
# 16 (1.18 mm)			± 4 %	± 2 %	± 4 %	± 3 %
# 30 (600 µm)	± 4 %	± 2.5 %	± 4 %	± 2.5 %		
Total Dust Content # 200 (75 µm)	± 1.5 %	± 1.0 %			± 1.5 %	± 1.0 %
Asphalt Binder Content	± 0.3 %	± 0.2 %	± 0.2 %	± 0.1 %	± 0.3 %	± 0.2 %
Air Voids 2/	± 1.2 %	± 1.0 %	± 1.2 %	± 1.0 %	± 1.2 %	± 1.0 %
Field VMA 3/	-0.7 %	-0.5 %	-0.7 %	-0.5 %	-0.7 %	-0.5 %

1/ Based on washed ignition oven or solvent extraction gradation.
2/ The air voids target shall be 3.2 to 4.8%.
3/ Allowable limit below minimum design VMA requirement.

Revise Article 1030.09(g)(2) of the Standard Specifications to read:

"(2) The Contractor shall complete split verification sample tests listed in the Limits of Precision table in Article 1030.09(h)(1)."

In the Supplemental Specifications, replace the revision for the end of the third paragraph of Article 1030.09(h)(2) with the following:

"When establishing the target density, the HMA maximum Gmm will be the Department mix design verification test result."

Add after third sentence of Article 1030.09(b) to read:

"If the Contractor and Engineer agree the nuclear density test method is not appropriate for the mixture, cores shall be taken at random locations determined according to the QC/QA document "Determination of Random Density Test Site Locations". Core densities shall be determined using the Illinois Modified AASHTO T 166 or T 275 procedure."

Revise Table 1 and Note 4/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

	Breakdown/Intermediate Roller (one of the following)	Final Roller (one or more of the following)	Density Requirement
IL-9.5, IL-9.5FG, IL-19.0 1/	V_D, P , T_B, 3W, O_T, O_B	V_S, T_B, T_F, O_T	As specified in Section 1030
IL-4.75 and SMA 3/ 4/	T_B, 3W, O_T	T_F, 3W	As specified in Section 1030
Mixtures on Bridge Decks 2/	T_B	T_F	As specified in Articles 582.05 and 582.06.

"4/ The Contractor shall provide a minimum of two steel-wheeled tandem rollers (T_B), and/or three-wheel (3W) rollers for breakdown, except one of the (T_B) or (3W) rollers shall be 84 inches wide and a weight of 315 pound per linear inch (PLI) and one of the (T_B) or (3W) rollers can be substituted for an oscillatory roller (O_T). T_F rollers shall be a minimum of 280 lb/in. The 3W and T_B rollers shall be operated at a uniform speed not to exceed 3 mph, with the drive roll for T_B rollers nearest the paver and maintain an effective rolling distance of not more than 150 ft behind the paver."

Add the following after the fourth paragraph of Article 406.13 (b):

"The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface mix design's G_{mb}."

Revise first paragraph of Article 1030.10 of the Standard Specifications to read:

"A test strip of 300 ton, except for SMA mixtures it will be 400 ton, will be required for each mixture on each contract at the beginning of HMA production for each construction year according to the Manual of Test Procedures for Materials "Hot Mix Asphalt Test Strip Procedures". At the request of the producer, the Engineer may waive the test strip if previous construction during the current construction year has demonstrated the constructability of the mix using department test results."

Revise fourth paragraph of Article 1030.10 of the Standard Specifications to read:

"When a test strip is constructed, the Contractor shall collect and split the mixture according to the document "Hot-Mix Asphalt Test Strip Procedures". The Engineer, or a representative, shall deliver split sample to the district laboratory for verification testing. The Contractor shall complete mixture tests stated in Article 1030.09(a). Mixture sampled shall include enough material for the Department to conduct mixture tests detailed in Article 1030.09(a) and in the document "Hot-Mix Asphalt Mixture Design Verification Procedure" Section 3.3. The mixture test results shall meet the requirements of Articles 1030.05(b) and 1030.05(d), except Hamburg wheel tests will only be conducted on high ESAL mixtures during production. To be considered acceptable to remain in place, the Department's mixture test results shall meet the acceptable limits stated in Article 1030.09(i)(1). In addition, no visible pavement distress such as, but not limited to, segregation, excessive coarse aggregate fracturing outside of growth curves, excessive dust balls, or flushing shall be present as determined by the Engineer."

WINTERIZED TEMPORARY ACCESS (D1)

Effective: January 1, 2012 Revised: March 5, 2012

Description**.** This work shall consist of constructing, maintaining and removing winterized temporary access for private and commercial entrances and side roads designed for use throughout the winter months.

Materials**.** Materials shall be according to the following.

Item	Article/Section
Hot-Mix Asphalt	1030

Construction Requirements

For projects lasting longer than one construction season, the Contractor shall construct and maintain temporary access composed of an HMA surface course over an existing aggregate temporary access. The Contractor shall install the winterized temporary access prior to winter shut down at the direction of the Engineer. The top 2" of the existing aggregate temporary access should be removed and replaced with 2" of hot-mix asphalt. Compensation will be given for the winterized temporary access at the time of the installation of the HMA surface course.

HMA Surface Course. The HMA surface course shall be 2 in. thick when compacted. HMA Surface Course, Mix "D", N50 shall be used except as modified by the plans or as directed by the Engineer. This work shall be constructed in accordance with the applicable portions of Section 406 of the Standard Specifications and as directed by the Engineer. The material shall conform to the applicable portions of Section 1030 of the Standard Specifications.

The winterized temporary access shall be constructed to the dimensions and grades of the existing aggregate temporary access.

Maintaining the winterized temporary access shall include repairing the HMA surface course after any operation that may disturb or remove the winterized temporary access to the satisfaction of the Engineer.

When use of the winterized temporary access is discontinued, the winterized temporary access shall be removed according to Article 440.03 of the Standard Specifications. The material shall be disposed of according to Article 202.03 of the Standard Specifications or may be utilized in the permanent construction with the approval of the Engineer.

Method of Measurement. Winterized temporary access for private and commercial entrances and roads will be measured per square yard for every private entrance, commercial entrance, or road constructed for the purpose of winterized temporary access.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE YARD for TEMPORARY ACCESS (WINTERIZE) as specified in the plans.

Partial payment of the square yard amount bid for each winterized temporary access will be paid according to the following schedule:

(a) Upon construction of the winterized temporary access, 60% of the contract unit price per square yard will be paid.
(b) Subject to the approval of the Engineer for the adequate maintenance and removal of the winterized temporary access, the remaining 40% of the pay item will be paid upon the permanent removal of the temporary access.

CLASS D PATCHES (SPECIAL)

Effective: July 24, 2020

Description. This work shall consist of all labor, materials, and equipment necessary to construct class D patches at the locations shown on the plans and/ or locations determined by the Engineer in the field. The work shall be performed according to Section 442 of the Standard Specifications, except as modified herein.

Delete Note 2 from Article 442.02 of the Standard Specification and replace with the following:

"Note 2. The mixture composition of the HMA used shall be binder course and surface course as specified in the Hot-Mix Asphalt Mixtures Requirements table in the plans."

Basis of Payment. This work will be paid for at the contract unit price per SQUARE YARD of CLASS D PATCHES, of the type and thickness specified, (SPECIAL).

STORM SEWER ADJACENT TO OR CROSSING WATER MAIN (D1)

Effective: February 1, 1996 Revised: January 1, 2007

This work consists of constructing storm sewer adjacent to or crossing a water main, at the locations shown on the plans. The material and installation requirements shall be according to the latest edition of the Standard Specifications for Water and Sewer Main Construction in Illinois, and the applicable portions of Section 550 of the Standard Specifications, which may include concrete collars and encasing pipe with seals if required.

Pipe materials shall meet the requirements of Sections 40 and 41-2.01 of the Standard Specifications for Water and Sewer Main Construction in Illinois, except PVC pipe will not be allowed. Ductile-Iron pipe shall meet the minimum requirements for thickness class 50.

Encasing of standard type storm sewer, according to the details for Water and Sewer Separation Requirements (Vertical Separation) in the Standard Drawings division of the Standard Specifications for Water and Sewer Main Construction in Illinois, may be used for storm sewers crossing water mains.

Basis of Payment: This work will be paid according to Article 550.10 of the Standard Specifications except the pay item shall be STORM SEWER (WATER MAIN REQUIREMENTS), of the diameter specified.

CLEANING EXISTING DRAINAGE STRUCTURES (D1)

Effective: September 30, 1985 Revised: May 1, 2022

All existing storm sewers, pipe culverts, manholes, catch basins, and inlets shall be considered as drainage structures insofar as the interpretation of this special provision is concerned. When specified for payment, the location of drainage structures to be cleaned will be determined in the field by the Engineer.

All existing drainage structures which are to be adjusted or reconstructed shall be cleaned according to Article 602.15 of the Standard Specifications. This work will be paid for according to accordance with Article 602.16 of the Standard Specifications.

All other existing drainage structures which are specified to be cleaned by the Engineer will be cleaned according to Article 602.15 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price EACH for DRAINAGE STRUCTURES TO BE CLEANED and at the contract unit price per FOOT for STORM SEWERS TO BE CLEANED, of the diameter specified.

ADJUSTMENTS AND RECONSTRUCTIONS (D1)

Effective: March 15, 2011 Revised: October 1, 2021

Revise the first paragraph of Article 602.04 to read:

"**602.04 Concrete.** Cast-in-place concrete for structures shall be constructed of class SI concrete according to the applicable portions of Section 503. Cast-in-place concrete for pavement patching around adjustments and reconstructions shall be constructed of class PP-2 concrete, unless otherwise noted in the plans, according to the applicable portions of Section 1020."

Revise the third, fourth and fifth sentences of the second paragraph of Article 602.11(c) to read:

"Castings shall be set to the finished pavement elevation so that no subsequent adjustment will be necessary, and the space around the casting shall be filled with class PP-2 concrete, unless otherwise noted in the plans, to the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. The pavement may be opened to traffic according to Article 701.17(e)(3)b."

Revise Article 603.05 to read:

"**603.05 Replacement of Existing Flexible Pavement.** After the castings have been adjusted, the surrounding space shall be filled with class PP-2 concrete, unless otherwise noted in the plans, to the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. The pavement may be opened to traffic according to Article 701.17(e)(3)b."

Revise Article 603.06 to read:

"**603.06 Replacement of Existing Rigid Pavement.** After the castings have been adjusted, the pavement and HMA that was removed, shall be replaced with class PP-2 concrete, unless otherwise noted in the plans, not less than 9 in. thick. The pavement may be opened to traffic according to Article 701.17(e)(3)b.

The surface of the class PP concrete shall be constructed flush with the adjacent surface."

Revise the first sentence of Article 603.07 to read:

"**603.07 Protection Under Traffic.** After the casting has been adjusted and the class PP concrete has been placed, the work shall be protected by a barricade and two lights according to Article 701.17(e)(3)b."

AGGREGATE FOR CONCRETE BARRIER (D1)

Effective: February 11, 2004 Revised: January 24, 2008

Add the following paragraph to Article 637.02 of the Standard Specifications:

"The coarse aggregate to be used in the concrete barrier walls shall conform to the requirement for coarse aggregate used in class BS concrete according to Article 1004.01(b), paragraph 2."

ENGINEER'S FIELD OFFICE TYPE A (SPECIAL) (D1)

Effective: December 1, 2011 Revised: May 1, 2013

Revise the first paragraph of Article 670.02 to read:

670.02 Engineer's Field Office Type A (Special). Type A (special) field offices shall have a ceiling height of no less than 7 feet and a floor space of no less than 3000 square feet with a minimum of two separate offices. The office shall also have a separate storage room capable of being locked for the storage of the nuclear measuring devices. The office shall be provided with sufficient heat, natural and artificial light, and air conditioning. Doors and windows shall be equipped with locks approved by the Engineer.

Revise the first sentence of the second paragraph of Article 670.02 to read:

An electronic security system that will respond to any breach of exterior doors and windows with an on-site alarm shall be provided.

Revise the last sentence of the third paragraph of Article 670.02 to read:

Adequate all-weather parking space shall be available to accommodate a minimum of 12 vehicles.

Revise the fifth paragraph of Article 670.02 to read:

Sanitary facilities shall include hot and cold potable running water, lavatory and toilet as an integral part of the office where available. Solid waste disposal consisting of seven waste baskets and an outside trash container of sufficient size to accommodate a weekly provided pick-up service. A weekly cleaning service for the office shall be provided.

Revise subparagraph (a) of Article 670.02 to read:

(a) Twelve desks with minimum working surface 42 inch x 30 inch each and 12 non-folding chairs with upholstered seats and backs.

Revise the first sentence of subparagraph (c) of Article 670.02 to read:

(c) Two four-post drafting tables with minimum top size of 37-½ inch x 48 inch.

Revise subparagraph (d) of Article 670.02 to read:

(d) Eight free standing four-drawer legal size file cabinets with lock and an underwriters' laboratories insulated file device 350 degrees one hour rating.

Revise subparagraph (e) of Article 670.02 to read:

(e) Twenty folding chairs and two conference tables with minimum top size of 44 inch x 96 inch.

Revise subparagraph (h) of Article 670.02 to read:

(h) Three electric desk type tape printing calculator and two pocket scientific notation calculators with a 1000 hour battery life or with a portable recharger.

Revise subparagraph (i)(2) of Article 670.02 to read:

(i)(2) Telephones lines. Five separate telephone lines including one line for the fax machine, and two lines for the exclusive use of the Engineer. All telephone lines shall include long distance service and all labor and materials necessary to install the phone lines at the locations directed by the Engineer. The TELCOM company shall configure ROLL/HUNT features as specified by the Engineer.

Revise subparagraph (j) of Article 670.02 to read:

(j) Two plain paper network multi-function printer/copier/scanner machines capable of reproducing prints up to 11 inch x 17 inch within automatic feed tray capable of sorting 30 sheets of paper. Letter size and 11 inch x 17 inch paper shall be provided. The Contractor shall provide the multi-function machines with IT support for setup and maintenance.

Revise subparagraph (k) of Article 670.02 to read:

(k) One plain paper fax machine including maintenance and supplies.

Revise subparagraph (l) of Article 670.02 to read:

(l) Six four-line telephones, with touch tone, where available, and two digital answering machines, for exclusive use by the Engineer.

Revise subparagraph (m) of Article 670.02 to read:

(m) One electric water cooler dispenser including water service.

Add the following subparagraphs to Article 670.02:

(s) One 4 foot x 6 foot chalkboard or dry erase board.

(t) One 4 foot x 6 foot framed cork board.

Add the following to Article 670.07 Basis of Payment.

The building or buildings, fully equipped, will be paid for at the contract unit price per CALENDAR MONTH or fraction thereof for ENGINEER'S FIELD OFFICE, TYPE A (SPECIAL).

TRAFFIC CONTROL AND PROTECTION (ARTERIALS) (D1)

Effective: February 1, 1996 Revised: March 1, 2011

Specific traffic control staging or maintenance of traffic plan details have been prepared for this contract. This work shall include all labor, materials, transportation, handling, and incidental work necessary to furnish, install, maintain, and remove all traffic control devices required as indicated in the plans and as approved by the Engineer.

When traffic is to be directed over a detour route, the Contractor shall furnish, erect, maintain, and remove all applicable traffic control devices along the detour route according to the details shown in the plans.

Method of Measurement. All traffic control shown in the Traffic Staging or Maintenance of Traffic Plans (except Traffic Control and Protection (Expressways) and temporary pavement markings) will be measured for payment on a lump sum basis unless otherwise noted.

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

Temporary pavement markings will be paid for separately unless shown on a standard.

TRAFFIC CONTROL PLAN (D1)

Effective: September 30, 1985 Revised: January 1, 2007

Traffic control shall be according to the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and highway standards contained in the plans, and the special provisions contained herein.

Special attention is called to Article 107.09 of the Standard Specifications and the following highway standards, details, quality standard for work zone traffic control devices, Recurring Special Provisions and special provisions contained herein, relating to traffic control.

The Contractor shall contact the District 1 Bureau of Traffic at least 72 hours in advance of beginning work.

Standards:

701001	Off-Rd Operations, 2L, 2W, More Than 15’ (4.5 M) Away
701106	Off-Rd Operations, 2L, 2W, 15’ (4.5 M) To 24” (600 MM) From Pavement Edge
701011	Off-Road Moving Operations, 2L, 2W, Day Only

701106	Off-Road Operations, Multilane, More Than 15' (4.5 M) Away
701301	Lane Closure, 2L, 2W, Short Time Operations
701311	Lane Closure, 2L, 2W, Moving Operations, - Day Only
701400	Approach To Lane Closure, Freeway/Expressway
701401	Lane Closure Freeway Expressway
701411	Lane Closure Multilane Entrance or Exit Ramp 45 Mph or More
701421	Lane Closure, Multilane, Day Operations Only, For Speeds > 45 Mph To 55 Mph
701422	Lane Closure Multilane for Speeds > 45 Mph To 55 Mph
701423	Lane Closure Multilane, With Barrier, For Speeds > 45 Mph to 55 Mph
701427	Lane Closure, Multilane, Intermittent or Moving Operations, For Speeds <= 40 Mph
701428	Traffic Control Setup Removal Freeway Expressway
701446	Two Lane Closure Freeway Expressway
701501	Urban Lane Closure, 2L, 2W, Undivided
701606	Urban Single Lane Closure, Multilane, 2W With Mountable Median
701701	Urban Lane Closure, Multilane Intersection
701801	Sidewalk, Corner or Crosswalk Closure
701901	Traffic Control Devices

Details:

TC-08	Entrance And Exit Ramp Closure Details
TC-09	Traffic Control Details For Freeway Single & Multi-Lane Weave
TC-10	Traffic Control And Protection For Side Roads, Intersections And Driveways
TC-11	Typical Applications Raised Reflective Pavement Markers (Snow Plow Resistant)
TC-12	Multi-Lane Freeway Pavement Marking
TC-13	District One Typical Pavement Markings
TC-14	Traffic Control And Protection At Turn Bays (To Remain Open To Traffic)
TC-16	Short Term Pavement Marking Letters And Symbols
TC-17	Traffic Control Details For Freeway Shoulder Closures And Partial Ramp Closures
TC-18	Freeway/Expressway Signing For Flagging Operations At Work Zone Openings On Freeway/Expressways
TC-21	Detour Signing for Closing State Highways
TC-22	Arterial Road Information Sign
TC-23	Typical Supplemental Signing And Pavement Marking Treatment For Railroad Crossings
TC-25	Traffic Control Details for Freeway Center Lane Closure Shoulder Lane
TC-27	Mile Post Markers – Gore Signs – Major Guide Sign Layout – Arrows

Special Provisions:

Failure to Complete the Work On Time (D1)
Failure to Open Traffic Lanes to Traffic
Keeping the Expressway Open to Traffic
Maintenance of Roadway (D1)
Public Convenience and Safety (D1)
Sign Shop Drawing Submittal
Speed Display Trailer (D1)
Temporary Information Signing
Temporary Pavement (D1)
Temporary Traffic Signal Timing

Traffic Control and Protection (Arterials) (D1)
Traffic Control and Protection (Expressways)
Traffic Control Surveillance (Expressways)
Traffic Control for Work Zone Areas
Vehicle And Equipment Warning Lights (BDE)
Work Zone Safety Devices (BDE)

FRICTION AGGREGATE (D1)

Effective: January 1, 2011 Revised: December 1, 2021

Revise Article 1004.03(a) of the Standard Specifications to read:

"**1004.03 Coarse Aggregate for Hot-Mix Asphalt.** The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate for HMA shall be according to the following table.

Use	Mixture	Aggregates Allowed
Class A	Seal or Cover	Allowed Alone or in Combination [5/]: Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA Low ESAL	Stabilized Subbase or Shoulders	Allowed Alone or in Combination [5/]: Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag[1/] Crushed Concrete
HMA High ESAL Low ESAL	Binder IL-19.0 or IL-19.0L SMA Binder	Allowed Alone or in Combination [5/ 6/]: Crushed Gravel Carbonate Crushed Stone[2/] Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete[3/]

<table>
<tr><th>Use</th><th>Mixture</th><th colspan="2">Aggregates Allowed</th></tr>
<tr><td>HMA
High ESAL
Low ESAL</td><td>C Surface and Binder
IL-9.5
IL-9.5FG
or IL-9.5L</td><td colspan="2"><u>Allowed Alone or in Combination</u> [5/]:

Crushed Gravel
Carbonate Crushed Stone[2/]
Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag[4/]
Crushed Concrete[3/]</td></tr>
<tr><td rowspan="5">HMA
High ESAL</td><td rowspan="5">D Surface and Binder
IL-9.5
or IL-9.5FG</td><td colspan="2"><u>Allowed Alone or in Combination</u> [5/]:

Crushed Gravel
Carbonate Crushed Stone (other than Limestone)[2/]
Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag[4/]</td></tr>
<tr><td colspan="2"><u>Other Combinations Allowed:</u></td></tr>
<tr><td>Up to...</td><td>With...</td></tr>
<tr><td>25% Limestone</td><td>Dolomite</td></tr>
<tr><td>50% Limestone</td><td>Any Mixture D aggregate other than Dolomite</td></tr>
<tr><td>75% Limestone</td><td>Crushed Slag (ACBF) or Crushed Sandstone</td></tr>
<tr><td rowspan="5">HMA
High ESAL</td><td rowspan="5">E Surface
IL-9.5

SMA
Ndesign 80
Surface</td><td colspan="2"><u>Allowed Alone or in Combination</u> [5/ 6/]:

Crushed Gravel
Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag

No Limestone.</td></tr>
<tr><td colspan="2"><u>Other Combinations Allowed:</u></td></tr>
<tr><td>Up to...</td><td>With...</td></tr>
<tr><td>50% Dolomite[2/]</td><td>Any Mixture E aggregate</td></tr>
<tr><td>75% Dolomite[2/]</td><td>Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone</td></tr>
</table>

<table>
<tr><td>Use</td><td>Mixture</td><td colspan="2">Aggregates Allowed</td></tr>
<tr><td></td><td></td><td>75% Crushed Gravel[2/]</td><td>Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag</td></tr>
<tr><td rowspan="4">HMA
High ESAL</td><td rowspan="4">F Surface
IL-9.5

SMA
Ndesign 80
Surface</td><td colspan="2"><u>Allowed Alone or in Combination</u> [5/ 6/]:

Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag
No Limestone.</td></tr>
<tr><td colspan="2"><u>Other Combinations Allowed</u>:</td></tr>
<tr><td>Up to...</td><td>With...</td></tr>
<tr><td>50% Crushed Gravel[2/] or Dolomite[2/]</td><td>Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone</td></tr>
</table>

1/ Crushed steel slag allowed in shoulder surface only.
2/ Carbonate crushed stone (limestone) and/or crushed gravel shall not be used in SMA Ndesign 80.
3/ Crushed concrete will not be permitted in SMA mixes.
4/ Crushed steel slag shall not be used as binder.
5/ When combinations of aggregates are used, the blend percent measurements shall be by volume."
6/ Combining different types of aggregate will not be permitted in SMA Ndesign 80."

ROCKFILL

Effective: January 1, 2010 Revised: April 1, 2022

<u>Description.</u> This work shall consist of the furnishing and placement of rockfill where unstable and/or unsuitable materials have been removed below the plan bedding grade of proposed cast-in-place and/or precast concrete box culverts. This work shall be done as shown on the plans and as directed by the Engineer.

<u>Materials.</u> Materials shall meet the following requirements of the Standard Specifications:

<u>Item</u>	<u>Section</u>
CA 07 and CA 11	1004
Rockfill	1005

The gradation of rockfill shall be selected based on the following table:

Material: Crushed Stone, Crushed Gravel, and Crushed Concrete

Sieve Size	Option 1 Percent Passing	Option 2 Percent Passing
3 inches (75 mm)	100	
2 1/2 inches (63 mm)	95 ± 5	100
2 inches (50 mm)	60 ± 15	93 ± 7
1 1/2 inches (37.5 mm)	15 ± 15	55 ± 20
1 inch (25 mm)	3 ± 3	8 ± 8
1/2 inch (12.5 mm)		3 ± 3

Geotechnical fabric for ground stabilization shall be nonwoven and meeting the requirements of Article 1080.02 of the Standard Specifications may be necessary dependent upon subgrade soil conditions. The Engineer shall make the determination if geotechnical fabric utilization is necessary.

Construction Requirements. Unstable and/or unsuitable soil shall be excavated according to Article 502.11 of the Standard Specifications. Rockfill shall be placed following the excavation of the unstable and/or unsuitable material. The maximum nominal thickness when compacted shall be 24 in. Each lift of aggregate shall be compacted to the satisfaction of the Engineer.

The rockfill shall be capped with material meeting the aggregate gradations of CA 07 or CA 11 according to Article 1004.01. The minimum cap thickness shall be 3 in.

The fabric, if required, shall be installed according to the applicable portions of Section 210 of the Standard Specifications.

Method of Measurement. Rockfill will be measured for payment in cubic yards.

Geotechnical fabric for ground stabilization will be measured for payment according to Article 210.05 of the Standard Specifications.

Basis of Payment. Rockfill will be paid for at the contract unit price per CUBIC YARD for ROCKFILL.

Geotechnical fabric for ground stabilization will be paid for according to Article 210.06 of the Standard Specifications. When the contract does not contain a pay item for the fabric and this item is required, it will be paid for according to Article 109.04 of the Standard Specifications.

Box culverts, removal and disposal of unstable and unsuitable materials, porous granular bedding material, and the excavation required for bedding will be paid for according to Section 540 of the Standard Specifications.

HOT-MIX ASPHALT – MIXTURE DESIGN VERIFICATION AND PRODUCTION (D1)

Effective: January 1, 2019 Revised: January 1, 2026

Add to Article 1030.05 (d)(3) of the Standard Specifications to read:

"During mixture design, prepared samples shall be submitted to the district laboratory by the Contractor for verification testing. The required testing, number, and size of prepared samples submitted, shall be according to the following tables.

High ESAL – Required Samples for Verification Testing	
Mixture	Hamburg Wheel and I-FIT Testing [1/ 2/]
Binder	total of 3 - 160 mm tall bricks
Surface	total of 4 - 160 mm tall bricks

Low ESAL – Required Samples for Verification Testing	
Mixture	I-FIT Testing [1/ 2/]
Binder	1 - 160 mm tall brick
Surface	2 - 160 mm tall bricks

1/ The compacted gyratory bricks for Hamburg wheel and I-FIT testing shall be 7.5 ± 0.5% t air voids.

2/ If the Contractor does not possess the equipment to prepare the 160 mm tall brick(s), twice as many 115 mm tall compacted gyratory bricks will be acceptable.

In the Supplemental Specifications, replace the addition of the paragraph between the third and fourth paragraphs of Article 1030.10 with the following:

"When a test strip is not required, each HMA mixture shall still be sampled on the first day of production: I-FIT and Hamburg wheel testing for high ESAL; I-FIT testing for low ESAL. Within two working days after sampling the mixture, the Contractor shall deliver gyratory cylinders to the district laboratory for Department verification testing. The high ESAL mixture test results shall meet the requirements of Articles 1030.05(d)(3) and 1030.05(d)(4). The low ESAL mixture test results shall meet the requirements of Article 1030.05(d)(4). The required number and size of prepared samples submitted for the Hamburg wheel and I-FIT testing shall be according to the "High ESAL - Required Samples for Verification Testing" table in Article 1030.05(d)(3) above."

Replace the eleventh paragraph of Article 1030.10 of the Standard Specifications with the following:

"If an initial Hamburg wheel or I-FIT test fails to meet the requirements of Article 1030.05(d), the Department will verify the results by testing the retained gyratory cylinders. Upon notification by the Engineer of a Hamburg wheel or I-FIT test failure on the retained gyratory

cylinders, the Contractor shall substitute an approved mix design, submit a new mix design for mix verification testing according to Article 1030.05(d), or pave 250 tons with or without an adjustment and resample for department Hamburg wheel and I-FIT testing as directed by the Engineer. Paving may continue as long as all other mixture criteria is being met. If Hamburg wheel or I-FIT tests on the resampled HMA fail, production of the affected mixture shall cease, and the Contractor shall substitute an approved mix design or submit a new mix design for mix verification testing according to Article 1030.05(d)."

Add the following to the end of Article 1030.10 of the Standard Specifications to read:

"Mixture sampled during first day of production shall include approximately 60 lb of additional material for the Department to conduct Hamburg wheel testing and approximately 80 lb of additional material for the Department to conduct I-FIT testing. Within two working days after sampling, the Contractor shall deliver prepared samples to the district laboratory for verification testing. The required number and size of prepared samples submitted for the Hamburg wheel and I-FIT testing shall be according to the "High ESAL - Required Samples for Verification Testing" table in Article 1030.05(d)(3) above."

GENERAL ELECTRICAL REQUIREMENTS

Effective: July 1, 2025

This special provision replaces Articles 801.01–801.07 and 801.09–801-16 of the Standard Specifications. Codes, standards, and industry specifications cited for electrical work shall be by definition the latest adopted version thereof, unless indicated otherwise.

Materials shall include electrical equipment, fittings, devices, motors, appliances, fixtures, apparatus, all hardware and appurtenances, and the like, used as part of, or in connection with, electrical installation.

Standards of Installation. Materials shall be installed according to the manufacturer's recommendations, the NEC, OSHA, the NESC, and AASHTO's Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

All like materials shall be from the same manufacturer. Listed and labeled materials shall be used whenever possible. The listing shall be according to UL or an approved equivalent.

Safety and Protection. Safety and protection requirements shall be as follows.

Safety. Electrical systems shall not be left in an exposed or otherwise hazardous condition. All electrical boxes, cabinets, pole handholes, etc. which contain wiring, either energized or non-energized, shall be closed or shall have covers in place and be locked when possible, during nonworking hours.

Protection. Electrical raceway or duct openings shall be capped or otherwise sealed from the entrance of water and dirt. Wiring shall be protected from mechanical injury.

Equipment Grounding Conductor. All electrical systems, materials, and appurtenances shall be grounded. Good ground continuity throughout the electrical system shall be assured, even though

every detail of the requirements is not specified or shown. Electrical circuits shall have a continuous insulated equipment grounding conductor. When metallic conduit is used, it shall be bonded to the equipment grounding conductor but shall not be used as the equipment grounding conductor.

Detector loop lead-in circuits, circuits under 50 volts, and runs of fiber optic cable will not require an equipment grounding conductor.

Where connections are made to painted surfaces, the paint shall be scraped to fully expose metal at the connection point. After the connection is completed, the paint system shall be repaired to the satisfaction of the Engineer.

Bonding of all boxes and other metallic enclosures throughout the wiring system to the equipment grounding conductor shall be made using a splice and pigtail connection. Mechanical connectors shall have a serrated washer at the contact surface.

All connections to structural steel or fencing shall be made with exothermic welds. Care shall be taken not to weaken load carrying members. Where connections are made to epoxy coated reinforcing steel, the epoxy coating shall be sufficiently removed to facilitate a mechanical connection. The epoxy coating shall be repaired to the satisfaction of the Engineer. Where connections are made to insulated conductors, the connection shall be wrapped with at least four layers of electrical tape extended 6 in. onto the conductor insulation.

Submittals**.** At the preconstruction meeting, the Contractor shall submit a written listing of manufacturers for all major electrical and mechanical items. The list of manufacturers shall be binding, except by written request from the Contractor and approval by the Engineer. The request shall include acceptable reasons and documentation for the change.

Within 30 calendar days after contract execution, the Contractor shall submit, for approval, through the method as directed in the pre-construction meeting. Submittals for the materials for each individual pay item shall be complete in every respect. Submittals which include multiple pay items shall have all submittal material for each item or group of items covered by a particular specification, grouped together and the applicable pay item identified. Various submittals shall, when taken together, form a complete coordinated package. A partial submittal will be returned without review unless prior written permission is obtained from the Engineer.

Submittals shall be provided for all items used, temporary and permanent, for review and approval.

Equipment which will be owned and maintained by a local agency other than the State shall be reviewed and approved by that agency prior to submittal to the State. The submittal to the State shall include any comments made by the local agency.

Each PDF document must be a vector format PDF from the originating supplier or program and not scanned images.

The submittal must clearly identify the specific model number or catalog number of the item being proposed. Submittals must be the Manufacturers current published information. Out of date submittal material will be grounds for rejection.

The submittal shall be properly identified by contractor, pay item number, route, section, county, and contract number. Example:

Contractor: Contractor Name
Pay Item: X0327607
Route: I-00
Section: 2013-xxx-yzx
County: Cook
Contract: 12Z34

The Contractor shall have reviewed the submittal material and affixed the Contractor's stamp of approval, with date and signature, for each individual item prior to submittal. The Contractor's approval stamp shall be the first page of the submittal.

Illegible print, incompleteness, inaccuracy, or lack of coordination will be grounds for rejection.

Items from multiple disciplines shall not be combined on a single submittal and transmittal. Items for lighting, signals, surveillance, and CCTV must be in separate submittals since they may be reviewed by various personnel in various locations.

The Department may provide a list of pay items broken out by discipline upon request for a particular contract. In general, the disciplines are as follows:

Discipline	Typical Items
ITS	CCTV CCTV structures Communication vaults Fiber optic Fiber optic duct Network equipment
Lighting	Breakaway devices Light poles Light tower Lighting cables Lighting controllers Luminaires Unit duct
Pump Station	All pump station equipment
Signing	Signing
Surveillance	Loop cables Detector equipment & associated structures Ramp metering & associated structures Wireless pavement sensors and assoc. structures Radar detection Data Probing Handholes Dynamic Message Signs (DMS)
Traffic Signal	Controllers/Cabinets Handholes Illuminated signs Pedestrian Push Buttons Signal Cable Signal Detectors Signal Heads Signal Loop Cable Signal Modules Signal Structures
Local Roads Lighting	Same as lighting
Local Roads Traffic Signal	Same as traffic signal
Discipline with the predominate amount of work in contract or ask Engineer.	Raceways Electric cables Junction boxes

The Engineer will review the submittals for conformance with the design concept of the project according to Article 105.04 and the following. The Engineer will stamp the drawings indicating their status as “Approved”, “Approved as Noted”, “Disapproved”, “Incomplete”, or “Information Only”. Since the Engineer’s review is for conformance with the design concept only, it shall be the Contractor’s responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, or layout drawings by the Engineer’s approval thereof. The Contractor shall still be in full compliance with contract and specification requirements.

All submitted items reviewed and marked “Disapproved”, “Incomplete” or “Approved as Noted” shall be resubmitted by the Contractor in their entirety, unless otherwise indicated within the submittal comments.

Work shall not begin until the Engineer has approved the submittal. Material installed prior to approval by the Engineer, will be subject to removal and replacement at no additional cost to the Department.

Certifications**.** When certifications are specified and are available prior to material manufacture, the certification shall be included in the submittal information. When specified and only available after manufacture, the submittal shall include a statement of intent to furnish certification. All certificates shall be complete with all appropriate test dates and data.

Authorized Project Delay. See Article 801.08

Maintenance transfer and Preconstruction Inspection: Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall request a maintenance transfer and preconstruction site inspection, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any electrical systems (lighting, ITS, pump station, surveillance, and traffic control systems) which may be affected by the work. The request for the maintenance transfer and preconstruction inspection shall be made no less than 14 calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

Establish the procedures for formal transfer of maintenance responsibility required for the construction period.

Establish the approximate location and operating condition of the electrical systems which may be affected by the work.

Marking of Existing Cable Systems. The party responsible for maintenance of any existing electrical systems at the project site will, at the Contractor's request, mark and/or stake, once per location, all underground cable routes owned or maintained by the State. A project may involve multiple "locations" where separated electrical systems are involved (i.e. different controllers). The markings shall be taken to have a horizontal tolerance of at least 1 foot (304.8 mm) to either side. The request for the cable locations and marking shall be made at the same time the request for the maintenance transfer and preconstruction inspection is made. The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of their work, as specified elsewhere herein. Note that the Contractor shall be entitled to only one request for location marking of existing systems and that multiple requests may only be honored at the Contractor's expense. No locates will be made after maintenance is transferred unless it is at the Contractor’s expense.

Condition of Existing Systems. The Contractor shall conduct an inventory of all existing electrical system equipment within the project limits, which may be affected by the work, making note of any parts which are found broken or missing, defective or malfunctioning. Megger and load readings shall be taken for all existing circuits which will remain in place or be modified. If a circuit is to be taken out in its entirety, then readings do not have to be taken. The inventory and test data shall be reviewed with and approved by the Engineer and a record of the inventory shall be submitted to the Engineer for the record. Without such a record, all systems transferred to the Contractor for maintenance during construction shall be returned at the end of construction in complete, fully operating condition.”

Maintenance and Responsibility During Construction.

Lighting Operation and Maintenance Responsibility. The scope of work shall include the assumption of responsibility for the continuing operation and maintenance of the existing, proposed, temporary, sign and navigation lighting, or other lighting systems and all appurtenances affected by the work as specified elsewhere herein. Maintenance of lighting systems is specified elsewhere and will be paid for separately.

The proposed lighting system must be operational prior to opening the roadway to traffic unless temporary lighting exists which is designed and installed to properly illuminate the roadway.

Electrical Infrastructure During Construction. The scope of work shall include locating and marking the proposed underground infrastructure installed in this contract.

Energy and Demand Charges. The payment of basic energy and demand charges by the electric utility for existing lighting which remains in service will continue as a responsibility of the Owner, unless otherwise indicated. Unless otherwise indicated or required by the Engineer duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously at the Owner's expense and lighting systems shall not be kept in operation during long daytime periods at the Owner's expense. Upon written authorization from the Engineer to place a proposed new lighting system in service, whether the system has passed final acceptance or not, (such as to allow temporary lighting to be removed), the Owner will accept responsibility for energy and demand charges for such lighting, effective the date of authorization. All other energy and demand payments to the utility shall be the responsibility of the Contractor until final acceptance.

Damage to Electrical Systems. Should damage occur to any existing electrical systems through the Contractor’s operations, the Engineer will designate the repairs as emergency or non-emergency in nature.

Emergency repairs shall be made by the Contractor, or as determined by the Engineer, the Department, or its agent. Non-emergency repairs shall be performed by the Contractor within six working days following discovery or notification. All repairs shall be performed in an expeditious manner to assure all electrical systems are operational as soon as possible. The repairs shall be performed at no additional cost to the Department.

Lighting. An outage will be considered an emergency when three or more lights on a circuit or three successive lights are not operational. Knocked down materials, which result in a danger to the motoring public, will be considered an emergency repair.

Temporary aerial multi-conductor cable, with grounded messenger cable, will be permitted if it does not interfere with traffic or other operations, and if the Engineer determines it does not require unacceptable modification to existing installations.

Marking Proposed Locations. The Contractor shall mark or stake the proposed locations of all poles, cabinets, junction boxes, pull boxes, handholes, cable routes, pavement crossings, and other items pertinent to the work. A proposed location inspection by the Engineer shall be requested prior to any excavation, construction, or installation work after all proposed installation

locations are marked. Any work installed without location approval is subject to corrective action at no additional cost to the Department.

Inspection Of Electrical Work. Inspection of electrical work shall be according to Article 105.12 and the following. Before any splice, tap, or electrical connection is covered in handholes, junction boxes, light poles, or other enclosures, the Contractor shall notify and make available such wiring for the Engineer's inspection.

Testing**.** Before final inspection, the electrical work shall be tested. Tests may be made progressively as parts of the work are completed or may be made when the work is complete. Tests shall be made in the presence of the Engineer. Items which fail to test satisfactorily shall be repaired or replaced. Tests shall include checks of control operation, system voltages, cable insulation, and ground resistance and continuity.

The forms for recording test readings will be available from the Engineer in electronic format. The Contractor shall provide the Engineer with a written report of all test data including the following:

- Voltage Tests
- Amperage Tests
- Insulation Resistance Tests
- Continuity tests
- Resistance of Grounding Electrodes
- Detector Loop Tests

Lighting Systems. The following tests shall be made.

(1) Voltage Measurements. Voltages in the cabinet from phase to phase and phase to neutral, at no load and at full load, shall be measured and recorded. Voltage readings at the last termination of each circuit shall be measured and recorded.

(2) Insulation Resistance. Insulation resistance to ground of each circuit at the cabinet shall be measured and recorded with all loads disconnected. Prior to performance of the insulation resistance test, the Contractor shall remove all fuses within all light pole bases on a circuit to segregate the luminaire loads.

On tests of new cable runs, the readings shall exceed 50 megohms for phase and neutral conductors with a connected load over 20A and shall exceed 100 megohms for conductors with a connected load of 20A or less.

On tests of cable runs which include cables which were existing in service prior to this contract, the resistance readings shall be the same or better than the readings recorded at the maintenance transfer at the beginning of the contract. Measurements shall be taken with a megohm meter approved by the Engineer.

(3) Loads. The current of each circuit, phase main, and neutral shall be measured and recorded. The Engineer may direct reasonable circuit rearrangement. The current readings shall be within 10% of the connected load based on material ratings.

(4) Ground Continuity. Resistance of the system ground as taken from the farthest extension of each circuit run from the controller (i.e. check of equipment ground continuity for each

circuit) shall be measured and recorded. Readings shall not exceed 2.0 ohms, regardless of the length of the circuit.

(5) Resistance of Grounding Electrodes. Resistance to ground of all grounding electrodes shall be measured and recorded. Measurements shall be made with a ground tester during dry soil conditions as approved by the Engineer. Resistance to ground shall not exceed 10 ohms.

Surveillance. The following tests shall be made in addition to the lighting system test above.

Detector Loops. Before and after permanently securing the loop in the pavement, the resistance, inductance, resistance to ground, and quality factor for each loop and lead-in circuit shall be tested.

The loop and lead-in circuit shall have an inductance between 20 and 2500 microhenries. The resistance to ground shall be a minimum of 50 megohms under any conditions of weather or moisture. The continuity test of the loop and loop lead-in shall not have a resistance greater than 2 ohms. The quality factor (Q) shall be 5 or greater. Loops which fail to test satisfactorily shall be repaired or replaced.

Telecommunication Cable. Once the telecommunication cable is installed complete with all cable terminations complete the Contractor shall request an end-to-end test. The Contractor shall request the end-to-end test at least seven days in advance to the TSC Engineer. Any lane closures and/or any other safety measures that need to be taken shall be provided for by the Contractor and shall be considered incidental to the cost of this item. The type of test performed shall be an end-to-end test with Halcyon type equipment transmitting and receiving at each end of the cable. Each pair shall be tested, and the results shall be recorded and submitted to the Engineer. If any results don't fall within the requirements set forth in (REA) PE-39, the Contractor shall correct and re-test that cable pair. Traffic systems will tolerate only one pair out of every 100 pair of cable that doesn't meet or exceed specifications set forth in (REA) PE-39.

Wireless in-pavement detection systems shall be tested in accordance with the approved testing procedures provided in the catalog cut submittal.

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

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

The Contractor shall provide the date, time and location of any tests required by this specification to the Engineer at least five working (seven calendar) days before performing the test. Included with the notification shall be a record drawing of the installed fiber optic cable system. The drawings shall indicate actual installed routing of the cable, the locations of splices, and locations of cable slack with slack quantities identified.

Upon completion of the cable installation, splicing, and termination, the Contractor shall test all fibers for continuity, events above 0.1 dB, and total attenuation of the cable. The test procedure shall be as follows:

A certified technician utilizing an OTDR and optical source/power meter shall conduct the installation test. The test equipment used shall have been calibrated within the last two years. Documentation shall be provided. The technician is directed to conduct the test using the standard operating procedures defined by the manufacturer of the test equipment. All fibers installed shall be tested in both directions.

A fiber ring or fiber box shall be used to connect the OTDR to the fiber optic cable under test at both the launch and receive ends. The tests shall be conducted at 1310 and 1550 nm for all fibers.

All testing shall be witnessed by the Engineer, and a copy of the test results (CD ROM or USB Drive) shall be submitted on the same day of the test. Hardcopies shall be submitted as described herein with copies on CD ROM or USB Drive.

At the completion of the test, the Contractor shall provide copies of the documentation of the test results to the Engineer. The test documentation shall be submitted as two bound copies and three CD ROM, or USB drive copies, and shall include the following:

Cable & Fiber Identification:

- Cable ID
- Cable Location - beginning and end point
- Fiber ID, including tube and fiber color
- Wavelength
- Pulse width (OTDR)
- Refractory index (OTDR)
- Operator Name
- Date & Time
- Setup Parameters
- Range (OTDR)
- Scale (OTDR)
- Setup Option chosen to pass OTDR “dead zone”

Test Results shall include:

- OTDR Test results
- Total Fiber Trace
- Splice Loss/Gain
- Events > 0.10 dB
- Measured Length (Cable Marking)
- Total Length (OTDR)
- Optical Source/Power Meter Total Attenuation (dB/km)

Sample Power Meter Tabulation:

Power Meter Measurements (dB)									
Location		Fiber No.	Cable Length (km)	A to B		B to A		Bidirectional Average	
A	B			1310 nm	1550 nm	1310 nm	1550 nm	1310 nm	1550 nm
		1							
		2							
Maximum Loss									
Minimum Loss									

The OTDR test results file format must be Bellcore/Telcordia compliant according to GR-196-CORE Issue 2, OTDR Data Standard, GR 196, Revision 1.0, GR 196, Revision 1.1, GR 196, Revision 2.0 (SR-4731) in a ".SOR" file format. A copy of the test equipment manufacture's software to read the test files, OTDR and power, shall be provided to the Department. These results shall also be provided in tabular form, see sample below:

Sample OTDR Summary				
Cable Designation:	*TCF-IK-03*	**OTDR Location:**	*Pump Sta. 67*	**Date:** *1/1/00*
Fiber Number	**Event Type**	**Event Location**	**Event Loss (dB)**	
			1310 nm	**1550 nm**
1	*Splice*	*23500 Ft.*	*.082*	*.078*
1	*Splice*	*29000 Ft.*	*.075*	*.063*
2	*Splice*	*29000 Ft.*	*.091*	*.082*
3	*Splice*	*26000 Ft.*	*.072*	*.061*
3	*Bend*	*27000 Ft.*	*.010*	*.009*

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

Upon completing all splicing operations for a cable span, the Contractor shall measure the mean bi-directional loss at each splice using an optical time domain reflectometer.

- When splices are made between identical cables (same manufacturer and cable type) the average optical loss of each splice shall not exceed 0.10 dB. The average is determined by measuring the splice loss in both directions with an OTDR, adding the two readings, and dividing by two. Testing should be performed for both the 1310 and 1550 nm wavelengths. No individual splice loss measured in a single direction shall exceed 0.15 dB.
- When splices are made between cables containing fibers of different mode field diameters, the average optical loss of each splice shall not exceed 0.50 dB. The average is determined by measuring the splice loss in both directions with an OTDR, adding the two readings, and dividing by two. Testing should be performed for both the 1310 and 1550 nm wavelengths. No individual splice loss measured in a single direction shall exceed 0.6 dB.

The Contractor shall measure the end-to-end attenuation of each fiber, from connector to connector, using an optical power meter and source. This loss shall be measured at from both directions and shall not exceed 0.5 dB per installed kilometer of single mode cable. Measurements shall be made at both 1300 and 1550 nm for single mode cable.

For multimode cable, power meter measurements shall be made at 850 and 1300 nm. The end-to-end attenuation shall not exceed 3.8 dB/installed kilometers at 850nm or 1.8 dB per installed kilometer at 1300nm for multimode fibers.

If the total loss exceeds these specifications, the Contractor shall replace or repair the cable run at the no additional cost to the state, both labor and materials. Elevated attenuation due to exceeding the pulling tension, or any other installation operation, during installation shall require the replacement of the cable run at no additional cost to the State, including labor and materials.

All test results shall be furnished to the Engineer seven working days before the date the inspection is scheduled.

Contract Guarantee. The Contractor shall provide a written guarantee for all electrical work provided under the contract for a period of six months after the date of acceptance with the following warranties and guarantees.

(a) The manufacturer's standard written warranty for each piece of electrical material or apparatus furnished under the contract. The warranty for LED modules, including the maintained minimum luminance, shall cover a minimum of 120 months from the date of delivery.
(b) The Contractor's written guarantee that, for a period of six months after the date of final acceptance of the work, all necessary repairs to or replacement of said warranted material or apparatus for reasons not proven to have been caused by negligence on the part of the user or acts of a third party shall be made by the Contractor at no additional cost to the Department.
(c) The Contractor's written guarantee for satisfactory operation of all electrical systems furnished and constructed under the contract for a period of six months after final acceptance of the work.

The warranty for an UPS shall cover a minimum of two years from date the equipment is placed in operation; however, the batteries of the UPS shall be warranted for full replacement for a minimum of five years.

Record Drawings. Alterations and additions to the electrical installation made during the execution of the work shall be made on the PDF copy of the as-Let documents using a PDF editor. Hand drawn notations or markups and scanned plans are not acceptable. These drawings shall be updated daily and shall be available for inspection by the Engineer during the work. The record drawings shall include the following:

- Cover sheet
- The electrical maintenance contract management system (EMCMS) location designation, i.e. "L", "TS", "S", "A" number.
- Summary of Quantities, electrical items only
- Legends, schedules, and notes
- Plan sheets
- Final fiber assignment tables
- Pertinent details
- Single line diagrams; electrical, communications, surveillance and fiber optic.
- Other useful information useful to locate and maintain the systems.

Any modifications to the details shall be indicated. Final quantities used shall be indicated on the Summary of Quantities. Foundation depths used shall also be listed.

As part of the record drawings, the Contractor shall inventory all materials, new or existing, on the project and record information on inventory sheets provided by the Engineer.

The inventory shall include:

- Location of equipment, including rack, chassis, slot as applicable.
- Designation of equipment
- Equipment manufacturer
- Equipment model number
- Equipment version number
- Equipment configuration
  - Addressing, IP or other
  - Settings, hardware or programming
- Equipment serial number

The following electronic inventory forms are available from the Engineer:

- Lighting controller inventory
- Lighting inventory
- Light tower inspection checklist
- ITS location inventory

The information shall be entered in the forms; handwritten entries will not be acceptable; except for signatures. Electronic file shall also be included in the documentation.

When the work is complete, and seven days before the request for a final inspection, the set of contract drawings, marked “RECORD DRAWINGS”, shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor’s supervising engineer or electrician. The record drawings shall be submitted in PDF format via a mutually agreed to electronic format for review and approval.

In addition to the record drawings, PDF copies of the final catalog cuts which have been approved and approved as noted with applicable follow-up shall be submitted along with the record drawings. The PDF files shall clearly indicate either by filename or PDF table of contents (bookmarks) the respective pay item number. Specific part or model numbers of items which have been selected shall be clearly visible.

If the electric service is new or modified, documentation as required in the Electric Utility Service Installation and Connection shall be submitted.

During the final inspection, the Contractor shall provide three sets of electronically produced drawings in a moisture proof pouch to be kept on the inside door of the controller cabinet or other location approved by the Engineer. These drawings shall show the final as-built circuit orientation(s) of the project in the form of a single line diagram with all equipment designations and clearly identified.

Final documentation shall be submitted as a complete submittal package, i.e. record drawings, test results, inventory, etc. shall be submitted at the same time. Partial piecemeal submittals will be rejected without review.

A total of three hardcopies and two CD-ROMs or USB Drives of the final documentation shall be submitted. The identical material shall also be submitted in the same manner as the catalog cut submittals utilizing the following final documentation pay item numbers:

Pay Code	Description	Discipline
FDLRD000	Record Drawings - Lighting	Lighting
FDSRD000	Record Drawings - Surveillance	Surveillance
FDTRD000	Record Drawings - Traffic Signal	Traffic Signal
FDIRD000	Record Drawings - ITS	ITS
FDLCC000	Catalog Cuts - Lighting	Lighting
FDSCC000	Catalog Cuts – Surveillance	Surveillance
FDTCC000	Catalog Cuts – Traffic Signal	Traffic Signal
FDICC000	Catalog Cuts - ITS	ITS
FDLWL000	Warranty - Lighting	Lighting
FDSWL000	Warranty - Surveillance	Surveillance
FDTWL000	Warranty - Traffic Signal	Traffic Signal
FDIWL000	Warranty - ITS	ITS
FDLTR000	Test Results - Lighting	Lighting
FDSTR000	Test Results - Surveillance	Surveillance
FDTTR000	Test Results - Traffic Signal	Traffic Signal
FDITR000	Test Results - ITS	ITS
FDLINV00	Inventory - Lighting	Lighting
FDSINV00	Inventory - Surveillance	Surveillance
FDTINV00	Inventory - Traffic Signal	Traffic Signal
FDIINV00	Inventory - ITS	ITS
FDLGPS00	GPS - Lighting	Lighting
FDSGPS00	GPS - Surveillance	Surveillance
FDTGPS00	GPS - Traffic Signal	Traffic Signal
FDIGPS00	GPS - ITS	ITS
FDLES00	Electric Service - Lighting	Lighting
FDSES00	Electric Service - Surveillance	Surveillance
FDTES00	Electric Service - Traffic Signal	Traffic Signal
FDIES00	Electric Service - ITS	ITS

Record drawings shall include marked up plans, controller info, electric service info, equipment settings, manuals, wiring diagrams for each discipline.

Test results shall be all electrical test results, fiber optic OTDR, and fiber optic power meter as applicable for each discipline.

GPS Documentation. In addition to the specified record drawings, the Contactor shall record GPS coordinates of the following electrical components being installed, modified or being affected in other ways by this contract:

- All light poles and light towers.
- Handholes and vaults.
- Junction boxes

- Conduit roadway crossings.
- Controllers.
- Control buildings.
- Structures with electrical connections, i.e. DMS, lighted signs.
- Electric service locations.
- CCTV camera installations.
- Roadway surveillance installations.
- Fiber optic splice locations.
- Fiber Optic Cables. Coordinates shall be recorded along each fiber optic cable route every 200 feet.
- Fiber optic utility markers
- All fiber optic slack locations shall be identified with quantity of slack cable included. When sequential cable markings are available, those markings shall be documented as cable marking into enclosure and marking out of enclosure.
- All wireless in-pavement vehicle detectors

Datum to be used shall be North American 1983.

Data shall be provided electronically. The electronic format shall be compatible with MS Excel. Latitude and Longitude shall be in decimal degrees with a minimum of six decimal places. Each coordinate shall have the following information:

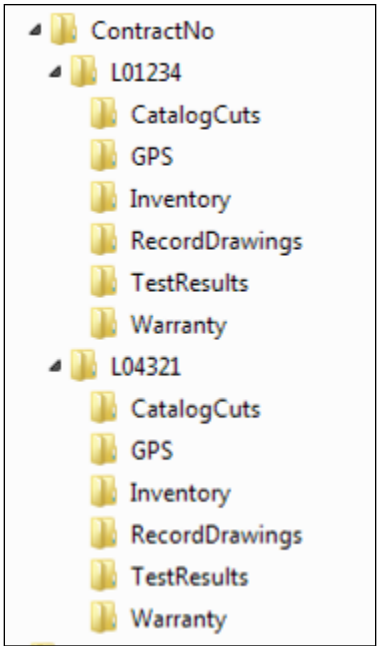
1. District
2. Description of item
3. Designation
4. Use
5. Approximate station
6. Contract number
7. Date
8. Owner
9. Latitude
10. Longitude
11. Comments

A spreadsheet template will be available from the Engineer for use by the Contractor.

Accuracy. Data collected is to be mapping grade. A handheld mapping grade GPS device shall be used for the data collection. The receiver shall support differential correction and data shall have minimum 5 meter accuracy after post processing.

GPS receivers integrated into cellular communication devices, recreational and automotive GPS devices are not acceptable. The GPS shall be the product of an established major GPS manufacturer having been in the business for a minimum of six years."

The documents on the CD ROM, or USB Drive shall be organized by the electrical maintenance contract management system (EMCMS) location designation. If multiple EMCMS locations are within the contract, separate folders shall be utilized for each location as follows:



Extraneous information not pertaining to the specific EMCMS location shall not be included in that particular folder and sub-folder.

The inspection will not be made until after the delivery of acceptable record drawings, specified certifications, and the required guarantees.

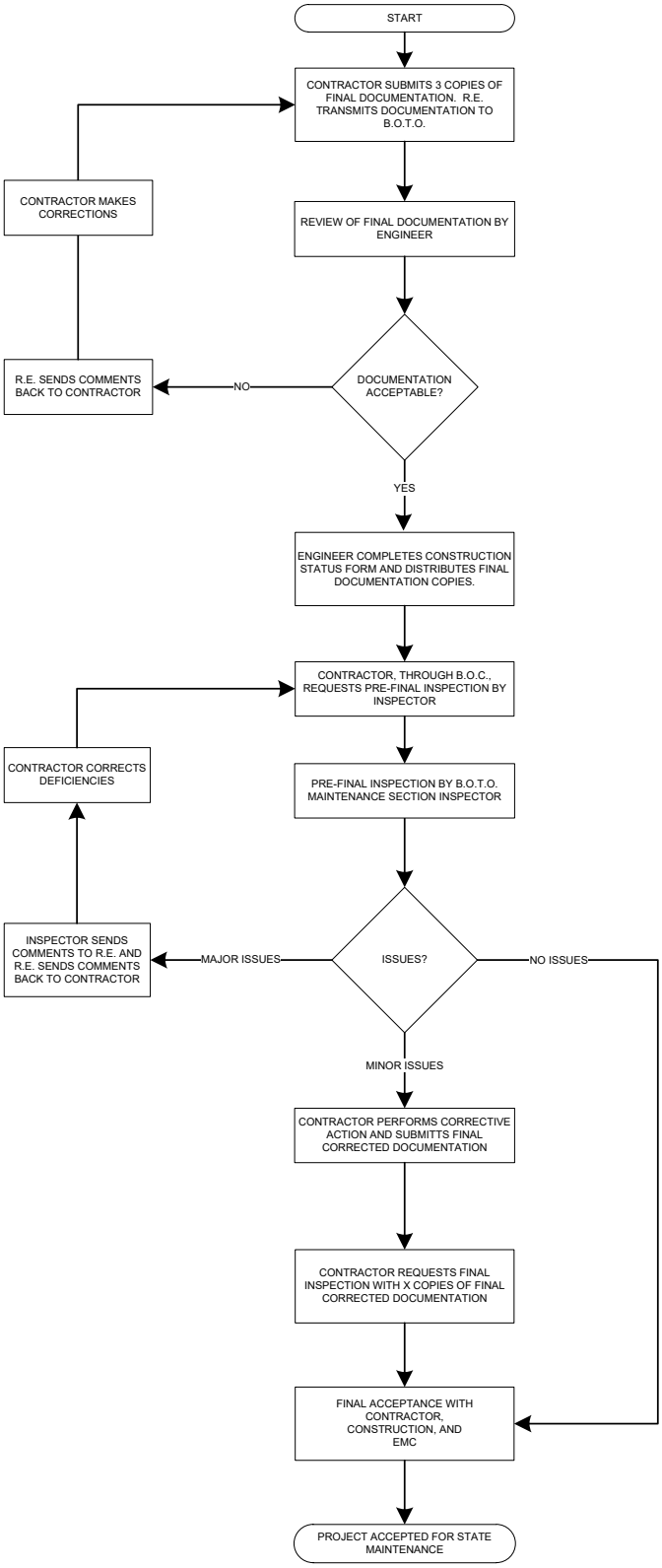
The final acceptance documentation checklist shall be completed and is contained elsewhere herein.

If CD's are used they shall be labeled as illustrated in the CD Label Template contained herein.

Acceptance**.** Acceptance of electrical work will be given at the time when the Department assumes the responsibility to protect and maintain the work according to Article 107.30 or at the time of final inspection.

When the electrical work is complete, tested, and fully operational, the Contractor shall schedule an inspection for acceptance with the Engineer no less than seven working days prior to the desired inspection date. The Contractor shall furnish the necessary labor and equipment to make the inspection.

A written record of the test readings taken by the Contractor according to Article 801.13 shall be furnished to the Engineer seven working days before the date the inspection is scheduled. Inspection will not be made until after the delivery of acceptable record drawings, specified certifications, and the required guarantees.


START
CONTRACTOR SUBMITS 3 COPIES OF FINAL DOCUMENTATION. R.E. TRANSMITS DOCUMENTATION TO B.O.T.O.
REVIEW OF FINAL DOCUMENTATION BY ENGINEER
DOCUMENTATION ACCEPTABLE?
NO
R.E. SENDS COMMENTS BACK TO CONTRACTOR
CONTRACTOR MAKES CORRECTIONS
YES
ENGINEER COMPLETES CONSTRUCTION STATUS FORM AND DISTRIBUTES FINAL DOCUMENTATION COPIES.
CONTRACTOR, THROUGH B.O.C., REQUESTS PRE-FINAL INSPECTION BY INSPECTOR
PRE-FINAL INSPECTION BY B.O.T.O. MAINTENANCE SECTION INSPECTOR
ISSUES?
MAJOR ISSUES
INSPECTOR SENDS COMMENTS TO R.E. AND R.E. SENDS COMMENTS BACK TO CONTRACTOR
CONTRACTOR CORRECTS DEFICIENCIES
NO ISSUES
MINOR ISSUES
CONTRACTOR PERFORMS CORRECTIVE ACTION AND SUBMITTS FINAL CORRECTED DOCUMENTATION
CONTRACTOR REQUESTS FINAL INSPECTION WITH X COPIES OF FINAL CORRECTED DOCUMENTATION
FINAL ACCEPTANCE WITH CONTRACTOR, CONSTRUCTION, AND EMC
PROJECT ACCEPTED FOR STATE MAINTENANCE

Final Acceptance Documentation Checklist

LOCATION	
Route	Common Name
Limits	Section
Contract #	County
Controller Designation(s)	EMC Database Location Number(s)

ITEM	Contractor (Verify)	Resident Engineer (Verify)
Record Drawings -Three hardcopies (11" x 17") -PDFs as required elsewhere	☐ ☐	☐ ☐
Field Inspection Tests -Voltage -Amperage -Cable Insulation Resistance -Continuity -Controller Ground Rod Resistance (Three Hardcopies & PDFs as required)	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐
GPS Coordinates -Excel file (Check Special Provisions, Excel file required.)	☐	☐
Job Warranty Letter (Three Hardcopies & PDFs as required)	☐	☐
Catalog Cut Submittals -Approved & Approved as Noted (PDFs as required)	☐	☐
Lighting Inventory Form (Three Hardcopies & PDFs as required)	☐	☐
Lighting Controller Inventory Form (Three Hardcopies & PDFs as required)	☐	☐
Electric Service Documentation (Three Hardcopies & PDFs as required)	☐	☐
Light Tower Inspection Form (If applicable, Three Hardcopies & PDFs as required)	☐	☐

Three hardcopies & PDFs as required shall be submitted for all items above. If a CD ROM is used it shall be labeled as shown in the example contained herein.

General Notes:

Record Drawings – The record drawings should contain contract cover sheet, summary of quantities showing all lighting pay item sheets, proposed lighting plans and lighting detail sheets. Submit hardcopies shall be 11" x 17" size. Temporary lighting plans and removal lighting plans should not be part of the set.

Field Inspection Tests – Testing should be done for proposed cables. Testing shall be per standard specifications. Forms shall be neatly filled out.

GPS Coordinates – Check special provisions "General Electrical Requirements". Submit electronic "EXCEL" file.

Job Warranty Letter – See standard specifications.

Cutsheet Submittal – See special provisions "General Electrical Requirements". Scan approved and approved as noted cutsheets.

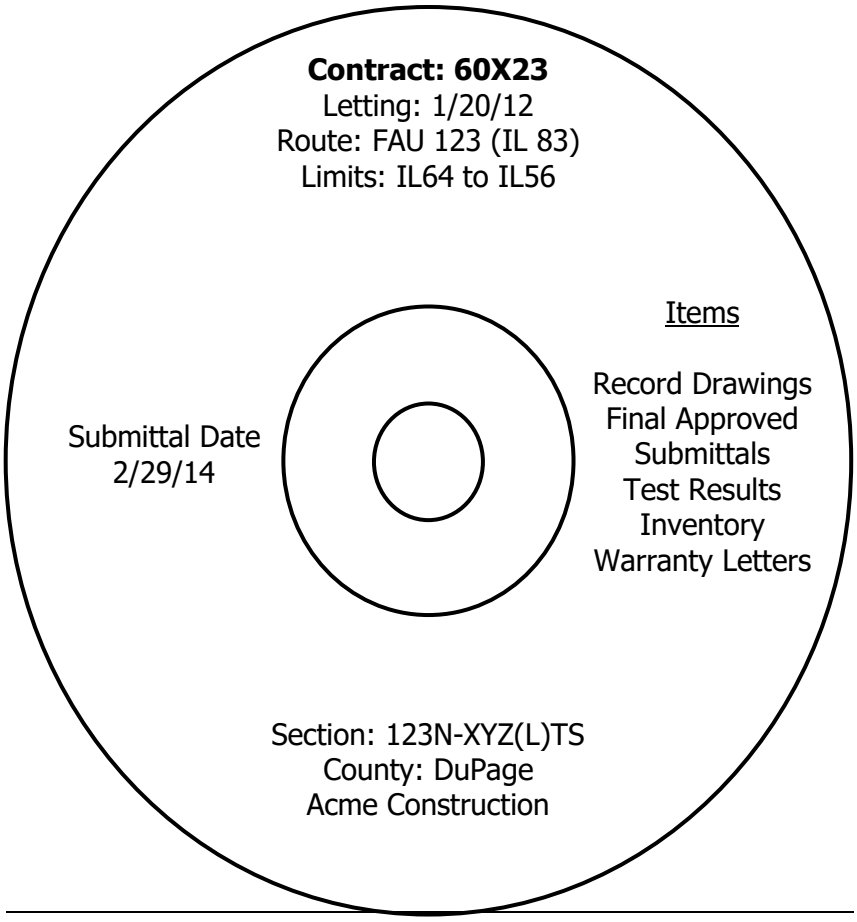
Lighting Inventory Form – Inventory form should include only proposed light poles, proposed light towers, proposed combination (traffic/light pole) lighting and proposed underpass luminaires.

Lighting Controller Inventory Form – Form should be filled out for only proposed lighting controllers.

Light Tower Safety Inspection Form – Form should be filled out for each proposed light tower.

Cd Label Format Template.

Label must be printed; hand written labels are unacceptable and will be rejected.



MAINTENANCE OF LIGHTING SYSTEMS

Effective: December 1, 2024

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

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

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting systems which may be affected by the work. During the maintenance preconstruction inspection, the party responsible for existing maintenance shall perform testing of the existing system in accordance with Article 801.13a. The Contractor shall request a date for the preconstruction inspection no less than 14 days prior to the desired date of the inspection.

The Engineer will document all test results and note deficiencies. All substandard equipment will be repaired or replaced by the existing maintenance contractor, or the Engineer can direct the Contractor to make the necessary repairs under Section109.04.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained. Contract documents shall indicate the circuit limits.

Maintenance of Existing Lighting Systems

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

Extent of Maintenance.

Partial Maintenance. Unless otherwise ‘indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in each controller and the controller is not part of the contract work, the Contractor needs only to maintain the affected circuits within the project limits. The project limits are defined as those limits indicated in the contract plans. Equipment outside of the project limits, on the affected circuits shall be maintained and paid for under Article 109.04. The affected circuits shall be isolated by means of in-line waterproof fuse holders as specified elsewhere and as approved by the Engineer. The unaffected circuits and the controller will remain under the maintenance of the State.

Full Maintenance. If the number of circuits affected by the contract is greater than 40% of the total number of circuits in each controller, or if the controller is modified in any way under the contract work, the Contractor shall maintain the entire controller and all associated circuits within the project limits. Equipment outside of the project limits shall be maintained and paid for under Article 109.04.

If the existing equipment is damaged by normal vehicular traffic, not the Contractor’s operations, and is beyond repair and cannot be re-set, the Contractor shall replace the equipment in kind with payment made for such equipment under Article 109.04. If the equipment damaged by any construction operations, not normal vehicular traffic, and is beyond repair and cannot be re-set, the Contractor shall replace the equipment in kind and the cost of the equipment shall be included in the cost of this pay item and shall not be paid for separately.

Maintenance of Proposed Lighting Systems

Proposed Lighting Systems. Proposed lighting systems shall be defined as any lighting system or part of a lighting system, temporary or permanent, which is to be constructed under this contract regardless of the project limits indicated in the plans.

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

The Contractor shall be responsible for locating cables installed under this contract to prevent damage from construction operations.

Lighting System Maintenance Operations. The Contractor's responsibility shall include all applicable responsibilities of District 1's electrical maintenance contract. These responsibilities shall include the maintenance of lighting units (including sign lighting), cable runs and lighting controls. Responsibilities shall also include the coordination and installation of replacement equipment for existing equipment which has failed within the warranty period for that equipment. The coordination shall include correspondence with the manufacturer regarding the warranty claim. In the case of a pole knockdown or sign light damage, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service. The equipment shall then be re-set by the contractor within the time limits specified herein.

If the existing equipment is damaged by normal vehicular traffic, not contractor operations, is beyond repair and cannot be re-set, the Contractor shall replace the equipment in kind with payment made for such equipment under Article 109.04. If the equipment damaged by any construction operations, not normal vehicular traffic, and is beyond repair and cannot be re-set, the Contractor shall replace the equipment in kind and the cost of the equipment shall be included in the cost of this pay item and shall not be paid for separately.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the Engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the Engineer. Uncorrected deficiencies may be designated by the Engineer as necessitating emergency repairs as described elsewhere herein.

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

INCIDENT OR PROBLEM	SERVICE RESPONSE TIME	SERVICE RESTORATION TIME	PERMANENT REPAIR TIME
Control cabinet out	1 hour	4 hours	7 Calendar days
Hanging mast arm	1 hour to clear	na	7 Calendar days
Radio problem	1 hour	4 hours	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	na
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	na
Outage of 75% of lights on one tower	1 hour	4 hours	na
Outage of light nearest RR crossing approach, Islands and gores	1 hour	4 hours	na
Outage (single or multiple) found on night outage survey or reported to EMC	na	na	7 Calendar days
Navigation light outage	na	na	24 hours

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

Failure to provide this service will result in liquidated damages of $500 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the electrical maintenance contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the electrical maintenance contractor within one month after the incident will result in additional liquidated damages of $500 per month per occurrence. Unpaid bills will be deducted from any monies owed to the Contractor. Repeated failures and/or a gross failure of maintenance shall result in the State's electrical maintenance contractor being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

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

Operation of Lighting. The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods.

Method of Measurement. The Contractor shall demonstrate to the satisfaction of the Engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request. Months in which the lighting systems are not maintained and not operational will not be paid. Payment shall not be made retroactively for months in which lighting systems were not operational.

Basis of Payment. This work will be paid for at the contract unit price per CALENDAR MONTH for MAINTENANCE OF LIGHTING SYSTEM.

LUMINAIRE SAFETY CABLE ASSEMBLY

Effective: January 1, 2012

Description: This item shall consist of providing a luminaire safety cable assembly as specified herein and as indicated in the plans.

Materials. Materials shall be according to the following:

Wire Rope. Cables (wire rope) shall be manufactured from type 304 or type 316 stainless steel having a maximum carbon content of 0.08 % and shall be a stranded assembly. Cables shall be 0.125) diameter, 7x19 class strand core and shall have no strand joints or strand splices. Cables shall be manufactured and listed for compliance with Federal Specification RR-W-410 and Mil-DTL-83420.

Cable terminals shall be stainless steel compatible with the cable and as recommended by the cable manufacturer. Terminations and clips shall be the same stainless-steel grade as the wire rope they are connected to.

U-Bolts. U-Bolts and associated nuts, lock washers, and mounting plates shall be manufactured from type 304 or type 316 stainless steel.

Construction Requirements

The safety cable assembly shall be installed as indicated in the plan details. One end of the cable assembly shall have a loop fabricated from a stainless steel compression sleeve. The other end of the cable assembly shall be connected with stainless steel wire rope clips as indicated. Slack shall be kept to a minimum to prevent the luminaire from creeping off the end of the mast arm. Unless otherwise indicated in the plans, the luminaire safety cable shall only be used in conjunction with luminaires which are directly above the traveled pavement.

Basis of Payment: This work shall be paid for at the contract unit price per EACH for LUMINAIRE SAFETY CABLE ASSEMBLY, which shall be payment for the work as described herein and as indicated in the plans.

EXPOSED RACEWAYS

Effective: January 1, 2012

Revise the first paragraph of Article 811.03(a) of the Standard Specifications to read:

"General. Rigid metal conduit installation shall be according to Article 810.05(a). Conduits terminating in junction and pull boxes shall be terminated with insulated and gasketed watertight threaded NEMA 4X conduit hubs. The hubs shall be listed under UL 514B. The insulated throat shall be rated up to 105º C. When PVC coated conduit is utilized, the aforementioned hubs shall also be PVC coated."

Add the following to Article 811.03(b) of the Standard Specifications:

"Where PVC coated conduit is utilized, all conduit fittings, couplings and clamps shall be PVC coated. All other mounting hardware and appurtenances shall be stainless steel."

"The personnel installing the PVC coated conduit must be trained and certified by the PVC coated conduit manufacturer or manufacturer's representative to install PVC coated conduit. Documentation demonstrating this requirement must be submitted for review and approval."

Add the following to Article 1088.01(a) of the Standard Specifications:

All iron and steel products, which are to be incorporated into the work, including conduit and all conduit fittings, shall be domestically manufactured or produced and fabricated as specified in Article 106."

Revise Article 1088.01(a)(3) of the Standard Specifications to read:

"a. PVC Coated Steel Conduit. The PVC coated rigid metal conduit shall be UL 6. The PVC coating must have been investigated by UL as providing the primary corrosion protection for the rigid metal conduit. Ferrous fittings for general service locations shall be UL listed with PVC as the primary corrosion protection. Hazardous location fittings, prior to plastic coating shall be UL listed.

b. The PVC coating shall have the following characteristics:

Hardness:	85+ Shore A Durometer
Dielectric Strength:	400V/mil @ 60 Hz
Aging:	1,000 Hours Atlas Weatherometer
Temperature	The PVC compound shall conform at 0º F. to Federal Specifications PL-406b, Method 2051, Amendment 1 of 25 September 1952 (ASTM D 746)
Elongation:	200%

c. The exterior and interior galvanized conduit surface shall be chemically treated to enhance PVC coating adhesion and shall also be coated with a primer before the PVC coating to ensure a bond between the zinc substrate and the PVC coating. The bond strength created shall be greater than the tensile strength of the plastic coating.

d. The nominal thickness of the PVC coating shall be 40 mils. The PVC exterior and urethane interior coatings applied to the conduit shall afford sufficient flexibility to permit field bending without cracking or flaking at temperatures above 30°F.

e. An interior urethane coating shall be uniformly and consistently applied to the interior of all conduit and fittings. This internal coating shall be a nominal 2 mil thickness. The interior coating shall be applied in a manner so there are no runs, drips, or pinholes at any point. The coating shall not peel, flake, or chip off after a cut is made in the conduit or a scratch is made in the coating.

f. Conduit bodies shall have a tongue-in-groove gasket for maximum sealing capability. The design shall incorporate a positive placement feature to assure proper installation. Certified test results confirming seal performance at 15 psig (positive) and 25 in. of mercury (vacuum) for 72 hours shall be submitted for review when requested by the Engineer.

g. The PVC conduit shall pass the following tests:

Exterior PVC Bond Test RN1: Two parallel cuts 1/2 inch apart and 1 1/2 inches in length shall be made with a sharp knife along the longitudinal axis. A third cut shall be made perpendicular to and crossing the longitudinal cuts at one end. The knife shall then be worked under the PVC coating for 1/2 inch to free the coating from the metal.

Using pliers, the freed PVC tab shall be pulled with a force applied vertically and away from the conduit. The PVC tab shall tear rather than cause any additional PVC coating to separate from the substrate.

Boil Test: Acceptable conduit coating bonds (exterior and interior) shall be confirmed if there is no disbondment after a minimum average of 200 hours in boiling water or exposure to steam vapor at one atmosphere. Certified test results from a national recognized independent testing laboratory shall be submitted for review and approval. The RN1 Bond Test and the Standard Method for Measuring Adhesion by Tape Test shall be utilized.

Exterior Adhesion. In accordance with ASTM D870, a 6" length of conduit test specimen shall be placed in boiling water. The specimen shall be periodically removed, cooled to ambient temperature and immediately tested according to the bond test (RN1). When the PVC coating separates from the substrate, the boil time to failure in hours shall be recorded.

Interior Adhesion. In accordance with ASTM D3359, a 6" conduit test specimen shall be cut in half longitudinally and placed in boiling water or directly above boiling water with the urethane surface facing down. The specimen shall be periodically removed, cooled to ambient temperature and tested in accordance with the Standard Method of Adhesion by Tape Test (ASTM D3359). When the coating disbonds, the time to failure in hours shall be recorded.

Heat/Humidity Test: Acceptable conduit coating bonds shall be confirmed by a minimum average of 30 days in the heat and humidity test. The RN1 bond test and the standard method for measuring adhesion by tape test shall be utilized.

Exterior Adhesion. In accordance with ASTM D1151, D1735, D2247, and D4585, conduit specimens shall be placed in a heat and humidity environment where the temperature is maintained at 150°F and 95% relative humidity. The specimens shall be periodically removed and a bond test (RN1) performed. When the PVC coating separates from the substrate, the exposure time to failure in days shall be recorded.

Interior Adhesion. In accordance with ASTM D3359, conduit specimens shall be placed in a heat and humidity environment where the temperature is maintained at 150°F and 95% relative humidity. When the coating disbonds, the time to failure in hours shall be recorded.

Add the following to Article 1088.01(a)(4) of the Standard Specifications:

"All liquid tight flexible metal conduit fittings shall have an insulated throat to prevent abrasion of the conductors and shall have a captive sealing O-ring gasket. The fittings shall be listed under UL 514B. The insulated throat shall be rated up to 105º C."

Revise the second paragraph of Article 811.04 of the Standard Specifications to read:

"Expansion fittings and LFNC will not be measured for payment."

Revise Article 811.05 of the Standard Specifications to read:

"811.05 Basis of Payment. This work will be paid for at the contract unit price per FOOT for CONDUIT ATTACHED TO STRUCTURE, of the diameter specified, RIGID GALVANIZED STEEL or CONDUIT ATTACHED TO STRUCTURE, of the diameter specified, PVC COATED GALVANIZED STEEL."

ROADWAY LUMINAIRE, LED

Effective: April 1, 2025

Description. This work shall consist of furnishing and installing a roadway LED luminaire as shown on the plans, as specified herein.

The luminaire including the housing, driver, and optical assembly shall be assembled in the US. The luminaire shall be assembled by and manufactured by the same manufacturer. The luminaire shall be mechanically strong and easy to maintain. The size, weight, and shape of the luminaire shall be designed so as not to incite detrimental vibrations in its respective pole, and it shall be compatible with the pole and arm. All electrical and electronic components of the luminaire shall comply with the requirements of RoHS regulations. The luminaire shall be listed for wet locations by an NRTL and shall meet the requirements of UL 1598 and UL 8750

Submittal Requirements.

The Contractor shall also submit the following manufacturer's product data for each type of luminaire:

1. Descriptive literature and catalogue cuts for luminaire, LED driver, and surge protection device. Completed manufacturer’s luminaire ordering form with the full catalog number provided.
2. LED drive current, total luminaire input wattage, and total luminaire current at the system operating voltage or voltage range and ambient temperature of 25 C.
3. LED efficacy per luminaire expressed in lumens per watt (l/w).
4. Initial delivered lumens at the specified color temperature, drive current, and ambient temperature.
5. IES file associated with each submitted luminaire in the IES LM-63 format.
6. Computer photometric calculation reports as specified and in the luminaire performance table.
7. TM-15 BUG rating report.
8. Isofootcandle chart with max candela point and half candela trace indicated.
9. Documentation of manufacturers experience and verification that luminaires were assembled in the US as specified.
10. Written warranty.

Upon request by the Engineer, the submittals shall also include any or all the following:

a. TM-21 calculator spreadsheet (XLSX or PDF format) and if available, TM-28 report for the specified luminaire or luminaire family. Both reports shall be for 50,000 hours at an ambient temperature of 77 °F.
b. LM-79 report with NVLAP current at the time of testing in PDF format inclusive of the following: isofootcandle diagram with half candela contour and maximum candela point; polar plots through maximum plane and maximum cone; coefficient of utilization graph; candela table; and spectral distribution graph and chromaticity diagram.
c. LM-80 report for the specified LED package in PDF format and if available, LM-84 report for the specified luminaire or luminaire family in PDF format. Both reports shall be conducted by a laboratory with NVLAP certification current at the time of testing.
d. AGi32 calculation file matching the submittal package.
e. ISTMT report for the specified luminaire or luminaire family in PDF format.
f. Vibration test report in accordance with ANSI C136.31 in PDF format.
g. ASTM B117/ASTM D1654 (neutral salt spray) test and sample evaluation report in PDF format.
h. ASTM G154 (ASTM D523) gloss test report in PDF format.
i. LED drive current, total luminaire input wattage, and current over the operating voltage range at an ambient temperature of 77 °F.
j. Power factor (pf) and THD at maximum and minimum supply and at nominal voltage for the dimmed states of 70%, 50%, and 30% full power.
k. IP test reports, conducted according to ANSI C136.25 requirements, for the driver and optical assembly in PDF format.
l. Installation, maintenance, and cleaning instructions in PDF format, including recommendations on periodic cleaning methods.
m. Documentation in PDF format that the reporting laboratory is certified to perform the required tests.

A sample luminaire shall also be provided upon request of the Engineer. The sample shall be as proposed for the contract and shall be delivered by the Contractor to the district headquarters. After review, the Contractor shall retrieve the luminaire.

Manufacturer Experience. The luminaire shall be designed to be incorporated into a lighting system with an expected 20 year lifetime. The luminaire manufacturer shall have a minimum of 15 years of experience manufacturing LED roadway luminaires; parking lot, architectural, or residential luminaires are not applicable to this requirement. The manufacturer shall have a minimum of 100,000 total LED roadway luminaires installed on a minimum of 100 separate installations, all within the US.

Housing. All external surfaces shall be cleaned in accordance with the manufacturer's recommendations and be constructed in such a way as to discourage the accumulation of water, ice, and debris.

Material. The luminaire shall be a single device not requiring on-site assembly for installation. The driver for the luminaire shall be integral to the unit.

Finish. The luminaire shall have a baked acrylic enamel finish. The color of the finish shall be gray, unless otherwise indicated.

The finish shall have a rating of six or greater according to ASTM D1654, Section 8.0 Procedure A – Evaluation of Rust Creepage for Scribed Samples after exposure to1000 hours of testing according to ASTM B117 for painted or finished surfaces under environmental exposure. The luminaire finish shall have less than or equal to 30% reduction of gloss according to ASTM D523 after exposure of 500 hours to ASTM G154 Cycle 6 QUV® accelerated weathering testing.

The luminaire shall slip-fit on a mounting arm with a 2" diameter tenon (2.375" outer diameter) and shall have a barrier to limit the amount of insertion. The slip fitter clamp shall utilize four bolts to clamp to the tenon arm. The luminaire shall be provided with a leveling surface and shall be capable of being tilted ±5° from the axis of attachment in 2.5° increments and rotated to any degree with respect to the supporting arm.

All external surfaces shall be cleaned in accordance with the manufacturer's recommendations and be constructed in such a way as to discourage the accumulation of water, ice, and debris.

The effective projected area (EPA) of the luminaire shall not exceed 1.6 sq ft and the weight, including accessories, shall not exceed 40 lb. If the weight of the luminaire is less than 20 lb weight shall be added to the mounting arm or a supplemental vibration damper installed as approved by the Engineer.

A passive cooling method with no moving, rotating parts, or liquids shall be employed for heat management.

The luminaire shall include a fully prewired, seven-pin twist lock ANSI C136.41-compliant receptacle. Unused pins shall be connected as directed by the Manufacturer and as approved by the Engineer. A shorting cap shall be provided with the luminaire that is compliant with ANSI C136.10.

Vibration Testing. All luminaires shall be subjected to and pass vibration testing requirements at "3G" minimum zero to peak acceleration in accordance with ANSI C136.31 requirements using the same luminaire. To be accepted, the luminaire housing, hardware, and each individual component shall pass this test with no noticeable damage and the luminaire must remain fully operational after testing.

Labels. An internal label shall be provided indicating the luminaire is suitable for wet locations and indicating the luminaire is an NRTL listed product to UL1598 and UL8750. The internal label shall also comply with the requirements of ANSI C136.22.

An external label consisting of two black characters on a white background with the dimensions of the label and the characters as specified in ANSI C136.15 for HPS luminaires. The first character shall be the alphabetical character representing the initial lumen output as specified in Table 1 of Article 1067.06(c). The second character shall be the numerical character representing the transverse light distribution type as specified in IES RP-8 (i.e. types 1, 2, 3, 4, or 5).

Hardware. All hardware shall be stainless steel or of other corrosion resistant material approved by the Engineer.

Luminaires shall be designed to be easily serviced, having fasteners such as quarter-turn clips of the heavy spring-loaded type with large, deep straight slot heads, complete with a receptacle and shall be according to military specification MIL-f-5591.

All hardware shall be captive and not susceptible to falling from the luminaire during maintenance operations. This shall include lens/lens frame fasteners as well hardware holding the removable driver and electronic components in place.

Provisions for any future house-side external or internal shielding should be indicated along with means of attachment.

Circuiting shall be designed to minimize the impact of individual LED failures on the operation of the other LED's.

Wiring. Wiring within the electrical enclosure shall be rated at 600v, 105°C or higher.

Driver. The driver shall be integral to the luminaire shall be capable of receiving an indefinite open and short circuit output conditions without damage.

The driver shall incorporate the use of thermal foldback circuitry to reduce output current under abnormal driver case temperature conditions and shall be rated for a lifetime of 100,000 hours at an ambient temperature exposure of 77 °F to the luminaire. If the driver has a thermal shut down feature, it shall not turn off the LEDs when operated at 104 °F or less.

The driver shall have an input voltage range of 120 to 277 volts (± 10%) or 347 to 480 volts (± 10%) according to the contract documents. When the driver is operating within the rated input voltage range and in an un-dimmed state, the power factor measurement shall be not less than 0.9 and the THD measurement shall be no greater than 20%.

The driver shall meet the requirements of the FCC Rules and Regulations, Title 47, Part 15 for Class A devices with regard to electromagnetic compatibility. This shall be confirmed through the testing methods in accordance with ANSI C63.4 for electromagnetic interference.

The driver shall be dimmable using the protocol listed in the Luminaire Performance Table shown in the contract.

Surge Protection. The luminaire shall comply the requirements of ANSI C136.2 for electrical transient immunity at the “Extreme” level (20KV/10KA) and shall be equipped with a SPD that is UL1449 compliant with indicator light. An SPD failure shall open the circuit to protect the driver.

LED Optical Assembly. The optical assembly shall have an IP 65 or higher rating in accordance with ANSI C136.25. The circuiting of the LED array shall be designed to minimize the effect of individual LED failures on the operation of other LEDs. All optical components shall be made of glass or a UV stabilized, non-yellowing material.

The optical assembly shall utilize high brightness, long life, minimum 70 CRI, 4,000K color temperature (+/-300K) LEDs binned in accordance with ANSI C78.377. Lenses shall be UV-stabilized acrylic or glass.

Lumen depreciation at 50,000 hours of operation shall not exceed 15% of initial lumen output at the specified LED drive current and an ambient temperature of 25° C.

The luminaire may or may not have a glass lens over the LED modules. If a glass lens is used, it must be a flat lens. Material other than glass will not be acceptable. If a glass lens is not used, the LED modules may not protrude lower than the luminaire housing.

The assembly shall have individual serial numbers or other means for manufacturer tracking.

Photometric Performance. Luminaires shall be tested according to IESNA LM-79. This testing shall be performed by a test laboratory holding accreditation from the National Institute of Standards and Technology (NIST) NVLAP for the IESNA LM-79 test procedure.

Data reports as a minimum shall yield an isofootcandle chart, with max candela point and half candela trace indicated, maximum plane and maximum cone plots of candela, a candlepower table (house and street side), a coefficient of utilization chart, a luminous flux distribution table, spectral distribution plots, chromaticity plots, and other standard report outputs of the above mentioned tests.

The luminaire shall have a BUG rating of back light B3 or less, up light rating of U0, and a glare rating of G3 or less unless otherwise indicated in the luminaire performance table.

Photometric Calculations.

Calculations. Submitted report shall include a luminaire classification system graph with both the recorded lumen value and percent lumens by zone along with the BUG rating according to IESNA TM-15.

Complete point-by-point luminance and veiling luminance calculations as well as listings of all indicated averages and ratios as applicable shall be provided in accordance with IESNA RP-8

recommendations. Lighting calculations shall be performed using AGi32 software with all luminance calculations performed to one decimal place (i.e. x.x cd/m2). Uniformity ratios shall also be calculated to one decimal place (i.e. x.x:1). Calculation results shall demonstrate that the submitted luminaire meets the lighting metrics specified in the project Luminaire Performance Table(s). Values shall be rounded to the number of significant digits indicated in the luminaire performance table(s).

All photometry must be **photopic**. Scotopic or mesopic factors will not be allowed. The AGi32 file shall be submitted at the request of the Engineer.

IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE
ROADWAY LIGHTING
I-80 MAINLINE, MEDIAN MOUNTED
GIVEN CONDITIONS

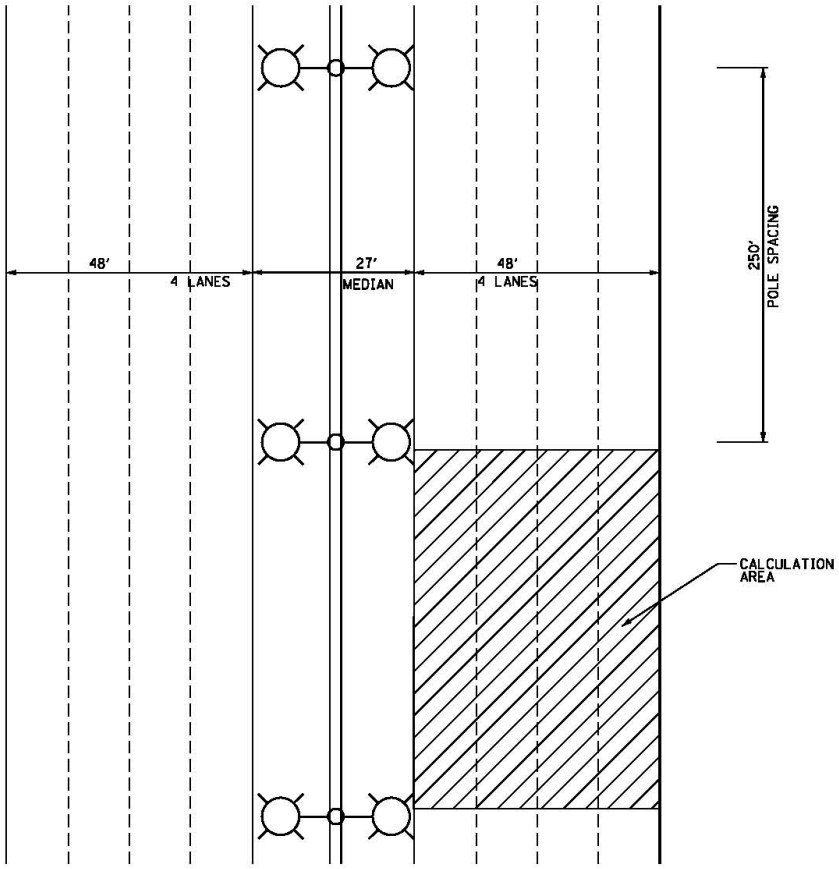
Roadway Data	Pavement Width	48	Ft
	Number of Lanes Left of Median	4	
	Number of Lanes Right of Median	4	
	Lane Width	12	Ft
	Median Width	27	Ft
	IES Surface Classification	R3	
	Q-Zero Value	0.07	
Mounting Data	Mounting Height (median mounted)	51	Ft
	Mast Arm Length (dual arms 180° apart)	(2)-6	Ft
	Pole Set-Back from Edge of Pavement	13.5	Ft
Luminaire Data	Source	LED	
	Color Temperature	4000	°K
	Lumens	33,790	Min
	Pay Item Lumen Designation	I	
	BUG Rating	B3-U0-G3/B4-U0-G4	
	IES Vertical Distribution	medium	
	IES Control of Distribution	cutoff	
	IES Lateral Distribution	Type II or III	
	Total Light Loss Factor	0.70	
Pole Layout Data	Spacing	250	Ft
	Configuration	See diagram	
	Luminaire Overhang over E.O.P.	-7.5	Ft

NOTE: Variations from the above specified I.E.S. distribution pattern may be requested, and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

Roadway Luminance	Average Luminance, L_{AVE} (Max)	1.2	Cd/m^2
	Average Luminance, L_{AVE} (Min)	0.8	Cd/m^2
	Uniformity Ratio, L_{AVE}/L_{MIN}	3.0	Max
	Uniformity Ratio, L_{MAX}/L_{MIN}	5.0	Max
	Veiling Luminance Ratio, L_V/L_{AVE}	0.3	Max


48'
4 LANES
27'
MEDIAN
48'
4 LANES
250'
POLE SPACING
CALCULATION
AREA

IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE
ROADWAY LIGHTING
I-80 MAINLINE, OUTSIDE MOUNTED
GIVEN CONDITIONS

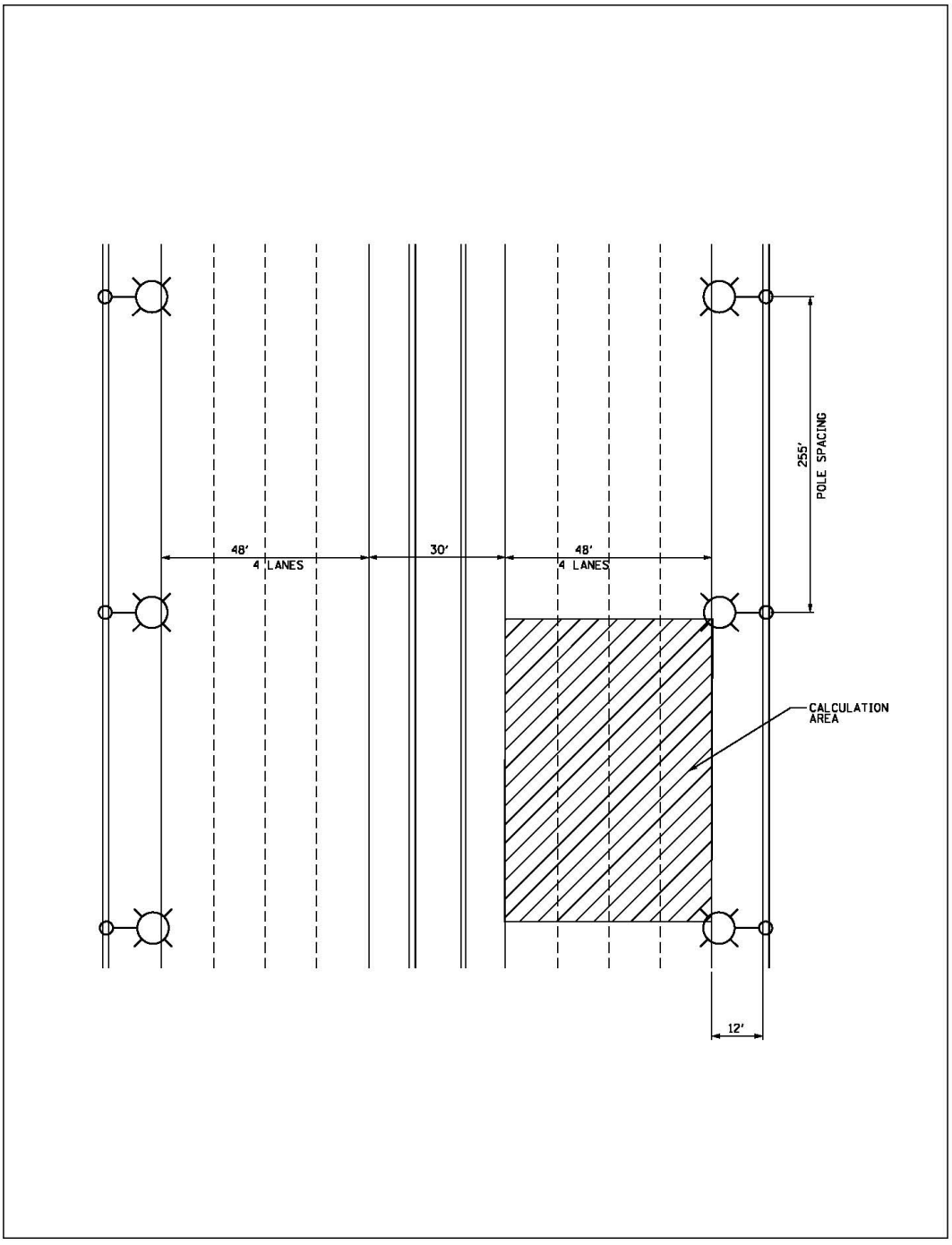
Roadway Data	Pavement Width	48	Ft
	Number of Lanes Left of Median	4	
	Number of Lanes Right of Median	4	
	Lane Width	12	Ft
	Median Width	30	Ft
	IES Surface Classification	R3	
	Q-Zero Value	0.07	
Mounting Data	Mounting Height (wall mounted)	51	Ft
	Mast Arm Length (single arm)	10	Ft
	Pole Set-Back from Edge of Pavement	12	Ft
Luminaire Data	Source	LED	
	Color Temperature	4000	°K
	Lumens	31,000	Min
	Pay Item Lumen Designation	H	
	BUG Rating	B3-U0-G3/B4-U0-G4	
	IES Vertical Distribution	medium	
	IES Control of Distribution	cutoff	
	IES Lateral Distribution	Type II or III	
	Total Light Loss Factor	0.70	
Pole Layout Data	Spacing	255	Ft
	Configuration	See diagram	
	Luminaire Overhang over E.O.P.	-3	Ft

NOTE: Variations from the above specified I.E.S. distribution pattern may be requested, and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

Roadway Luminance	Average Luminance, L_{AVE} (Max)	1.2	Cd/m^2
	Average Luminance, L_{AVE} (Min)	0.8	Cd/m^2
	Uniformity Ratio, L_{AVE}/L_{MIN}	3.0	Max
	Uniformity Ratio, L_{MAX}/L_{MIN}	5.0	Max
	Veiling Luminance Ratio, L_V/L_{AVE}	0.3	Max


48'
4 LANES
30'
48'
4 LANES
255'
POLE SPACING
CALCULATION
AREA
12'

Independent Testing. When a contract has 50 or more luminaires of the same type (distribution type and lumen output/wattage), that luminaire type shall be independently tested, unless otherwise noted. The quantity of luminaires to be tested shall be as specified in the following table.

Contract Quantity	Luminaires to be Tested
1-49	0 (unless otherwise noted)
50-100	2
101-150	3
151-200	4
201-250	5
251-300	6
301-350	7

The Contractor shall coordinate the testing with the contract schedule considering submittal, manufacturing, testing, and installation lead-times and deadlines.

The Electrical Engineer shall select from all the project luminaires at the Contractor's or distributor's storage facility, within District 1, the luminaires for testing. In all cases, the selection of luminaires shall be a random selection from the entire completed lot of luminaires required for the contract. Selections from partial lots will not be allowed. An additional luminaire shall also be selected for physical inspection by the Engineer at the district headquarters. This luminaire will be available for the Contractor to pick up at a later date to be installed under this contract. This luminaire is in addition to the luminaire required as a part of the submittal process specified elsewhere.

Alternative Selection Process. With the Engineer's prior approval, the Contractor shall provide a list of luminaire serial numbers for all the luminaires. The Engineer shall make a random selection of the required number of luminaires for testing from the serial numbers. That luminaire must then be photographed clearly showing the serial number prior to shipment to the selected and approved testing laboratory. The testing laboratory shall include a photograph of the luminaire along with the test results directly to the Engineer.

Luminaires shall be tested at a NVLAP accredited laboratory approved for each of the required tests. The testing facility shall not be associated in any way, subsidiary or otherwise, with the luminaire manufacturer. All costs associated with luminaire testing shall be included in the bid price of the luminaire.

The selection of the proposed independent laboratory shall be presented with the information submitted for review and approval.

The testing performed shall include photometric and electrical testing.

All tests shall be conducted at the luminaire system operating voltage of 240 volts unless specified differently in the contract plans.

Photometric testing shall be according to IES recommendations, performed with a goniophotometer and as a minimum, shall yield an isofootcandle chart, with max candela point

and half candela trace indicated, an isocandela diagram, maximum planned and maximum cone plots of candela, a candlepower table (house and street side), a coefficient of utilization chart, a luminous flux distribution table, BUG rating report, and complete calculations based on specified requirements and test results.

Electrical testing shall conform to NEMA and ANSI standards and, as a minimum shall include a complete check of wiring connections and a table of characteristics showing input amperes, watts, power factor, total harmonic distortion and LED drive current.

The summary report and the test results including IES photometric files shall be sent directly to the Engineer, the Electrical Engineer, and the Contractor via email or other mutually agreeable means.

Photometric performance shall meet or exceed that of the specified values. If the luminaire does not meet the specified photometric values, the luminaire has failed regardless of whether the test results meet the submitted factory data.

Should any of the tested luminaires of a given type, and distribution fail to satisfy the specifications and perform according to approved submittal information, the luminaire type of that distribution type and wattage shall be unacceptable and be replaced by alternate equipment meeting the specifications with the submittal and testing process repeated in their entirety; or corrections made to achieve required performance.

In the case of corrections, the Contractor shall advise the Engineer of the proposed corrections and shall request a repeat of the specified testing and, if the corrections are deemed reasonable by the Engineer, the testing process shall be repeated in its entirety.

The number of luminaires to be tested shall be the same quantity as originally tested as required in the above table.

Retesting, should it become necessary, shall not be grounds for additional compensation or extension of time.

Submittal information shall include a statement of intent to provide the testing as well as a request for approval of the chosen laboratory.

Installation. Each luminaire shall be installed according to the luminaire manufacturer's recommendations.

Luminaires which are pole mounted shall be mounted on site such that poles and arms are not left unloaded. Pole mounted luminaires shall be leveled/adjusted after poles are set and vertically aligned before being energized. When mounted on a tenon, care shall be exercised to assure maximum insertion of the mounting tenon. Each luminaire shall be checked to assure compatibility with the project power system. When the night-time check of the lighting system by the Engineer indicates that any luminaires are mis-aligned, the misaligned luminaires shall be corrected at no additional cost.

No luminaire shall be installed prior to approval. Where independent testing is required, full approval will not be given until complete test results, demonstrating compliance with the specifications, have been reviewed and accepted by the Engineer.

Pole wiring shall be provided with the luminaire. Pole wire shall run from handhole to luminaire. Pole wire shall be sized No. 10, rated 600 V, RHW/USE-2, and have copper conductors, stranded in conformance with ASTM B 8. Pole wire shall be insulated with cross-linked polyethylene (XLP) insulation. Pole wire shall include a phase, neutral, and green ground wire. Wire shall be trained within the pole or sign structure to avoid abrasion or damage to the insulation.

Pole wire shall be extended through the pole, pole grommet, luminaire ring, and any associated arm and tenon. The pole wire shall be terminated in a manner that avoids sharp kinks, pinching, pressure on the insulation, or any other arrangement prone to damaging insulation value and producing poor megger test results. Wires shall be trained away from heat sources within the luminaire. Wires shall be terminated so all strands are extended to the full depth of the terminal lug with the insulation removed far enough so it abuts against the shoulder of the lug but is not compressed as the lug is tightened.

Included with the pole wiring shall be fusing located in the handhole. Fusing shall be according to Article 1065.01 with the exception that fuses shall be 6 amperes.

Each luminaire and optical assembly shall be free of all dirt, smudges, etc. Should the optical assembly require cleaning, a luminaire manufacturer approved cleaning procedure shall be used.

Horizontal mount luminaires shall be installed in a level, horizontal plane, with adjustments as needed to ensure the optics are set perpendicular to the traveled roadway.

When the pole is bridge mounted, a minimum size stainless steel 1/4-20NC set screw shall be provided to secure the luminaire to the mast arm tenon. A hole shall be drilled and tapped through the tenon and luminaire mounting bracket and then fitted with the screw.

Warranty. The entire luminaire and all its component parts shall be covered by a ten-year warranty. Failure is when one or more of the following occur:

1) Negligible light output from more than 10% of the discrete LEDs.
2) Significant moisture that deteriorates performance of the luminaire.
3) Driver that continues to operate at a reduced output due to overheating.

The warranty period shall begin on the date of luminaire delivery. The Contractor shall verify that the Engineer has noted the delivery date in the daily diary. Copy of the shipment and delivery documentation shall be submitted with the final documentation.

The replacement luminaire shall be of the same manufacturer, model, and photometric distribution as the original.

Method of Measurement. The rated initial minimum luminous flux (lumen output) of the light source, as installed in the luminaire, shall be according to the following table for each specified output designation.

Designation Type	Minimum Initial Luminous Flux	Designation Type	Minimum Initial Luminous Flux
A	2,200	F	12,500
B	3,150	G	15,500
C	4,400	H	25,200
D	6,300	I	33,000
E	9,450		

Where delivered lumens is defined as the minimum initial delivered lumens at the specified color temperature. Luminaires with an initial luminous flux less than the values listed in the above table will not be acceptable even if they meet the requirements given in the Luminaire Performance table shown in the contract.

Basis of Payment. This work will be paid for at the contract unit price per EACH for LUMINAIRE, LED, ROADWAY, of the output designation specified.

ELECTRIC UTILITY SERVICE CONNECTION

Effective: July 1, 2025

Description. This item shall consist of payment for work performed by the electric service provider (utility company) in providing or modifying electric service as indicated. This may involve work at more than one electric service location.

Construction Requirements

It shall be the Contractor's responsibility to contact the electric service provider. The Contractor shall coordinate their work fully with the electric service provider both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement.

For those locations served by ComEd; please contact ComEd, New Business Center Call Center, at 866 NEW ELECTRIC (1-866-639-3532) to begin the service connection process. The call center representatives will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of project.

For locations served by other electric service providers, that utility shall be contacted.

The Contractor should make note of the need for the earliest attention to arrangements with the electric service provider for service. In the event of delay by the electric service provider, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution.

Documentation. The Contractor shall provide copies of all correspondence with the electric service provider including as a minimum:

- A copy of the request for service to the electric service provider.
- Service entrance sketch
- Electric service account number
- Electric meter number
- Size of utility transformer and available fault current.
- GPS coordinates of the service, format as described in the General Electrical Provisions.

All correspondence for state owned and maintained installations must include the pertinent contract number and electrical maintenance database number.

Certain state-maintained electrical systems may have energy paid by local agencies, but unless otherwise established, energy billing for state-maintained electrical systems shall be directed to:

Illinois Department of Transportation
District 1
201 West Center Court
Schaumburg, Illinois 60196
Attn: Financial Services

Electric service correspondence for non-state owned systems shall be directed to the respective agency assuming maintenance with a copy of the final service agreement submitted to IDOT.

Method Of Payment. The Contractor will be reimbursed to the exact amount of money as billed by the electric service provider for the services. Work provided by the Contractor for electric service will be paid separately as described under Electric Service Installation. No extra compensation shall be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

For bidding purposes, this item shall be estimated as $10,000

Basis Of Payment. This work will be paid for at the contract unit price per LUMP SUM for ELECTRIC UTILITY SERVICE CONNECTION, which shall be reimbursement in full for electric utility service charges.

ELECTRIC SERVICE INSTALLATION

Effective: January 1, 2012

Description. This item shall consist of all material and labor required to extend, connect, or modify the electric services, as indicated or specified, which is over and above the work performed by the utility. Unless otherwise indicated, the cost for the utility work, if any, will be reimbursed to the Contractor separately under Electric Utility Service Connection. This item may apply to the work at more than one service location, and each will be paid separately.

Materials. Materials shall be in accordance with the Standard Specifications.

Construction Requirements

The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work not included by other contract pay items required to complete the electric service work in complete compliance with the requirements of the utility.

No additional compensation will be allowed for work required for the electric service, even though not explicitly shown on the drawings or specified herein

Method Of Measurement. Electric service installation shall be counted per each.

Basis Of Payment. This work will be paid for at the contract unit price per EACH for ELECTRIC SERVICE INSTALLATION, which shall be payment in full for the work specified herein.

TEMPORARY LUMINAIRE, LED, ROADWAY

Effective: November 1, 2024

Description. This work shall consist of furnishing and installing a temporary roadway LED luminaire as shown on the plans, as specified herein. To expedite the roadway work, the luminaire may be new or previously used. The luminaire shall remain the property of the Contractor.

The luminaire shall be of the output designation specified and the distribution pattern specified in the plans. The luminaire shall be listed for wet locations by an NRTL and shall meet the requirements of UL 1598 and UL 8750. Used luminaires shall be no older than five years old. Documentation shall be submitted to verify compliance with this requirement.

Submittal Requirements. The Contractor shall submit manufacturer's product data for each type of luminaire including descriptive literature and catalogue cuts.

A sample luminaire shall also be provided upon request of the Engineer. The sample shall be as proposed for the contract and shall be delivered by the Contractor to the district headquarters. After review, the Contractor shall retrieve the luminaire.

Housing. The luminaire shall slip-fit on a mounting arm with a 2" diameter tenon (2.375" outer diameter). The luminaire shall be provided with a leveling surface and shall be capable of being tilted ±5° from the axis of attachment in 2.5° increments and rotated to any degree with respect to the supporting arm.

An external label consisting of two black characters on a white background with the dimensions of the label and the characters as specified in ANSI C136.15 for HPS luminaires. The first character shall be the alphabetical character representing the initial lumen output as specified in Table 1 of Article 1067.06(c). The second character shall be the numerical character representing the transverse light distribution type as specified in IES RP-8 (i.e. types 1, 2, 3, 4, or 5).

Wiring. Wiring within the electrical enclosure shall be rated at 600v, 105°C or higher.

Driver. The driver shall have an input voltage range of 120 to 277 volts (± 10%) or 347 to 480 volts (± 10%) according to the contract documents.

The driver shall meet the requirements of the FCC Rules and Regulations, Title 47, Part 15 for Class A devices with regard to electromagnetic compatibility. This shall be confirmed through the testing methods in accordance with ANSI C63.4 for electromagnetic interference.

Surge Protection. The luminaire shall comply the requirements of ANSI C136.2 for electrical transient immunity at the “Extreme” level (20KV/10KA) and shall be equipped with a SPD) that is UL1449 compliant with indicator light. An SPD failure shall open the circuit to protect the driver.

Installation. Each luminaire shall be installed according to the luminaire manufacturer’s recommendations.

Luminaires which are pole mounted shall be mounted onsite such that poles and arms are not left unloaded. Pole mounted luminaires shall be leveled/adjusted after poles are set and vertically aligned before being energized. When mounted on a tenon, care shall be exercised to assure maximum insertion of the mounting tenon. Each luminaire shall be checked to assure compatibility with the project power system. When the night-time check of the lighting system by the Engineer indicates that any luminaires are mis-aligned, the misaligned luminaires shall be corrected at no additional cost.

No luminaire shall be installed prior to approval.

Pole wiring shall be provided with the luminaire. Pole wire shall run from handhole to luminaire. Pole wire shall be sized No. 10, rated 600 V, RHW/USE-2, and have copper conductors, stranded in conformance with ASTM B 8. Pole wire shall be insulated with XLP insulation. Pole wire shall include a phase, neutral, and green ground wire. Wire shall be trained within the pole or sign structure to avoid abrasion or damage to the insulation.

Pole wire shall be extended through the pole, pole grommet, luminaire ring, and any associated arm and tenon. The pole wire shall be terminated in a manner that avoids sharp kinks, pinching, pressure on the insulation, or any other arrangement prone to damaging insulation value and producing poor megger test results. Wires shall be trained away from heat sources within the luminaire. Wires shall be terminated so all strands are extended to the full depth of the terminal lug with the insulation removed far enough so it abuts against the shoulder of the lug but is not compressed as the lug is tightened.

Included with the pole wiring shall be fusing located in the handhole. Fusing shall be according to Article 1065.01 with the exception that fuses shall be 6 amperes.

Each luminaire and optical assembly shall be free of all dirt, smudges, etc. Should the optical assembly require cleaning, a luminaire manufacturer approved cleaning procedure shall be used.

Horizontal mount luminaires shall be installed in a level, horizontal plane, with adjustments as needed to ensure the optics are set perpendicular to the traveled roadway.

When the pole is bridge mounted, a minimum size stainless steel 1/4-20NC set screw shall be provided to secure the luminaire to the mast arm tenon. A hole shall be drilled and tapped through the tenon and luminaire mounting bracket and then fitted with the screw.

Method of Measurement. The rated initial minimum luminous flux (lumen output) of the light source, as installed in the luminaire, shall be according to the following table for each specified output designation.

Designation Type	Minimum Initial Luminous Flux	Designation Type	Minimum Initial Luminous Flux
A	2,200	F	12,500
B	3,150	G	15,500
C	4,400	H	25,200
D	6,300	I	33,000
E	9,450		

Where delivered lumens is defined as the minimum initial delivered lumens at the specified color temperature. Luminaires with an initial luminous flux less than the values listed in the above table will not be acceptable.

Basis of Payment. This work will be paid for at the contract unit price per EACH for TEMPORARY LUMINAIRE, LED, ROADWAY, of the output designation specified.

TRACER WIRE

Effective: July 1, 2024

Description. This work shall consist of furnishing and installing tracer wire in raceways, complete with all splicing, identifications, and terminations. A tracer wire shall be installed with all fiberoptic raceways including microduct, innerduct, and metal raceways or nonmetallic raceways installed underground, under the pavement, in trench, or in conduit embedded in structures or attached to structures. Only one tracer wire per raceway is required. If there are parallel raceways, a tracer wire is required for each raceway. Tracer wire shall be installed in raceway segments to provide a continuous tracer wire system.

Materials. The tracer wire shall be a direct burial rated, number 12 AWG (minimum) solid (.0808" diameter), fully annealed, high carbon steel, extra high strength, solid copper-clad, steel tracer wire. The wire shall have a minimum break load of 1150 lbs. The wire shall have a 45 mil high density orange polyethylene (HDPE) jacket complying with ASTM-D-1248, rated for direct burial use at 600 volts. Wire must conform to ASTM B1010. Copper is UNS-C10200, OF Copper in accordance with ASTM B-170. The conductor must be meet or exceed 21% conductivity.

Connection devices used shall be as approved by the tracer wire manufacturer. Except, wire nuts of any type are not acceptable and shall not be used.

Installation. Tracer wire shall be installed without damaging the insulation. The tracer wire shall be installed in the same trench as the fiberoptic raceway. When the fiber optic raceway is installed in conduit under pavement or in conduit embedded in structures or attached to structures, the tracer wire shall be installed in the same conduit as the fiber optic raceway.

Tracer wire cable extended to camera poles, ITS poles, ITS cabinets, and similar equipment shall be of length sufficient for cable splices to be withdrawn a minimum of 18 inches out of pole handholes or similar equipment. Tracer wire shall follow all bending radius and pulling tensions of manufacturer.

The tracer cable shall be installed directly from the reels on which the cable was shipped. The cable shall be installed in continuous spans between terminal points and splicing will only be permitted in pole handholes, junction boxes, handholes, vaults, and communication huts and similar locations.

Immediately after placement, the cables ends shall be sealed to prevent entrance of moisture and contaminants.

Method of Measurement. The tracer wire will be measured for payment in feet in place. Measurements will be made in straight lines between changes in direction and to the center of equipment, handholes, vaults, or junction boxes.

Bais of Payment. This work will be paid for at the contract unit price per FOOT for TRACER WIRE, of the size specified.

UNIT DUCT

Effective: January 1, 2012

Revise the first paragraph of Article 810.04 to read:

> "The unit duct shall be installed at a minimum depth of 30-inches unless otherwise directed by the Engineer."

Revise Article 1088.01(c) to read:

> "(c) Coilable Nonmetallic Conduit.
>
> General: The duct shall be a plastic duct which is intended for underground use and which can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance.
>
> The duct shall be made of high-density polyethylene which shall meet the requirements of ASTM D 2447, for schedule 40. The duct shall be composed of black high-density polyethylene meeting the requirements of ASTM D 3350, class C, grade P33. The wall thickness shall be in accordance with Table 2 for ASTM D 2447.
>
> The duct shall be UL Listed per 651-B for continuous length HDPE coiled conduit. The duct shall also comply with NEC Article 354.100 and 354.120.
>
> Submittal information shall demonstrate compliance with the details of these requirements.

Dimensions: Duct dimensions shall conform to the standards listed in ASTM D2447. Submittal information shall demonstrate compliance with these requirements.

Nominal Size		Nominal I.D.		Nominal O.D.		Minimum Wall	
mm	in	mm	in	mm	in	mm	in
31.75	1.25	35.05	1.380	42.16	1.660	3.556 +0.51	0.140 +0.020
38.1	1.50	40.89	1.610	48.26	1.900	3.683 +0.51	0.145 +0.020

Nominal Size		Pulled Tensile	
mm	in	N	lbs
31.75	1.25	3322	747
38.1	1.50	3972	893

Marking: As specified in NEMA Standard Publication No. TC-7, the duct shall be clearly and durably marked at least every 10 feet with the material designation (HDPE for high density polyethylene), nominal size of the duct and the name and/or trademark of the manufacturer.

Performance Tests: Polyethylene duct testing procedures and test results shall meet the requirements of UL 651. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the duct. Duct crush test results shall meet or exceed the following requirements:

Duct Diameter		Min. force required to deform sample 50%	
mm	in	N	lbs
35	1.25	4937	1110
41	1.5	4559	1025

WIRE AND CABLE

Effective: January 1, 2012

Add the following to the first paragraph of Article 1066.02(a):

"The cable shall be rated at a minimum of 90 °C dry and 75 °C wet and shall be suitable for installation in wet and dry locations and shall be resistant to oils and chemicals."

Revise the Aerial Electric Cable Properties table of Article 1066.03(a)(3) to read:

Aerial Electric Cable Properties

Phase Conductor				Messenger wire	
Size AWG	Stranding	Average Insulation Thickness		Minimum Size AWG	Stranding
		mm	mils		
6	7	1.1	(45)	6	6/1
4	7	1.1	(45)	4	6/1
2	7	1.1	(45)	2	6/1
1/0	19	1.5	(60)	1/0	6/1
2/0	19	1.5	(60)	2/0	6/1
3/0	19	1.5	(60)	3/0	6/1
4/0	19	1.5	(60)	4/0	6/1

Add the following to Article 1066.03(b) of the Standard Specifications:

"Cable sized No. 2 AWG and smaller shall be U.L. listed type RHH/RHW and may be type RHH/RHW/USE. Cable sized larger than No. 2 AWG shall be U.L. listed type RHH/RHW/USE."

Revise Article 1066.04 to read:

"Aerial Cable Assembly. The aerial cable shall be an assembly of insulated aluminum conductors according to Section 1066.02 and 1066.03. Unless otherwise indicated, the cable assembly shall be composed of three insulated conductors and a steel reinforced bare aluminum conductor (ACSR) to be used as the ground conductor. Unless otherwise indicated, the code word designation of this cable assembly is "Palomino". The steel reinforced aluminum conductor shall conform to ASTM B-232. The cable shall be assembled according to ANSI/ICEA S-76-474."

Revise the second paragraph of Article 1066.05 to read:

"The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing."

STRUCTURAL STEEL REPAIR

Effective: December 15, 2000 Revised: January 1, 2007

Description. This work shall consist of furnishing all labor, equipment and materials necessary to furnish and install steel repair plates and members according to Section 505 and removal and disposal of structural steel members as necessary according to Section 501 of the Standard Specifications, as indicated on the plans, and in this special provision.

Construction Requirements. Existing members noted in the plans to have structural steel repair, that are also noted to be straightened, shall be straightened prior to the connection of any new steel repair plates or members. If beam straightening is required, it shall not be included in this item and shall be paid for separately.

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

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

Engineer. Repair or replacement of damaged members shall be at the Contractor's expense.

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

KEEPING THE EXPRESSWAY OPEN TO TRAFFIC

Effective: March 22, 1996 Revised: October 9, 2020

Whenever work is in progress on or adjacent to an expressway, the Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these special provisions, the Standard Specifications, the standards and the district freeway details. All Contractor's personnel shall be limited to these barricaded work zones and shall not cross the expressway.

The Contractor shall request and gain approval from the Illinois Department of Transportation's Expressway Traffic Operations Engineer at www.idotlcs.com 24 hours in advance of all daily lane, ramp and shoulder closures and seven days in advance of all permanent and weekend closures on all freeways and/or expressways in District 1. This advance notification is calculated based on workweek of Monday through Friday and shall not include weekends or holidays.

LOCATION: I-80: Kendall Co. to Center/Meadow

WEEK NIGHT	TYPE OF CLOSURE	ALLOWABLE LANE CLOSURE HOURS					
		INBOUND			OUTBOUND		
Sun - Thu	1-Lane	8:00 PM	to	5:00 AM	9:00 PM	to	6:00 AM
Friday	1-Lane	8:00 PM (Fri)	to	10:00 AM (Sat)	9:00 PM (Fri)	to	10:00 AM (Sat)
Saturday	1-Lane	8:00 PM (Sat)	to	11:59 AM (Sun)	8:00 PM (Sat)	to	11:59 AM (Sun)

LOCATION: I-80: Center/Meadow to US-30

WEEKNIGHT	TYPE OF CLOSURE	ALLOWABLE LANE CLOSURE HOURS		
Sunday – Thursday	1 Lane	9:00 PM	to	5:00 AM
Friday	1 Lane	10:00 PM (Fri)	to	8:00 AM (Sat)
Saturday	1 Lane	9:00 PM (Sat)	to	10:00 AM (Sun)

In addition to the hours noted above, temporary shoulder and non-system interchange partial ramp closures are allowed weekdays between 9:00 A.M. and 3:00 P.M. and between 7:00 P.M. and 5:00 A.M or as approved by the Expressway Traffic Operations Engineer.

Narrow Lanes and permanent shoulder closures will not be allowed between Dec. 1st and April 1st. Permanent shoulder closures per District Detail TC-17 will only be permitted if called for in the plans or as approved by the Expressway Traffic Operations Engineer.

Full expressway closures will only be permitted for a maximum of 15 minutes at a time during the low traffic volume hours of 1:00 A.M. to 5:00 A.M. Monday thru Friday and from 1:00 A.M. to 7:00 A.M. on Sunday. During full expressway closures, the Contractor will be required to close off all lanes except one, using freeway standard closures. Police forces should be notified and

requested to close off the remaining lane at which time the work item may be removed or set in place. The District 1 Expressway Traffic Control Supervisor (847-705-4151) shall be notified at least three working days (weekends and holidays DO NOT count into this 72 hours notification) in advance of the proposed road closure and will coordinate the closure operations with police forces. Liquidated damages as specified in the Failure to Open Traffic Lanes to Traffic for One Lane or Ramp Blocked shall be assessed to the Contract for every 15 minutes beyond the initial 15 minutes all lanes are blocked.

All stage changes requiring the stopping and/or the pacing of traffic shall take place during the allowable hours for full expressway closures and shall be approved by the Department. The Contractor shall notify the District 1 Expressway Traffic Control Supervisor at least three working days (weekends and holidays DO NOT count into this 72 hours notification) in advance of any proposed stage change.

A maintenance of traffic plan shall be submitted to the District 1 Expressway Traffic Control Supervisor 14 days in advance of any stages changes or full expressway closures. The maintenance of traffic plan shall include, but not be limited to, lane and ramp closures, existing geometrics, and equipment and material location.

All daily lane closures shall be removed during adverse weather conditions such as rain, snow, and/or fog and as determined by the Engineer. Also, the Contractor shall promptly remove their lane closures when maintenance forces are out for snow and ice removal.

Additional lane closure hour restrictions may have to be imposed to facilitate the flow of traffic to and from major sporting events and/or other events.

All lane closure signs shall not be erected any earlier than one-half hour before the starting hours listed above. Also, these signs should be taken down within one-half hour after the closure is removed.

The Contractor will be required to cooperate with all other contractors when erecting lane closures on the expressway. All lane closures (includes the taper lengths) without a 3 mile gap between each other, in one direction of the expressway, shall be on the same side of the pavement. Lane closures on the same side of the pavement with a 1 mile or less gap between the end of one work zone and the start of taper of next work zone should be connected. The maximum length of any lane closure on the project and combined with any adjacent projects shall be 3 miles. Gaps between successive permanent lane closures shall be no less than 2 miles in length.

Private vehicles shall not be parked in the work zone. Contractor's equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on state right-of-way will only be permitted at the locations approved by the Engineer.

Check barricades shall be placed every 1000’ within a lane closure to prevent vehicles from driving through closed lanes.

Temporary ramp closures for service interchanges will only be permitted at night during the restricted hours listed for temporary one-lane closures within the project limits. However, no two adjacent entrance and exit ramps in one direction of the expressway shall be closed at the same time.

Freeway to freeway (system interchange) full ramp closures for two lane ramps will not be permitted. Partial ramp closures of system ramps may be allowed during the one-lane closure hours above. System ramp full closures for single lane ramps are only permitted for a maximum of four hours

- between the hours of 1:00 a.m. and 5:00 a.m. on Monday thru Friday
- between the hours of 1:00 a.m. and 6:00 a.m. on Saturday, and
- between the hours of 1:00 a.m. and 7:00 a.m. on Sunday.

The Contractor shall furnish and install large (48" X 48") "DETOUR with arrow" signs as directed by the Engineer for all system ramp closures. In addition, one portable changeable message sign will be required to be placed in advance of the ramp closure. The cost of these signs and PCMS board shall be included in the cost of traffic control and protection (six static signs maximum per closure).

Should the Contractor fail to completely open, and keep open, the ramps to traffic in accordance with the above limitations, the Contractor shall be liable to the Department for liquidated damages as noted under the Failure to Open Traffic Lanes to Traffic special provision.

FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC

Effective: March 22, 1996 Revised: February 9, 2005

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified under the Keeping the Expressway Open to Traffic special provision, the Contractor shall be liable to the Department for the amount of:

One lane or ramp blocked = $3,000
Two lanes blocked = $6,000

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.

TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)

Effective: March 8, 1996 Revised: January 25, 2024

Description. This work shall include furnishing, installing, maintaining, replacing, relocating, and removing all traffic control devices used for the purpose of regulating, warning, or directing traffic. Traffic control and protection shall be provided as called for in the plans, applicable highway standards, District 1 Expressway details, standards and Supplemental Specifications, these special provisions, or as directed by the Engineer.

The governing factor in the execution and staging of work for this project is to provide the motoring public with the safest possible travel conditions on the expressway through the construction zone.

The Contractor shall arrange their operations to keep the closing of lanes and/or ramps to a minimum.

The Contractor shall be responsible for the proper location, installation, and arrangement of all traffic control devices. Special attention shall be given to existing warning signs and overhead guide signs during all construction operations. Warning signs and existing guide signs with down arrows shall be kept consistent with the barricade placement at all times. The Contractor shall immediately remove, completely cover, or turn from the motorist's view all signs which are inconsistent with lane assignment patterns.

The Contractor shall coordinate all traffic control work on this project with adjoining or overlapping projects, including barricade placement necessary to provide a uniform traffic detour pattern. When directed by the Engineer, the Contractor shall remove all traffic control devices that were furnished, installed, or maintained by them under this contract, and such devices shall remain the property of the Contractor. All traffic control devices shall remain in place until specific authorization for relocation or removal is received from the Engineer.

Additional requirements for traffic control devices shall be as follows.

Traffic Control Setup and Removal. The setting and removal of barricades for the taper portion of a lane closure shall be done under the protection of a vehicle with a truck/trailer mounted attenuator and arrow board per Standard 701428 and Section 701 of the Standard Specifications. Failure to meet this requirement will be subject to a traffic control deficiency. The deficiency will be calculated as outlined in Article 105.03 of the Standard Specifications. Truck/trailer mounted attenuators shall comply with Article 1106.02(g) or shall meet the requirements of NCHRP 350 test level 3 with vehicles used in accordance with manufacturer’s recommendations and requirements.

Sign Requirements

(1) Sign Maintenance. Prior to the beginning of construction operations, the Contractor will be provided a sign log of all existing signs within the limits of the construction zone. The Contractor is responsible for verifying the accuracy of the sign log. Throughout the duration of this project, all existing traffic signs shall be maintained by the Contractor. All provisions of Article 107.25 of the Standard Specifications shall apply.

(2) Work Zone Speed Limit Signs. Work zone speed limit signs shall be installed as required in Article 701.14(b) and as shown in the plans and highway standards. Based upon the exiting posted speed limit, work zone speed limits shall be established and signed as follows.

   a. Existing Speed Limit of 55 mph or Higher. The initial work zone speed limit assembly, located approximately 4200’ before the closure, shall be as shown in Standard 701400. Additional work zone 45 mph assemblies shall be used as required according to Article 701.14(b) and as shown in the highway standards and plans. “WORK ZONE SPEED LIMIT 55 PHOTO ENFORCED” assemblies may be omitted when this assembly would normally be placed within 1500 feet of the “END WORK ZONE SPEED LIMIT” sign. If existing speed limit is over 65 mph, then additional signage should be installed per Standard 701400.

b. Existing Speed Limit of 45 mph. The advance 55 mph work zone speed limit assembly shown in Standard 701400 shall be replaced with a 45 mph assembly. Additional work zone 45 mph assemblies shall be used as required according to Article 701.14(b) and as shown in the highway standards and plans. “WORK ZONE SPEED LIMIT 55 PHOTO ENFORCED” assemblies shall be eliminated in all cases. “END WORK ZONE SPEED LIMIT” signs are required.

(3) Exit Signs. The exit gore signs as shown in Standard 701411 shall be a minimum size of 48 inch by 48 inch with 12-inch capital letters and a 20 inch arrow. “EXIT OPEN AHEAD” signs shown in Standard 701411 shall be a minimum size of 48 inch by 48 inch with 8-inch capital letters.

(4) Uneven Lanes Signs. The Contractor shall furnish and erect “UNEVEN LANES” signs (W8-11) on both sides of the expressway, at any time when the elevation difference between adjacent lanes open to traffic equals or exceeds 1 inch. Signs shall be placed 500’ in advance of the drop-off, within 500’ of every entrance, and a minimum of every mile.

Drums/Barricades. Check barricades shall be placed in work areas perpendicular to traffic every 1000', one per lane and per shoulder, to prevent motorists from using work areas as a traveled way. Check barricades shall also be placed in advance of each open patch, or excavation, or any other hazard in the work area, the first at the edge of the open traffic lane and the second centered in the closed lane. Check barricades, either type I or II, or drums shall be equipped with a flashing light.

To provide sufficient lane widths (10' minimum) for traffic and working room, the Contractor shall furnish and install vertical barricades, in lieu of type II or drums, along the cold milling and asphalt paving operations. The vertical barricades shall be placed at the same spacing as the drums.

Vertical Barricades. Vertical barricades shall not be used in lane closure tapers, lane shifts, exit ramp gores, or staged construction projects lasting more than 12 hours. Also, vertical barricades shall not be used as patch barricades or check barricades. Special attention shall be given, and ballast provided per manufacture’s specification, to maintain the vertical barricades in an upright position and in proper alignment.

Temporary Concrete Barrier Wall. Prismatic barrier wall reflectors shall be installed on both the face of the wall next to traffic, and the top of sections of the temporary concrete barrier wall as shown in Standard 704001. The color of these reflectors shall match the color of the edgelines (yellow on the left and crystal or white on the right). If the base of the temporary concrete barrier wall is 12 inches or less from the travel lane, then the lower slope of the wall shall also have a 6 inch wide temporary pavement marking edgeline (yellow on the left and white on the right).

Flaggers. One flagger will be required for each separate activity of an operation that requires frequent construction vehicles to enter or leave a work zone to or from a lane open to traffic. Temporary traffic control and flagger position shall be according to District 1 Detail TC-18 – Expressway Flagging, or as directed by the Engineer.

Full Expressway Closures. Full expressway closures will only be permitted for a maximum of 15 minutes during the allowable hours listed in the Keeping the Expressway Open to Traffic special provision. During full expressway closures, the Contractor will be required to close off all lanes

except one, using freeway standard closures. The Contractor will be required to provide one changeable message sign to be placed at the direction of the Engineer. The sign shall display a message as directed by the Engineer. A maintenance of traffic plan shall be submitted to the District 1 Expressway Traffic Control Supervisor 14 days in advance of the planned work; including all stage changes. The maintenance of traffic plan shall include, but not be limited to, lane and ramp closures, existing geometrics, and equipment and material location. The District 1 Expressway Traffic Control Supervisor (847-705-4151) shall be contacted at least three working days in advance of the proposed road closure and will coordinate the closure operation with police forces.

Method of Measurement. This item of work will be measured on a lump sum basis for furnishing, installing, maintaining, replacing, relocating, and removing traffic control devices required in the plans and these special provisions. Traffic control and protection required under Standards 701101, 701400, 701401, 701402, 701406, 701411, 701416, 701426, 701428, 701446, 701901 and District Details TC-8, TC-9, TC-17, TC-18 and TC-25 will be included with this item.

Basis of Payment. This work will be paid for at the contract unit price per LUMP SUM for TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS). This price shall be payment in full for all labor, materials, transportation, handling, and incidental work necessary to furnish, install, maintain, replace, relocate, and remove all expressway traffic control devices required in the plans and specifications.

In the event the sum total value of all the work items for which traffic control and protection is required is increased or decreased by more than 10%, the contract bid price for Traffic Control and Protection (Expressways) will be adjusted as follows:

Adjusted contract price = .25P + .75P [1±(X-0.1)]

Where: "P" is the bid unit price for Traffic Control and Protection

$$\text{Where: "X" =} \quad \frac{\text{Difference between original and final sum total value of all work items for which traffic control and protection is required}}{\text{Original sum total value of all work items for which traffic control and protection is required.}}$$

The value of the work items used in calculating the increase and decrease will include only items that have been added to or deducted from the contract under Article 104.02 of the Standard Specifications and only items which require use of traffic control and protection.

Temporary traffic control costs due to delay will be paid for according to the Compensable Delay Costs (BDE) special provision.

The Engineer may require additional traffic control be installed in accordance with standards and/or designs other than those included in the plans. In such cases, the standards and/or designs will be made available to the Contractor at least one week in advance of the change in traffic control. Payment for any additional traffic control required will be in accordance with Article 109.04 of the Standard Specifications.

Revisions in the phasing of construction or maintenance operations, requested by the Contractor, may require traffic control to be installed in accordance with standards and/or designs other than those included in the plans. Revisions or modifications to the traffic control shown in the contract shall be submitted by the Contractor for approval by the Engineer. No additional payment will be made for a Contractor requested modification.

Temporary concrete barrier wall will be measured and paid for according to Section 704.

Impact attenuators, temporary bridge rail, and temporary rumble strips will be paid for separately.

Temporary pavement markings shown on the Standard will be measured and paid for according to Section 703 and Section 780. All pavement marking removal will be measured and paid for according to Section 703 or Section 783. Temporary pavement marking on the lower slope of the temporary concrete barrier wall will be measured and paid for as Temporary Pavement Marking, 6".

The changeable message sign required for full expressway closures shall not be paid for separately.

TRAFFIC CONTROL SURVEILLANCE, EXPRESSWAYS

Effective: October 25, 1995 Revised: January 21, 2015

The Contractor shall provide a person with a vehicle to survey, inspect and maintain all temporary traffic control devices when a lane is closed to traffic, when hazards are present adjacent to or within 10 foot of the edge of pavement for more than 24 hours, or as directed by the Engineer.

The surveillance person is required to drive through the project, to inspect all temporary traffic control devices, to correct all traffic control deficiencies, if possible, or immediately contact someone else to make corrections and to assist with directing traffic until such corrections are made, at intervals not to exceed 4 hours. This person shall list every inspection on an inspection form, furnished by the Engineer, and shall return a completed form on the first working day after the inspections are made.

The Contractor shall supply a telephone staffed on a 24-hour-a-day basis to receive any notification of any deficiencies regarding traffic control and protection or receive any request for improving, correcting or modifying traffic control, installations or devices, including pavement markings. The Contractor shall dispatch additional men, materials, and equipment as necessary to begin to correct, improve, or modify the traffic control as directed, within one hour of notification by this surveillance person or by the Department. Upon completion of such corrections and/or revisions, the Contractor shall notify the Department's communication center at (847) 705-4612.

Method of Measurement. Traffic control surveillance will be measured on calendar day basis. One calendar day is equal to a minimum of six inspections. The inspections shall start within four hours after the lane is closed to traffic, a hazard exists within 10 foot from the edge of pavement, or as directed by the Engineer and shall end when the lane closure or hazard is removed or as directed by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per CALENDAR DAY or fraction thereof for TRAFFIC CONTROL SURVEILLANCE, EXPRESSWAYS. The price shall include all labor and equipment necessary to provide the required inspection and maintenance on the expressway and on all cross streets which are included in the project. The cost of the materials for the maintenance of traffic control devices shall be included in the traffic control pay items.

TEMPORARY INFORMATION SIGNING

Effective: November 13, 1996 Revised: January 29, 2020

Description. This work shall consist of furnishing, installing, maintaining, relocating for various states of construction, and eventually removing temporary informational signs. Included in this item may be ground mount, skid mount, truss mount, and bridge mount signs and overlay sign panels which cover portions of existing signs.

Materials. Materials shall be according to the following Articles of Section 1000 - Materials:

	Item	Article/Section
a.)	Sign Base (Note 1)	1090
b.)	Sign Face (Note 2)	1091
c.)	Sign Legends	1091
d.)	Sign Supports	1093
e.)	Overlay Panels (Note 3)	1090.02

Note 1. The Contractor may use 5/8 inch instead of 3/4 inch thick plywood.
Note 2. The sign face material shall be in accordance with the Department's Fabrication of Highway Signs Policy.
Note 3. The overlay panels shall be 0.08 inch thick.

General Construction Requirements

Installation. The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 701.14 and Article 720.04. The signs shall be 7 ft above the near edge of the pavement and shall be a minimum of 2 ft beyond the edge of the paved shoulder. A minimum of two posts shall be used.

The attachment of temporary signs to existing bridges, sign structures, or sign panels shall be approved by the Engineer. Any damage to the existing signs and/or structures due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

Method of Measurement. This work shall be measured for payment in square feet edge to edge (horizontally and vertically). All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

Basis Of Payment. This work will be paid for at the contract unit price per SQUARE FOOT for TEMPORARY INFORMATION SIGNING.

TRAFFIC CONTROL FOR WORK ZONE AREAS

Effective: September 14, 1995 Revised: January 1, 2007

Work zone entry and exit openings shall be established daily by the Contractor with the approval of the Engineer. All vehicles including cars and pickup trucks shall exit the work zone at the exit openings. All trucks shall enter the work zone at the entry openings. These openings shall be signed in accordance with the details shown elsewhere in the plans and shall be under flagger control during working hours.

The Contractor shall plan their trucking operations into and out of the work zone as well as on and off the expressway to maintain adequate merging distance. Merging distances to cross all lanes of traffic shall be no less than 1/2 mile. This distance is the length from where the trucks enter the expressway to where the trucks enter the work zone. It is also the length from where the trucks exit the work zone to where the trucks exit the expressway. The stopping of expressway traffic to allow trucks to change lanes and/or cross the expressway is prohibited.

Failure to comply with the above requirements will result in a traffic control deficiency charge. The deficiency charge will be calculated as outlined in Article 105.03 of the Standard Specifications. The Contractor will be assessed this daily charge for each day a deficiency is documented by the Engineer.

KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (LANE CLOSURES ONLY)

Effective: January 22, 2003 Revised: August 10, 2017

The Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these special provisions, the Standard Specifications, the standards, and the district details.

Arterial lane closures shall be in accordance with the Standard Specifications, standards, district details, and the direction of the Engineer. The Contractor shall request and gain approval from the Engineer 72 hours in advance of all long-term (24 hrs. or longer) lane closures.

Arterial lane closures not shown in the staging plans will not be permitted during peak traffic volume hours.

Peak traffic volume hours are defined as weekdays (Monday through Friday) **from** 6:00 AM to 8:30 AM and 4:30 PM to 6:00 PM. for northbound and southbound US-6, northbound and southbound River Street, and northbound and southbound Water Street.

Private vehicles shall not be parked in the work zone. Contractor’s equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on state right-of-way will only be permitted at locations approved by the Engineer in accordance with Articles 701.08 and 701.11 of the Standard Specifications.

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified above, the Contractor shall be liable to the Department for the amount of:

One lane or ramp blocked = $ 1,000.
Two lanes blocked = $ 2,500

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.

KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (WITH 15 MIN FULL STOPS)

Effective: January 22, 2003 Revised: August 10, 2017

The Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these special provisions, the Standard Specifications, the standards, and the district details. Arterial lane closures shall be in accordance with the Standard Specifications, highway standards, district details, and the direction of the Engineer. The Contractor shall request and gain approval from the Engineer 72 hours in advance of all long-term (24 hrs. or longer) lane closures.

Arterial lane closures not shown in the staging plans will not be permitted during peak traffic volume hours.

Peak traffic volume hours are defined as weekdays (Monday through Friday) from 6:00 AM to 8:30 AM and 4:30 PM to 6:00 PM. **f**or northbound and southbound US-6, northbound and southbound River Street, and northbound and southbound Water Street.

Full closure of all arterial lanes in one or both directions will only be permitted for a maximum of 15 minutes at a time Sunday through Thursday between the hours of 11:00 PM and 5:00 AM. During full roadway closures, the Contractor will be required to reduce the roadway to only one open traffic lane in the affected direction(s) of travel using the appropriate standard(s) and district detail(s). Police forces shall be notified and requested to close the remaining lane to facilitate the necessary work activities, except that a flagger may be substituted for daytime closures with the approval of the Engineer. The Contractor shall notify the District 1 Arterial Traffic Control Supervisor at 847-705-4470 at least three working days (weekends and holidays DO NOT count into this notification time) in advance of the proposed road closures.

Private vehicles shall not be parked in the work zone. Contractor’s equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on state right-of-way will only be permitted at locations approved by the Engineer in accordance with Articles 701.08 and 701.11 of the Standard Specifications.

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified above, the Contractor shall be liable to the Department for the amount of:

One lane or ramp blocked = $1,000
Two lanes blocked = $2,500

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.

SPEED DISPLAY TRAILER (D1)

Effective: April 1, 2015 Revised: April 1, 2021

Revise the third 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."

Whenever the speed display trailer is not in use, it shall be considered non-operating equipment and shall be stored according to Article 701.11."

Add the following to Article 701.20 of the Standard Specifications:

"(k) "Speed Display Trailer will NOT be paid for by separate pay item, but its costs shall be included in the contract unit price of the various traffic control pay items.

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. 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. 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., and the nominal legibility distance shall be at least 750 ft.

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the posted 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 25mph 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 speed limit shall not be displayed. On any roadway facility if detected speeds are less than 25 mph, speed 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."

RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL

Effective: August 1, 2023

Description: This work shall be completed in accordance with Section 783 of the Standard Specifications. This work shall consist of removing the reflector unit from existing raised reflector pavement markers that will remain in place at the end of construction activities. Existing reflectors that conflict with revised traffic patterns shall be removed immediately to facilitate a change in lane assignment. If darkness or inclement weather prohibits the removal operations, such operation shall be resumed the next morning of when weather permits.

The base casting shall remain in place in areas where no pavement rehabilitation is required, therefore only the reflector shall be removed. Debris from the removal operations shall be removed from the pavement prior to opening the roadway to traffic.

Basis of Payment: This work will be measured for payment at the contract unit price per EACH for RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL. Payment shall be full compensation for materials, labor and equipment required to complete this work.

RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REPLACEMENT

Effective: August 1, 2023

Description: This work shall be completed in accordance with Section 781 of the Standard Specifications for Road and Bridge Construction. This work shall consist of reinstallation of reflectors into the raised pavement marker castings upon completion of staging in which the markers were in conflict with temporary lane usage.

Basis of Payment: This work will be measured for payment at the contract unit price per EACH for RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REPLACEMENT. Payment shall be full compensation for materials, labor, and equipment required to complete this work.

SIGN SHOP DRAWING SUBMITTAL

Effective: January 22, 2013 Revised: July 1, 2015

Add the following paragraph to Article 720.03 of the Standard Specifications:

Shop drawings will be required, according to Article 105.04, for all arterials/expressways signs except standard highway signs covered in the MUTCD. Shop drawings shall be submitted to the Engineer for review and approval prior to fabrication. The shop drawings shall include dimensions, letter sizing, font type, colors and materials.

TRAFFIC SIGNAL GENERAL REQUIREMENTS

Effective: May 22, 2002 Revised: March 1, 2024

These traffic signal special provisions and District 1 Standard Traffic Signal Design Details supplement the requirements of the Standard Specifications. The intent of these special provisions is to prescribe the materials and construction methods commonly used for traffic signal installations.

All material furnished shall be new unless otherwise noted herein. Traffic signal construction and maintenance work shall be performed by personnel holding current International Municipal Signal Association (IMSA)/Illinois Public Service Institute (IPSI) traffic signal technician level II certification. A copy of the certification shall be immediately available upon request of the Engineer. The work to be done under the contract consists of furnishing, installing, and maintaining all traffic signal work and items as specified in the plans and as specified herein in a manner acceptable and approved by the Engineer.

Definitions of Terms. Add the following to Section 101 of the Standard Specifications:

101.56 Manufacturer. Company that sells a particular type of product directly to the Contractor or the Vendor.

101.57 Vendor. Company that supplies, represents, and provides technical support for IDOT's District One approved traffic signal controllers and other related equipment. The vendor shall be located within IDOT District 1 and shall:

(1) Be full service with onsite facilities to assemble, test, and troubleshoot traffic signal controllers and cabinet assemblies.
(2) Maintain an inventory of IDOT District 1 approved controllers and cabinets.
(3) Be staffed with permanent sales and technical personnel able to provide traffic signal controller and cabinet expertise and support.
(4) Have technical staff that hold current IMSA/IPSI traffic signal technician level III certification and shall attend traffic signal turn-ons as well as cabinet and/or controller modifications.

Submittals. Revise Article 801.05 of the Standard Specifications to read:

“All material approval requests shall be submitted electronically following district guidelines unless directed otherwise by the Engineer. Submittal requirements shall include, but not limited to the following:

(1) All material approval requests shall be made prior to or no later than the date of the preconstruction meeting. A list of major traffic signal items can be found in Article 801.05. Material or equipment which is similar or identical shall be the product of the same manufacturer, unless necessary for system continuity. Traffic signal materials and equipment shall bear the UL label whenever such labeling is available.
(2) Product data and shop drawings shall be assembled by pay item. Only the top sheet of each pay item submittal will be stamped by the Department with the review status, except shop drawings for mast arm pole assemblies and the like will be stamped with the review status on each sheet.
(3) Original manufacturer published product data and shop drawing sheets with legible dimensions and details shall be submitted for review.
(4) When hard copy submittals are necessary, four complete copies of the manufacturer’s descriptive literatures and technical data for the traffic signal materials shall be submitted. For hard copy or electronic submittals, the descriptive literature and technical data shall be adequate for determining whether the materials meet the requirements of the plans and specifications. If the literature contains more than one item, the Contractor shall indicate which item or items will be furnished.
(5) When hard copy submittals are necessary for structural elements, four complete copies of the shop drawings for the mast arm assemblies and poles and the combination mast arm assemblies and poles showing, in detail, the fabrication thereof and the certified mill analyses of the materials used in the fabrication, anchor rods, and reinforcing materials shall be submitted.
(6) Partial or incomplete submittals will be returned without review.
(7) Certain non-standard mast arm poles and special structural elements will require additional review from IDOT’s Central Office. Examples include ornamental or decorative, non-standard length mast arm pole assemblies and monotube structures.
(8) The contract number or permit number, project location/limits, and corresponding pay code number must be on each sheet of correspondence, material approval, and mast arm poles and assemblies drawings.
(9) Where certifications and/or warranties are specified, the information submitted for approval shall include certifications and warranties. Certifications involving inspections and/or tests of material shall be complete with all test data, dates, and times.
(10) After the Engineer reviews the submittals for conformance with the design concept of the project, the Engineer will stamp the drawings indicating their status as ‘Approved’, ‘Approved-As-Noted’, ‘Disapproved’, or ‘Incomplete’. Since the Engineer's review is for conformance with the design concept only, it is the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, layout drawings, or other documents by the Department's approval thereof. The Contractor must still be in full compliance with contract and specification requirements. All submitted items reviewed and marked ‘APPROVED AS NOTED’, ‘DISAPPROVED’, or ‘INCOMPLETE’ are to be resubmitted in their entirety, unless otherwise indicated within the submittal comments, with a disposition of previous comments to verify contract compliance at no additional cost to the contract.
(11) The Contractor shall secure approved materials in a timely manner to assure construction schedules are not delayed.

(12) Exceptions to and deviations from the requirements of the contract documents will not be allowed. It is the Contractor's responsibility to note any deviations from contract requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution is superior to the material or equipment required by the contract documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.

(13) The Contractor shall not order major equipment such as mast arm assemblies prior to engineer approval of the contractor marked proposed traffic signal equipment locations to assure proper placement of contract required traffic signal displays, push buttons, and other facilities. Field adjustments may require changes in proposed mast arm length and other coordination.

(14) Revised cabinet wiring diagrams shall be submitted whenever any wiring modifications are made to the traffic signal cabinet."

Marking Proposed Locations. Revise "Marking Proposed Locations for Highway Lighting System" of Article 801.09 to read "Marking Proposed Locations for Highway Lighting System and Traffic Signals."

Add the following to Article 801.09 of the Standard Specifications:

"It shall be the Contractor's responsibility to verify all dimensions and conditions existing in the field prior to ordering materials and beginning construction. This shall include locating the mast arm foundations and verifying the mast arms lengths."

Inspection of Electrical Systems. Add the following to Article 801.10 of the Standard Specifications:

(c) All cabinets, including temporary traffic signal cabinets, shall be assembled by an approved Vendor in District 1. The Department reserves the right to request any controller and cabinet to be tested at the Vendor's facility prior to field installation at no extra cost to the contract.

Maintenance and Responsibility of Traffic Signal and Flashing Beacon Installations. Replace Article 801.11(b) of the Standard Specifications to read:

(b) Traffic Signals and Flashing Beacons. The Contractor shall be responsible for maintaining the traffic signal/flashing beacon installation in proper operating condition.

(1) General.

a. The Contractor must notify the Area Traffic Signal Maintenance and Operations Engineer of their intent to begin any physical construction work on the contract or any portion thereof. This notification must be made a minimum of seven working days prior to the start of construction to allow sufficient time for inspection of the existing traffic signal installation(s) and transfer of maintenance to the Contractor. The Department will attempt to fulfill the Contractor's inspection date request(s); however, workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested inspection date(s) cannot be scheduled by the Department.

b. Full maintenance responsibility shall start upon the successful completion of a maintenance transfer inspection, or as directed by the Engineer. If the Contractor begins any physical work on the contract or any portion thereof prior to a traffic signal inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The Contractor will become responsible for repairing or replacing all equipment that is not operating properly or is damaged at the time of transfer at no cost to the owner of the traffic signal equipment. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection, otherwise the traffic signal installation will not be accepted.
c. All traffic signals within the limits of the contract or those which have the item "Maintenance of Existing Traffic Signal Installation," “Temporary Traffic Signal Installation”, “Temporary Bridge Traffic Signal Installation”, “Temporary Portable Bridge Traffic Signal Installation”, and/or “Maintenance of Existing Flashing Beacon Installation” shall become the full responsibility of the Contractor. Maintenance responsibility shall end upon issuance of final acceptance by the Engineer.
d. The Contractor shall have electricians with IMSA/IPSI traffic signal technician level II certification on staff to provide signal maintenance. A copy of the certification shall be immediately available upon request by the Engineer.
e. This item shall include maintenance of all traffic signal equipment and other connected and related equipment such as flashing beacons, EVP equipment, master controllers, network switches, UPS and batteries, PTZ cameras, vehicle detection, handholes, lighted signs, telephone service installations, cellular modems, radios, communication cables, and other traffic signal equipment. All conduit and related equipment to adjacent intersections shall be maintained to the far back handhole, or as directed by the Engineer. If adjacent intersections are part of contract work, then maintenance of all conduit and related equipment shall be included in this item.
f. Regional transit, county, and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as network switches and transit signal priority (TSP, SCP, and BRT) servers, radios, and other devices, where maintenance shall be coordinated with the owner.
g. Maintenance shall not include automatic traffic enforcement equipment such as red-light enforcement cameras, detectors, or peripheral equipment. This equipment is operated and maintained by others and shall be deactivated while on contractor maintenance.
h. The energy charges for the operation of the traffic signal installation shall be paid for by the Contractor.

(2) Maintenance.
a. The Contractor shall inspect all traffic signal equipment and appurtenances every two weeks to ensure they are functioning properly. Signal heads shall be properly adjusted, including plumb, and tightly mounted. All controller cabinets, signal posts, and controller pedestals shall be tight on their foundations and in alignment. Deficient equipment shall be repaired or replaced as necessary. The Contractor shall check signal system communications and phone lines to assure proper operation. This item includes, as routine maintenance, all portions of EVP equipment. The Contractor shall always maintain enough materials and equipment

in stock to provide effective temporary and permanent repairs. The Contractor shall supply a detailed maintenance log monthly that includes dates, locations, names of electricians performing the required checks and inspections and any other information requested by the Engineer. The Contractor shall attend any additional inspections as requested by the Engineer. The Contractor shall check the controllers, relays, and detectors after receiving complaints or calls to ascertain that they are functioning properly and make all necessary repairs and replacement.

b. The Contractor is advised that the existing and/or temporary traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation which exceeds 15 minutes must have prior approval from the Engineer. Approval to shut down the traffic signal installation will only be granted during the period extending from 9:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.
c. The Contractor shall provide immediate corrective action when any part(s) of the signal fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. When repairs at a signalized intersection require that the controller be disconnected or otherwise removed from normal operation and power is available, the Contractor shall place the traffic signal installation in flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor shall install cones on all lane lines at the stop bar on each approach, R1-1 (36 in. minimum) “STOP” signs at the stop bar on each approach on the right side and on raised medians (where applicable), and black on fluorescent orange “SIGNALS OUT AHEAD” warning signs followed by fluorescent orange W3-1 symbolic stop ahead warning signs on all approaches to the intersection.
d. Temporary replacement of a damaged or knocked down mast arm pole assembly shall require construction of a full or partial span wire signal installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals is not permitted.
e. The Contractor shall provide the Engineer with two 24-hour telephone numbers for the maintenance of the traffic signal installation and for emergency calls by the Engineer.
f. Traffic signal equipment which is lost, damaged, or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of the Standard Specifications and these special provisions.
g. The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals and other equipment noted herein. The Contractor shall respond to all emergency calls from the Department or others within one hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new equipment meeting current District 1 traffic signal specifications. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional cost to the contract. The Contractor may institute action to recover damages from

a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal installation in proper operating condition, or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the Department's electrical maintenance contractor perform the maintenance work. The Contractor shall be responsible for all of the Department's electrical maintenance contractor's costs and liquidated damages of $1,000 per day per occurrence. The Department's electrical maintenance contractor shall bill the Contractor for the total cost of the work. The Contractor shall pay this bill within 30 days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor. The Contractor shall allow the electrical maintenance contractor to inspect the traffic signal installation that has been transferred to the Contractor for maintenance. Final replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection, otherwise the traffic signal installation will not be accepted. Cable splices outside the controller cabinet shall not be allowed. The Department may inspect any signalizing device on the Department's highway system at any time without notification. The Contractor shall not install padlocks on traffic signal cabinets or otherwise restrict the Department's access to the cabinet or controller.

h. Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the current edition of the MUTCD regarding work in temporary traffic control zones in the vicinity of highway-rail grade crossings which states that lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the railroad tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place.
i. The Contractor shall be responsible to clear snow, ice, dirt, debris, vegetation, temporary fence, or other condition that obstructs visibility of any traffic signal display or access to traffic signal equipment.
j. The Contractor shall maintain the traffic signal in normal operation during any loss of utility or battery backup power. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries. Temporary power shall not be paid for separately but shall be included in the contract.

(3) Basis of Payment. This work will be paid for at the contract unit price per EACH for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION, TEMPORARY TRAFFIC SIGNAL INSTALLATION, TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION, or TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNAL INSTALLATION. Each location will be paid for separately. Maintenance of a flashing beacon shall be paid for at the contract unit price for Maintenance of Existing Flashing Beacon Installation. Each flashing beacon will be paid for separately.

Damage to Traffic Signal System. Add the following to Article 801.12(b) of the Standard Specifications:

"Any traffic signal control equipment that is damaged and non-repairable or not operating properly from any cause shall be replaced with new equipment meeting current District 1 traffic signal specifications and provided by the Contractor at no additional cost to the contract and/or owner of the traffic signal system, all as approved by the Engineer. Final replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection. Repair or replace any equipment damaged within the time shown in the table below:

ITEM	RESPONSE TIME	SERVICE RESTORATION	PERMANENT REPAIR (calendar days)
Cabinet	1 hour	24 hours	21 days
Controllers and Peripheral Equipment	1 hour	4 hours	21 days
System Detector Loop	1 hour	N/A	7 days
All Other Detectors	1 hour	N/A	21 days
Signal Head and Lenses	1 hour	4 hours	7 days
Aviation Red Beacon	1 hour	4 hours	7 days
Mast Arm Assembly and Pole	1 hour	4 hours	7 days
Traffic Signal Post	1 hour	4 hours	7 days
Cable and Conduit	1 hour	4 hours	7 days
Interconnect and Telemetry	1 hour	4 hours	7 days
Graffiti Removal	N/A	N/A	7 days
Misalignment of Signal Heads	1 hour	4 hours	4 hours
Closed Loop Monitoring System	1 hour	24 hours	14 days
Post and Poles Plumb Vertically	N/A	N/A	21 days
Controller, Post & Pole Foundations	N/A	N/A	21 days
Complaints, Calls, Controller or System Alarms, Timing, Phasing, Programming	1 hour	4 hours	N/A
Patrol Truck Deficiencies	N/A	24 hours	24 hours
Signal Heads Visibility	1 day	2 days	14 days

Temporary replacement of a damaged or knocked down mast arm pole assembly shall require construction of a full or partial span wire signal installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals will not be permitted.

Replacement of any equipment for any reason shall be reported to the Area Traffic Signal Maintenance and Operations Engineer in writing within 24 hours. Permanent and temporary replacement of the controller and/or cabinet shall require inspection and testing by the Vendor.

Automatic traffic enforcement equipment, such as red-light enforcement cameras, detectors, and peripheral equipment that is damaged or not operating properly from any cause shall be the responsibility of the municipality or the automatic traffic enforcement company per permit agreement."

Traffic Signal Inspection (TURN-ON). Revise Article 801.15(b) of the Standard Specifications to read:

“Turn-On. It is the intent to have all electric work completed and equipment field tested by the Contractor and/or Vendor prior to the Department’s “turn-on” field inspection. If in the event the Engineer determines work is not complete and the inspection will require more than two hours to complete, the inspection shall be canceled, and the Contractor will be required to reschedule at another date. The maintenance of the traffic signals will not be accepted until all punch list work is corrected and re-inspected.

When the Contractor requests a turn-on and inspection of the completed traffic signal installation(s), the request must be made to the Area Traffic Signal Maintenance and Operations Engineer a minimum of seven working days prior to the time of the requested inspection. The Department will attempt to fulfill the Contractor’s turn-on and inspection date request(s); however, workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested turn-on and inspection date(s) cannot be scheduled by the Department. The Department will not grant a field inspection until written or electronic notification is provided from the Contractor that the equipment has been field tested and the intersection is operating according to contract requirements. The Contractor must invite local fire department personnel to the turn-on when EVP is included in the project. When the Contract includes the item Re-Optimize Traffic Signal System, Optimize Traffic Signal System, and/or Temporary Traffic Signal Timing, the Contractor must notify the SCAT consultant of the turn-on/detour implementation schedule, as well as stage changes and phase changes during construction.

The Contractor must have all traffic signal work completed and the electrical service installation connected by the utility company prior to requesting an inspection and turn-on of the traffic signal installation. The Contractor shall be responsible to provide a police officer to assist with traffic control at the time of testing.

The Contractor shall provide a representative from the Vendor who is knowledgeable of the cabinet design and controller functions to attend the traffic signal inspection for both permanent and temporary traffic signal turn-ons.

Upon demonstration that the signals are operating and all work is completed in accordance with the contract and to the satisfaction of the Engineer, the Engineer will then allow the signals to be placed in continuous operation. The signals shall continue to be maintained by the Contractor until final acceptance.

The Department requires the following final project documentation from the Contractor at traffic signal turn-ons in electronic format in addition to hard copies where noted. An electronic media device shall be submitted with separate folders corresponding to each numbered title below. The electronic media device shall be labeled with date, project location, company, and contract or permit number. Electronic record drawings and material approvals shall be submitted prior to traffic signal turn-on for review by the Department as described in the Record Drawings section herein.

Final Project Documentation:

(1) Record Drawings. Electronically produced signal plans of record with field revisions marked in red. Two hard copies of 11 in. x 17 in. record drawings shall also be provided.

(2) Field Testing. Written notification from the Contractor and the Vendor of satisfactory field testing with corresponding material performance measurements, such as for detector loops and fiber optic systems (see Article 801.13).
(3) Material Approvals. Material approval documentation.
(4) Manuals. Operation and service manuals of the signal controller and associated control equipment.
(5) Cabinet Wiring Diagram and Cable Logs. Five hard copies of 11 in. x 17 in. cabinet wiring diagrams shall be provided along with electronic PDF and DGN files of the cabinet wiring diagram. Five hard copies of the cable logs and electronic Excel files shall be provided with cable number, number of conductors and spares, connected device/signal head, and intersection location.
(6) Warrantees and Guarantees. All manufacturer and contractor warrantees and guarantees required by Article 801.14.
(7) GPS Coordinates. GPS coordinates of traffic signal equipment as described in the Record Drawings section herein.

Acceptance of the traffic signal equipment by the Department shall be based upon inspection results at the traffic signal “turn-on”, completeness of the required documentation, and successful operation during a minimum 72 hour “burn-in” period following activation of traffic signal equipment. If approved, traffic signal acceptance shall be verbal at the final inspection followed by written correspondence from the Engineer. The Contractor shall be responsible for all traffic signal equipment and associated maintenance thereof until departmental acceptance is granted.

All equipment and/or parts to keep the traffic signal installation operating shall be furnished by the Contractor. No spare traffic signal equipment is available from the Department.

All punch list work shall be completed within two weeks after the turn-on. The Contractor shall notify the Area Traffic Signal Maintenance and Operations Engineer to schedule an inspection of all punch list work. Failure to meet these time constraints shall result in liquidated damage charges of $500 per month per incident.

All cost of work and materials required to comply with the requirements herein shall be included in the pay item bid prices, under which the subject materials and signal equipment are paid, and no additional compensation will be allowed. Materials and signal equipment not complying with the requirements herein shall be subject to removal and disposal at the Contractor's expense.”

Record Drawings. The requirements listed for electrical Installation shall apply for traffic signal installations in Article 801.16. Revise the second and third paragraphs of Article 801.16 of the Standard Specifications to read:

“When the work is complete and seven days before the request for a final inspection, electronic contract drawings, stamped “RECORD DRAWINGS”, shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor’s supervising Engineer or electrician. The record drawings shall be submitted in PDF format. If the contract consists of multiple intersections, each intersection shall be saved as an individual PDF file with TS# and location name in its file name.

In addition to the record drawings, copies of the final material approvals which have been Approved or Approved as Noted shall be submitted in PDF format. The PDF files shall clearly indicate the pay item either by filename or PDF Table of Contents referencing the respective pay item number for multi-item PDF files. Specific part or model numbers of items which have been selected shall be clearly visible.

The Contractor shall provide two 11 in. x 17 in. hard copies of electronically produced final record drawings to be kept inside each traffic signal cabinet within project limits."

Add the following to Article 801.16 of the Standard Specifications:

"In addition to the specified record drawings, the Contactor shall record GPS coordinates of the following traffic signal components being installed, modified, or being affected in other ways by the contract:

- All Mast Arm Poles And Posts
- Traffic Signal Wood Poles
- Railroad Bungalow
- UPS
- Handholes
- Controller Cabinets
- Communication Cabinets
- Electric Service Disconnect Locations
- CCTV/PTZ Camera Installations

Datum to be used shall be North American 1983.

Data shall be provided in electronic format and shall be in .csv format. Latitude and longitude shall be in decimal degrees with a minimum of six decimal places. Each coordinate shall have the following information:

- File shall be named: TSXXX_YY-MM-DD.csv (i.e. TS22157_24-01-01.csv)
- Each intersection shall have its own file
- Row 1 should have the location name (i.e. IL 31 @ Klausen)
- Row 2 is blank
- Row 3 is the headers for the columns
- Row 4 starts the data
- Column A (Date) – should be in the following format: MM/DD/YYYY
- Column B (Item) – as shown in the table below
- Column C (Description) – as shown in the table below
- Column D and E (GPS Data) – should be in decimal form

Examples:

Date	Item	Description	Latitude	Longitude
01/01/2024	MP (Mast Arm Pole)	NEQ, NB, Dual, Combination Pole	41.580493	-87.793378
01/01/2024	HH (Handhole)	Heavy Duty, Fiber, Intersection, Double	41.558532	-87.792571
01/01/2024	ES (Electrical Service)	Ground mount, Pole mount	41.765532	-87.543571

01/01/2024	CC (Controller Cabinet)		41.602248	-87.794053
01/01/2024	PTZ (PTZ)	NEQ extension pole	41.593434	-87.769876
01/01/2024	POST (Post)		41.651848	-87.762053
01/01/2024	MCC (Master Controller Cabinet)		41.584593	-87.793378
01/01/2024	COMC (Communication Cabinet)		41.584600	-87.793432
01/01/2024	BBS (Battery Backup System)		41.558532	-87.792571

Data collection can be made as construction progresses or can be collected after all items are installed. If the data is unacceptable, the Contractor shall make corrections to the data collection equipment and/or process and resubmit the data for review and approval as specified.

Data shall have a minimum 1 ft accuracy after post processing."

Restoration of Work Area. Add the following article to Section 801 of the Standard Specifications:

"**801.17 Restoration of Work Area.** Restoration of the traffic signal work area shall be included in the related pay items such as foundation, conduit, handhole, underground raceways, detector loop installation or replacement, etc. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded. All brick pavers disturbed in the work area shall be restored to their original configuration as directed by the Engineer. All damaged brick pavers shall be replaced with a comparable material approved by the Engineer.

Exposed holes created from removal or relocation of traffic signal equipment shall be sealed using a zinc-plated fender washer with toggle bolt.

Restoration of the work area shall be included in the contract without any extra compensation allowed to the Contractor.

Removal, Disposal, and Salvage of Existing Traffic Signal Equipment. The removal, disposal, and/or salvage of existing traffic signal equipment shall become the property of the Contractor and disposed by the Contractor outside the state's right-of-way, unless otherwise noted. No additional compensation shall be provided to the Contractor for removal, disposal, or salvage expense for the work in the contract."

Bagging Signal Heads. Light tan colored traffic and pedestrian signal reusable covers shall be used to cover dark/un-energized signal sections, visors, and retroreflective backplates. Covers shall be made of outdoor fabric with urethane coating for repelling water, have elastic fully sewn around the cover ends for a tight fit over the visor, and have a minimum of two straps with buckles to secure the cover to the backplate. A center mesh strip allows viewing without removal for signal status testing purposes. Covers shall include a message indicating the signal is not in service. Pedestrian pushbuttons that are not in service shall be covered with a durable material such as described above or burlap that is secured in a weather-resistant manner. The entire housing, including the pedestrian sign, shall also be covered on the front side.

Turn-on of New Traffic Signal Installations. The following only applies to new traffic signals at previously unsignalized locations.

The signal responsibility shall begin at the start of signal construction and shall end upon issuance of final acceptance by the Engineer. New traffic signal heads and indications may not be installed more than two weeks (14 calendar days) prior to the scheduled turn-on of the traffic signal to avoid motorist confusion caused by the presence of new signal heads, even if properly covered. Unenergized signal indications shall be bagged until one hour prior to the scheduled turn-on per the Bagging Signal Heads section above.

New stop bars and crosswalks on approaches that did not previously have stop control shall not be installed until the day of the traffic signal turn-on.

A portable changeable message sign (PCMS) must be placed two weeks prior to the scheduled new traffic signal turn-on for all approaches to the intersection with the following messages:

NEW TRAFFIC SIGNAL	STARTING MMM ##

where “MMM” and “##” are the three-character month abbreviation and day of the scheduled turn-on, respectively.

On the day of the turn-on, change messages to read:

NEW SIGNAL AHEAD	BE PREPARED TO STOP

The PCMS must remain in place for two weeks following the day of the turn-on.

Conflicting stop signs shall be removed immediately at the time of the traffic signal turn-on.

Locating Underground Facilities. Revise Section 803 to the Standard Specifications to read:

> “IDOT traffic signal facilities are not part of any of the one-call locating service such as J.U.L.I.E or Digger. If the contract requires the maintenance services of an electrical contractor, the Contractor shall be responsible at their own expense for locating all existing IDOT electrical facilities, including but not limited to interconnect conduit and handholes, prior to performing any work. A maintenance transfer is required prior to any locating work. If this contract does not require the maintenance services of an electrical contractor, the Contractor may request one free locate for existing IDOT electrical facilities from the District 1 electrical maintenance contractor prior to the start of any work. Additional requests will be at the expense of the Contractor. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any facilities damaged during construction at their expense.

The exact location of all utilities shall be field verified by the Contractor before the installation of any components of the traffic signal system. For locations of utilities, locally owned equipment, and leased enforcement camera system facilities, the local counties or municipalities may need to be contacted, in the City of Chicago contact Digger at (312) 744-7000 and for all other locations contact J.U.L.I.E. at 1-800-892-0123 or 811.

The Contractor shall take whatever precautions to protect the electric cable or electric conductors in conduit from damage during location and construction operations. If the wiring is damaged, the Contractor shall replace the entire length of cable or conductors in conduit, in a manner satisfactory to the Engineer. Splicing below grade will not be permitted.

In the event the repairs are not made by the Contractor, the Contractor shall reimburse the Department for such repairs within 60 days of receiving written notification of said damage. Otherwise, the cost of such repairs will be deducted from monies due or which will become due to the Contractor under the terms of the contract."

Grounding of Traffic Signal Systems. Revise Section 806 of the Standard Specifications to read:

"All traffic signal systems, equipment, and appurtenances shall be properly grounded in strict conformance with the NEC. This work shall be in accordance with IDOT's District 1 Traffic Signal Design Details.

The grounding electrode system shall include a ground rod installed with each traffic signal controller concrete foundation and all mast arm and post concrete foundations. An additional ground rod will be required at locations were measured resistance exceeds 25 ohms. Ground rods are included in the applicable concrete foundation or service installation pay item and will not be paid for separately.

Testing shall be according to Article 801.13(a)(4) and (5).

(a) The grounded conductor (neutral conductor) shall be white color coded. This conductor shall be bonded to the equipment grounding conductor only at the electric service installation. All power cables shall include one neutral conductor of the same size.

(b) The equipment grounding conductor shall be green color coded. The following is in addition to Article 801.04 of the Standard Specifications:
  (1) Equipment grounding conductors shall be bonded to the grounded conductor (neutral conductor) only at the electric service installation. The equipment grounding conductor is paid for separately and shall be continuous. The Earth shall not be used as the equipment grounding conductor.
  (2) Equipment grounding conductor*s* shall be bonded, using a UL listed grounding connector, to all traffic signal mast arm poles, traffic signal posts, pedestrian posts, pull boxes, handhole frames and covers, conduits, and other metallic enclosures throughout the traffic signal wiring system, except where noted herein. Bonding shall be made with a splice and pigtail connection, using a sized compression type copper sleeve, sealant tape, and heat-shrinkable cap. A UL listed electrical joint compound shall be applied to all conductors' terminations, connector threads, and contact points. Conduit grounding bushings shall be installed at all conduit

terminations, including spare or empty conduits and conduit protruding from handhole walls.

(3) All metallic and non-metallic raceways, including spare or empty raceways, shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits. Circuits under 50 V and/or fiber optic cable will not be required to include an equipment grounding conductor.

(4) Individual conductor splices in handholes shall be soldered and sealed with heat shrink. When necessary to maintain effective equipment grounding, a full cable heat shrink shall be provided over individual conductor heat shrinks.

(c) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, UL listed pressure connectors, and UL listed clamps."

UNDERGROUND RACEWAYS

Effective: May 22, 2002 Revised: March 1, 2024

Revise Article 810.04 of the Standard Specifications to read:

"Installation. All underground conduits shall have a minimum depth of 30 in. below the finished grade and shall be installed to avoid existing and proposed utilities within the project limits."

Add the following to Article 810.04 of the Standard Specifications:

"All metal conduit installed underground shall be rigid steel conduit unless otherwise indicated on the plans."

All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 1 ft or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped.

The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap.

The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 1/8 in. thick. The cap shall be sealed to the conduit using a RTV sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring."

HANDHOLES

Effective: January 01, 2002 Revised: November 1, 2023

Description. Add the following to Section 814 of the Standard Specifications:

All conduits shall enter the handhole at a depth of 30 in. except for the conduits for detector loops when the handhole is less than 5 ft from the detector loop. All conduit ends should be sealed with a waterproof sealant to prevent the entrance of contaminants into the handhole.

Steel cable hooks shall be epoxy coated and must meet the specifications set forth in Article 1006.10. Hooks shall be a minimum of 5/8 in. diameter with 90-degree bend and extend into the handhole at least 6 in. Hooks shall be placed a minimum of 12 in. below the lid or lower if additional space is required.

Precast round handholes shall not be used unless called out on the plans.

The cover of the handhole frame shall be labeled “Traffic Signals" with legible raised letters. Only handholes serving IDOT traffic signal equipment shall have this label. Handhole covers for red light running cameras shall be labeled “RLRC”.

Revise the third paragraph of Article 814.03 of the Standard Specifications to read:

“Handholes shall be constructed as shown on the plans and shall be cast-in-place or precast concrete units. Heavy duty handholes shall be either cast-in-place or precast concrete units.”

Revise Article 814.03(c) of the Standard Specifications to read:

“Precast Concrete. Precast concrete handholes shall be fabricated according to Article 1042.17. Where a handhole is contiguous to a sidewalk, preformed joint filler of 1/2 in. thickness shall be placed between the handhole and the sidewalk.”

Add the following to Section 814 of the Standard Specifications:

Cast-In-Place Handholes. All cast-in-place handholes shall be concrete with minimum inside dimensions of 21-1/2 in. Frames and lid openings shall match this dimension.

For grounding purposes, the handhole frame shall have provisions for a 7/16 in. diameter stainless steel bolt cast into the frame. The covers shall have a stainless-steel threaded stint extended from the eye hook assembly for the purpose of attaching the grounding conductor to the handhole cover.

The minimum wall thickness for heavy duty hand holes shall be 1 ft.

Precast Round Handholes. All precast handholes shall be concrete with an inside diameter of 30 in. Frames and covers shall have a minimum opening of 26 in. and no larger than the inside diameter of the handhole.

For grounding purposes, the handhole frame shall have provisions for a 7/16 in. diameter stainless steel bolt cast into the frame. For the purpose of attaching the grounding conductor to the handhole cover, the covers shall either have a 7/16 in. diameter stainless steel bolt cast into the cover or a stainless-steel threaded stint extended from an eye hook assembly. A hole may be drilled for the bolt if one cannot be cast into the frame or cover. The head of the bolt shall be flush or lower than the top surface of the cover.

The minimum wall thickness for precast heavy duty hand holes shall be 6 in.

Precast round handholes shall be only produced by an approved precast vendor.

FIBER OPTIC CABLE

Effective: May 22, 2002 Revised: July 1, 2015

Add the following to Article 871.01 of the Standard Specifications:

The fiber optic cable shall be installed in conduit or as specified on the plans.

Add the following to Article 871.02 of the Standard Specifications:

The control cabinet distribution enclosure shall be 24 port fiber wall enclosure, unless otherwise indicated on plans. The fiber optic cable shall provide 12 fibers per tube for the number of fibers called for in the fiber optic cable pay item in the contract. Fiber optic cable may be gel filled or have an approved water blocking tape.

Add the following to Article 871.04 of the Standard Specifications:

A minimum of six multimode fibers from each cable shall be terminated with approved mechanical connectors at the distribution enclosure. Fibers not being used shall be labeled “spare." Fibers not attached to the distribution enclosure shall be capped. A minimum of 13.0 feet of extra cable length shall be provided for controller cabinets. The controller cabinet extra cable length shall be stored as directed by the Engineer.

Add the following to Article 871.06 of the Standard Specifications:

The distribution enclosure and all connectors will be included in the cost of the fiber optic cable.

Testing shall be in accordance with Article 801.13(d). Electronic files of OTDR signature traces shall be provided in the final project documentation with certification from the Contractor that attenuation of each fiber does not exceed 3.5 dB/km nominal at 850nm for multimode fiber and 0.4 bd/km nominal at 1300nm for single mode fiber.

FLASHING BEACON INSTALLATION, RELOCATION AND REMOVAL

Effective: January 1, 2007 Revised: March 1, 2024

This work shall consist of furnishing and installing a new flashing beacon installation, solar powered flashing beacon installation, relocation of existing flashing beacon, and/or the removal of the existing flashing beacon installation as shown on the plans and as described herein. The energy charges for the operation of the flashing beacon installation shall be paid for by the Department unless otherwise directed by the Engineer.

The installation, relocation, and removal of flashing beacon installations shall be according to the applicable portions of Sections 800 and 1000 of the Standard Specifications and District 1 Flashing Beacon Installation Details except as revised herein. LED signal heads shall be as modified in Led Signal Head and Optically Programmed Led Signal Head Special Provision.

Flashing Beacon Installation. This item shall consist of installing a post mounted 12 in. LED single section red or yellow flashing beacon on a new or existing post as shown on the plans or as directed by the Engineer. This item shall include furnishing and installing a flasher controller in an aluminum cabinet or integrated within the signal head, 12 in. LED red or yellow signal section with a dimmer if required by the Engineer, and all other hardware necessary to complete the installation.

Solar Powered Flashing Beacon Installation. This item shall consist of installation of a solar powered flashing beacon, post mounted as shown on the plans or as directed by the Engineer. This item shall consist of furnishing and installing a 12 in. single red or yellow flashing module on a new or existing post as shown on the plans or as directed by the Engineer. This item shall include furnishing and installing a flasher controller that is integrated within the signal head, with discrete solar panels, LED module, battery, electronics, compact housing and be capable of operating 24 hours, seven days a week. The flasher unit shall be installed on a standard wood or metal post. The flash pattern shall be MUTCD compliant and have alternate flash patterns available. The battery shall have a life span of a minimum of five years and be field replaceable. The battery and electronics may be located inside the solar panel housing or signal head. The sections of the flasher unit shall be secured with tamper resistant stainless steel hardware. Unless otherwise noted, the housing shall be black in color.

Relocate Existing Flashing Beacon. Relocation of an existing flashing beacon installation, as shown on the plans or as directed by the Engineer, shall meet the above requirements. This work shall include the complete relocation of the existing flashing beacon installation, the backfilling of the holes created by the removal of the poles, and restoration of the surface to match the adjoining area.

Remove Existing Flashing Beacon Installation Complete. Removal of an existing flashing beacon installation shall be as shown on the plans or as directed by the Engineer and shall be according to applicable portions of Section 895 of the Standard Specifications. This work shall include a complete removal of an existing flashing beacon installation, backfilling of the holes created by the removal of the poles, and restoration of the surface to match the adjoining area. The flashing beacon installation will be removed only after the permanent signal installation is accepted for maintenance, or as directed by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per EACH for FLASHING BEACON INSTALLATION; SOLAR POWERED FLASHING BEACON INSTALLATION;

RELOCATE EXISTING FLASHING BEACON or REMOVE EXISTING FLASHING BEACON INSTALLATION COMPLETE. The price shall be payment in full for all labor and material necessary to complete the work described above.

TEMPORARY TRAFFIC SIGNAL TIMING

Effective: May 22, 2002 Revised: March 1, 2024

Description. This work shall consist of developing and maintaining appropriate traffic signal timings for the specified intersection for the duration of the temporary signalized condition, as well as impact to existing traffic signal timings caused by detours or other temporary conditions.

All timings and adjustments necessary for this work shall be performed by an approved consultant who has previous experience in optimizing traffic signal systems for District 1. The Contractor shall contact the Traffic Signal Engineer for a listing of approved consultants.

The following tasks are associated with temporary traffic signal timing:

(a) Consultant shall attend temporary traffic signal inspection (turn-on) and/or detour meeting and conduct on-site implementation of the traffic signal timings.
(b) Consultant shall be responsible for making fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
(c) Consultant shall provide monthly observation of traffic signal operations in the field.
(d) Consultant shall provide on-site consultation and adjust timings as necessary for construction stage changes, temporary traffic signal phase changes, and any other conditions affecting timing and phasing, including lane closures, detours, and other construction activities.
(e) Consultant shall make timing adjustments and prepare comment responses as directed by the Area Traffic Signal Maintenance and Operations Engineer.
(f) Return original timing plan once construction is complete.

Basis of Payment. The work will be paid for at the contract unit price per EACH for TEMPORARY TRAFFIC SIGNAL TIMING, which includes performing all work described herein per intersection. When the temporary traffic signal installation is turned on and/or detour implemented, 50% of the bid price will be paid. The remaining 50% of the bid price will be paid following the removal of the temporary traffic signal installation and/or detour.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

Effective: May 22, 2002 Revised: March 1, 2024

Add the following to Article 895.05 of the Standard Specifications:

"The traffic signal equipment which is to be removed and is to become the property of the Contractor shall be disposed of outside the right-of-way at the Contractor's expense.

All equipment to be returned to the State shall be delivered by the Contractor to the State's traffic signal maintenance contractor's main facility. The Contractor shall contact the State's electrical maintenance contractor to schedule an appointment to deliver the equipment. No equipment will be accepted without a prior appointment. All equipment shall be delivered within 30 days of removing it from the traffic signal installation. The Contractor shall provide one hard copy and one electronic file of a list of equipment that is to remain the property of the State, including model and serial numbers, where applicable. The Contractor shall also provide a copy of the contract plan or special provision showing the quantities and type of equipment. Controllers and peripheral equipment from the same location shall be boxed together (equipment from different locations may not be mixed), and all boxes and controller cabinets shall be clearly marked or labeled with the location from which they were removed. If equipment is not returned according to these requirements, it will be rejected by the State's electrical maintenance contractor. The Contractor shall be responsible for the condition of the traffic signal equipment from the time Contractor takes maintenance of the signal installation until approval by the Department. A delivery receipt will be signed by the State's electrical maintenance contractor indicating the items have been returned.

The Contractor shall safely store and arrange for pick up or delivery of all equipment to be returned to agencies other than the State. The Contractor shall package the equipment and provide all necessary documentation as stated above.

Traffic signal equipment which is lost, damaged, or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of these specifications at no additional cost to the contract."

ABANDON AND FILL EXISTING SANITARY SEWER PIPE

This pay item consists of all work necessary for the abandonment and filling of existing sanitary pipe with CLSM according to the Standard Specifications for Water & Sewer Construction in Illinois and the requirements of Section 593 and 1019 of the Standard Specifications. Work includes re-excavation of locations; removal and disposal of waste excavated materials; cutting and removing of mains; providing fill, vent and drain holes; concrete thrust blocks; backfilling and compaction of excavated materials or granular trench backfill material in pavements; and clean-up.

Installation of plugs and on existing mains to remain will be paid for separately and shall be according to Plug Existing Sanitary Sewers.

Existing sewer main shall be abandoned only after all new sewer main has been completed.

Basis of Payment: The work will be paid for at the contract unit price per FOOT for ABANDON AND FILL EXISTING SANITARY SEWER PIPE, which price shall include all labor, equipment, and materials necessary to complete the work as specified.

FILLING EXISTING STORM SEWER

Description. This work shall consist of filling abandoned sewer pipe with CLSM at locations shown on the plans or as directed by the Engineer. CLSM shall be according to Section 1019 of the Standard Specifications.

Method of Measurement. This work will be measured for payment in feet for the pipe to be abandoned in place.

Basis of Payment. This work will be paid for at the contract unit price per FOOT (regardless of pipe size) for FILLING EXISTING STORM SEWER, which price shall include all materials, labor, equipment, and backfilling of any excavation necessary.

ABANDON AND FILL MANHOLE STRUCTURE

The Contractor shall abandon structures indicated in the plans or as directed by the Engineer. This work shall include all labor, materials, and equipment necessary to plug all pipes and remove the frame, cover, and adjustment rings of the manhole structure.

All connected pipes to the structure to be abandoned shall be plugged according to these special provisions. The Contractor shall remove the frame, cover, and adjustment rings of the manhole structures, and cone/flat-top/wall to a minimum of 2’ below finished grade. The structure shall be filled with trench backfill and is considered included in the cost of this item.

Contractor shall be responsible for off-site disposal of adjustment rings. The frame and cover must be returned to the City of Joliet at 921 Washington Street (Contact information will be provided at the preconstruction meeting).

Basis of Payment: This work will be paid for at the contract unit price per EACH for ABANDON AND FILL MANHOLE STRUCTURE, which price shall include the cost of all labor, materials, and equipment necessary to complete the work.

ACCESS LADDER

Description. This work shall consist of all material, labor and equipment necessary for furnishing and installing steel access ladders for access to the navigation lights on the I-80 Bridge over the Des Plaines River. The work shall be done in accordance with OSHA standards, the Standard Specifications, the details shown in the plans, and as directed by the Engineer. If the Contractor chooses a different configuration than shown in the plans, they shall submit detailed drawings for the approval of the Engineer.

The ladder and associated attachments shall be hot dip galvanized as described in the Hot Dip Galvanizing for Structural Steel special provision. The fabrication and galvanizing of the ladder rungs shall meet the non-slip requirements of OSHA regulations.

Basis of Payment. This work will be paid for at the contract unit price per EACH for ACCESS LADDER, which shall include all labor, materials, and equipment necessary to construct the access ladders.

APPROACH SLAB REMOVAL

Description. This work consists of full-depth sawcutting of concrete or asphalt pavement and the satisfactory removal and disposal of the existing bridge approach slab at the locations shown on the plans. The work shall be performed in accordance with Section 440 of the Standard Specifications. The removal of the existing bituminous overlay on the approach slab shall be included in this item. The partial removal of existing timber piles supporting the ends of the existing approach slabs which could conflict with the proposed approach slabs shall be included in this item.

The Contractor shall entirely remove the existing approach slab and reinforcement. Any additional excavation necessary to reach the top of proposed subgrade shall not be paid for separately. However, those areas of the existing subbase which, in the sole judgement of the Engineer, are disturbed or damaged by the Contractor's negligence shall be repaired by the Contractor to the Engineer's satisfaction by excavation, disposal, placement of granular subbase material, and compaction operations, or as otherwise directed by the Engineer, and no additional compensation will be allowed.

Disposal of material shall be done in accordance with Section 440.06 of the Standard Specifications.

Method of Measurement. Approach slab removal will be measured in square yards of approach slab removed regardless of replacement area. Full depth sawcutting shall not be measured separately for payment.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE YARD for APPROACH SLAB REMOVAL, which price shall include full depth sawcutting, pavement removal, disposal of debris, and all labor, equipment, and materials required to complete the work specified herein.

ASBESTOS REPORTS

Asbestos survey reports for each property in this contract are available online with the Department as part of the downloadable electronic contract package in the "Additional Information" folder. The asbestos survey reports are considered part of the special provisions for this contract. Contractor shall download and review asbestos reports prior to bidding on the contract.

BORING DRILLING FOR PIER FOUNDATIONS

Description. This work will consist of services to provide subsurface investigation and subsequent geotechnical report for the analysis of the construction of Pier 2 EB & WB shallow pier foundations for I-80 over the Des Plaines River as shown in the plans. The report shall follow the 2020 Illinois Department of Transportation Geotechnical Manual and shall provide foundation recommendations that may be used for the proposed pier foundations. Final geotechnical report shall be given to the Engineer for review.

Construction Requirements. The Contractor will perform subsurface investigations taking four borings which shall include 10 feet of rock core at the parcel on the west shore of the Des Plaines River at the Pier 2 EB & WB locations. Pier 2 EB & WB locations may be within the existing building footprint and include slab foundations.

Demolition of the existing structure shall be performed prior to drilling any boring and rock cores per building removal with asbestos no. 1. The boring drillings and rock cores should be scheduled and completed as soon as possible after the contract has been executed.

Method of Measurement. This work will be measured for payment per each location.

Basis of Payment. This work will be paid for at the contract unit price per EACH for BORING DRILLING FOR PIER FOUNDATIONS, which price shall include all equipment, materials, labor, staking, layout, and technical report required to complete the work.

BRIDGE DECK MAINTENANCE PATCHING

Description. This item shall consist of patching the existing bridge decks of the following structures, as directed by the Engineer:

- I-80 EB over Des Plaines River (SN 099-0056 EB)
- I-80 WB over Des Plaines River (SN 099-0057 WB)
- I-80 WB over IL-53 Chicago Street (SN 099-0058 WB)
- I-80 EB over IL-53 Chicago Street (SN 099-0059 EB)

Construction Requirements. The Contractor shall patch the existing bridge decks according to the Deck Slab Repair special provision. The deck patching shall be completed over six cycles; twice

per year in the spring and fall. The patching quantities given in the plans are nominal, and it is anticipated that 16.7% of the patches will be performed in each cycle.

CAMERA MOUNTING ASSEMBLY

Description**.** This work shall consist of furnishing and installing a camera mounting assembly attached to bridge structure as shown in the plans for a future CCTV security camera.

Materials**.** The mounting assembly shall consist of the following components:

Mounting Bracket. Materials for the camera mounting assembly mounting bracket as shown on the structural plans shall be in accordance with Article 505.02 of the Standard Specifications. Structural steel for the mounting bracket shall be uncoated weathering steel, AASHTO M270 Grade 50W.

Pivot Assembly. The pivot assembly shall be stainless steel or bronze and shall be mounted on an external vibration isolator. The pivot assembly shall include a sealed bearing or grease fitting. The pivot assembly spindle shall be of stainless steel. The pivot assembly shall provide for all wiring to be completed contained inside the assembly. Gaskets and o-rings shall provide a weather-tight assembly.

Stem. Stainless steel conduits shall be used to attached the pivot assembly to both the CCTV camera mounting base plate and counterweight. A stainless steel locknut shall be used at all threaded connections to the pipes. Pipes shall have permanently mounted retroreflective panels of the size and color required by the United States Coast Guard. Stainless steel conduit shall be in accordance with Article 1088.01(a)(6) of the Standard Specifications.

Automatic Latch. An automatic latch shall hold the camera mounting assembly securely in normal operating and service positions. A firm pull on the service chain shall automatically release the latch, allowing the mounting assembly to pivot. As the camera mount is raised, the latch shall automatically engage to hold the camera mount in the service position. Assembly shall be dual-handed (service chain may be pulled up from either side).

Service Chain and Mounting Bracket. A stainless steel hook, ring, and connecting plate shall be anchored to the bridge parapet. The connecting plate shall include a vandal-resistant rod locking mechanism. A locking rod assembly, made of aluminum or stainless steel, shall secure the camera mounting assembly in operating position and shall include padlock provisions. The service chain shall be stainless steel with adequately rated breaking strength.

CCTV Camera Mounting Base Plate. The base plate shall include a 1-1/2” NPT threaded end to accept a future CCTV camera.

Liquid-tight Flexible Nonmetallic Conduit (LFNC). LFNC shall be in accordance with Article 1088.01(a)(4) of the Standard Specifications.

Submittals and Drawings. The Contractor shall prepare a submittal package in accordance with the General Electrical Requirements special provision. The submittal package shall include shop

drawings for the complete camera mounting assembly. drawings for structural steel shall be provided in accordance with Article 505.03 of the Standard Specifications.

Fabrication. Structural steel fabrication for the mounting bracket as shown in the structural plans shall be in accordance with Article 505.04 of the Standard Specifications.

Inspection. Structural steel inspection for the mounting bracket as shown in the structural plans shall be in accordance with Article 505.05 of the Standard Specifications.

Marking and Shipping**.** Marking and shipping for the mounting bracket as shown in the structural plans shall be in accordance with Article 505.07 of the Standard Specifications.

Construction Requirements

The 1-1/2” NPT threaded end for future CCTV camera attachment shall be installed to a point below the bottom of the adjacent bridge girder to allow the future CCTV camera an unobstructed view of the waterway beneath the bridge structure. The 1-1/2” NPT threaded end shall be capped immediately after installation.

The Contractor shall verify the length of the 1-1/2” stainless steel conduit stem such that the future CCTV camera is accessible above the top of the parapet for maintenance.

After installation of the camera mounting assembly is complete, the Contractor shall demonstrate, in the presence of the Engineer, that the swing arm can be rotated into position parallel with the top of the bridge parapet for future CCTV camera/cable installation and maintenance.

Structural Steel Erection. Structural Steel erection for the mounting bracket as shown in the structural plans shall be in accordance with Article 505.08 of the Standard Specifications.

Method of Measurement. This work will be measured per each camera mounting assembly installed.

Basis of Payment. This work will be paid for at the contract unit price EACH for CAMERA MOUNTING ASSEMBLY. The unit price shall include all equipment, materials, and labor required to install the assembly to the satisfaction of the Engineer.

CHAIN LINK FENCE ATTACHED TO STRUCTURE

Description. This work shall consist of all labor, materials, and equipment necessary for the mounting of a chain link fence on retaining walls in accordance with the details and locations shown on the plans and the requirements of Section 664 of the Standard Specifications.

Construction Requirements. All posts shall be vertical when erected; the base plate shall be welded to the post at the proper angle to account for any slope along the top of the wall.

The fence fabric shall be type IV, class B (PVC-coated steel) and shall be in accordance with Article 1006.27 of the Standard Specifications. The color of all PVC coatings shall be black.

The steel base plate shall meet the requirements of AASHTO M183.

Method of Measurement. Measurement shall be made along the top of the fence center to center of the end post, in feet, completed in place.

Basis of Payment. The work will be paid at the contract unit price per FOOT for CHAIN LINK FENCE ATTACHED TO STRUCTURE, of the height specified, which shall include all labor, materials, and equipment necessary to perform the work as specified.

CHAIN LINK GATES, 6' X 12' DOUBLE

Revise Article 664.01 of the Standard Specifications to read:

"Description. This work shall consist of constructing and removal of temporary chain link fence, gates, and accessories."

Revise Article 664.12 of the Standard Specifications to read:

"Removal. Chain link gates shall be removed and disposed of by the Contractor upon direction from the Engineer, according to Section 201.

Concrete post foundations shall be removed completely. Broken pieces of concrete shall be disposed of according to Section 501 of the Standard Specifications."

Revise Article 664.13 of the Standard Specifications to read:

"Method of Measurement. Chain link fence will be measured for payment in feet, along the top of the fence from center to center of end posts, excluding the length occupied by gates.

Excavation in rock will be measured for payment according to Article 502.12."

Revise Article 664.14 of the Standard Specifications to read:

"Basis of Payment. This work will be paid for at the contract unit price per EACH for CHAIN LINK GATES, of the opening sizes and types specified.

Excavation in rock will be paid for according to Article 502.13."

CLOSED CIRCUIT TELEVISION CABINET

Description**.** This work shall consist of furnishing and installing a closed circuit television (CCTV) cabinet and mounting supports in accordance with the details shown on the plans and as specified herein.

Materials**.** The closed circuit television cabinet shall include the following components:

Mounting Brackets. The mounting brackets shall be hot dip galvanized carbon steel as shown in the plans, capable of supporting a minimum 1,000 pound dead load per bracket. All mounting hardware, including bolts, nuts, and washers, or other hardware required to secure the mounting brackets to the steel support plate or bridge parapet as shown on the plans shall be high strength hot-dip galvanized steel and meet the requirements of Article 1006.08 of the Standard Specifications. Cast-in-place ferrule inserts shall meet the requirements of Article 1006.13 of the Standard Specifications. A 1/8" neoprene pad, in accordance with Article 1052.02 of the Standard Specifications shall be provided between the mounting bracket and the concrete parapet.

Steel Support Plate. The steel support plate shall be hot dip galvanized carbon steel as shown in the plans of nominal dimensions ¼" thick x 13" D x 30" W.

Cabinet. The CCTV cabinet shall be a 36"H x 24"W x 12"D (nominal dimensions), NEMA 3R, type 316 stainless steel enclosure. The access door shall have a continuous hinge installed vertically and on the left side of the enclosure so that the door can open from right to left while facing the enclosure. The cabinet shall have a gasket that forms a weather-tight seal between the cabinet and door. The door shall have a hasp and staple provision for padlocking. The cabinet shall include a 27"H x 21" W (nominal dimensions) steel back panel for mounting of future CCTV control equipment.

Submittals and Drawings**.** The Contractor shall prepare a submittal package in accordance with the General Electrical Requirements special provisions.

Construction Requirements

Cast-in-place ferrule inserts shall be used on the outside face of the concrete parapet along the bridge deck to anchor the mounting bracket to the bridge parapet. The Contractor shall coordinate the location of all anchorages with the concrete reinforcement in the supporting structure elements.

The steel support plate shall be installed such that the top of the bracket the bottom of the cabinet door is a minimum of 2" higher than the top of the adjacent bridge parapet to ensure proper door operation. Leveling nuts may be required to ensure proper clearance of the top of the bridge parapet.

The CCTV cabinet shall be welded to the steel plate. All welds shall be in accordance with Article 505.04(q) of the Standard Specifications.

Method of Measurement. This work will be measured for payment in place for units of each.

Basis of Payment. This work will be paid for at the contract unit price per EACH for CLOSED CIRCUIT TELEVISION CABINET.

CCTV CAMERA AND RELOCATE CCTV SURVEILLANCE CAMERA SYSTEM

Description**.** This work shall consist of furnishing, installing, calibrating, testing, maintaining, relocating, and removing a webcam system and related required components, including a 100 foot, class 2 wood pole. The webcam system shall be installed on a 100 foot, class 2, wood pole at a minimum 75-foot mounting height, unless directed otherwise by the Engineer. Contract 62R22 is providing a webcam system that will be located on the west side of the Des Plaines River, therefore the webcam system provided by Contract 62R23 shall be located on the east side of the Des Plaines River. The exact location shall be approved by the Engineer. The archived images from the webcam system will be used to create time lapse photography through the duration of the contract.

The Contractor shall furnish a webcam system and shall coordinate the procurement, installation testing, and calibration of the system.

Location and aiming of the webcam system and associated equipment must function to view construction progress of the proposed bridge. The Contractor shall coordinate with the Engineer to determine the final location and aiming, in consultation with IDOT for optimum site coverage.

The Contractor shall be required to provide ongoing maintenance of the webcam and hosting and maintaining the established website, archiving services, and the 4G modem data service in coordination with the webcam system vendor through the duration on the contract.

The Contractor shall relocate the webcam system and wood pole if required during construction due to construction staging. The Contractor shall coordinate with the Engineer for approval of the relocated location. The wood pole and webcam system shall be re-installed and aimed as necessary at the new location.

At completion of the contract, the Contractor shall coordinate with the Engineer to determine when the webcam system shall be removed. Once the Engineer approves removal of the webcam system the Contractor shall remove the webcam system and wood pole.

Materials. The webcam system shall meet or exceed the following system component specifications. The system components furnished shall be compatible with the central system software and control center of the system vendor:

Camera: The camera shall at a minimum meet the following specifications:

i. Thermostatically controlled IP66/IP67 rated environmentally sealed black powder coated enclosure with stainless steel hardware
ii. User controlled window wiper
iii. Industrial grade solid state embedded Linux System
iv. Pan/Tilt/Zoom base designed to provide consistent imaging in all environments.
v. Pan/Tilt: Pan Range 360º continuous Pan, Tilt: +45º to -90º non-continuous pan mode.
vi. Auto generated 360º Megapixel Panoramas up to 10 Gigapixel (10,000 megapixels)

vii. 24 Megapixels (6000 x 4000 pixels), Digital SLR camera with a 15.6 mm x 23.6 mm DXFormat CMOS Color Image Sensor
viii. Lens: F/3.5-F/5.6, 18-300mm, 17X Optical Zoom
ix. Live streaming video preview window with daily 1080i broadcast quality clip

Wood Pole: The 100 foot, class 2 wood pole shall be in accordance with Article 1069.04 of the Standard Specifications.

Communications. The communication to the camera shall be over 4G cellular wireless network. The Contractor shall be responsible for the 4G cellular modem and related monthly service fees for the 4G cellular communication service, in coordination with the webcam system vendor through the duration of the contract. In addition, the 4G cellular modem shall meet the following requirements at a minimum.

i. Communications: 10Base-T/100Base-TX Ethernet,
ii. IP Addressing: Dynamic or Static
iii. 32GB On-Board Data Backup to provide a minimum of 30 days of on-board image retention

Power. The webcam system shall be powered through a solar 12 VDC system. Solar panels, batteries, inverters, weatherproof enclosure, and any other required material shall be provided by the Contractor, in coordination with the webcam system vendor. In addition, the Contractor shall be responsible for maintenance of the solar power system throughout the duration of the contract.

Mounting Structure**.** The webcam system shall be mounted on a wood pole, at the mounting height specified herein. The webcam electronics enclosure and solar panels shall be mounted near the base of the pole and shall not interfere with construction. Any additional requirements per the system vendor shall be coordinated by the Contractor. The Contractor shall supply all equipment required for safe and secure access to the camera location for technicians performing installation and maintenance services, including building access, bucket truck and/or lift. The Contractor shall coordinate with the system vendor and obtain professional installation services, to determine optimal camera placement. All cameras shall be tested in the presence of the Engineer to verify that a clear (no visible distortion) camera video stream can be viewed and that the camera can be panned, tilted, and zoomed.

Web Interface. The webcam system shall be accessible via an internet-based software as a service (SaaS) solution. This online interface shall be managed and supported by the system vendor and the Contractor shall be responsible for payment of all hosting, archiving, and broadcasting service fees, including creating time-lapse video throughout the duration of the of the contract. The service shall allow the viewing of live video and HD digital still images captured and stored of the project via a secure password protected website. In addition, the web interface shall meet the following requirements:

The internet based online interface shall include the following features:

i. The system vendor shall provide a live link to the video stream from the webcam. The Contractor is required to coordinate with the Engineer to determine the suitable integration of the live stream into the IDOT I-80 project web page.
ii. Multiview Screen for viewing and accessing multiple cameras.
iii. Real-time live video viewing

iv. User-controllable robotic pan, tilt and zoom
v. Instant live snapshot capability in addition to preset scheduled archives.
vi. Account access security feature shall include four levels of password protection, IP address block/permission and SSL protection of user login password.

Other System Requirements. In addition, the webcam system shall meet the following general requirements:

i. The webcam system shall capture and upload images every 15 minutes, 24 hours per day. The field of view angle shall be towards the proposed interchange.
ii. Software and system upgrades shall be made whenever available by the system vendor at no additional cost to the Department.
iii. Images generated will be maintained on the servers owned and operated by the system vendor, throughout the life of the project and for no less than 180 days after completion. The system vendor shall provide access to the Department to download the images and video and/or store the data for its use. Still image file format shall be .jpeg and 1920x1080 pixels minimum. Video file format shall be .mp4 and 1080i resolution.
iv. The system vendor shall provide custom public website separate from the online interface. The website shall be coordinated with the Engineer to match the look and colors of the project's website and be delivered as embed code or standalone web page.
v. The system vendor shall provide time-lapse movie(s) at the end of the project. Time-lapses shall be professionally edited by a video editor using image stabilization software.

Wood Pole Installation and Removal. The 100 foot, class 2 wood pole shall be installed in accordance with Article 830.03(c) of the Standard Specifications. The wood pole shall be installed such that the minimum required buried depth shall be maintained for existing, temporary and proposed grades.

Removal of the wood pole shall be in accordance with Article 841.02 of the Standard Specifications.

Maintenance. The Contractor shall be responsible to provide all service and maintenance, including cleaning, of the camera system throughout the life of the project including making appropriate arrangements for camera to remain in operation up to and through finalization of all structural, landscaping and "completed state" condition necessary for beginning-to-end time lapse record. The Engineer will identify non-functioning webcam systems and notify the Contractor. Deficiencies will be corrected and service restored by the contractor within 72 hours of notification.

Method of Measurement. This work will be measured for payment in calendar months or fraction thereof.

Basis of Payment. This work will be paid for at the contract unit price per CALENDAR MONTH for CLOSED CIRCUIT TELEVISION CAMERA, which price shall be payment in full for the work described herein including all labor, equipment, and any other material required for successful installation, testing, and removal of the webcam system and wood pole as stated herein. The Contractor shall demonstrate to the satisfaction of the Engineer that the webcam system is operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

Relocation of the webcam system and wood pole will be paid for at the contract unit price per

EACH for RELOCATE CLOSED CIRCUIT TELEVISION SURVEILLANCE CAMERA SYSTEM, which price shall be payment in full for the work described herein including all labor, equipment, and any other material required for successful relocation and testing of the webcam system as stated herein.

COFFERCELL

Description. The work shall consist of the preparation of an in-stream/wetland work plan and the installation, maintenance, removal and disposal of the temporary or permanent coffercells to isolate the work area from water within regulated wetlands and waters of the U.S. (WOUS) in accordance with the authorized U.S. Army Corps of Engineers (USACE) Section 404 Permit and the general conditions of the current Nationwide Permit Program. A coffercell shall be defined as a temporary or permanent precast structure, consisting of engineered components, and designed to isolate the work area from water to enable construction of the permanent footing under dry conditions based on the top of coffercell elevation as specified in the plans.

Materials. Materials shall be in accordance with the USACE Section 404 Permit and general conditions of the current Nationwide Permit Program, and as specified herein.

Construction Requirements. The Contractor shall submit a coffercell plan for each coffercell to the Engineer for review and approval a minimum of 60 days prior to the start of pier footing construction. Coffercells shall not be installed without the Engineer's approval. Work shall not be performed in flowing water except for the installation of the coffercell. The coffercell shall be primarily composed of concrete elements that may be precast as a whole and floated into place or precast in modules and assembled in place. All structural material for the coffercell shall conform to Standard Specifications. Minimum reinforcing steel clearances shall be in accordance with the latest AASHTO LRFD Bridge Design Specifications. The coffercell shall be supported on the drilled shafts and designed to carry the weight of the wet concrete footing pour until the footing is hardened. The coffercell plan shall address the following.

The Contractor shall submit a coffercell plan which addresses the proposed methods of construction; proposed materials for construction; proposed materials for construction; the construction sequence including staging; installation methods; methods for adjustments in the field; dewatering methods; a quality control plan; effluent water control measures; and the best management practices to prevent introduction of foreign material into the aquatic environment. For coffercells, it is anticipated the design will be based on the top of coffercell elevation listed in the plans. The Contractor shall assume all liability, financial or otherwise, for a coffercell designed for an elevation lower than the top of coffercell elevation listed in the plans. The Contractor’s submittal shall include detailed drawings, calculations and installation method, prepared, and sealed by an Illinois licensed structural engineer.

The coffercell plan shall detail the methods of casting, transporting, lifting, picking, and placing of coffercell components in the field as well as designate any staging and precasting locations.

The coffercell plan shall detail the methods of sealing around the drilled shaft casings to ensure a sealed dry coffercell for installation and placement of the footing reinforcement and concrete in the dry.

The coffercell plan shall detail positive connectivity of the permanent coffercell to the proposed footing through reinforcing and/or multiple shear keys with appropriate calculations to justify connectivity such that the coffercell will remain a permanent part of the footing for the life of the structure. No component of the coffercell other than epoxy coated steel reinforcing bars shall extend into the substructure concrete without written approval of the Engineer. Reinforcing steel extending into the substructure shall not interfere with the footing reinforcement detailed in the plans.

The coffercell plan shall detail the limits of the coffercell. The coffercell is limited to a maximum width of 1' feet on any side of the footing. The exposed exterior faces of the coffercell shall be concrete. The exterior face of the coffercell on all sides shall be smooth and not vary in width. The thickness and surface of the bottom of the coffercell may vary and shall be within justifiable limits subject to approval by the Engineer.

The coffercell shown in the plans and specified in this special provision is for a precast coffercell, which may be a temporary or permanent work. The Contractor may elect to utilize a coffercell with removable watertight steel side forms. If the Contractor elects to utilize removable watertight steel side forms, the top of the pier footing shall be modified to incorporate the volume of the precast side walls as cast-in-place concrete, at no additional cost to the Department, to provide a monolithic pier cap of the same out-to-out dimensions and elevations as detailed in the plans. It shall be the responsibility of the Contractor to modify the pier footing reinforcing steel, at no additional cost to the Department, to account for the changes in the pier footing dimensions. In addition to the submittal requirements listed in the sections above that are applicable, the Contractor’s coffercell submittal shall include the top of footing modifications including any reinforcement modifications at the top of the footing, plans and sealed design calculations for the watertight steel forms and all other temporary components for the watertight steel forms. If the Contractor elects to use removable watertight steel side forms for the coffercell, this work shall be at no additional cost to the Department.

Method of Measurement. This work will be measured for payment in units of each where each is defined as a plan detailed stage of bridge, culvert, or other construction for which a temporary or permanent in-stream coffercell is required.

Basis of Payment. This work will be paid for at the contract unit price per EACH for COFFERCELL, at the locations specified.

COMMUNICATIONS VAULT

Description. This work shall consist of constructing a composite concrete communications vault and cover and a cable marker locate post in accordance with the details shown on the plans and as specified herein.

Materials. The composite concrete handhole and two-piece vault lid shall be constructed of polymer concrete material and shall be gray in color. The composite concrete handhole shall be 36 inches x 60 inches and shall have an effective depth of 36 inches. The composite concrete handhole shall have an open bottom.

The composite concrete handhole and cover shall have a design/test loading of 22,500/33,750 pounds, respectively. The composite concrete handhole lid shall have two 1 /2-in x 4-in pull slots. The lid surface shall have a coefficient of friction of 0.50 in accordance with ASTM C-1028.

The cover of IDOT communications vaults, as shown on the plans, shall have a permanently recessed logo that reads "**IDOT**". The cover of third party communications vaults shall have a permanently recessed logo that reads "**IDOT-DoIT**".

The Contractor shall install manufacturer-approved gasketing between the lid and the handhole to prevent water from entering the composite concrete handhole.

The composite concrete handhole lid shall be secured to the vault with two 3/8-inch NC stainless steel penta-head bolts and washers to lock the lid. In addition, a "lock tool" shall be provided for composite concrete handhole entry.

A fiber optic cable support assembly shall be recommended by the manufacturer and approved by the Engineer for fiber optic cable and splice enclosures used in the vault. Each support assembly shall consist of multiple brackets, racks, and/or rails required to suspend the required surplus cabling and any splice enclosures required.

The support assembly shall be made from or coated with weather resistant material such that there is no corrosion of the supports. The support assemblies shall be anchored to the vault using stainless steel hardware.

The fiber optic cable support assemblies shall be included in the contract unit price for the composite concrete handhole.

The cable marker locate post test station shall be made of non-conductive high-density polymer. The locate post for IDOT communications vaults shall be white in color with an orange cap with black graphic and lettering on two sides. The locate post for third party communications vaults shall be orange in color with an orange cap with black graphic and lettering on two sides. Lettering on the IDOT and third party markers shall read: "**IDOT 847-705-4612**". All colors shall be stabilized against ultraviolet light such that they will not fade under continuous exposure to direct sunlight. The marker shall retain dimensional stability in temperatures ranging between -40°F and 175°F. Each post shall be able to withstand a single vehicle impact at 45 MPH and return to within 10° of vertical within 60 seconds. The locate post will have a removeable top exposing a plate with a minimum of six ½ inch stainless steel bolt lugs with locking washer and nut terminals.

Construction Requirements

Composite concrete handholes shall be installed in accordance with applicable requirements of Section 800 of the Standard Specifications and as provided herein.

Conduits shall enter the open bottom of the composite concrete handhole. The side walls of the handhole shall not be punched, drilled, or altered in any way for conduit entry.

The composite concrete handhole shall be placed on 18 inches of coarse aggregate, CA-5 or CA 7 class A, as specified in Section 1004 of the Standard Specifications.

Included with the installation of each communications vault, a cable marker locate post test station shall be installed. One cable marker locate post shall be installed next to every communications vault. A #6 (green) ground wire shall be connected to the top lug in the locate post through the connecting conduit to the communication vault and connected to the ground rod. The tracer wire from each micro-duct or other conduit entering the communications vault shall be connected to the top lug in the locate post.

Method of Measurement. This work will be measured for payment in place for units of each.

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

CONCRETE BARRIER BASE (SPECIAL)

Description. This work shall consist of constructing a concrete barrier base as detailed in the plans. This work shall be done in accordance with the applicable portions of Section 637 of the Standard Specifications. The concrete barrier base shall be constructed as detailed in the plans. The concrete barrier wall shall be constructed separately and not poured monolithically with the concrete barrier base.

Method of Measurement. Concrete barrier base (special) will be measured for payment in feet in place along the front face of the concrete barrier wall. The concrete barrier wall of the type specified will be paid for separately. All reinforcement for the concrete barrier base (special) and barrier wall, will not be measured for payment but shall be included in the cost of Concrete Barrier Base (Special).

Basis of Payment. This work will be paid for at the contract unit price per FOOT for CONCRETE BARRIER BASE (SPECIAL) and CONCRETE BARRIER BASE (SPECIAL) of the number specified, which shall include all equipment, labor, and materials necessary to construct the concrete barrier base including all hook bars extending into the concrete barrier wall and reinforcement in the concrete barrier wall.

CONCRETE BARRIER, SINGLE FACE, 44 INCH HEIGHT

Description. This work shall consist of constructing a concrete barrier wall as detailed in the plans. This work shall be done in accordance with the applicable portions of Section 637 of the Standard Specifications. The concrete barrier wall shall be constructed as detailed in the plans. The concrete barrier wall shall be constructed separately and not poured monolithically with the concrete barrier base.

Method of Measurement. Concrete barrier, single face, 44 inch height will be measured for payment in feet in place along the front face of the concrete barrier wall. The concrete barrier base of the type specified will be paid for separately. All reinforcement for the concrete barrier, single face, 44 inch height, will not be measured for payment but shall be included in the cost of Concrete Barrier, Single Face, 44 Inch Height. Light pole bumpouts and anchor rods will not be

measured for payment but shall be included in the cost of Concrete Barrier, Single Face, 44 Inch Height.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for CONCRETE BARRIER, SINGLE FACE, 44 INCH HEIGHT, which shall include all equipment, labor, and materials necessary to construct the concrete barrier wall including all hook bars extending into the concrete barrier base and reinforcement in the concrete barrier wall.

CONCRETE BARRIER, VERTICAL FACE (SPECIAL)

Description. This work shall consist of constructing a concrete barrier wall as detailed in the plans. This work shall be done in accordance with the applicable portions of Section 637 of the Standard Specifications. The concrete barrier wall shall be constructed on a concrete barrier base as detailed in the plans.

Method of Measurement. Concrete barrier walls shall be measured in feet in place, along the centerline of the concrete barrier. Concrete barrier base will be paid for separately according to Concrete Barrier Base (Special) special provision.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for CONCRETE BARRIER, VERTICAL FACE (SPECIAL).

CONDUIT ATTACHED TO STRUCTURE, RIGID NONMETALLIC

Description. This work shall consist of furnishing and installing fiberglass reinforced epoxy (FRE) conduit, hangers, fittings, expansion joints, and accessories attached to a bridge structure.

Materials. Materials shall be according to the following.

Conduit.

a) The conduit shall be FRE conduit, also known as reinforced thermosetting resin conduit (RTRC). The conduit shall be manufactured using the single circuit filament winding process. Multi circuit windings are not allowed. Winding mandrels shall be straight and true to produce a non-tapered conduit. Tapering is allowed at the belled end only.

b) The resin system shall be epoxy based, with no fillers, using an anhydride curing agent. The fiberglass shall consist of continuous E- glass roving. All additives for increasing flame spread and lowering smoke density shall be halogen free, i.e. not contain chlorine or bromine.

c) Suitable material shall be used as ultraviolet inhibitor to protect the conduit and fittings during storage and exposure to the outdoors. Conduit and elbows shall be concrete gray 406 in color.

d) The internal conduit and elbow walls shall be smooth and all fibers embedded in the epoxy. Internal diameter percentages for passage of round ball or mandrel shall meet UL 2515A standards.

e) All elbows shall meet the nominal radius ±2°. All elbows shall have either straight ends or deep socket PVC couplings.

f) All conduits and elbows shall be durably and legibly marked in accordance to NEMA TC 14 and UL 2515A. In addition, the following information shall be included:

NEMA TC 14
UL 2515A (Extra Heavy Wall – Above Ground)
Manufacturer and Reseller (If the conduit was modified or bent other than by the manufacturer)
Date of Manufacturing of conduit and elbows
Elbows shall be marked with the angle and radius

g) All conduits, elbows and fittings shall be manufactured in the U.S.A. and marked as such.

h) Listing. All conduits and fittings shall be listed by UL.

i) Dimensions. Conduit shall be manufactured with the following nominal dimensions:

Nominal Size	Average Outside Diameter (inches)	Minimum Inside Diameter (inches)	Nominal Wall Thickness
2”	2.50”	2.00”	0.25”
4”	4.50”	4.00”	0.25”

No taper shall be allowed for the conduit straight sections except for integral belled ends.

j) Electrical Characteristics. Dielectric strength shall meet or exceed 500 volts/mil when tested in accordance with ASTM D-149.

k) Mechanical Characteristics. The conduit shall have the following mechanical strength when tested in accordance with the referenced test method:

Characteristic	Mechanical Strength Requirement	Test Method
Tensile Strength, Axial	11,000 psi	ASTM D2105
Compressive Strength	12,000 psi	ASTM D695
Coefficient of Thermal Expansion	1.2 – 1.4 x 10^{-5} in/in/°F	ASTM D696
Barcol Hardness	52 – 56	ASTM D2583
Glass Content	65 – 70%	ASTM 15LR
Water Absorption	1.5% maximum	ASTM D570
1” Conduit Impact Resistance	400 lbs/ft	ASTM D2444
2” Conduit Impact Resistance	550 lbs/ft	ASTM D2444
4” Conduit Impact Resistance	1000 lbs/ft	ASTM D2444

l) Fire Resistance and Flame Spread. Conduit shall meet specification UL 2515A.

m) Toxicity. The conduit shall not contain any compounds that can release halogens, e.g. chlorine, bromine, fluorine, and iodine, in more than trace amounts when burning. Following shall be the maximum values when tested in accordance to ASTM E-800

Gas	Value (Max PPM)
Hydrogen Chloride	0
Hydrogen Bromide	0
Hydrogen Cyanide	<1
Hydrogen Sulfide	0
Ammonia	0
Aldehydes as HCHO	<10
Oxides of Nitrogen	<50
Carbon Dioxide	<12,500
Carbon Monoxide	<250

n) Fittings and Accessories. Fiberglass conduit fittings, elbows, and accessories shall be manufactured using one of two manufacturing procedures. The first method shall use the same process, methods and components as used to manufacture the fiberglass conduit. The second method shall use the compression molding process, sheet molding compound (SMC), for the manufacturer of the finished component. The SMC material shall be a vinyl ester resin with over 30% reinforcement of glass fiber. The glass fibers should be approximately 1” in length. The SMC material shall be fire resistant to UL 2515A specifications and shall be halogen free. Plastic duct plugs if required shall be manufactured from PVC.

o) Joining System. The conduit shall be supplied with an integral wound bell on one end and a machined end spigot on the other end. A two component epoxy adhesive shall be applied to the spigot end before joining the conduit together. The adhesive shall be supplied in 20 fl. oz. plastic cartridges. A plastic static mixer tip shall be attached to the cartridges and be applied with an adhesive gun. The adhesive shall be available for two different ambient temperatures, 70°F, 40°F. The adhesive shall be supplied from the same manufacturer of the conduit and fittings to retain the UL listing.

p) Mounting Hardware. All fastener and mounting hardware shall be in accordance with Article 1088.03 of the Standard Specifications.

q) Environmental. The manufacturer shall have a current certificate, issued by an independent and accredited company, or compliance with an ISO 14001 Environmental Management Systems and Performance.

r) Quality Assurance Program. The manufacturer shall have a current certificate, issued by an independent and accredited company, or compliance with an ISO 9001 Quality Management System.

Fiberglass Hangers.

a) Hangers used to support fiberglass conduit from bridge structures shall be shipped fully assembled with all necessary components. All nuts shall be tightened to “snug fit”.

b) The fiberglass components shall be manufactured using isophthalic polyester resin and contain UV inhibitors. They shall contain a fire retardant and exhibit low smoke generation. The fiberglass components shall be black in color and shall meet or exceed the following.

Mechanical Property	**ASTM**	**Value**	**Units**
Tensile Strength	D638	30,000	psi
Tensile Modulus	D638	2.5×10^6	psi
Compressive Strength	D695	30,000	psi
Compressive Modulus	D695	2.5×10^6	psi
Flexural Strength	D790	30,000	psi
Flexural Modulus	D790	1.8×10^6	psi
Modulus of Elasticity		2.8×10^6	psi
Shear Modulus		0.45×10^6	psi
Short Beam Shear	D2344	4,500	psi
Punch Shear	D256	10,000	psi
Impact Shear 24	D256	25	ft-lbs/in

Physical Property	**ASTM**	**Value**	**Units**
Barcol Hardness	D2583	45	
24 Hour Water Absorption	D570	0.45% max	
Density	D792	0.062-0.700	lbs/in^3
Coefficient of Thermal Expansion	D696	4.4	10^{-6}in/in/ºF

Electrical Property	**ASTM**	**Value**	**Units**
Arc Resistance	D495	120	seconds
Dialectric Strength	D149	35	kv/in

Flammability Property	**ASTM**	**Value**	**Units**
Tunnel Test	E84	25 max	
Flammability	D635	Nonburning	
UL	94	VO	
Smoke Chamber	E662	600-700	

c) Hangers shall be designed and fabricated in such manner as to eliminate the possibility of crushing the square tube by tightening the nuts on the suspension or intermediate rods (the spacer tube shall rest on the bottom part of the square tube).

Hardware.

a) The support rods, intermediate rods, and all metallic hardware shall be stainless steel 316 and shall meet or exceed the following:

Threaded Rod – SS316, ASTM A193 grade B8
Hex Nut – SS316, ASTM A194 grade 8
Flat Washer – SS18-8
Lock Washer – SS18-8

Metal components that are custom fabricated shall be stainless steel 316 in accordance with ASTM specification A193/A193M-94b dated 1994.

Construction Requirements

To facilitate the most efficient and safe means of installation of fiber optic cable (by others), the Contractor shall use 20-foot sections of conduit unless restricted by geometric constraints of the bridge structure. Exceptions for use of 20-foot sections of conduit shall be approved by the Engineer. The Contractor shall prepare and submit to the Engineer for approval a conduit-installation plan prior to the start of installation. The plan shall detail the proposed conduit routing layout in coordination with the approved structural shop drawings for the bridge cross frames. The Engineer's approval shall be for the conduit routing attached to the bridge structure and does not include an endorsement of the proposed construction means, methods, or procedures.

Installation. Installation shall be in accordance with applicable portions of Article 811.03 of the Standard Specifications and as recommended by the manufacturer.

Cast in place inserts as shown in the plans shall be used to anchor conduit hangers to the bridge deck. Drilling of the bridge deck will not be allowed.

Slip collars shall be installed at each pipe clamp/strap to eliminate binding and allow unrestricted expansion/contraction movement of the fiberglass conduit.

Method of Measurement. This work will be measured for payment in feet in place. Measurements will be made in straight lines along the centerline of the conduit between ends and changes in direction. Changes in direction shall assume perfect straight line runs, ignoring actual raceway sweeps.

Expansion fittings will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for CONDUIT ATTACHED TO STRUCTURE, RIGID NONMETALLIC of the diameter specified.

CONNECTION TO EXISTING DRAINAGE STRUCTURE

Description. This work shall consist of joining new pipe to existing manholes as shown on the plans or as directed by the Engineer.

Construction Requirements. An opening for the new pipe shall be made through the walls of the existing structure at the proper location and grade. The new pipe shall be properly fitted into place, flush with the inner face of the existing masonry, or as nearly so as the Engineer determines is practical. After the pipe is in place, the opening around the pipe shall be sealed watertight in a manner approved by the Engineer. Any portion of an existing structure that is damaged in joining the new pipe shall be repaired or replaced, at no additional cost to the Department, with new material of a type matching the old.

Method of Measurement. This work will be measured in units of each complete in place.

Basis of Payment. This work will be paid for at the contract unit price per EACH for CONNECTION TO EXISTING DRAINAGE STRUCTURE

CONNECTION TO EXISTING SEWER

This work shall consist of connecting proposed sanitary sewer pipe to existing sanitary structures as shown in the plans or as directed by the Engineer. All materials and equipment needed to connect the new pipe to the existing structure shall be included. Connection will need to be approved by the Engineer before backfilling the structure. This work shall include and conform to all requirements as specified in the City of Joliet Requirements.

The work shall include 5 feet of sewer pipe for each connection to existing sanitary structure. The pipe, collar, couplings, and trench back fill needed for each connection location shall be paid for separately.

Method of Measurement. This work will be measured in units of each complete in place.

Basis of Payment. This work will be paid for at the contract unit price per EACH for CONNECTION TO EXISTING SEWER.

CONSTRUCTION AIR QUALITY – DUST CONTROL

Description. This work shall consist of developing and implementing a detailed dust control plan (DCP) in accordance with Article 107.36 of the Standard Specifications. Development of a DCP is required. All construction activities shall be governed by the DCP. Elements of the DCP will include and specify, at a minimum:

1. Mechanisms to limit tracking soil onto nearby publicly traveled roadways
2. Required speed reductions for Contractor vehicles on unpaved surfaces
3. Requirements for covering of haul vehicles, and
4. Application of dust suppressants (typically water based, calcium chloride, tarps) or water to exposed surfaces, particularly to vehicles and surfaces on which construction vehicles travel.

The nature and extent of dust generating activities, and specific control techniques appropriate to specific situations shall be discussed at the pre-construction meeting, with subsequent development of the DCP to include but not be limited to the requirements below.

General Requirements. The Contractor is responsible for the control of dust at all times during the duration of the contract, 24 hours per day, 7 days per week, including non-working hours, weekends, and holidays. This work shall be considered complete after the completion of all permanent erosion control measures required for the contract and after all temporary and permanent seeding is established.

The DCP shall describe the plan for the implementation of control measures before, during and after conducting any dust generating operation. These controls must be in place on non-working days and after working hours, not just while work is being done on the site. The DCP must contain information specific to the project site, proposed work, and dust control measures to be implemented. A copy of the DCP must be available on the project site at all times.

The DCP must contain, at a minimum, all of the following information:

1. Name, address and phone number of the person(s) responsible for the dust generating operation and for the submittal and implementation of the DCP.
2. A drawing specifying the site boundaries of the project with the areas to be disturbed, the locations of the nearest public roads, and all planned exit and entrance locations to the site from any paved public roadways.
3. Control measures to be applied to all actual and potential fugitive dust sources before, during and after conducting any dust generating operation, including non-work hours and non-work days.
4. A contingency plan consisting of at least one contingency measure for each activity occurring on the site in case the primary control measure proves inadequate.

The Contractor shall submit two copies of the DCP that outlines in detail the measures to be implemented by the Contractor complying with this section, including prevention, cleanup, and other measures at least 14 days before beginning any dust generating activity. The Contractor shall not begin any dust generating activities until the Engineer approves the DCP in writing.

Materials.

1. Dust Suppression Agents: Water shall meet the requirements of Section 1002 of the Standard Specifications.
2. Soil stabilizers shall consist of seed and mulch meeting the requirements of Article 1081.06 (a) (2) and (3).
3. Covers for stockpiles shall be commercially available plastic tarps, or other materials approved by the Engineer.

Construction Methods. Water shall be used to provide temporary control of dust on entrances/exits to the jobsite, haul roads and other active work areas. Several applications per day may be necessary to control dust depending upon meteorological conditions and work activity. The Contractor shall apply water on a routine basis as necessary or as directed by the Engineer to control dust. Wet suppression consists of the application of water. Wet suppression equipment shall consist of sprinkler pipelines, tanks, tank trucks or other devices approved by the Engineer, capable of providing a regulated flow, uniform spray and positive shut off.

Haul truck cargo areas shall be securely covered during the transport of materials on public roadways that are prone to cause dust.

Public Roadway Dust Control. Trackout including carryout and spillage of material that adheres to the exterior surfaces of or are spilled from motor vehicles and/or equipment and subsequently fall onto a paved public roadway must be controlled at all times. Clean up of carryout and spillage is required immediately if it extends a cumulative distance of 50 feet or more on a paved public roadway. If the extent of carryout is less than 50 feet, clean up at the end of the day is permissible. Clean up of paved surfaces shall be by wet spray power vacuum street sweeper. Dry power sweeping is prohibited.

Control of Earthwork Dust. During batch drop operations (i.e., earthwork with a front-end loader, clamshell bucket, or backhoe), the free drop height of excavated or aggregate material shall be reduced to minimum heights as necessary to perform the specified task, and to minimize the generation of dust. To prevent spills during transport, a minimum of 2 inches of freeboard space

shall be maintained between the material load and the top of the truck cargo bed rail. A maximum drop height of 2 feet (or minimum height allowed by equipment) will be allowed, or to heights as directed by the Engineer.

Control of Dust on Stockpiles and Inactive Work Areas. The Contractor shall use the following methods to control dust and wind erosion of stockpiles and inactive areas of disturbed soil:

1. Water shall be used during active stockpile load-in, load-out, and maintenance activities.
2. Soil stabilizers (hydraulic or chemical mulch) may be applied to the surface of inactive stockpiles and other inactive areas of disturbed soil. Final grading and seeding of inactive areas shall occur immediately after construction activity is completed in an area and as directed by the Engineer.
3. Plastic tarps shall be used on small stockpiles, secured with sandbags or an equivalent method approved by the Engineer, to prevent the cover from being dislodged by the wind. The Contractor shall repair or replace the covers whenever damaged or dislodged at no additional cost.

Method of Measurement. Water used as a dust suppression measure shall be measured for payment in units of 1000 gallons of water applied. All measuring devices shall be furnished by the Contractor and approved by the Engineer. All other dust control measures will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per UNIT for DUST CONTROL WATERING.

All other dust control measures, along with preparation of the DCP, will not be paid for directly but shall be considered as included in the various items involved, and no additional compensation will be allowed.

DETOUR SIGNING

This work shall consist of furnishing, erecting, relocating, maintaining, and removing all detour route and associated advisory signing as specified in the detour plans for the temporary closure of ramps and roadways as indicated and specified. Materials, equipment, and operations for detour signing shall conform to Standard 701901 and to Section 701 of the Standard Specifications. The sizes of signs not specified in the plans shall be as required by the Illinois Manual on Uniform Traffic Control Devices.

All detour signing shall be new or like new condition. The Engineer shall be the sole judge of the condition of the signs.

The Contractor shall notify the Engineer at least three weeks prior to the day the detour is to be in effect. The Engineer shall determine the hour of closure. Engineer will contact the appropriate local agencies and interested parties. If deemed necessary by the Engineer, a pre-construction meeting with the Contractor shall be held at least two weeks prior to the day the detour is to be in effect. The Contractor shall supply to the Engineer the names and telephone numbers of his/her representative responsible for the detour signing prior to the start of the work.

The road/ramps shall not be closed until all signing is erected in accordance with the detour plan and inspected and approved by the Engineer. All existing signing that is not applicable while the detour is in effect shall be completely covered by the Contractor in a manner approved by the Engineer. The Contractor shall be responsible for ensuring that all barricades, signs, lights, and other devices installed by him/her are in place and operating 24 hours each day, including Sundays and holidays during the time the detour is in effect. The detour signage shall be included in the requirements for surveillance and related reports as described in Section 701.10. The Contractor shall be responsible for maintaining the visibility of all detour and construction signing, including clearing vegetation if deemed necessary by the Engineer. Sign locations are subject to approval of the Engineer. Longitudinal dimensions shown on the plans may be adjusted to fit field conditions, with Engineer's approval. The Contractor shall make all changes in traffic control that are deemed necessary by the Engineer.

The Contractor shall preliminarily notify the Engineer at least one day before the road is to be opened to traffic. The Contractor shall notify the Engineer again at least two hours before the road is to be opened to traffic. The Engineer will contact the appropriate local agencies and interested parties.

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

DRAINAGE SCUPPERS (SPECIAL)

Description. This work shall include furnishing and installing drainage scuppers, as shown in the plans and in accordance with these Specifications. Also included shall be furnishing and installing steel slip plates required to properly position and support the scuppers during concrete placement and all inserts, grout, expansion anchors, threaded rods, nuts, washers, straps, structural steel shapes, and miscellaneous hardware to properly install and support the drain pipe.

Materials. Materials for scuppers and drains shall conform to the requirements of Division 1000, Materials. Specific references are as follows:

Concrete Superstructure	1020
Reinforcing Bars	1006.10
Gray Iron Castings	1006.14
Structural Steel	1006.04
Steel Pipe	1006.18
Structural Steel Coatings	1008
Polyvinyl Chloride (PVC) Pipe	1040.03
Note: PVC pipe, when called for, shall be Schedule 80	
Threaded Rods	1006.09
High Strength Steel Bolts and Washers	1006.08

Construction Requirements. The scuppers shall be placed and properly positioned in accordance with details and to the lines, grades and dimensions shown in the plans. The drain pipe and fittings shall be installed and securely fastened to the structure as shown in the plans. All pipe joints shall be watertight and shall be of the type shown in the plans. After installation of scuppers and drain pipe, all exposed steel pipe and all miscellaneous hardware not hot dipped galvanized shall be

cleaned and painted in accordance with the applicable provisions of Section 506 of the Standard Specifications. All paint shall conform to the requirements of Section 1008.

Method of Measurement. Scuppers will be measured for payment per each furnished installed, and accepted, for each type specified.

Basis of Payment. This work will be paid for at the contract unit price per EACH for DRAINAGE SCUPPERS (SPECIAL).

DRAINAGE STRUCTURES TO BE ADJUSTED

Description. This work shall consist of adjusting drainage structures in accordance with applicable portions of Section 602 and 603 of the Standard Specifications. All inlets, catch basins, manholes and drainage structures shall be classified as drainage structures.

Materials. Materials shall be according to Article 602.02 of the Standard Specifications.

Construction Requirements. The adjustments to existing frames, grates and lids shall be in accordance with applicable portions of Section 602 and 603 of the Standard Specifications.

Method of Measurement. This work will be measured for payment in units of each.

Basis of Payment. This work will be paid for at the contract unit price per EACH for DRAINAGE STRUCTURES TO BE ADJUSTED.

DRAINAGE STRUCTURES TO BE RECONSTRUCTED

Description. This work shall consist of adjusting drainage structures in accordance with applicable portions of Section 602 and 603 of the Standard Specifications. All inlets, catch basins, manholes and drainage structures shall be classified as drainage structures.

Materials. Materials shall be according to Article 602.02 of the Standard Specifications.

Construction Requirements. The adjustments to existing frames, grates, and lids shall be in accordance with applicable portions of Section 602 and 603 of the Standard Specifications.

Method of Measurement. This work will be measured for payment in units of each.

Basis of Payment. This work will be paid for at the contract unit price per EACH for DRAINAGE STRUCTURES TO BE RECONSTRUCTED.

DUCTILE IRON WATER MAIN

All water main materials incorporated into the City of Joliet water system, from the main line to the curb stop including fittings, shall be of domestic manufacture (i.e. manufactured within the

United States) and shall meet all applicable specifications of the American Water Works Association (AWWA). This work shall include and conform to all requirements as specified in the City of Joliet Requirements.

Material:

1 Provide ductile iron pipe complying with ANSI A21.51, thickness class 52, with joints complying with ANSI A21.11.
   a. Use cement lining complying with ANSI/AWWA C104/A21.4, standard thickness.
   b. Exterior Coating:
      1. The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179.
      2. The mass of the zinc applied shall be 200 grams per square meter of pipe surface area.
         I. A finishing layer of asphaltic coating shall be applied over the zinc coating. The mean dry film thickness of the finishing coat shall not be less than 3 mils, with a local minimum not less than 2 mils.
      3. The coating system shall conform in every respect to ISO 8179-1 “Ductile iron pipes - External zinc-based coating - Part 1: Metallic zinc with finishing layer. Second edition 2004-06-01”.
   c. In areas where petroleum contamination is present use Buna-Nitrile gaskets.

2 Provide restrained joint pipe system, where indicated on the drawings, that utilizes one of the following methods:
   a. Lock rings welded into place around pipe barrel.
   b. Bolted rings installed around pipe barrels that fit inside pipe bells.
   c. Gaskets which include stainless steel locking segments vulcanized into the gasket.
   d. Mechanical joint retainer gland systems that provide locking segments shaped to pipe barrel that do not create stress points on pipe barrel.
      I. Do not use set screw type retainer glands.
   e. Acceptable products:
      1. Meg-A-Lug System.
         I. Series 1100 Megalug for MJ to pipe.
         II. Series 1700 Megalug Harness for push on joint.
         III. As recommended by manufacturer for connection to existing pipes.

Fittings:

I. Ductile iron fittings: Provide mechanical joints complying with ANSI A21.10 or A21.53.
   a. Cement lining: Comply with ANSI A-21.4, standard thickness.
   b. Bolts and nuts:
      1. Use A-304 stainless steel bolts with nuts and washers of series 300 stainless steel per ASTM A194.
      2. Duratron Sac Nuts or approved equal.
         I. One sac nut per fitting.

Polyethylene sheet:

1. Comply with ANSI/AWWA C105/A21.5:

2. Thickness: Three layers of co-extruded LLDPE fused into a single thickness of not less than 8 mils.

3. The inside surface of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a blend of anti-microbial biocide to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion.

4. Markings: The following information will be clearly marked on the sheet at minimum increments of 2 feet along its length:
   a. Manufacturers name or trademark.
   b. Year of manufacture.
   c. Minimum film thickness and material type (LLDPE).
   d. Applicable range of nominal pipe diameter size(s).
   e. Warning – Corrosion Protection – Repair Any Damage.

5. Acceptable manufacturers:
   a. V-BIO® Enhanced Polyethylene Encasement.
   b. Or approved equal.

Conductivity appurtenances:

1. Provide wedges of serrated silicon bronze or #10-copper cable and tapping devices specifically designed for this purpose.
2. Use devices provided by the pipe manufacturer.
3. Standard mechanical joints, Field-Lok, Megalug joints or similar joints/restrained joint systems do not provide conductivity.

Pipe tracer wire:

1. The Contractor shall follow the City’s tracer wire requirement as stated in the City of Joliet specifications.

Pipe Handling, Storage, Installation And Testing

General:

1. Install in accordance with pipe manufacturer's recommendations.

Ductile Iron Water Mains and Appurtenances:

1. Comply with AWWA C600.

2. Protect pipe and fittings installed in corrosive soils containing cinders or having a high organic content by loose wrapping or tubing with polyethylene sheet.
   a. Place polyethylene sheet or tube around the entire circumference of the pipe, tie or tape sheet securely to prevent displacement during backfilling.
   b. Comply with ANSI/AWWA A21.5-99/C105 regarding installation of polyethylene protection.

3. Install conductivity through joints by use of conductivity wedges or copper cable and taps.

a. Use two wedges per joint for pipes 12 inches or smaller, and four wedges per joint for pipe sizes larger than 12 inches.
b. Use number of copper cable connectors per joint as recommended by the pipe manufacturer.

Depth Of Pipe Cover:

A. Install water mains and water service lines with a minimum depth of cover of 5 feet below finished grade ground level unless otherwise indicated on the drawings.
B. Where new water mains cross existing water mains, install new water main below existing main unless otherwise indicated on the drawings.

Connections To Existing Water Mains:

A. Make connections to existing water mains. Comply with ANSI/AWWAC651. Maintain positive pressure to the area of connection.
B. Use non-pressure connections except where pressure connections are shown on the Drawings, or required by the conditions encountered at the time of construction.
C. Make one connection at a time except as approved by the Engineer.
D. Do not operate the valves on the existing water mains. The employees of the Owner's water department will open and close the valves as required for the connections.
E. Coordinate shutdown of existing water mains with Owner’s water department and Engineer with a minimum of 48 hours notice prior to shutdown.

Pipe Restraining System:

A. General:

1. Provide protection from movement of water main piping, plugs, caps, tees, valves, hydrants, and bends of 11¼° or greater.

B. Restrained joint pipe, fittings and valves:
1. Provide restrained joint pipe to a distance indicated on the drawings, or if not shown on the drawings, to a distance no less than two pipe lengths on each side of a fitting or valve to be restrained.

C. Concrete thrust blocks:
1. When conditions prevent the use of restrained joints, use concrete thrust blocks of an approved type. The use of concrete thrust blocks in lieu of restrained joint pipe, fittings and valves requires written approval of the Engineer.
2. Provide precast or cast-in-place concrete thrust blocking with a compressive strength of 3,000 psi in 28 days.
3. Locate thrust blocking between solid ground and the fitting to be anchored.
4. Unless otherwise shown or directed by the Engineer, place the base and thrust bearing sides of thrust blocking directly against undisturbed earth.
5. Sides of thrust blocking not subject to thrust may be placed against forms.
6. Place thrust blocking so the fitting joints will be accessible for repair.

Sewer Crossing:

A. General:
   1. Separate water mains and water service lines from sanitary sewer, storm sewers, combined sewers, house sewer service connections, and drains in accordance with the “Standard Specifications for Water and Sewer Construction in Illinois”.
   2. The Owner will supply a data set with the locations of all known sanitary service laterals prior to the start of construction.

B. Water mains:
   1. Wherever water mains cross storm sewers, sanitary sewers, or sewer service connections:
      a. Install the water main so that its invert is at least 18 inches above the top of the sewer.
      b. Maintain this vertical separation for that portion of the water main located within 10’ horizontally of any sewer or drain crossed.
      c. Center a length of water main pipe over the sewer to be crossed with joints equidistant from the sewer or drain.
   2. When it is impossible to obtain the minimum 18 inches vertical separation, or when it is necessary for the water main to pass under a sewer or drain:
      a. Construct the sewer or drain of pressure pipe, conforming to the specification for water main materials.
      b. Extend the sewer construction on each side of the crossing until the normal distance from the water main to the sewer or drain is at least 10 feet.
      c. As an alternate, install either the water main or sewer inside a water main quality casing pipe for a distance of 10 feet measured perpendicular to the sewer on each side of the crossing.
   3. Where a water main must cross under a sewer:
      a. Maintain a vertical separation of 18 inches between the invert of the sewer and the crown of the water main.
      b. Support the sewer or drain line to prevent settling and breaking the water main.

C. Water service lines:
   1. Comply with the requirements of water main separation.

D. Sewer manholes:
   1. Do not install water line through sewer manhole.

Pressure Connection:

A. Support the exposed existing water main on concrete pedestals at sufficient intervals to properly carry its own weight, plus the weight of the tapping machinery and fitting.
   1. Provide a concrete thrust block behind tapping sleeve.

B. Minimum tap hole diameter:
   1. For pipe 12-inch or smaller: 1/2-inch less than the nominal pipe diameter.
   2. For pipe 14-inch through 20-inch: 1½-inch less than the pipe diameter.

C. Open valve to flush any foreign material after completion of the pressure tapping.

Pipe Insulation:

A. Rigid Pipe Insulation:
   1. Place rigid insulation board above the pipe bedding material to the width of the trench.
   2. Place rigid insulation board to the required thickness at locations as directed by the Engineer.

Polyethylene Wrapping of Ductile Iron Pipe And Appurtenances:

A. Comply with requirements of ANSI/AWWA A21.5-99/C105.
   1. Place polyethylene sheet around the entire circumference of the pipe, tie ,or tape sheet securely to prevent displacement during backfilling.
   2. Wrap all water mains, fittings, valves, fire hydrant leaders, fire hydrants, and service lines.
      a. Wrap copper service lines to a point 3 feet from center of water main.
      b. Do not block fire hydrant weep hole.

Preliminary Flushing

A. Prior to disinfection, flush water main as thoroughly as possible.
   1. Flush water main until water runs clear.
   2. Provide a minimum flushing velocity of 2.5 feet per second in the water main.
   3. Where no fire hydrant exists on the end of a water main, the plug (or cap) on the end of the water main must be tapped with opening in the end for flushing purposes. After acceptance install threaded plug into tap.
      a. 8”, 10” and 12” mains: 2½-inch tap.
      b. 16” mains: 3-inch tap.
      c. Larger than 16” use temporary fire hydrants.
   4. Contractor has the option to use temporary fire hydrants in lieu of taps. Temporary fire hydrants must be removed after testing is complete.

B. Coordinate time of flushing with Owner and Engineer, at least 72 hours in advance of flushing.
   1. Do not initiate flush without Owner’s permission.

Disinfection

A. General:
   1. After the water main work has been satisfactorily completed and tested, disinfect the work in accordance with AWWA C651 and "Standard Specifications for Water and Sewer Construction in Illinois" as modified by these Specifications.

B. Application of chlorine:
   1. Apply chlorine by gas feed or solution feed chlorinator as approved by the Owner.
      a. Provide effective diffusion of the gas or solution into the water.
      b. Provide means for preventing the backflow of water into the feeder.
   2. Chlorine solution:
      a. Apply solution of sodium hypochlorite into one end of the section of main to be disinfected while filling the main with water.

C. Requirement of chlorine:
   1. Initial chlorine solution in pipe: At least 50 mg/L, but not more than 100 mg/L.

2. Retain the disinfecting solutions in the work for at least 24 hours.
3. Chlorine residual after the retention period: At least 25 mg/L.

D. Flushing and testing:
   1. Following chlorination, flush treated water thoroughly from the water mains until the chlorine concentration in the water flowing from the main is no higher than generally prevailing in the Owner's system, or less than 1 mg/L.

E. After flushing, the Owner will collect two samples on successive days at least 24 hours apart in sterile bottles treated with sodium thiosulfate. Notify the Engineer and Owner when leakage testing is complete and schedule the time for sample collection with the Owner. Provide materials and support to the Owner in collection of samples.
   1. The Owner will perform bacteriological analysis.
   2. Should the initial disinfection result in an unsatisfactory bacterial test, repeat the chlorination and sampling procedures until satisfactory results are obtained.

F. Swabbing:
   1. Flush and swab the piping, valves, and fittings that must be placed in service immediately and cannot be disinfected by the above specified methods, with 5% solution of calcium hypochlorite prior to assembly.
      a. Secure the Engineer's approval before applying this method of disinfection.

Dechlorination

A. Comply with AWWA C651-05 requirements to neutralize the residual chlorine in new water mains.

B. After new water mains have passed disinfection requirements, utilize portable diffusing dechlorinators that utilize sulfur dioxide or other chemicals listed in Appendix C of AWWA C651 to lower chlorine residuals prior to discharge to the drainage system.
   1. Lower concentration to 1 mg/L or less.

Basis of Payment: This item will be paid for at the contract unit price per FOOT for DUCTILE IRON WATERMAIN of the size specified, regardless of depth. Water main shall be listed in the bid items by size which shall be measured in lineal feet along the center without deduction for valves and fittings. Embedment up to 1 foot above the pipe shall be included in the cost per lineal feet of water main.

All restrained joint type fittings shall be included in the cost per lineal foot of water main unless otherwise noted on the plans. Additional fittings not anticipated shall not be paid for separately but included in this pay item. When the water main terminates in a hydrant, valve or other main connection, measurement shall be from the center of the hydrant valve or main connection.

ERECTION OF COMPLEX STEEL STRUCTURES

Description: In addition to the requirements of Article 505.08(e), the following shall apply to the erection of steel units.

The Contractor or sub-Contractor performing the erection of the structural steel is herein referred to as the erection contractor.

Erector Qualifications: The erection contractor shall be certified as an Advanced Certified Steel Erector (ACSE), by the AISC Certification Program. The erection contractor shall submit evidence of current ACSE certification to the Engineer with the submittal of the proposed erection plan.

Erection Plan: The erection contractor shall retain the services of an engineering firm, prequalified with the Illinois Department of Transportation in the complex structures category, for the completion of a project-specific erection plan. An Illinois licensed structural engineer employed by this pre-qualified engineering firm, herein referred to as the erection engineer, shall sign and seal the erection plan, drawings, and calculations for the proposed erection of the structural steel.

The erection plan shall be complete in detail for all phases, stages, and conditions anticipated during erection. The erection plan shall include structural calculations and supporting documentation necessary to completely describe and document the means, methods, temporary support positions, and loads necessary to safely erect the structural steel in conformance with the contract documents and as outlined herein. The erection plans shall address and account for all items pertinent to the steel erection including such items as sequencing, falsework, temporary shoring and/or bracing, girder stability, crane positioning and movement, means of access, pick points, girder shape, permissible deformations and roll, interim/final plumbness, cross frame/diaphragm placement and connections, bolting and anchor bolt installation sequences and procedures, and blocking and anchoring of bearings. The erection contractor shall be responsible for the stability of the partially erected steel structure during all phases of the steel erection.

The erection plans and procedures shall be submitted to the Engineer for review and acceptance prior to starting the work. The plan shall be submitted a minimum of eight weeks prior to the planned mobilization efforts for erection tasks. Final acceptance of the erection plan shall be a minimum of three weeks prior to the start of erection activities. Review, acceptance and/or comments by the Department shall not be construed to guarantee the safety or final acceptability of the work or compliance with all applicable specifications, codes, or contract requirements, and shall neither relieve the Contractor of the responsibility and liability to comply with these requirements, nor create liability for the Department. Significant changes to the erection plan in the field must be approved by the erection engineer and accepted by the Engineer for the Department.

Basis of Payment: This work shall not be paid for separately but shall be included in the applicable pay items according to Art. 505.13 of the Standard Specifications.

EXPLORATION TRENCH (SPECIAL)

This item shall consist of excavating an area for the purpose of locating existing utilities within the construction limits of the proposed improvement. This work shall be performed as directed by the Engineer

The depth of the trench shall be variable but shall be deep enough to locate all potential conflicts. The width of the trench shall be sufficient to allow proper investigation of the entire trench. The exploration trench shall be constructed at the locations as determined by the Engineer.

After the trench has been inspected by the Engineer, the excavated material shall be used to backfill the trench in a manner satisfactory to the Engineer. Any excess materials shall be disposed of according to Article 202.03 of the Standard Specifications.

Method of Measurement: The exploration trench will be measured for payment in feet of trench constructed.

Basis of Payment: This work will be paid for at the contract unit price per FOOT for EXPLORATION TRENCH (SPECIAL).

EXPRESSWAY SWEEPING CYCLE

Description. This work shall consist of the sweeping, pickup, removal, and satisfactory disposal of all debris, refuse, and other rubbish which has accumulated on the highway. Areas to be cleaned are those driving surfaces including expressway, expressway ramp and local street pavement, expressway, expressway ramp and local street shoulders, and crash investigation sites within the project limits. All work will be done at night according to the Keeping the Expressway Open To Traffic special provision. This work shall include the traffic control required to close lanes necessary for the sweeping work. Moving lane closures per Standard 701426 will not be permitted. Lanes shall be closed per Standards 701400, 701401, 701428, 701446, and as directed by the Engineer. Cleaning will be required once every other month starting within 30 days of contract award until substantial completion of the project or as directed by the Engineer.

Because sweeping operations need water to work effectively, sweeping will not be allowed when temperatures or wind chill factors are forecasted by the Departments certified meteorologists to be at or below freezing. Temperature must be above 32 °F. All shoulders and curb lines must be free of any existing snow and/or ice. Dry sweeping shall be allowed only if it is considered an emergency, immediate hazard, or any work as designated by the department that requires first priority corrective action.

Sequence of Work. The Contractor shall submit a sequence of work for the full expressway sweeping cycle. The sequence of work shall be approved by the Engineer prior to commencing operations. It is required that the cleaning be completed to the satisfaction of the Engineer.

The length for Contract 62R23 has been determined to be:

Existing/Proposed Eastbound I-80:	0.63 miles
Existing/Proposed Westbound I-80:	0.63 miles
Existing Ramp CB:	0.27 miles
Existing Ramp AC:	0.40 miles
Cherry Street:	0.03 miles
US-6:	0.33 miles
River Street:	0.22 miles
Water Street:	0.15 miles
Lucas Street:	0.08 miles
N Joliet Street (South):	0.06 miles
N Joliet Street (North):	0.04 miles
Chicago Street Ramp A:	0.15 miles
Chicago Street Ramp C:	0.22 miles
Total Miles Per Cycle:	3.2 miles

Method of Measurement. This work shall be measured for payment in miles.

Basis of Payment. This work will be paid for at the contract unit price per MILE for EXPRESSWAY SWEEPING, which price shall include the labor, equipment, and materials necessary to perform the work as herein specified and as directed by the Engineer.

FENCE REMOVAL

Description. This work shall consist of the complete removal and disposal of existing fence, regardless of type, as shown in the plans or as directed by the Engineer.

Construction Requirements. All associated hardware and appurtenances of the existing fence including but not limited to post, foundations, fittings, gates, and accessories shall be removed and disposed of by the Contractor. All post or foundation holes shall be backfilled and compacted to the satisfaction of the Engineer. Any part of the fence that is not called out to be removed and damaged by the Contractor's work shall be replaced to the satisfaction of the Engineer at the expense of the Contractor.

Method of Measurement. Fence removal shall be measured for payment per foot and measured along the top of the fence from center to center of end posts, including length occupied by gates.

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

FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX

Fire hydrants shall conform to AWWA C502-85. All hydrants shall be furnished with 6-inch flanged connections. All hydrants shall have a 5 ¼-inch valve opening; open left. All hydrants shall be provided with one 4 ½-inch NST steamer connection and two 2 ½-inch NST hose connections. Hydrants shall be painted red. One-quarter cubic yard of coarse, washed, glacial gravel shall be placed at the base of the hydrant to provide for drainage.

Fire hydrants shall be measured for payment as an installed unit complete with accessories. Accessories include a 6-inch gate valve and valve box connected between the watermain and the fire hydrant. This work shall also include any vertical adjustment required to position the center of the steamer nozzle at least 18 inches above ground level. The hydrant shall be installed with traffic flange positioned as per manufacturer's installation instructions. Hydrants shall be Mueller Centurion A423 or Clow Medallion or E.J.I.W. 5BR250. All fire hydrants shall be new, manufactured either in the year that construction begins or the previous year.

Paint fire hydrants in colors selected by the owner. Municipal treated water: red. Raw water: green. Private systems: yellow.

This work shall include and conform to all requirements as specified in the City of Joliet Requirements.

Fire Hydrant Installation:

- Install fire hydrants plumb with the lowest hose connection at least 18 inches, but no more than 26 inches, above the finished grade ground level.
- Set fire hydrant and auxiliary valve on precast concrete blocks to provide firm support for the bases.
- Brace the fire hydrant base with solid concrete blocking between the base and undisturbed trench wall to counteract the reaction thrust of water pressure at the base.
  - Provide mechanical joint anchoring fittings or approved restrained joints.
- Brace the fire hydrant barrels during backfilling.
  - Do not block the drain hole in fire hydrant.
- Place a minimum of 1/2 cubic yards of washed coarse stone at and around the base for proper drainage.
  - Cover stone with plastic before backfilling.
- Place and compact backfill materials in 6-inch layers around the fire hydrant and auxiliary gate valve.
- Cover new fire hydrant with plastic bag until new system is in service.

Basis of Payment: This work will be paid for at the contract unit price per EACH for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX and shall include all materials, equipment and labor necessary to install the fire hydrant and trench backfill at least 1 foot above the top of the pipe and hydrant.

FIRE HYDRANTS TO BE RELOCATED

This item shall be in accordance with the applicable portions of Section 564 of the "Standard Specifications" and shall include and conform to all requirements as specified in the City of Joliet Requirements.

Hydrants shall be located a minimum of 2 feet behind back of curb in locations determined on the plans or by the Engineer. They shall be plumb and shall be set so that the lowest hose connection is at least 18 inches above the surrounding finished grade and that the 'break-away' connection is no more than 3 inches above the finished ground surface. Ductile iron 'offset fittings', or approved equal, shall be used to make final adjustments.

A minimum of a 1/4 cubic yard of course stone shall be placed at and around the base of the hydrant to insure proper drainage of the hydrant after use. Care shall be taken to ensure that weep holes are not covered by concrete. The hydrant shall be set on a concrete block to ensure a firm bearing for the hydrant base. The resetting of existing hydrants and moving and reconnections of existing hydrants shall be handled in a manner similar to a new installation.

Watermain extensions shall be made with iron pipe class 52 in accordance with AWWA C151, and with set screw-type retainer glands on all mechanical joints in accordance with AWWA C153. Tyler 5-158 MJX flange adapters should be used when connecting to existing flanged auxiliary valve. Tie rods, friction clamps, ductile lugs or other restraint systems approved by the Engineer, must be used to restrain all existing pipe joints between the hydrant and the tee including the valve and the tee. This restraining system shall be installed prior to making the vertical and/or horizontal adjustment to the fire hydrant. All fittings (including tie rods, friction clamps, or other restraint systems), ductile iron pipe and stone required to complete this work shall be included in the unit price to move the hydrant. The City will not shut off the water main unless the auxiliary valve cannot provide a sufficient shut off to perform the work.

Basis of Payment: This work will be paid for at the contract unit price per EACH for FIRE HYDRANTS TO BE RELOCATED. All fittings required to complete this work shall be included in the unit price to move the fire hydrant.

FIRE HYDRANTS TO BE REMOVED

This item shall be performed in accordance with the applicable portion of Section 564 of the Standard Specifications.

This work shall include all labor, materials, and equipment necessary to remove an existing fire hydrant and relocate it to the City of Joliet Water Department Maintenance Facility at 921 E. Washington Street. All pipe and valves to remain from the tee to the fire hydrant, shall be restrained with tie rods, friction clamps, ductile lugs or other restraint systems approved by the Engineer, prior to the removal of the fire hydrant. The City will not shut off the watermain unless the auxiliary valve cannot provide a sufficient shut off to perform the work.

Basis of Payment: This work will be paid for at the contract unit price per EACH for FIRE HYDRANTS TO BE REMOVED. All fittings required to complete this work shall be included in the unit price to the remove the fire hydrant.

FIRE STANDPIPE SYSTEM

Description. This work shall consist of furnishing and installing a class 1, manual-dry standpipe system, including associated piping, valves, fittings/couplings, supports, signage, and bollards in accordance with the plans or as directed by the Engineer. This work shall also include testing and certification of the installed dry standpipe system in accordance with the National Fire Protection Association (NFPA) and Illinois Department of Transportation and coordination with the Joliet Fire Protection District (Joliet FPD) and Local Fire Chief.

General. The work shall be performed according to the latest editions of the following:

(a) NFPA 13 - “Standard for the Installation of Sprinkler Systems”
(b) NFPA 14 - “Standard for the Installation of Standpipe and Hose Systems”
(c) NFPA 25 - “Standard for the Inspection, Testing, and Maintenance of Water-Based Fire
(d) Protection System”
(e) NFPA 170 - “Standard for Fire Safety and Emergency Symbols”
(f) NFPA 502 - “Standard for Road Tunnels, Bridges, and Other Limited Access Highways”
(g) IDOT Standard Specifications
(h) AASHTO - Standard Specifications for Highway Bridges
(i) AASHTO Welding Code
(j) American Welding Society (AWS) - AWS D1.1/D1.1W - Structural Welding Code - Steel
(k) AWS D1.6/D1.6M Structural Welding Code Stainless Steel
(l) Manufacturer’s Standardization Society of the Valve and Fittings Industry (MSS) SP-58 Pipe Hangers and Supports Materials, Design, Manufacture, Selection, Application, and Installation.
(m) American Society for Testing and Materials (ASTM)
(n) ANSI A21.51 AWWA C151 “Ductile-Iron Pipe, Centrifugal Cast"
(o) ANSI A21.4 AWWA C104 “Cement-Mortar Lining for Ductile-Iron Pipes and Flanges”
(p) ANSI A21.15 AWWA C115 “Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges”
(q) ANSI A21.10 AWWA C110 “Ductile-Iron & Gray-Iron Fittings”
(r) ANSI A21.53 AWWA C153 “Ductile-Iron Compact Fittings”

Submittals. Contractor shall provide copies of submittals in accordance with Section 105 of the Standard Specifications and as described below.

(a) Perform hydrant flow test and submit results for review. Test data shall indicate locations of the hydrants tested, static pressure, residual.

(b) Detailed shop drawings in accordance with the requirements of NFPA 14, NFPA 13 and NFPA 502. The drawings shall include all piping, hanger locations, vertical and horizontal piping routing, pipe elevations, valves, expansion couplings, and fire department connections. Shop drawings shall indicate the specific standards, codes and listings which apply.

(c) Pipe support system, including hangers, clamps, anchor points, connections, etc., shown on the drawings are conceptual in nature. The Contractor shall submit shop drawing, catalog cuts and calculations signed and sealed by a structural engineer licensed in the State of Illinois, experienced in the design of the piping supports. The design submittal shall include a signed/sealed letter confirming that the supports, restraints, guides, bolts, connectors and anchors have been designed in accordance with NFPA 13 requirements and are designed for proposed dead loads, activation thrust loads, thermal movements of the bridge superstructure, movements between bridge super and substructure, and restrain and maintain proper pipe alignment under operating and test pressures.

The design submittal(s) shall include the following information, at a minimum:

1. Calculations for pipe expansion and contraction
2. Show expansion fitting/coupling locations, including adjacent support/restraint fittings.
3. Show pipe hanger, support, and anchor locations, with calculated thrust loads listed and hanger/support ratings.
4. Show locations of pipe guides, including spacing and design calculations.
5. Calculations for anchors, including embedment depths, locations and spacing. Calculations for connections, including embedment depths and spacing.
    a. All field installed anchor locations shall be coordinated with the Engineer to avoid conflict with the reinforcement bars and to ensure full embedment depth.

(d) When submitting manufactured products, provide manufacturer's product data with the relevant data highlighted or identified otherwise. Include physical characteristics, dimensional data, finishes, performance data, load ratings, and limitations of the proposed products, if any.

(e) Painting and coatings. The Contractor shall submit pipe surface preparation method, including any chemical agents, environmental protection (if required) and written plan; and, paint chip samples, in the selected color(s), for the finish coat.

(f) Catalog cuts shall be provided for the following items:

1. Piping, couplings, fittings and flanges
2. Hangers, supports, guides, restraints and accessories
3. 90 degrees Storz connection elbow
4. Paint and coating systems
5. Expansion joints and couplings
6. Automatic ball drips
7. Valves
8. Air/vacuum valves, ball valves, stainless steel pipe and service saddle
9. Fire Department Connections
10. Signage
11. Concrete mixes and reinforcement for concrete foundations
12. Bollards
13. Splash blocks

(g) Test reports and certificates

a. UL or FM approval certificates for all equipment and materials.

(h) The Contractor shall submit certification that welders to be employed and performing welding operations for the fire standpipe work have satisfactorily passed AWS qualification tests and are AWS certified.

(i) Operation and Maintenance Manuals
   a. Prior to requesting final acceptance of work furnish five (5) printed and bound sets of the following:
      i. Brief description of equipment, systems and basic operating features.
      ii. Manufacturer's name, model number, serve manual, spare parts list and descriptive literature for all components.
      iii. Maintenance instructions and testing procedure.
      iv. Listing of possible breakdowns and repairs.
      v. Field test reports.

(j) Shop drawings and specifications shall be submitted to the Joliet Fire Department for review and comment, and to the Engineer for review and approval.

Materials.: All pipe, fittings, valves, supports, and system components shall comply with NFPA 13, NFPA 14 and NFPA 502. All valves, supports and Fire Department Connections shall be Factory Mutual (FM) approved, or UL listed for fire protection service, and rated for a minimum of 250 psi.

Components that do not affect system performance, such as drain valves, drainpipes and signage, shall not be required to be listed.

The material will be inspected after delivery. The Engineer may reject those that do not meet the requirements of the contract documents. Materials furnished and installed that are found to be nonconforming to the contract documents shall be removed and replaced with conforming material at no additional cost.

Ductile iron pipe (DIP) shall be centrifugally cast in metal or sand lined molds and shall conform to ANSI A21.51/AWWA C151. Minimum thickness class shall be class 52 for all sizes, unless otherwise shown on the drawings. Ductile iron pipe shall have a standard thickness cement mortar lining as specified in ANSI A21.4/AWWA C104. Pipe shall be rated for a minimum of 250 psi. If flanged to grooved couplings are required, only AWWA DIP grooved coupling pattern shall be accepted. DIP grooving machine shall be test fitted to couplings being installed to ensure proper engagement.

Flanged piping and joints shall comply with AWWA C115 and AWWA C110, respectively. Flanges shall confirm to ANSI B16.1. Flange gaskets shall be full face type, rubber composition. Gasket thickness shall be 1/8-inch thick molded SBR (styrene-butadiene rubber) conforming to AWWA C111 and ANSI A21.11 standards. Flange assembly bolts shall be standard hexagonal head machine bolts in accordance with ANSI B18.2.1, and nuts shall be heavy hexagonal nuts` in accordance with ANSI B18.2.2. Bolts and nuts shall be low-carbon steel conforming to ASTM A307. Threads shall conform to ANSI B1.1, coarse thread series, class 2 fit. Bolt length shall be such that after joints are made up the bolts shall protrude through the nut, but not more than 2-inch.

Piping material shall bear label, stamp, or other markings of specified testing agency.

DIP shall be provided with a manufacturer's applied epoxy primer coating, rated for corrosion resistance. The coating shall be applied at a dry film thickness of 3.0-8.0 mils.

The Contractor shall field paint pipe supports and hangers with a high-build, corrosive, wet/exterior environment rated epoxy primer and intermediate coating as supplied by Tnemec, Sherwin Williams, PPG, or equal. A corrosive, wet/exterior environment rated, UV resistant, acrylic polyurethane finish coat as supplied by Tnemec, Sherwin Williams, PPG, or equal. The Contractor shall only use one manufacturer for all three coatings.

The finish coat color shall be as directed by the Engineer and/or IDOT.

All couplings and fitting shall be coated with an epoxy coating, the same coating systems as specified for ductile iron pipe. The thickness of the lining or coating shall not be less than 10 mils. Couplings and fitting shall be finish painted with the specified standpipe color, and paint system using compatible intermediate tie coat if necessary.

Stainless steel pipe and fittings shall be grade 304, schedule 80, and shall comply with ASTM A312. Stainless steel fittings shall be NPT threaded. Pipe and fittings shall be rated for a minimum of 250 psi. Piping material shall bear label, stamp, or other markings of specified testing agency.

Pipe support system, including hangers, clamps, connections, anchor points, etc., shown on the drawings are conceptual in nature. The support system, which includes thrust restraints, shall be designed to accommodate the dead loads, thermal movements of the bridge superstructure, pipe operating, activation thrust forces and test pressures, and requirements of NFPA 13. The support system shall be ASTM type 304 stainless steel, hot-dip galvanized carbon steel, or as indicated on the plans. All shall be UL listed and comply with Federal Specification A-A-1192A, WW-H-171-E, ANSI/MSS SP-69 and MSS SP-58.

One eighth inch neoprene pads, in accordance with Article 1052.02 of the Standard Specifications, shall be provided between the mounting plates/pipe alignment guides and the concrete.

U-bolts shall be part of an anti-corrosion pipe support system. Bolts shall be used in the gripping configuration at anchor points and the non-gripping configuration at non-anchor points. anti-corrosion pipe support system shall be installed per manufacturer recommendation and instruction. Anchor points are identified in the contract drawings. U-bolts part of the anti-corrosion pipe support system shall be provided by Deepwater, Advance Products & Systems or approved equal.

Pipe alignment guides shall be hot-dip galvanized carbon steel with a dielectric separation coating and as part of the anti-corrosion pipe support system, to control alignment of pipe during axial expansion and contraction cycles. Pipe guides shall be used in conjunction with pipe hangers, clamps and supports, as they are not meant to support the weight of the pipe. Pipe guides shall be as manufactured by Anvil, Metraflex, Cooper/Eaton, or approved equal. U-bolts part of the anti-corrosion pipe support system shall be provided by Deepwater, Advance Products & Systems or approved equal.

Expansion joints, between superstructure and substructure, located at piers where the FDC connection is made, shall be forced balanced, double ball type, constructed of ASTM A536 and ANSI/AWWA C153/A21.53 ductile iron. Expansion couplings shall be approved and provided with

flange outlets that conform to the dimensional requirements of ANSI/AWWA C110/A21.10 and O-ring gaskets. The expansion couplings shall be designed to provide expansion/contraction required to protect the pipe mounted to the pier and bridge structures from shear. The expansion coupling shall not impart a thrust force while under internal pressure and shall only expand/contract to match bridge longitudinal movements. The coupling shall be rated for a minimum 250 psi, provide a minimum of 20° deflection at each ball joint, and offset shall be sized based on the maximum bridge longitudinal movement. The coupling shall be UL and/or FM approved. All exterior surfaces shall be coated with a minimum of 6 mils of fusion bonded epoxy conforming to applicable requirements of ANSI/AWWA C116/A21.16. Expansion coupling shall be EBBA Iron, Inc. Force Balance Flex Tend, or approved equal.

Expansion joints, for straight sections of pipes located at the bridge expansion joints and between fixed pipe anchor points shall be installed in locations indicated on the drawings. The expansion joints shall be manufactured of ductile iron conforming to the material properties of ANSI/AWWA C153/21.53. All expansion joints shall be capable of expanding or contracting to the amounts shown on drawings or indicated in the specifications, but in no case shall be less than 4” total axial movement. Separation beyond the maximum extension of the expansion joint shall be prevented without the use of external tie rods. Each expansion joint shall be pressure tested against its own restraint to a minimum of 250 psi, or as shown on the plans. Flange outlets shall conform to the dimensional requirements of ANSI/AWWA C110/A21.10 (class 150) with the addition of an O-ring gasket which is provided to ensure a watertight seal all internal surfaces (wetted parts) shall be lined a minimum of 15 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C213. Exterior surfaces shall be coated with a minimum of 6 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C116/A21.16. Sealing gaskets shall be constructed of EPDM. The coating shall meet ANSI/NSF-61. Expansion joints shall be fully supported per manufacturer specifications. Expansion joints shall be UL listed or FM approved for fire protection systems. Linear expansion joints shall be EX_TEND 200, as manufactured by EBBA Iron, Inc. or approved equal.

Service saddles shall be cast iron body, meeting or exceeding ASTM A536, grade 65-45- 12 (or equal), with a nitrile butadiene rubber (NBR) gasket, and type 304 heavy gauge stainless steel straps in accordance with ASTM A240. All bolts, nuts, and washers shall be Type 304 stainless steel. The service saddle shall be rated for a minimum 250 psi.

Spring check valves shall be UL listed, and FM Approved for fire protection service. Check valves shall be constructed of ASTM A-536, Grade 65-42-12 ductile iron, grooved ends and rated for a minimum of 250 psi.

The check valve shall be provided with threaded boss ports for Contractor to furnish and install drain valve and piping. Spring check valves shall be installed per manufacturer’s instructions.

Swing check valves shall be UL 312 listed, and FM Approved. Check valves shall be full body type, with a domed access cover, and non-slam flexible disc. Check valves shall be constructed of ASTM A536 Grade 65-45-12 ductile iron, ANSI B16.1 class 125 flanges, and rated for a minimum of 250 psi. The top access port shall be full size, allowing removal of the disc and all parts without removing the valve from the line. The access cover shall be domed in shape to provide flushing action over the disc.

The disc shall be of one-piece construction, precision molded with an integral O-ring type sealing surface, and EDPM faced disc assembly. Non-slam closing characteristics shall be provided thorough a short disc stroke and disc return action.

The check valve shall be provided with threaded boss ports for Contractor to furnish and install drain valve and piping. Swing check valves shall only be installed in the horizontal position or per manufacturer's instructions.

Gate valves shall be UL 262 listed, and FM approved. Gate valves shall be furnished with a stainless steel rising stem, outside screw and yoke (OS&Y) with hand wheel and ANSI B16.1 class 125 flanges. Gate valves shall be cast iron body with epoxy coated interior and exterior surfaces (meeting or exceeding ASME/AWWA C550). The valve shall be rated for a minimum 250 psi and provided with EPDM disc and O-rings.

Air/vacuum valve shall be furnished and sized for the proposed air inflow when filling the pipe, closing the valve watertight when the liquid enters the valve; and also, the proposed air outflow when the pipe is being drained to break the vacuum. The valve body, cover, and throttling device (if available) shall be constructed of ASTM A536 Grade 65-45-12 ductile iron. The baffle shall be polyoxymethylene; and, the valve float and bushing shall be stainless steel, with an EDPM or Buna-N seating surface. The valves and throttling device shall have NPT threaded outlets. The valve shall be high pressure service rated, rated for a minimum of 250 psi and provided with a field applied epoxy coating on exterior surfaces. Air/vacuum valves was designed for a 500 GPM flowrate, and shall be as manufactured by APCO, Cla-Val, Valmatic or approved equal.

Fire department connections (FDC) shall be UL listed, and FM approved. FDC shall be constructed of components and arrangements as indicated on the plans. FDC shall be quick connection type, hard anodized, cast aluminum. The connections shall consist of a 5" Storz inlet, with a flat faced flange inlet. Contractor shall coordinate flange bolt configuration, to match DI pipe flanges. Storz connection shall be provided with a threaded cap, secured to the assembly with a stainless-steel aircraft cable.

The Contractor shall be responsible for supplying four custom fabricated aluminum 90° elbows, with a 5" floating Storz end connection at one end, and a standard 5" Storz connection at the other end. The elbow shall be as manufactured by US coupling and Accessories Inc. 1134 N. Range St, Dothan, Alabama 36303 (Contact Bob Gourlay at (888) 447-6441), or equal. The Contractor shall coordinate delivering the elbows to the Joliet FPD for use in connecting to the FDC.

Hydrant Storz adapters shall be UL listed, and FM approved. The adapters shall be hard anodized or forged cast aluminum adapter and cap, with a stainless-steel aircraft cable and stainless-steel set screw to prevent unscrewing from the hydrant.

Signage shall be red lettering on a white background in accordance with NFPA 14. Signs shall be in accordance with Article 1090.02 of Standard Specifications for a type 1 sign, and Section 1091 of Standard Specifications for a sign face and type ZZ reflectivity.

Cast in place concrete shall be in accordance with Section 1020 of the Standard Specifications.

Reinforcement shall be in accordance with Section 508 of the Standard Specifications.

Bollards shall consist of 6” diameter schedule 40 steel pipe, in accordance with ASTM A500, and filled with concrete. The bollard shall be provided with a 1/8” plast bollard cover. The cover shall consist of a one-piece, HDPE tube/sleeve, having an UV resistance, and anti-static properties. The covers shall be sized for a 6-inch diameter pipe, be 60-inches long, and have a 0.125-inch nominal thickness. The cover shall be provided in an OSHA yellow color.

Splash blocks shall be precast concrete and as detailed on the plans. The splash blocks shall be cast with class PC concrete in accordance with Article 1042.18 of the Standard Specification and reinforced with epoxy coated or galvanized wire mesh (4x4 -W4xW4).

Construction Requirements.

Standpipe System: The Contractor shall coordinate all work with the bridge, electrical, and drainage Contractors. The standpipe system (including equipment and accessories) shall be installed and tested in accordance with NFPA 14, NFPA 502, and in accordance with the plans.

Pipe: The pipe shall be installed at pier locations indicated on the plans. Pipe shall be mounted to the bridge, columns, pier cap and parapet walls. Piping shall be routed parallel with the structure and sloped to drain. Piping and fittings mounted to the face of the parapet walls shall be as compact as possible, with fire department connections flush with the top of the parapet wall.

Pipe support system (including hangers and connections) shall be installed in accordance with the manufacturer’s recommendations, complete with all necessary bolts, rods, nuts, washers, anchors and appurtenances for a complete installation. A typical standpipe installation at a pier is detailed on the plans. It is conceptual in nature and does not show all details of the work to be performed and materials to be supplied. The Contractor shall be responsible for providing all materials to complete the installation based on each pier layout and final bridge conditions.

Pipe supports, including hangers, attached to the underside of the concrete bridge deck, anywhere on the precast pre-stressed concrete wide flange beams, or structural steel plate girders, will not be permitted. Post-installed anchors or cast-in-place anchorages or ferrule inserts will be permitted on the cap beams of the concrete piers. Cast-in-place ferrule inserts shall be used on the outside face of the concrete parapets along the bridge deck. The Contractor shall coordinate the location of all anchorages with the concrete reinforcement in the supporting structure elements. Only undercut type anchors or mechanical type anchors shall be used for the post-installation. Epoxy set anchors are prohibited.

Drilling through reinforcement in the pier caps when post-installing anchor bolts/connections is prohibited. The Contractor shall be responsible for locating reinforcement prior to beginning any drilling procedures. The Contractor shall notify the Engineer immediately if reinforcement is encountered when drilling holes.

Anchors shall be installed at proper locations to prevent stresses from exceeding those permitted by ASME B31.9 and to prevent transfer of loading and stress to connected piping and equipment. In locations where the pre-cast pre-stressed concrete elements require the use of wedge washer or bevel washers to properly align and install the components, only hot-dipped galvanized wedge washers shall be used.

Fixed anchor points shall be designed to resist all loading on the piping system during normal operation with an empty pipe and during fire activity while pipe is being filled and discharged.

Expansion joints shall be provided at between all changes of direction that may prohibit free movement between two fixed anchor points.

Pipe guides and expansion joints shall be installed in accordance with manufacturer recommendations. Pipe guides shall be mounted flush with concrete surfaces. Expansion joints shall be provided with flanges to attach to ductile iron piping.

Painting and Coatings: Field applied paint/coatings shall be applied in accordance with the paint manufacturer's recommendations. The Contractor shall store pipe coating in accordance with the manufacturer's recommendations, within minimum and maximum temperatures, and apply within pot/spray life requirements. Ductile iron pipe shall have external surfaces prepared by the methods listed in NAPF 500-03. Surfaces shall be free of all visible dirt, dust, loose annealing oxide, loose rust, loose mold coating and other foreign matter (including oil, and grease).

Pipe shall be coated prior to attaching to the bridge/pier. The Contractor shall repair any areas that were damaged by handling or installation after the pipe has been inspected.

Paint/coating shall be applied in accordance with the manufacturer's recommendation. The piping, including bolts, bolt heads, nuts, edges, and weld seams shall have one prime coat applied at a dry film thickness of 3.0-5.0 mils. After the primer has cured, apply one intermediate coat at a dry film thickness of 4.0-6.0 mils. Once the intermediate coat has cured, apply one finish coat applied at a dry film thickness of 2.0-3.0 mils.

Concrete pedestals for support of piping, valves, and connections shall be installed in accordance with the plans and Section 836 of the Standard Specifications.

Valves shall be installed at the locations as shown on the plans and in accordance with the manufacturer's recommendations.

Fire department connections shall be Storz type (of the size indicated) and flanged to be mounted to the flanged ductile iron pipe as shown on the plans. The Contractor shall furnish four 90° elbows with Storz connections at both ends, to the Joliet FPD.

Concrete bollards and pedestals shall be installed in accordance with the applicable portions of Section 830 of the Standard Specifications, and at locations shown on the plans.

Bollard steel pipe shall have surfaces primed with a rust & corrosion resistant, zinc rich primer, with 5,000-hour salt spray performance.

Signage shall be provided at the locations, and quantities, as indicated on the plans.

Testing. The Contractor shall be responsible for performing all field tests, inspections, and preparing all test reports and certificates.

The Contractor shall coordinate and perform all tests in the presence of the Engineer, the Joliet FPD and local Representatives and Inspectors. The Contractor shall provide all departments and representatives with a minimum of five working day notice of all test procedures.

All tests shall be performed in accordance with NFPA 14 and 502 requirements, and as directed by the Engineer, Joliet FPD, and Local Agencies. The following test shall be performed at a minimum:

(a) Hydrostatic Tests - at no less than 200 psi for two hours
(b) Flow Tests - to verify that required flow and pressure are in accordance with plans and system design requirements. Flow test shall be coordinated with Joliet FPD to allow them to connect equipment to the connections and ensure operation meets their requirements.
(c) Flow data for the proposed fire hydrant
(d) FDC compatibility with Joliet Fire department

The Contractor shall provide test results, reports, and certificates to all attendees and as directed by the Engineer, no later than two weeks after the system passes all testing.

Method Of Measurement. This work will not be measured for payment.

Basis Of Payment. The work will be paid for at the contract unit price per LUMP SUM for FIRE STANDPIPE SYSTEM, of the location specified.

FLOOD CONTINGENCY PLAN

Description. This work shall consist of development of a flood contingency plan that satisfies the conditions of this special provision and establishes procedures for high water conditions during construction per the requirements of the USACE outlined in the 408 Permit. Flood contingency plan shall be submitted and approved by the engineer, prior to equipment mobilization, materials delivery, and construction.

The Contractor shall ensure that the proposed temporary facilities installed will not impact the performance of the floodwall system or accessibility to the floodwalls during flood stages per the requirements of the USACE outlined in the 408 Permit.

The flood contingency plan shall also include procedures for monitoring forecasted rainfall events and river levels, specify measures to ensure that backwater rise does not exceed 0.1 feet, and detail emergency procedures. Such emergency procedures shall include clearly defined triggers for the removal of temporary facilities within the Des Plaines River to ensure protection of the floodwall system and compliance with permit conditions.

Any proposed modifications of the contract documents by the Contractor for construction activities located within the floodwall footprint, such as changes to temporary facilities installed, excavation depths, shoring, hauling routes, floodwall access locations, addition, groundwater dewatering, must be submitted to the Engineer for approval before changes are implemented.

Permit Requirements. This work shall consist of development of a flood contingency plan that satisfies the conditions of this special provision and establishes procedures for high water conditions during construction per the requirements of the USACE outlined in the 408 Permit.

Flood contingency plan shall be submitted and approved by the Engineer, prior to equipment mobilization, materials delivery, and construction.

The Contractor shall monitor the NOAA advanced hydrologic prediction service website for the Chicago Sanitary and Ship Canal at Lockport Lock, Lockport, Illinois. The web sites are available at: https://water.noaa.gov/gauges/LOKI2.

The Contractor shall check, monitoring and record data from these websites at least once every 12 hours, including all weekends and holidays, for the duration of the project that temporary facilities are located.

The causeways shown on the plans were analyzed and shown to not increase the WSEL more than 0.1-foot per IDNR requirements for all storm events up to 100-year of the Des Plaines River.

For the coffercell and causeway configuration shown on the plans, the maximum water surface elevation is considered to be 540.52, at which time the Contractor shall remove all causeway elements as required by the 408 Permit.

All removed material must be located outside of the flood plain identified on the plans until after water elevation has returned to normal water level. Removed material shall be stockpiled to an approved upland area and stockpiled areas shall be provided sediment and erosion control measures. Material removed and stockpiled shall remain clean, and free of silt and other unsuitable materials.

The Contractor may need to remove portions of the temporary facilities during high flow events to meet the requirements of the flood contingency plan. No extension of time or compensation will be granted to the Contractor to remove and subsequently restore the causeway system, regardless of the number of occurrences.

Basis of Payment. All work included in flood contingency plan including plan development, construction, maintenance, and removal of temporary risk reduction measures shall not be measured or paid for separately but shall be included in the cost of the contract.

GROUNDING OF ITS SUBSYSTEMS

Effective: March 12, 2009

The grounding of ITS subsystems shall meet the requirements of Section 806 of the Standard Specifications. All ITS subsystems (ramp metering system, dynamic message sign system, system detector stations, etc.), associated equipment, and appurtenances shall be properly grounded in strict conformance with the NEC and as shown on the plans.

Testing shall be according to Section 801.13(a)(5) of the Standard Specifications:

The grounded conductor (neutral conductor) shall be white color-coded. This conductor shall be bonded to the equipment-grounding conductor only at the electric service installation. All power cables shall include one neutral conductor of the same size as the phase (hot) conductors.

The equipment-grounding conductor shall be green color-coded. The following is in addition to Section 801.04 of the Standard Specifications.

Equipment grounding conductors shall be XLP insulated No. 6, unless otherwise noted on the plans and bonded to the grounded conductor (neutral conductor) only at the electric service installation. The equipment-grounding conductor is paid for separately and shall be continuous. The earth shall not be used as the equipment-grounding conductor.

Equipment grounding connectors shall be bonded, using a listed grounding conductor, to all ramp meters, DMS, and detector cabinets, handholes, and other metallic enclosures throughout the ITS subsystems, except where noted herein. A listed electrical joint compound shall be applied to all conductor terminations, connector threads, and contact points.

All metallic and non-metallic raceways containing ITS circuit runs shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 volts and/or fiber optic cable will not be required to include an equipment grounding conductor.

The grounding electrode conductor shall be similar to the equipment grounding conductor in color-coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, listed pressure connectors, listed clamps or other approved listed means.

Basis of Payment. Payment shall be included in the various items associated with ITS.

JUNCTION CHAMBER

Description. This work shall consist of all labor, materials, and equipment necessary for fabricating, furnishing, and constructing the junction chamber according to applicable portions of Section 540 and Section 602 of the Standard Specifications, as shown on the plans, and as directed by the Engineer.

Method of Measurement. Junction chambers will be measured for payment as each. Each will be defined as one complete junction chamber, which shall include, but is not limited to, all concrete, epoxy coated reinforcement bars, frames and lids, cast iron steps and adjusting rings, as shown on the plans, unless specifically included with a separate pay item.

Basis of Payment. This work will be paid for at the contract unit price per EACH for JUNCTION CHAMBER of the number specified, as shown on the plans.

CONCRETE BARRIER WALL (SPECIAL NO. 1)

Description. This work shall consist of constructing a concrete barrier wall on a concrete barrier base foundation at the lines, grades and details shown on the plans, according to applicable portions of Sections 502, 503, 637, 664, 1006, and 1051 of the Standard Specifications, as modified herein, and as directed by the Engineer. This work shall include the removal of paved or poured surfaces within the limits of the proposed wall foundation and the installation of all concrete, reinforcing steel, expansion joint filler, and protective coat. This work shall include the mounting of chain link fence on top of the proposed cast in place concrete barrier wall as shown on the plans or as directed by the Engineer.

Materials: The concrete barrier wall shall be of class BS concrete and the foundation of the knee wall shall be of class SI concrete meeting the requirements of 1020 of the Standard Specifications.

The chain link fence, posts, frames, base plates, wires, braces, and anchorage shall be in accordance with all applicable portions of Section 664.02 and 1006.27 of the Standard Specifications, and as modified herein.

Method of Measurement: Knee wall with fence (special) will be measured in feet, installed and accepted by the Engineer, measured along the centerline of the concrete barrier wall from end to end. Base plates, brackets, clamps, and anchor bolts will not be measured separately.

Basis of Payment: This work will be paid for at the contract unit price per FOOT for CONCRETE BARRIER WALL (SPECIAL NO. 1), which payment shall constitute full compensation for all labor, materials, tools, and equipment required for all removals within the limits of the wall foundation, concrete, reinforcing steel, expansion joint filler, protective coat, and other included items, as detailed in the plans, described herein and as directed by the Engineer.

All excavation shall be paid for as Earth Excavation.

MANHOLES, TYPE A, SANITARY

This work shall include furnishing and installing precast structures as shown on the plans. The work shall be carried out in accordance with the applicable portions of Section 602 in the Standard Specifications and shall include and conform to all requirements as specified in the City of Joliet Requirements. Construction requirements shall be in accordance with the applicable articles of Section 602 in the Standard Specifications and as specified herein:

Base**:** The base shall be 6-inch nominal thickness and integral with the structure. The Contractor shall provide channels in invert to direct flows from incoming to outgoing pipe.

Pipe Connections: Shall be made of flexible synthetic rubber boots meeting ASTM C-923 and shall be installed on all pipe connections. Both “cast-in” or “pressed-on” type boots are permitted. Cast-in type boot shall be installed in initial pouring of manhole section.

Wall: Manhole walls shall be precast concrete sections conforming to ASTM C478. Sections and component parts shall be marked by manufacturer with trade name and/or trademark and ASTM designation. Wall thickness shall be 5” minimum. Holes shall be smooth, radial to centerline of manhole, and perpendicular to manhole wall.

Cone: Manhole cones shall be precast concrete sections compatible with the lower precast manhole wall sections. The opening shall be eccentric on cone. Flat top slab sections are optional and shall be furnished and installed in accordance with Standard 602601

Coating: The exterior of the base, barrel, and cone sections shall require bituminous coating. Where force main discharges into a manhole, coat interior with Sherwin Williams Duraplace 6100 or Raven 405

Joints: Section joints between manhole base, walls, and cone shall all be tongue and groove. All sections shall be laid on two ropes of EZ-Stick gaskets or approved equal.

External Joint Sealing Bands: External joint sealing bands shall conform to ASTM C877. Approved products are type II MacWrap or approved equal. External joint seals shall consist of a collar 9 inches wide with an outer layer of polyethylene, with a minimum tensile strength of 4000 psi and a minimum tear resistance of 1500 psi, and an under layer of rubberized mastic that is reinforced with the collar 3/4 inches from the edge. The straps shall be confined in tubes that isolate them from the mastic and allow them to slip freely when mechanically tightened and locked around the manhole. The collar shall be furnished with a minimum 6 inches overlap and a closing flap to cover any remaining exposed strap.

Adjustment Rings: The Contractor shall replace all adjustment rings with new precast concrete rings and rubber composite (in pavement) adjustment rings depending on the height of adjustment as follows:

- The contractor shall use precast concrete adjustment rings and a rubber composite ring on top (in pavement).
- Precast concrete rings shall be 2", 3", 4", 6", or 12" and shall be installed concentrically above the manhole cone. The Contractor shall use the minimum number of rings possible for the adjustment.
- No shims or other leveling devices, other than leveling rings provided by the manufacturer, will be permitted.
- In paved areas, the rubber composite ring shall be installed at the top of the adjustment and shall be at least 2" thick. The rubber composite ring shall be EJ Infra-riser or approved equal.
- EZ-STIK or an approved equal butyl mastic sealant shall be used when rejoining the manhole frame to the precast adjustments to provide a watertight structure.

External Chimney Seal: External chimney seals are to be installed on all new manholes and shall conform to ASTM C923. Acceptable external chimney seals include Infi-Shield Uni-Band or an approved equivalent.

Castings: Castings shall conform to ASTM A48, class 30. Castings shall be free from cracks, holes, swells, and cold shuts and patches. Do not coat or paint casting. Approved casting to be used on sanitary sewer manholes is EJ 1050Z1 or Neenah R1710 with watertight lid or approved equal. The word “SANITARY” and “CITY OF JOLIET” is to be cast into the lid.

Extrudable Preform or Plastic Gasket: Extrudable preform or plastic gasket shall be Butyl rubber. Approved products are EZ Stik by Press Seal Gasket Company or equal and shall meet or exceed Federal Specification SS-S-210A.

Cast-In-Place Concrete: The Contractor shall use class SI concrete in accordance with Section 637 of Standard Specifications. Use for field poured manhole bases, inverts, and plugs for existing inlet leads being abandoned. Cast-in type boot shall be installed in initial pouring of manhole section. Cement shall be ASTM C150, type 1-resistant to attack by sanitary sewage. Reinforcement Bars shall be installed per Section 508 of the Standard and Specifications.

Execution: Connect pipe using flexible boots in accordance with boot manufacturer's instructions: Center pipe in boot; take special care to ensure connections are watertight. Flexible boots shall conform to ASTM C923, be made of synthetic rubber resistant to sanitary sewage and shall be cast-in or pressed-on type acceptable. To maintain flexibility of pipe connection boots, the Contractor shall plug annular space between pipe and boot which falls in area where the invert to be poured meets with the extrudable preformed plastic gasket material. Plug shall prevent concrete from entering space between pipe and boot. Invert channels may be placed any time after manhole base section (and connecting pipe) is backfilled.

During pouring of the manhole invert, the Contractor shall provide poured-in-place channels (if manholes not furnished with precast inverts) to direct flows from in-coming pipes to outgoing pipes. Channels shall smoothly blend flows and shall be horseshoe shaped. Width and depth shall be equal to the size of outlet sewer.

The Contractor shall place an O-ring gasket or a double row of extrudable pre-form plastic gasket material between manhole sections as manufactured by EZ Stik by Press Seal Gasket Company, or equal. Place external sealing bands as shown on the detail at each joint between manhole sections in accordance with the manufacturer's instructions. External sealing bands shall be MacWrap or approved equal. The Contractor shall grout all lift holes from the inside and outside with a non-shrink grout, prior to backfilling.

Place appropriate top section, cone (depth > 6-feet). Place two adjusting rings maximum on manhole top. Thickness of adjusting rings shall be 2-inches to 12-inches as necessary to bring completed manhole to required elevation. Maximum height of adjustment shall be 12- inches. Place extrudable preformed plastic gasket material between adjusting ring and manhole top, and between adjusting ring and manhole frame. Avoid use of overly thick gasket material such as will likely produce after-settlement of manhole frame due to long-term cold flow of gasket materials. For un-grooved adjusting ring, provide two rows of 2-inch by 2-inch or ¾-inch by ¾- inch gasket material. For grooved adjusting rings, provide size gasket material recommended by ring manufacturer. Single or multiple grooved rings permitted. Where multiple grooved rings are used, place gasket material in each groove.

Install manhole frame and cover and external manhole chimney seal as shown on the detail, with extensions where needed to cover the entire chimney area, in accordance with the manufacturer's instructions. External chimney seal installed shall not be buried until inspected by the Engineer. For bolted cover provide bolts and ensure that the frame is securely fastened to the manhole.

Testing: All manholes shall be tested for watertightness in accordance with ASTM C1244-93 "Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test",

Vol. 04.05, Chemical Resistant Materials, Vitrified Clay, Concrete, Fiber-Cement Products; Mortars; Masonry (1996) (no later editions or amendments) prior to placing into service.

Manholes shall be tested after installation or rehabilitation and when all connections are in place. Lift holes, if any, shall be plugged with an approved, non-shrinkable grout prior to testing. Drop connections shall be installed prior to testing. The vacuum test shall include testing of the seal between the cast iron frame and the concrete cone, slab or grade rings. Manhole vacuum testing shall be performed after all adjacent underground utilities have been installed and all manholes have been backfilled and finished to final grade.

All manholes found to have been damaged or disturbed prior to the final (one-year) inspection shall be corrected and vacuum tested at that time, regardless of whether they were originally tested. If a coating or lining is to be applied to the interior of the manhole the vacuum test must not be performed until the coating or lining has been cured according to the manufacturer’s recommendations.

If existing manholes are to be vacuum tested (e.g. in the case of a sewer rehabilitation project), the Engineer and Contractor must deem the manhole structurally sound prior to vacuum testing.

Procedure for testing shall be as follows:

1. Temporarily plug all pipes entering the manhole. Each plug must be installed at a location beyond the manhole/pipe gasket (i.e. outside the manhole wall), and shall be braced to prevent the plug or pipe from being drawn into the manhole
2. The test head shall be placed inside the rim of the cast iron frame at the top of the manhole and inflated, in accordance with the manufacturer's recommendations.
3. A vacuum of at least ten inches of mercury (10" Hg) shall be drawn on the manhole. Shut the valve on the vacuum line to the manhole and shut off the pump or disconnect the vacuum line from the pump.
4. The pressure gauge shall be liquid filled, having a 3.5-inch diameter face with a reading from 0 to 30 inches of mercury.

The manhole shall be considered to pass the vacuum test if the vacuum reading does not drop more than 1” Hg (i.e. from 10” Hg to 9” Hg) during the following minimum test times for various manhole diameters.

	Manhole Diameter (inches)								
	30	33	36	42	48	54	60	66	72
Depth (ft.)	Test Time (Seconds)								
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	29	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	53	65	72	81
22	31	33	39	46	55	64	72	79	89
24	33	36	42	51	59	64	78	87	97
26	36	39	46	55	64	75	85	94	105
28	39	42	49	59	69	81	91	101	113
30	42	45	53	65	74	87	89	108	121

Manhole installation may be rejected because of any of the following:

1. Use of individual components subject to rejection;
2. Failure to conform to installation requirements;
3. Visible infiltration;
4. Variation from true vertical alignment by more than 2% of depth;
5. Variations in pipe and rim elevations greater than 0.5 inches from elevations shown on plans;
6. Vacuum Test failure

Basis of Payment: This work will be paid for at the contract unit price per EACH for MANHOLES, TYPE A, SANITARY, of diameter specified and frame and lid specified or MANHOLES, SANITARY, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID. The price shall be payment in full for performing the work as specified herein. Costs for all materials and labor to install manhole and make all necessary pipe connections, excavation, and perform vacuum testing shall be included in the contract unit price.

MANHOLES, TYPE A, 6'-DIAMETER, WITH 2 TYPE 1 FRAME, CLOSED LID, RESTRICTOR PLATE

Description. This work shall consist of constructing a type A manhole with 6 foot diameter in accordance with District 1 Standard BD-12 and with Sections 602 and 1006 of the Standard Specifications and the plans and/or as directed by the Engineer.

Construction Requirements. Construction shall conform to the details shown in the plans, all applicable standards, and all applicable portions of Sections 602 and 1006 of the Standard Specifications.

Method of Measurement. This work will be measured complete in place and accepted in units of EACH.

Basis of Payment. This work will be paid for at the contract unit price per EACH for MANHOLES, TYPE A, 6'-DIAMETER, WITH 2 TYPE 1 FRAME, CLOSED LID, RESTRICTOR PLATE.

MOWING CYCLE (RUSTY PATCHED BUMBLEBEE)

Description This work shall consist of mowing turf areas along the expressway (approximately 21 acres) to a height of 4 inches and as directed by the Engineer to avoid impacting nesting rusty patched bumble bees, within all ROW between Midland Avenue and Elgin, Joliet, and Eastern Railway (west of W. Richard Street), will be mowed starting March 15, or any time after the grass starts growing, and ending October 14. Mowing is no longer required if no vegetation is present due to grading, etc. Mowing is not required between October 15 and March 15.

The work required for each work cycle must be 100% complete on inspection dates. Partial inspections will not be made.

Frequency. The project site will be mowed once a week throughout construction within the construction limits wherever vegetation is allowed to grow to avoid any flowering plants in the project area. The work shall continue until the last week in October or until directed the Engineer

Equipment. The Contractor shall keep the blades of all mowing equipment sharp and properly equipped for operation along an urban arterial route. The equipment used shall be capable of completely severing all growth at the cutting height and distributing it evenly over the mowed area. Special equipment may be required on steep slopes, in narrow areas, and for trimming around posts, poles, fences, trees, shrubs, seedlings, etc.

Method. All mowing and trimming operations are to proceed in the direction of traffic flow. The cut material shall not be windrowed or left in a lumpy or bunched condition. Additional mowing or trimming may be required to obtain the height specified or to disperse mowed material.

Debris encountered during the mowing operations which hampers the operation or is visible from the roadway shall be removed prior to mowing and disposed of according to Article 202.03.

Remove all grass clippings from paved surfaces (knee wall surfaces, high mast light tower pads, paved gutters and paved gore areas.) All trimmings, windrowed material, litter and trash removal must be complete to the satisfaction of the Engineer. Damage to the turf, such as ruts or wheel tracks more than 2 inches in depth, other plantings, or highway appurtenances, caused by the mowing or trimming operation shall be repaired at the Contractor's expense.

Method of Measurement. Mowing and trimming will be measured as each at the completion of each mowing cycle. The approximate quantity of acres shall be entirely mowed during this cycle.

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

NOISE ABATEMENT WALL, STRUCTURE MOUNTED

Description. This work shall consist of the complete design, submittal of shop and working drawings, furnishing all materials, and constructing structure mounted noise abatement walls (noise walls) at the locations shown on the contract plans (plans) and in accordance with the requirements of the plans, this special provision, the Standard Specifications, the Contractor's accepted shop and working drawings and as directed by the Engineer.

The noise wall shall consist of lightweight panels spanning between vertical posts attached to/supported by another structure (structure mounted) as shown on the plans. The posts shall be steel, unless otherwise specified on the plans. The design, material, fabrication and construction shall comply with this special provision and the requirements specified by the noise wall supplier selected by the Contractor for use on this project. The walls shall have no omissions or gap except as detailed in the plans.

The Contractor shall verify the locations for the proposed structure mounted wall for conflicts and inform the Engineer in writing of any conflicts before realigning or redesigning the wall. The Contractor shall realign or redesign the wall to avoid any conflicts.

Wall components shall be fabricated and erected to produce a reflective noise wall system at the locations shown in the plans. The noise reduction system shall satisfy the acoustic requirements as specified on the plans. Substitution of alternate materials in lieu of lightweight panels will not be allowed.

All appurtenances behind, in front of, under, over, mounted upon, or passing through the noise wall, such as drainage structures, fire hydrant access, highway signage, emergency access, utilities, and storm sewers shall be accounted for in design of the wall.

The noise walls shall be designed and constructed to extend to the minimum lines, grades and dimensions of the wall envelope, with no omissions or gaps, as shown on the plans and as directed by the Engineer.

This specification covers the minimum certification requirements of a crash worthy noise wall for use on bridges and structures.

The specification provides minimum performance criteria for quality, reliability, longevity, and safety.

This specification was developed based on the design criteria for the suggested product Durisol-Acrylite Soundstop. Please see the source section of the specification for contact information for Durisol, suppliers of this specific wall system.

Referenced Standards and Test Methods. In addition to the Standard Specifications and Supplemental Specifications (latest edition), the following specifications and standards shall govern the design, fabrication, and construction of the noise wall.

(1) American Association of State Highway and Transportation Officials (AASHTO)
   (a) AASHTO LRFD Bridge Design Specifications, 9th Edition, 2020
   (b) Standard Specifications for Transportation Materials and Methods of Sampling and Testing, and AASHTO Provisional Standards
   (c) Manual for Assessing Safety Hardware (MASH), Second Edition

(2) American Society of Civil Engineers
   (a) Minimum Design Loads for Buildings and Other Structures (ASCE/SEI 7-16), Wind Load Provisions

(3) Underwriters Laboratories, Inc. (UL)
   (a) Building Materials Directory
   (b) International Conference of Building Officials (ICBO)
   (c) International Building Code (IBC), 2012 or latest edition, and State of Illinois amendments, referred to herein as Building Code

(4) United States Department of Transportation (USDOT), Federal Highway Administration (FHWA)
   (a) FHWA Highway Noise Barrier Design Handbook (Report No. FHWA-EP-00-005) Final Report, February, 2000
   www.fhwa.dot.gov/Environment/noise/noise_barriers/design_construction/design/

(5) American Society for Testing and Materials (ASTM) International Standards
   (a) A36 – Standard Specification for Carbon Structural Steel
   (b) A123 – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
   (c) A153 – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
   (d) A193 – Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
   (e) A307 – Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
   (f) A449 – Standard Specification for Hex Cap Screws, Bolts and Studs, Steel, Heat Treated, 120/105/90 ksi Minimum Tensile Strength, General Use
   (g) A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
   (h) A709 – Standard Specification for Structural Steel for Bridges
   (i) D635 – Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
   (j) D638 – Standard Test Method for Tensile Properties of Plastic

(k) D648 – Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
(l) D785 – Standard Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials
(m) D790 – Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
(n) D1003 – Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics
(o) D1929 – Standard Test Method for Determining Ignition Temperature of Plastics
(p) D2843 – Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics
(q) E90 – Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
(r) E313 – Standard Practice for Calculating Yellowness and Whiteness Indices from Instrumentally Measured Color Coordinates
(s) E413 – Classification for Rating Sound Insulation
(t) E1996 – Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes
(u) F1554 – Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
(v) F3125 – Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength
(w) G21 – Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi
(x) G155 – Standard Practice for Operating Xenon Arc Lamp Apparatus for Exposure of Materials

(6) Other Standards and Test Methods
(a) ANSI Standard Z97.1 – for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test
(b) BS EN 1794-1:2024 – Road traffic noise reducing devices. Non-acoustic performance Methods of determination of the mechanical and stability characteristics
(c) DIN EN 1794-2 – Road traffic noise reducing devices - Non-acoustic performance - Part 2: Methods of determination of the general safety and environmental characteristics
(d) ISO 9001:2015 – Quality Management Systems — Requirements
(e) ISO 14001:2015 – Environmental Management Systems — Requirements with guidance for use

Should a conflict occur between the Standard Specifications and another requirement, the Standard Specifications shall govern

Submittals. A complete wall design submittal, including design calculations for wall panels, posts, and all connections and shop drawings shall be submitted to the Department for review and approval no later than 90 days prior to beginning construction of the wall. The time required for the preparation and review of these submittals shall be charged to the allowable contract time. Delays caused by untimely submittals or insufficient data will not be considered justifications for any time extensions. No additional compensation will be made for any additional material,

equipment or other items found necessary to comply with the project specifications as a result of the Engineer's review. The Contractor will be required to submit the necessary shop drawings. All submittals shall be prepared and sealed by an Illinois licensed structural engineer.

Submittals shall include all structural calculations, details, dimensions, quantities, and cross sections necessary for the construction of the noise walls including, but not be limited to:

(1) Structural design calculations for all structural members, and connections prepared and sealed by an Illinois Licensed Structural Engineer and prints of shop drawings on reduced size 11 x 17 in. sheets in accordance with Article 505.03 of the Standard Specifications.
(2) A plan view of the wall indicating the stations and offsets required to locate the wall. Each panel and post shall be numbered and any changes in type or size shall be noted. The centerline of any utilities passing under the wall and locations of expansion joints, lighting, and signing shall also be shown.
(3) An elevation view of the wall, indicating the elevations of the top of the posts and panels as well as the elevations of the bottom of the panels, all steps in wall system, the finished grade line, and vertical clearances to existing utilities. Each post size and length, panel type and size, shall be designated.
(4) All general notes required for constructing the wall.
(5) All details for the steps in the bottom of panels shall be shown. The bottom of the panels shall be located at or below the theoretical bottom of panel line shown on the plans. The theoretical bottom of panel line is assumed to be at the top of the structure to which it is mounted, unless otherwise shown on the plans.
(6) Tops of the panels and posts shall extend to or above the theoretical top of wall line shown on the plans. All panel tops shall be cast and placed horizontally with any changes in elevation accomplished by stepping adjacent panel sections at posts. Steps shall not exceed 2 ft in height.
(7) All panel types shall be detailed. The details shall show panel weight, orientation, all dimensions necessary to fabricate each type of panel, and location of post connection hardware as well as lifting devices embedded in the panels.
(8) All post types shall be detailed. The details shall show post weight, orientation, all dimensions necessary to fabricate each type of post, connecting plates, and anchorage details as well as lifting devices embedded in or attached to the posts. Post spacing for walls shall be limited to a distance that does not over stress the supporting structure.
(9) Details of wall panels with appurtenances attached to or passing through the wall, as shown on the contract plans, such as utilities, framed openings, signs, etc. shall be shown. Any modifications to the design or location of these appurtenances to accommodate a particular system shall also be submitted.
(10) All architectural panel treatment, including color, and texture shall be shown. All joints shall be placed horizontal or vertical and shall be aligned with adjacent panels.
(11) The details for the connection between panels and posts as well as their connection to the supporting structure shall be shown.
(12) Testing, certifications and reports from independent laboratories documenting that the panel's sound Transmission Loss (TL) for the panel satisfy the criteria shown in the design criteria section of this specification. The testing results for the flame spread, smoke density and freeze-thaw/salt scaling requirements described in the materials section of this specification shall also be submitted. If unable to document panel and post deflections by calculations, reports of full scale testing shall be submitted to demonstrate the deflection criteria have been met.

(13) Manufacturer recommended installation requirements, a sequence of construction and a detailed bill of materials shall be included.
(14) The color of the wall panels and support posts identified by Federal Standard 595-B color number.

The Contractor shall deliver to the Department, a 2 ft x 2 ft of the wall which contains the colors, textures and patterns proposed for use on the project for approval.

The samples shall be made at the same plant manufacturing the product for the noise walls under this contract and shall be representative of those which will be tested per this specification. Once the color sample is approved, a batch shall be designated by batch number and date and will remain the standard for the entire project.

The Contractor shall submit site access plans showing access and limits of the work areas for the installation of the wall. Any required traffic controls shall be according to the requirements in the plans or the Traffic Control Plan special provision.

The initial wall design submittal shall include three sets of shop drawings and calculations. One set of drawings will be returned to the Contractor with any corrections indicated. The Contractor shall do no work or ordering of materials for the structure until the Engineer has approved the submittal.

General Requirements. In addition to the general requirements identified in the Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), the following requirements shall also apply to the fabrication and construction of the noise wall.

(1) Qualification: The manufacturer shall provide facilities and qualified personnel to perform all specification tests and maintain an acceptable quality control program. An acceptable program is one that meets the requirements of QS 9000 and ISO 9002. To ensure total quality, all manufacturers shall provide proof of compliance for the production of noise barrier panels.

    Manufacturers must have a minimum five year history of producing transparent noise barrier assemblies for highway noise barriers.

(2) The noise wall designs shall provide the same desired essential aesthetics, functions and characteristics as specified including, but not limited to, service life, reliability, economy of operation, ease of maintenance, any necessary standardized features, desired appearance and required design standards.

(3) The Contractor shall identify the design consulting firm, manufacturer or supplier of proprietary wall system that is to perform the design of the noise wall. If the Contractor proposes to utilize more than one firm to provide these services, the Contractor shall identify all proposed firms. The Contractor shall indicate the roles of each of the individual design firms and their subconsultants. The design consulting firm(s) shall meet the following minimum qualifications:
    - Illinois Department of Transportation Prequalification of Highway Structures
    - Sufficiently staffed and capable of performing the required structural design in accordance with the Contract documents

(4) Suppliers of proprietary noise wall systems must have an equivalent level of expertise and will be allowed to perform the design work providing the responsible designer is a licensed structural engineer registered in the State of Illinois with three years of relevant experience.

(5) The noise wall shall be designed to safely support any construction loads, impact loads, wind loads on the noise wall and parapet, and any other temporary or permanent loads. Bearing loads shall be accounted for during all aspects of the walls service life, including but not limited to; fabrication, storage, transportation, placement and final location.

(6) Any adjustments to other work items shown in the plans or additional pay items required to construct the noise wall per the Contractor's accepted design shall be his responsibility subject to review by Engineer. Additional costs for any adjustments shall be the responsibility of the Contractor and shall be included in the bid price for the noise wall.

Design Criteria. The following design requirements shall apply to the fabrication and construction of the noise walls.

(1) Certification of Crash Worthiness: The vendor shall provide a letter from a certified crash test facility indicating a physical crash test was conducted on the system and recommending acceptance by the FHWA. The vendor shall be able to provide visual evidence of such crash test upon the request of the Department.

(2) Structural Requirements: The incremental total weight of the system as installed shall not exceed the weight as specified on the plans, but no greater than 250 pounds per foot.

(3) Wind Design Criteria: The wall system shall be designed to withstand wind pressure, applied perpendicular to the panels in either direction, according to the AASHTO LRFD Bridge Design Specifications, see Chapter 15, for the Design of Sound Barriers. The noise wall design life shall be 75 years unless otherwise noted. The wall system shall be designed to withstand any live load surcharge at locations indicated on the plans. The contractor shall be responsible for the structural adequacy of the panels, posts, and connections. Prestressed and/or post tensioned panel concepts will not be permitted.

The factored strength III design wind loading shall be as specified on the plans but not less than 35 psf . The factored service I design wind loading shall be as specified on the plans but not less than 15 psf.

(4) Attachment Criteria: The post spacing for structure mounted noise walls shall be as shown on the plans but in no case greater than 11 ft. – 8 in. center to center.

(5) Posts shall be oversized by 0.0625 in. in each direction to account for corrosion.

(6) Deflection Criteria: The maximum allowable panel deflection shall be no more than the panel length (L) divided by 240 (L/240). The maximum post deflection due to post curvature shall be (H/180), where H is the height of the post above the foundation. When meeting the deflection limits cannot be demonstrated by calculations, a lateral load test and report shall be submitted to the Engineer indicating that the above noted design lateral

loads can be applied to the panels and/or posts without exceeding noted deflection tolerance. The test shall apply lateral loads to the panel simulating uniform wind pressure.

(7) The design shall account for the presence of all appurtenances mounted on or passing through the wall such as existing or proposed utilities, and other items.

(8) The walls shall not have openings allowing the perching or nesting of birds or the collection of dirt, debris or water.

(9) The walls shall not have handholds or grips promoting climbing of the walls. Any bolts or fasteners used to connect material to the supporting panel, posts, or foundations shall be recessed or embedded in concrete, hidden from view and weather exposure. No external mechanical fastening devices such as frames or clips shall be used for these connections.

(10) The noise abatement material shall be designed to achieve a sound TL equal to or greater than 20 dB in all one-third octave bands from 100 hertz to 5000 hertz, inclusive, when tested according to ASTM E90.

Materials. Noise wall materials shall conform to the supplier's standards, AASHTO Specifications for noise walls and the following:

(1) Anchor bolts: Anchor bolts shall conform to ASTM F1554 Grade 55 or 105 and shall be galvanized per AASHTO M232.

(2) Structural Steel: Structural steel components shall conform to Section 505 of the Standard Specifications. All structural steel components, except bolts and corner cables, shall be cleaned and painted per Section 506 of the Standard Specifications. The paint system and color of the finish coat shall be as specified on the plans. Bolts shall be galvanized in accordance with ASTM A 153.

(3) Noise Barrier Panels:

(a) Color and finish: Noise barrier panel color, finish, and aesthetic design shall be as shown on the plans. The paint color for structural steel components shall be as shown on the plans.

(b) Performance Characteristics: The noise barrier panel shall meet the performance requirements of Table 1 when tested in accordance with the associated ASTM method.

TABLE 1. Performance Requirements

PROPERTY	REQUIREMENTS	TEST METHOD
Tensile strength	> 9,250 psi	ASTM D 638
Flexural modulus	>445,000 psi	ASTM D 790
Rockwell hardness	>M-90	ASTM D 785
STC	27 dBA min	ASTM E 90 / E 413

(c) Flammability: The noise barrier panel shall meet the flammability requirements of Table 2 when tested in accordance with the associated test method.

TABLE 2. Flammability Requirements

PROPERTY	REQUIREMENTS	TEST METHOD
Resistance to brush fire	Class 2	EN 1794-2
Horizontal burn rate	< 2.5 in/min	ASTM D 635
Smoke density	< 50%	ASTM D 2843
Self ignition	650 °F	ASTM D 1929

(d) Fragment Retention Following Vehicle Collision: Noise barrier panels that are installed in proximity to the travel lanes may be exposed to damage due to vehicle collision. To provide for the safety of the transportation system, such noise barrier panels shall have the capability to contain fragments in the event that the panel is broken during the collision. The noise barrier panel shall meet the requirements of EN 1794-2 Annex B, “Secondary Safety: Danger of Falling Debris” Class 3.

(e) Impact Resistance: In order to withstand impacts of stones thrown up from the road surface the noise barrier panel shall meet the requirements of EN 1794-1, Appendix C.

(f) Glazing Requirements: The noise barrier panel shall comply with the requirements of ANSI Z97.1 as a safety glazing material.

(g) Resistance to Roadside Chemicals: The noise barrier panel shall be resistant to standard de-ice chemical such as: calcium chloride, magnesium chloride, potassium acetate, calcium/magnesium acetate, and sodium acetate.

Supplier shall show documentation of the chemical resistance properties of the panels. Panels should be able to withstand direct exposure to the chemical for a period of not less than 24 hours. Panels should be exposed to the chemicals at 100% (undiluted) strength.

(h) Wildlife Protection: When the specified panel is transparent, the product shall provide for protection against birds inadvertently striking the panels in flight. The panels shall have a pattern capable of preventing in excess of 90% of bird impacts.

The supplier shall show documentation of the effectiveness of the means for wildlife protection. This shall be a test report or testimonial from an independent authority including but not limited to a Department or Ministry of Transportation, testing facility or other entity deemed acceptable.

(i) Acoustical Requirements: The noise barrier panels shall provide a noise insertion loss or STC, of no less than 27 dBA when tested under test method ASTM E90. The vendor shall supply a test report from a certified test laboratory.

Source. Materials shall be supplied by one of the following, or an approved equal, meeting all the requirements of this specification:

(1) Durisol: 313c Trindale Rd, Archdale, North Carolina, 27263

Construction. The Contractor shall obtain technical assistance from the supplier during wall erection to demonstrate proper construction procedures and shall include any costs related to this technical assistance in the contract unit price for noise abatement wall. The instructions provided by the wall supplier are guidelines and do not relieve the contractor of the responsibility to adhere to contract requirements.

It is recommended that all bottom panels be installed for a length of wall prior to placing middle or top panels.

The Contractor should consider overhead obstruction such as electric and telephone wires prior to wall erection.

The panels shall be delivered to the project site in full truckload quantities. They may be off-loaded individually or by forklift with a solid steel plate spanning between the forks providing uniform, fully distributed bearing support to the underside of the panels. Units shall be shipped, handled and stored in such a manner as to minimize the danger of staining, chipping, spalling, development of cracks, fractures, and excessive bending stresses. Panels shall be stored and shipped in bundles, on edge. Any touch up and repair is at the Contractor's expense and shall be carried out according to the manufacturer's recommendations.

Method of Measurement. Noise abatement walls will be measured in square feet from the wall envelope, defined by the theoretical top of wall line to the theoretical bottom of wall line for the length of the wall as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE FOOT for NOISE ABATEMENT WALL, STRUCTURE MOUNTED. The costs of aesthetic treatments, noise reduction treatments, or other details within the wall panels will not be paid for separately but will be included in the cost of Noise Abatement Wall, Structure Mounted, Lightweight.

NON-PRESSURE CONNECTION TO EXISTING WATER MAIN

The work of this pay item consists of connecting to existing water mains, including removal of existing plugs; cutting, removing, and plugging existing mains; all required fittings; thrust blocking; excavation; bracing; bedding and covering of pipe; trench dewatering; trench backfilling with excavated materials; testing; disinfection; finish grading; removal and disposal of waste excavated materials; protection, replacement, or repair of utilities; including backfilling with compacted granular backfill materials where required. This work shall include and conform to all requirements as specified in the City of Joliet Requirements.

Make one connection at a time except as approved by the Engineer. Do not operate the valves on the existing mains. Coordinate shutdown of existing mains with the City's Public Utilities Department with a minimum of 48 hours' notice prior to shut down.

This pay item includes installation and removal of temporary thrust blocking and temporary plugs and coordination of shutdown of main with Owner and Engineer during final connection.

Basis of Payment: The work will be paid for at the contract unit price per EACH for NON-PRESSURE CONNECTION TO EXISTING WATER MAIN.

PRECONSTRUCTION VISUAL RECORDING

Description: This work shall consist of visually recording detour routes and submitting recordings to the Department via storage devices and shall be in accordance with the applicable sections of the Standard Specifications.

Materials: This work shall include providing the Department with a detailed visual recording of each detour route shown in the plans and/or as directed by the Engineer.

Construction Requirements: A detailed visual recording of each detour route shall be taken and submitted to the Department for approval prior to the installation and use of a detour route. Included in this item is the complete documentation of the detour route's existing condition and locations of all objects which include, but not limited to, street signage, pavement markings, traffic signals, intersections, driveways, trees, landscaping, mailboxes and any other existing features along the detour route.

The video file shall be submitted in a format that can be viewed by conventional video players. The video shall be stored on a USB flash drive or USB mass storage device capable of holding the visual digital information of the entire detour route. The storage device shall be labeled with the detour's corresponding to construction stage. The storage device and its content submitted will become the property of the Department and will not be returned to the Contractor.

Method of Measurement: This work will be measured per lump sum.

Basis of Payment: This work will be paid for at the contract unit price per LUMP SUM for PRECONSTRUCTION VISUAL RECORDING which shall include all labor, equipment, and materials required to complete the work

PLUG EXISTING SANITARY SEWER

Sewer pipes to be abandoned as shown on the plans shall be plugged with mechanical wing plugs of the specified diameter and topped with concrete plug. Brick and mortar plugs will not be acceptable in lieu of concrete. The Contractor shall install plugs in the sewers at locations shown on the plans or where directed by the Engineer. All work shall be performed by competent personnel. The minimum install depth of the mechanical plug shall two pipe diameters up to 24 inches. The Contractor shall submit data sheets for mechanical wing plugs for use on this project.

Basis of Payment: This work will be paid for at the contract unit price per EACH for PLUG EXISTING SANITARY SEWER, which price shall include the cost of all labor, materials, and equipment necessary to complete the work.

PROPOSED MANHOLE/CATCH BASIN CONNECTION OVER EXISTING STORM SEWER

Description. This work shall consist of installing a manhole/catch basin over an existing sewer as directed in Sections 502 and 550 of Standard Specifications.

Construction Requirements. The Contractor shall carefully remove the existing storm sewer which falls within the structure. After the structure is installed, the void spaces around the pipe openings shall be mortared with a non-shrink concrete grout. Damage to the existing storm sewer pipe to remain shall be repaired by the Contractor at his own expense.

Basis of Payment. The work will be paid for at the contract unit price per EACH for PROPOSED MANHOLE/CATCH BASIN CONNECTION OVER EXISTING STORM SEWER.

PRUNING FOR SAFETY AND EQUIPMENT CLEARANCE

This special provision revises Section 201 of the Standard Specifications to provide payment of pruning for safety and equipment clearance.

Delete Article 201.10(c)(3) and substitute the following:

Pruning for safety and equipment clearance will be measured for payment on a lump sum basis.

Delete the third paragraph of Article 201.11(c) and replace with the following:

Pruning for safety and equipment clearance will be paid for at the contract unit price per LUMP SUM for PRUNING FOR SAFETY AND EQUIPMENT CLEARANCE.

REINFORCEMENT BARS, STAINLESS STEEL

Description**.** The work shall consist of furnishing and placing stainless steel reinforcement bars as required by Section 508 of the Standard Specifications except as modified herein.

Materials**.** Materials shall be according to Article 1006.10 of the Standard Specifications except as modified herein.

Add the following to Article 1006.10 of the Standard Specifications:

"(d)Stainless Steel Reinforcement Bars. Furnish reinforcement bars meeting the requirements of ASTM A955-19. Stainless steel bars shall be UNS S24000, S24100, S31653, S31803, S32101, S32205, or S32304 as defined in ASTM A955. The reinforcement bars shall be a minimum of Grade 60. The manufacturer of the stainless steel reinforcing bar shall be AASHTO Product Evaluation and Audit Solutions compliant.

Unless otherwise noted, all metal hardware cast into concrete in the portion of the structure using stainless steel reinforcement, such as inserts, brackets, cable clamps, metal casings and other miscellaneous items, shall be ASTM A955-19 stainless steel and finished according to the requirements of ASTM A380. This includes the following items:

(1) Mechanical and Bar Splicers.
(2) Chairs and Supports. Chairs and continuous supports shall be stainless steel or plastic. Stainless steel chairs and supports used above steel beams shall have plastic coated feet.
(3) Concrete Inserts. Concrete Inserts. Furnish concrete inserts with closed-back ferrule threaded to receive UNC threaded bolts or rods. Article 1006.13 proof loading shall apply.
(4) Dowels.
(5) Tie Wire. Tie wire shall be in a dead soft annealed condition.

Sacrificial, non-structural elements used in the bridge deck construction may be galvanized steel but must be separated from the stainless steel reinforcement as required by this specification. All non-stainless steel items shall meet the approval of the Engineer."

Construction Requirements.

Add the following to Article 508.03 of the Standard Specifications:

"General. All reinforcement bars or bar bundles delivered to the project site shall be clearly identified with tags bearing identification information. The tags shall also include the bar description, UNS designation, heat number and sufficient identification to track each bar bundle to the appropriate mill report. All bundles delivered to the jobsite shall have a tag and mill report provided to the Engineer. Bundles without tags and mill reports shall be rejected.

Training. The Contractor shall provide for technical support and training by the supplier in the unloading, storage, handling, placing and tying of the reinforcement bars and bar splicers.

Reinforcement Bar Sampling. The material engineering consultant (MEC) representative will select jobsite samples in accordance with IDOT Policy Memorandum, 'Reinforcement Bar and/or Dowel Bar Plant Certification Procedure'. The Contractor shall assist the MEC representative in obtaining the required sample from the jobsite.

If necessary, the MEC representative will contact the supplier to include extra bar in their next shipment. The Contractor will be advised of the bar description and shipment via email. When the shipment arrives, the Contractor shall advise the MEC representative who will arrange to visit the project to make a random selection from the bars delivered to the project."

Revise the first paragraph of Article 508.03 to read:

"Storage, Protection, and Handling. Reinforcement bars shall be stored off the ground using platforms, skids, or other supports; and shall be protected from injury and from deterioration or contamination. Stainless steel bars shall be delivered and stored so that they are not touching other types of metal. Epoxy coated and stainless steel reinforcement bars shall be stored on wooden or padded steel cribbing and all systems for handling shall have padded contact areas. The bars or bundles shall not be dragged or dropped."

Revise the second paragraph of Article 508.06 of the Standard Specifications to read:

"Metal bar supports shall be made of cold-drawn wire or other metal products, and shall be either ASTM A955 stainless steel, epoxy coated, galvanized or plastic tipped. When the reinforcement bars are epoxy coated, the metal supports shall be epoxy coated. Plastic supports may be recycled plastic. Supports for stainless steel reinforcement bars shall be according to Article 1006.10(d)(2). Supports shall be provided in sufficient number and spaced to provide the required clearances. Supports shall adequately support the reinforcement bars and shall permit the concrete to flow through and fully encase the reinforcement. The legs of supports shall be spaced to allow an opening that is a minimum 1.33 times the nominal maximum aggregate size used in the concrete. Nominal maximum aggregate size is defined as the largest sieve which retains any of the aggregate sample particles."

Method of Measurement. Method of Measurement shall be according to Article 508.10 of the Standard Specifications except as modified herein.

Insert the following after the second paragraph of Article 508.10(b) of the Standard Specifications:

"Stainless steel reinforcement bars will be measured in pounds as computed for the sizes and lengths of bars shown on the plans or as authorized by the Engineer. This shall include all lap lengths show in the plans and any additional bars required for independent testing. In computing the quantity to be paid for, the quantity of bars of the cross section shown on the plans, or authorized, will be used. These weights are given in the following table based on an assumed density of 495 pounds per cubic foot.

Bar Size (English)	Weight, lb/ft
No. 3	0.378
No. 4	0.686
No. 5	1.058
No. 6	1.511
No. 7	2.059
No. 8	2.713
No. 9	3.441
No. 10	4.358
No. 11	5.352
No. 14	7.72
No. 18	13.72"

Basis of Payment. Revise Article 508.11 of the Standard Specifications to read:

"Reinforcement bars in special reinforced pavement designs and in reinforced concrete structures where the concrete is paid for at a unit price per cubic yard, will be paid for at the contract unit price per POUND for REINFORCEMENT BARS, REINFORCEMENT BARS, EPOXY COATED or REINFORCEMENT BARS, STAINLESS STEEL.

Bar splicer assemblies will be paid for at the contract unit price per EACH for BAR SPLICERS.

Mechanical splicers will be paid for at the contract unit price per EACH for MECHANICAL SPLICERS.

Any technical support to be provided to the Contractor by the stainless steel supplier shall be included in the cost of each stainless steel item."

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (PROJECT SPECIFIC)

Description. This work shall consist of the removal and disposal of regulated substances according to Section 669 of the Standard Specifications as revised below.

Contract Specific Sites. The excavated soil and groundwater within the areas listed below shall be managed as either "uncontaminated soil", hazardous waste, special waste or non-special waste. For stationing, the lateral distance is measured from centerline, and the farthest distance is the offset distance or construction limit, whichever is less.

Soil Disposal Analysis. When the waste material requires sampling for landfill disposal acceptance, the Contractor shall secure a written list of the specific analytical parameters and analytical methods required by the landfill. The Contractor shall collect and analyze the required number of samples for the parameters required by the landfill using the appropriate analytical procedures. A copy of the required parameters and analytical methods (from landfill email or on landfill letterhead) shall be provided as Attachment 4A of the BDE 2733 (Regulated Substances Final Construction Report). The price shall include all sampling materials and effort necessary for collection and management of the samples, including transportation of samples from the job site to the laboratory. The Contractor shall be responsible for determining the specific disposal facilities to be utilized; and collect and analyze any samples required for disposal facility acceptance using a NELAP certified analytical laboratory registered with the State of Illinois.

Site No. 2233V3-1BF: Crown Painting, 600 River Street, Joliet, Will County

- Station 104+20 to Station 105+70 (CL Proposed River Street), from 70 feet LT to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminant of concern sampling parameter: Manganese.

Site No. 2233V-172: Railroad, 500-1000 blocks of Railroad Street, Joliet, Will County

- Station 214+55 to Station 216+25 (CL Proposed US-6), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Manganese.
- Station 216+25 to Station 217+75 (CL Proposed US-6), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Lead, and Manganese.
- Station 217+75 to Station 219+30 (CL Proposed US-6), 0 to 85 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminant of concern sampling parameter: Benzo(a)pyrene.
- Station 217+95 to Station 219+40 (CL Proposed US-6), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene,

Benzo(a)pyrene, Benzo(b)fluoranthene, Carbazole, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic, and Manganese

- Station 219+40 to Station 221+45 (CL Proposed US-6), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, Cadmium, Lead, Manganese, and Zinc.

At the Railroad property, Zinc was detected at concentrations exceeding the TACO Tier 1 soil remediation objectives for the Construction Worker exposure route in soil boring BU-2, from the sample interval 0 to 4 feet deep, as noted in the Final Preliminary Site Investigation Report for this project, submitted August 28, 2025 by Weston Solutions, Inc. Procedures shall be implemented to protect site workers and observers from hazards encountered during construction activities in locations containing contaminated materials, pursuant to Article 669 of the Standard Specifications for Road and Bridge Construction manual.

- Station 219+30 to Station 220+85 (CL Proposed US-6), 0 to 80 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminant of concern sampling parameter: Manganese, Elevated PID Readings.
- Station 220+85 to Station 221+65 (CL Proposed US-6), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Manganese.
- Station 226+15 to Station 229+65 (CL Proposed US-6), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Carbazole, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Lead, Manganese, and Elevated PID Readings.
- Station 229+65 to Station 231+20 (CL Proposed US-6), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene, Dibenzo(a,h)anthracene, and Manganese.
- Station 231+20 to Station 232+85 (CL Proposed US-6), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, and Manganese.
- Station 232+85 to Station 233+45 (CL Proposed US-6), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, and Manganese.
- Station 1309+60 to Station 1310+10 (CL Proposed US-6), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, and Manganese.

- Station 1310+10 to Station 1310+60 (CL Proposed US-6), 0 to 120 feet RT, and 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, and Manganese.
- Station 1311+20 to Station 1312+00 (CL McDonough Street), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined that this material meets the criteria of and shall be managed in accordance with Article 669.05(b)(1).

Site No. 2233V-178: Commercial Building, 608 Railroad Street, Joliet, Will County

- Station 214+55 to Station 216+50 (CL Proposed US-6), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h,)anthracene, Indeno(1,2,3-cd)pyrene, Lead, and Manganese.
- Station 216+50 to Station 217+95 (CL Proposed US-6), 0 to 65 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h,)anthracene, Indeno(1,2,3-cd)pyrene, Lead, and Manganese.

Site No. 2233V-184: Residential Buildings, 724 Railroad Street, Joliet, Will County

- Station 501+10 to Station 503+55 (CL Proposed Cherry Street), 0 to 75 feet LT, and 0 to 45 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Cadmium, Lead, and Manganese.
- Station 503+55 to Station 504+35 (CL Proposed Cherry Street), 0 to 30 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 89+30 to Station 89+95 (CL Proposed Jasper Street), 0 to 35 feet LT, and 0 to 25 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.

Site No. 2233V-188: Vacant Land, 500 block of Shelby Street, Joliet, Will County

- Station 37+50 to Station 38+90 (CL Proposed I-80), 30 to 130 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, and Lead.
- Station 37+50 to Station 38+90 (CL Proposed I-80), 0 to 30 feet LT, and 0 to 125 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Cadmium, Lead, and Manganese.

At the Vacant Land property, Lead was detected at concentrations exceeding the TACO Tier 1 soil remediation objectives for the Construction Worker exposure route in soil boring VL-1, from the sample interval 0 to 2 feet deep, as noted in the Final Preliminary Site Investigation Report

for this project, submitted August 28, 2025 by Weston Solutions, Inc. Procedures shall be implemented to protect site workers and observers from hazards encountered during construction activities in locations containing contaminated materials, pursuant to Article 669 of the Standard Specifications for Road and Bridge Construction manual.

Site No. 2233V-193: Buzzi Unicem USA and Ozinga Ready-Mix Concrete, 450-504 Railroad Street, Joliet, Will County

- Station 217+95 to Station 219+40 (CL Proposed US-6), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Carbazole, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic, and Manganese.
- Station 219+40 to Station 221+45 (CL Proposed US-6), 0 to 30 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, Cadmium, Lead, Manganese, and Zinc.

At the Buzzi Unicem USA and Ozinga Ready-Mix Concrete property, Zinc was detected at concentrations exceeding the TACO Tier 1 soil remediation objectives for the Construction Worker exposure route in soil boring BU-2, from the sample interval 0 to 4 feet deep, as noted in the Final Preliminary Site Investigation Report for this project, submitted August 28, 2025 by Weston Solutions, Inc. Procedures shall be implemented to protect site workers and observers from hazards encountered during construction activities in locations containing contaminated materials, pursuant to Article 669 of the Standard Specifications for Road and Bridge Construction manual.

- Station 41+50 to Station 42+50 (CL Proposed I-80), 0 to 100 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Carbazole, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic, and Manganese.
- Station 41+50 to Station 42+50 (CL Proposed I-80), 0 to 100 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, Cadmium, Lead, Manganese, and Zinc.

At the Buzzi Unicem USA and Ozinga Ready-Mix Concrete property, Zinc was detected at concentrations exceeding the TACO Tier 1 soil remediation objectives for the Construction Worker exposure route in soil boring Bu-2, from the sample interval 0 to 4 feet deep, as noted in the Final Preliminary Site Investigation Report for this project, submitted August 28, 2025 by Weston Solutions, Inc. Procedures shall be implemented to protect site workers and observers from hazards encountered during construction activities in locations containing contaminated materials, pursuant to Article 669 of the Standard Specifications for Road and Bridge Construction manual.

Site No. 2233V3-194: Des Plaines River, between I-80 M.M. 132 and 133, Joliet, Will County

- Station 44+30 to Station 50+00 (CL Proposed I-80), 0 to 100 feet LT, and 0 to 100 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameter: VOCs, SVOCs, PCBs, and Metals.

Site No. 2233V-196: Residences, 664-716 River Street, 201-225 Davis Street, 662-668 Kiep Avenue, 663-715 Water Street, 700-711 Des Plaines Street, and 707- 715 S. Joliet Street, Joliet, Will County

- Station 100+50 to Station 102+30 (CL Proposed River Street), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Lead and Manganese.
- Station 102+30 to Station 104+25 (CL Proposed River Street), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminant of concern sampling parameters: Manganese.
- Station 100+50 to Station 104+25 (CL Proposed River Street), 0 to 45 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 104+25 to Station 105+70 – See ISGS Site No. 2233V-206.
- Station 105+70 to Station 109+80 (CL Proposed River Street), 0 to 90 feet LT, and 0 to 55 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 109+80 to Station 111+10 (CL Proposed River Street), 0 to 90 feet LT, and to 55 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 111+10 to Station 112+40 (CL Proposed River Street) 0 to 35 feet LT, and 0 to 55 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene, Manganese.
- Station 112+40 to Station 113+65 (CL Proposed River Street) 0 to 35 feet LT, and 0 to 55 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameters: Manganese.
- Station 113+65 to Station 115+10 (CL Proposed River Street) from 45 to 55 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benso(a)anthracene, Benzo(a)pyrene, Dibenzo(a,h)anthracene, Arsenic, Lead, and Manganese.
- Station 601+25 to Station 602+75 (CL Proposed Joliet Street), 0 to 30 feet LT, and 0 to 60 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameter: Benzo(a)pyrene, Lead, and Manganese.
- Station 602+15 to Station 602+95 (CL Proposed Joliet Street), from 30 to 180 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameter: Benzo(a)pyrene, Lead, and Manganese.
- Station 2000+50 to Station 2001+70 (CL Proposed Des Plaines Street), 0 to 15 feet LT, and 0 to 15 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminant of concern sampling parameters: Manganese.
- Station 2001+70 to Station 2003+20 (CL Proposed Des Plaines Street), 0 to 15 feet LT, and 0 to 15 feet RT. The Engineer has determined this material meets the criteria of and shall be

managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Manganese.

- Station 1302+35 to Station 1303+40 (CL Proposed Des Plaines Street), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminant of concern sampling parameters: Arsenic and Manganese.
- Station 1302+65 to Station 1303+05 (CL Proposed Des Plaines Street), from 35 to 200 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminant of concern sampling parameters: Arsenic and Manganese.
- Station 1303+40 to Station 1304+35 (CL Proposed Des Plaines Street), 0 to 50 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.

Site No. 2233V-203: Vacant Land, 600 block of River Street, Joliet, Will County

- Station 51+60 to Station 52+25 (CL Proposed I-80), 0 to 100 feet LT, and 0 to 100 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.

Site No. 2233V-206: Residences and Vacant Lot, 200-261 Duncan Street, 600-654 Kiep Avenue, 204-256 Lucas Street, 512-613 Water Street, 202-218 Sheridan Street, 514-611 S. Des Plaines Street, 510-521 S. Joliet Street, 56 Shelby Street, 464-508 S. Ottawa Street, and 500 block of S. Ottawa Street, Joliet, Will County.

- Station 104+25 to Station 105+70 (CL Proposed River Street), 0 to 70 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminant of concern sampling parameter: Manganese.
- Station 58+00 to Station 58+35 (CL Proposed I-80 Bridge), 0 to 45 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminant of concern sampling parameter: Arsenic, Cadmium, Manganese.
- Station 58+00 to Station 58+35 (CL Proposed I-80 Bridge), from 45 to 100 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminant of concern sampling parameter: Benzo(a)pyrene and Manganese.
- Station 58+15 to Station 58+60 (CL Proposed I-80 Bridge), 0 to 110 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminant of concern sampling parameter: Arsenic, Cadmium, Manganese.
- Station 59+60 to Station 60+40 (CL Proposed I-80 Bridge), 0 to 130 feet RT, and 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 59+60 to Station 60+40 (CL Proposed I-80 Bridge), from 50 to 170 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminant of concern sampling parameter: Benzo(a)pyrene Manganese.

- Station 56+50 to Station 56+80 (CL Proposed I-80 Bridge), 0 to 100 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 56+65 to Station 57+00 (CL Proposed I-80 Bridge), 0 to 100 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 54+90 to Station 55+30 (CL Proposed I-80 Bridge), 0 to 90 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 55+00 to Station 55+25 (CL Proposed I-80 Bridge), 0 to 80 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminant of concern sampling parameter: Arsenic, Lead, and Manganese.
- Station 53+45 to Station 53+80 (CL Proposed I-80 Bridge), 0 to 90 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 53+35 to Station 53+65 (CL Proposed I-80 Bridge), 0 to 90 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameter: Manganese.
- Station 104+25 to Station 105+70 (CL Proposed River Street), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminant of concern sampling parameters: Manganese.
- Station 289+85 to Station 299+90 (CL Water Street), 0 to 15 feet LT, and 0 to 25 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminant of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Lead, Manganese.
- Station 299+90 to Station 301+35 (CL Water Street), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminant of concern sampling parameters: Benzo(a)pyrene, Dibenzo(a,h)anthracene, Lead, and Manganese.
- Station 301+35 to Station 303+05 (CL Water Street), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminant of concern sampling parameters: Benzo(a)pyrene, Lead, Manganese.
- Station 301+35 to Station 303+05 (CL Water Street), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameters: Manganese.
- Station 303+05 to Station 304+25 (CL Water Street), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameters: Arsenic and Manganese.
- Station 303+05 to Station 304+05 (CL Water Street), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminant of concern sampling parameters: Benzo(a)pyrene, Cadmium, and Manganese.
- Station 304+05 to Station 305+30 (CL Water Street), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminant of concern sampling parameters: Manganese.

- Station 304+25 to Station 305+30 (CL Water Street), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminant of concern sampling parameters: Arsenic, Cadmium, Manganese.
- Station 305+25 to Station 307+50 (CL Water Street), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminant of concern sampling parameters: Benzo(a)pyrene and Manganese.
- Station 305+25 to Station 306+75 (CL Water Street), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminant of concern sampling parameters: Arsenic and Manganese.
- Station 401+70 to Station 404+40 (CL Proposed Lucas Street), 0 to 75 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminant of concern sampling parameters: Benzo(a)pyrene and Dibenzo(a,h)anthracene.
- Station 1105+60 to Station 1107+85 (CL Shelby Street), 0 to 30 feet LT, and 0 to 30 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminant of concern sampling parameters: Benzo(a)pyrene, Lead, and Manganese.
- Station 700+00 to Station 701+40 (CL Joliet Street), 0 to 45 feet LT, and 0 to 45 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminant of concern sampling parameters: Benzo(a)pyrene, Iron, Lead, and Manganese.
- ▪ Station 405+65 to Station 407+20 (CL Proposed Des Plaines Street), 0 to 35 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Benzo(a)pyrene and Lead.

<u>Kiep Avenue</u>

- Station 111+60 to Station 112+00 (CL Proposed River Street) from 55 to 130 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Manganese.
- Station 111+60 to Station 112+00 (CL Proposed River Street) from 130 to 325 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 111+60 to Station 112+00 (CL Proposed River Street) from 325 to 385 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic, Lead, and Manganese.
- Station 111+60 to Station 112+00 (CL Proposed River Street) from 385 to 630 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene, Lead, Manganese.

Duncan Street

- Station 304+60 to Station 305+00 (CL Water Street) from 80 to 140 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic, Cadmium, Manganese.
- Station 304+60 to Station 305+00 (CL Water Street) from 140 to 310 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Benzo(a)pyrene, Manganese.
- Station 304+60 to Station 305+00 (CL Water Street) from 310 to 450 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, Arsenic, Lead, and Manganese.
- Station 304+60 to Station 305+00 (CL Water Street) from 450 to 580 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Benzo(a)pyrene, Manganese.

Site No. 2233V-1: ROW, I-80 between M.M. 69 and M.M. 75 Spring Valley, Peru, and unincorporated Hall and Peru Townships

- Station 60+40 to Station 62+50 (CL Proposed I-80 Bridge), 0 to 70 feet LT, and 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese and Nickel.
- Station 60+40 to Station 62+50 (CL Proposed I-80 Bridge), from 50 to 240 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Cadmium, and Manganese.
- Station 60+40 to Station 62+50 (CL Proposed I-80 Bridge), from 70 to 135 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Manganese.
- Station 114+00 to Station 117+05 (CL Proposed Ramp C), 0 to 120 feet LT, and 0 to 170 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Manganese.
- Station 111+50 to Station 114+00 (CL Proposed Ramp C), 0 to 150 feet LT, and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 29+65 to Station 32+60 (CL Chicago Street), 0 to 10 feet LT, and 0 to 10 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Iron and Manganese.
- Station 32+60 to Station 36+40 (CL Chicago Street), 0 to 10 feet LT, and 0 to 10 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Iron and Manganese.

- Station 36+40 to Station 38+55 (CL Chicago Street), 0 to 10 feet LT, and 0 to 10 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, Arsenic, Lead, and Manganese.
- Station 38+70 to Station 40+00 (CL Chicago Street), 0 to 150 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Benzo(a)pyrene, Arsenic, Lead, and Manganese.
- Station 38+70 to Station 40+00 (CL Chicago Street), from 150 to 340 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Arsenic, Lead, and Manganese.

Work Zones: Three distinct OSHA HAZWOPER work zones (exclusion, decontamination, and support) shall apply to projects adjacent to or within sites with documented leaking underground storage tank (LUST) incidents or sites under management in accordance with the requirements of the Site Remediation Program (SRP); Resource Conservation and Recovery Act (RCRA); Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); or as deemed necessary. For this project, the work zones apply for the following ISGS PESA Sites**:** **None**

REMOVAL OF EXISTING STRUCTURES

Description. This work shall consist of the partial removal and satisfactory disposal of specified portions of I-80 WB over the Des Plaines River, Structure Number 099-0057, and I-80 EB over the Des Plaines River, Structure Number 099-0056, in accordance with Article 501 of the Standard Specifications as indicated on the plans and as specified herein. The superstructure consists of a concrete deck supported on rolled steel beams, concrete parapets, steel rail, steel bearings, deck joints, deck drains, and overhead street lighting. The substructure consists of concrete abutments on steel piles as well as concrete multi-column piers with concrete caps. Portions of the existing slope wall to be removed are included in this pay item.

The Contractor must submit a detailed procedure for removing the existing structures to the Engineer for approval prior to starting this work.

Contractor shall coordinate with utilities to remove and/or relocate existing utilities within the work zone prior to structure removal activities. Where utilities were identified during design they are shown on the drawings. The final location of utilities is the responsibility of the Contractor and is included in Removal of Existing Superstructures.

The work shall conform in every respect to all environmental, state and local regulations regarding construction requirements, the protection of adjacent properties, as well as dust and noise control.

Prior to commencing work under this item, the Contractor shall verify the location of all existing utilities in the area. The Contractor shall submit drawings and written documentation to the Engineer of such verification. All work under this item shall be executed in such a manner so as not to disturb or damage the existing utilities.

All materials removed under this item shall become the property of the Contractor and shall be disposed of by the Contractor off the site and in a lawful manner meeting all IDOT policies and procedures.

Existing Plans. See contract drawings for original plans for the existing superstructures involved in this work. The original plans, however, may not show all modifications that have been made to the structures over the years. The completeness of these plans is not guaranteed, and no responsibility is assumed by IDOT for their accuracy. Information is furnished for the Contractor's convenience and is to be used solely at the Contractor's risk.

Basis of Payment. This work will be paid for at the contract unit price per EACH for REMOVAL OF EXISTING STRUCTURES of the number stated.

REMOVAL OF LUMINAIRE, SALVAGE (D-1)

Effective: December 17, 2019

Description. This work shall consist of the removal and salvage of existing luminaires from existing conventional poles.

Construction Requirements. No removal work will be permitted without approval from the Engineer. Removal shall start as soon as the temporary lighting or permanent lighting, as applicable, is placed in approved operation. An inspection and approval by the Engineer will take place before any associated proposed permanent or temporary lighting is approved for operation.

Removal Of Luminaires. The existing luminaire shall be disconnected and removed from the existing pole mast arms. Disconnect any luminaire safety cable assemblies. Any damage resulting from the removal and/or transportation of the lighting luminaire and associated hardware, shall be repaired or replaced in kind. The Engineer will be the sole judge to determine the extent of damage and the suitability of repair and/or replacement. The removal of pole mounted luminaries shall include the luminaries, lamps and associated hardware and appurtenances.

Salvage. When indicated, luminaries, and all associated hardware and appurtenances shall remain the property of the Department and shall be delivered to a Department facility within the District 1 and unloaded and stacked there, as directed by the Engineer. Wood blocking, banding, or other appurtenant items required for proper stacking and protection shall be included. Luminaires shall be removed, boxed in new containers, approved by the Engineer, and delivered to a department facility, as designated by the Engineer. The Contractor shall call IDOT EMC at (708) 524-2145 to schedule the delivery date and location.

Method of Measurement. Each luminaire unit which is removed and delivered to a department storage facility will be counted as a unit for payment.

Basis of Payment. This work will be paid for at the contract unit price per EACH for REMOVAL OF LUMINAIRE, SALVAGE.

REMOVE AND REINSTALL FIBER OPTIC CABLE FROM CONDUIT

Description. This work shall consist of removing an existing fiber optic cable from a micro-duct conduit and reinstalling the fiber optic cable within existing or new micro-duct conduit as shown on the plans, including all termination, splicing, and testing required to return the fiber optic cable to its pre-removal operational condition. Existing conduit shall be cleaned and swabbed prior to reinstallation of the cable.

Materials. Materials are required to re-terminate the existing fiber optic cable within the McDonough Street Bridge Operator House:

Pigtails. Single-mode fiber terminations shall utilize pre-fabricated, factory-terminated pigtails fusion spliced to bare fibers. Pigtails shall comply with the following:

- The factory installed connector furnished as part of the pigtails shall meet or exceed the requirements for approved connectors specified herein.
- The fiber portion of each pigtail shall have a single, jacketed fiber and match the color of the fiber strand jacket it will be spliced to.
- The fiber portion of each pigtail shall have optical properties (microfiber or regular) identical and/or compatible with the optical cable being spliced to and furnished under this contract.
- Pigtails shall be a minimum of 1 meter in length.

All equipment and ancillary materials needed to make fiber optic fusion splices between fiber strands and pigtails shall be included in the cost of this pay item.

Connectors. Connectors shall comply with the following:

- All connectors shall be factory installed connectors compatible with the existing McDonough Street Bridge Operator House fiber termination panels. Field installed connectors shall not be allowed.
- Maximum attenuation 0.4dB.

CONSTRUCTION REQUIREMENTS

No removal work will be permitted without approval from the Engineer and the Department's Bridge Office. Removal shall not be allowed to start until all proposed infrastructure required for reinstallation has been installed and all testing of existing fiber in place has been completed and submitted to the Engineer.

The Contractor shall coordinate with the IDOT Bridge Office, IDOT Electrical Maintenance Engineer, and the Engineer for Contract 60P55 to confirm the operational status of the existing fiber optic cable prior starting work.

Experience Requirements. Personnel involved in the testing, removal, reinstallation, and re-termination of the fiber optic cables shall meet the following requirements:

- A minimum of three years experience in the installation of microfiber optic cables, including fusion splicing, terminating, and testing single mode fibers.

- Install two systems where microfiber optic cables are outdoors in micro conduit and where the systems have been in continuous satisfactory operation for at least two years. The Contractor shall submit as proof, photographs or other supporting documents, and the names, addresses and telephone numbers of the operating personnel who can be contacted regarding the installed microfiber optic systems.
- One fiber optic cable system (which may be one of the two in the preceding paragraph), which the Contractor can arrange for demonstration to the Department representatives and the Engineer.

Installers shall be familiar with the general industry recommended procedures for installing microfiber optic cable. This shall include knowledge of splicing procedures for the fusion splicer being used on this project and knowledge of all hardware such as breakout kits and splice closures. The Contractor shall submit documented procedures to the Engineer for approval and to be used by construction inspectors.

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

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

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

The Contractor shall provide the date, time and location of any tests required by this specification to the Engineer at least five working (seven calendar) days before performing the test. Included with the notification shall be a record drawing of the installed fiber optic cable system. The drawings shall indicate actual installed routing of the cable, the locations of splices, and locations of cable slack with slack quantities identified.

Upon completion of the cable installation, splicing, and termination, the Contractor shall test all fibers for continuity, events above 0.1 dB, and total attenuation of the cable. The test procedure shall be as follows:

A certified technician utilizing an OTDR and optical source/power meter shall conduct the installation test. The test equipment used shall have been calibrated within the last 12 months. Documentation shall be provided. The technician is directed to conduct the test using the standard operating procedures defined by the manufacturer of the test equipment. All fibers installed shall be tested in both directions.

A fiber ring or fiber box (minimum 1 kilometer) shall be used to connect the OTDR to the fiber optic cable under test at both the launch and receive ends. The tests shall be conducted at 1310 and 1550 nm for all fibers.

All testing shall be witnessed by the Engineer and a copy of the test results (CD ROM or USB drive) shall be submitted on the same day of the test. The OTDR test results file format must be Bellcore/Telcordia compliant according to GR-196-CORE Issue 2, OTDR Data Standard, GR 196, Revision 1.0, GR 196, Revision 1.1, GR 196, Revision 2.0 (SR-4731) in a ".SOR" file format. A copy of the test equipment manufacture's software to read the test files, OTDR and power, shall be provided to the Department.

The quality of all fiber splices and terminations shall be verified by OTDR and power meter testing and documented according to the requirements of this special provision to the satisfaction of the Engineer. The Contractor at no additional cost to the Department shall replace any splice not satisfying the required objectives.

At the completion of the test, the Contractor shall provide copies of the documentation of the test results to the Engineer. The test documentation shall be submitted as two bound copies and three CD ROM or USB copies, and shall include the following:

Cable & Fiber Identification:

- Cable ID
- Cable Location – Beginning and End Point
- Fiber ID, including tube and fiber color
- Wavelength
- Pulse width (OTDR)
- Refractory index (OTDR)
- Operator Name
- Date & Time
- Setup Parameters
- Range (OTDR)
- Scale (OTDR)
- Setup Option chosen to pass OTDR "dead zone"

Test Results shall include:

- OTDR Test Results
- Total Fiber Trace
- Splice Loss/Gain
- Measured Length (Cable Marking)
- Total Length (OTDR)
- Optical Source/Power Meter Total Attenuation (dB/km)
- Events >0.10 Db

Sample OTDR Summary:

Sample OTDR Summary				
Cable Designation:	*TCF-IK-03*	**OTDR Location:**	*Pump Sta. 67*	**Date:** *1/1/00*
Fiber Number	**Event Type**	**Event Location**	**Event Loss (dB)**	
			1310 nm	**1550 nm**
1	*Splice*	*23500 Ft.*	*.082*	*.078*
1	*Splice*	*29000 Ft.*	*.075*	*.063*
2	*Splice*	*29000 Ft.*	*.091*	*.082*
3	*Splice*	*26000 Ft.*	*.072*	*.061*
3	*Bend*	*27000 Ft.*	*.010*	*.009*

Sample Power Meter Tabulation Table:

Power Meter Measurements (dB)									
Location		**Fiber No.**	**Cable Length (km)**	**A to B**		**B to A**		**Bidirectional Average**	
A	**B**			**1310 nm**	**1550 nm**	**1310 nm**	**1550 nm**	**1310 nm**	**1550 nm**
		1							
		2							
Maximum Loss									
Minimum Loss									

Upon completion of initial testing (prior to removal), the Contractor shall alert the Engineer to any events rendering a loss in excess of the values listed in the following three paragraphs. If initial testing does not yield any evidence of fiber breaks or events exceeding the loss limits noted below, the Contractor may proceed with removal of the fiber optic cable upon approval by the Engineer and IDOT's bridge office. Upon completion of final testing (after reinstallation), the following shall be the criteria for the acceptance of the reinstalled cable:

The average optical loss of each splice shall not exceed 0.10 dB. In addition, no event shall exceed 0.10 db. The average is determined by measuring the splice loss in both directions with an OTDR, adding the two readings, and dividing by two. Testing should be performed for both the 1310 and 1550 nm wavelengths.

For connectors, maximum attenuation shall be 0.4 dB. Typical attenuation is 0.2dB.

The total loss of the cable (dB), less events and connectors, shall not exceed the following: 0.50 dB/km at both 1310 nm and at 1550 nm.

If the total loss exceeds these specifications, the Contractor shall replace or repair the cable run at the no additional cost to the Department, both labor and materials. Elevated attenuation due to exceeding the pulling tension, or any other installation operation, during installation shall require the replacement of the cable run at no additional cost to the Department, including labor and

materials. No additional splice points in the fiber optic cable will be allowed, meaning that the full cable run between the Brandon Street Bridge and McDonough Street bridge shall require replacement.

Removal and Reinstallation. Prior to removal and reinstallation, the Contractor shall provide a cable removal and reinstallation plan. The plan shall include the following information:

- Identify where each cable will be disconnected from the existing McDonough Street Bridge Operator House and that existing fiber terminations/assignments have been documented to ensure that reinstallation will match the existing configuration.
- Identify where each cable will enter the underground system and the direction for blowing each cable segment.
- Identify mid span locations where the cable is slacked out of a handhole, coiled in a figure eight, and blown back into the hand hole.
- The plan shall address the physical protection of the microcable during removal and reinstallation and during periods of downtime.
- Identify the location of slack storage locations
- Identify the locations of splices.
- Identify distances between fiber access points and crossings.

The cable installation plan shall be provided to the Engineer for approval a minimum of 15 working days prior to the start of installation. The Engineer's approval shall be for the operation on the freeway and does not include an endorsement of the proposed procedures. The Contractor is responsible for the technical adequacy of the proposed procedures.

The fiber optic cable shall be disconnected from any splice cases and/or the communications end equipment and fiber enclosures prior to removal. Fiber optic cable shall be removed from conduits, handholes, junction boxes, cabinets as shown on the plans and as directed by the Engineer.

During cable removal and reinstallation operations, the Contractor shall ensure that the minimum bending of the cable is maintained during the unreeling and installation operations. Unless specified otherwise by the fiber optic cable manufacturer, the outside bend radius of the cable during installation shall be no less than 20 times the outside diameter of the fiber optic cable. Entry guide chutes shall be used to guide the cable into the handhole conduit ports. Lubricating compound may be used to minimize friction. Corner rollers (wheels), if used, shall not have radii less than the minimum installation-bending radius of the cable. A series array of smaller wheels can be used for accomplishing the bend if the cable manufacturers specifically approve the array.

If figure-eight techniques are used during cable removal and reinstallation, the cable shall be handled manually and stored on the ground. The cable shall be placed on tarps to prevent damage from gravel, rocks, or other abrasive surfaces. Tarps should also be used in muddy conditions to keep the cable clean. Enough area to accommodate the cable length to be stored and sufficient personnel to maintain the required minimum-bending diameter as well as avoid kinking or otherwise damaging the cable shall be provided. If the cable has been figure-eighted in preparation for a forward feed, the figure-eight must be flipped over to access the outside cable end. Provide sufficient personnel to avoid kinking the cable as the figure-eight is flipped over. When removing the cable from the figure-eight, use care to avoid kinking the cable, minimum tension applied to the cable, and violating the minimum-bending diameter.

Power assisted or figure-eight eliminator equipment, which is used to eliminate manual figure-eight procedures, shall not be used unless specifically allowed by the cable manufacturer in writing.

For reinstallation, the cable shall be blown into the microduct. The Contractor shall use a micro cable blowing machine designed for use with the microfiber cable being installed. A Compressed air cooler shall be used when ambient air temperatures reaches 68°F or more.

Where cable is to be blown through existing conduit which contains existing cable(s), optical or other, the existing cable(s) shall stay in place. In addition, the Contractor shall be required to obtain a watch and protect from the IDOT District 1 electrical maintenance contractor during the work.

Termination. All fiber terminations shall utilize pre-fabricated, factory-terminated pigtails fusion spliced to bare fibers. The splicing of pigtails for singlemode fibers is included in the cost of this pay item. The prefabricated pigtails shall have all their fibers color coded to match the singlemode fibers in the fiber optic cable. All fusion splices shall be secured on aluminum splice trays capable of accommodating the required number of fusion splices, including necessary splice holders and a compatible splice tray cover, heat shrink, and stainless steel backer rod, and any other ancillary components required to support/complete the fusion splice. All fibers that are terminated with a connector shall be plugged into the backside of the fiber patch panel. Unused fibers at the termination panel shall be protected with a plastic cap to eliminate dust and moisture.

The quality of all fiber splices and terminations shall be verified by OTDR and power meter testing and documented according to the requirements of this special provision to the satisfaction of the Engineer. The Contractor at no additional cost to the Department shall replace any splice not satisfying the required objectives. Attenuation of all connectors shall be checked and recorded at the time of installation with an insertion test (minimum five times checked with an OTDR).

All bulkhead connectors / adapters shall be labeled with the fiber numbers and direction (i.e. 13-14N, 1-2W, etc.) with a laminated machine printed label.

All spliced fibers and pigtails shall be trained in splice cassettes securely fastened inside of a fiber optic interconnect center. Fibers and buffer tubes not terminated shall be coiled neatly in the interconnect center. The ferrule end of the pigtail shall be connected to a patch panel to match the existing conduit (prior to fiber removal).

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

Basis of Payment. This work will be paid for at the contract unit price per FOOT for REMOVE AND REINSTALL FIBER OPTIC CABLE FROM CONDUIT as shown on the plans. Payment shall not be made until the cable is reinstalled, re-spliced/terminated and tested in compliance with the requirements of this special provision.

REMOVING EXISTING SEPTIC TANK

Description. This work shall consist of the complete removal and disposal of existing underground septic tank including inlet and outlet pipes, chlorination chamber, and leech field if applicable.

The septic tank and its contents shall be removed according to the methods approved by the Will County Health Department and the Engineer. The Contractor shall also comply with the applicable provisions of the Private Sewage Disposal Code 905.40(f). The Contractor shall notify the Will County Health Department at least five business days prior to removal. Any fees associated in removal shall be included in the unit price of the removal. The tank shall be disposed of by a professional licensed septic tank removal company/contractor at a location approved by the Engineer.

The work area shall be backfilled with materials approved by the Engineer. The backfill materials shall be compacted as directed by the Engineer. The furnishing, placement and compaction of the backfill material shall not be paid for separately but shall be included in the cost for Removing Existing Septic Tank.

Basis of Payment. This work will be paid for at the contract unit price per EACH for REMOVING EXISTING SEPTIC TANK.

REMOVE EXISTING TRAFFIC SURVEILLANCE EQUIPMENT

Description. This work shall consist of removing and salvaging or disposing of various traffic surveillance equipment, as specified herein and as shown in the plans.

General Requirements. No removal work will be permitted without approval from the Engineer. A minimum of four weeks prior to removal of the site, and IDOT shall be notified. The IDOT contact is Kristy Brod: kristy.brod@illinois.gov.

Traffic surveillance equipment shall be removed in accordance with the following requirements and/or Articles of the Standard Specifications for Road and Bridge Construction.

(a) Roadway Weather Information System (RWIS).
  (1) RWIS Sensors and cables (Salvage). All existing sensors mounted to the existing RWIS tower structure and their associated cables shall be removed from the site for salvage.
  (2) RWIS Cabinet (Salvage). The RWIS equipment cabinet shall be removed from the RWIS tower structure for salvage.
  (3) RWIS Tower (Salvage). The RWIS tower structure shall be removed from the site for salvage.
  (4) Flashing Beacon/Sign Assembly (Salvage). The flashing beacon and static sign assemblies shall be removed from the site for salvage.
  (5) RWIS Foundation. The RWIS foundation removal will be paid for separately.
  (6) Fence (No Salvage). The fence surrounding the existing RWIS site shall be removed from the site.

(7) Conduits. Existing underground conduits associated with the RWIS site shall be abandoned in place.

Removal of Traffic Surveillance Equipment, No Salvage. When indicated, traffic surveillance equipment and associated hardware and appurtenances shall become the property of the Contractor and shall be disposed of according to Article 202.03.

Removal of Traffic Surveillance Equipment, Salvage. When indicated, traffic surveillance equipment and associated hardware and appurtenances shall remain the property of the Department and shall be delivered to the Department maintenance facility at I-80 & US-30 in New Lenox, unless otherwise directed by the Engineer.

Prior to any work being performed by the Contractor, the Contractor shall, in the presence of the Engineer, conduct an inspection of the equipment to be salvaged, making note of any parts which are found broken, missing, defective, or malfunctioning. IDOT will have the option to test the equipment as deemed necessary by the Engineer. Any problems noted will be resolved as directed by the Engineer.

The Contractor shall assume full responsibility for the equipment during removal, transportation, and shipping/transfer to the Department facility. Traffic surveillance equipment shall be removed, boxed in new containers (exception: RWIS tower and RWIS cabinet), approved by the Engineer, and delivered to the Department facility. The Contractor is responsible for all packaging, transportation, and delivery.

The Contractor shall handle the equipment in such a manner as to prevent damage. Any damage resulting from the removal and/or transportation/shipping of the traffic surveillance equipment to be salvaged shall be repaired or replaced in kind at the Contractor's expense. The Engineer will be the sole judge to determine the extent of damage and the suitability of repair and/or replacement.

Method of Measurement. This work will be measured on a lump sum basis.

Basis of Payment. This work will be paid for at the contract unit price per LUMP SUM for REMOVE EXISTING TRAFFIC SURVEILLANCE EQUIPMENT.

REMOVE EXISTING WATER VALVE

This item shall consist of the complete removal of existing valves within existing vaults prior to filling of the structure at location shown on the plans or as directed by the Engineer. Material shall not be salvaged but shall be disposed of according to Article 202.03 of the Standard Specifications.

Existing vaults to be abandoned shall be paid for separately as Valve Vaults To Be Removed.

No work shall proceed prior to the shutdown of any water main passing through the existing valve to be removed.

Basis of Payment: This work will be paid for at the contract unit price per EACH for REMOVE EXISTING WATER VALVE.

REMOVE HIGH TENSION CABLE MEDIAN BARRIER TERMINAL

Description: This work shall consist of furnishing labor, materials, and equipment to remove and dispose of the existing high tension cable (HTC) median barrier terminals/end anchorages.

Method of Measurement: Terminals shall be defined as the end anchorages and other components from the extreme ends of a run to a point 50 feet into the run. This definition of the terminal applies regardless of the length of need point, transitions from anchorage to full height cable, or other features that may vary between systems.

Basis of Payment: This work will be paid for at the contract unit price per EACH for REMOVE HIGH TENSION CABLE MEDIAN BARRIER TERMINAL.

REMOVE TEMPORARY WOOD POLE

Description. This item shall consist of the disconnection and removal of the temporary wood pole and associated aerial cable. Removal of the temporary wood pole shall be performed in accordance with the applicable sections of Article 841.02 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per EACH for REMOVE TEMPORARY WOOD POLE which shall be payment in full for all labor, equipment, and material necessary to perform the work specified herein.

SANITARY MANHOLE (SPECIAL)

This item consists of all labor, equipment and materials required for installing a precast drop manhole as shown in the plans. The drop manhole shall be constructed per the construction standard details of the plans. The construction and materials of the drop manhole shall conform to the Manholes, Type A, Sanitary specification. The work shall be carried out in accordance with the applicable portions of Section 602 in the Standard Specifications and shall include and conform to all requirements as specified in the City of Joliet Requirements.

Construction requirements shall be in accordance with the applicable articles of Section 602 in the Standard Specifications.

Sanitary Manhole Drop Connections: The drop portion of the manhole shall be designed, installed, and tested per the special provisions described under Manholes, Type A, Sanitary. The section of the drop shall be fabricated with the manhole in the factory and not constructed on site. All materials shall comply with the drop manhole detail within the plans.

Basis of Payment: This work shall be paid at the contract unit price per EACH for SANITARY MANHOLE (SPECIAL), of the type, diameter, frame and lid specified, shall include furnishing all labor, supervision, materials, equipment, and testing necessary to complete the work.

Trench backfill and restoration work shall be measured and paid for separately.

Vacuum testing shall be included in the cost of this pay item..

SANITARY MANHOLES TO BE ADJUSTED

This work shall consist of the adjustment of existing sanitary manholes as specified in Section 602-604 of the "Standard Specifications" and shall include and conform to all requirements as specified in the City of Joliet Requirements. Metal adjusting rings will not be allowed for use in these adjustments. All manhole lids shall be inspected and approved by the City of Joliet before resetting.

The Contractor shall inspect the flow line of each structure for debris obstruction prior to removing the existing casting and excavating the roadway. It is the Contractor's responsibility to contact the City of Joliet Sewer Department to arrange for city crews to clean out the structure if debris is found during the initial inspection prior to the start of excavation. Failure to report the debris will require the Contractor to clean the structure of any debris at no additional cost to the city. Also, the contractor shall be responsible for supplying and installing a metal plate of adequate shape, size, and thickness to protect the public and structure. This metal plate shall provide a seal onto the concrete structure hindering debris from entering the structure during construction of the roadway. The Contractor is responsible for removing all existing frames and lids, all existing raising rings and any damaged upper courses of brick manholes. The upper two courses of brick manholes shall be replaced with a six-inch concrete raising ring set in a Portland cement mortar bed. All unusable frames and lids shall be relocated to the nearest City of Joliet maintenance facility at no additional cost to the City.

Structures within the pavement shall remain plated until the HMA binder course is placed. The Contractor shall inspect the structure prior to adjusting the casting to final grade. Any construction debris that has entered the structure due to negligence by the Contractor shall be removed at the Contractor's cost. If the debris entering the structure is not a result of negligence by the Contractor, the Contractor shall contact the City's sewer department within 48 hrs. of adjusting the structure to arrange city crews to clean out the structure. Failure to do so will require the contractor to clean out the structure at no cost to the City.

After the binder is placed, the Contractor shall adjust each structure to final surface elevation by making a clean square saw cut around the structure and backfilling to the binder elevation with approved Portland cement concrete**.** Adjustment rings shall be installed per the adjustment ring section of Article 560.50. The adjusted structure shall have a minimum cure time of three days after adjustment prior to the placement of the final (surface) lift of asphalt. If the contract does not have items for asphalt paving, the Contractor shall coordinate scheduling the adjustments with the City's plant mix seal coat contractor's schedule for paving the roadway. All raising rings shall be sealed using a polyurethane sealant or other approved flexible sealant. Tapered rings shall be used to install the frame to the slope of the road. The final elevation of the adjusted frame and lid

on the surface course shall be parallel to the cross slope of the road within a tolerance of 1/8" of the finish grade.

Sanitary sewer structure must include the installation of an external chimney seal,

External Chimney Seal: External chimney seals are to be installed on all new manholes and shall conform to ASTM C923. Acceptable external chimney seals include Infi-Shield Uni-Band or an approved equivalent.

Basis of Payment: This work shall be paid for at the contract unit price each for SANITARY MANHOLES TO BE ADJUSTED which price shall include the cost of the mortar bed as described in the Article 604.04 of the "Standard Specifications" and the concrete and rubber adjusting rings.

SANITARY MANHOLES TO BE ADJUSTED WITH NEW TYPE 1 FRAME, CLOSED LID

This work shall consist of all labor, material and equipment necessary to adjust sanitary sewer manholes to final surface elevation with new type 1 frames, closed lids. This work shall be performed in accordance with Section 602 and 604 of the Standard Specifications and shall include and conform to all requirements as specified in the City of Joliet Requirements.

Manhole lids shall be stamped "CITY OF JOLIET" and "SANITARY. In addition, all sanitary manhole covers shall have a concealed pick-hole with sealed gasket. Approved casting to be used on sanitary sewer manholes is EJ 1050Z1 with watertight lid or approved equal.

The Contractor shall inspect the flow line of each structure for debris obstruction prior to removing the existing casting and excavating the roadway. It is the Contractor's responsibility to contact the City of Joliet Sewer Department to arrange for city crews to clean out the structure if debris is found during the initial inspection prior to the start of excavation. Failure to report the debris will require the Contractor to clean the structure of any debris at no additional cost to the City. Also, the Contractor shall be responsible for supplying and installing a metal plate of adequate shape, size, and thickness to protect the public and structure. This metal plate shall provide a seal onto the concrete structure hindering debris from entering the structure during construction of the roadway. The Contractor is responsible for removing all existing frames and lids, all existing raising rings and any damaged upper courses of brick manholes. The upper two courses of brick manholes shall be replaced with a 6-inch concrete raising ring set in a Portland cement mortar bed. The Contractor is responsible for removing all existing frames and lids and delivering them to the nearest City of Joliet maintenance facility at no additional cost to the City.

Structures within the pavement shall remain plated until the HMA binder course is placed. The Contractor shall inspect the structure prior to adjusting the casting to final grade. Any construction debris that has entered the structure due to negligence by the Contractor shall be removed at the Contractor's cost. If the debris entering the structure is not a result of negligence by the Contractor, the Contractor shall contact the City's sewer department within 48 hrs. of adjusting the structure to arrange city crews to clean out the structure. Failure to do so will require the contractor to clean out the structure at no cost to the City.

After the binder is placed, the Contractor shall adjust each structure to final surface elevation by making a clean square saw cut around the structure and backfilling to the binder elevation with

approved Portland cement concrete**.** Adjustment rings shall be installed per the adjustment ring section of Article 560.50. The adjusted structure shall have a minimum cure time of three days after adjustment prior to the placement of the final (surface) lift of asphalt. If the contract does not have items for asphalt paving, the Contractor shall coordinate scheduling the adjustments with the City's plant mix seal coat contractor's schedule for paving the roadway. All raising rings shall be sealed using a polyurethane sealant or other approved flexible sealant. Tapered rings shall be used to install the frame to the slope of the road. The final elevation of the adjusted frame and lid on the surface course shall be parallel to the cross slope of the road within a tolerance of 1/8" of the finish grade.

Sanitary sewer structure must include the installation of an external chimney seal,

External Chimney Seal: External chimney seals are to be installed on all new manholes and shall conform to ASTM C923. Acceptable external chimney seals include Infi-Shield Uni-Band or an approved equivalent.

Basis of Payment: This work shall be paid for at the contract unit price each for SANITARY MANHOLES TO BE ADJUSTED WITH NEW TYPE 1 FRAME, CLOSED LID, which price shall include the cost of the mortar bed as described in the Article 604.04 of the "Standard Specifications", concrete and rubber adjusting rings, and the frame and lid.

SANITARY MANHOLES TO BE RECONSTRUCTED

This work shall consist of the reconstruction of existing sanitary interceptor manholes as specified in Section 602 of the Standard Specifications and shall include and conform to all requirements as specified in the City of Joliet Requirements. Work includes the removal of all existing risers, cones, flat tops, adjustment rings, and frames as required to repair the manhole or adjust it to the new elevation. Then the installation of new risers, cones, flat tops, adjustment rings, and a new type 1 frame and closed lid to the new elevation as specified in the plans. The existing junction chamber shall remain in place with no modifications. All existing frames and lids shall be relocated to the nearest City of Joliet maintenance facility at no additional cost to the City.

The Contractor shall inspect the reconstructed structure prior to adjusting the casting to final grade. Any construction debris that has entered the structure due to negligence by the Contractor shall be removed at the Contractor's cost. If the debris entered into the structure is not a result of negligence by the Contractor, the Contractor shall contact the City's Sewer Department within 48 hrs. of reconstructing the structure to arrange city crews to clean out the structure. Failure to do so will require the Contractor to clean out the structure at no cost to the City.

All raising rings shall be sealed using a polyurethane sealant or other approved flexible sealant. Tapered rings shall be used to install the frame to the slope of the road.

The sanitary manhole reconstruction shall be designed, installed and tested per MANHOLES, TYPE A, SANITARY special provision.

Sanitary sewer structure must include the installation of an external chimney seal,

External Chimney Seal: External chimney seals are to be installed on all new manholes and shall conform to ASTM C923. Acceptable external chimney seals include Infi-Shield Uni-Band or an approved equivalent.

Basis of Payment: This work will be paid for at the contract unit price per EACH for SANITARY MANHOLES TO BE RECONSTRUCTED, which price shall include the cost of the mortar bed as described in the Article 604.04 of the Standard Specifications, as well as the concrete riser section, precast cone or flat top, rubber adjusting rings, and all necessary materials to complete the work.

SANITARY SERVICE REPLACEMENT

Wherever sanitary sewer services are encountered during the course of the work and are located above but not in conflict with the construction, the Contractor shall replace that portion of the service line spanning the excavation 3 feet to either side of the trench walls. The replacement material shall be ASTM D3034, SDR 26 of the same diameter as the existing line. The PVC pipe shall be supported on both ends by not less than 3 feet of undisturbed soil. The PVC pipe shall be coupled with the existing sewer on both ends using shearless type mission couplings or an approved equal. This work shall include and conform to all requirements as specified in the City of Joliet Requirements.

Method of Measurement: This work shall be measured by each sanitary service replacement required per property. No separate measurement shall be made for materials including fittings, couplings, concrete or mortar, lineal feet of pipe, or for excavation except in rock. Excavation of rock and trench backfill shall be measured for payment in accordance with the contract specifications.

Basis of Payment: This work will be paid for at the contract unit price per EACH for SANITARY SERVICE REPLACEMENT. Such payment shall compensate the Contractor for furnishing.

SANITARY SEWER

The work of this pay item consists of sewer pipe complete in place, excavation; removal and disposal of waste excavated materials; removal and disposal of existing pipe and manholes when sewer is installed in-situ; protection, replacement, or repair of utilities; trench dewatering, including erosion and sedimentation control methods and devices to provide protection to environment from all pumping operations; temporary pumping of sewage around work area if necessary to complete work; bracing; bedding and covering of pipe; trench backfilling with excavated materials; infiltration testing; and all testing as stated below; GIS data collection; finish grading; but not including backfilling with granular trench backfill materials. This work shall include and conform to the full scope as specified in the City of Joliet Requirements.

Materials. PVC Sewer Pipe and Fittings:

Pipe:

- 8 to 24 inch diameter: ASTM D 2241, SDR 26

Fittings such as saddles, elbows, tees, and wyes shall be factory produced and have joint design compatible with adjacent pipe. Gasketed SDR26 sewer fittings shall meet ASTM D2241. Provide approved adapters for transitions to other types of pipe materials.

Pipe Joints: Rubber Gasket ASTM F477. Bell and spigot joint conforming to ASTM D3139, sealed by rubber gasket so assembly remains watertight under conditions of service including movements resulting from expansion, contraction, settlement, and deformation of pipe. Field applied heat fusion or solvent welded joints between pipe sections, pipe and fittings, or fitting components will not be permitted. Assembled joint shall pass performance tests as required in ASTM D3139.

Pipe Markings: Manufacturer's name or trademark; Nominal pipe size; PVC cell classification; ASTM and SDR/PS classification; Extrusion date, period of manufacture or lot number.

Pipe shall be subject to rejection for fractures or cracks passing through pipe wall or socket; cracks sufficient to impair strength, durability of serviceability of pipe; variations of more than 1/8 inch/lineal foot in alignment in pipe intended to be straight; damaged ends.

Flexible connectors: shall be non-shear mission couplings or approved equal for joining pipes of dissimilar material and/or size.

Bedding. Bedding shall be per standard details – CA-11 (#6 Wash) minimum of 4” below the pipe and 12” above the pipe.

Backfill. Backfill requirements shall be per Trench Backfill.

Execution.

Pipe Installation:

- Install pipe and gaskets in accordance with manufacturer's recommendations. Install PVC pipe in accordance with ASTM D2321.
- Trenching shall be provided – including sheeting, shoring, and bracing as necessary to be compatible with Contractor’s specific construction procedures.
- Dewatering shall be required so that excavations are kept free from water. Lay pipe only after trench is dewatered.
- Primary line and grade shall be provided by the Contractor. Contractor shall arrange work operations to avoid interference with establishment of primary lines and grades. Contractor shall bear sole responsibility for correct transfer of construction lines and grades and for correct alignment and grade of completed work, based upon lines and grades shown on drawings.
- Begin laying pipe from lowest point in proposed sewer line where possible. Lay pipe with bell end of bell and spigot pipe pointing upgrade. Lay pipe uniformly to line and grade so finished sewer will present uniform bore. Continuously monitor line and grade of pipe, and in event they do not meet specified limits described hereinafter, stop work immediately, notify Engineer, and remedy cause before proceeding with work.
- Retain pipe in position to maintain alignment and joint closure until backfill completed to hold pipe in place. Lay pipe to conform to prescribed line and grade shown on drawings with limits as follows: Variance from established line and grade shall not be greater than 1/32 inch per inch of pipe diameter and not to exceed maximum 2 inch, provided any such

variation does not result in level or reverse sloping invert; provided also, variation in invert elevation between adjoining ends of pipe, due to non-concentricity of joining surface and pipe interior surfaces, does not exceed 1/64 inch per inch of pipe diameter, or 2 inch maximum.

Rubber Gasket Joints:

- Immediately before making joint, lubricate outside of gasket and inside of bell or groove of last pipe with approved vegetable lubricant. Take care that gasket and pipe ends are clean and free of sand, gravel, dirt or other foreign materials. Introduce spigot of pipe being laid with gasket in place, into bell of previously laid pipe.
- Set pipe to line and grade, and then jack or push completely home. During insertion of the spigot, pipe shall be partially supported by hand or crane to minimize unequal lateral pressure on the gasket and maintain concentricity until gasket is properly positioned. Employ whatever procedures necessary to seat spigots fully into bells without damaging or placing excessive stress on pipes.
- Connection of sanitary services shall include the filling of any voids which may be found to exist around the lateral. The void space shall be filled with hydraulic cement or other approved material for a minimum distance of three feet.
- Backfill in accordance with standard details and specifications.
- When the sewer has been backfilled, temporary aggregate is to be placed in the trench across driveways until sidewalk can be installed
- During surface restoration temporary aggregate is to be removed and replaced with sidewalk per these specifications

Sewer Testing. Contractor shall pull a "95%" mandrel through PVC pipes after pipes have been backfilled for 30 days to demonstrate roundness.

The Contractor shall perform a closed-circuit television inspection of the new sewer system, excepting sewer services. Televising shall show that the sewer system has been constructed in accordance with the approved plans and specifications, that the sewer is free and clear of all accumulations of foreign substance and debris to prevent clogging, and that there are no structural defects.

Prior to televising the sewer, the Contractor shall at their own expense clean the sewer line with a jetter or other equipment approved by the Engineer.

Upon completion of such inspection, and upon receipt of a written report of such inspection, together with a DVD or external hard drive of the actual inspection, and, if satisfied that such sewer is free and clear of all foreign substance, and free of all structural defects, the Engineer shall give approval of the sanitary sewer. All inspection reports and video recordings shall remain the property of the Village.

Failure criteria for sewer testing.

- Visible infiltration at any joint which, in Engineer’s opinion, exceeds 1 gallon per minute.
- Joints not "fully home" in accordance with pipe manufacturer's recommendations.
- Out-of-roundness in PVC pipes which, in Engineer’s opinion, exceeds 5% of the pipe diameter.
- Cracks or spall in pipe
- Displaced gaskets.

Correction of defects.

- Repair sections failing tests or quality requirements by removal and replacement of affected sections, internal or external grouting of failed joints or other defects not permitted.
- Correct sewers failing deflection tests by re-excavating to sewer at point of failure and 10 feet on either side, allowing sewer to return to original round cross-section, and re-backfilling according to specifications. Re-test deflection limits as described herein. Sewers failing to return to original round cross-section or failing second deflection test shall be removed and replaced at no additional cost to Owner. Use of devices generating internal pressures or vibrations to correct sewers failing deflection testing is expressly prohibited.

If replacing existing sewer, removal of existing sewer and plugging/abandoning of existing sewer is incidental to this item.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for SANITARY SEWER, of the diameter specified. The pipe material shall be PVC ASTM D-2241 as stated in the plans and this specification.

SANITARY SEWER REMOVAL

This work includes furnishing all materials, equipment and labor necessary to remove sanitary sewer in accordance with Section 551 of the Standard Specifications. This work shall also include plugging the existing structure which shall remain in place after this sanitary sewer has been removed from it. The existing remaining structure shall be plugged with brick and mortar to the satisfaction of the Engineer and this work shall be considered included in the sanitary sewer removal.

Basis of Payment: This work will be paid for at the contract unit price per FOOT for SANITARY SEWER REMOVAL, of the diameter specified, measured as removed.

SETTLEMENT PLATFORMS

Description. This work shall consist of furnishing and placing settlement platforms in accordance with Articles 204.03 and 204.06 of the Standard Specifications except as herein modified. This work will also include the installation and monitoring of surface monitoring points.

The settlement platforms shall be installed at the locations shown on the plans or as directed by the Engineer prior to placing embankment materials. The settlement platforms will be monitored by the Engineer to determine when construction of the storm sewer system, roadway pavement, and/or any permanent fixtures can commence.

The surface monitoring points shall be located as shown in the plans or as directed by the Engineer prior to doing any work adjacent to identified locations. Surface monitoring points are intended to be a location which survey can be taken consistently during construction to provide a

log of horizontal and vertical measurements of an already-built surface such as roadway, railway or wall and are simple objects such as PK nail or prism.

Settlement Platforms. Two settlement platforms are identified for embankment construction at locations specified on the plans. The minimum monitoring period for the settlement platforms shall be 180 days. The monitoring period shall begin after commencement of structural fill placement. Settlement platform monitoring will be performed at a minimum of once per week for the duration of the monitoring periods. The duration of the settlement monitoring period(s) is at the discretion of the Engineer. The monitoring periods for each platform may be extended by the Engineer until no more than 0.01' of settlement occurs per week for a minimum of two consecutive weeks. Temporary pavement is allowed to be placed on the embankment one week after embankment placement has been completed. Final paving can not commence until the 180 day monitoring period is successfully completed and is approved by the engineer.

Surface Monitoring Points. Eight surface monitoring points are identified for monitoring of already constructed surfaces. The monitoring period of these surfaces shall be according to the Engineer but at a minimum shall be during the period of time work is being done adjacent to the structure being monitored plus two weeks. The frequency of elevations taken shall be according to the Engineer but shall be no less than once per week during the monitoring period. The Engineer has authority to issue a stop work order of adjacent work if an existing structure has moved more than 0.04’ in any direction. In the event of a stop work order, the Contractor will be required to develop a work plan to fix any damage to the existing structure and to show how he will proceed with construction as to not cause additional movement to the existing structure. Work plan must be developed and signed and sealed by a licensed structural or geotechnical engineer.

Method of Measurement. Settlement platforms will be measured in units of each at the locations designated on the plans. Surface monitoring points will not be measured for payment.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for SETTLEMENT PLATFORMS, which price shall include all labor, equipment, and materials necessary to install, maintain, and partially remove and cap the settlement platforms. This work shall also include all labor, equipment, and materials necessary to install, maintain, and monitor the surface monitoring points. No additional compensation for developing a work plan or for any delays incurred due to any stop work orders. Additional Settlement Platforms requested by the Engineer to aid in the determination of settlement rate and amount shall be paid as Settlement Platforms.

UTILITY STRUCTURE REMOVAL

This work shall consist of the removal and disposal of existing structures indicated in the plans or as directed by the Engineer. The term “structure” shall be understood to refer to any of the following: catch basins, manholes, inlets, valve vaults, valve boxes and sanitary manholes. The structures shall be removed and disposed of as specified in Section 605 of the Standard Specifications. This work includes furnishing all materials, equipment and labor necessary for the removal and disposal of existing structures, backfilling the removed structure excavation with aggregate trench backfill, which shall be considered incidental to this item, and plugging any hole formed by the removal process.

Basis of Payment. This work will be paid for at the contract unit price per EACH for UTILITY STRUCTURE REMOVAL

STUMP REMOVAL, ACRES

Description: This work shall be according to section 201 of the Standard Specification except as modified herein. The work includes the removal of tree stumps, excess chips, and debris remaining from an advanced tree removal contract performed by others. The advanced tree removal contract will remove trees and stumps to below grade or leave stumps exposed. The entire tree stump shall be removed to the satisfaction of the Engineer.

Method of Measurement: Stumps to be removed shall be measured per acre for the entire area shown on the plans and as directed by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price per ACRE for STUMP REMOVAL, ACRES.

TEMPORARY CHAIN LINK FENCE, 6'

Description. This work shall consist of installing a temporary chain link fence 6' in height, including rails and posts as shown on the plans and as directed by the Engineer. The work shall meet the minimum requirements of Section 664 and Standard 664001, except that concrete post foundations will not be required. The temporary fence shall be removed upon substantial completion of the work. The temporary chain link fence may be new, used or rented and shall be approved by the Engineer. The temporary chain link will remain the property of the Contractor after construction.

Method of Measurement. This work shall be measured in place in feet. Payment shall be based on actual length of fence erected without change in unit price because of adjustment in plan quantities due to field conditions.

Basis of Payment. This work shall be paid for at the contract unit price per FOOT for TEMPORARY CHAIN LINK FENCE, 6' which price shall include all equipment, labor, and materials required to complete this work.

TEMPORARY CHAIN LINK FENCE WITH SCREENING, 8'

Description. This work shall consist of installing, maintaining and removing a temporary chain link fence 8' in height, including rails, posts, screens, and gates at locations shown on the plans and as directed by the Engineer. The work shall meet the applicable requirements of Section 664 and Standard 664001, with the exception that the embedded poles will be placed in the in-situ soil, without concrete foundations.

Skid plates or other nonembedded bases may only be used in paved areas. All pull and corner posts required for installation are included in this work. Maintenance shall include, but not be limited to, re-erection or replacement of leaning or fallen sections of the fence and replacement of damaged or torn site screening. No additional compensation will be made for maintenance of the temporary chain link fence with screening. The temporary fence shall be removed upon substantial completion of the work. The temporary chain link fence may be new, used or rented and shall be approved by the Engineer. The temporary chain link fence will remain the property of the Contractor after construction.

Fence Screening. Screening material shall be affixed to the chain link fence and gates following the manufacturers specifications. The screening shall be the full height of the fence and cover the entire length of the fence including gated openings. The screening and fence shall not contain any advertisement. The color of the screening shall be green. Final color choices at all planned locations shall be approved by the Engineer prior to ordering material.

The screening shall have edge reinforcements and 3/8" brass grommets at 24" on center to attach to the fence.

Screen panels shall be overlapped a minimum of 24" and connected at each overlapping grommet. Screen panels shall overlap line posts to reduce availability of open sight through the fence.

The screening shall be knitted heavy-duty UV stabilized polyethylene material with no lead or fillers. Screening shall allow the passage of air but shall contain dust and dirt with a minimum of 85% visibility blockage.

Method of Measurement. This work shall be measured in place in feet. Payment shall be based on actual length of fence erected without change in unit price because of adjustment in plan quantities due to field conditions. Rails, posts, screens and gates shall not be measured separately.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for TEMPORARY CHAIN LINK FENCE WITH SCREENING, 8' which price shall include all equipment, labor, and materials required to complete this work.

TEMPORARY ELECTRIC SERVICE INSTALLATION

Description. This item shall consist of installing, modifying or extending an electric service temporarily to feed relocated lighting controller during the construction which is over and above the work performed by the utility. The cost of utility work if any, will be reimbursed to the Contractor in accordance to Article 109.05. The removal of temporary electric service installation shall be incidental to this pay item.

Materials. The materials shall in accordance with Article 804.02 of Standard Specifications.

General. The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work not included by other contract pay items required to complete the temporary electric service work in complete compliance with the requirements of the utility.

The Contractor may choose to use existing service location for temporary electric service as coordinated with the utility and the Engineer. Temporary electric service shall be removed after permanent electric service is installed and ready for connection.

Basis Of Payment. This work will be paid for at the contract unit price per EACH for TEMPORARY ELECTRIC SERVICE INSTALLATION which shall be payment in full for the work specified herein.

TEMPORARY FACILITIES INSTALLED BY CONTRACTOR

Description. This work shall consist of all labor, materials, and equipment necessary to provide and subsequently remove temporary facilities required and installed by the Contractor to enable access to work areas during construction.

General Construction Requirements. All means and methods employed for the installation and subsequent removal of temporary facilities to be installed by the Contractor for access or for any other reason shall be in compliance with all project permits.

The plans for temporary facilities shall be submitted to the Engineer for review and acceptance prior to starting the work. Review, acceptance and/or comments by the Department, USACE, ILEPA, IDNR, and the USCG shall not be construed to guarantee the safety or compliance with all applicable specifications, codes, or contract requirements, and shall neither relieve the Contractor of the responsibility and liability to comply with these requirements, nor create liability for the Department, USACE, ILEPA, IDNR nor the USCG. The Contractor is responsible for meeting all IDOT, USACE and the USCG requirements. No additional compensation or time will be allowed for USACE or USCG restrictions. The plans shall be submitted a minimum of 90 days prior to beginning work.

The Contractor shall not proceed with work until written approval from each of the approval agencies has been received. Approval agencies are IDOT, USACE, ILEPA, IDNR and the USCG. Significant changes to the plans in the field must be approved by the Engineer.

The Contractor shall construct the causeway as indicated on the contract plans, and place geotextile fabric between the granular embankment and the streambed or ground line. The causeway embankments shall be constructed using free-draining coarse aggregate or riprap material with an aggregate capping surface to allow construction vehicle access and adequate support for construction activities. The causeway elevations shall be as shown on the plans.

The Contractor may elect to use a temporary work bridge, temporary causeway, or other temporary structure in the river and floodplains to facilitate construction. The construction of the bridges may take place during periods of high water. The Contractor shall consider the effects of scour on any temporary substructures and on the existing and proposed bridge foundations. The Contractor shall consider the effects of high flood waters on any temporary superstructures and ensure that any temporary means does not impact or adversely affect the existing or proposed substructures.

If temporary barges, work bridges, or platforms are used for access in the river, the Contractor shall keep the navigation waterway clear and open in compliance with the project permits.

After a temporary work bridge, platform or any other facility is no longer needed, it shall be removed per Article 513.08 of the Standard Specifications for Road and Bridge Construction.

Contractor is responsible for the design, stability and maintenance of the causeway. The Contractor shall minimize disturbance of the riverbed to limit suspension of riverbed material. If the Engineer determines that the Contractor’s activities are producing undue disturbance of the riverbed and/or riverbed material suspension, the Contractor shall stop the work and take corrective action before proceeding.

Haul roads shall be constructed with materials (i.e., coarse aggregate) meeting the requirements of Article 1004.04 of the Standard Specifications, except if pit run gravel is used, prior approval of the source may be required by the Engineer. Upon completion of the work, the haul road shall be removed, and the floodplains returned to their original contours or the contours called for in the plans. The Contractor shall provide and maintain access to the causeway(s) from local roads and from outside of the floodwalls. Haul roads may constitute part of the temporary facilities installed and subsequently removed by the contractor. The Contractor shall not disturb the embankment on the backside of the floodwalls nor place causeway material within five feet of the front side of the wall as shown on the plans.

The causeway locations shown on the plans indicate the design used to determine the water surface elevations under design storm events and are used in the IDNR permit elevations for the various causeway configurations shown. The causeway openings shown are the minimum allowed to maintain the design water surface elevations and shall be maintained at all times. Temporary bridges may be used to access the causeway(s).

The Contractor shall maintain the causeways throughout the contract duration or until no longer needed, and shall restore the riverbed to the original condition and as specified on the plans for landscaping at the contract end. River cross sections shall be taken at an approximate 50-foot grid and extend 100-feet upstream and 100-feet downstream of the proposed bridge face or existing bridge face, whichever controls, with additional survey as necessary to define the streambed. River cross sections shall be taken before and after construction to verify river restoration and available to the Engineer upon request.

The Contractor shall maintain a daily log of twice-a-day or every 12 hours advanced hydrologic prediction service from NOAA's websites, under Flood Contingency Plan. The logs shall be submitted for information to the Engineer on a weekly basis unless requested otherwise due to a predicted flood event.

The Contractor shall assume all risk of damage to his equipment and the work caused by inundation of the selected waterway access and causeway design regardless of the flow event.

The proposed causeway will have a top elevation as shown on the plans. The as-designed causeway hydraulic computations and hydraulic report will be made available to the Contractor upon request. Any revisions to the causeway design shall be coordinated with the regulatory agencies to ensure requirements are met.

Materials. Granular embankment shall be in accordance with Article 206.02 of the Standard Specifications.

Temporary facilities may not be constructed using dumped fill or any other erodible material. Erodible material is defined as material subject to transport due to normal or high flows, or material which may not be 100% recoverable from the waterway. Crushed concrete or reclaimed asphalt pavement will not be permitted.

Geotextile fabric shall be used in accordance with Article 1080.02 of the Standard Specifications.

Temporary bridges across portions of the causeway shall meet the requirements of Section 513 of the Standard Specifications. These structures shall be designed to accommodate all construction loads for the span. Temporary bridges are an option available to the Contractor and the use of this alternate must meet the requirements specified herein.

Preparedness, Prevention, and Contingency Plan (PPC). The Contractor shall prepare a PPC Plan, which details procedures for preventing contamination of the causeway rock and addresses clean up procedures. Contamination includes, but is not limited to, fuel, hydraulic or lubricating fluids, cleaning solutions, dirt or other debris, which could cause pollution of the waterway(s). All personnel shall be familiar with the procedures outlined in the PPC plan. The PPC plan shall be submitted to the Engineer for review and acceptance prior to commencing causeway construction activities.

Submittals. The Contractor shall submit shop drawings, calculations, installation and removal procedures for review and approval prior to beginning the work. If the Contractor elects to use a temporary work bridge, structural plans and procedures shall be prepared and sealed by an Illinois licensed structural engineer (SE) and submitted to the Engineer for review and approval.

Basis of Payment. Temporary facilities installed by the Contractor and their subsequent removal will not be measured nor paid for separately but shall be considered as included in the unit cost of the various related pay items in the contract. Excavation required for the installation of causeway will not be measured for payment.

TEMPORARY LIGHTING CONTROLLER

Description. This work shall consist of furnishing, installing, and removing a temporary lighting controller as specified in Section 825 of the Standard Specifications, as shown on the plans and as specified herein.

The temporary lighting controller shall be 240/480 volt, 200 amps, single phase. The enclosure and its components may be used but must be able to function properly and safely according to Section 1068 of the Standard Specification and the NEC. The temporary lighting controller shall be controlled by a photocell mounted on the cabinet. The controller shall have a double pole circuit breaker sized at 200 amps.

The cabinet and control components must be grounded.

The removal of the temporary lighting controller shall not be paid for separately but shall be included in this pay item. The temporary lighting controller shall not be removed until the proposed lighting is in place, and the proposed lighting controller is functioning.

Basis of Payment. This item will be paid for at the contract unit price per EACH for TEMPORARY LIGHTING CONTROLLER and shall include all material, labor, and equipment necessary to perform the work as specified in the plan documentation and as herein specified.

TEMPORARY SLOPE DRAIN

Description. This work involves the installation of a temporary slope drain at locations indicated on the plans or as directed by the Engineer. The slope drain shall extend from a storm drainage structure at the top of a high embankment to the bottom, to convey concentrated discharge down the face of the slope without causing erosion. The system shall be comprised of bituminous coated corrugated steel pipe drain conduits, elbows, and end sections conforming to the requirements of Section 601.

Installation of the temporary slope drain shall follow the details shown in Standard 610001 for the outlet pipe of the Shoulder Inlet With Curb structure, except that the cast in place thrust block shown at the bottom of slope is not required. The temporary slope drain is to remain in place upon substantial completion of the work.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for PIPE DRAIN of the diameter specified, at the contract unit price per EACH for PIPE ELBOW of the diameter specified, and at the contract unit price per EACH for METAL FLARED END SECTIONS of the diameter specified.

TEMPORARY WOOD POLE, 60 FT., CLASS 4

Description. This item shall consist of furnishing and installing temporary wood pole, hardware and accessories required for temporary installation. The materials shall be in accordance with Article 1069.01 and 1069.04 of the Standard Specifications.

Construction Requirements

Installation. The wood pole shall be installed in accordance with article 830.03(c) and 830.04 of the Standard Specifications. The wood pole shall be installed such that minimum required buried depth shall be maintained for existing and proposed grade.

Method Of Measurement. Each wood pole which is installed as indicated will be counted as a unit for payment.

Basis Of Payment. This work will be paid for at the contract unit price per EACH for TEMPORARY WOOD POLE, 60 FT., CLASS 4, which shall be payment in full for the work specified herein.

TRACK AND GROUND MONITORING

Description. This work shall consist of providing pre-construction, during construction, and post-construction track surveys and daily monitoring of the CSX Transportation, Inc (CSX) tracks for vertical and horizontal potential displacements during operations associated with the installation of bridge piles and underground compensatory storage system adjacent to the railroad corridor and tracks, These operations include, but are not limited to:

1. Placement of concrete and rebar for drilled shafts and pier columns.
2. Excavation for pier crashwalls.
3. Backfilling and restoration of all areas near the piers.
4. Erection of shoring towers and erection of girders.
5. Placement of deck over tracks.
6. Partial demolition of the exist. WB I-80 bridge deck and beams.

The Contractor shall submit a track monitoring plan to the Engineer a minimum of 30 calendar days prior to the start of any work within the CSX right of way for the Engineer's and the CSX's review and approval. The purpose of the track monitoring plan is to monitor the track's vertical and horizontal position prior to, during, and after construction, and to have a contingency plan prepared in the event of track displacement beyond acceptable limits due to proposed work within railroad right of way. The track monitoring plan shall be in compliance with the description of the work described below.

The Contractor will not be allowed to begin work within the CSX right of way until written approval of the Contractor's track monitoring plan and contingency plan is received from the CSX and the supervising engineer.

Ground Monitoring. Provide means for monitoring ground settlement. Submit monitoring plan for Railroad review. Ground monitoring points should be in alignment above the proposed construction activities and according to the schedule as described below for pre-construction, during construction, and post-construction activities.

Pre-Construction: A pre-construction track survey and inspection shall be performed prior to any construction operations taking place which shall consist of the following:

- Establish a bench mark in the vicinity of the construction area. Establish locations for shooting elevations on the top of rail at each area of construction.
- The Contractor will establish an existing track alignment for both sets of tracks extending 1,000 feet along the track in both directions from the centerline of the proposed casing pipe crossing.
- The survey shots will be taken at intervals from the center of the casing pipe crossing at 10, 20, 30, 40, and 50 feet, then every 50 feet for 1,000 feet in both directions along the existing rails.
- Survey shots shall be taken at the top of each rail (or side of rail using targets), centerline of track, and at the outside edges of the tie for a total of five shots at each interval crossing for each rail crossing. There are two tracks being crossed which will require a total of 10 shots to be taken at each interval crossing.
- Use of monitoring targets shall be used and placed such that monitoring is possible when a train is present.
- Adhesive backed reflective targets may be attached to the side of the rail temporarily. Targets should be removed once monitoring phase is complete.
- The survey shall be taken for a period of14 consecutive calendar days prior to the start of the jacking operation.
- The survey shall be coordinated with the Engineer and the CSX (Contact: Public_ProjectsRPI@csx.com) at least 14 calendar days prior to any activity that precedes construction.
- The pre-construction track survey shall be documented and tabulated for weekly submittal to the Engineer and the CSX (Contact: Public_ProjectsRPI@csx.com) for review.

During Construction: Daily monitoring shall consist of the Contractor surveying the same points taken during the pre-construction track survey, taking horizontal and vertical measurements and recording results in a field log book dedicated for this purpose. Copies of the field log entries shall be made available to all concerned parties upon request at any time during construction. Daily monitoring shall only occur from the date the Contractor begins work through the date the Contractor completes work within the CSX ROW.

Track conditions shall be documented and tabulated for weekly submittal to the Engineer and the CSX (Contact: Public_ProjectsRPI@csx.com) for review. If any measurements exceed ¼" vertical or horizontal of the pre-construction track survey, the Contractor must discontinue construction operations immediately and notify the Engineer and CSX to evaluate the track condition.

The Contractor shall provide an established contingency plan in the event of ground loss and/or if the rail deviates ¼ inch vertical or horizontal and shall perform any restorative work at his/her own expense prior to resuming construction operations. If track repairs are required, the Contractor shall use a qualified specialty contractor experienced in CSX track work and approved by CSX in advance to perform corrective track repairs to the satisfaction of CSX and the Engineer. These repairs can include but are not limited to elevations adjustments, realignment, replacement of track units or hardware or other work to restore the existing tracks to pre-construction conditions and shall be performed at no additional cost to the Department or CSX.

Post-Construction: The Contractor shall complete a post-construction track survey and inspection after completion of the operation. The post-construction track survey shall consist of the Contractor surveying the same points taken during the pre-construction track survey, taking horizontal and vertical measurements, for a period of seven days or longer as required by the Railroad for up to 30 days.

The post-construction track survey shall be documented and tabulated for weekly submittal to the Engineer and the CSX Utilities Contact (Contact: Public_ProjectsRPI@csx.com) for review.

Contingency Plans: The Contractor shall supply contingency plan(s), which anticipate reaching the threshold and shutdown values, for all construction activities which may result in horizontal and/or vertical track deflection.

Track monitoring values:
Threshold value = 1/8 inch permanent vertical or horizontal deflection
Shutdown value = 1/4 inch permanent vertical or horizontal deflection

The contingency plans shall provide means and methods, with options if necessary. The Contractor should anticipate the need to implement each contingency plan with required materials, equipment and personnel.

Once the threshold value is met, the Contractor shall determine the appropriate contingency plan(s) and immediately discuss this plan with, and receive approval confirmation from, the Railroad.

Once the shutdown value is exceeded, all project work shall stop, and the chosen contingency plan shall commence.

The Railroad may choose to allow and/or require the immediate implementation of specific approved contingency plans, submitted by the Contractor, once the shutdown value is exceeded.

Method of Measurement. This work will not be measured for payment.

Basis of Payment. This work shall not be paid for separately and shall be included in the cost for PRECAST CONCRETE BOX CULVERT (SPECIAL) and JUNCTION CHAMBER and shall include all track and ground monitoring involved for the specified operations.

TRAFFIC CONTROL ITEMS OWNED BY STATE

Description. This work shall consist of furnishing, placing, and maintaining traffic control items specified in the plans. This work shall be completed in accordance with applicable sections of the Standard Specifications and special provisions.

Temporary traffic control items along the median of I-80 between the I-80 bridge over Hickory Creek and Richards Street were not removed from a previous contract and ownership transferred to the Department. Thirty days after contract award, or as directed by the Engineer in writing, the Contractor shall take ownership and maintenance of the traffic control items.

The traffic control items remaining in place and transferring ownership include temporary concrete barrier, pinning for temporary concrete barriers, and temporary guardrail connections. If traffic control devices do not meet the Department's quality standards as shown in the "Traffic Control Field Manual" upon taking ownership, the Contractor shall replace these items upon direction from the Engineer using the applicable pay items.

Method of Measurement. The furnishing, placing, and maintaining of traffic control items specified in the plans will be measured according to the applicable sections of the Standard Specifications and special provisions. The cost of taking ownership from the Department shall be included in the cost of the applicable traffic control pay items.

Basis of Payment. The transfer of traffic control items from the Department will not be paid for separately but shall be included in the cost of the applicable items of work in the contract. The removal of these traffic control items, with ownership transferred from the Department to the Contractor, will not be paid for separately unless specifically identified in this specification.

TRAFFIC CONTROL ITEMS TO REMAIN IN PLACE PERMANENTLY

Description. This work shall consist of furnishing, placing, and maintaining traffic control items specified in the plans. This work shall be completed in accordance with applicable sections of the Standard Specifications and special provisions.

The traffic control items shown at the end of stage 3/3 substage east of the contract limit separating 62R23 and 62F94 shown on the Suggested Stages of Construction and Traffic Control Plan shall not be removed and ownership transferred to the Department. The 62F94 contractor will be responsible for moving these items into future stages.

The traffic control items shown in Stage 5/5A/5B shall not be removed at the end of the contract. After the contract is closed, or as directed by the Engineer in writing, the Contractor shall leave the existing traffic control items in place and ownership, and maintenance of the traffic control items shall be transferred to the Department.

The traffic control items to remain in place include, but are not limited to, temporary pavement, temporary concrete barrier, pinning for temporary concrete barriers, temporary impact attenuators, temporary pavement markings, temporary information signing, and temporary

maintenance of traffic signing. All traffic control devices shall meet the Department's quality standards as shown in the "Traffic Control Field Manual" at the completion of the project.

Changeable message signs are not to remain in place, and the removal shall be coordinated with the Engineer.

Method of Measurement. The furnishing, placing, and maintaining of traffic control items specified in the plans will be measured according to the applicable sections of the Standard Specifications and special provisions. The cost of the items to remain in place and transfer of the ownership to the Department shall be included in the cost of the applicable traffic control pay items.

Basis of Payment. The transfer of traffic control items to the Department will not be paid for separately but shall be included in the cost of the applicable items of work in the contract.

UNDERDRAIN CONNECTION TO STRUCTURE

Description. This work shall consist of making a pipe underdrain connection to an existing or proposed drainage structure as shown in the plans and in accordance with Section 601 of the Standard Specifications.

Construction Requirements. This work will be measured for payment in units of each in place.

Basis of Payment. This work will be paid for at the contract unit price per EACH for UNDERDRAIN CONNECTION TO STRUCTURE.

UNDERGROUND CONDUIT, MULTI-DUCT, 7-18MM MICRODUCTS

Description. This work shall consist of furnishing, installing, splicing, connecting, and demonstrating continuity of a fiber optic conduit micro-duct system of the size specified herein and as shown on the plans.

Materials. The conduit and fittings shall meet the requirements of Article 1088.01(c) of the Standard Specifications, except as modified herein. The conduit system shall consist of 7, 18 mm outside diameter (O.D.), 14 mm inside diameter (I.D.) micro-ducts contained inside an HDPE protective outer sheath with a minimum thickness of 0.07 in. The outer sheath for IDOT microduct shall be orange. The outer sheath for Third Party microduct shall be slate. The conduit system shall be designed for direct burial.

The overall conduit shall have a nominal 2.27 in. outside diameter with a supported bend radius of 31 in., an unsupported bend radius of 52 in., and a safe working pull strength of 3,500 lbs.

Conduit shall be free from holes, blisters, inclusions, cracks, or other imperfections that would affect the performance or serviceability of the product.

Conduit shall be constructed of polymeric materials, which are lightweight, flexible, corrosion resistant and nonconductive. The base material shall be clean virgin grade HDPE, which

conforms to ASTM D3350-98a, type III, category 5, class B or C and grade P- 34 per ASTM D1248-84 or equivalent.

The base HDPE material shall conform to the following minimum mechanical properties:

Description Property	**ASTM Standard**	**Value**
Density	D1505	0.940-0.950 g/cm3
Melt Index (E)	D1238	0.10 - 0.35 g/10 Minutes
Environmental Stress Crack Resistance (ESCR)	D1693	192.0 hrs (per ASTM D3350)
Tensile @ Yield (min)	D638	2500 - 3200 psi (1,700 - 2,200 N/cm2)
Elongation	D638	300%
Flexural Modulus (min)	D790	115,000 psi (790,000 kPa)
Hardness	D2240	60 Shore D
VICAT Softening Point	D1525	248°F (120°C)
Brittleness Temperature	D746	-94°F (-70°C)

Micro-ducts shall be smooth on the outside and ribbed on the inside. The inside shall have a co-extruded permanent layer of low friction boundary layer between the micro-duct and the fiber optic cable for the anticipated service life of the micro-duct.

Factory pre-lubrication shall be performed with materials or agents that provide a stable treatment and result in a dynamic coefficient of friction less than or equal to (≤) 0.20, when tested in accordance with Telcordia (Bellcore) GR-356-CORE, section 4.2.5. Lubricants, whether factory applied, or field applied, shall be chemically compatible with both conduit and cable jacket materials.

Standard available micro-duct colors shall be blue, orange, green, brown, grey, white, and red, or other colors as approved. Micro-ducts shall be individually colored and be sequentially numbered every two feet. Colors shall be protected from UV degradation by the incorporation of hindered amine light stabilizers (HALS) to allow for two years of outside storage UV protection. The duct material shall be compounded with antioxidant additives to prevent thermal degradation.

All 18/14 mm micro-ducts shall have a minimum safe pull strength of 3,500 lbs., a minimum sustained air pressure of 300 PSI, and a minimum burst pressure of 475 PSI.

The micro-duct system shall be equipped with an integrated 20 AWG (minimum) copper wire, insulated and installed within the void between microducts that is designed to be used for underground utility locating purposes. Continuity of the tracer wire must be maintained at all points. Submittal information shall demonstrate how the tracer wire continuity will be maintained throughout the micro-duct run. Connection devices used shall be as approved by the tracer wire manufacturer, except wire nuts of any type are not acceptable and shall not be used.

The Contractor shall perform a locate or conductivity test as a part of the final documentation.

Conduit shall be supplied on 3,500 ft reels (or larger as equipment and installation techniques permit) in order to minimize the number of conduit splices. Fittings shall be mechanical splices that preserve the seamless surface on the inside of the conduit. Fittings shall be capable of developing a minimum of 75% of the rated tensile (pull) strength of the conduit.

Construction Requirements

Installation. The micro-duct shall be installed according to Section 810 of the Standard Specifications, in accordance with manufacturer's specifications, and as specified herein.

Conduit shall be buried a minimum of 42 inches below final grade throughout its entire length. Conduit shall be installed in straight runs as much as possible with a minimum number of bends according to Section 816 of the Standard Specifications. Any bend in the conduit shall be limited to the bend radius specified herein.

Micro-duct shall not be permitted to enter the side wall of the communications vault. A 3' "tail" of micro-duct, along with a strain relief assembly shall be installed at each communications vault to prevent contraction of the micro-duct system. The Contractor shall not trim the micro-duct to the 3' "tail" until a minimum of 24 hours after installation.

The micro-duct system shall be sealed at all times during construction to eliminate the ingress of dirt and moisture. The Contractor shall utilize caps that are approved for use by the duct manufacturer. All micro-ducts shall be capped within communications vaults. Microduct end stop caps shall be used for empty micro ducts and divisible duct seals shall be used for microducts with installed microfiber cables. Catalog cuts shall be provided for review and approval of the seals. Expandable foam seal and taping is not permitted.

The Contractor shall perform post installation testing on all micro ducts. As a minimum, tests shall include: an air test, a foam sponge test, a plastic sphere test, a pressure test, and a tracer wire continuity test between communication vaults.

Each micro-duct shall be tested for continuity by blowing a sponge and then a plastic sphere (approximately 80% of the inside duct diameter) from one end to the other and each duct shall be pressure tested in accordance with the manufacturer's procedures to ensure that the duct will pressurize and hold air pressure for a specific amount of time.

The Contractor shall perform acceptance testing of the micro-ducts in accordance with the manufacturer's recommended practices. Testing, at a minimum shall demonstrate that the micro-ducts are installed and assembled correctly, are air-tight, and have had no reduction of the interior diameter. Each micro-duct shall be pressurized to check for leaks and other problems that would prevent the installation of fiber optic cable in the future. All testing shall be performed in the presence of the Resident Engineer. The Contractor shall submit testing results to the Department. The Contractor shall correct deficiencies to the satisfaction of the Engineer.

The Contractor shall submit testing information and procedures to the Department for review and approval included in the micro-duct submittal prior to ordering material.

A cable marking tape shall be installed above the conduit system according to Article 810 of the Standard Specifications. The color of the tape shall be red with large black lettering which reads "WARNING – FIBER OPTIC CABLE BELOW" or similar.

In addition to the GPS documentation requirements in the General Electrical Provisions, the Contractor shall locate the micro-duct every 100' feet using a GIS locating device that is accurate to the nearest foot. All coordinates shall be in decimal degrees with the Datum used identified.

The Contractor shall submit catalog cut sheets for the communications duct, micro-ducts, splice kits, and all installation and testing documents to the Department for review prior to ordering.

Method of Measurement. This work will be measured for payment in feet in place. Measurements will be made in straight lines along the centerline of the conduit between ends and changes in direction.

Vertical measurement of the duct shall be as follows: For runs terminating at junction boxes, the vertical measurement will be made from the bottom of the trench, or horizontal raceway, to a point 18 inches beyond the center of the junction box or control cabinet.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for UNDERGROUND CONDUIT, MULTI-DUCT, 7-18MM MICRODUCTS.

VALVE VAULT

The work of this pay item consists of the installation of valve vaults complying with ASTM C478 during water main installation complete in place as on plan details, including sawcutting, removal and disposal of existing pavements; excavation in excess of that required for standard pipeline trench construction; removal and disposal of waste excavated materials; bracing, sheeting, and shoring; protection, replacement, or repair of utilities; dewatering, including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operations; vault bedding; monolithic type vault base with watertight flexible pipe connectors where pipes enter vault wall; manhole risers as required to provide proper depth; concentric cone or flat top cover; frame and cover adjusting rings; frame and cover; steps; backfilling with compacted excavated materials in parkways, and compacted granular materials under pavements; and including frame and cover adjustment to final grade at time of street or parkway restoration. This work shall include and conform to all requirements as specified in the City of Joliet Requirements.

Provide precast reinforced concrete manhole sections, bottoms, and flat top slabs complying with ASTM C478 unless otherwise indicated on drawings. Provide concentric cone section for gate valves. Provide eccentric cone section for butterfly valves.

Provide precast reinforced concrete monolithic or separate base. Design flat slab tops for AASHTO HS20-44 wheel loading.

Provide 4000 psi concrete using type I Portland cement complying with ASTM C150. Mortar: Mix one part Portland cement to three parts fine aggregate.

Provide joints of either flexible watertight rubber gaskets or preformed bituminous plastic gaskets consisting of a homogeneous blend of refined hydro-carbon resins and plasticizing compound reinforced with inert mineral filler. Acceptable preformed gasket products: Henry Company, RN103 – RAM-NEK Preformed Flexible Plastic Gasket (Coils). ConSeal Concrete Sealants, Type CS-102. Or equal. E.

Provide steps with a minimum width of 12 inches and a minimum projection of 5 inches. Use steps consisting of copolymer polypropylene plastic with a continuous ½-inch steel reinforcement as manufactured by M.A. Industries, Inc. cast iron steps, Neenah R-1980-I, or equal.

Provide cast iron frames and covers with heavy duty, indented top, with solid self-sealing lids and machined bearing surfaces, stamped with the word “WATER” and “CITY OF JOLIET”. Acceptable products: one East Jordan 1050Z1 two Neenah R1710 (3) Or equal. G.

Provide flexible rubber gasket collar for connecting pipe to the manhole. Comply with ASTM C923. For pipe 24-inch and smaller, use PSX gasket system by PressSeal Gasket Corporation, or equal. For pipe 27-inch and larger, use resilient gasket by A-LOK Products, Inc., or equal.

This pay item includes providing vaults of sufficient depth to provide the standard depth of cover indicated on the drawings, plus 2 feet, measured from the top of the water main to the top of the frame and cover. If depth of cover is 6 feet, vaults to a depth of 8 feet from top to main to top of frame and cover will be installed with no addition to the contract allowed. Where deeper vaults are installed, the cost for additional manhole risers required will be paid for in a separate pay item.

This pay item includes providing exterior joint protection on all valve vaults.

Basis of Payment: The work will be paid for at the contract unit price per EACH for VALVE VAULTS, TYPE A, 4’-DIAMETER, TYPE 1 FRAME, CLOSED LID.

VERTICAL CLEARANCE GAUGE

Description. This work shall consist of all labor, materials and equipment necessary to furnish and install the vertical clearance gauges as shown in the plans, specified herein, and as directed by the Engineer. The gauges indicate the vertical clearance between the low steel of the bridge spans above the navigation channel and the level of the water, measured to the bottom of the foot marks and read from top to bottom. The locations of the gauges are shown in the plans.

Construction Requirements: The gauges shall meet the applicable U.S. Coast Guard requirements, including Title 33 "Navigation and Navigable Waters", Part 118 "Bridge Lighting and Other Signals" of the Code of Federal Regulations (33 CFR 118). The CFR is available online at: http://www.ecfr.gov and the U.S. Coast Guard "Bridge Lighting and Other Signals" is available online at: https://www.uscgaan.com/cd/bridge/BridgeLightingManual.pdf

The navigation clearance gauges shall be painted on the pier using a two-component high performance epoxy paint system for use in exterior marine applications that is chemical, abrasion, chalking and bleeding resistant. The product shall be applied in accordance with the manufactures written recommendations. In addition to the manufactures surface preparation requirements, a light sandblast shall be given to the area to be painted to remove all form oil, grease, dirt, and existing paint prior to application. The background area shall be painted white with two coats at the rate of 200 square feet per gallon. The numbers and foot marks shall be painted black and applied over the white background using one coat. The paint shall not be applied until the pier concrete has cured for a minimum of 28 days. Prior to painting the clearance markings, the clearance shall be verified on both bridges (SN 099-8309 and SN 099-8325) by measuring the vertical clearance relative to the low steel of each bridge span above the navigation channel. The

lowest measured vertical clearance of either bridge shall be utilized for both vertical clearance gauges.

Submittals: Product data for the paint system shall be submitted to the Engineer for approval prior to application.

Basis of Payment: This work will be paid at the contract unit price per EACH for VERTICAL CLEARANCE GAUGE.

WATER MAIN REMOVAL

This work shall consist of the removal of existing water main in direct conflict with the proposed improvements. Existing water main to be taken out of operation but not in conflict with the proposed improvements shall be abandoned as specified for Water Main To Be Abandoned.

This work shall be completed in accordance with applicable portions of Section 551, except that the material shall not be salvaged but shall be disposed of according to Article 202.03.

All diameters of water main to be removed will be covered under this pay item. This work shall also include any necessary saw cutting of the existing water main and the removal of valves, tees, and other appurtenances (excluding fire hydrants).

The ends of the existing water main shall be plugged as specified for Water Main To Be Abandoned.

Trenches resulting from the removal of water main shall be backfilled in accordance with the applicable requirements of Article 550.07. Backfill of removal trenches (including Trench Backfill) shall be included in this item.

Basis of Payment: This work will be paid for at the contract unit price per FOOT for WATER MAIN REMOVAL of the diameter specified. The price shall include the cost of all labor, equipment and materials required to perform the work as specified.

WATER MAIN TO BE ABANDONED

This pay item consists of all work necessary for the abandonment and filling of existing water main pipe with CLSM according to the Standard Specifications for Water & Sewer Construction in Illinois, current edition, and the requirements of Section 593 and 1019 of the Standard Specifications.

Work includes coordination of shut-down of mains with Owner and Engineer; re-excavation of locations; removal and disposal of waste excavated materials; cutting and removing of mains; installing plugs and/or caps on existing mains to remain; providing fill, vent and drain holes; concrete thrust blocks; backfilling and compaction of excavated materials or granular trench backfill material in pavements; and clean-up.

Length of dead-end mains shall be no greater than two times the outside diameter of the main. Existing water main shall be abandoned only after all new water services have been transferred over to the new main and the new main has passed all required testing and is operational.

Basis of Payment: The work will be paid for at the contract unit price per FOOT for WATER MAIN TO BE ABANDONED, of the diameter specified which price shall include all labor, equipment, and materials necessary to complete the work as specified.

WATER SERVICE CONNECTION

The work of this pay item consists of connecting water service lines to the water mains complete in place, including service saddles; corporation stops; curb stops; service boxes; all required fittings, and including backfilling with granular backfill materials at pavement locations.

Contractor shall include and conform to all requirements as specified in the City of Joliet Requirements.

Below are the materials required to make the connection to the watermain as well as the service to the house.

Materials:

1. Service lines: Type K soft temper seamless copper water tubing complying with ASTM B88.
2. Service saddles:
   a. Provide service saddles on all water mains for services greater than 1-inch.
   b. Stainless steel saddle with O-ring and grade 30 rubber grid map; Cascade styles CSC2, CS22, or approved equal.
3. Corporation stops:
   a. A.Y. McDonald No. 74701BQ,
   b. Mueller B25008N,
   c. Ford FB1000-XX-NL,
   d. Or approved equal.
4. Curb stops:
   a. A.Y. McDonald No. 76104Q,
   b. Mueller B25155N,
   c. Ford B44-XXX-M-NL,
   d. Or approved equal.
5. Service boxes: Tyler 6500 with BBAF valve box stabilizer or approved equal.

This pay item includes connecting to the curb stop within meter pits, where meter pits are encountered. Notify the City's Public Utilities Department if existing lead water services are discovered.

Water Service Connection Install:

General:

1. Install water service pipe, corporation stop and curb stop as shown on the standard water

service installation detail.
2. Set curb stop on a precast concrete block.
3. Do not splice the water service pipe.
4. Sequence of installation: See Testing And Inspecting section of these Specifications for outline of when, in the sequence of construction, the corporation stops, curb stops, and service boxes are to be installed, leakage tested, and disinfected.
   i. Water service installation work must begin within five days of satisfactory sample results and IEPA approval.

Service boxes:
1. Install over the curb stop in a truly vertical position.
2. Set the top of the box flush with the finished grade ground level.

Direct tapping of polyethylene-encased D.I.P.:
1. Wrap two or three layers of polyethylene adhesive tape completely around the pipe to cover the tapping machine and chain mounting area.
2. Make the tap and install the corporation stop directly through the tap and polyethylene.
3. After making the direct service connection, inspect the entire circumferential area for damage and make any necessary repairs.
4. Wrap the corporation stop and a minimum distance of 3 feet of the copper service pipe with polyethylene.

Basis of Payment: The work will be paid for at the contract unit price per EACH for WATER SERVICE CONNECTION.

WATER SERVICE CONNECTION

The work of this pay item consists of water service pipe complete in place, by open cut method, including excavation; bracing; bedding and covering of pipe; trench dewatering; trench backfilling with excavated materials; testing; disinfection; finish grading; removal and disposal of waste excavated materials; protection, and replacement or repair of utilities. The Contractor shall include and conform to all requirements as specified in the City of Joliet Requirements.

The service pipe is to be continuous and have no intermediate unions. The minimum water service diameter shall be 1” Type K copper. Type K soft temper seamless copper water tubing complying with ASTM B-88.

Water service lines shall be installed by horizontal directional drilling method under street pavements, and open cut methods at connection points to water main and existing service pipe. The open cut method includes backfilling with compacted granular backfill materials where service is below street pavement and sidewalks.

All service lines shall have a minimum depth of 54”, unless otherwise approved by the Engineer. Installing new services in excess of 5 feet of cover in order to cross existing mains, provide for future improvements or cross below sewer lines is considered incidental to the installation of the service, and no addition to the contract will be allowed.

At locations where existing customers are connected to the water main, the tap onto the public water main will be performed by the City of Joliet.

If the Contractor encounters lead service, the Contractor is to removal and replace the lead service with copper from the new watermain to the new b-box. The Contractor is to connect to the lead service at the ROW. The Contractor is to notify the City of every property that they encounter lead service so that the City can replace the service from the new B-box to the house meter. The contractor is to provide a picture of the property and an address and send the information to:

Attn: Bill Baltz
Phine:815-409-6876
Department of Public Utilities
150 W Jefferson Street
Joliet, IL 60432

Water service line (short) shall be the water service lines installed on the same side of the roadway as the newly constructed water main.

Water service line (long) shall be the water service lines installed on the side of the roadway opposite of the newly constructed water main.

Basis of Payment: The work will be paid for at the contract unit price per EACH for WATER SERVICE CONNECTION (SHORT) or WATER SERVICE CONNECTION (LONG) of the water service sizes specified.

WATER VALVES

Gate valves (3-inch through 14-inch) shall comply with AWWA C515 (ductile iron body), bronze fitted, resilient wedge and seat type with non-rising stem and O-ring packing. Provide gear operator for 14-inch valves.

Use A-304 stainless steel bolts with nuts and washers of series 300 stainless steel per ASTM A194. Provide mechanical joint ends for buried valves and ANSI Class 125 flange ends or mechanical joint ends for valve installed in vaults as indicated on the drawings.

Provide restrained type joints for all mechanical joint end valves.

Acceptable valve manufacturers: American Flow Control, Clow, EJ, or approved equal. Gate valves shall be installed vertical and plumb. All valves shall be installed in 5-1/4 inch cast iron valve boxes unless otherwise specified. Valve boxes shall be installed with a plastic centering guide and adjusted to grade. The valve box cover shall bear the legend "WATER".

This work shall include and conform to all requirements as specified in the City of Joliet Requirements.

Basis of Payment: This work will be paid for at the contract unit price per EACH for WATER VALVES of the size specified, and shall include all material, equipment and labor necessary to install the valve and trench backfill at least one foot above the top of the pipe and valve.

HIGH LOAD MULTI-ROTATIONAL BEARINGS

Effective: October 13, 1988 Revised: June 28, 2024

Description. This work shall consist of furnishing and installing High Load Multi-Rotational type bearing assemblies at the locations shown on the plans.

High Load Multi-Rotational (HLMR) bearings shall be the type as shown on the plans, which will be one of the following:

a) Pot Bearings. These bearings shall be manufactured so that the rotational capability is provided by an assembly having a rubber disc of proper thickness, confined in a manner so it behaves like a fluid. The disc shall be installed, with a snug fit, into a steel cylinder and confined by a tight fitting piston. The outside diameter of the piston shall be no more than 0.03 in. (750 microns) less than the inside diameter of the cylinder at the interface level of the piston and rubber disc. The sides of the piston shall be beveled. PTFE sheets, or silicone grease shall be utilized to facilitate rotation of the rubber disc. Suitable brass sealing rings shall be provided to prevent any extrusion between piston and cylinder.

b) Shear Inhibited Disc Type Bearing. The Structural Element shall be restricted from shear by the pin and ring design and need not be completely confined as with the Pot Bearing design. The disc shall be a molded monolithic Polyether Urethane compound.

These bearings shall be further subdivided into one or more of the following classes:

1) Fixed. These allow rotation in any direction but are fixed against translation.

2) Guided Expansion. These allow rotation in any direction but translation only in limited directions.

3) Non-Guided Expansion. These allow rotation and translation in any direction.

Suppliers: The Department maintains a pre-qualified list of proprietary structural systems allowed for High Load Multi-Rotational Bearings. This list can be found on the Departments web site under Prequalified Structural Systems. The Contractor's options are limited to those systems pre-qualified by the Department on the date that the contract was bid. These systems have been reviewed for structural feasibility and adequacy only. Presence on this list shall in no case relieve the Contractor of the site-specific design or QC/QA requirements stated herein.

The supplier shall notify the Department at least two weeks in advance of fabrication of the fabrication shop address. The fabricator shall provide evidence of current certification by AISC according to Article 106.08(e) of the Standard Specifications.

The overall depth dimension for the HLMR bearings shall be as specified on the plans. The horizontal dimensions shall be limited to the available bearing seat area.

Any modifications required to accommodate the bearings chosen shall be submitted to the Engineer for approval prior to ordering materials. Modifications may include the addition of steel filler plates or the adjustment of beam seat elevations. Adjustments to bridge seat elevations and

accompanying reinforcement details shall be approved by the Structural Engineer of Record. Modifications required shall be made at no additional cost to the State. Inverted bearing or center-guided bearing configurations will not be permitted.

The Contractor shall comply with all manufacturer's material, fabrication and installation requirements specified.

Submittals. Shop drawings shall be submitted to the Engineer for approval according to Article 105.04 of the Standard Specifications. All steel filler plate details shall be included in the shop drawings. In addition the Contractor shall furnish certified copies of the bearing manufacturer's test reports on the physical properties of the component materials for the bearings to be furnished and a certification by the bearing manufacturer stating the bearing assemblies furnished conform to all the requirements shown on the plans and as herein specified. Submittals with insufficient test data and supporting certifications will be rejected.

Materials. The materials for the HLMR bearing assemblies shall be according to the following:

(a) Elastomeric Materials. The rubber disc for Pot bearings shall be according to Article 1083.02(a) of the Standard Specifications.

(b) Polytetrafluoroethylene (PTFE) Material. The PTFE material shall be according to Article 1083.02(b) of the Standard Specifications, except that it shall be dimpled lubricated with a maximum coefficient of friction of 0.02 on stainless steel. The dimpled and lubricated PTFE surface shall comply with AASHTO 14.7.2. The friction requirement shall be as specified in the Long Term Deterioration Test required for prequalification and the Sliding Friction Test as specified below.

(c) Stainless Steel Sheets. The stainless steel sheets shall be of the thickness specified and shall be according to Article 1083.02(c).

(d) Structural Steel. All structural steel used in the bearing assemblies shall be according to AASHTO M 270, Grade 50 (M 270M Grade 345), unless otherwise specified.

(e) Threaded studs. The threaded stud, when required, shall conform to the requirements of Article 1083.02(d)(4) of the Standard Specifications.

(f) Polyether Urethane for Disc bearings shall be according to all of the following requirements:

PHYSICAL PROPERTY	ASTM TEST METHOD	REQUIREMENTS	
Hardness, Type D durometer	D 2240	45 Min	65 Max
Tensile Stress, psi (kPa) At 100% elongation, min	D 412	1500 psi (10,350 kPa)	2300 psi (15,900 kPa)
Tensile Stress, psi (kPa) At 200% elongation, min	D 412	2800 psi (19,300 kPa)	4000 psi (27,600 kPa)
Tensile Strength, psi (kPa), min	D 412	4000 psi (27,600 kPa)	6000 psi (41,400 kPa)
Ultimate Elongation, %, min	D 412	350	220
Compression Set 22 hr. at 158 °F (70 °C), Method B %, max	D 395	40	40

The physical properties for a durometer hardness between the minimum and maximum values shown above shall be determined by straight line interpolation.

Design. The HLMR bearings shall be of the type and class specified and designed for the loads shown on the plans. Bearing details shown on the contract plans are a schematic representation of the bearing. Actual design of the bearing shall be by the supplier according to:

- the exact parameters specified in the Design Data table noted on the bridge plans,
- the appropriate AASHTO LRFD Bridge Design Specifications, and
- the IDOT Bridge Manual.

The design of the masonry and sole bearing plates are based on detail assumptions which may require modifications depending on the supplier chosen by the Contractor.

Fabrication. The bearings shall be complete factory-produced assemblies. They shall provide for rotation in all directions and for sliding, when specified, in directions as indicated on the plans. All bearings shall be furnished as a complete unit from one manufacturing source. All material used in the manufacture shall be new and unused with no reclaimed material incorporated into the finished assembly.

The translation capability for both guided and non-guided expansion bearings shall be provided by means of a polished stainless steel sliding plate that bears on a PTFE sheet bonded and recessed to the top surface of the piston or disc. The sliding element of expansion bearings shall be restrained against movement in the fixed direction by exterior guide bars capable of resisting the horizontal forces or 20 percent of the vertical design load on the bearing applied in any direction, whichever is greater. The sliding surfaces of the guide bar shall be of PTFE sheet and stainless steel. Guiding off of the fixed base, or any extension of the base, will not be permitted.

Structural steel plates shall be fabricated according to Article 505.04(l) of the Standard Specifications. Prior to shipment the exposed edges and other exposed portions of the structural steel plates shall be cleaned and given a corrosion protection coating as specified on the plans

and according to the applicable Special Provisions and Articles 506.03 and 506.04 of the Standard Specifications. During cleaning and coating the stainless steel, PTFE sheet and neoprene shall be protected from abrasion and coating material.

PTFE sheets shall be bonded to steel under factory controlled conditions using heat and pressure for the time required to set the epoxy adhesive used. The PTFE sheet shall be free from bubbles and the sliding surface shall be burnished to an absolutely smooth surface.

The steel piston and the steel cylinder for pot bearings shall each be machined from a solid piece of steel. The steel base cylinder shall be either integrally machined, recessed into with a snug fit, or continuously welded to its steel masonry plate. If the sole plate and piston are not one piece, the piston shall be recessed ⅜ inch into the sole plate.

If the bottom disc plate or base cylinder is recessed into the masonry plate, the designed thickness of the masonry plate shall take into account the depth of the recess. If the top disc plate is recessed into the sole plate, the designed thickness of the sole plate shall take into account the depth of the recess.

The shear resisting mechanism shall be machined from a solid piece of steel. Connection of the shear resisting mechanism to top and bottom disc plate shall be determined by the bearing fabricator.

Packaging. Each HLMR bearing assembly shall be fully assembled at the manufacturing plant and delivered to the construction site as complete units. The assemblies shall be packaged, crated or wrapped so the assemblies will not be damaged during handling, transporting and shipping. The bearings shall be held together with removable restraints so sliding surfaces are not damaged.

Centerlines shall be marked on both masonry and sole plates for alignment in the field. The bearings shall be shipped in moisture-proof and dust-proof covers.

Performance Testing. The following performance tests are required per lot on the project. A lot size shall be the number of bearings per class (fixed, guided expansion, non-guided expansion) on the project, but not to exceed 25 bearings per class. When multiple sizes of bearings are used on the same contract, they shall be grouped by class when determining lot sizes and amount of bearings to be tested. All tests shall be performed by the manufacturer prior to shipment.

Dimension Check. Each bearing shall be checked dimensionally to verify all bearing components are within tolerances. Failure to satisfy any dimensional tolerance shall be grounds for rejecting the bearing component or the entire bearing assembly.

Clearance Test. This test shall be performed on one bearing per lot. The bearing selected for this test shall be the one with the least amount of clearance based on the dimension check. The bearing assembly shall be loaded to its service limit state rated capacity at its full design rotation but not less than 0.02 radians to verify the required clearances exist. This test shall be performed twice for each bearing with the rotation oriented longitudinally with the bridge once in each direction. Any visual signs of rubbing or binding shall be grounds for rejection of the lot.

Proof Load Test. This test shall be performed on one bearing per lot. The bearing assembly shall be load tested to 150 percent of the service limit state rated capacity at a rotation of 0.02 radians. The load shall be maintained for 5 minutes, removed then reapplied for 5 minutes. If the load drops below the required value during either application, the test shall be restarted from the beginning. This test shall be performed twice for each bearing with the rotation oriented longitudinally with the bridge once in each direction.

The bearing shall be visually examined both during the test and upon disassembly after the test. Any resultant visual defects include, but are not limited to:

1. Extruded or deformed elastomer, polyether urethane, or PTFE.

2. Insufficient clearances such as evidence of metal to metal contact between the pot wall and the top or sole plate.

3. Damaged components such as cracked steel, damaged seal rings, or damaged limiting rings.

4. Bond failure.

If any of the above items are found it shall be grounds for rejection of the lot.

Sliding Friction Test. For expansion bearings, this test shall be performed on one bearing per lot. The sliding surfaces shall be thoroughly cleaned with a degreasing solvent. No lubrication other than that specified for the bearing shall be used. The bearing shall be loaded to its service limit state rated capacity for 1 hour prior to and throughout the duration of the sliding test. At least 12 cycles of plus and minus sliding with an amplitude equaling the smaller of the design displacement and 1 inch (25 mm) shall then be applied. The average sliding speed shall be between 0.1 inch and 1.0 inches (2.5 mm and 25 mm) per minute. The sliding friction coefficient shall be computed for each direction of each cycle and its mean and standard deviation shall be computed for the sixth through twelfth cycles.

The friction coefficient for the first movement and the mean plus two standard deviations for the sixth through twelfth cycles shall not exceed the design value used. In addition, the mean value for the sixth through twelfth cycles shall not exceed 2/3 of the design value used. Failure of either of these shall result in rejection of the lot.

The bearing shall also be visually examined both during and after the testing, any resultant defects, such as bond failure, physical destruction, or cold flow of the PTFE shall also be cause for rejection of the lot.

The Contractor shall furnish a notarized certification from the bearing manufacturer stating the HLMR bearings have been performance tested as specified, and a. purchase order prior to fabrication. The purchase order shall contain, as a minimum, the quantity and size of each type of bearing furnished. The notarized certifications and the purchase order shall be submitted in one package to the Engineer of Tests at the Bureau of Materials and Physical Research (126 East Ash Springfield, IL 62704). The Department reserves the right to perform any of the specified tests on one or more of the furnished bearings. If the tested bearing shows failure it shall be

replaced and the remaining bearings shall be similarly tested for acceptance at the Contractor's expense.

The manufacturer shall furnish samples of component materials used in the bearings, for testing by the Department, to the Engineer of Tests at the Bureau of Materials and Physical Research (126 East Ash Springfield, IL 62704). The required components shall be those components of HLMR bearings that are consistent with elastomeric bearing components according to Article 1083.04 of the Standard Specifications.

Installation. The HLMR bearings shall be erected according to Article 521.05 of the Standard Specifications.

Exposed edges and other exposed portions of the structural steel plates shall be field painted as specified for Structural Steel.

Basis of Payment. This work will be paid for at the contract unit price each for HIGH LOAD MULTI-ROTATIONAL BEARINGS, POT , FIXED; HIGH LOAD MULTI-ROTATIONAL BEARINGS, POT, GUIDED EXPANSION; HIGH LOAD MULTI-ROTATIONAL BEARINGS, POT, NON-GUIDED EXPANSION; HIGH LOAD MULTI-ROTATIONAL BEARINGS, DISC, FIXED; HIGH LOAD MULTI-ROTATIONAL BEARINGS, DISC, GUIDED EXPANSION; or HIGH LOAD MULTI-ROTATIONAL BEARINGS, DISC, NON-GUIDED EXPANSION of the load capacity specified.

When the fabrication and erection of HLMR bearings is accomplished under separate contracts, the applicable requirements of Article 505.09 shall apply.

Fabricated HLMR bearings and other materials complying with the requirements of this item, furnished and accepted, will be paid for at the contract unit price each for
FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, POT, FIXED; FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, POT, GUIDED EXPANSION; FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, POT, NON-GUIDED EXPANSION; FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, DISC, FIXED; FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, DISC, GUIDED EXPANSION; or FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, DISC, NON-GUIDED EXPANSION of the load capacity specified.

Storage and care of fabricated HLMR bearings and other materials complying with the requirements of this item by the Fabrication Contractor beyond the specified storage period, will be paid for at the contract unit price per calendar day for STORAGE OF HIGH LOAD MULTI-ROTATIONAL BEARINGS if a pay item is provided for in the contract, or will be paid for according to Article 109.04 if a pay item is not provided in the contract.

HLMR bearings and other materials fabricated under this item erected according to the requirements of the specifications, and accepted, will be paid for at the contract unit price each for ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, POT, FIXED; ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, POT, GUIDED EXPANSION; ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, POT, NON-GUIDED EXPANSION; ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, DISC, FIXED; ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, DISC, GUIDED EXPANSION; or ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, DISC, NON-GUIDED EXPANSION of the load capacity specified.

MODULAR EXPANSION JOINT

Effective: May 19, 1994 Revised: October 27, 2023

Description. This work shall consist of furnishing and installing a modular expansion joint(s) as shown on the plans, and according to applicable portions of Section 520 of the Standard Specifications.

General. The expansion joint device shall be capable of handling the specified longitudinal movement. In addition, when specified, the joint shall also be capable of handling the differential non-parallel longitudinal movement. The expansion joint device shall effectively seal the joint opening in the deck surface and barrier curbs against the entrance of water and foreign materials. There shall be no appreciable change in the deck surface plane with the expansion and contraction movements of the bridge.

The device shall consist of a shop-fabricated modular assembly of transverse elastomeric seals, edge and center beams, bearing on support bars spanning the joint opening. The assembly shall maintain equal distances between intermediate support rails, at any cross section, for the entire length of the joint. The assembly shall be stable under all conditions of expansion and contraction.

The noise level of the joint in service shall meet all Federal and State of Illinois noise requirements.

At sidewalks, concrete median barriers and concrete parapet joints, a sliding steel plate shall be fabricated and installed according to the plans. Painting or galvanizing of sliding steel plates shall be as specified on the plans.

Suppliers: The Department maintains a pre-qualified list of proprietary structural systems allowed for modular expansion joints. This list can be found on the Departments web site under Prequalified Structural Systems. The Contractor's options are limited to those systems pre-qualified by the Department on the date that the contract was bid. These systems have been reviewed for structural feasibility and adequacy only. Presence on this list shall in no case relieve the Contractor of the site-specific design or QC/QA requirements stated herein.

The supplier shall notify the Department at least two weeks in advance of fabrication of the fabrication shop address. The fabricator shall provide evidence of current certification by AISC according to Article 106.08(e) of the Standard Specifications.

Submittals: Shop drawings and a copy of the calculations and support documents shall be submitted to the Engineer for approval according to Article 105.04 of the Standard Specifications. Calculations shall be sealed by an Illinois Licensed Professional Engineer. Submittals will be required for each modular expansion joint device specified. In addition, the Contractor shall provide the Department with a certification of compliance by the manufacturer listing all materials in the system. The certification shall attest that the system conforms to the design requirements, material requirements, and that all components of the joint are the same as what was included in the prequalification submittal that was successfully tested in the OMV, seal push out, and fatigue tests of Section 19, Appendix 19, Article 5.1, 5.2, and 5.3 of the AASHTO LRFD Bridge Construction Specifications. Submittals with insufficient test data and supporting certifications will be rejected.

The shop drawings shall include tables showing the total anticipated movements for each joint and the required setting width of the joint assemblies at various temperatures.

The shop drawings shall include installation drawings or details showing locations and details of temporary installation supports, and joint assembly components, in relation to the adjacent primary structural beams, girders, or members. These details shall demonstrate that the proposed modular expansion joint is designed to fit and operate around all primary structural members within the space provided on the contract plans.

Fabrication: Fabricators of the modular expansion device(s) are required to meet the following tolerances:

Allowable variation in straightness of center beam rails Length < 30' Length 30' to 45' Length > 45'	 1/8" per 10' total length 3/8" 3/8" + 1/8"*(total length (feet) – 45')/10'
Allowable lateral variation in specified location of support boxes	±1/4"
Allowable lateral variation in specified location of stirrup or other attachments to center beam	±1/16"
Allowable variation in total depth	±1/8"
Allowable vertical dimension variation of all components	±1/8"
Allowable variation from specified elevation end squareness or skew	±1/8"
Allowable variation in overall length of joint	±1"

Metallic attachments used to secure elastomeric seals to centerbeams, if welded to the centerbeams and edge beams, shall be welded continuously along either their top or bottom edges.

Run off tabs shall be used for stirrup or other attachments to the center beam full penetration welds.

Design Requirements: The maximum vertical, transverse and horizontal rotations and displacements shall be defined and included in the design.

The expansion joint device(s) shall be designed, detailed and successfully tested, according to Section 14 of the AASHTO LRFD Bridge Design Specifications.

The design forces used for centerbeam to support bar analysis shall be taken at the centerline of the centerbeam.

The maximum fatigue resistance of any detail shall not exceed that associated with the fatigue category prescribed in the table below.

Type of Detail	Maximum Permitted Category
Welded Multiple Centerbeam to Support Bar Connections	C
Weld Stirrup Attachments for Single Support Bar Systems	C
Bolted Stirrup Attachments for Single Support Bar Systems	D
Groove Welded Centerbeam Splices	B
Miscellaneous Welded Connections[1]	C
Miscellaneous Bolted Connections	D

[1]Miscellaneous connections include attachments for equidistant devices and any metallic attachments to the centerbeams or edge beams that are used to secure the elastomeric seals.

In addition, expansion joint device(s) shall be designed for the vehicular live load as specified on the General, Plan, and Elevation sheet of the plans across the entire width of the structure.

Top, bottom and sides of support bars shall be restrained to prevent uplift, transmit bearing loads, and maintain the lateral position of the bars.

The total service movement of each individual sealing element shall not exceed 3 in. (75 mm).

The joint supplier shall design, layout, and detail the modular expansion joint assembly and components to miss existing or proposed structural beams, girders, or members. Cutting of structural members to install joint assemblies shall not be permitted.

Materials:

(a) Metals. Structural Steel. All structural steel, except stainless steel, shall be according to AASHTO M 270, Grade 50 or 50W (M 270M Grade 345), unless otherwise specified. All structural steel, except stainless steel, shall be hot-dip galvanized according to ASTM A123 or A153 as applicable.

Stainless steel sheets for the sliding surfaces of the support bars shall conform to the requirements of ASTM A240 (A240M) type 302 or 304. Stainless steel mating surfaces shall require a No. 8 finish. For non-mating surfaces a 2B finish is required.

The use of aluminum components in the modular joint will not be allowed.

(b) Preformed Elastomeric Seals. The elastomeric sealing element shall be according to ASTM D5973.

Lubricant/Adhesive for installing the preformed elastomeric elements in place shall be a one-part, moisture-curing, polyurethane and hydrocarbon solvent mixture as recommended by the manufacturer and containing not less than 65 percent solids.

(c) Support Bar Bearings. Support bar bearings shall be fabricated from elastomeric pads with polytetrafluorethylene (PTFE) surfacing or from polyurethane compound with PTFE sliding surfaces. The elastomeric and PTFE materials shall meet the requirements of Section 1083 of the Standard Specifications.

(d) Support Bars. Support bars shall incorporate stainless steel sliding surfaces to permit joint movement.

Construction Requirements

General. Installation of expansion devices shall be according to the plans and shop drawings.

The fabricator of the modular joint assembly shall be AISC certified according to Article 106.08 for Bridge and Highway Metal Component Manufacturers. In lieu of AISC certification, the Contractor may have all welding on main members (support bars and center beams) observed and inspected by independent (third party) personnel at the Contractor's expense. Welding shall then be observed by a Certified Welding Inspector (CWI) in addition to the manufacturer's own welding inspection. Third-party Non-Destructive Examination (NDE) shall be performed by inspector(s), certified as level II in applicable methods, and all complete penetration beam-to-bar welds and butt joints in beams shall be UT inspected and 10 percent of fillet and partial pen welds shall be MT inspected.

The manufacturer of the expansion device shall provide a qualified technical service representative to supervise installation. Modular expansion joint devices shall be factory prefabricated assemblies, preset by the manufacturer prior to shipment with provisions for field adjustment for the ambient temperature at the time of installation.

Unless otherwise shown on the plans, the neoprene seals shall be continuous without any field splices. Installation of the joint seals shall be performed by a trained representative of the Manufacturer.

The metal surfaces in direct contact with the neoprene seals shall be blast cleaned to permit a high strength bond of the lubricant/adhesive between the neoprene seal and mating metal surfaces.

The Contractor shall anticipate and make all necessary adjustments to existing or plan-specified reinforcement bars, subject to the approval of the Engineer, in order to prevent interferences with placement of the selected joint in the structure. Any adjustments to reinforcement bars interfering with the joint installation shall be the responsibility of the Contractor and preapproved by the Engineer prior to installation of the joint. Cutting of reinforcement shall be minimized, and any bars that are cut shall be replaced in-kind at no additional cost.

The prefabricated joint assembly shall be properly positioned and attached to the structure according to the manufacturer's approved shop drawings. The attachment shall be sufficiently rigid to prevent non-thermal rotation, distortion, or misalignment of the joint system relative to the deck prior to casting the concrete. The joints shall be adjusted to the proper opening based on the ambient temperature at the time of installation and then all restraints preventing thermal movement shall be immediately released and/or removed. The joint upturn may be recessed 1 inch into the parapet to allow for lateral adjustment. The joint assembly units shall be straight, parallel and in proper vertical alignment or reworked until proper adjustment is obtained prior to casting of the concrete around the joint.
After the joint system is installed, the joint area shall be flooded with water and inspected, from below for leakage. If leakage is observed, the joint system shall be repaired, at the expense of the Contractor, as recommended by the manufacturer and approved by the Engineer.

Method of Measurement. This work will be measured for payment in place, in feet (meters), along the centerline of the joint. All sliding plate assemblies at the sidewalks, parapets and median barriers will not be measured for payment. The size will be defined as the specified longitudinal movement rounded up to the nearest 3 inch (75 mm) increment.

Basis of Payment: When only a longitudinal movement is specified, this work will be paid for at the contract unit price per foot (meter) for the MODULAR EXPANSION JOINT, of the size specified. When a differential non-parallel movement is also specified, this work will be paid for at the contract unit price per foot (meter) for the MODULAR EXPANSION JOINT-SWIVEL, of the size specified.

All materials, equipment and labor required to fabricate, paint and install the sliding plate assemblies at the sidewalks, parapets and median barriers will not be paid for separately but shall be included in the price for the expansion joint specified.

When the fabrication and erection of modular expansion joint is accomplished under separate contracts, the applicable requirements of Article 505.09 shall apply, except the furnishing pay items shall include storage and protection of fabricated materials up to 75 days after the completion dates.

Fabricated modular expansion joints and other materials complying with the requirements of this item, furnished and accepted, will be paid for at the contract unit price per foot (meter) for FURNISHING MODULAR EXPANSION JOINT or FURNISHING MODULAR EXPANSION JOINT – SWIVEL of the size specified.

Storage and care of fabricated joints and other materials complying with the requirements of this item by the Fabrication Contractor beyond the specified storage period, will be paid for at the contract unit price per calendar day for STORAGE OF MODULAR EXPANSION JOINTS if a pay item is provided for in the contract, or will be paid for according to Article 109.04 if a pay item is not provided in the contract.

Modular expansion joints and other materials erected according to the requirements of the specifications, and accepted, will be paid for at the contract unit price per foot (meter) for ERECTING MODULAR EXPANSION JOINT or ERECTING MODULAR EXPANSION JOINT - SWIVEL of the size specified.

DIAMOND GRINDING AND SURFACE TESTING BRIDGE SECTIONS

Effective: December 6, 2004 Revised: April 15, 2022

Description. This work shall consist of diamond grinding and surface testing bridge sections.

The bridge section shall consist of the bridge deck plus the bridge approach slab and pavement connector, if present, at each end of the bridge.

Equipment. Equipment shall be according to the following.

(a) Diamond Grinder. The diamond grinder shall be a self-propelled planing machine specifically designed for diamond saw grinding. It shall be capable of accurately establishing the profile grade and controlling the grinding cross slope. It shall also have an effective means for removing excess material and slurry from the surface and for preventing dust from escaping into the air. The removal of slurry shall be continuous throughout the grinding operation. The slurry shall be disposed of according to Article 202.03.

The grinding head shall be a minimum of 4 ft. (1.2 m) wide and the diamond saw blades shall be gang mounted on the grinding head at a rate of 50 to 60 blades / ft. (164 to 197 blades/m).

(b) Surface Testing Equipment. Required surface testing and analysis equipment and their jobsite transportation shall be provided by the Contractor. The Profile Testing Device shall be according to Illinois Test Procedure 701 except the trace analysis shall be based on traces from bridge sections.

CONSTRUCTION REQUIREMENTS

General. After all components have been properly cured, the bridge section shall be ground over its entire length and over a width that extends to within 2 ft. (600 mm) of the curbs or parapets. Grinding shall be done separately before any saw cut grooving, and no concurrent combination of the two operations will be permitted. Whenever possible, each subsequent longitudinal grinding pass shall progress down the cross slope from high to low. The maximum thickness removed shall be 1/4 inch (6 mm); however, when the bridge deck thickness noted on the plans can be maintained, as a minimum, additional removal thickness may be permitted.

The grinding process shall produce a pavement surface that is true in grade and uniform in appearance with longitudinal line-type texture. The line-type texture shall contain corrugations parallel to the outside pavement edge and present a narrow ridge corduroy type appearance. The peaks of the ridges shall be 1/8-inch +/- 1/16-inch (3 mm +/- 1.5 mm) higher than the bottom of the grinding with evenly spaced ridges. It shall be the Contractor’s responsibility to select the actual number of blades per foot (meter) to be used to provide the proper surface finish for the aggregate type and concrete present on the project within the limits specified above.

The vertical difference between longitudinal passes shall be 1/8 inch (3 mm) maximum. The grinding at the ends of the bridge section shall be diminished uniformly at a rate of 1:240 over the pavement connectors.

Grinding shall be continuous through all joints. All expansion joints and bridge components under the joints shall be protected from damage or contact with the grinding slurry.

Surface Testing. The diamond ground bridge section shall be surface tested in the presence of the Engineer prior to opening to traffic.

A copy of the approval letter and recorded settings from the Profile Equipment Verification (PEV) Program shall be submitted to the Engineer prior to testing.

The Contractor shall notify the Engineer a minimum of 24 hours prior to commencement of measurements. All objects and debris shall be removed from the bridge section surface prior to testing. During surface testing, joint openings may be temporarily filled with material approved by the Engineer.

Profiles shall be taken in both wheel paths of each lane, 3 ft. (1 m) from, and parallel to, the planned lane lines.

The profile report shall have stationing indicated every 500 ft. (150 m) at a minimum. The profile report shall include the following information: contract number, structure number, beginning and ending stationing, which lane was tested, direction of travel on the trace, date of collection, time of collection, ambient air temperature at time of collection, and the device operator name(s). The data file created from the testing will be submitted to the Engineer and the Bureau of Research for analysis. The file shall be in a format that is compatible with ProVAL software (ERD, PPF).

Trace Reduction and Bump Locating Procedure. All traces shall be reduced using ProVal. This software shall calculate the Mean International Roughness Index (MRI) in inches/mile (mm/km) and indicate any areas of localized roughness in excess of 200 inches/mile (3105 mm/km) on a continuous 25 feet (8 meters) basis.

The average MRI and locations with deviations exceeding the 200 inches/mile (3105 mm/km) limit will be recorded on the Profile Report for Bridge Deck Smoothness.

All ProVAL files shall be provided to the Engineer within two working days of completing the testing. Bureau of Construction Form BC 2450 shall be provided to the Engineer. An example Form BC 2450 is attached. All files shall contain serial numbers for the vehicle and profiling equipment, the approved settings from the PEV program. The Engineer will compare these settings with the approved settings from the PEV Program. If the settings do not match, the results will be rejected and the section shall be retested/reanalyzed with the appropriate settings.

Corrective Actions. Within the bridge section, all deviations in excess of 200 inches/mile (1575 mm) within any continuous length of 25 ft. (8 m) shall be corrected. Correction of deviations shall not result in the deck thickness being less than the minimum. Where corrective work is performed, the bridge section shall be retested to verify that corrections have produced a MRI of 200 inch/mile (3105 mm/km) within an continuous length of 25 ft (8 m) or less for each lane. The Contractor

shall furnish and Form BC 2450 the ProVAL files to the Engineer and the Bureau of Research within two working days after any corrections are made.

Corrective actions shall be performed at no additional cost to the department.

The Engineer may perform profile testing on the surface at any time for monitoring and comparison purposes.

Method of Measurement. This work will be measured for payment in place and the area computed in square yards (square meters) of diamond grinding performed.

Basis of Payment. This work will be paid for at the contract unit price per square yard (square meter) for DIAMOND GRINDING (BRIDGE SECTION).

Instructions for Completing Bridge Deck Smoothness Assessment Summary ALR

This form shall be prepared and submitted, along with the raw data files, to the Engineer.

Report Type:

Initial – Testing of bridge section prior to any smoothness grinding.

Intermediate – After initial pass of smoothness grinding has been completed.

Final – All smoothness grinding has been completed.

Other information:

Submission Date – Date in which it has been submitted to the Engineer

Project Type – New Deck, Microsilica Overlay, Latex Overlay, Fly Ash Overlay

Specification Effective Date – revision date of the specification in the contract

Begin ALR Section 1 – beginning station of ALR finding

End ALR Section 1 – end station of ALR finding

Distance – End ALR minus the Begin ALR station number

MRI – The value of the ALR at that location.

Illinois Department of Transportation

Bridge Deck Smoothness Assessment Summary
Areas of Localized Roughness

This worksheet is intended as a reference for documenting Areas of Localized Roughness (ALR) as described in GBSP-59.

Contract Information		*Contact Info*	
Contract	60111	IDOT RE Name	Jerry Jones
District	1	IDOT RE E-Mail	Jerry.Jones2@illinois.gov
Letting Date	1/15/2022	IDOT RE Phone	217-555-4183
Item #	26	Contractor Rep. Name	Bob Builder
Route	IL 164	Contractor Rep. E-Mail	Bob.Builder@BTBBConstr.com
Report Type (Initial or Post Grinding)	Initial	Contractor Rep. Phone	217-555-2822
Lane	Driving	*General Comments*	
Direction	Eastbound		
Begin Station	13+45.00		
End Station	14+65.00		
Contractor	Bob the Bridge Builder		
Submission Date	4/1/2022		
Overlay Type	Microsilica		
Specification Effective Date	1/1/2022	*Distance (ft)*	*MRI (in/mi)*
Begin ALR Section 1	13+56.00	8.2	256.40
End ALR Section 1	13+64.20		
Begin ALR Section 2	14+04.60	1.4	278.90
End ALR Section 2	14+06.00		
Begin ALR Section 3			
End ALR Section 3			
Begin ALR Section 4			
End ALR Section 4			
Begin ALR Section 5			
End ALR Section 5			
Begin ALR Section 6			
End ALR Section 6			
Begin ALR Section 7			
End ALR Section 7			
Begin ALR Section 8			
End ALR Section 8			
Begin ALR Section 9			
End ALR Section 9			
Begin ALR Section 10			
End ALR Section 10			

STRUCTURAL ASSESSMENT REPORTS FOR CONTRACTOR'S MEANS AND METHODS

Effective: March 6, 2009 Revised October 5, 2015

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

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

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

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

Requirements

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

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

of an in-service structure as a work platform shall require a SAR and Article 107.16 shall not apply.

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

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

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

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

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

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

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

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

c) Submittals. The Contractor shall be pre-approved to prepare SAR(s) or shall retain the services of a pre-qualified engineering firm to provide these services. Pre-approval of the Contractor will be determined by the Illinois Department of Transportation and will allow SAR(s) preparation by the Contractor unless otherwise noted on the plans. For engineering firms, pre-qualification shall be according to the Department in the category of "Highway Bridges-Typical" unless otherwise noted on the plans. Firms involved in any part of the project (plan development or project management) will not be eligible to provide these services. Evidence

of pre-approval/pre-qualification shall be submitted with all SAR(s). The SAR(s) shall be prepared and sealed by an Illinois Licensed Structural Engineer. The Contractor shall submit SAR(s), complete with working drawings and supporting design calculations, to the Engineer for approval, at least 30 calendar days prior to start of that portion of the work.

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

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

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

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

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

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

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

BRIDGE DECK CONSTRUCTION

Effective: October 22, 2013 Revised: December 21, 2016

When Diamond Grinding of Bridge Sections is specified, hand finishing of the deck surface shall be limited to areas not finished by the finishing machine and to address surface corrections according to Article 503.16(a)(2). Hand finishing shall be limited as previously stated solely for the purpose of facilitating a more timely application of the curing protection. In addition the requirements of 503.16(a)(3)a. and 503.16(a)(4) will be waived.

Revise the Second Paragraph of Article 503.06(b) to read as follows.

"When the Contractor uses cantilever forming brackets on exterior beams or girders, additional requirements shall be as follows."

Revise Article 503.06(b)(1) to read as follows.

"(1) Bracket Placement. The spacing of brackets shall be per the manufacturer's published design specifications for the size of the overhang and the construction loads anticipated. The resulting force of the leg brace of the cantilever bracket shall bear on the web within 6 inches (150 mm) of the bottom flange of the beam or girder."

Revise Article 503.06(b)(2) to read as follows.

"(2) Beam Ties. The top flange of exterior steel beams or girders supporting the cantilever forming brackets shall be tied to the bottom flange of the next interior beam. The top flange of exterior concrete beams supporting the cantilever forming brackets shall be tied to the top flange of the next interior beam. The ties shall be spaced at 4 ft (1.2 m) centers. Permanent cross frames on steel girders may be considered a tie. Ties shall be a minimum of 1/2 inch (13 mm) diameter threaded rod with an adjusting mechanism for drawing the tie taut. The ties shall utilize hanger brackets or clips which hook onto the flange of steel beams. No welding will be permitted to the structural steel or stud shear connectors, or to reinforcement bars of concrete beams, for the installation of the tie bar system. After installation of the ties and blocking, the tie shall be drawn taut until the tie does not vary from a straight line from beam to beam. The tie system shall be approved by the Engineer."

Revise Article 503.06(b)(3) to read as follows.

"(3) Beam Blocks. Suitable beam blocks of 4 in x 4 in (100 x 100 mm) timbers or metal structural shapes of equivalent strength or better, acceptable to the Engineer, shall be wedged between the webs of the two beams tied together, within 6 inches (150 mm) of the bottom flange at each location where they are tied. When it is not feasible to have the resulting force from the leg brace of the cantilever brackets transmitted to the web within 6 inches (150 mm) of the bottom flange, then additional blocking shall be placed at each bracket to transmit the resulting force to within 6 inches (150 mm) of the bottom flange of the next interior beam or girder."

Delete the last paragraph of Article 503.06(b).

MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES

Effective: October 4, 2016 Revised: March 1, 2019

Description. This work shall consist of furnishing and placing a membrane waterproofing system on the top slab and sidewalls, or portions thereof, for buried structures as detailed on the contract plans.

All membrane waterproofing systems shall be supplied by qualified producers. The Department will maintain a list of qualified producers.

Materials. The materials used in the waterproofing system shall consist of the following.

(a) Cold-applied, self-adhering rubberized asphalt/polyethylene membrane sheet with the following properties:

Physical Properties	
Thickness ASTM D 1777 or D 3767	60 mils (1.500 mm) min.
Width	36 inches (914 mm) min.
Tensile Strength, Film ASTM D 882	5000 lb./in^2 (34.5 MPa) min.
Pliability [180° bend over 1" inch (25 mm) mandrel @ -20 °F (-29 °C)] ASTM D 146 (Modified) or D1970	No Effect
Puncture Resistance-Membrane ASTM E 154	40 lb. (178 N) min.
Permeability (Perms) ASTM E 96, Method B	0.1 max.
Water Absorption (% by Weight) ASTM D 570	0.2 max.
Peel Strength ASTM D 903	9 lb./in (1576 N/m) min.

(b) Ancillary Materials: Adhesives, Conditioners, Primers, Mastic, Two-Part Liquid Membranes, and Sealing Tapes as required by the manufacturer of the membrane and film for use with the respective membrane waterproofing system.

Construction. The areas requiring waterproofing shall be prepared and the waterproofing shall be installed in accordance with the manufacturer's instructions. The Contractor shall not install any part of a membrane waterproofing system in wet conditions, or if the ambient or concrete surface temperature is below 40° (4° C), unless allowed by the Engineer.

Surfaces to be waterproofed shall be smooth and free from projections which might damage the membrane sheet. Projections or depressions on the surface that may cause damage to the membrane shall be removed or filled as directed by the Engineer. The surface shall be power

washed and cleaned of dust, dirt, grease, and loose particles, and shall be dry before the waterproofing is applied.

The Contractor shall uniformly apply primer to the entire area to be waterproofed, at the rate stated in the manufacturer's instructions, by brush, or roller. The Contractor shall brush out primer that tends to puddle in low spots to allow complete drying. The primer shall be cured according to the manufacturer's instructions. Primed areas shall not stand uncovered overnight. If membrane sheets are not placed over primer within the time recommended by the manufacturer, the Contractor shall recoat the surfaces at no additional cost to the Department.

The installation of the membrane sheet to primed surfaces shall be such that all joints are shingled to shed water by commencing from the lowest elevation of the buried structure's top slab and progress towards the highest elevation. The membrane sheets shall be overlapped as required by the manufacturer. The Contractor shall seal with mastic any laps that were not thoroughly sealed. The membrane shall be smooth and free of wrinkles and there shall be no depressions in horizontal surfaces of the finished waterproofing. After placement, exposed edges of membrane sheets shall be sealed with a troweled bead of a manufacturer's recommended mastic, or two-part liquid membrane, or with sealing tape.

Sealing bands at joints between precast segments shall be installed prior to the waterproofing system being applied. Where the waterproofing system and sealing band overlap, the installation shall be planned such that water will not be trapped or directed underneath the membrane or sealing band.

Care shall be taken to protect and to prevent damage to the waterproofing system prior to and during backfilling operations. The waterproofing system shall be removed as required for the installation of slab mounted guardrails and other appurtenances. After the installation is complete, the system shall be repaired and sealed against water intrusion according to the manufacturer's instructions and to the satisfaction of the Engineer.

Replace the last paragraph of Article 540.06 Precast Concrete Box Culverts and replace with:

> Handling holes shall be filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation nor project above the outside surface to the extent that may cause damage to the membrane. When metal lifting inserts are used, their sockets shall be filled with mastic or mortar compatible with the membrane.

Method of Measurement. The waterproofing system will be measured in place, in square yards (square meters) of the concrete surface to be waterproofed.

Basis of Payment. This will work will be paid for at the contract unit price, per square yard (square meter) for MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES.

HOT DIP GALVANIZING FOR STRUCTURAL STEEL

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

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

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

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

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

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

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

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

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

Surface Preparation and Hot Dip Galvanizing

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

Cleaning Structural Steel. If rust, mill scale, dirt, oil, grease or other foreign substances have accumulated prior to galvanizing, steel surfaces shall be cleaned by a combination of caustic cleaning and cleaning according to SSPC-SP8 (Pickling).

Special attention shall be given to the cleaning of corners and reentrant angles.

Surface Preparation. A flux shall be applied to all steel surfaces to be galvanized. Any surfaces which will receive field-installed stud shear connectors shall not be galvanized within 2 in. (50 mm) of the stud location. Either the entire area receiving studs or just individual stud locations may be left ungalvanized. The following steel surfaces of bearings shall not be galvanized: stainless steel surfaces, surfaces which will be machined (except for fixed bearing sole plates), and surfaces which will have TFE, elastomer, or stainless steel parts bonded to them.

The cleaned surfaces shall be galvanized within 24 hours after cleaning, unless otherwise authorized by the Engineer.

Application of Hot Dip Galvanized Coating. Steel members, fabrications and assemblies shall be galvanized by the hot dip process in the shop according to AASHTO M 111.

Bolts, nuts, and washers shall be galvanized according to ASTM F 2329.

All steel shall be safeguarded against embrittlement according to ASTM A 143. Water quenching or chromate conversion coating shall not be used on any steel work that is to be painted. All galvanized steel work shall be handled in such a manner as to avoid any mechanical damage and to minimize distortion.

Beams and girders shall be handled, stored and transported with their webs vertical and with proper cushioning to prevent damage to the member and coating. Members shall be supported and externally stiffened during galvanizing to prevent permanent distortion.

Hot Dip Galvanized Coating Requirements. Coating weight, surface finish, appearance and adhesion shall conform to requirements of ASTM A 385, ASTM F2329, AASHTO M 111 or AASHTO M 232, as appropriate.

Any high spots of zinc coating, such as metal drip lines and rough edges, left by the galvanizing operation in areas that are to be field connected or in areas that are to be painted shall be removed by cleaning per SSPC-SP2 (Hand Tool Cleaning) or SSPC-SP3 (Power Tool Cleaning). The zinc shall be removed until it is level with the surrounding area, leaving at least the minimum required zinc thickness.

Shop assemblies producing field splices shall provide 1/8 in. (3 mm) minimum gaps between ends of members to be galvanized. At field splices of beams or girders, galvanizing exceeding 0.08 in. (2 mm) on the cross-sectional (end) face shall be partially removed until it is 0.04 in. to 0.08 in. (1 to 2 mm) thick.

Testing of Hot Dip Galvanized Coating. Inspection and testing of hot dip galvanized coatings shall follow the guidelines provided in the American Galvanizers Association publication "*Inspection of Products Hot Dip Galvanized After Fabrication".* Sampling, inspection, rejection and retesting for conformance with requirements shall be according to AASHTO M 111 or AASHTO M 232, as applicable. Coating thickness shall be measured according to AASHTO M 111, for magnetic thickness gage measurement or AASHTO M 232, as applicable.

All steel shall be visually inspected for finish and appearance.

Bolts, nuts, washers, and steel components shall be packaged according to ASTM F 2329. Identity of bolts, nuts and washers shall be maintained for lot-testing after galvanizing according to Article 505.04(f)(2) for high strength steel bolts.

A notarized certificate of compliance with the requirements listed herein shall be furnished. The certificate shall include a detailed description of the material processed and a statement that the processes used met or exceeded the requirements for successful galvanizing of the surface, where applicable. The certificate shall be signed by the galvanizer.

Repair of Hot Dip Galvanized Coating. Surfaces with inadequate zinc thickness shall be repaired in the shop according to ASTM A 780 and AASHTO M 111.

Surfaces of galvanized steel that are damaged after the galvanizing operation shall be repaired according to ASTM A 780 whenever damage exceeds 3/16 in. (5 mm) in width and/or 4 in. (100 mm) in length. Damage that occurs in the shop shall be repaired in the shop. Damage that occurs during transport or in the field shall be repaired in the field.

Connection Treatment. All bolt holes shall be reamed or drilled to their specified diameters after galvanizing. All bolts shall be installed after galvanizing.

Surface Preparation and Painting

Surface Preparation. When galvanized steel surfaces are specified to be painted they shall be clean and free of oil, grease, and other foreign substances. Surface preparation necessary to provide adequate adhesion of the coating shall be performed according to ASTM D6386. Surface preparation shall include, but not be limited to the following:

- All galvanized steel surfaces that are to be painted shall be cleaned according to SSPC-SP1 (Solvent Cleaning). After cleaning, all chemicals shall be thoroughly rinsed from the surface with a suitable solvent. The steel shall be allowed to completely dry prior to coating application.

- All galvanized steel surfaces that are to be painted shall be checked for the presence of chromate conversion coating according to ASTM D 6386 Appendix X1. Surfaces where chromate conversion coating is found shall be cleaned according to the same appendix and blown down with clean, compressed air according to ASTM D 6386 Section 6.1.

- All galvanized steel surfaces that are to be painted shall be checked for the presence of wet storage stain. Surfaces where wet storage stain is found shall be cleaned, rinsed and completely dried according to ASTM D 6386 Section 6.2.

- Following galvanizing, thickness readings shall verify the acceptable thickness of the galvanizing according to AASHTO M111/ASTM A123.

Paint Requirements. The paint materials (epoxy intermediate coat and aliphatic urethane finish coat) shall meet the requirements of the Articles 1008.05(d) and (e) of the Standard Specification.

All paint materials for the shop and field shall be supplied by the same manufacturer, and samples of components submitted for approval by the Department, before use.

Paint storage, mixing, and application shall be according to Section 506 of the Standard Specifications and the paint manufacturer's written instructions and product data sheets. In the event of a conflict the Contractor shall advise the Engineer and comply with the Engineer's written resolution. Until a resolution is provided, the most restrictive conditions shall apply.

Shop Application of the Paint System. The areas to be painted shall receive one full coat of an epoxy intermediate coat and one full coat of an aliphatic urethane finish coat. The film thickness of each coat shall be according to Article 506.09(f)(2).

Construction Requirements. The contact surfaces of splice flange connections (mating flange faces and areas under splice bolt heads and nuts) shall be free of paint prior to assembly. If white rust is visible on the mating flange surfaces, the steel shall be prepared by hand wire brushing or brush-off blasting according to SSPC-SP7. Power wire brushing is not allowed.

After field erection, the following areas shall be prepared by cleaning according to SSPC-SP1 (Solvent Cleaning), tie- or wash-coated if applicable, and then painted or touched up with the paint specified for shop application (the intermediate coat and/or the finish coat):

- exposed unpainted areas at bolted connections
- areas where the shop paint has been damaged
- any other unpainted, exposed areas as directed by the Engineer.

Special Instructions. Painting Date/System Code. At the completion of the work, the Contractor shall stencil in contrasting color paint the date of painting the bridge and the paint type code from the Structure Information and Procedure Manual for the system used according to Article 506.10(i). The code designation for galvanizing is "V". If painting of the structural steel is not specified then the word "PAINTED" may be omitted, the month and year shall then correspond to the date the stencil is applied.

Basis of Payment. The cost of all surface preparation, galvanizing, painting and all other work described herein shall be considered as included in the unit price bid for the applicable pay items to be galvanized and painted, according to the Standard Specifications.

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."

CROSSHOLE SONIC LOGGING TESTING OF DRILLED SHAFTS

Effective: April 20, 2016 Revised: March 24, 2023

Description. This work shall consist of furnishing and installing materials and equipment necessary to install access ducts in all drilled shafts of structures identified on the plans, and to perform Crosshole Sonic Logging (CSL) testing, analysis, and reports only on selected drilled shafts where specified and as directed by the Engineer. This work shall be according to Illinois Modified ASTM D6760. This work includes investigating anomalies identified in the CSL data and grouting of all access ducts after testing and analysis.

Materials. Materials shall be according to the following.

(a) Nonshrink Grout (Note 1) ……1024.02
(b)

Note 1. Grout shall attain a minimum strength equal to the required strength of the drilled shaft concrete at 14 days.

Qualifications. A consulting firm experienced in CSL testing shall conduct this work. The CSL consulting firm shall be a company independent from the Contractor with a minimum of 3 years of experience in performing CSL testing of drilled shafts. The individual evaluating the CSL data and preparing the report shall be an Illinois Licensed Professional Engineer and have experience on a minimum of 5 CSL testing projects.

The name, contact information, and qualifications of the CSL consulting firm, including the names and experience of the individual employees performing and analyzing the test results and preparing the report, shall be submitted to the Engineer at least 30 days prior to drilled shaft construction.

Construction. Access ducts shall be placed in all drilled shafts identified on the plans according to Illinois Modified ASTM D6760. The completed rebar cage with the required access ducts shall be lifted to prevent cage bending and damage to the access ducts and/or joints. Joints of the access ducts shall be watertight.

The Engineer will determine which drilled shafts shall have CSL testing performed after the concrete has been placed, and may direct additional tests, if necessary, due to problems encountered or observed during drilled shaft construction.

After permission is given by the Engineer, the access ducts shall be grouted. The grout shall be placed with a pump, starting at the bottom of each access duct.

Superimposed loads, either dead or live, shall not be applied to a drilled shaft until CSL testing is completed, CSL reports have been submitted, any necessary testing and repairs have been completed, access ducts have been grouted, and permission has been granted by the Engineer.

Reports. Reports shall be according to Illinois Modified ASTM D6760. Reports shall identify, label, and discuss anomalies, potential flaws, or defects. If none are identified, that shall be stated in the report. An anomalous zone shall be defined as an area where the First Arrival Time (FAT) increase exceeds 20 percent of the local average FAT value of the shaft concrete at the time of testing. Reports shall discuss recommendations for additional investigation or testing of anomalous zones identified. Reports shall give an overall assessment of the constructed shaft quality based on the data and information analyzed. Reports shall be submitted to the Bureau of Bridges and Structures, or the local agency owner, for review and acceptance.

Anomalies. If anomalies are identified, they shall be investigated by coring or other methods approved by the Engineer. If coring is to be performed, the Engineer will determine the location of the core(s).

Remediation of Drilled Shaft Defects. When the Engineer determines a defect is present, the Engineer will direct the Contractor to repair the defect. The Contractor shall submit a plan to repair the defect to the Engineer for approval. No compensation will be made for remedial work, or losses, or damage, due to remedial work of drilled shafts found defective or not in accordance with the drilled shaft specifications or plans. Modifications to the structure shall be designed, detailed, and sealed by an Illinois Licensed Structural Engineer.

Method of Measurement. Installation and grouting of access ducts will be measured for payment by the linear foot of drilled shafts with access ducts. Each individual access duct will not be measured for payment.

CSL testing, analysis, and reporting will be measured for payment by each drilled shaft foundation tested.

Investigation of anomalies will not be measured for payment.

Basis of Payment. Installation and grouting of access ducts will be paid for at the contract unit price per foot for CROSSHOLE SONIC LOGGING ACCESS DUCTS. CSL testing, analysis, and reporting will be paid for at the contract unit price per each for CROSSHOLE SONIC LOGGING TESTING.

ILLINOIS MODIFIED ASTM D6760
Effective Date: April 20, 2016
Revised Date: August 4, 2023

Standard Test Method for
Integrity Testing of Concrete Deep Foundations by Ultrasonic Crosshole Testing
Reference ASTM D6760-16

<table>
<tr><th>ASTM SECTION</th><th>Illinois Modification</th></tr>
<tr><td>1.7</td><td>Revise this section as follows:
Units—The values stated in either English units or SI units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the standard. Reporting of test results in units other than English shall not be regarded as nonconformance with this standard.</td></tr>
<tr><td>3.1.1</td><td>Revise this section as follows:
access ducts, n – preformed steel tubes or drilled boreholes, placed in the concrete to allow probe entry in pairs to measure pulse transmission in the concrete between the probes.</td></tr>
<tr><td>5.2.1</td><td>Revise the first sentence of this section as follows:
For crosshole tests, the access ducts shall be made of steel to prevent debonding of the access duct from the concrete resulting in an anomaly.</td></tr>
<tr><td>5.2.2</td><td>Delete this section.</td></tr>
<tr><td>6.1</td><td>Revise the second sentence of this section as follows:
The access ducts shall be mild steel with internal diameter of 38 mm (1.5 in.).
Delete the third, fourth, and fifth sentences of this section.</td></tr>
<tr><td>7.1.1</td><td>Revise this section as follows:
The access ducts shall be installed during construction of the drilled shaft.
For drilled shafts foundations, access ducts shall be provided according to the following table.
<table>
<tr><th>Reinforcing Cage Diameter (feet)</th><th>Number of Access Ducts</th></tr>
<tr><td>≤ 5.0</td><td>4</td></tr>
<tr><td>5.1 to 7.0</td><td>6</td></tr>
<tr><td>> 7.0</td><td>8</td></tr>
</table>
Access ducts shall be spread equally around the perimeter and spaced at an equal distance from the axis.

Delete Fig. 4. In Section 7.1.1.</td></tr>
</table>

ILLINOIS MODIFIED ASTM D6760
Effective Date: April 20, 2016
Revised Date: August 4, 2023

Standard Test Method for
Integrity Testing of Concrete Deep Foundations by Ultrasonic Crosshole Testing
Reference ASTM D6760-16

7.1.2	Revise the second sentence of this section as follows: The exterior duct surface shall be free from contamination (for example, oil, dirt, loose rust, mill scale, etc.) to ensure a good bond between the duct surface and the surrounding concrete.
7.1.3	Delete the third sentence of this section.
7.2	Revise the first sentence of this section as follows: The access ducts shall be installed such that the bottom of the access ducts are at the bottom of the concrete deep foundation element so that the bottom of the drilled shaft can be tested. Revise the sixth sentence of this section as follows: Access ducts shall be filled with water prior to concrete placement to assure good bonding of the concrete to the duct after the concrete cools. The access ducts shall be kept full of water until the ducts are grouted.
7.3	Revise the first sentence of this section as follows: In cases where drilled shafts to be tested have access ducts that do not permit passage of the probes, do not retain water, are not plumb, are debonded from the concrete, or cannot be used for testing for other reasons, drilled boreholes shall be used to provide probe access.
7.4.2	Revise the second sentence of this section as follows: The tests shall be performed no later than 21 days after concrete casting.
7.6	Delete this section.
7.8.1	Revise the first sentence of this section as follows: If the ultrasonic profile indicates an anomaly, then the suspect anomaly zone shall be further investigated by special test procedures such as fan shaped tests, tests with the probes raised at a fixed offset distance, or other tomographical techniques.
7.8.2	Delete Note 4 of this section.
8.1.1 (New Section)	Add as follows: Test data and results shall be reported in US Customary units.

THERMAL INTEGRITY PROFILE TESTING OF DRILLED SHAFTS

Effective: April 20, 2016 Revised: March 24, 2023

Description. This work shall consist of furnishing and installing materials and equipment necessary to perform Thermal Integrity Profile (TIP) testing of drilled shafts according to Illinois Modified ASTM D7949. Data collection using embedded thermal sensors shall be performed on all drilled shafts identified on the plans. Analysis and reports shall be performed only on selected drilled shafts where specified and as directed by the Engineer. This work includes collection, analysis, and storage of the TIP data, preparation of reports summarizing the TIP data, and investigating anomalies identified in the TIP data.

Qualifications. A consulting firm experienced in TIP testing shall direct this work. The TIP consulting firm shall be a company independent from the Contractor with a minimum of 3 years of experience performing TIP testing of drilled shafts. The individual evaluating the TIP data and preparing the report shall be an Illinois Licensed Professional Engineer and have experience on a minimum of 5 TIP testing projects.

The name, contact information, and qualifications of the TIP consulting firm, including the names and experience of the individual employees performing and analyzing the test results and preparing the report, shall be submitted to the Engineer at least 30 days prior to drilled shaft construction.

Training. The TIP Consultant shall provide on-site instruction to the Contractor on the installation of the embedded thermal sensors and data recording devices, use of the data recording apparatus, use of the processing and display apparatus, and methods of transferring data to the TIP Consultant.

Construction. Embedded thermal sensors shall be installed on all drilled shafts identified on the plans according to the Illinois Modified ASTM D7949. Embedded thermal sensors shall be checked for functionality after the reinforcing cage has been placed in the shaft excavation. Any embedded thermal sensors that are not functioning correctly shall be removed and replaced.

In wet installations, embedded thermal sensors shall have enough lead in wire to allow for connection of the recording apparatus above the water.

The TIP data shall be recorded and stored for each shaft where embedded thermal sensors are installed. Analysis and reports shall be performed only on selected drilled shafts where specified and as directed by the Engineer. The Engineer may direct additional analysis and reports, if necessary, due to problems encountered or observed during drilled shaft construction. The Engineer will determine which shaft(s) shall have an analysis and report prepared. All drilled shafts that do not require an analysis and report shall have the raw data submitted according to Illinois Modified ASTM D7949.

Superimposed loads, either dead or live, shall not be applied to a drilled shaft until TIP testing is completed, TIP reports have been submitted, any necessary testing and repairs have been completed, and permission has been granted by the Engineer.

Reports. Reports shall be according to Illinois Modified ASTM D7949. Reports shall identify, label, and discuss anomalies, potential flaws, or defects. If none are identified, that shall be stated in the report. Reports shall discuss recommendations for additional investigation or testing of anomalies, flaws, or defects identified. Reports shall give an overall assessment of the constructed shaft quality based on the data and information analyzed. Reports shall be submitted to the Bureau of Bridges and Structures, or local agency owner, for review and acceptance.

Anomalies. If anomalies are identified, they shall be investigated by coring or other methods approved by the Engineer. If coring is to be performed, the Engineer will determine the location of the core(s).

Remediation of Drilled Shaft Defects. When the Engineer determines that a defect is present, the Engineer will direct the Contractor to repair the defect. The Contractor shall submit a plan to repair the defect to the Engineer for approval. No compensation will be made for remedial work, or losses, or damage, due to remedial work of drilled shafts found defective or not in accordance with the drilled shaft specifications or plans. Modifications to the structure shall be designed, detailed, and sealed by an Illinois Licensed Structural Engineer.

Method of Measurement. TIP testing materials, equipment, and data collection will be measured for payment by the linear foot of drilled shafts instrumented. Each individual embedded thermal sensor wire will not be measured for payment.

TIP test analysis and reporting will be measured for payment for each drilled shaft where analysis and reporting is specified or directed by the Engineer.

Investigation of anomalies will not be measured for payment.

Basis of Payment. TIP materials, equipment, and data collection will be paid for at the contract unit price per foot for THERMAL INTEGRITY PROFILE DATA COLLECTION. TIP test analysis and reporting will be paid for at the contract unit price per each for THERMAL INTEGRITY PROFILE TESTING.

ILLINOIS MODIFIED ASTM D7949, Method B
Effective Date: April 20, 2016
Revised Date: August 4, 2023

Standard Test Method for
Thermal Integrity Profiling of Concrete Deep Foundations, Method B
Reference ASTM D7949-14

The testing shall be per ASTM D7949-14, Method B, except as modified herein. All references to the Method A procedure shall be disregarded.

<table>
<tr><th>ASTM SECTION</th><th>Illinois Modification</th></tr>
<tr><td>1.6</td><td>Revise this section as follows:
Units—The values stated in either English units or SI units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the standard. Reporting of test results in units other than English units shall not be regarded as nonconformance with this standard.</td></tr>
<tr><td>3.2</td><td>Add the following to this section:
3.2.12 anomaly, n – irregularity or series of irregularities observed in a thermal profile indicating a possible flaw.</td></tr>
<tr><td>6.1, 6.2, 6.2.1, 6.3.1, 6.3.2, 6.3.3, & 6.3.4</td><td>Delete these sections.</td></tr>
<tr><td>6.4.1</td><td>Revise the first sentence of this section as follows:
The recording apparatus shall record depth and temperature data from each group of embedded thermal sensors at a depth interval of no greater than 300 mm.</td></tr>
<tr><td>7.1</td><td>Revise this section as follows:
The embedded thermal sensors shall be installed during construction of the foundation element. The location plan shall provide access locations for embedded thermal sensors according to the following table.

<table><tr><th>Reinforcing Cage Diameter (feet)</th><th>Number of access locations for embedded thermal sensors</th></tr><tr><td>≤ 5.0</td><td>4</td></tr><tr><td>5.1 to 7.0</td><td>6</td></tr><tr><td>7.1 to 9.0</td><td>8</td></tr><tr><td>9.1 to 11.0</td><td>10</td></tr><tr><td>11.1 to 13.0</td><td>12</td></tr><tr><td>> 13.0</td><td>14</td></tr></table>
Access locations for embedded thermal sensors shall be spread equally around the perimeter and spaced at an equal distance from the axis, and the sensor levels shall be the same for all of the access locations with a maximum depth interval between levels of 300 mm. Fig 3 illustrates several plan layout configurations for the access locations.</td></tr>
</table>

ILLINOIS MODIFIED ASTM D7949, Method B
Effective Date: April 20, 2016
Revised Date: August 4, 2023

Standard Test Method for
Thermal Integrity Profiling of Concrete Deep Foundations, Method B
Reference ASTM D7949-14

ASTM SECTION	Illinois Modification
7.1.2	Revise this section as follows: Temperature measurements shall be performed starting at the beginning of concrete placement in the element and terminating a minimum of 12 hours after the peak temperature of the concrete has been reached. The tests should be performed, analyzed, and reported on the selected shaft(s) at the time of ½ peak temperature, and at the time of peak temperature of the concrete.
7.2, 7.2.1, 7.2.2, 7.2.3, & 7.2.4	Delete these sections.
7.3.1	Revise the third sentence of this section as follows: Embedded thermal sensors shall extend to the bottom of the foundation element.
7.4, 7.4.1, 7.4.2, 7.4.3, 7.4.4, 7.4.5, 7.4.6, 7.4.7, 7.4.8, & 7.4.9	Delete these sections.
7.5.3	Revise this section as follows: Connect each embedded thermal sensor to the Recording Apparatus. Start recording temperature data to the nearest 0.1°C prior to concrete placement. Record temperatures periodically at intervals not to exceed 15 minutes. Testing shall be terminated only after a minimum of 12 hours has elapsed after the peak temperature of the concrete has been reached.
7.6.1	Delete this section.
8.1.1 (New Section)	Add as follows: Test data and results shall be reported in US Customary units.
8.5 (New Section)	*Raw Data Submittal* – The raw temperature data for the peak temperature time and ½ the peak temperature time shall be provided to the Engineer for each drilled shaft where data was collected. The data shall be clearly labeled and organized in a standard computer spreadsheet format. The data shall be provided in a table and in a graph.

PREFORMED BRIDGE JOINT SEAL

Effective: December 21, 2016 Revised: June 28, 2024

Description. This work shall consist of furnishing all labor, equipment and materials necessary to prepare the joint opening and install preformed bridge joint seal(s) at the locations specified. Unless otherwise detailed on the plans or specified herein, the maximum rated movement for this joint type is 4 inches (100 mm).

Materials: Unless otherwise specified, one of the following prefabricated joint seals will be permitted.

(a) Preformed Pre-compressed, Silicone Coated, Self-Expanding Sealant System. This Sealant system shall be comprised of three components: 1) cellular polyurethane foam impregnated with hydrophobic 100% acrylic, water-based emulsion, factory coated with highway-grade, fuel resistant silicone; 2) field-applied epoxy adhesive primer, 3) field-injected silicone sealant bands.

The preformed, pre-compressed silicone joint seal shall, as a minimum, be according to the following:

- The joint seal shall be held in place by a non-sag, high modulus silicone adhesive.
- The joint seal shall be compatible with the epoxy and header material.
- The joint seal shall withstand the effects of vertical and lateral movements, skew movements and rotational movement without adhesive or cohesive failure.
- The joint seal shall be designed so that, the material is capable of movement of +50%, -50% (100% total) of nominal material size. The gland shall not contain any open, unsealed joints along its length it its final condition.
- Changes in plane and direction shall be executed using factory fabricated transition assemblies fabricated to the angle(s) specified on the plans. The transitions shall be watertight at the inside and outside corners through the full movement of the product.
- The depth of the joint shall be recessed 3/4 in. (19 mm) below the riding surface throughout the normal limits of joint movement.
- The joint seal shall be resistant to ultraviolet rays.
- The joint seal shall be resistant to abrasion, oxidation, oils, gasoline, salt, and other materials that may be spilled on or applied to the surface.
- The manufacturer shall certify that the joint composition shall be free of any waxes or wax compounds; asphalts or asphalt compounds.

The joint material shall meet the following physical properties:

Property	Requirement	Test Method
Tensile Strength of Silicone Coating (min)	140 psi	ASTM D 412
UV Resistance of Joint System	No Changes--2000 Hours	ASTM G155-00A
Density of Cellular Polyurethane Foam (Unconfined)	4.0 lb/ cu ft (200kg/cu m)	ASTM D545
Heat Aging Effects (Silicone Coating)	No cracking, chalking	ASTM C 792
Joint System Operating temp range (min)	-40° F to 185° F	ASTM C 711

The adhesive shall be a two-component, 100% solid, modified epoxy meeting the requirements of ASTM C881, Type I, Grade 3, Class B & C. The adhesive shall also have the following properties:

Property	Requirement	Test method
Tensile Strength	2,500 psi (24 MPa) min.	ASTM D638
Compressive Strength	7000 psi (48 MPa) min.	ASTM D695
Bond Strength (Dry Cure)	2000 psi (28MPa) min	ASTM C882
Water Absorption	0.1% by weight	ASTM D570

The silicone band adhesive shall have the following properties:

Property	Requirement	Test Method
Movement Capability	+50/-50%	ASTM C 719
Elongation at Break	>600%	ASTM D 5893
Slump	≤=0.3"	ASTM D 2202
Hardness (Shore A) max.	20	ASTM C 661
Tack free time (max)	60 minutes	ASTM C 679
Heat Aging Effects	No cracking, chalking	ASTM C 792
Resilience	≥ 75%	ASTM D5329
Bond	0% Adhesive or Cohesive Failure after 5 cycles @100%extension	ASTM D 5329

(b) Preformed Silicone Joint Seal. The preformed silicone joint seal used for this item shall conform to the following specifications:

Table 1
Physical Properties of Preformed Silicone Gland

Property	Requirement	Test Method
Rated Movement Capability	+2 ¼ inch total	N/A
Tensile Strength, psi.	1000 min	ASTM D 412
Elongation	400% min	ASTM D 412
Tear (die B)	100 ppi. min	ASTM D 624
Hardness Durometer (Shore A).	55 +/- 5 max	ASTM D 2240
Compression set at 212°F, 70 hrs	30% max	ASTM D 395
Heat Aged Properties	5pt max loss on Durometer	ASTM D 573
Tensile and Elongation % Loss	10 % max	

The color of the preformed silicone seal shall be black, made by the addition of Carbon Black fillers which increases UV resistance, tensile strength, and abrasion wear properties.

The locking adhesive shall be non-sag, high modulus silicone adhesive conforming to the following specifications:

Table 2
Physical Properties of the Silicone Locking Adhesive

Property	Requirement	Test Method
Tensile Strength, psi.	200 min	ASTM D 412
Elongation, %	450 min	ASTM D 412
Tack Free Time, minutes.	20 max.	ASTM C 679
Cure Time ¼" bead, hrs	24 max	ASTM C 679
Resistance to U.V.	No cracking, chalking,or degradation	ASTM C793
VOC (g/L)	55	ASTM D 3960

Any rips, tears, or bond failure will be cause for rejection.

The two-part epoxy primer shall be supplied for application to the vertical faces of the joint opening. The supplied primer shall be equally as effective when bonded to concrete or steel. This primer shall meet the following criteria:

Table 3
Physical Properties of Preformed Silicone Joint System Primer

Property	Requirement	Test Method
Viscosity (cps)	44	ASTM D 2196
Color	Light Amber	Visual
Solids (%)	41	ASTM D 4209
Specific Gravity	0.92	ASTM D 1217
Product Flash Point (◦F, T.C.C.)	48	ASTM D 56
Package Stability	N/A	One year in tightly sealed containers
Cleaning	N/A	Mineral Spirits
VOC (g/L)	520	ASTM D 3960

(c) Preformed Inverted EPDM Joint Seal. The preformed inverted EPDM joint seal used for this item shall conform to the following specifications:

Table 1
Physical Properties of Preformed Silicone Gland

Property	Requirement	Test Method
Rated Movement Capability	Up To 5 inch total	N/A
Tensile Strength, psi.	1200 psi min	ASTM D 412
Elongation	400 % min	ASTM D 412
Tear (Die C)	150 pli. min	ASTM D 624
Durometer Content	50 +/- 5 max	ASTM D 2240
Water Resistance (70 hrs @ 100c)	10% max	ASTM D 471
Ozone Resistance	100 min	ASTM D 1171
Color	Black	Visual

Table 2
Physical Properties of the V-Epoxy-R

V-Epoxy-R adhesive meets the requirements of ASTM C881 Type III, Grade 2. The adhesive shall also have the following properties:

Property	Requirement	Test Method
Color	Gray	Visual
Viscosity	45,000 CP (typ.)	N/A
Gel Time (minutes)	30 min.	ASTM C 881
Shelf Life (Separate Sealed Containers)	12 Months	N/A
Resistance to U.V.	No cracking, chalking,or degradation	ASTM C793
VOC (g/L)	55	ASTM D 3960

Any rips, tears, or bond failure will be cause for rejection.

(d) Bonded Preformed Joint Seal. This joint system shall consist of preformed elastomeric seal bonded to the side walls of the joint opening using an adhesive as specified by the Manufacturer of the joint seal.

The bonded preformed joint seal shall be according to Table 1 of ASTM D2628 with the following exceptions: Compression set shall not be over 40 percent when tested according to Method B (Modified) of ASTM D 395 after 70 hours at 212 ºF (100 ºC). The Compression-Deflection requirement will not apply to the bonded preformed joint seal.

The adhesive shall be epoxy base, dual component, which resists salt, diluted acids, alkalis, solvents, greases, oils, moisture, sunlight and weathering. Temperatures up to 200 ºF (93 ºC) shall not reduce bond strength. At 68 ºF (20 ºC), the bond strength shall be a minimum of 1000 psi (6.9 MPa) within 24 hours.

Any primers or cleaning solutions used on the faces of the joint or on the profile of the sides of the bonded preformed joint seal shall be supplied by the manufacturer of the bonded preformed joint seal.

Any additional installation materials and adhesive for splicing joint sections shall be as supplied by the manufacturer of the preformed joint seal.

The Contractor shall submit the Manufacturer's material certification documentation stating that their materials meet the applicable requirements of this specification for the joint seal(s) installed.

CONSTRUCTION REQUIREMENTS

General. The Contractor shall furnish the Engineer with the manufacturer's product information and installation procedures at least two weeks prior to installation.

The minimum ambient air temperature in which the joint seal can be installed is 40° F (4.4° C) and rising, except for bonded preformed joint seals which shall not be installed when temperatures below 50 ºF (10 ºC) are predicted within a 48-hour period.

The joint surface shall be completely dry before installing the Joint Seal. For newly placed concrete, the concrete shall be fully cured and allowed to dry out a minimum of seven additional

days prior to placement of the seal. Cold, wet, inclement weather will require an extended drying time.

The Joint Seal shall not be installed immediately after precipitation or if precipitation is forecasted for the day. Joint preparation and installation of Joint Seal shall be done during the same day.

Surface Preparation. Surface preparation shall be according to the joint seal manufacturer's written instructions.

After surface preparation is completed, the joint shall be cleaned of debris using compressed air with a minimum pressure of 90 psi (620 kPa). The air compressor shall be equipped with traps to prevent the inclusion of water and/or oil in the air line. The compressed air shall be according to the cleanliness requirements of ASTM D 4285.

When priming is required per the manufacturer's instruction, this operation shall immediately follow cleaning.

Joint Installation. The Joint installation shall be per the manufacturer's instructions; special attention shall be given to ensure the joint seal is properly recessed below the top of the riding surface as recommended by the manufacturer.

For bonded joint seals the seal shall be inserted into the joint and held tightly against both sides of the joint until sufficient bond strength has been developed to resist the expected expansion forces.

Opening to traffic. As these joint systems are supposed to be recessed below the top of the riding surface, there should be no restriction, based on the joint seal installation, on when these joints can be reopened to traffic.

Method of Measurement. The installed preformed joint seal will be measured for payment in feet (meters) measured along the centerline of joint, from out to out of the deck, no measurement will be made for joint material used to turn up into the parapet, sidewalk, or median.

Basis of Payment. The preformed bridge joint seal will be paid for at the contract unit price per foot (meter) for PREFORMED JOINT SEAL, of the design movement specified, rounded to the nearest half inch (13 mm).

ERECTION OF BRIDGE GIRDERS OVER OR ADJACENT TO RAILROADS

Effective: August 9, 2019

Description: In addition to the requirements of Article 504.06(d) and 505.08(e), the following shall apply.

The Contractor or sub-Contractor performing the erection of steel or concrete beams or girders over, or adjacent to (within 25 ft. of), active railroad tracks shall submit an erection plan to the Engineer for approval prior to starting the work.

Erection Plan: The Erection Contractor shall retain the services of an Illinois Licensed Structural Engineer for the completion of a project-specific erection plan. The structural engineer, herein referred to as the Erection Engineer, shall sign and seal the erection plan, drawings, and calculations for the proposed erection of the structural beams or girders.

The erection plan shall be complete in detail for all phases, stages, and conditions anticipated during erection. The erection plan shall include structural calculations and supporting documentation necessary to completely describe and document the means, methods, temporary support positions, and loads necessary to safely erect the structural members in conformance with the contract documents and as outlined herein. The erection plans shall address and account for all items pertinent to the erection including such items as sequencing, falsework, temporary shoring and/or bracing, girder stability, crane positioning and movement, means of access, pick points, girder shape, permissible deformations and roll, interim/final plumbness, cross frame/diaphragm placement and connections, bolting and anchor bolt installation sequences and procedures, and blocking and anchoring of bearings. The Erection Contractor shall be responsible for the stability of the partially erected structure during all phases of erection.

The erection plans and procedures shall be submitted to the Engineer for review and acceptance prior to starting the work. Review, acceptance and/or comments by the Department shall not be construed to guarantee the safety or final acceptability of the work or compliance with all applicable specifications, codes, or contract requirements, and shall neither relieve the Contractor of the responsibility and liability to comply with these requirements, nor create liability for the Department. Significant changes to the erection plan in the field must be approved by the Erection Engineer and accepted by the Engineer for the Department.

Basis of Payment: This work shall not be paid for separately but shall be included in the applicable pay items according to Article 504.08 or 505.13 of the Standard Specifications.

BAR SPLICERS, HEADED REINFORCEMENT

Effective: September 2, 2022
Revised: October 27, 2023

Add the following to Article 508.08(b):

When bar splicers are epoxy-coated, all damaged or uncoated areas near the threaded ends shall be coated with a two-part epoxy according to ASTM D 3963 (D 3963M). All threaded ends of Stage II construction threaded splicer bars shall be coated according to ASTM D 3963 or dipped in an epoxy-mastic primer prior to joining the Stage II construction threaded splicer bar to the threaded coupler.

Add the following Article 508.02 (d)

Bar Terminators ……1006.10(a)(1)h

Add the following paragraph after Article 508.08 (c):

Bar terminators are threaded, headed attachments to reinforcement to form headed reinforcement. When specified on the plans, a bar terminator shall be attached to the designated reinforcement for development.

Add the following 4th paragraph to Article 508.11:

Bar Terminators will be paid for at the contract unit price per each for BAR TERMINATORS.

Add the following to Article 1006.10(a)(1)g:

For bar splicers with welded connections between the threaded coupler and threaded rod, the Stage I construction threaded splicer bar shall be welded to the threaded coupler using an all-around fillet weld.

Add the following Article 1006.10(a)(1)h:

Bar Terminators. Designated bars shall use a bar terminator to form headed reinforcement. Headed reinforcement shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706, except the connection strength of the bar terminator to the reinforcement bar shall meet, in tension, at least 125 percent of the specified yield strength of the reinforcement bar. The bar terminator shall be on the Department's qualified product list.

When the reinforcement bar to receive the bar terminator is epoxy coated, the bar terminator shall also be epoxy coated according to ASTM A 775 (A 775M)

NOISE ABATEMENT WALL, GROUND MOUNTED

Effective: December 9, 2022 Revised: October 17, 2025

General. This work shall consist of furnishing the design, shop drawings, materials, post anchorage, and construction of ground mounted concrete noise abatement walls (noise walls) according to this Special Provision, the Contract Plans and/or as directed by the Engineer.

The noise abatement wall shall consist of precast concrete panels spanning between vertical posts supported by concrete drilled shaft foundations (ground mounted) as shown on the plans. Driven piles will not be allowed. The posts shall be steel or concrete, unless otherwise specified on the Contract Plans. The design, material, fabrication and construction shall comply with this Special Provision and the requirements specified by the noise wall supplier selected by the Contractor for use on this project. The walls shall have no omissions or gap except as detailed in the Contract Plans.

The Contractor shall verify the locations for the proposed ground mounted wall for conflicts and inform the Engineer in writing of any conflicts before realigning or redesigning the wall. The Contractor shall realign or redesign the wall to avoid any conflicts.

Post spacing shall avoid existing and proposed underground utilities and storm sewers.

Wall components shall be fabricated and erected to produce a precast concrete reflective noise wall system and/or an absorptive noise reduction system at the locations shown in the Contract Plans. The noise reduction system shall satisfy the acoustical requirements as specified on the Contract Plans. An absorptive noise reduction system may be used as an alternate to a reflective noise wall system. Substitution of alternate materials in lieu of precast concrete panels will not be allowed.

All appurtenances behind, in front of, under, over, mounted upon, or passing through the noise wall, such as drainage structures, fire hydrant access, highway signage, emergency access, utilities, and storm sewers shall be accounted for in design of the wall.

The noise walls shall be designed and constructed to extend to the minimum lines, grades and dimensions of the wall envelope, with no omissions or gaps, as shown on the Contract Plans and as directed by the Engineer.

Submittals. A complete wall and foundation design submittal, including design calculations for wall panels, posts, foundations, and all connections and shop drawings shall be submitted to the Department for review and approval no later than 90 days prior to beginning construction of the wall. Approval shall be contingent upon acceptance by the utilities and/or railroad companies involved. The time required for the preparation and review of these submittals shall be charged to the allowable contract time. Delays caused by untimely submittals or insufficient data will not be considered justifications for any time extensions. No additional compensation will be made for any additional material, equipment or other items found necessary to comply with the project specifications as a result of the Engineer’s review. The Contractor will be required to submit the necessary shop drawings. All submittals shall be prepared and sealed by an Illinois Licensed Structural Engineer.

Submittals shall include all structural calculations, details, dimensions, quantities and cross sections necessary for the construction of the noise abatement walls including but not be limited to:

(1) Structural design calculations for all structural members, foundations, and connections prepared and sealed by an Illinois Licensed Structural Engineer, and prints of shop drawings on reduced size 11 x 17 in. (275 x 425 mm) sheets in accordance with Article 505.03 and 1042.03(b) of the Standard Specifications. Each sheet shall provide adequate space for review and approval stamps at the lower right hand corner. Both lettering and details shall ensure legibility for review and reproduction. All drawings shall be completely titled according to the contract plans, including structure number, state contract number, route, section and county, and shall pertain to only one structure.

(2) A plan view of the wall indicating the stations and offsets required to locate the drilled shaft foundations. The proposed foundation diameter(s) and spacing(s) shall be indicated with all changes to the horizontal alignment shown. Each panel and post shall be numbered and any changes in type or size shall be noted. The centerline of any utilities passing under the wall and locations of expansion joints, access doors, lighting, signing, curb cuts, and drainage structures shall also be shown.

(3) An elevation view of the wall, indicating the elevations of the top of the posts and panels as well as the elevations of the bottom of the panels, tops of the shaft foundations, all steps in wall system, the finished grade line, and vertical clearances to existing utilities and storm sewers. Each post size and length, panel type and size, and foundation depth shall be designated.

(4) A typical cross section(s) that shows the panel, post, foundation, and the elevation relationship between existing ground conditions and the finished grade as well as slopes adjacent to the wall.

(5) All general notes required for constructing the wall.

(6) All details for the steps in the bottom of panels shall be shown. The bottom of the panels shall be located at or below the theoretical bottom of panel line shown on the Contract Plans. The theoretical bottom of panel line is assumed to be 8 in (200 mm) below the finished grade line at front face of the wall for ground mounted noise walls, unless otherwise shown on the Contract Plans.

(7) Tops of the panels and posts shall extend to or above the theoretical top of wall line shown on the Contract Plans. All panel tops shall be cast and placed horizontally with any changes in elevation accomplished by stepping adjacent panel sections at posts. Steps shall not exceed 2 ft (300 mm) in height.

(8) All panel types shall be detailed. The details shall show panel weight, orientation, all dimensions necessary to cast and/or fabricate each type of panel, the reinforcing steel, and location of post or foundation connection hardware as well as lifting devices embedded in the panels. The Noise Reduction Coefficient (NRC) of each panel of the absorptive face shall be noted. The NRC shall be applied to the entire panel face(s) as specified on the contract plans.

(9) All post types shall be detailed. The details shall show post weight, orientation, all dimensions necessary to cast and/or fabricate each type of post, the reinforcing steel, connecting plates, and anchorage details as well as lifting devices embedded in or attached to the posts. Post spacing for walls shall be limited to a distance that does not over stress the supporting structure.

(10) Details of wall panels with appurtenances attached to or passing through the wall, as shown on the contract plans, such as utilities, emergency access doors, framed openings, drainage structures, signs, etc. shall be shown. Any modifications to the design or location of these appurtenances to accommodate a particular system shall also be submitted.

(11) All architectural panel treatment, including color, texture and form liner patterns shall be shown. All joints shall be placed horizontal or vertical and shall be aligned with adjacent panels.

(12) The details for the connection between panels and posts as well as their connection to the foundation, shall be shown. Foundation details, including details showing the dimensions, reinforcement, and post anchorage system for the drilled shaft foundations, shall be shown. The method of securing the reinforcement in the foundation prior to concrete placement shall be shown.

(13) Testing, certifications and reports from independent laboratories documenting that the panel's sound Transmission Loss (TL) and NRC for the panel satisfy the criteria shown in the design criteria section of this specification. The testing results for the flame spread, smoke density and freeze-thaw/salt scaling requirements described in the materials section of this specification shall also be submitted. If unable to document panel and post deflections by calculations, reports of full scale testing shall be submitted to demonstrate the deflection criteria have been met.

(14) Manufacturer recommended installation requirements, a sequence of construction and a detailed bill of materials shall be included.

(15) The color of the wall panels and support posts identified by Federal Standard 595-B color number.

The Contractor shall deliver to the Department, a 2 ft x 2 ft (600 mm x 600 mm) precast concrete sample of the wall which contains the colors, textures and patterns proposed for use on the project for approval.

The samples shall be made at the same plant manufacturing the product for the noise walls under this contract and shall be representative of those which will be tested per this specification. Once the color sample is approved, a batch shall be designated by batch number and date and will remain the standard for the entire project.

The Contractor shall submit site access plans showing access and limits of the work areas for the installation of the wall. Any required traffic controls shall be according to the requirements in the plans or the special provision for TRAFFIC CONTROL PLAN.

The initial wall and foundation design submittal shall include a complete set of shop drawings and calculations. A set of drawings will be returned to the Contractor with any corrections indicated.

The Contractor shall do no work or ordering of materials for the structure until the Engineer has approved the submittal.

Design Criteria. The wall system shall be designed to withstand wind pressure, applied perpendicular to the panels in either direction, according to the AASHTO LRFD Bridge Design Specifications, Chapter 15, for the Design of Sound Barriers. The noise wall design life shall be 75 years unless otherwise noted. The wall system shall be designed to withstand active earth pressure and live load surcharge at locations indicated on the plans. The contractor shall be responsible for the structural adequacy of the panels, posts, foundations and connections as well as overall wall overturning stability. Prestressed and/or post tensioned panel concepts will not be permitted.

The factored Strength III and Strength V design wind loading shall be as specified on the plans but not less than 35 psf (1.7 kPa). The Service I factored design wind loading shall be as specified on the plans but not less than 15 psf. When a sound wall is also required to support earth pressures, the unfactored design active earth pressure shall be based on an equivalent fluid pressure of 55 pounds per cubic foot (880 kg/m^3) and a minimum live load surcharge resulting in an additional lateral pressure of 110 psf. The earth pressure fill height shall be defined by the proposed grade line elevation and the theoretical bottom of panel line.

The post shall be connected to the foundation by either embedding the post inside the concrete foundation shaft or by attaching the post to the foundation shaft with base plates and anchor bolts as required by design. Embedded posts shall extend into the shaft for the full length of the shaft. A maximum tolerance of 6” from the base of the shaft will be permitted, as permitted by the Engineer, to achieve uniform panel and post height alignment. For base plate and anchor bolt connections, the minimum number of anchor bolts per post shall be four 1 in. (M24) diameter bolts, with a minimum embedment depth of 18 in. (450 mm). The concrete shaft for base plate and anchor bolt type connections shall be reinforced. For embedded post type connections, the shaft need not be reinforced unless the minimum clear cover over the post exceeds 10 inches (250 mm). When reinforcement of the concrete shaft is required as specified above, the reinforcement shall consist of a minimum of eight #5 (#15) vertical bars symmetrically placed and tied with #3 (#10) ties at 6 in. (150 mm) centers. An additional tie shall be provided at the top and bottom of the foundation. As an alternative to the ties, a #3 (#10) spiral at a 6 in. (150 mm) pitch with an additional 1 1/2 turns at the top and bottom of the foundation or an equivalent 4 x 4 – W12.3 x W7.4 welded wire fabric may be substituted. Reinforcement bars inside the concrete foundations shall extend to the base of the shaft. The reinforcement does not require epoxy coating.

Posts shall be oversized by 0.0625 in. in each direction to account for corrosion.

The material and construction of the foundations (drilled shafts) shall be according to Section 516 of the Standard Specifications.

The shaft foundation dimensions shall be determined according to AASHTO LRFD Bridge Design Specifications. Soil borings from prior soil investigations when available are shown in the plans and may be used to generate foundation design parameters. The design shall utilize load and resistance factors as specified in the AASHTO LRFD Bridge Design Specifications and shall account for the effects of a sloping ground surface and water table indicated on the plans. In the event that insufficient data is shown on the plans, the following parameters should be assumed for the foundation design:

Effective unit weight	70 pcf (1120 kg/m^3)
Internal friction angle	30 degrees
Cohesion intercept	0 ksf (0 kg/m^3)

The maximum post spacing shall be as specified in the Contractor's approved design, but not greater than 20 ft.

The maximum allowable panel deflection shall be no more than the panel length (L) divided by 240 (L/240). The maximum post deflection due to post curvature shall be H/180, where H is the height of the post above the foundation. The maximum total post deflection due to post curvature, foundation curvature, and top-of-foundation rotation shall be H/90. A method utilizing P-y springs for different soil layers shall be used to calculate the total post deflection. When meeting the deflection limits cannot be demonstrated by calculations, a lateral load test and report shall be submitted to the Engineer indicating that the above noted design lateral loads can be applied to the panels and/or posts without exceeding noted deflection tolerance. The test shall apply lateral loads to the panel simulating uniform wind pressure, and earth pressure when present.

The design shall account for the presence of all appurtenances mounted on or passing through the wall such as drainage structures, existing or proposed utilities, emergency access doors and other items.

Corrugations, ribs or battens on the panel shall be oriented vertically when erected. The panels shall be designed to prevent entrapment and ponding of water. The walls shall not have openings allowing the perching or nesting of birds or the collection of dirt, debris or water.

The walls shall not have handholds or grips promoting climbing of the walls. Any bolts or fasteners used to connect material to the supporting panel, posts, or foundations shall be recessed or embedded in concrete, hidden from view and weather exposure. No external mechanical fastening devices such as frames or clips shall be used for these connections.

The noise abatement material shall be designed to achieve a sound TL equal to or greater than 20 dB in all one-third octave bands from 100 hertz to 5000 hertz, inclusive, when tested according to ASTM E-90. The sound absorptive material shall have a minimum NRC as indicated on the plans. For the side of the walls specified as reflective, no minimum NRC is required.

The NRC shall be determined per ASTM E795, tested according to ASTM C423 (mounting type A). The ratio of noise absorptive material on the panel surface to total wall area (including posts) shall be greater than 90 percent. NRC testing shall be performed on coated samples, utilizing the stain that will be applied for color.

Access Doors. All access doors shall be designed to fit within the design of the noise wall as shown on the plans. Doors shall be complete with hardware and locking devices. Each door shall provide a 3 ft (0.9 m) wide by 7 ft (2.1 m) high minimum clear access opening. Both door jambs shall be securely fastened to anchored posts. Front and back face of the installed door shall be flush with the faces of the noise wall.

The door, jambs, head, hinges, door appurtenances, and adjacent ground mounted posts shall be designed to withstand the wind pressure of 30 psf (1.4 kPa) with the door in fully open and fully closed positions and support the weight of the door and a 300 lb (136 kg) vertical load on the

non-hinged side of the door. Provide steel bracing as required. Door bottom shall be equipped with drainage holes to avoid accumulation of trapped moisture.

Door jambs and head section shall be hot dip galvanized steel. Door hinges shall be barrel type, edge mount, extra heavy-duty, hot dip galvanized steel or stainless steel. The hinges shall be designed to support the weight of door assembly, wind loads on the open door, and a 300 lb (136 kg) vertical load on the non-hinged side of the door.

Door pulls shall be provided on both sides of access door(s). Door locking hardware shall be hasp-type to be used with a padlock and shall be located according to local fire department or other requirements as applicable. A solid steel emergency access lock box system shall be provided and mounted near the hasp location at the steel post on the locking hardware side of door. The lock box for emergency access doors shall be according to local fire department requirements.

Doors shall be equipped with lifting bolts or beams as required for safe lifting of door units.

Materials. Noise wall materials shall conform to the supplier's standards, AASHTO Specifications for noise walls and the following:

(a) Reinforcement bars shall satisfy ASTM A706 Grade 60 (400). Welded wire fabric shall be according to AASHTO M 336. All reinforcement in the wall panels shall be epoxy coated or galvanized.

(b) Anchor bolts shall conform to ASTM F1554 Grade 55 or 105 and shall be galvanized per AASHTO M232.

(c) The precast elements shall be according to applicable portions of Section 1042 of the Standard Specifications. The precast elements are considered to be Precast Concrete Structural Members. Coarse Aggregate shall meet the requirements of Article 1004.02(f)) of the Standard Specifications. Concrete shall be Class PC with a minimum compressive strength of 4500 psi (31,000 kPa)at 28 days. Dry cast concrete element will not be permitted.

(d) Sound absorptive panels shall have a precast concrete core as described in (c) with a bonded sound absorptive material on one or both sides of the precast concrete core as required by the contract plans. The manufacturer shall provide test information from an independent lab that the panels meet specified durability requirements. Test data older than 5 years prior of the execution date of the contract will not be accepted.

All sound absorbing concrete and composite concrete components shall be tested for long-term durability according to AASHTO T 161 (ASTM C666), Procedure A or B, or ASTM C672-12. For testing according to AASHTO T 161 (ASTM C666), a minimum of three specimens shall be tested, and the maximum weight (mass) loss after 300 cycles shall be 7.0 percent with no cracks, delamination (applies to composite panels), or other excessive physical distress. For testing according to ASTM C672-12, the following modifications and requirements shall apply:

Three specimens of a full cross section of the panel at least 144 square inches in face area will be selected at random from the provided panel. Sample specimens shall be representative of the manufacturer’s continuous production operation, as selected and marked by the

engineer. Specimens shall be 2D-symmetric and shaped according to the testing laboratory's accommodations. Surfaces of the sample specimens shall be prepared for testing as follows. Brush the surfaces of the sample to remove any loose particles. Before testing, submerge the test specimens be submerged in water for a period of 24 hours before testing. Immediately following this, cover the specimens with the sodium chloride solution as stated below.

Test Procedure

Place samples in a 5-sided water tight container, fully submerged in a solution of sodium chloride (concentration 3% by mass). Maintain 1/4 inch of sodium chloride solution above the top surface of the fully submerged specimen within the container.

Subject the submerged specimens to continuous freeze-thaw cycles as follows:

After each five cycles, remove the salt solution and particles of deteriorated concrete from the slab and collect in a watertight container. The operation is best accomplished by tilting the slab in a funnel approximately 20 inches in diameter and washing the surface of the slab with a 3% sodium chloride solution. Continue this washing until all loose particles are removed from the sample. Strain the solution through a filter and dry the residue at 221 degrees Fahrenheit to a constant mass condition. Cumulatively weigh the residue after each five cycles. The dry residue is defined as the loss of mass. Calculate the loss of mass to the nearest 0.01 pounds per square foot, not including the exposed surface of any core material on the cast or cut edges. Visually rate the surfaces according to 10.1.5 of ASTM C672 including any delamination of the sound absorbing material from the concrete core for composite concrete materials. After each washing of each sample, re-establish the initial submerged condition with a new solution of 3% sodium chloride before continuing with freeze-thaw cycling.

Continue the test until 30 freeze-thaw cycles have been completed.

During the test position and support each specimen to allow free circulation of the test solution under, around, and over test pieces. Support the bottom of the specimens on blocks in a manner to facilitate movement of moisture through and around the test specimens.

Test Report

Submit to the engineer an independent testing laboratory test report which shows that all solid and composite concrete products meet or exceed the following criteria:

1. After 30 freeze-thaw cycles the test specimens shall not exhibit excessive deterioration in the form of cracks, spalls, aggregate disintegration, delamination or other objectionable features.
2. Compliance with the test requirements is based upon a loss of mass of not more than 0.2 pounds per square foot from the surface after 30 cycles of freezing and thawing.
3. The report shall include the following:
    a. Name of manufacturer.
    b. Location of production.
    c. Production description.
    d. Date product sample was cast.
    e. Date testing began.
    f. Specimen identification.

g. 5x7-inch color photographs of the test specimens before and after the 30 cycles of freeze-thaw test showing both sound absorbing faces and at least one representative side view of a cut (not cast) face, and any defects.
h. A graph of the cumulative mass loss of each specimen plotted against the number of freeze-thaw cycles for 5, 10, 15, 20, 25, and 30 freeze-thaw cycles.
i. Visual rating according to ASTM C672 Section 10.1.5, including report of any delamination of the sound absorbing material from the concrete core for composite concrete components.

(e) The manufacturer for the noise abatement wall shall provide their quality control plan for testing the product, and test results shall be provided upon request by the Engineer. Manufacturers on the Department's Qualified Product List of Certified Precast Concrete Producers who are approved for noise abatement walls will be considered in compliance with this requirement. The panel manufacturer shall warranty the panels for aesthetic coating durability and no material delaminations or failures for a minimum of ten years.

(f) Steel plates and posts shall conform to AASHTO M 270 (M 270 M) Grade 36 (250) or 50 (345). All portions of the post shall be galvanized according to AASHTO M111 and ASTM A385 or primed according to Section 506 of the Standard Specifications. The exposed portions of the steel posts shall be painted according to Section 506 of the Standard Specifications. The adjacent concrete panels shall be protected from over spray. The color shall closely match the color of the concrete panels, unless otherwise specified on the plans. Steel bolts, nuts, and washers shall be galvanized according to AASHTO M232.

(g) Lifting inserts cast into the panels shall be hot dipped galvanized.

(h) Non shrink grout shall be according to Section 1024 of the Standard Specifications.

(i) The default color of both sides of the panels, posts and other visible elements shall be a light brown earth tone unless specified otherwise on the Contract Plans Colors shall be achieved through the use of integral pigments or stains, which are in compliance with the environmental regulation of the State of Illinois. Components manufactured with integral pigment shall be tested and certified in conformance to ASTM C979. Stains shall be non film forming, penetrating stains. Stains shall be applied to concrete at the cured age of the manufacturer's recommendation. Surface preparation and application shall be according to manufacturer written recommendations. Coloring of concrete elements shall be accomplished using a single component water based, sound absorptive, penetrating, architectural stain that is weather resistant. Stains and/or pigments must be applied at the manufacturing plant; application in the field on site will not be allowed. The final color shall be consistent with the quality and appearance of the approved sample. The surface coating shall be tested for accelerated weathering as follows:

Submit to the engineer certification of compliance that all coatings on barrier components, with the exception of structural steel and wood components comply with the following requirements when tested according to ASTM Standard G155, G153, or G152 after 2400 hours of exposure on a cement based test specimens:
1. No checking when rated according to ASTM D660.
2. No cracking when rated according to ASTM D661.
3. No blistering when rated according to ASTM D714.

4. No difference in adhesion between the unexposed control sample and an exposed sample when tested according to ASTM D3359, Method A.
5. No chalking less than #7 rating when rated according to ASTM D4214.
6. No color change greater than 5 NBS units when measured according to ASTM D2244, using illuminant D65 and the 1964 10-degree standard observer.

(j) The finish pattern of the precast panels shall be as specified on the Contract Plans.

(k) With the exception of the steel and Portland cement concrete elements of the wall, all materials shall be tested for flame spread and smoke density developed according to ASTM E84. The material must exhibit a flame-spread index less than 10 and a smoke density developed value of 10 or less.

Fabrication. All precast units shall be manufactured according to Section 504 of the Standard Specifications, and the following requirements and tolerances with respect to the dimensions shown on the approved shop drawings.

(a) The minimum reinforcement bar cover shall be 1 1/2 in (40 mm).
(b) Panel dimensions shall be within 1/4 in (6 mm).
(c) All hardware embedded in panels or posts shall be within 1/4 in (6 mm).
(d) Angular distortion with regard to panel squareness, defined as the difference between the two diagonals, shall not exceed 1/2 in (13 mm).
(e) Surface defects on formed surfaces measured on a length of 5 ft (1.5 m) shall not be more than 0.10 in (2.5 mm).
(f) Posts shall be installed plumb to within 1/2 in (13 mm) of vertical for every 15 ft (5 m) of height and to within 1/2 in (13 mm) of the station and offset indicated on the approved shop drawings.
(g) Drilled shaft foundations shall be placed within 2 in (50 mm) of the station and offset indicated on the approved shop drawings.
(h) Panel reinforcement and lifting devices shall be set in place to the dimension and tolerances shown on the plans and these special provisions prior to casting.

The date of manufacture, the production lot number, and the piece-mark shall be clearly noted on each panel.

Absorptive material shall be permanently attached to their supporting elements and no external mechanical fastening systems such as frames or clips shall be used. Any bolts or fasteners used shall be recessed or embedded below the surface.

Any chipping, cracks, honeycomb, or other defects, to be allowed, shall be within acceptable standards for precast concrete products according to Section 1042 of the Standard Specifications and as determined by the Engineer.

Construction. The Contractor shall obtain technical assistance from the supplier during wall erection to demonstrate proper construction procedures and shall include any costs related to this technical assistance in the contract unit price for Noise Abatement Wall. The instructions provided by the wall supplier are guidelines and do not relieve the contractor of the responsibility to adhere to contract requirements.

It is recommended that all bottom panels be installed for a length of wall prior to placing middle or top panels. After bottom panels are in-place, finish grading can be accomplished with heavy equipment by reaching over the in-place panels.

Site excavations and/or fill construction shall be completed to plan elevations and profiles prior to the start of wall foundation construction. All underground utility or drainage structure installation shall be completed prior to foundation installation. The ground elevations as shown on the plans and the approved noise wall shop drawings shall be verified by the contractor and discrepancies corrected prior to material fabrication. Buried utilities shall be marked to verify proper clearance from the drilled foundations. The Contractor should consider overhead obstruction such as electric and telephone wires prior to wall erection.

If the soils encountered during drilling of the foundations do not satisfy the design strengths shown on the Contract Plans, the Engineer shall be notified to evaluate the required foundation modifications. The shaft foundation will normally require additional length, which may be paid separately under Article 104.03 of the Standard Specifications. All drilled shaft excavations shall be filled with concrete within 6 hours of their initiation. The concrete for the drilled shaft foundations shall be placed against undisturbed, in-place soils. The concrete at the top of the shaft shall be shaped to provide the panels on each side of the post full bearing area and correct elevation per the approved shop drawings.

The panels shall be delivered to the project site in full truckload quantities. They may be off-loaded individually or by forklift with a solid steel plate spanning between the forks providing uniform, fully distributed bearing support to the underside of the panels. Units shall be shipped, handled and stored in such a manner as to minimize the danger of staining, chipping, spalling, development of cracks, fractures, and excessive bending stresses. Panels shall be stored and shipped in bundles, on edge. Any touch up and repair is at the Contractor’s expense and shall be carried out according to the manufacturer’s recommendations.

Method of Measurement. Noise abatement walls will be measured in square feet (square meters) from the wall envelope, defined by the theoretical top of wall line to the theoretical bottom of wall line for the length of the wall as shown on the Contract Plans.

Drilled shafts, concrete, reinforcement bars and other elements for supporting the ground mounted noise abatement walls will not be measured for payment.

Access doors shown on the Contract Plans will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for NOISE ABATEMENT WALL, GROUND MOUNTED.

The costs for drilled shafts, concrete, reinforcement bars and other elements supporting the noise abatement walls will not be paid for separately but will be included in the item for NOISE ABATEMENT WALL, GROUND MOUNTED.

AGGREGATE SUBGRADE IMPROVEMENT (BDE)

Effective: April 1, 2012 Revised: April 1, 2022

Add the following Section to the Standard Specifications:

"**SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT**

303.01 Description. This work shall consist of constructing an aggregate subgrade improvement (ASI).

303.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate	1004.07
(b) Reclaimed Asphalt Pavement (RAP)	1031.09

303.03 Equipment. The vibratory roller shall be according to Article 1101.01, or as approved by the Engineer. Vibratory machines, such as tampers, shall be used in areas where rollers do not fit.

303.04 Soil Preparation. The minimum immediate bearing value (IBV) of the soil below the improved subgrade shall be according to the Department's "Subgrade Stability Manual" for the aggregate thickness specified.

303.05 Placing and Compacting. The maximum nominal lift thickness of aggregate gradations CA 2, CA 6, and CA 10 when compacted shall be 9 in. (225 mm). The maximum nominal lift thickness of aggregate gradations CS 1, CS 2, and RR 1 when compacted shall be 24 in. (600 mm).

The top surface of the aggregate subgrade improvement shall consist of a layer of capping aggregate gradations CA 6 or CA 10 that is 3 in. (75 mm) thick after compaction. Capping aggregate will not be required when aggregate subgrade improvement is used as a cubic yard pay item for undercut applications.

Each lift of aggregate shall be compacted to the satisfaction of the Engineer. If the moisture content of the material is such that compaction cannot be obtained, sufficient water shall be added so that satisfactory compaction can be obtained.

303.06 Finishing and Maintenance. The aggregate subgrade improvement shall be finished to the lines, grades, and cross sections shown on the plans, or as directed by the Engineer. The aggregate subgrade improvement shall be maintained in a smooth and compacted condition.

303.07 Method of Measurement. This work will be measured for payment according to Article 311.08.

303.08 Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) or ton (metric ton) for AGGREGATE SUBGRADE IMPROVEMENT or at the contract unit price per square yard (square meter) for AGGREGATE SUBGRADE IMPROVEMENT, of the thickness specified."

Add the following to Section 1004 of the Standard Specifications:

"**1004.07 Coarse Aggregate for Aggregate Subgrade Improvement (ASI).** The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate shall be crushed gravel, crushed stone, or crushed concrete. In applications where greater than 24 in. (600 mm) of ASI material is required, gravel may be used below the top 12 in (300 mm) of ASI.

(b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials.

(c) Gradation.

(1) The coarse aggregate gradation for total ASI thickness less than or equal to 12 in. (300 mm) shall be CA 2, CA 6, CA 10, or CS 1.

The coarse aggregate gradation for total ASI thickness greater than 12 in. (300 mm) shall be CS 1 or CS 2 as shown below or RR 1 according to Article 1005.01(c).

	COARSE AGGREGATE SUBGRADE GRADATIONS				
Grad No.	Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 1	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 2		100	80 ± 10	25 ± 15	

	COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)				
Grad No.	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 1	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 2		100	80 ± 10	25 ± 15	

(2) Capping aggregate shall be gradation CA 6 or CA 10."

Add the following to Article 1031.09 of the Standard Specifications:

"(b) RAP in Aggregate Subgrade Improvement (ASI). RAP in ASI shall be according to Articles 1031.01(a), 1031.02(a), 1031.06(a)(1), and 1031.06(a)(2), and the following.

(1) The testing requirements of Article 1031.03 shall not apply.

(2) Crushed RAP used for the lower lift may be mechanically blended with aggregate gradations CS 1, CS 2, and RR 1 but it shall be no greater than 40 percent of the total product volume. RAP agglomerations shall be no greater than 4 in. (100 mm).

(3) For capping aggregate, well graded RAP having 100 percent passing the 1 1/2 in. (38 mm) sieve may be used when aggregate gradations CS 1, CS 2, CA 2, or RR 1 are used in the lower lift. FRAP will not be permitted as capping material.

Blending shall be through calibrated interlocked feeders or a calibrated blending plant such that the prescribed blending percentage is maintained throughout the blending process. The calibration shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered."

BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE)

Effective: November 2, 2006 Revised: August 1, 2017

Description. Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract.

The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments that are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, joint filling/sealing, or extra work paid for at a lump sum price or by force account.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$

Where: CA = Cost Adjustment, $.

BPI_P = Bituminous Price Index, as published by the Department for the month the work is performed, $/ton ($/metric ton).

BPI_L = Bituminous Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, $/ton ($/metric ton).

$\%AC_V$ = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the $\% AC_V$ will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC_V and undiluted emulsified asphalt will be considered to be 65% AC_V.

Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards: Q, tons = $A \times D \times (G_{mb} \times 46.8) / 2000$. For HMA mixtures measured in square meters: Q, metric tons = $A \times D \times (G_{mb} \times 1) / 1000$. When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different G_{mb} and $\% AC_V$.

For bituminous materials measured in gallons: Q, tons = V x 8.33 lb/gal x SG / 2000
For bituminous materials measured in liters: Q, metric tons = V x 1.0 kg/L x SG / 1000

Where: A = Area of the HMA mixture, sq yd (sq m).
D = Depth of the HMA mixture, in. (mm).
G_{mb} = Average bulk specific gravity of the mixture, from the approved mix design.
V = Volume of the bituminous material, gal (L).
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI_L and BPI_P in excess of five percent, as calculated by:

Percent Difference = $\{(BPI_L - BPI_P) \div BPI_L\} \times 100$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

BUILDING REMOVAL WITH ASBESTOS ABATEMENT (BDE)

Effective: September 1, 1990 Revised: August 1, 2022

Description. This work shall consist of the removal and disposal of building(s), including all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate bottom of building elevation or proposed bottom of construction elevation. The building(s) are identified as follows:

Bldg. No.	Parcel No.	Location	Description
1	1P10119	504 Railroad St, Joliet, IL 60436	Tall Brick Commercial (Ozinga)
2	1P10124	256 Lucas St, Joliet, IL 60436	1 Story Frame Residence with Basement and Frame Garage
3	1P10125	261 Duncan St, Joliet, IL 60436	1 Story Frame Residence with Basement and Frame Garage and Shed
4	1P10126	601 Kiep Ave, Joliet, IL 60436	1-1/2 Story Brick Residence with Basement and Frame Garage
5	1P10128	607 Kiep Ave, Joliet, IL 60436	1 Story Brick Residence with Basement
6	1P10140	607 Water St, Joliet, IL 60436	1 Story Brick Residence with Basement
7	1P10146	604 Water St, Joliet, IL 60436	1 Story Frame Residence with Basement and Frame Garage
8	1P10149	612 Water St, Joliet, IL 60436	2 Story Frame with Basement Residence
9	1P10151	605 S Des Plaines St, Joliet, IL 60436	2 Story Frame with Basement Residence
10	1P10161	232 Duncan St, Joliet, IL 60436	1 Story Frame Residence with Basement
11	1P10166	226 Duncan St, Joliet, IL 60436	1 Story Frame Residence with Basement
12	1P10170	210 Duncan St, Joliet, IL 60436	1 Story Frame Residence with Basement and Frame Garage
13	1P10171	206 Duncan St, Joliet, IL 60436	1 Story Frame Residence with Basement
14	1P10173	664 River St, Joliet, IL 60436	1 Story Frame Residence with Basement and Frame Garage
15	1P10177	662 Kiep Ave, Joliet, IL 60436	1-1/2 Story Frame Residence with Basement
16	1P10179	666 Kiep Ave, Joliet, IL 60436	2 Story Frame Residence with Basement

CONSTRUCTION REQUIREMENTS

General. The IEPA's "State of Illinois Demolition/Renovation/Asbestos Project Notification Form" shall be submitted and a copy sent to the Engineer. It shall be updated if there is a change in the start and/or finish date or if the quantity of asbestos changes by more than 20 percent.

Asbestos abatement work shall be performed by an IDPH licensed Contractor prequalified with the Illinois Capital Development Board who has an on-site supervisor licensed by IDPH and employs workers licensed by IDPH. This work shall be completed according to the requirements of the U.S. Environmental Protection Agency (USEPA), IEPA, OSHA, and local regulatory agencies.

Discontinuance of Utilities. The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the

respective requirements and regulations of the city, county, or utility companies involved. The Contractor shall disconnect and seal the service outlets.

Posting. Upon execution of the contract and prior to the removal of any buildings, the Contractor shall paint or stencil, in contrasting colors of an oil base paint, on all sides of each building or structure, the following posting:

NO TRESPASSING
VIOLATORS WILL BE PROSECUTED

The postings shall be positioned prominently on the structure(s) so they can be easily read and at a sufficient height to prevent defacing.

Asbestos Abatement. Friable asbestos containing building materials (ACBMs) and Category II non-friable ACBMs shall be removed from the building(s) prior to demolition. Category II non-friable ACBMs include asbestos containing transite boards, siding, and other cementitious materials (cement pipe or highly weathered roofing shingles/materials) which have a likelihood of becoming friable during typical demolition activities (by crumbling, pulverizing, or otherwise reducing to powder) making them regulated asbestos containing materials (RACM). Removed ACBM shall be kept separate from non-ACBM demolition debris for purposes of transport and disposal.

Category I non-friable ACBM may be kept in place for demolition or removal of the building unless it has become friable as determined by the ACBM inspector. If the Contractor demolishes the building(s) with the non-friable asbestos in place, the following shall apply.

(a) The Contractor shall continuously wet the non-friable ACBM and other building debris with water during demolition and loading for disposal.

(b) The Contractor shall dispose of all demolition debris as ACBM.

The Contractor shall perform air monitoring during asbestos abatement activities. Air sampling shall be conducted by a qualified air sampling professional. Air sampling shall be conducted according to NIOSH Method 7400. Air monitoring equipment shall be calibrated and maintained in proper operating condition. The Contractor shall submit a copy of the air sampling professional’s certificate to the Engineer. The results of the tests, and daily calibration and maintenance records shall be kept on site and be available to the Engineer upon request.

Personal monitoring shall be conducted per applicable OSHA regulations. Excursion limits shall be monitored daily, and corrective actions taken immediately to bring excursions within OSHA permissible exposure limits.

When asbestos is removed prior to demolition, clearance testing per IDPH shall be conducted upon the removal of ACBM.

Submittals. The following submittals shall be made to the Engineer prior to the start of the asbestos abatement:

(a) Manufacturer's certification stating that vacuums, ventilation equipment, and other equipment required to contain airborne fibers conform to ANSI 29.2.

(b) A listing of the brand name, manufacturer, and specification of all sealants or surfactants to be used.

(c) Proof that arrangements for transport and disposal of ACBMs have been obtained (i.e., a letter of authorization to utilize designated landfill).

(d) A detailed work plan of the Contractor's anticipated procedures including the location and layout of decontamination units, the sequencing of work, the respiratory protection plan, a site safety plan, a disposal plan, and a detailed description of the methods to be used to control pollution.

(e) Proof of the Contractor's prequalification with Capital Development Board and employee certifications with IDPH.

Submittals that shall be made upon completion of abatement work:

(f) Copies of waste chain-of-custodies, trip tickets, shipping manifests, or disposal receipts for asbestos waste materials removed from the work area.

(g) Copies of each day's work site entry logbook with information on worker and visitor access.

(h) Logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls.

(i) Test results of any bulk material analysis and air sampling data collected during the abatement including results of any on-site testing by any federal, state, or local agency.

Any holes, such as basements, shall be backfilled according to Article 502.10.

Basis of Payment. This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL NO. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.

Removal and disposal of friable ACBM will be paid for at the contract lump sum unit price for REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. 1, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16.

Removal and disposal of non-friable ACBM will be paid for at the contract lump sum unit price for REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 1, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16.

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."

CONCRETE BARRIER (BDE)

Effective: January 1, 2025

Revise the second paragraph of Article 637.12 of the Standard Specifications to read:

"When a double face concrete barrier with a variable cross-section is required, and the variation exceeds 1/2 in. (13 mm), the barrier will be paid for at the contract unit price per foot (meter) for CONCRETE BARRIER, VARIABLE CROSS-SECTION, of the height specified."

CONCRETE SEALER (BDE)

Effective: November 1, 2023

Replace Section 1026 of the Standard Specifications with the following:

"**SECTION 1026. CONCRETE SEALER**

1026.01 General. Sealer types shall be according to the listing in AASHTO M 224. All concrete sealer types shall meet the sealer requirements of AASHTO M 224 when tested in accordance with AASHTO T 384. The sealer shall be listed on the Department's qualified product list.

The sealer shall have a clear or amber color when dry.

The Department will perform the sealer characterization properties of ATR-FTIR spectra, total solids, and specific gravity in accordance with AASHTO M 224."

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.

DECK SLAB REPAIR

Effective: January 1, 2026

Add the following Section 530 to the Standard Specifications:

"**SECTION 530. DECK SLAB REPAIR**

530.01 Description. This work shall consist of the removal of existing hot-mix asphalt (HMA) surface and loose and deteriorated concrete from a bridge deck, and the replacement with new concrete to the existing top of deck.

Work will be classified as follows.

Removal Type	Description
HMA Surface Removal	Removal of the HMA surface from the concrete bridge deck.
Deck Slab Repair (Partial)	Removal and replacement of the concrete deck, at least 3/4 in. (20 mm) but not more than 1/2 of the concrete deck thickness.
Deck Slab Repair (Full Depth, Type I)	Removal and replacement of the concrete deck to full depth, for an area 1 ft x 1 ft (300 mm x 300 mm) to 5 sq ft (0.5 sq m).
Deck Slab Repair (Full Depth, Type II)	Removal and replacement of the concrete deck to full depth, for an area greater than 5 sq ft (0.5 sq m).

530.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement Concrete (Note 1)	1020
(b) Reinforcement Bars	508

Note 1. Class PP-1, PP-2, PP-3, PP-4, PP-5, or BS concrete shall be used unless otherwise noted on the plans.

530.03 Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Concrete Equipment	1020.03
(b) Finishing Equipment	503.03
(c) Hydrodemolition Equipment	1101.11
(e) Hydro-Scarification Equipment (Note 1)	

Note 1. Hydro-scarification equipment shall consist of filtering and pumping units operating with a computerized, self-propelled robotic machine capable of removing unsound concrete in a single pass to the specified depth and operating at a 16,000 psi (110 MPa) minimum water pressure with a 55 gal/min (208 L/min) minimum water flow rate.

CONSTRUCTION REQUIREMENTS

530.04 General. Sidewalks, curbs, drains, reinforcement, existing transverse and longitudinal joints, and other appurtenances which are to remain in place shall be protected from damage during removal and cleaning operations.

The Contractor shall control the runoff water generated by the various construction activities in such a manner as to minimize, to the maximum extent practicable, the discharge of untreated effluent into adjacent waters, and shall properly dispose of the solids generated according to Article 202.03. The Contractor shall submit a water management plan to the Engineer specifying the control measures to be used. The control measures shall be in place prior to the start of runoff water generating activities. Runoff water shall not be allowed to constitute a hazard to adjacent

or underlying roadways, waterways, drainage areas or railroads nor be allowed to erode existing slopes.

530.05 HMA Surface Removal. The existing HMA surface and waterproofing membrane shall be removed and disposed of according to Articles 440.04 and 440.06, except milling equipment will not be allowed if the deck is to receive a waterproofing membrane system. Removal of the HMA surface by the use of radiant or direct heat will not be permitted. If the HMA surface or waterproofing membrane contains asbestos fibers, removal shall be according to the Recurring Special Provision “Asbestos Waterproofing Membrane or Asbestos Hot-Mix Asphalt Surface Removal”.

530.06 Concrete Removal. Concrete shall be removed, as determined by the Engineer, in areas of loose, disintegrated, and unsound concrete. Areas designated for partial depth repair in which unsound concrete is found to extend below half the concrete deck thickness shall be removed to full depth.

A concrete saw shall be used to provide vertical edges 3/4 in. (20 mm) deep around the perimeter of the area to be patched. Where reinforcement bars lack sufficient concrete cover, the depth shall be reduced as directed by the Engineer. A saw cut will not be required if the deck is to get an overlay, or along the face of the curb, parapet or joint, or when sharp vertical edges are provided by hydrodemolition.

(a) Partial-Depth. The loose and unsound concrete shall be removed using power-driven hand tools or hydrodemolition equipment. Power-driven hand tools include jackhammers less than or equal to the nominal 45 lb (20 kg) class. Chipping hammers heavier than the nominal 15 lb (7 kg) class shall not be used for removing concrete from below reinforcing bars, or for removal within 1 ft (300 mm) of existing beams, girders, or other structural members that are to remain in service. Jackhammers and chipping hammers shall not be operated at an angle less than 45 degrees measured from the surface of the deck.

(b) Full Depth. Full depth removal shall be performed according to Article 501.05 except that hydraulic impact equipment may be permitted in areas of full depth removal more than 1 ft (300 mm) away from the edges of existing beams, girders or other supporting structural members or more than 1 ft (300 mm) from the boundaries of full depth repairs.

Forms for full depth repair may be supported by hangers with adjustable bolts or by blocking from the beams below. When approved by the Engineer, forms for Type I patches may be supported by No. 9 (3.8 mm) wires or other devices attached to the reinforcement bars.

Exposed reinforcement bars and newly exposed concrete shall be blast cleaned. If the Engineer determines the bond between existing concrete and reinforcement bars within the patch area has been destroyed, the concrete adjacent to the bar shall be removed to a depth that will permit new concrete to bond to the entire periphery of the exposed bar. A minimum of 1 in. (25 mm) clearance will be required. If the Engineer enlarges a designated removal area due to deterioration beyond the limits previously designated, a new saw cut shall be made around the extended area before additional removal is begun. The removal area shall not be enlarged solely to correct debonded reinforcement or deficient lap lengths.

530.07 Reinforcement Treatment. Care shall be exercised during concrete removal to protect the reinforcement bars and structural steel from damage. Damage to the reinforcement bars or structural steel to remain in place shall be repaired or replaced. Existing reinforcement bars shall remain in place and loose bars shall be tied. Reinforcing bars which have been removed with the patch or lost at least 25 percent of their original cross-sectional area due to corrosion shall be supplemented by new in-kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical splicer capable of developing in tension at least 125 percent of the yield strength of the existing bar shall be used when it is not feasible to provide the minimum bar lap. No welding of bars will be permitted.

530.08 Cleaning. After concrete removal and reinforcement repairs, the repair areas shall be cleaned of dust and debris. Once the initial cleaning is completed, the repair areas shall be blast cleaned to a roughened appearance free from concrete fines and foreign matter.

Exposed reinforcement bars shall be free of dirt, detrimental scale, paint, oil, or other foreign substances which may reduce bond with the concrete. Loose, scaling rust shall be removed by rubbing with burlap, wire brushing, blast cleaning, or another method approved by the Engineer.

Dust, concrete fines, debris, and water resulting from the blast cleaning shall be confined and immediately removed. If concrete placement does not follow immediately after the final cleaning, the area shall be protected with anchored polyethylene sheeting.

530.09 Placing. Concrete placement shall be according to Articles 503.07, 503.16, 1020.14(b), and the following.

The patch area shall be cleaned to the satisfaction of the Engineer and shall be thoroughly wetted and maintained in a dampened condition with water for at least 12 hours before placement of the concrete. Excess water shall be removed by compressed air or by vacuuming prior to the beginning of concrete placement. Water shall not be applied to the surface within one hour before or at any time during placement of the concrete.

When an overlay system is not specified, the patches shall be finished according to Article 503.16(a), followed by a light brooming.

530.10 Curing and Protection. Concrete patches shall be cured according to Articles 1020.13(a)(3) or (a)(5). The curing period shall be three days for Class PP-1, PP-2, PP-3, PP-4, and PP-5 concrete, and seven days for Class BS concrete. When the air temperature is below 55º F (13º C), the Contractor shall cover the patch according to Article 1020.13(d)(1) with minimum R12 insulation.

A 72 hour minimum drying period shall be required before placing waterproofing or HMA surfacing.

530.11 Opening to Traffic. No traffic will be permitted on a patch until after the cure period and the concrete has obtained a minimum compressive strength of 4000 psi (27.6 MPa) or flexural strength of 675 psi (4.65 MPa). Construction equipment will be permitted on a patch during the cure period if the concrete has obtained the minimum required strength when the specimens are cured with the patch.

530.12 Method of Measurement. HMA surface removal and deck slab repair will be measured for payment in place and the area computed in square yards (square meters).

530.13 Basis of Payment. HMA surface removal will be paid for at the contract unit price per square yard (square meter) for HOT-MIX ASPHALT SURFACE REMOVAL (DECK).

Areas removed and replaced up to and including a depth of half the concrete deck thickness will be paid for at the contract unit price per square yard (square meter) for DECK SLAB REPAIR (PARTIAL). Areas removed and replaced to a depth greater than half the concrete deck thickness will be paid for at the contract unit price per square yard (square meter) for DECK SLAB REPAIR (FULL DEPTH, of the type specified).

Concrete protected according to Article 1020.13(d) will be paid according to Article 503.22.

Reinforcement bars repaired in-kind, as approved by the Engineer, will be paid according to Article 109.04."

EROSION CONTROL BLANKET (BDE)

Effective: August 1, 2025

Revise Article 251.02 of the Standard Specifications to read:

"**251.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Compost	1081.05(b)
(b) Mulch	1081.06(a)
(c) Chemical Mulch Binder	1081.06(a)(3)
(d) Chemical Compost Binder	1081.06(a)(4)
(e) Erosion Control Blanket	1081.10(a)
(f) Wildlife Friendly Erosion Control Blanket	1081.10(b)
(g) Wire Staples	1081.10(c)
(h) Wood Stakes	1081.10(d)
(i) Turf Reinforcement Mat	1081.10(e)"

Revise the first and second sentences of Article 251.04 of the Standard Specifications to read:

"**251.04 Erosion Control Blanket.** All erosion control blanket materials shall be placed on the areas specified within 24 hours of seed placement."

Revise the second paragraph of Article 251.04 of the Standard Specifications to read:

"After the area has been properly shaped, fertilized (when applicable), and seeded, the blanket shall be laid out flat, evenly, and smoothly, without stretching the material. The erosion control blanket shall be placed according to the manufacture's recommendations."

Revise the second sentence of Article 251.06(b) of the Standard Specifications to read:

"Erosion control blanket, wildlife friendly erosion control blanket, and turf reinforcement mat will be measured for payment in square yards (square meters)."

Revise Article 251.07 of the Standard Specifications to read:

"**251.07 Basis of Payment.** This work will be paid for at the contract unit price per acre (hectare) for MULCH, of the method specified; and at the contract unit price per square yard (square meter) for EROSION CONTROL BLANKET, WILDLIFE FRIENDLY EROSION CONTROL BLANKET, or TURF REINFORCEMENT MAT."

Revise first sentence of Article 280.04(h) of the Standard Specifications to read:

"This system consists of temporarily installing erosion control blanket or wildlife friendly erosion control blanket over areas that are to be reworked during a later construction phase."

Revise Article 280.08(g) of the Standard Specifications to read:

"(g) Temporary Erosion Control Blanket. Temporary erosion control blanket will be paid for at the contract unit price per square yard (square meter) for TEMPORARY EROSION CONTROL BLANKET or TEMPORARY WILDLIFE FRIENDLY EROSION CONTROL BLANKET.

The work of removing, storing, and reinstalling the blanket over areas to be reworked more than once will not be paid for separately but shall be included in the cost of the temporary erosion control blanket or temporary wildlife friendly erosion control blanket."

Revise Article 1081.10 of the Standard Specifications to read:

"**1081.10 Erosion Control Blankets.** The manufacturer shall furnish a certificate with each shipment stating the amount of product furnished and that the material complies with these requirements.

(a) Erosion Control Blanket. Erosion control blanket shall be covered on top and bottom, also known as double net, with a 100 percent biodegradable woven, natural fiber or jute net meeting the following.

Material	Minimum Value
Excelsior	80%
Straw	100%
Coconut or Coir	100% Coconut or Coir
Straw/Coconut or Coir	70% Straw / 30% Coconut or Coir

(b) Wildlife Friendly Erosion Control Blanket. Wildlife friendly erosion control blanket shall be according to Article 1081.10(a) except the netting shall be loose weave, also known as leno weave or gauze weave, with a moveable joint.

(c) Wire Staples. Staples shall be made from No. 11 gauge or heavier uncoated black carbon steel wire, a minimum of 1 in. (25 mm) wide at the top and a minimum overall length of 8 in. (200 mm).

(d) Wood Stakes. Hardwood blanket anchors shall be nominally 7 in. (180 mm) long from neck of hook to tip of anchor. The anchor shall have a minimum 1/2 in. (13 mm) curving hook to hold the blanket in place.

(e) Turf Reinforcement Mat (TRM). The TRM shall be comprised of non-degradable, ultraviolet stabilized synthetic fibers, filaments, netting, and/or wire mesh processed into a three-dimensional reinforced mat. The mats may include degradable material to assist with vegetation establishment. Soil filled mats will not be allowed.

The TRM shall meet the following physical and performance properties:

Property	Value	Test Method
Tensile Strength, lb/ft (kN/m)	150 (2.19) min.	ASTM D 6818
UV Stability, (% Tensile Retained)	80 min.	ASTM D 4355 (1000 Hour Exposure)
Resiliency, (% Thickness Retained)	80 min.	ASTM D 6524
Allowable Shear Stress, lb/sq ft (Pa) 1/	8 (384)	ECTC approved test method and independent laboratory

1/ Minimum shear stress the TRM (fully vegetated) can sustain without physical damage or excess erosion (> 1/2 in. (13 mm) soil loss) during a 30 minute flow event in large scale testing.

For TRMs containing degradable components, all property values shall be obtained on the non-degradable portion of the matting alone."

FUEL COST ADJUSTMENT (BDE)

Effective: April 1, 2009 Revised: August 1, 2017

Description. Fuel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in fuel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any category of work will make that category of work exempt from fuel cost adjustment.

General. The fuel cost adjustment shall apply to contract pay items as grouped by category. The adjustment shall only apply to those categories of work checked "Yes", and only when the cumulative plan quantities for a category exceed the required threshold. Adjustments to work items in a category, either up or down, and extra work paid for by agreed unit price will be subject to fuel cost adjustment only when the category representing the added work was subject to the

fuel cost adjustment. Extra work paid for at a lump sum price or by force account will not be subject to fuel cost adjustment. Category descriptions and thresholds for application and the fuel usage factors which are applicable to each are as follows:

(a) Categories of Work.

(1) Category A: Earthwork. Contract pay items performed under Sections 202, 204, and 206 including any modified standard or nonstandard items where the character of the work to be performed is considered earthwork. The cumulative total of all applicable item plan quantities shall exceed 25,000 cu yd (20,000 cu m). Included in the fuel usage factor is a weighted average 0.10 gal/cu yd (0.50 liters/cu m) factor for trucking.

(2) Category B: Subbases and Aggregate Base Courses. Contract pay items constructed under Sections 311, 312 and 351 including any modified standard or nonstandard items where the character of the work to be performed is considered construction of a subbase or aggregate, stabilized or modified base course. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is a 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.

(3) Category C: Hot-Mix Asphalt (HMA) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 355, 406, 407 and 482 including any modified standard or nonstandard items where the character of the work to be performed is considered HMA bases, pavements and shoulders. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.

(4) Category D: Portland Cement Concrete (PCC) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 353, 420, 421 and 483 including any modified standard or nonstandard items where the character of the work to be performed is considered PCC base, pavement or shoulder. The cumulative total of all applicable item plan quantities shall exceed 7500 sq yd (6000 sq m). Included in the fuel usage factor is 1.20 gal/cu yd (5.94 liters/cu m) factor for trucking.

(5) Category E: Structures. Structure items having a cumulative bid price that exceeds $250,000 for pay items constructed under Sections 502, 503, 504, 505, 512, 516 and 540 including any modified standard or nonstandard items where the character of the work to be performed is considered structure work when similar to that performed under these sections and not included in categories A through D.

(b) Fuel Usage Factors.

English Units

Category	Factor	Units
A - Earthwork	0.34	gal / cu yd
B – Subbase and Aggregate Base courses	0.62	gal / ton
C – HMA Bases, Pavements and Shoulders	1.05	gal / ton
D – PCC Bases, Pavements and Shoulders	2.53	gal / cu yd
E – Structures	8.00	gal / $1000

Metric Units

Category	Factor	Units
A - Earthwork	1.68	liters / cu m
B – Subbase and Aggregate Base courses	2.58	liters / metric ton
C – HMA Bases, Pavements and Shoulders	4.37	liters / metric ton
D – PCC Bases, Pavements and Shoulders	12.52	liters / cu m
E – Structures	30.28	liters / $1000

(c) Quantity Conversion Factors.

Category	Conversion	Factor
B	sq yd to ton	0.057 ton / sq yd / in depth
	sq m to metric ton	0.00243 metric ton / sq m / mm depth
C	sq yd to ton	0.056 ton / sq yd / in depth
	sq m to metric ton	0.00239 m ton / sq m / mm depth
D	sq yd to cu yd	0.028 cu yd / sq yd / in depth
	sq m to cu m	0.001 cu m / sq m / mm depth

Method of Adjustment. Fuel cost adjustments will be computed as follows.

$CA = (FPI_P - FPI_L) \times FUF \times Q$

Where: CA = Cost Adjustment, $
FPI_P = Fuel Price Index, as published by the Department for the month the work is performed, $/gal ($/liter)
FPI_L = Fuel Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, $/gal ($/liter)
FUF = Fuel Usage Factor in the pay item(s) being adjusted
Q = Authorized construction Quantity, tons (metric tons) or cu yd (cu m)

The entire FUF indicated in paragraph (b) will be used regardless of use of trucking to perform the work.

Basis of Payment. Fuel cost adjustments may be positive or negative but will only be made when there is a difference between the FPI_L and FPI_P in excess of five percent, as calculated by:

Percent Difference = $\{(FPI_L - FPI_P) \div FPI_L\} \times 100$

Fuel cost adjustments will be calculated for each calendar month in which applicable work is performed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT (BDE)

Effective: November 1, 2022 Revised: August 1, 2023

Add the following after the second sentence in the eighth paragraph of Article 406.06(h)(2) of the Standard Specifications:

"If rain is forecasted and traffic is to be on the LJS or if pickup/tracking of the LJS material is likely, the LJS shall be covered immediately following its application with FA 20 fine aggregate mechanically spread uniformly at a rate of 1.5 ± 0.5 lb/sq yd (0.75 ± 0.25 kg/sq m). Fine aggregate landing outside of the LJS shall be removed prior to application of tack coat."

Add the following after the first sentence in the ninth paragraph of Article 406.06(h)(2) of the Standard Specifications:

"LJS half-width shall be applied at a width of 9 ± 1 in. (225 ± 25 mm) in the immediate lane to be placed with the outside edge flush with the joint of the next HMA lift. The vertical face of any longitudinal joint remaining in place shall also be coated."

Add the following after the eleventh paragraph of Article 406.06(h)(2) of the Standard Specifications:

"LJS Half-Width Application Rate, lb/ft (kg/m) 1/			
Lift Thickness, in. (mm)	Coarse Graded Mixture (IL-19.0, IL-19.0L, IL-9.5, IL-9.5L, IL-4.75)	Fine Graded Mixture (IL-9.5FG)	SMA Mixture (SMA-9.5, SMA-12.5)
¾ (19)	0.44 (0.66)		
1 (25)	0.58 (0.86)		
1 ¼ (32)	0.66 (0.98)	0.44 (0.66)	
1 ½ (38)	0.74 (1.10)	0.48 (0.71)	0.63 (0.94)
1 ¾ (44)	0.82 (1.22)	0.52 (0.77)	0.69 (1.03)
2 (50)	0.90 (1.34)	0.56 (0.83)	0.76 (1.13)
≥ 2 ¼ (60)	0.98 (1.46)		

1/ The application rate includes a surface demand for liquid. The thickness of the LJS may taper from the center of the application to a lesser thickness on the edge of the application, provided the correct width and application rate are maintained."

Revise the second paragraph of Article 406.13(b) of the Standard Specifications to read:

"Aggregate for covering tack, LJS, or FLS will not be measured for payment."

Add the following to the end of the second paragraph of Article 406.14 of the Standard Specifications:

"Longitudinal joint sealant (LJS) half-width will be paid for at the contract unit price per foot (meter) for LONGITUDINAL JOINT SEALANT, HALF-WIDTH."

LONGITUDINAL TINING (BDE)

Effective: January 1, 2026

Revise the first three paragraphs of Article 420.09(e)(1) of the Standard Specifications to read:

"(1) Type A. Type A final finish shall be obtained by the use of a carpet drag composed of an artificial turf followed immediately by a mechanically operated metal comb longitudinal tining device.

The artificial turf shall be made of molded polyethylene with synthetic turf blades approximately 0.85 in. (20 mm) long and contain approximately 7,200 individual blades per 1 sq ft (0.1 sq m). The artificial turf shall be attached to a device that will permit control of the time and rate of texturing. The artificial turf carpet shall be full pavement width and of sufficient size that during the finishing operation, approximately 2 ft (600 mm) of carpet in the direction of drag (i.e., parallel to the pavement centerline) will be in contact with the pavement surface over the entire pavement width. The drag shall be operated in a longitudinal direction to produce a uniform appearing finish. If necessary for maintaining contact with the pavement surface, the carpet may be weighted.

The metal comb shall consist of a single line of tempered spring steel tines uniformly spaced at 3/4 in. (19 mm). The tines shall be flat and of a size and stiffness sufficient to produce a groove of the specified dimensions in the plastic concrete without tearing of the pavement surface. The mechanically operated metal comb shall be either an exclusive piece of equipment which is mechanically self-propelled or shall be combined with the curing equipment. The artificial turf carpet drag may be attached to this piece of equipment provided a surface texture is produced satisfactory to the Engineer. The tining device shall be operated to produce a pattern of grooves, 1/8 to 3/16 in. (3 to 5 mm) deep and 1/10 to 1/8 in. (2.5 to 3 mm) wide along the pavement in a single pass. The tining shall be operated parallel to the longitudinal joint or edge of pavement and shall not deviate more than 1 in. (25 mm) in 25 ft (8 m). Tining shall be withheld 1 to 1 1/2 in. (25 to 38 mm) from a longitudinal joint or pavement edge.

Hand tining or tining with a mechanically operated comb combined with the curing equipment specified in Article 1101.09 will be permitted where the specifications permit hand finishing or screeds, one lane construction up to 16 ft (5 m) wide, gaps, projects with a net length of 1/2 mile (800 m) or less, and where the production rate on any paving day will be less than 1,500 cu yd (1200 cu m) per day. A foot bridge shall be provided for the hand tining operation for all pavement over 12 ft (3.6 m) wide, unless it can be demonstrated that an alternate texturing operation produces satisfactory results."

MECHANICALLY STABILIZED EARTH RETAINING WALLS (BDE)

Effective: August 1, 2023 Revised: August 1, 2025

Add the following to Article 522.02 of the Standard Specifications:

"(s) Metal Hardware Cast into Concrete.....1006.13"

Revise the first paragraph of Article 522.09(b)(1) of the Standard Specifications to read:

"(1) General. At least seven calendar days prior to the start of installation, the Contractor shall meet with the Engineer, supplier, consultants, and subcontractors involved in any part of the MSE wall installation or inspection to outline procedures and ensure proper construction of the wall."

Revise Article 522.09(b)(5)(a.)(2.) of the Standard Specifications to read:

"2. The maximum allowable offset between adjacent panels shall be 3/4 in. (19 mm)."

Add the following as Article 522.09(b)(5)(a.)(5.) to the Standard Specifications:

"5. The width of each panel joint shall be within 1/4 in. (6 mm) of that shown on the plans."

Revise the second sentence of Articles 1003.07(d) and 1004.06(d) of the Standard Specifications to read:

"The Illinois Modified AASHTO T 296 test with pore pressure measurement may be used in lieu of AASHTO T 236."

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."

PAVEMENT PATCHING (BDE)

Effective: August 1, 2025

Revise the first sentence of the last paragraph of Article 442.06(a)(2) of the Standard Specifications to read:

"Type IV patches shall be reinforced with welded wire reinforcement according to the details shown on the plans."

Revise Article 442.06(a)(3) of the Standard Specifications to read:

"(3) Class C Patching. Patches adjacent to a new lane of pavement, new portland cement concrete shoulder, or new curb and gutter of more than 20 ft (6 m) in length shall be tied with No. 6 (No. 19) tie bars, 24 in. (600 mm) long, embedded 8 in. (200 mm) at 36 in. (900 mm) centers according to Article 420.05(b).

When the patched pavement is not to be resurfaced, transverse contraction joints shall be formed on 15 ft (4.5 m) to 20 ft (6 m) centers by sawing in all patches that are more than 20 ft (6 m) in length. They shall be placed in line with joints or cracks in the existing slab whenever possible."

Revise the eighth paragraph of Article 442.11 of the Standard Specifications to read:

"Pavement tie bars for patches will be paid for at the contract unit price per each for TIE BARS, of the diameter specified."

PERFORMANCE GRADED ASPHALT BINDER (BDE)

Effective: January 1, 2023

Revise Article 1032.05 of the Standard Specifications to read:

"**1032.05 Performance Graded Asphalt Binder.** These materials will be accepted according to the Bureau of Materials Policy Memorandum, "Performance Graded Asphalt Binder Qualification Procedure." The Department will maintain a qualified producer list. These materials shall be free from water and shall not foam when heated to any temperature below the actual flash point. Air blown asphalt, recycle engine oil bottoms (ReOB), and polyphosphoric acid (PPA) modification shall not be used.

When requested, producers shall provide the Engineer with viscosity/temperature relationships for the performance graded asphalt binders delivered and incorporated in the work.

(a) Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans and the following.

Test	Parameter
Small Strain Parameter (AASHTO PP 113) BBR, ΔTc, 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5 °C min.

(b) Modified Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans.

Asphalt binder modification shall be performed at the source, as defined in the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.”

Modified asphalt binder shall be safe to handle at asphalt binder production and storage temperatures or HMA construction temperatures. Safety Data Sheets (SDS) shall be provided for all asphalt modifiers.

(1) Polymer Modification (SB/SBS or SBR). Elastomers shall be added to the base asphalt binder to achieve the specified performance grade and shall be either a styrene-butadiene diblock, triblock copolymer without oil extension, or a styrene-butadiene rubber. The polymer modified asphalt binder shall be smooth, homogeneous, and be according to the requirements shown in Table 1 or 2 for the grade shown on the plans.

Table 1 - Requirements for Styrene-Butadiene Copolymer (SB/SBS) Modified Asphalt Binders		
Test	Asphalt Grade SB/SBS PG 64-28 SB/SBS PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SB/SBS PG 76-22 SB/SBS PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

Table 2 - Requirements for Styrene-Butadiene Rubber (SBR) Modified Asphalt Binders		
Test	Asphalt Grade SBR PG 64-28 SBR PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SBR PG 76-22 SBR PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
Toughness ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	110 (12.5) min.	110 (12.5) min.
Tenacity ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	75 (8.5) min.	75 (8.5) min.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	40 min.	50 min.

(2) Ground Tire Rubber (GTR) Modification. GTR modification is the addition of recycled ground tire rubber to liquid asphalt binder to achieve the specified performance grade. GTR shall be produced from processing automobile and/or truck tires by the ambient grinding method or micronizing through a cryogenic process. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall not contain free metal particles, moisture that would cause foaming of the asphalt, or other foreign materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois Modified AASHTO T 27 “Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates” or AASHTO PP 74 “Standard Practice for Determination of Size and Shape of Glass Beads Used in Traffic Markings by Means of Computerized Optical Method”, a 50 g sample of the GTR shall conform to the following gradation requirements.

Sieve Size	Percent Passing
No. 16 (1.18 mm)	100
No. 30 (600 µm)	95 ± 5
No. 50 (300 µm)	> 20

GTR modified asphalt binder shall be tested for rotational viscosity according to AASHTO T 316 using spindle S27. GTR modified asphalt binder shall be tested for original dynamic shear and RTFO dynamic shear according to AASHTO T 315 using a gap of 2 mm.

The GTR modified asphalt binder shall meet the requirements of Table 3.

Table 3 - Requirements for Ground Tire Rubber (GTR) Modified Asphalt Binders		
Test	Asphalt Grade GTR PG 64-28 GTR PG 70-22	Asphalt Grade GTR PG 76-22 GTR PG 76-28 GTR PG 70-28
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

(3) Softener Modification (SM). Softener modification is the addition of organic compounds, such as engineered flux, bio-oil blends, modified vegetable oils, glycol amines, and fatty acid derivatives, to the base asphalt binder to achieve the specified performance grade. Softeners shall be dissolved, dispersed, or reacted in the asphalt binder to enhance its performance and shall remain compatible with the asphalt binder with no separation. Softeners shall not be added to modified PG asphalt binder as defined in Articles 1032.05(b)(1) or 1032.05(b)(2).

An Attenuated Total Reflectance-Fourier Transform Infrared spectrum (ATR-FTIR) shall be collected for both the softening compound as well as the softener modified asphalt binder at the dose intended for qualification. The ATR-FTIR spectra shall be collected on unaged softener modified binder, 20-hour Pressurized Aging Vessel (PAV) aged softener modified binder, and 40-hour PAV aged softener modified binder. The ATR-FTIR shall be collected in accordance with Illinois Test Procedure 601. The electronic files spectral files (in one of the following extensions or equivalent: *.SPA, *.SPG, *.IRD, *.IFG, *.CSV, *.SP, *.IRS, *.GAML, *.[0-9], *.IGM, *.ABS, *.DRT, *.SBM, *.RAS) shall be submitted to the Central Bureau of Materials.

Softener modified asphalt binders shall meet the requirements in Table 4.

Table 4 - Requirements for Softener Modified Asphalt Binders	
Test	Asphalt Grade SM PG 46-28 SM PG 46-34 SM PG 52-28 SM PG 52-34 SM PG 58-22 SM PG 58-28 SM PG 64-22
Small Strain Parameter (AASHTO PP 113) BBR, ΔTc, 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5°C min.
Large Strain Parameter (Illinois Modified AASHTO T 391) DSR/LAS Fatigue Property, Δ|G*|peak τ, 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	≥ 54 %

The following grades may be specified as tack coats.

Asphalt Grade	Use
PG 58-22, PG 58-28, PG 64-22	Tack Coat"

Revise Article 1031.06(c)(1) and 1031.06(c)(2) of the Standard Specifications to read:

"(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin ABR shall not exceed the amounts listed in the following table.

HMA Mixtures - RAP/RAS Maximum ABR % 1/ 2/			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface 3/
30	30	30	10
50	25	15	10
70	15	10	10
90	10	10	10

1/ For Low ESAL HMA shoulder and stabilized subbase, the RAP/RAS ABR shall not exceed 50 percent of the mixture.

2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

3/ The maximum ABR percentages for ground tire rubber (GTR) modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.

(2) FRAP/RAS. When FRAP is used alone or FRAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the following table.

HMA Mixtures - FRAP/RAS Maximum ABR % 1/ 2/			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface 3/
30	55	45	15
50	45	40	15
70	45	35	15
90	45	35	15
SMA	- -	- -	25
IL-4.75	- -	- -	35

1/ For Low ESAL HMA shoulder and stabilized subbase, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.

2/ When FRAP/RAS ABR exceeds 20 percent for all mixes, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

3/ The maximum ABR percentages for GTR modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes."

Add the following to the end of Note 2 of Article 1030.03 of the Standard Specifications.

"A dedicated storage tank for the ground tire rubber (GTR) modified asphalt binder shall be provided. This tank shall be capable of providing continuous mechanical mixing throughout and/or recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ±0.40 percent."

RAILROAD PROTECTIVE LIABILITY INSURANCE (BDE)

Effective: December 1, 1986 Revised: January 1, 2022

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications. A separate policy is required for each railroad unless otherwise noted.

NUMBER & SPEED OF NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	FREIGHT TRAINS
CSX Transportation, Inc. 500 Water Street, C907 Jacksonville, FL 32202	0	7 trains/day @ 20mph

Class 1 RR (Y or N): Y
DOT/AAR No.: 608218D RR Mile Post: 41.42
DOT/AAR No.: 608217W RR Mile Post: 41.28
DOT/AAR No.: 976870X RR Mile Post: 41.19 (spur to Prairie Milling Co.)
DOT/AAR No.: 608236B RR Mile Post: 41.19 (spur to Prairie Milling Co.)

RR Division: Chicago RR Sub-Division: New Rock
Location: I-80 over CSX

For Freight/Passenger Information Contact: Brad Armstrong Phone: (513) 853-1221
For Insurance Information Contact: Richard Shepard Phone: 904-359-1782

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

RAISED REFLECTIVE PAVEMENT MARKERS (BDE)

Effective: November 1, 2025

Revise the eighth sentence of the second paragraph of Article 781.03(a) of the Standard Specifications to read:

"A rapid setting epoxy selected from the Department's qualified product list for raised reflective pavement markers shall be poured into the cut to within 3/8 in. (9 mm) of the pavement surface."

Revise the first sentence of Article 1096.01 of the Standard Specifications to read:

"**1096.01 Raised Reflective Pavement Markers.** Raised reflective pavement markers shall meet the following requirements and be on the Department's qualified product list."

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

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

Revise the first paragraph of Article 669.04 of the Standard Specifications to read:

"**669.04 Regulated Substances Monitoring.** Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities. The excavated soil and groundwater within the work areas shall be managed as either uncontaminated soil, hazardous waste, special waste, or non-special waste.

As part of the regulated substances monitoring, the monitoring personnel shall perform and document the applicable duties listed on form BDE 2732 "Regulated Substances Monitoring Daily Record (RSMDR)"."

Revise the first two sentences of the nineteenth paragraph of Article 669.05 of the Standard Specifications to read:

"The Contractor shall coordinate waste disposal approvals with the disposal facility and provide the specific analytical testing requirements of that facility. The Contractor shall make all arrangements for collection, transportation, and analysis of landfill acceptance testing."

Revise the last paragraph of Article 669.05 of the Standard Specifications to read:

"The Contractor shall select a permitted landfill facility or CCDD/USFO facility meeting the requirements of 35 Ill. Admin. Code Parts 810-814 or Part 1100, respectively. The Department will review and approve or reject the facility proposed by the Contractor based upon information provided in BDE 2730. The Contractor shall verify whether the selected facility is compliant with those applicable standards as mandated by their permit and whether the facility is presently, has previously been, or has never been, on the United States Environmental Protection Agency (U.S. EPA) National Priorities List or the Resource Conservation and Recovery Act (RCRA) List of Violating Facilities. The use of a Contractor selected facility shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth."

Revise the first paragraph of Article 669.07 of the Standard Specifications to read:

"**669.07 Temporary Staging.** Soil classified according to Articles 669.05(a)(2), (b)(1), or (c) may be temporarily staged at the Contractor's option. All other soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) shall be managed and disposed of without temporary staging to the greatest extent practicable. If circumstances beyond the Contractor's control require temporary staging of these latter materials, the Contractor shall request approval from the Engineer in writing.

Topsoil for re-use as final cover which has been field screened and found not to exhibit PID readings over daily background readings as documented on the BDE 2732, visual staining or odors, and is classified according to Articles 669.05(a)(2), (a)(3), (a)(4), (b)(1), or (c) may be temporarily staged at the Contractor's option."

Add the following paragraph after the sixth paragraph of Article 669.11 of the Standard Specifications.

"The sampling and testing of effluent water derived from dewatering discharges for priority pollutants volatile organic compounds (VOCs), priority pollutants semi-volatile organic compounds (SVOCs), or priority pollutants metals, will be paid for at the contract unit price per each for VOCS GROUNDWATER ANALYSIS using EPA Method 8260B, SVOCS GROUNDWATER ANALYSIS using EPA Method 8270C, or RCRA METALS GROUNDWATER ANALYSIS using EPA Methods 6010B and 7471A. This price shall include transporting the sample from the job site to the laboratory."

Revise the first sentence of the eight paragraph of Article 669.11 of the Standard Specifications to read:

"Payment for temporary staging of soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) to be managed and disposed of, if required and approved by the Engineer, will be paid according to Article 109.04."

SEEDING (BDE)

Effective: November 1, 2022

Revise Article 250.07 of the Standard Specifications to read:

"**250.07 Seeding Mixtures.** The classes of seeding mixtures and combinations of mixtures will be designated in the plans.

When an area is to be seeded with two or more seeding classes, those mixtures shall be applied separately on the designated area within a seven day period. Seeding shall occur prior to placement of mulch cover. A Class 7 mixture can be applied at any time prior to applying any seeding class or added to them and applied at the same time.

TABLE 1 - SEEDING MIXTURES

Class	Type	Seeds	lb/acre (kg/hectare)
1	Lawn Mixture 1/	Kentucky Bluegrass	100 (110)
		Perennial Ryegrass	60 (70)
		Festuca rubra ssp. r*ubra* (Creeping Red Fescue)	40 (50)
1A	Salt Tolerant Lawn Mixture 1/	Kentucky Bluegrass	60 (70)
		Perennial Ryegrass	20 (20)
		Festuca rubra ssp. *rubra* (Creeping Red Fescue)	20 (20)
		Festuca brevipilla (Hard Fescue)	20 (20)
		Puccinellia distans (Fults Saltgrass or Salty Alkaligrass)	60 (70)
1B	Low Maintenance Lawn Mixture 1/	Turf-Type Fine Fescue 3/	150 (170)
		Perennial Ryegrass	20 (20)
		Red Top	10 (10)
		Festuca rubra ssp. *rubra* (Creeping Red Fescue)	20 (20)
2	Roadside Mixture 1/	*Lolium arundinaceum* (Tall Fescue)	100 (110)
		Perennial Ryegrass	50 (55)
		Festuca rubra ssp. r*ubra* (Creeping Red Fescue)	40 (50)
		Red Top	10 (10)
2A	Salt Tolerant Roadside Mixture 1/	*Lolium arundinaceum* (Tall Fescue)	60 (70)
		Perennial Ryegrass	20 (20)
		Festuca rubra ssp. *rubra* (Creeping Red Fescue)	30 (20)
		Festuca brevipila (Hard Fescue)	30 (20)
		Puccinellia distans (Fults Saltgrass or Salty Alkaligrass)	60 (70)
3	Northern Illinois Slope Mixture 1/	*Elymus canadensis* (Canada Wild Rye) 5/	5 (5)
		Perennial Ryegrass	20 (20)
		Alsike Clover 4/	5 (5)
		Desmanthus illinoensis (Illinois Bundleflower) 4/ 5/	2 (2)
		Schizachyrium scoparium (Little Bluestem) 5/	12 (12)
		Bouteloua curtipendula (Side-Oats Grama) 5/	10 (10)
		Puccinellia distans (Fults Saltgrass or Salty Alkaligrass)	30 (35)
		Oats, Spring	50 (55)
		Slender Wheat Grass 5/	15 (15)
		Buffalo Grass 5/ 7/	5 (5)
3A	Southern Illinois Slope Mixture 1/	Perennial Ryegrass	20 (20)
		Elymus canadensis (Canada Wild Rye) 5/	20 (20)
		Panicum virgatum (Switchgrass) 5/	10 (10)
		Schizachyrium scoparium (Little Blue Stem) 5/	12 (12)
		Bouteloua curtipendula (Side-Oats Grama) 5/	10 (10)
		Dalea candida (White Prairie Clover) 4/ 5/	5 (5)
		Rudbeckia hirta (Black-Eyed Susan) 5/	5 (5)
		Oats, Spring	50 (55)

Class – Type		Seeds	lb/acre (kg/hectare)
4	Native Grass 2/ 6/	*Andropogon gerardi* (Big Blue Stem) 5/	4 (4)
		Schizachyrium scoparium (Little Blue Stem) 5/	5 (5)
		Bouteloua curtipendula (Side-Oats Grama) 5/	5 (5)
		Elymus canadensis (Canada Wild Rye) 5/	1 (1)
		Panicum virgatum (Switch Grass) 5/	1 (1)
		Sorghastrum nutans (Indian Grass) 5/	2 (2)
		Annual Ryegrass	25 (25)
		Oats, Spring	25 (25)
		Perennial Ryegrass	15 (15)
4A	Low Profile Native Grass 2/ 6/	*Schizachyrium scoparium* (Little Blue Stem) 5/	5 (5)
		Bouteloua curtipendula (Side-Oats Grama) 5/	5 (5)
		Elymus canadensis (Canada Wild Rye) 5/	1 (1)
		Sporobolus heterolepis (Prairie Dropseed) 5/	0.5 (0.5)
		Annual Ryegrass	25 (25)
		Oats, Spring	25 (25)
		Perennial Ryegrass	15 (15)
4B	Wetland Grass and Sedge Mixture 2/ 6/	Annual Ryegrass	25 (25)
		Oats, Spring	25 (25)
		Wetland Grasses (species below) 5/	6 (6)

Species:	% By Weight
Calamagrostis canadensis (Blue Joint Grass)	12
Carex lacustris (Lake-Bank Sedge)	6
Carex slipata (Awl-Fruited Sedge)	6
Carex stricta (Tussock Sedge)	6
Carex vulpinoidea (Fox Sedge)	6
Eleocharis acicularis (Needle Spike Rush)	3
Eleocharis obtusa (Blunt Spike Rush)	3
Glyceria striata (Fowl Manna Grass)	14
Juncus effusus (Common Rush)	6
Juncus tenuis (Slender Rush)	6
Juncus torreyi (Torrey's Rush)	6
Leersia oryzoides (Rice Cut Grass)	10
Scirpus acutus (Hard-Stemmed Bulrush)	3
Scirpus atrovirens (Dark Green Rush)	3
Bolboschoenus fluviatilis (River Bulrush)	3
Schoenoplectus tabernaemontani (Softstem Bulrush)	3
Spartina pectinata (Cord Grass)	4

Class – Type	Seeds	lb/acre (kg/hectare)
5 Forb with Annuals Mixture 2/ 5/ 6/	Annuals Mixture (Below)	1 (1)
	Forb Mixture (Below)	10 (10)

Annuals Mixture - Mixture not exceeding 25 % by weight of any one species, of the following:

Coreopsis lanceolata (Sand Coreopsis)
Leucanthemum maximum (Shasta Daisy)
Gaillardia pulchella (Blanket Flower)
Ratibida columnifera (Prairie Coneflower)
Rudbeckia hirta (Black-Eyed Susan)

Forb Mixture - Mixture not exceeding 5 % by weight PLS of any one species, of the following:

Amorpha canescens (Lead Plant) 4/
Anemone cylindrica (Thimble Weed)
Asclepias tuberosa (Butterfly Weed)
Aster azureus (Sky Blue Aster)
Symphyotrichum leave (Smooth Aster)
Aster novae-angliae (New England Aster)
Baptisia leucantha (White Wild Indigo) 4/
Coreopsis palmata (Prairie Coreopsis)
Echinacea pallida (Pale Purple Coneflower)
Eryngium yuccifolium (Rattlesnake Master)
Helianthus mollis (Downy Sunflower)
Heliopsis helianthoides (Ox-Eye)
Liatris aspera (Rough Blazing Star)
Liatris pycnostachya (Prairie Blazing Star)
Monarda fistulosa (Prairie Bergamot)
Parthenium integrifolium (Wild Quinine)
Dalea candida (White Prairie Clover) 4/
Dalea purpurea (Purple Prairie Clover) 4/
Physostegia virginiana (False Dragonhead)
Potentilla arguta (Prairie Cinquefoil)
Ratibida pinnata (Yellow Coneflower)
Rudbeckia subtomentosa (Fragrant Coneflower)
Silphium laciniatum (Compass Plant)
Silphium terebinthinaceum (Prairie Dock)
Oligoneuron rigidum (Rigid Goldenrod)
Tradescantia ohiensis (Spiderwort)
Veronicastrum virginicum (Culver's Root)

Class – Type		Seeds	lb/acre (kg/hectare)
5A	Large Flower Native Forb Mixture 2/ 5/ 6/	Forb Mixture (see below)	5 (5)
		Species:	% By Weight
		Aster novae-angliae (New England Aster)	5
		Echinacea pallida (Pale Purple Coneflower)	10
		Helianthus mollis (Downy Sunflower)	10
		Heliopsis helianthoides (Ox-Eye)	10
		Liatris pycnostachya (Prairie Blazing Star)	10
		Ratibida pinnata (Yellow Coneflower)	5
		Rudbeckia hirta (Black-Eyed Susan)	10
		Silphium laciniatum (Compass Plant)	10
		Silphium terebinthinaceum (Prairie Dock)	20
		Oligoneuron rigidum (Rigid Goldenrod)	10
5B	Wetland Forb 2/ 5/ 6/	Forb Mixture (see below)	2 (2)
		Species:	% By Weight
		Acorus calamus (Sweet Flag)	3
		Angelica atropurpurea (Angelica)	6
		Asclepias incarnata (Swamp Milkweed)	2
		Aster puniceus (Purple Stemmed Aster)	10
		Bidens cernua (Beggarticks)	7
		Eutrochium maculatum (Spotted Joe Pye Weed)	7
		Eupatorium perfoliatum (Boneset)	7
		Helenium autumnale (Autumn Sneeze Weed)	2
		Iris virginica shrevei (Blue Flag Iris)	2
		Lobelia cardinalis (Cardinal Flower)	5
		Lobelia siphilitica (Great Blue Lobelia)	5
		Lythrum alatum (Winged Loosestrife)	2
		Physostegia virginiana (False Dragonhead)	5
		Persicaria pensylvanica (Pennsylvania Smartweed)	10
		Persicaria lapathifolia (Curlytop Knotweed)	10
		Pychanthemum virginianum (Mountain Mint)	5
		Rudbeckia laciniata (Cut-leaf Coneflower)	5
		Oligoneuron riddellii (Riddell Goldenrod)	2
		Sparganium eurycarpum (Giant Burreed)	5
6	Conservation Mixture 2/ 6/	*Schizachyrium scoparium* (Little Blue Stem) 5/	5 (5)
		Elymus canadensis (Canada Wild Rye) 5/	2 (2)
		Buffalo Grass 5/ 7/	5 (5)
		Vernal Alfalfa 4/	15 (15)
		Oats, Spring	48 (55)
6A	Salt Tolerant Conservation Mixture 2/ 6/	*Schizachyrium scoparium* (Little Blue Stem) 5/	5 (5)
		Elymus canadensis (Canada Wild Rye) 5/	2 (2)
		Buffalo Grass 5/ 7/	5 (5)
		Vernal Alfalfa 4/	15 (15)
		Oats, Spring	48 (55)
		Puccinellia distans (Fults Saltgrass or Salty Alkaligrass)	20 (20)
7	Temporary Turf Cover Mixture	Perennial Ryegrass	50 (55)
		Oats, Spring	64 (70)

Notes:

1/ Seeding shall be performed when the ambient temperature has been between 45 ºF (7 ºC) and 80 ºF (27 ºC) for a minimum of seven (7) consecutive days and is forecasted to be the same for the next five (5) days according to the National Weather Service.
2/ Seeding shall be performed in late fall through spring beginning when the ambient temperature has been below 45 ºF (7 ºC) for a minimum of seven (7) consecutive days and ending when the ambient temperature exceeds 80 ºF (27 ºC) according to the National Weather Service.
3/ Specific variety as shown in the plans or approved by the Engineer.
4/ Inoculation required.
5/ Pure Live Seed (PLS) shall be used.
6/ Fertilizer shall not be used.
7/ Seed shall be primed with KNO_3 to break dormancy and dyed to indicate such.

Seeding will be inspected after a period of establishment. The period of establishment shall be six (6) months minimum, but not to exceed nine (9) months. After the period of establishment, areas not exhibiting 75 percent uniform growth shall be interseeded or reseeded, as determined by the Engineer, at no additional cost to the Department."

SHORT TERM AND TEMPORARY PAVEMENT MARKINGS (BDE)

Effective: April 1, 2024 Revised: April 2, 2024

Revise Article 701.02(d) of the Standard Specifications to read:

"(d) Pavement Marking Tapes (Note 3) .....1095.06"

Add the following Note to the end of Article 701.02 of the Standard Specifications:

"Note 3. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape."

Revise Article 703.02(c) of the Standard Specifications to read:

"(c) Pavement Marking Tapes (Note 1) .....1095.06"

Add the following Note to the end of Article 703.02 of the Standard Specifications:

"Note 1. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape."

Revise Article 1095.06 of the Standard Specifications to read:

"**1095.06 Pavement Marking Tapes.** Type I white or yellow marking tape shall consist of glass spheres embedded into a binder on a foil backing that is precoated with a pressure sensitive adhesive. The spheres shall be of uniform gradation and distributed evenly over the surface of the tape.

Type IV tape shall consist of white or yellow tape with wet reflective media incorporated to provide immediate and continuing retroreflection in wet and dry conditions. The wet retroreflective media shall be bonded to a durable polyurethane surface. The patterned surface shall have approximately 40 ± 10 percent of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed reflective elements or particles.

Blackout tape shall consist of a matte black, non-reflective, patterned surface that is precoated with a pressure sensitive adhesive.

(a) Color. The white and yellow markings shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

Color	Daylight Reflectance %Y
White	65 min.
Yellow *	36 - 59

*Shall match Aerospace Material Specification Standard 595 33538 (Orange Yellow) and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

(b) Retroreflectivity. The white and yellow markings shall be retroreflective. Reflective values measured in accordance with the photometric testing procedure of ASTM D 4061 shall not be less than those listed in the table below. The coefficient of retroreflected luminance, R_L, shall be expressed as average millicandelas/footcandle/sq ft (millicandelas/lux/sq m), measured on a 3.0 x 0.5 ft (900 mm x 150 mm) panel at 86 degree entrance angle.

Coefficient of Retroreflected Luminance, R_L, Dry					
Type I			Type IV		
Observation Angle	White	Yellow	Observation Angle	White	Yellow
0.2°	2700	2400	0.2°	1300	1200
0.5°	2250	2000	0.5°	1100	1000

Wet retroreflectance shall be measured for Type IV under wet conditions according to ASTM E 2177 and meet the following.

Wet Retroreflectance, Initial R_L	
Color	R_L 1.05/88.76
White	300
Yellow	200

(c) Skid Resistance. The surface of Type IV and blackout markings shall provide a minimum skid resistance of 45 BPN when tested according to ASTM E 303.

(d) Application. The pavement marking tape shall have a precoated pressure sensitive adhesive and shall require no activation procedures. Test pieces of the tape shall be applied according to the manufacturer's instructions and tested according to ASTM D 1000, Method A, except that a stiff, short bristle roller brush and heavy hand pressure will be substituted for the weighted rubber roller in applying the test pieces to the metal test panel. Material tested as directed above shall show a minimum adhesion value of 750 g/in. (30 g/mm) width at the temperatures specified in ASTM D 1000. The adhesive shall be resistant to oils, acids, solvents, and water, and shall not leave objectionable stains or residue after removal. The material shall be flexible and conformable to the texture of the pavement.

(e) Durability. Type IV and blackout tape shall be capable of performing for the duration of a normal construction season and shall then be capable of being removed intact or in large sections at pavement temperatures above 40 °F (4 °C) either manually or with a roll-up device without the use of sandblasting, solvents, or grinding. The Contractor shall provide a manufacturer’s certification that the material meets the requirements for being removed after the following minimum traffic exposure based on transverse test decks with rolling traffic.

(1) Time in place - 400 days
(2) ADT per lane - 9,000 (28 percent trucks)
(3) Axle hits - 10,000,000 minimum

Samples of the material applied to standard specimen plates will be measured for thickness and tested for durability in accordance with ASTM D 4060, using a CS-17 wheel and 1000-gram load, and shall meet the following criteria showing no significant change in color after being tested for the number of cycles indicated.

Test	Type I	Type IV	Blackout
Minimum Initial Thickness, mils (mm)	20 (0.51)	65 (1.65) 1/ 20 (0.51) 2/	65 (1.65) 1/ 20 (0.51) 2/
Durability (cycles)	5,000	1,500	1,500

1/ Measured at the thickest point of the patterned surface.

2/ Measured at the thinnest point of the patterned surface.

The pavement marking tape, when applied according to the manufacturer's recommended procedures, shall be weather resistant and shall show no appreciable fading, lifting, or shrinkage during the useful life of the marking. The tape, as applied, shall be of good appearance, free of cracks, and edges shall be true, straight, and unbroken.

(f) Sampling and Inspection.

(1) Sample. Prior to approval and use of Type IV pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory,

together with the results of all tests, stating that the material meets the requirements as set forth herein. The independent laboratory test report shall state the lot tested, the manufacturer's name, and the date of manufacture.

After initial approval by the Department, samples and certification by the manufacturer shall be submitted for each subsequent batch of Type IV tape used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, the manufacturer's name, and the date of manufacture.

(2) Inspection. The Contractor shall provide a manufacturer's certification to the Engineer stating the material meets all requirements of this specification. All material samples for acceptance tests shall be taken or witnessed by a representative of the Bureau of Materials and shall be submitted to the Engineer of Materials, 126 East Ash Street, Springfield, Illinois 62704-4766 at least 30 days in advance of the pavement marking operations."

SIGN PANELS AND APPURTENANCES (BDE)

Effective: January 1, 2025 Revised: January 1, 2026

Add Article 720.02(c) of the Standard Specifications to read:

"(c) Aluminum Epoxy Mastic .....1008.03"

Revise the second and third paragraphs of Article 720.02 of the Standard Specifications to read:

"The sign mounting support channel shall be manufactured from steel or aluminum and shall be according to Standard 720001.

Steel support channels shall be according to ASTM A 1011 (A 1011M), ASTM A 635 (A 635M), ASTM A 568 (A 568M), or ASTM A 684 (A 684M), and shall be galvanized. Galvanizing shall be according to ASTM A 653 (A 653M) when galvanized before fabrication, and AASHTO M 111 (M 111M) when galvanized after fabrication. Field or post fabricated drilled holes shall be spot painted with one coat of aluminum epoxy mastic paint prior to installation."

Revise the fifth paragraph of Article 720.02 of the Standard Specifications to read:

"The stainless steel banding for mounting signs or sign support channels to light or signal standards shall be according to ASTM A 240 (A 240M) Type 302 stainless steel."

Revise the first sentence of the tenth paragraph of Article 720.03 of the Standard Specifications to read:

"The backs of all sign panels shall be marked in a manner designed to last as long as the sign face material, in letters and numerals at least 3/8 in. (9.5 mm) but no more than 3/4 in. (19 mm) in height with the month and year of manufacture, the name of the sign manufacturer, the name

of the sign sheeting manufacturer, the method of manufacture ("screened", "EC film", "direct applied", or "digital print"), and the initials IDOT."

Revise the first sentence of the fourth paragraph of Article 1091.03(a)(10) of the Standard Specifications to read:

"Transparent colors screened, or transparent acrylic electronic cutting films, or digital printing on white sheeting, shall meet the minimum initial coefficient of retroreflection values of the 0.2 degree observation angle, -4.0 degree entrance angle values as listed in the previous tables for the color being applied."

Add the following after the fourth paragraph of Article 1091.03(a)(10) of the Standard Specifications:

"Digitally printed signs shall be produced using digital print technologies and ink systems, products and processes that comply with the sheeting manufacturer's recommendation. The digitally printed signs shall be fabricated with a full sign protective overlay film designed to provide a smooth surface needed for retroreflectivity, and to protect the sign from fading and UV degradation. The overlaminate shall comply with the sheeting manufacturer's recommendations to ensure proper adhesion and transparency."

Add the following after the third paragraph of Article 1106.01 of the Standard Specifications:

"Digitally printed signs may omit protective overlay film."

SLOPE WALL (BDE)

Effective: August 1, 2025

Revise Article 511.02(b) of the Standard Specifications to read:

"(b) Welded Wire Reinforcement (Note 3) .....1006.10"

Add the following note to the end of Article 511.02 of the Standard Specifications.

"Note 3. Welded wire reinforcement used for concrete slope wall shall be epoxy coated or galvanized according to AASHTO M 111 (M 111M)."

Revise the second sentence of Article 511.03(a) of the Standard Specifications to read:

"Concrete slope walls shall be reinforced with welded wire reinforcement consisting of 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) and supported 2 in. (50 mm) below the upper surface of the slope wall by concrete blocks."

Add the following to the end of Article 511.03(a) of the Standard Specifications as the last paragraph.

"The concrete slope wall shall be given a broom finish. The broom shall be drawn vertically along the slope wall surface, with adjacent strokes slightly overlapping, producing a uniform, slightly rough surface with parallel broom marks."

SOURCE OF SUPPLY AND QUALITY REQUIREMENTS (BDE)

Effective: January 2, 2023 Revised: January 1, 2026

Revise the third through ninth paragraphs of Article 106.01 of the Standard Specifications to read:

"Articles, materials, and supplies shall be classified into only one of the following categories.

(a) Iron and Steel. All iron and steel products, which are to be incorporated into the work, shall be domestically manufactured or produced and fabricated, unless an exception is expressly permitted under Federal and/or State law and written permission is given by the Department. The Contractor shall obtain from the iron or steel producer and/or fabricator, in addition to the mill analysis, a certification that all iron or steel materials meet these domestic source requirements.

The applications of all coatings, epoxy, galvanizing, painting, etc. to iron and steel products shall be domestically applied.

(b) Manufactured Products. Manufactured products shall include articles, materials or supplies that have been processed into a specific form or shape; or have been combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies. Manufactured products incorporated into the work shall have the final assembly for the manufacturing process occur domestically.

A manufactured product may include components that are construction materials, iron or steel products, or exempt materials.

Precast concrete products and intelligent transportation systems (ITS) or other electronic hardware systems shall comply with the requirements of Article 106.01(a) in addition to the requirements of manufactured products.

(c) Construction Materials. All manufacturing processes for construction materials shall occur within the United States. Construction materials shall include an article, material, or supply consisting of only one of the following.

(1) Non-ferrous metals;

(2) Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);

(3) Glass (including optic glass);

(4) Fiber optic cable (including drop cable);

(5) Optical fiber;

(6) Lumber;

(7) Drywall;

(8) Engineered wood.

Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material.

(d) Exempt Materials. Materials exempt from domestic production requirements are cement or cementitious materials, aggregates, aggregate binding agents or additives, or items not permanently incorporated into the work. Exempt materials may be combined with other materials into a final form to produce a manufactured product."

STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004 Revised: November 1, 2025

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)
Structural Steel
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, welded reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of $10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. The following documentation shall be furnished to the Engineer.

(a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.

(b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$SCA = Q \times D$

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in lb (kg)
D = price factor, in dollars per lb (kg)

$D = MPI_M - MPI_L$

Where: MPI_M = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

MPI_L = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items will be derived from submitted documentation.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the MPI_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the MPI_L and MPI_M in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

"**109.14 Subcontractor and Disadvantaged Business Enterprise Payment Reporting.** The Contractor shall report all payments made to the following parties:

(a) first tier subcontractors;

(b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;

(c) material suppliers or trucking firms that are part of the Contractor's submitted DBE utilization plan.

The report shall be made through the Department's on-line subcontractor payment reporting system within 21 days of making the payment."

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017
Revised: April 1, 2019

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

"This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than $10,000	25%
$10,000 to less than $20,000	20%
$20,000 to less than $40,000	18%
$40,000 to less than $60,000	16%
$60,000 to less than $80,000	14%
$80,000 to less than $100,000	12%
$100,000 to less than $250,000	10%
$250,000 to less than $500,000	9%
$500,000 to $750,000	8%
Over $750,000	7%"

SUBMISSION OF BIDDERS LIST INFORMATION (BDE)

Effective: January 2, 2025 Revised: March 2, 2025

In accordance with 49 CFR 26.11(c) all DBE and non-DBEs who bid as prime contractors and subcontractors shall provide bidders list information, including all DBE and non-DBE firms from whom the bidder has received a quote or bid to work as a subcontractor, whether or not the bidder has relied upon that bid in placing its bid as the prime contractor.

The bidders list information shall be submitted with the bid using the link provided within the "Integrated Contractor Exchange (iCX)" application of the Department's "EBids System".

SUBMISSION OF PAYROLL RECORDS (BDE)

Effective: April 1, 2021 Revised: November 2, 2023

FEDERAL AID CONTRACTS. Revise the following section of Check Sheet #1 of the Recurring Special Provisions to read:

"STATEMENTS AND PAYROLLS

The payroll records shall include the worker's name, social security number, last known address, telephone number, email address, classification(s) of work actually performed, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof), daily and weekly number of hours actually worked in total, deductions made, and actual wages paid.

The Contractor and each subcontractor shall submit certified payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers, last known addresses, telephone numbers, and email addresses shall not be included on weekly submittals. Instead, the payrolls need only include an identification number for each employee (e.g., the last four digits of the employee's social security number). The submittals shall be made using LCPtracker Pro software. The software is web-based and can be accessed at https://lcptracker.com/. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option ("No Work", "Suspended", or "Complete") selected."

STATE CONTRACTS. Revise Item 3 of Section IV of Check Sheet #5 of the Recurring Special Provisions to read:

"3. Submission of Payroll Records. The Contractor and each subcontractor shall, no later than the 15th day of each calendar month, file a certified payroll for the immediately preceding month to the Illinois Department of Labor (IDOL) through the Illinois Prevailing Wage Portal in compliance with the State Prevailing Wage Act (820 ILCS 130). The portal can be found on the IDOL website at https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Prevailing-Wage-Portal.aspx. Payrolls shall be submitted in the format prescribed by the IDOL.

In addition to filing certified payroll(s) with the IDOL, the Contractor and each subcontractor shall certify and submit payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers shall not be included on weekly submittals. Instead, the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee's social security number). In addition, starting and ending times of work each day may be omitted from the payroll records submitted. The submittals shall be made using LCPtracker Pro software. The software is web-based and can be accessed at https://lcptracker.com/. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option ("No Work", "Suspended", or "Complete") selected."

SURFACE TESTING OF PAVEMENTS – IRI (BDE)

Effective: January 1, 2021 Revised: January 1, 2023

Description. This work shall consist of testing the ride quality of the finished surface of pavement sections with new concrete pavement, PCC overlays, full-depth HMA, and HMA overlays with at least 2.25 in. (57 mm) total thickness of new HMA combined with either HMA binder or HMA surface removal, according to Illinois Test Procedure 701, "Ride Quality Testing Using the International Roughness Index (IRI)". Work shall be according to Sections 406, 407, or 420 of the Standard Specifications, except as modified herein.

Hot-Mix Asphalt (HMA) Overlays

Add the following to Article 406.03 of the Standard Specifications:

"(n) Pavement Surface Grinding Equipment..... 1101.04"

Revise Article 406.11 of the Standard Specifications to read:

"**406.11 Surface Tests.** Prior to HMA overlay pavement improvements, the Engineer will measure the smoothness of the existing high-speed mainline pavement. The Contractor shall measure the smoothness of the finished high-speed mainline, low-speed mainline, and miscellaneous pavements after the pavement improvement is complete but within the same construction season. Testing shall be performed in the presence of the Engineer and according to Illinois Test Procedure 701. The pavement will be identified as high-speed mainline, low-speed mainline, or miscellaneous as follows.

(a) Test Sections.

(1) High-Speed Mainline Pavement. High-speed mainline pavement consists of pavements, ramps, and loops with a posted speed limit greater than 45 mph. These sections shall be tested with an inertial profiling system (IPS).

(2) Low-Speed Mainline Pavement. Low-speed mainline pavement consists of pavements, ramps, and loops with a posted speed limit of 45 mph or less. These

sections shall be tested using a 16 ft (5 m) straightedge or with an IPS analyzed using the rolling 16 ft (5 m) straightedge simulation in ProVAL.

(3) Miscellaneous Pavement. Miscellaneous pavement are segments that either cannot readily be tested by an IPS or conditions beyond the control of the Contractor preclude the achievement of smoothness levels typically achievable with mainline pavement construction. This may include the following examples or as determined by the Engineer.

a. Pavement on horizontal curves with a centerline radius of curvature of less than or equal to 1,000 ft (300 m) and the pavement within the superelevation transition of such curves;

b. Pavement on vertical curves having a length less than or equal to 200 ft (60 m) in combination with an algebraic change in tangent grade greater than or equal to 3 percent as may occur on urban ramps or other constricted-space facilities;

c. The first and last 50 ft (15 m) of a pavement section where the Contractor is not responsible for the adjoining surface;

d. Intersections and the 25 ft (7.6 m) before and after an intersection or end of radius return;

e. Variable width pavements;

f. Side street returns, to the end of radius return;

g. Crossovers;

h. Pavement connector for bridge approach slab;

i. Bridge approach slab;

j. Pavement that must be constructed in segments of 600 ft (180 m) or less;

k. Pavement within 25 ft (7.6 m) of manholes, utility structures, at-grade railroad crossings, or other appurtenances;

l. Turn lanes; and

m. Pavement within 5 ft (1.5 m) of jobsite sampling locations for HMA volumetric testing that fall within the wheel path.

Miscellaneous pavement shall be tested using a 16 ft (5 m) straightedge.

(4) International Roughness Index (IRI). An index computed from a longitudinal profile measurement using a quarter-car simulation at a simulation speed of 50 mph (80 km/h).

(5) Mean Roughness Index (MRI). The average of the IRI values for the right and left wheel tracks.

a. MRI_O. The MRI of the existing pavement prior to construction.

b. MRI_I. The MRI value that warrants an incentive payment.

c. MRI_F. The MRI value that warrants full payment.

d. MRI_D. The MRI value that warrants a financial disincentive.

(6) Areas of Localized Roughness (ALR). Isolated areas of roughness, which can cause significant increase in the calculated MRI for a given sublot.

(7) Sublot. A continuous strip of pavement 0.1 mile (160 m) long and one lane wide. A partial sublot greater than or equal to 264 ft (80 m) will be subject to the same evaluation as a whole sublot. Partial sublots less than 264 ft (80 m) shall be included with the previous sublot for evaluation purposes.

(b) Corrective Work. Corrective work shall be completed according to the following.

(1) High-Speed Mainline Pavement. For high-speed mainline pavement, any 25 ft (7.6 m) interval with an ALR in excess of 200 in./mile (3,200 mm/km) will be identified by the Engineer and shall be corrected by the Contractor. Any sublot having a MRI greater than MRI_D, including ALR, shall be corrected to reduce the MRI to the MRI_F, or replaced at the Contractor's option.

(2) Low-Speed Mainline Pavement. Surface variations in low-speed mainline pavement which exceed the 5/16 in. (8 mm) tolerance will be identified by the Engineer and shall be corrected by the Contractor.

(3) Miscellaneous Pavements. Surface variations in miscellaneous pavement which exceed the 5/16 in. (8 mm) tolerance will be identified by the Engineer and shall be corrected by the Contractor.

Corrective work shall be completed with pavement surface grinding equipment or by removing and replacing the pavement. Corrective work shall be applied to the full lane width. When completed, the corrected area shall have uniform texture and appearance, with the beginning and ending of the corrected area perpendicular to the centerline of the paved surface.

Upon completion of the corrective work, the surface of the sublot(s) shall be retested. The Contractor shall furnish the data and reports to the Engineer within 2 working days after corrections are made. If the MRI and/or ALR still do not meet the requirements, additional corrective work shall be performed.

Corrective work shall be at no additional cost to the Department.

(c) Smoothness Assessments. Assessments will be paid to or deducted from the Contractor for each sublot of high-speed mainline pavement per the Smoothness Assessment

Schedule. Assessments will be based on the MRI of each sublot prior to performing any corrective work unless the Contractor has chosen to remove and replace the pavement. For pavement that is replaced, assessments will be based on the MRI determined after replacement.

The upper MRI thresholds for high-speed mainline pavement are dependent on the MRI of the existing pavement before construction (MRI_0) and shall be determined as follows.

Upper MRI Thresholds [1/]	MRI Thresholds (High-Speed, HMA Overlay)	
	$MRI_0 \leq 125.0$ in./mile (≤ 1,975 mm/km)	$MRI_0 > 125.0$ in./mile [1/] (> 1,975 mm/km)
Incentive (MRI_I)	45.0 in./mile (710 mm/km)	$0.2 \times MRI_0 + 20$
Full Pay (MRI_F)	75.0 in./mile (1,190 mm/km)	$0.2 \times MRI_0 + 50$
Disincentive (MRI_D)	100.0 in./mile (1,975 mm/km)	$0.2 \times MRI_0 + 75$

1/ MRI_0, MRI_I, MRI_F, and MRI_D shall be in in./mile for calculation.

Smoothness assessments for high-speed mainline pavement shall be determined as follows.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, HMA Overlay)	
Mainline Pavement MRI Range	Assessment Per Sublot [1/]
$MRI \leq MRI_I$	$+ (MRI_I - MRI) \times \$20.00$ [2/]
$MRI_I < MRI \leq MRI_F$	+ \$0.00
$MRI_F < MRI \leq MRI_D$	$- (MRI - MRI_F) \times \$8.00$
$MRI > MRI_D$	– \$200.00

1/ MRI, MRI_I, MRI_F, and MRI_D shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed \$300.00.

Smoothness assessments will not be paid or deducted until all other contract requirements for the pavement are satisfied. Pavement that is corrected or replaced for reasons other than smoothness, shall be retested as stated herein."

Hot-Mix Asphalt (HMA) Pavement (Full-Depth)

Revise the first paragraph of Article 407.03 of the Standard Specifications to read:

"**407.03 Equipment.** Equipment shall be according to Article 406.03."

Revise Article 407.09 of the Standard Specifications to read:

"**407.09 Surface Tests.** The finished surface of the pavement shall be tested for smoothness according to Article 406.11, except as follows:

The testing of the existing pavement prior to improvements shall not apply and the smoothness assessment for high-speed mainline pavement shall be determined according to the following table.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, Full-Depth HMA)	
Mainline Pavement MRI, in./mile (mm/km)	Assessment Per Sublot 1/
≤ 45.0 (710)	+ (45 – MRI) × $45.00 2/
> 45.0 (710) to 75.0 (1,190)	+ $0.00
> 75.0 (1,190) to 100.0 (1,580)	– (MRI – 75) × $20.00
> 100.0 (1,580)	– $500.00

1/ MRI shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed $800.00."

Portland Cement Concrete Pavement

Delete Article 420.03(i) of the Standard Specifications.

Revise Article 420.10 of the Standard Specifications to read:

"**420.10 Surface Tests.** The finished surface of the pavement shall be tested for smoothness according to Article 406.11, except as follows.

The testing of the existing pavement prior to improvements shall not apply. The Contractor shall measure the smoothness of the finished surface of the pavement after the pavement has attained a flexural strength of 250 psi (3,800 kPa) or a compressive strength of 1,600 psi (20,700 kPa).

Membrane curing damaged during testing shall be repaired as directed by the Engineer at no additional cost to the Department.

(a) Corrective Work. No further texturing for skid resistance will be required for areas corrected by grinding. Protective coat shall be reapplied to areas ground according to Article 420.18 at no additional cost to the Department.

Jointed portland cement concrete pavement corrected by removal and replacement, shall be corrected in full panel sizes.

(b) Smoothness Assessments. Smoothness assessment for high-speed mainline pavement shall be determined as follows.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, PCC)	
Mainline Pavement MRI, in./mile (mm/km) 3/	Assessment Per Sublot 1/
≤ 45.0 (710)	+ (45 – MRI) × $60.00 2/
> 45.0 (710) to 75.0 (1,190)	+ $0.00
> 75.0 (1,190) to 100.0 (1,580)	– (MRI – 75) × $37.50
> 100.0 (1,580)	– $750.00

1/ MRI shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed $1200.00.

3/ If pavement is constructed with traffic in the lane next to it, then an additional 10 in./mile will be added to the upper thresholds."

Removal of Existing Pavement and Appurtenances

Revise the first paragraph of Article 440.04 of the Standard Specifications to read:

"**440.04 HMA Surface Removal for Subsequent Resurfacing.** The existing HMA surface shall be removed to the depth specified on the plans with a self-propelled milling machine. The removal depth may be varied slightly at the discretion of the Engineer to satisfy the smoothness requirements of the finished pavement. The temperature at which the work is performed, the nature and condition of the equipment, and the manner of performing the work shall be such that the milled surface is not torn, gouged, shoved or otherwise damaged by the milling operation. Sufficient cutting passes shall be made so that all irregularities or high spots are eliminated to the satisfaction of the Engineer. When tested with a 16 ft (5 m) straightedge, the milled surface shall have no surface variations in excess of 3/16 in. (5 mm)."

General Equipment

Revise Article 1101.04 of the Standard Specifications to read:

"**1101.04 Pavement Surface Grinding Equipment.** The pavement surface grinding device shall have a minimum effective head width of 3 ft (0.9 m).

(a) Diamond Saw Blade Machine. The machine shall be self-propelled with multiple diamond saw blades.

(b) Profile Milling Machine. The profile milling machine shall be a drum device with carbide or diamond teeth with spacing of 0.315 in. (8 mm) or less and maintain proper forward speed for surface texture according to the manufacturer's specifications."

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.

TEMPORARY CONCRETE BARRIER (BDE)

Effective: January 1, 2026

Add the following to Article 704.02 of the Standard Specifications:

"(f) Type C Reflector .....1097.02(c)"

TRAINING SPECIAL PROVISIONS (BDE)

Effective: October 15, 1975 Revised: September 2, 2021

This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be **11**. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also ensure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee it employs on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he or she has successfully completed a training course leading to journeyman status or in which he or she has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor Employment Training Administration shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the Contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The Contractor shall provide for the maintenance of records and furnish periodic reports documenting its performance under this Training Special Provision.

For contracts with an awarded contract value of $500,000 or more, the Contractor is required to comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules to the extent permitted by Section 20-20(g). For federally funded projects, the number of trainees to be trained under this contract, as stated in the Training Special Provisions, will be the established goal for the Illinois Works Apprenticeship Initiative 30 ILCS 559/20-20(g). The Contractor shall make a good faith effort to meet this goal. For federally funded projects, the Illinois Works Apprenticeship Initiative will be implemented using the FHWA approved OJT procedures. The Contractor must comply with the recordkeeping and reporting obligations of the Illinois Works Apprenticeship Initiative for the life of the project, including the certification as to whether the trainee/apprentice labor hour goals were met.

Method of Measurement. The unit of measurement is in hours.

Basis of Payment. This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price, and total price have been included in the schedule of prices.

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION

Effective: August 1, 2012 Revised: February 2, 2017

In addition to the Contractor's equal employment opportunity (EEO) affirmative action efforts undertaken as required by this Contract, the Contractor is encouraged to participate in the incentive program described below to provide additional on-the-job training to certified graduates of the IDOT pre-apprenticeship training program, as outlined in this Special Provision.

IDOT funds, and various Illinois community colleges operate, pre-apprenticeship training programs throughout the State to provide training and skill-improvement opportunities to promote the increased employment of minority groups, disadvantaged persons and women in all aspects of the highway construction industry. The intent of this IDOT Pre-Apprenticeship Training Program Graduate (TPG) special provision (Special Provision) is to place these certified program graduates on the project site for this Contract in order to provide the graduates with meaningful on-the-job training. Pursuant to this Special Provision, the Contractor must make every reasonable effort to recruit and employ certified TPG trainees to the extent such individuals are available within a practicable distance of the project site.

Specifically, participation of the Contractor or its subcontractor in the Program entitles the participant to reimbursement for graduates' hourly wages at $15.00 per hour per utilized TPG trainee, subject to the terms of this Special Provision. Reimbursement payment will be made even though the Contractor or subcontractor may also receive additional training program funds from other non-IDOT sources for other non-TPG trainees on the Contract, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving reimbursement from another entity through another program, such as IDOT through the TPG program. With regard to any IDOT funded construction training program other than TPG, however, additional reimbursement for other IDOT programs will not be made beyond the TPG Program described in this Special Provision when the TPG Program is utilized.

No payment will be made to the Contractor if the Contractor or subcontractor fails to provide the required on-site training to TPG trainees, as solely determined by IDOT. A TPG trainee must begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee must remain on the project site through completion of the Contract, so long as training opportunities continue to exist in the relevant work classification. Should a TPG trainee's employment end in advance of the completion of the Contract, the Contractor must promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor must supply a written report for the reason the TPG trainee involvement terminated, the hours completed by the TPG trainee on the Contract, and the number of hours for which the incentive payment provided under this Special Provision will be, or has been claimed for the separated TPG trainee.

Finally, the Contractor must maintain all records it creates as a result of participation in the Program on the Contract, and furnish periodic written reports to the IDOT District EEO Officer that document its contractual performance under and compliance with this Special Provision. Finally, through participation in the Program and reimbursement of wages, the Contractor is not relieved of, and IDOT has not waived, the requirements of any federal or state labor or employment law applicable to TPG workers, including compliance with the Illinois Prevailing Wage Act.

Method of Measurement: The unit of measurement is in hours.

Basis of Payment: This work will be paid for at the contract unit price of $15.00 per hour for each utilized certified TPG Program trainee (TRAINEES TRAINING PROGRAM GRADUATE). The estimated total number of hours, unit price, and total price must be included in the schedule of prices for the Contract submitted by Contractor prior to beginning work. The initial number of TPG trainees for which the incentive is available for this contract is **11**.

The Department has contracted with several educational institutions to provide screening, tutoring and pre-training to individuals interested in working as a TPG trainee in various areas of common construction trade work. Only individuals who have successfully completed a Pre-Apprenticeship Training Program at these IDOT approved institutions are eligible to be TPG trainees. To obtain a list of institutions that can connect the Contractor with eligible TPG trainees, the Contractor may contact: HCCTP TPG Program Coordinator, Office of Business and Workforce Diversity (IDOT OBWD), Room 319, Illinois Department of Transportation, 2300 S. Dirksen Parkway, Springfield, Illinois 62764. Prior to commencing construction with the utilization of a TPG trainee, the Contractor must submit documentation to the IDOT District EEO Officer for the Contract that provides the names and contact information of the TPG trainee(s) to be trained in each selected work classification, proof that that the TPG trainee(s) has successfully completed a Pre-Apprenticeship Training Program, proof that the TPG is in an Apprenticeship Training Program approved by the U.S. Department of Labor Bureau of Apprenticeship Training, and the start date for training in each of the applicable work classifications.

To receive payment, the Contractor must provide training opportunities aimed at developing a full journeyworker in the type of trade or job classification involved. During the course of performance of the Contract, the Contractor may seek approval from the IDOT District EEO Officer to employ additional eligible TPG trainees. In the event the Contractor subcontracts a portion of the contracted work, it must determine how many, if any, of the TPGs will be trained by the subcontractor. Though a subcontractor may conduct training, the Contractor retains the responsibility for meeting all requirements imposed by this Special Provision. The Contractor must also include this Special Provision in any subcontract where payment for contracted work performed by a TPG trainee will be passed on to a subcontractor.

Training through the Program is intended to move TPGs toward journeyman status, which is the primary objective of this Special Provision. Accordingly, the Contractor must make every effort to enroll TPG trainees by recruitment through the Program participant educational institutions to the extent eligible TPGs are available within a reasonable geographic area of the project. The Contractor is responsible for demonstrating, through documentation, the recruitment efforts it has undertaken prior to the determination by IDOT whether the Contractor is in compliance with this Special Provision, and therefore, entitled to the Training Program Graduate reimbursement of $15.00 per hour.

Notwithstanding the on-the-job training requirement of this TPG Special Provision, some minimal off-site training is permissible as long as the offsite training is an integral part of the work of the contract, and does not compromise or conflict with the required on-site training that is central to the purpose of the Program. No individual may be employed as a TPG trainee in any work classification in which he/she has previously successfully completed a training program leading to journeyman status in any trade, or in which he/she has worked at a journeyman level or higher.

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021 Revised: November 1, 2022

Add the following paragraph after the first paragraph of Article 701.08 of the Standard Specifications:

"The Contractor shall equip all vehicles and equipment with high-intensity oscillating, rotating, or flashing, amber or amber-and-white, warning lights which are visible from all directions. In accordance with 625 ILCS 5/12-215, the lights may only be in operation while the vehicle or equipment is engaged in construction operations."

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."

PROJECT LABOR AGREEMENT

Effective: May 18, 2007 Revised: April 1, 2025

Description. The Illinois Project Labor Agreements Act, 30 ILCS 571, states that the State of Illinois has a compelling interest in awarding public works contracts so as to ensure the highest standards of quality and efficiency at the lowest responsible cost. A project labor agreement (PLA) is a form of pre-hire collective bargaining agreement covering all terms and conditions of employment on a specific project that is intended to support this compelling interest. It has been determined by the Department that a PLA is appropriate for the project that is the subject of this contract. The PLA document, provided below, only applies to the construction site for this contract. It is the policy of the Department on this contract, and all construction projects, to allow all contractors and subcontractors to compete for contracts and subcontracts without regard to whether they are otherwise parties to collective bargaining agreements.

The Department reserves the right to rescind the PLA requirement from this project in the event FHWA disapproves of the inclusion of the PLA terms for this project. The contractor, by bidding, agrees that any recission of the PLA requirement shall not constitute grounds for the withdrawal of its bid and further agrees to remove the PLA requirement from this contract upon notice from the Department should such be necessary at a later date.

Execution of Letter of Assent. A copy of the PLA applicable to this project is included as part of this special provision. As a condition of the award of the contract, the successful bidder and each of its subcontractors shall execute a “Contractor Letter of Assent”, in the form attached to the PLA as Exhibit A. The successful bidder shall submit a Subcontractor’s Contractor Letter of Assent to the Department prior to the subcontractor’s performance of work on the project. Upon request, copies of the applicable collective bargaining agreements will be provided by the appropriate signatory labor organization at the pre-job conference.

Quarterly Reporting. Section 37 of the Illinois Project Labor Agreements Act requires the Department to submit quarterly reports regarding the number of minorities and females employed under PLAs. To assist in this reporting effort, the Contractor shall provide a quarterly workforce participation report for all minority and female employees working under the PLA of this contract. The data shall be reported on Construction Form BC 820, Project Labor Agreement (PLA) Workforce Participation Quarterly Reporting Form available on the Department’s website https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/idot-forms/bc/bc-820.pdf.

The report shall be submitted no later than the 15th of the month following the end of each quarter (i.e., April 15 for the January – March reporting period). The form shall be emailed to DOT.PLA.Reporting@illinois.gov or faxed to (217) 524-4922.

Any costs associated with complying with this provision shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

Illinois Department of Transportation
PROJECT LABOR AGREEMENT

This Project Labor Agreement ("PLA" or "Agreement") is entered into this_____ day of _____, 2024, by and between the Illinois Department of Transportation ("IDOT" or "Department") in its proprietary capacity, and each relevant Illinois AFL-CIO Building Trades signatory hereto as determined by the Illinois AFL-CIO Statewide Project Labor Agreement Committee on behalf of each of its affiliated members (individually and collectively, the "Unions"). This PLA shall apply to Construction Work (as defined herein) to be performed by IDOT's Prime Contractor and each of its subcontractors of whatever tier ("Subcontractor" or "Subcontractors") on Contract No. (hereinafter, the "Project").

ARTICLE 1 - INTENT AND PURPOSES

1.1 This PLA is entered into in accordance with the Project Labor Agreement Act ("Act", 30 ILCS 571). It is mutually understood and agreed that the terms and conditions of this PLA are intended to promote the public interest in obtaining timely and economical completion of the Project by encouraging productive and efficient construction operations; by establishing a spirit of harmony and cooperation among the parties; and by providing for peaceful and prompt settlement of any and all labor grievances or jurisdictional disputes of any kind without strikes, lockouts, slowdowns, delays, or other disruptions to the prosecution of the work. The parties acknowledge the obligations of the Contractors and Subcontractors to comply with the provisions of the Act. The parties will work with the Contractors and Subcontractors within the parameters of other statutory and regulatory requirements to implement the Act's goals and objectives.

1.2 As a condition of the award of the contract for performance of work on the Project, IDOT's Prime Contractor and each of its Subcontractors shall execute a "Contractor Letter of Assent", in the form attached hereto as Exhibit A, prior to commencing Construction Work on the Project. The Contractor shall submit a Subcontractor's Contractor Letter of Assent to the Department prior to the Subcontractor's performance of Construction Work on the Project. Upon request copies of the applicable collective bargaining agreements will be provided by the appropriate signatory labor organization consistent with this Agreement and at the pre-job conference referenced in Article III, Section 3.1.

1.3 Each Union affiliate and separate local representing workers engaged in Construction Work on the Project in accordance with this PLA are bound to this agreement by the Illinois AFL-CIO Statewide Project Labor Agreement Committee which is the central committee established with full authority to negotiate and sign PLAs with the State on behalf of all respective crafts. Upon their signing the Contractor Letter of Assent, the Prime Contractor, each Subcontractor, and the individual Unions shall thereafter be deemed a party to this PLA. No party signatory to this PLA shall, contract or subcontract, nor permit any other person, firm, company, or entity to contract or subcontract for the performance of Construction Work for the Project to any person, firm, company, or entity that does not agree in writing to become bound for the term of this Project by the terms of this PLA prior to commencing such work and to the applicable area-wide collective bargaining agreement(s) with the Union(s) signatory hereto.

1.4 It is understood that the Prime Contractor(s) and each Subcontractor will be considered and accepted by the Unions as separate employers for the purposes of collective bargaining, and it is further agreed that the employees working under this PLA shall constitute a bargaining unit separate and distinct from all others. The parties hereto also agree that this PLA shall be applicable solely with respect to this Project, and shall have no bearing on the interpretation of any other collective bargaining agreement or as to the recognition of any bargaining unit other than for the specific purposes of this Project.

1.5 In the event of a variance or conflict, whether explicit or implicit, between the terms and conditions of this PLA and the provisions of any other applicable national, area, or local collective bargaining agreement, the terms and conditions of this PLA shall supersede and control. For any work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, the National Agreement of the International Union of Elevator Constructors, and for any instrument calibration work and loop checking performed under the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, the preceding sentence shall apply only with respect to Articles I, II, V, VI, and VII.

1.6 Subject to the provisions of paragraph 1.5 of this Article, it is the parties' intent to respect the provisions of any other collective bargaining agreements that may now or hereafter pertain, whether between the Prime Contractor and one or more of the Unions or between a Subcontractor and one or more of the Unions. Accordingly, except and to the extent of any contrary provision set forth in this PLA, the Prime Contractor and each of its Subcontractors agrees to be bound and abide by the terms of the following in order of precedence: (a) the applicable collective bargaining agreement between the Prime Contractor and one or more of the Unions made signatory hereto; (b) the applicable collective bargaining agreement between a Subcontractor and one or more of the Unions made signatory hereto; or (c) the current applicable area collective bargaining agreement for the relevant Union that is the agreement certified by the Illinois Department of Labor for purposes of establishing the Prevailing Wage applicable to the Project. The Union will provide copies of the applicable collective bargaining agreements pursuant to part (c) of the preceding sentence to the Prime Contractor. Assignments by the Contractors or Subcontractors amongst the trades shall be consistent with area practices; in the event of unresolved disagreements as to the propriety of such assignments, the provisions of Article VI shall apply.

1.7 Subject to the limitations of paragraphs 1.4 to 1.6 of this Article, the terms of each applicable collective bargaining agreement as determined in accordance with paragraph 1.6 are incorporated herein by reference, and the terms of this PLA shall be deemed incorporated into such other applicable collective bargaining agreements only for purposes of their application to the Project.

1.8 To the extent necessary to comply with the requirements of any fringe benefit fund to which the Prime Contractor or Subcontractor is required to contribute under the terms of an applicable collective bargaining agreement pursuant to the preceding paragraph, the Prime Contractor or Subcontractor shall execute all "Participation Agreements" as may be reasonably required by the Union to accomplish such purpose; provided, however, that such Participation Agreements shall, when applicable to the Prime Contractor or Subcontractor solely as a result of this PLA, be amended as reasonably necessary to reflect such fact. Upon written notice in the form of a lien of a Contractor's or Subcontractor's delinquency from any applicable fringe benefit fund, IDOT will withhold from the Contractor's periodic pay request an amount sufficient to extinguish any delinquency obligation of the Contractor or Subcontractor arising out of the Project.

1.9 In the event that the applicable collective bargaining agreement between a Prime Contractor and the Union or between the Subcontractor and the Union expires prior to the completion of this Project, the expired applicable contract's terms will be maintained until a new applicable collective bargaining agreement is ratified. The wages and fringe benefits included in any new applicable collective bargaining agreement will apply on and after the effective date of the newly negotiated collective bargaining agreement, except to the extent wage and fringe benefit retroactivity is specifically agreed upon by the relevant bargaining parties.

ARTICLE II – APPLICABILITY, RECOGNITION, AND COMMITMENTS

2.1 The term Construction Work as used herein shall include all “construction, demolition, rehabilitation, renovation, or repair” work performed by a “laborer or mechanic” at the “site of the work” for the purpose of “building” the specific structures and improvements that constitute the Project. Terms appearing within quotation marks in the preceding sentence shall have the meaning ascribed to them pursuant to 29 CFR Part 5 and Illinois labor laws.

2.2 By executing the Letters of Assent, Prime Contractor and each of its Subcontractors recognizes the Unions signatory to this PLA as the sole and exclusive bargaining representatives for their craft employees employed on the jobsite for this Project. Unions who are signatory to this PLA will have recognition on the Project for their craft.

2.3 The Prime Contractor and each of its Subcontractors retains and shall be permitted to exercise full and exclusive authority and responsibility for the management of its operations, except as expressly limited by the terms of this PLA or by the terms and conditions of the applicable collective bargaining agreement.

2.4 Except to the extent contrary to an express provision of the relevant collective bargaining agreement, equipment or materials used in the Project may be pre-assembled or pre- fabricated, and there shall be no refusal by the Union to handle, transport, install, or connect such equipment or materials. Equipment or materials delivered to the job-site will be unloaded and handled promptly without regard to potential jurisdictional disputes; any such disputes shall be handled in accordance with the provisions of this PLA.

2.5 The parties are mutually committed to promoting a safe working environment for all personnel at the job-site. It shall be the responsibility of each employer to which this PLA applies to provide and maintain safe working conditions for its employees, and to comply with all applicable federal, state, and local health and safety laws and regulations.

2.6 The use or furnishing of alcohol or drugs and the conduct of any other illegal activity at the job-site is strictly prohibited. The parties shall take every practical measure consistent with the terms of applicable collective bargaining agreements to ensure that the job-site is free of alcohol and drugs.

2.7 All parties to this PLA agree that they will not discriminate against any employee based on race, creed, religion, color, national origin, union activity, age, gender or sexual orientation and shall comply with all applicable federal, state, and local laws.

2.8 In accordance with the Act and to promote diversity in employment, IDOT will establish, in cooperation with the other parties, the apprenticeship hours which are to be performed by minorities and females on the Project. IDOT shall consider the total hours to be performed by these underrepresented groups, as a percentage of the workforce, and create aspirational goals for each Project, based on the level of underutilization for the service area of the Project (together "Project Employment Objectives"). IDOT shall provide a quarterly report regarding the racial and gender composition of the workforce on the Project.

Persons currently lacking qualifications to enter apprenticeship programs will have the opportunity to obtain skills through basic training programs as have been established by the Department. The parties will endeavor to support such training programs to allow participants to obtain the requisite qualifications for the Project Employment Objectives.

The parties agree that all Contractors and Subcontractors working on the Project shall be encouraged to utilize the maximum number of apprentices as permitted under the terms of the applicable collective bargaining agreements to realize the Project Employment Objectives.

The Unions shall assist the Contractor and each Subcontractor in efforts to satisfy Project Employment Objectives. A Contractor or Subcontractor may request from a Union specific categories of workers necessary to satisfy Project Employment Objectives. The application of this section shall be consistent with all local Union collective bargaining agreements, and the hiring hall rules and regulations established for the hiring of personnel, as well as the apprenticeship standards set forth by each individual Union.

2.9 The parties hereto agree that engineering consultants and materials testing employees, to the extent subject to the terms of this PLA, shall be fully expected to objectively and responsibly perform their duties and obligations owed to the Department without regard to the potential union affiliation of such employees or of other employees on the Project.

2.10 This Agreement shall not apply to IDOT employees or employees of any other governmental entity.

ARTICLE III - ADMINISTRATION OF AGREEMENT

3.1 In order to assure that all parties have a clear understanding of the PLA, and to promote harmony, at the request of the Unions a post-award pre-job conference will be held among the Prime Contractor, all Subcontractors and Union representatives prior to the start of any Construction Work on the Project. No later than the conclusion of such pre-job conference, the parties shall, among other matters, provide to one another contact information for their respective representatives (including name, address, phone number, facsimile number, e-mail). Nothing herein shall be construed to limit the right of the Department to discuss or explain the purpose and intent of this PLA with prospective bidders or other interested parties prior to or following its award of the job.

3.2 Representatives of the Prime Contractor and the Unions shall meet as often as reasonably necessary following award until completion of the Project to assure the effective implementation of this PLA.

3.3 Any notice contemplated under Article VI and VII of this Agreement to a signatory labor organization shall be made in writing to the Local Union with copies to the local union's International Representative.

ARTICLE IV - HOURS OF WORK AND GENERAL CONDITIONS

4.1 The standard work day and work week for Construction Work on the Project shall be consistent with the respective collective bargaining agreements. In the event Project site or other job conditions dictate a change in the established starting time and/or a staggered lunch period for portions of the Project or for specific crafts, the Prime Contractor, relevant Subcontractors and business managers of the specific crafts involved shall confer and mutually agree to such changes as appropriate. If proposed work schedule changes cannot be mutually agreed upon between the parties, the hours fixed at the time of the pre-job meeting shall prevail.

4.2 Shift work may be established and directed by the Prime Contractor or relevant Subcontractor as reasonably necessary or appropriate to fulfill the terms of its contract with the Department. If used, shift hours, rates and conditions shall be as provided in the applicable collective bargaining agreement.

4.3 The parties agree that chronic and/or unexcused absenteeism is undesirable and must be controlled in accordance with procedures established by the applicable collective bargaining agreement. Any employee disciplined for absenteeism in accordance with such procedures shall be suspended from all work on the Project for not less than the maximum period permitted under the applicable collective bargaining agreement.

4.4 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, employment begins and ends at the Project site; employees shall be at their place of work at the starting time; and employees shall remain at their place of work until quitting time.

4.5 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, there shall be no limit on production by workmen, no restrictions on the full use of tools or equipment, and no restrictions on efficient use of manpower or techniques of construction other than as may be required by safety regulations.

4.6 The parties recognize that specialized or unusual equipment may be installed on the Project. In such cases, the Union recognizes the right of the Prime Contractor or Subcontractor to involve the equipment supplier or vendor's personnel in supervising the setting up of the equipment, making modifications and final alignment, and performing similar activities that may be reasonably necessary prior to and during the start-up procedure in order to protect factory warranties. The Prime Contractor or Subcontractor shall notify the Union representatives in advance of any work at the job-site by such vendor personnel in order to promote a harmonious relationship between the equipment vendor's personnel and other Project employees.

4.7 For the purpose of promoting full and effective implementation of this PLA, authorized Union representatives shall have access to the Project job-site during scheduled work hours. Such access shall be conditioned upon adherence to all reasonable visitor and security rules of general applicability that may be established for the Project site at the pre-job conference or from time to time thereafter.

ARTICLE V – GRIEVANCE PROCEDURES FOR DISPUTES ARISING UNDER A PARTICULAR COLLECTIVE BARGAINING AGREEMENT

5.1 In the event a dispute arises under a particular collective bargaining agreement specifically not including jurisdictional disputes referenced in Article VI below, said dispute shall be resolved by the Grievance/Arbitration procedure of the applicable collective bargaining agreement. The resulting determination from this process shall be final and binding on all parties bound to its process.

5.2 Employers covered under this Agreement shall have the right to discharge or discipline any employee who violates the provisions of this Agreement. Such discharge or discipline by a contractor or subcontractor shall be subject to Grievance/Arbitration procedure of the applicable collective bargaining agreement only as to the fact of such violation of this agreement. If such fact is established, the penalty imposed shall not be disturbed. Work at the Project site shall continue without disruption or hindrance of any kind as a result of a Grievance/Arbitration procedure under this Article.

5.3 In the event there is a deadlock in the foregoing procedure, the parties agree that the matter shall be submitted to arbitration for the selection and decision of an Arbitrator governed under paragraph 6.8.

ARTICLE VI –DISPUTES: GENERAL PRINCIPLES

6.1 This Agreement is entered into to prevent strikes, lost time, lockouts and to facilitate the peaceful adjustment of jurisdictional disputes in the building and construction industry and to prevent waste and unnecessary avoidable delays and expense, and for the further purpose of at all times securing for the employer sufficient skilled workers.

6.2 A panel of Permanent Arbitrators are attached as addendum (A) to this agreement. By mutual agreement between IDOT and the Unions, the parties can open this section of the agreement as needed to make changes to the list of permanent arbitrators.

The arbitrator is not authorized to award back pay or any other damages for a miss assignment of work. Nor may any party bring an independent action for back pay or any other damages, based upon a decision of an arbitrator.

6.3 The PLA Jurisdictional Dispute Resolution Process ("Process") sets forth the procedures below to resolve jurisdictional disputes between and among Contractors, Subcontractors, and Unions engaged in the building and construction industry. Further, the Process will be followed for any grievance or dispute arising out of the interpretation or application of this PLA by the parties except for the prohibition on attorneys contained in 6.11. All decisions made through the Process are final and binding upon all parties.

DISPUTE PROCESS

6.4 Administrative functions under the Process shall be performed through the offices of the President and/or Secretary-Treasurer of the Illinois State Federation of Labor, or their designated representative, called the Administrator. In no event shall any officer, employee, agent, attorney, or other representative of the Illinois Federation of Labor, AFL- CIO be subject to any subpoena to appear or testify at any jurisdictional dispute hearing.

6.5 There shall be no abandonment of work during any case participating in this Process or in violation of the arbitration decision. All parties to this Process release the Illinois State Federation of Labor ("Federation") from any liability arising from its action or inaction and covenant not to sue the Federation, nor its officers, employees, agents or attorneys.

6.6 In the event of a dispute relating to trade or work jurisdiction, all parties, including the employers, Contractors or Subcontractors, agree that a final and binding resolution of the

dispute shall be resolved as follows:

(a) Representatives of the affected trades and the Contractor or Subcontractor shall meet on the job site within two (2) business days after receiving written notice in an effort to resolve the dispute. (In the event there is a dispute between local unions affiliated with the same International Union, the decision of the General President, or his/her designee, as the internal jurisdictional authority of that International Union, shall constitute a final and binding decision and determination as to the jurisdiction of work.)

(b) If no settlement is achieved subsequent to the preceding Paragraph, the matter shall be referred to the local area Building & Construction Trades Council, which shall meet with the affected trades within two (2) business days subsequent to receiving written notice. In the event the parties do not wish to avail themselves of the local Building & Construction Trades Council, the parties may elect to invoke the services of their respective International Representatives with no extension of the time limitations. An agreement reached at this Step shall be final and binding upon all parties.

(c) If no settlement agreement is reached during the proceedings contemplated by Paragraphs “a” or “b” above, the matter shall be immediately referred to the Illinois Jurisdictional Dispute Process for final and binding resolution of said dispute. Said referral submission shall be in writing and served upon the Illinois State Federation of Labor, or the Administrator, pursuant to paragraph 6.4 of this agreement. The Administrator shall, within three (3) days, provide for the selection of an available Arbitrator to hear said dispute within this time period. Upon good cause shown and determined by the Administrator, an additional three (3) day extension for said hearing shall be granted at the sole discretion of the Administrator. Only upon mutual agreement of all parties may the Administrator extend the hearing for a period in excess of the time frames contemplated under this Paragraph. Business days are defined as Monday through Friday, excluding contract holidays.

6.7 The primary concern of the Process shall be the adjustment of jurisdictional disputes arising out of the Project. A sufficient number of Arbitrators shall be selected from list of approved Arbitrators as referenced Sec. 6.2 and shall be assigned per Sec. 6.8. Decisions shall be only for the Project and shall become effective immediately upon issuance and complied with by all parties. The authority of the Arbitrator shall be restricted and limited specifically to the terms and provisions of Article VI and generally to this Agreement as a whole.

6.8 Arbitrator chosen shall be randomly selected based on the list of Arbitrators in Sec. 6.2 and geographical location of the jurisdictional dispute and upon his/her availability, and ability to conduct a Hearing within two (2) business days of said notice. The Arbitrator may issue a "bench" decision immediately following the Hearing or he/she may elect to only issue a written decision, said decision must be issued within two (2) business days subsequent to the completion of the Hearing. Copies of all notices, pleadings, supporting memoranda, decisions, etc. shall be provided to all disputing parties and the Illinois State Federation of Labor.

Any written decision shall be in accordance with this Process and shall be final and binding upon all parties to the dispute and may be a "short form" decision. Fees and costs of the arbitrator shall be divided evenly between the contesting parties except that any party wishing a full opinion and decision beyond the short form decision shall bear the reasonable fees and costs of such full opinion. The decision of the Arbitrator shall be final and binding upon the parties hereto, their members, and affiliates.

In cases of jurisdictional disputes or other disputes between a signatory labor organization and another labor organization, both of which is an affiliate or member of the same International Union, the matter or dispute shall be settled in the manner set forth by their International Constitution and/or as determined by the International Union's General President whose decision shall be final and binding upon all parties. In no event shall there be an abandonment of work.

6.9 In rendering a decision, the Arbitrator shall determine:

(a) First, whether a previous agreement of record or applicable agreement, including a disclaimer agreement, between National or International Unions to the dispute or agreements between local unions involved in the dispute, governs;

(b) Only if the Arbitrator finds that the dispute is not covered by an appropriate or applicable agreement of record or agreement between the crafts to the dispute, he shall then consider the established trade practice in the industry and prevailing practice in the locality. Where there is a previous decision of record governing the case, the Arbitrator shall give equal weight to such decision of record, unless the prevailing practice in the locality in the past ten years favors one craft. In that case, the Arbitrator shall base his decision on the prevailing practice in the locality. Except, that if the Arbitrator finds that a craft has improperly obtained the prevailing practice in the locality through raiding, the undercutting of wages or by the use of vertical agreements, the Arbitrator shall rely on the decision of record and established trade practice in the industry rather than the prevailing practice in the locality; and,

(c) Only if none of the above criteria is found to exist, the Arbitrator shall then consider that because efficiency, cost or continuity and good management are essential to the well being of the industry, the interests of the consumer or the past practices of the employer shall not be ignored.

(d) The arbitrator is not authorized to award back pay or any other damages for a mis-assignment of work. Nor may any party bring an independent action for back pay or any other damages, based upon a decision of an arbitrator.

6.10 The Arbitrator shall set forth the basis for his/her decision and shall explain his/her findings regarding the applicability of the above criteria. If lower ranked criteria are relied upon, the Arbitrator shall explain why the higher-ranked criteria were not deemed applicable. The Arbitrator's decision shall only apply to the Project. Agreements of Record, for other PLA projects, are applicable only to those parties signatory to such agreements. Decisions of Record are those that were either attested to by the former Impartial Jurisdictional Disputes Board or adopted by the National Arbitration Panel.

6.11 All interested parties, as determined by the Arbitrator, shall be entitled to make presentations to the Arbitrator. Any interested labor organization affiliated to the PLA Committee and party present at the Hearing, whether making a presentation or not, by such presence shall be deemed to accept the jurisdiction of the Arbitrator and to agree to be bound by its decision. In addition to the representative of the local labor organization, a representative of the labor organization's International Union may appear on behalf of the parties. Each party is responsible for arranging for its witnesses. In the event an Arbitrator's subpoena is required, the party requiring said subpoena shall prepare the subpoena for the Arbitrator to execute. Service of the subpoena upon any witness shall be the responsibility of the issuing party.

Attorneys shall not be permitted to attend or participate in any portion of a Hearing.

The parties are encouraged to determine, prior to Hearing, documentary evidence which may be presented to the Arbitrator on a joint basis.

6.12 The Order of Presentation in all Hearings before an Arbitrator shall be

I. Identification and Stipulation of the Parties
II. Unions(s) claiming the disputed work presents its case
III. Union(s) assigned the disputed work presents its case
IV. Employer assigning the disputed work presents its case
V. Evidence from other interested parties (i.e., general contractor, project manager, owner)
VI. Rebuttal by union(s) claiming the disputed work
VII. Additional submissions permitted and requested by Arbitrator VIII. Closing arguments by the parties

6.13 All parties bound to the provisions of this Process hereby release the Illinois State Federation of Labor and IDOT, their respective officers, agents, employees or designated representatives, specifically including any Arbitrator participating in said Process, from any and all liability or claim, of whatsoever nature, and specifically incorporating the protections provided in the Illinois Arbitration Act, as amended from time to time.

6.14 The Process, as an arbitration panel, nor its Administrator, shall have any authority to undertake any action to enforce its decision(s). Rather, it shall be the responsibility of the prevailing party to seek appropriate enforcement of a decision, including findings, orders or awards of the Arbitrator or Administrator determining non-compliance with a prior award or decision.

6.15 If at any time there is a question as to the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process, the primary responsibility for any determination of the arbitrability of a dispute and the jurisdiction of the Arbitrator shall be borne by the party requesting the Arbitrator to hear the underlying jurisdictional dispute. The affected party or parties may proceed before the Arbitrator even in the absence or one or more stipulated parties with the issue of jurisdiction as an additional item to be decided by the Arbitrator. The Administrator may participate in proceedings seeking a declaration or determination that the underlying dispute is subject to the jurisdiction and process of the Illinois Jurisdictional Dispute Resolution Process. In any such proceedings, the non-prevailing party and/or the party challenging the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process shall bear all the costs, expenses and attorneys' fees incurred by the Illinois Jurisdictional Dispute Resolution Process and/or its Administrator in establishing its jurisdiction.

ARTICLE VII - WORK STOPPAGES AND LOCKOUTS

7.1 During the term of this PLA, no Union or any of its members, officers, stewards, employees, agents or representatives shall instigate, support, sanction, maintain, or participate in any strike, picketing, walkout, work stoppage, slow down or other activity that interferes with the routine and timely prosecution of work at the Project site or at any other contractor's or supplier's facility that is necessary to performance of work at the Project site. Hand billing at the Project site during the designated lunch period and before commencement or following conclusion of the established standard workday shall not, in itself, be deemed an activity that interferes with the routine and timely prosecution of work on the Project.

7.2 Should any activity prohibited by paragraph 7.1 of this Article occur, the Union shall undertake all steps reasonably necessary to promptly end such prohibited activities.

7.2.A No Union complying with its obligations under this Article shall be liable for acts of employees for which it has no responsibility or for the unauthorized acts of employees it represents. Any employee who participates or encourages any activity prohibited by paragraph 7.1 shall be immediately suspended from all work on the Project for a period equal to the greater of (a) 60 days; or (b) the maximum disciplinary period allowed under the applicable collective bargaining agreement for engaging in comparable unauthorized or prohibited activity.

7.2.B Neither the PLA Committee nor its affiliates shall be liable for acts of employees for which it has no responsibility. The principal officer or officers of the PLA Committee will immediately instruct, order and use the best efforts of his office to cause the affiliated union or unions to cease any violations of this Article. The PLA Committee in its compliance with this obligation shall not liable for acts of its affiliates. The principal officer or officers of any involved affiliate will immediately instruct, order or use the best effort of his office to cause the employees the union represents to cease any violations of this Article. A union complying with this obligation shall not be liable for unauthorized acts of employees it represents. The failure of the Contractor to exercise its rights in any instance shall not be deemed a waiver of its rights in any other instance.

During the term of this PLA, the Prime Contractor and its Subcontractors shall not engage in any lockout at the Project site of employees covered by this Agreement.

7.3 Upon notification of violations of this Article, the principal officer or officers of the local area Building and Construction Trades Council, and the Illinois AFL-CIO Statewide Project Labor Agreement Committee as appropriate, will immediately instruct, order and use their best efforts to cause the affiliated union or unions to cease any violations of this Article. A Trades Council and the Committee otherwise in compliance with the obligations under this paragraph shall not be liable for unauthorized acts of its affiliates.

7.4 In the event that activities in violation of this Article are not immediately halted through the efforts of the parties, any aggrieved party may invoke the special arbitration provisions set forth in paragraph 7.5 of this Article.

7.5 Upon written notice to the other involved parties by the most expeditious means available, any aggrieved party may institute the following special arbitration procedure when a breach of this Article is alleged:

7.5.A The party invoking this procedure shall notify the individual designated as the Permanent Arbitrator pursuant to paragraph 6.8 of the nature of the alleged violation; such notice shall be by the most expeditious means possible. The initiating party may also furnish such additional factual information as may be reasonably necessary for the Permanent Arbitrator to understand the relevant circumstances. Copies of any written materials provided to the arbitrator shall also be contemporaneously provided by the most expeditious means possible to the party alleged to be in violation and to all other involved parties.

7.5.B Upon receipt of said notice the Permanent Arbitrator shall set and hold a hearing within twenty-four (24) hours if it is contended the violation is ongoing, but not before twenty-four (24) hours after the written notice to all parties involved as required above.

7.5.C The Permanent Arbitrator shall notify the parties by facsimile or any other effective written means, of the place and time chosen by the Permanent Arbitrator for this hearing. Said hearing shall be completed in one session. A failure of any party or parties to attend said hearing shall not delay the hearing of evidence or issuance of an Award by the Permanent Arbitrator.

7.5.D The sole issue at the hearing shall be whether a violation of this Article has, in fact, occurred. An Award shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one shall be issued within fifteen (15) days, but its issuance shall not delay compliance with, or enforcement of, the Award. The Permanent Arbitrator may order cessation of the violation of this Article, and such Award shall be served on all parties by hand or registered mail upon issuance.

7.5.E Such Award may be enforced by any court of competent jurisdiction upon the filing of the Award and such other relevant documents as may be required. Facsimile or other hardcopy written notice of the filing of such enforcement proceedings shall be given to the other relevant parties. In a proceeding to obtain a temporary order enforcing the Permanent Arbitrator's Award as issued under this Article, all parties waive the right to a hearing and agree that such proceedings may be ex parte. Such agreement does not waive any party's right to participate in a hearing for a final order of enforcement. The Court's order or orders enforcing the Permanent Arbitrator's Award shall be served on all parties by hand or by delivery to their last known address or by registered mail.

7.6 Individuals found to have violated the provisions of this Article are subject to immediate termination. In addition, IDOT reserves the right to terminate this PLA as to any party found to have violated the provisions of this Article.

7.7 Any rights created by statue or law governing arbitration proceedings inconsistent with the above procedure or which interfere with compliance therewith are hereby waived by parties to whom they accrue.

7.8 The fees and expenses of the Permanent Arbitrator shall be borne by the party or parties found in violation, or in the event no violation is found, such fees and expenses shall be borne by the moving party.

ARTICLE VIII – TERMS OF AGREEMENT

8.1 If any Article or provision of this Agreement shall be declared invalid, inoperative or unenforceable by operation of law or by any of the above mentioned tribunals of competent jurisdiction, the remainder of this Agreement or the application of such Article or provision to persons or circumstances other than those as to which it has been held invalid, inoperative or unenforceable shall not be affected thereby.

8.2 This Agreement shall be in full force as of and from the date of the Notice of Award until the Project contract is closed.

8.3 This PLA may not be changed or modified except by the subsequent written agreement of the parties. All parties represent that they have the full legal authority to enter into this PLA. This PLA may be executed by the parties in one or more counterparts.

8.4 Any liability arising out of this PLA shall be several and not joint. IDOT shall not be liable to any person or other party for any violation of this PLA by any other party, and no Contractor or Union shall be liable for any violation of this PLA by any other Contractor or Union.

8.5 The failure or refusal of a party to exercise its rights hereunder in one or more instances shall not be deemed a waiver of any such rights in respect of a separate instance of the same or similar nature.

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Addendum A

IDOT Slate of Permanent Arbitrators

1. Bruce Feldacker
2. Thomas F. Gibbons
3. Edward J. Harrick
4. Brent L. Motchan
5. Robert Perkovich
6. Byron Yaffee
7. Glenn A. Zipp

Exhibit A - Contractor Letter of Assent

(Date)

To All Parties:

In accordance with the terms and conditions of the contract for Construction Work on [Contract No.], this Letter of Assent hereby confirms that the undersigned Prime Contractor or Subcontractor agrees to be bound by the terms and conditions of the Project Labor Agreement established and entered into by the Illinois Department of Transportation in connection with said Project.

It is the understanding and intent of the undersigned party that this Project Labor Agreement shall pertain only to the identified Project. In the event it is necessary for the undersigned party to become signatory to a collective bargaining agreement to which it is not otherwise a party in order that it may lawfully make certain required contributions to applicable fringe benefit funds, the undersigned party hereby expressly conditions its acceptance of and limits its participation in such collective bargaining agreement to its work on the Project.

(Authorized Company Officer)

(Company)

STORM WATER POLLUTION PREVENTION PLAN

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	Marked Route	Section Number
FAI Route I-80	Interstate 80	FAI 80 21 STRUCTURE 2
Project Number	**County**	**Contract Number**
NHPP-8PC(116)	Will	62R23

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issued by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Permittee Signature & Date

1.8.2026

SWPPP Notes

Preparing BDE 2342 (Storm Water Pollution Prevent Plan)

Guidance on preparing each section of BDE 2342 (Storm Water Pollution Prevention Plan) is found in Chapter 41 of the IDOT Bureau of Design and Environment (BDE) Manual, please consult this chapter during SWPPP preparation Please note that the Illinois Environmental Protection Agency (IEPA) has 30 days to review the Notice of Intent (NOI) prior to project approval and any deficiencies can result in construction delays.

The Notice of Intent contains the following documents:

- BDE 2342 (Storm Water Pollution Prevention Plan)
- BDE 2342 A (Contractor Certification Statement)
- Erosion and Sediment Control Plan (See Section 63-4.09 of the BDE Manual)

Non-applicable information
If any section of the SWPPP is not applicable put "N/A" in box rather than leaving blank.

National Pollutant Discharge Elimination System (NPDES) Compliance

Description of Work: This work shall consist of those efforts necessary for compliance with the requirements of the Clean Water Act, Section 402 (NPDES), and the Illinois Environment Protection Act. This provision also provides the background information needed to comply with ILR10 and ILR40 permits for this project.

NPDES COMPLIANCE REQUIREMENTS

Part I: Site Description

1. Describe the project location; include latitude and longitude, section, town, and range.

Interstate 80 is under the jurisdiction of the Illinois Department of Transportation (IDOT). The project location is at Latitude 41°30'44.97" N, Longitude 88°05'26.86" W, in Section 16, T35N, R10E). In addition, this project consists of the demolition and removal of buildings and other structures in the City of Joliet, at locations from Railroad Street (US Route 6) on the west to S. Des Plaines Street on the east, both north and south of I-80.

2. Describe the nature of the construction activity or demolition work.

The I-80 Over Des Plaines River Bridge Replacement and Reconstruction project is located in the City of Joliet in Will County, Illinois, along FAI Route 80 (Interstate 80) beginning at station 37+89 at the Des Plaines River bridge and extending in an easterly direction to station 60+05 east of the Des Plaines River Bridge and includes the bridge itself, as well as connector pavements between the interchanges at Center Street on the west side of the river crossing and at Chicago Street on the east side. The project also includes local roads improvements around the area of the interstate and bridge. See plans for all improvement areas shown on the general location map. The work consists of the realignment and reconstruction of the mainline pavement and related roadway elements, cross-road reconstruction, installation of an enclosed storm sewer system with drainage structures, earth excavation and embankment grading, installation of retaining and noise walls, barrier and moment slab construction, bridge replacement, roadway lighting, ITS implementation, erosion and sediment control, landscaping, traffic control and protection, detour routing, pavement marking and signing, and other related roadway items required to complete the project as indicated in the contract documentation.
The work activity also includes the demolition of existing buildings and other structures for 16 residential and/or commercial parcels. At each parcel, the removal work will include removal of any structure above and below the ground, including the main building frames, attached and detached buildings, and facilities. It will also include the removal of fences, sidewalks and driveways, utilities, and trees within the parcels' limits. The existing drainage pattern will be maintained. Proposed permanent seeding shown on the erosion control plans for the demolition sites will act as final stabilization unless or until disturbed by interchange reconstruction activities.
Erosion and Sediment Control measures include temporary ditch checks, erosion control blanket, temporary seeding, mulch methods 1& 2 and inlet filters. Perimeter erosion barrier and ditch checks shall be utilized to protect existing drainage structures located in grass prior to commencing land disturbing activities. The erosion control plans show the erosion control devices to be installed and maintained during each stage of construction. Riprap is a permanent measure that will provide outlet protection at storm sewer and culvert outlets. The location for permanent seeding and stabilization is shown on the Landscape Plans.

3. Describe the intended sequence of major activities which disturb soils for major portions of the site (e.g. clearing, grubbing, excavation, grading, on-site or off-site stockpiling of soils, on-site or off-site storage of materials).

Estimated duration of this project is from March 2026 to November 2027 - 21 months. Staged construction is being utilized to maintain traffic in both directions during construction. The design, installation, and maintenance of BMPs at these locations are in an area where the annual erosivity (R value) is less than or equal to 170.

Stages 1-5: Activities include full construction of the substructure and superstructure of proposed westbound Des Plaines River bridge, to connect at either end with proposed interstate thru lanes and interchange ramps constructed under separate contracts. Additional activities in this stage include partial construction of the proposed eastbound Des Plaines River bridge. Some traffic will be shifted onto the new westbound bridge to allow for reconfigured ramp construction under other Contracts. Activities in these stages include completion of the proposed eastbound Des Plaines River bridge.

Activities including removal of existing pavement and storm sewers and construction of proposed roadway, sidewalk, storm sewer for Local roads which include; River St., Water St., Lucas Dr., and Joliet St. on the eastern side of Des Plaines River to be conducted independent from I-80 Mainline, at the contractor's discretion.

3. Describe the intended sequence of major activities which disturb soils for major portions of the site (e.g. clearing, grubbing, excavation, grading, on-site or off-site stockpiling of soils, on-site or off-site storage of materials).

The existing Des Plaines River bridges will be removed under a separate contract during these stages.

The demolition of existing buildings within the proposed ROW, consisting of soil disturbing activities such as site clearing and debris removal, excavation, and soil compaction due to heavy equipment operations, followed by implementation of stabilization measures, will be completed in a single stage with no stockpiling or storage of

4. The total area of the construction site is estimated to be 32.84 (includ. bridge) acres.

5. The total area of the site estimated to be disturbed by excavation, grading or other activities is 30.08(incl.watr piers) acres.

6. Determine an estimate of the runoff coefficient of the site after construction activities are completed.

Before: 0.76, After: 0.78

7. Provide the existing information describing the potential erosivity of the soil at discharge locations at the project site.

The design, installation, and maintenance of BMPs within the project limits are within an area where annual erosivity (R value) is less than or equal to 168. Erosivity is less than 5 in all two-week periods between October 12 and April 14, which would qualify for a construction rainfall erosivity waiver under the US Construction General Permit requirements. At these locations, erosivity is highest in spring to autumn, April 15 - October 11.

8. Erosion and Sediment Control Plan (Graphic Plan) is included in the contract. ☒ Yes ☐ No

9. List all soils found within project boundaries; include map until name, slope information, and erosivity.

315C2, Channahon silt loam, 4 to 6 percent slopes, eroded, K=0.43
316A, Romeo silt loam, 0 to 2 percent slopes, K=0.32
802B, Orthents, loamy, undulating, 1 to 6 percent slopes, K=0.37
8451A, Lawson silt loam, heavy till plain, 0 to 2 percent slopes, occasionally flooded, K=0.37

10. List of all MS4 permittees in the area of this project

Illinois Department of Transportation; City of Joliet

Note: For sites discharging to an MS4, a separate map identifying the location of the construction site and the location where the MS4 discharges to surface water must be included.

Part II: Waters of the US

1. List the nearest named receiving water(s) and ultimate receiving waters.

This project is tributary to the Des Plaines River and to Hickory Creek. Hickory Creek flows into the Des Plaines River approximately one mile south of the project which is ultimately tributary to the Illinois River, approximately 12 miles southwest of the project. Hickory Creek, the Des Plaines River and the Illinois River are not identified by the IDNR as "biologically significant streams". Hickory Creek (segment IL_GG-22) and the Des Plaines River (segment IL_G-23) are listed on the 2020/2022 IEPA 303(d) list as impaired.

2. Are wetlands present in the project area? ☐ Yes ☒ No

If yes, describe the areal extent of the wetland acreage at the site.

No wetlands are located within the project limits.
WOUS 1 (Des Plaines River): 5.8 acres/ 2.283 acres of impact

3. Natural buffers:

For any storm water discharges from construction activities within 50 feet of a Waters of the United States, except for activities for water-dependent structures authorized by a Section 404 permit, the following shall apply:

(i) A 50-foot undisturbed natural buffer between the construction activity and the Waters of the United States has been provided

☐ Yes ☒ No; and/or

(ii) Additional erosion and sediment controls within that area has been provided

☒ Yes ☐ No; and Describe: Erosion Control Blanket and rip rap slope wall scour protection.

Part III. Water Quality

1. Water Quality Standards

As determined by the Illinois Pollution Control Board, Illinois waters have defined numeric limits of pollutants under the umbrella term "Water Quality Standards." In the following table are commonly used chemicals/practices used on a construction site. These chemicals if spilled into a waterway, could potentially contribute to a violation of a Water Quality Standard. If other chemicals that could contribute a violation of a Water Quality Standard, add as needed.

☒ Fertilizer (check as appropriate)
- ☒ Nitrogen
- ☐ Phosphorus, and/or
- ☒ Potassium

☒ Herbicide

☒ Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)
☒ Waste water for concrete washout station
☒ Coal tar Pitch Emulsion
☐ Other (Specify) N/A
☐ Other (Specify) N/A

Table 1: Common chemicals/potential pollutants used during construction

If no boxes are checked in Table 1 above, check the following box:
☐ There are no chemicals on site that will exceed a Water Quality Standards if spilled.

If any boxes are checked in Table 1 above, check the following box:
☒ There are chemicals on site that if spilled could potentially cause an exceedance of a Water Quality Standard. The Department shall implement Pollution Prevention/Good Housekeeping Practices as described in the Department's ILR40 Discharge for Small Municipal Separate Storm Sewer Systems (MS4) reiterated below and Part VIII. Unexpected Regulated Substances/Chemical Spill Procedures:

Pollution Prevention:

The Department will design, and the contractor shall, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants from construction activities. At a minimum, such measures must be designed, installed, implemented and maintained to:

(a) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.

(b) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, chemical storage tanks, deicing material storage facilities and temporary stockpiles, detergents, sanitary waste, and other materials present on the site exposed to precipitation and to storm water.

(c) Minimize the discharge of pollutants from spills, leaks and vehicle and equipment maintenance and repair activities and implement chemical spill and leak prevention and response procedures;

(d) Minimize the exposure of fuel, oil, hydraulic fluids, other petroleum products, and other chemicals by storing in covered areas or containment areas. Any chemical container with a storage of 55 gallons or more must be stored a minimum of 50 feet from receiving waters, constructed or natural site drainage features, and storm drain inlets. If infeasible due to site constraints, store containers as far away as the site permits and document in your SWPPP the specific reasons why the 50-foot setback is infeasible and how the containers will be stored.

(e) The contractor is to provide regular inspection of their construction activities and Best Management Practices (BMPs). Based on inspection findings, the contractor shall determine if repair, replacement, or maintenance measures are necessary in order to ensure the structural integrity, proper function, and treatment effectiveness of structural storm water BMPs. Necessary maintenance shall be completed as soon as conditions allow to prevent or reduce the discharge of pollutants to storm water or as ordered by the Engineer. The Engineer shall conduct inspections required in Section XI Inspections, and report to the contractor deficiencies noted. These Department conducted inspections do not relieve the contractor from their responsibility to inspect their operations and perform timely maintenance; and

(f) In addition, all IDOT projects are screened for Regulated Substances as described in Section 27-3 of the BDE Manual and implemented via Section 669: Removal and Disposal of Regulated substances in the Standard Specifications for Road and Bridge Construction.

Approved alterations to the Department's provided SWPPP, including those necessary to protect Contractor Borrow, Use and Waste areas, shall be designed, installed, implemented and maintained by the Contractor in accordance with IDOT Standard Specifications Section 280.

2. 303(d) Impaired Waterways

Does the project area have any 303(d) impaired waterways with the following impairments?

- suspended solids
- turbidity, and or
- siltation

☒ Yes ☐ No

If yes, list the name(s) of the listed water body and the impairment(s)

303(d) waterbody	Impairments(s)
Hickory Creek	The aquatic life use of Hickory Creek is being impaired by phosphorus, total suspended solids, fecal coliform, and unknown causes.
Des Plaines River	The aquatic life use of the Des Plaines River is being impaired by mercury, polychlorinated biphenyls (PCBS), and dissolved oxygen.
N/A	N/A

In addition, It is paramount that the project does not increase the level of the impairment(s) described above. Discuss which BMPs will be implemented to reduce the risk of impairment increase

Sediment control BMP's will be implemented to prevent discharge of sediment from the construction area.

3. Total Maximum Daily Load (TMDL)

Does the project include any receiving waters with a TMDL for sediment, total suspended solids, turbidity or siltation? ☐ Yes ☒ No

If yes, List TMDL waterbodies below and describe associated TMDL

TMDL waterbody	TMDL
N/A	N/A
N/A	N/A
N/A	N/A

Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL

N/A

If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation

N/A

Part IV. Temporary Erosion and Sediment Controls

Stabilization efforts must be initiated within 1 working day of cessation of construction activity and completed within 14 days. Areas must be stabilized if they will not be disturbed for at least 14 calendar days. Exceptions to this time frame include:

(i) Where the initiation of stabilization measures is precluded by snow cover, stabilization measures must be initiated as soon as practicable,

(ii) On areas where construction activities have temporarily ceased and will resume after 14 days, a temporary stabilization method can be used (temporary stabilization techniques must be described), and

(iii) Stabilization is not required for exit points at linear utility construction site that are used only episodically and for very short durations over the life of the project, provided other exit point controls are implemented to minimize sediment track-out.

Additionally, a record must be kept with the SWPPP throughout construction of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated.

At a minimum, controls must be coordinated, installed and maintained to:

1. Minimize the amount of soil exposed during construction activity.
2. Minimize the disturbance of steep slopes.
3. Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible.
4. Minimize soil compaction and, unless infeasible, preserve topsoil.

Note: For practices below, consult relevant design criteria in Chapter 41 of the BDE Manual and maintenance criteria in Erosion and Sediment Control Field Guide for Construction.

1. Erosion Control:

The following are erosion control practices which may be used on a project (place a check by each practice that will be utilized on the project, add additional practices as needed):

- ☒ Mulch
- ☒ Erosion Control Blanket
- ☒ Turf Reinforcement Mat
- ☐ Sodding
- ☒ Geotextile fabric
- ☐ Preservation of existing vegetation
- ☒ Temporary Turf Cover Mixture (Class 7)
- ☒ Permanent seeding (Class 1-6)
- ☒ Other (Specify) Temporary Erosion Control Seeding
- ☐ Other (Specify) N/A
- ☐ Other (Specify) N/A

2. Sediment Control:

The following sediment control devices will be implemented on this project:

- ☒ Ditch Checks
- ☒ Inlet and Pipe protection
- ☐ Hay or Straw bales
- ☐ Above grade inlet filters (fitted)
- ☐ Above grade inlet filters (non-fitted)
- ☒ Inlet filters
- ☒ Perimeter Erosion Barrier
- ☐ Rolled Excelsior
- ☒ Silt Filter Fence
- ☐ Urethane foam/geotextiles
- ☒ Other (Specify) Aggregate Culvert Inlet Protection
- ☐ Other (Specify) N/A
- ☐ Other (Specify) N/A

3. Structural Practices:

Provide below is a description of structural practices that will be implemented:

- ☐ Aggregate Ditch
- ☐ Articulated Block Revetment Mat
- ☐ Barrier (Permanent)
- ☐ Concrete Revetment Mats
- ☒ Dewatering Filtering
- ☐ Gabions
- ☒ In-Stream or Wetland Work
- ☐ Level Spreaders
- ☐ Paved Ditch
- ☐ Permanent Check Dams
- ☐ Precast Block Revetment Mat
- ☐ Rock Outlet Protection
- ☒ Stabilized Construction Exits
- ☒ Stabilized Trench Flow
- ☐ Sediment Basin
- ☒ Retaining Walls
- ☒ Riprap
- ☒ Strom Drain Inlet Protection
- ☐ Slope Walls
- ☐ Sediment Trap
- ☒ Other (Specify) Dust Supression
- ☒ Other (Specify) Temporary Ditch Checks
- ☐ Other (Specify) N/A
- ☐ Other (Specify) N/A

4. Polymer Flocculants

Design guidance for polymer flocculants is available in Chapter 41 of the BDE Manual. In addition, Polymer Flocculants may only be used by district Special Provision.

If polymer flocculants are used for this project, the following must be adhered to and described below:

- Identify the use of all polymer flocculants at the site.
- Dosage of treatment chemicals shall be identified along with any information from any Material Safety Data Sheet.
- Describe the location of all storage areas for chemicals.
- Include any information from the manufacturer's specifications.
- Treatment chemicals must be stored in areas where they will not be exposed to precipitation.
- The SWPPP must describe procedures for use of treatment chemicals and staff responsible for use/application of treatment chemicals must be trained on the established procedures.

N/A

Part V. Other Conditions

1. Dewatering

Will dewatering be required for this project? ☒ Yes ☐ No

If yes, the following applies:

- Dewatering discharges shall be routed through a sediment control (e.g., sediment trap or basin, pumped water filter bag) designed to minimize discharges with visual turbidity;
- The discharge shall not include visible floating solids or foam;
- The discharge must not cause the formation of a visible sheen on the water surface, or visible oily deposits on the bottom or shoreline of the receiving water. An oil-water separator or suitable filtration device shall be used to treat oil, grease, or other similar products if dewatering water is found to or expected to contain these materials;
- To the extent feasible, use well-vegetated (e.g., grassy or wooded), upland areas of the site to Infiltrate dewatering water before discharge;
- You are prohibited from using receiving waters as part of the treatment area;
- To minimize dewatering-related erosion and related sediment discharges. use stable. erosion-resistant surfaces (e.g., well-vegetated grassy areas, clean filler stone, geotextile underlayment) to discharge from dewatering controls. Do not place dewatering controls, such as pumped water filter bags, on steep slopes (15% or greater in grade);
- Backwash water (water used to backwash/clean any filters used as part of storm water treatment) must be properly treated or hauled off site for disposal;
- Dewatering treatment devices shall be properly maintained; and
- See Part XI (Inspections) for inspection requirement.

Part VI. Permanent (i.e., Post-Construction) Storm Water Management Controls

Provided below is a description of measures that may be installed during the construction process to control volume and therefore the amount pollutants in storm water runoff that can occur after construction operations have been completed.

Practices may include but are not limited to the following:

- Aggregate ditch checks;
- bioswales,
- detention pond(s),
- infiltration trench;
- retention pond(s),
- open vegetated swales and natural depressions,
- treatment train (sequential system which combine several practices).
- Velocity dissipation devices (See Structural Practices above)

Describe these practices below

Roadway ditches will be vegetated to promote infiltration and riprap will be provided at storm sewer and culvert outlets for velocity dissipation.

Part VII. Additional Practices Incorporated From Local Ordinance(s)

In some instances, an additional practice from a local ordinance may be included in the project. If so, describe below (Note: the Department is not subject to local ordinances)

None.

Part VIII. Unexpected Regulated Substances/Chemical Spill Procedures

When Unexpected Regulated Substances or chemical spills occur, Article 107.19 of the Standard Specifications for Road and Bridge Construction shall apply. In addition, it is the contractor's responsibility to notify the Engineer in the event of a chemical spill into a ditch or waterway, the Engineer will then notify appropriate IEPA and IEMA personnel for the appropriate cleanup procedures.

Part IX. Contractor Required Submittals

Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342A.

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:

- Approximate duration of the project, including each stage of the project
- Rainy season, dry season, and winter shutdown dates
- Temporary stabilization measures to be employed by contract phases
- Mobilization time-frame
- Mass clearing and grubbing/roadside clearing dates
- Deployment of Erosion Control Practices
- Deployment of Sediment Control Practices (including stabilized construction entrances and exits to be used and how they will be maintained)
- Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
- Paving, saw-cutting, and any other pavement related operations
- Major planned stockpiling operation
- Time frame for other significant long-term operations or activities that may plan non-storm water discharges as dewatering, grinding, etc.
- Permanent stabilization activities for each area of the project

2. During the pre-construction meeting, the Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:

- Temporary Ditch Checks - Identify what type and the source of Temporary Ditch Checks that will be installed as part of the project. The installation details will then be included with the SWPPP.
- Vehicle Entrances and Exits - Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
- Material Delivery, Storage and Use- Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project. Specifically, any chemical stored in a 55 gallon drum provided by the contractor.
- Stockpile Management - Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
- Waste Disposal - Discuss methods of waste disposal that will be used for this project.
- Spill Prevention and Control - Discuss steps that will be taken in the event of a material spill.
- Concrete Residuals and Washout Wastes - Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
- Litter Management - Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
- Vehicle and Equipment Fueling - Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Vehicle and Equipment Cleaning and Maintenance - Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Dewatering Activities - Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.

Additional measures indicated in the plan

None.

Part X. Maintenance

It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications. However, when requested by the Contractor, the Resident Engineer will provide general maintenance guides (e.g., IDOT Erosion and Sediment Control Field Guide) to the Contractor for the practices associated with this project. Any damage or undermining shall be repaired immediately.

For Inlet Protection: Where there is evidence of sediment accumulation adjacent to the inlet protection measure, the deposited sediment must be removed by the following business day.

Below, describe procedures to maintain in good and effective operating conditions

Erosion Control Blanket: Repair damage due to water running beneath
the blanket and restore blanket when displacement occurs. Reseeding may be necessary. Replace all displaced blanket and re-staple.

Mulch Type 1: Repair straw if blown or washed away, or if hydraulic mulch washes away. Place tackifier if mulch does not control erosion.

Mulch Type 2: Repair straw if blown or washed away, or if hydraulic mulch washes away. Place tackifier or an Erosion Control Blanket if mulch does not control erosion.

Temporary Erosion Control Seeding: Reapply seed if stabilization hasn't been achieved. Apply temporary mulch to hold seed in place if seed has been washed away or found to be concentrated in ditch bottoms. Restore rills, greater than 4 inches deep, as quickly as possible on slopes steeper than 1V:4H to prevent sheet-flow from becoming concentrated flow patterns. Mow, if necessary, to promote seed soil contact when excessive weed development occurs, a common indication of ineffective temporary seeding. Supplement BMP if weather conditions (extreme heat or cold) are not conducive for germination.

Inlet Filters: Remove sediment from inlet filter baskets when basket is 25% full or 50% of the fabric pores are covered with silt. Remove ponded water on road surfaces immediately. Clean filter if standing water is present longer than one hour after a rain event. Remove trash accumulated around or on top of inlet filter. When filter is removed for cleaning, replace fabric if any tear is present.

Perimeter Erosion Control Barrier: Repair tears, gaps or undermining in silt fence or super silt fence. Restore leaning silt fence and ensure taut. Repair or replace any missing or broken stakes immediately. Clean fence line if sediment reaches one-third height of barrier. Remove fence once final stabilization is established. Repair fence if undermining occurs anywhere along its entire length.

Rip rap: Restore dislodged protection and correct erosion that may occur. Remedy deficient areas prone to increased erosion immediately to prevent greater deficiencies.
Stabilized Construction Exits: Replenish stone or replace exit if vehicles continue to track sediment onto the roadway from the construction site. Sweep sediment on roadway from construction activities immediately. Use street sweeping in conjunction with this BMP to remove sediment not removed by the stabilized construction exit.
Stockpile Management: Repair and/or replace perimeter controls and stabilization measures when stockpile material has potential to be discharged or leave the limits of protection. Remove all off-tracked material by sweeping or other methods.
Temporary Concrete Washout: Do not discharge wastewater into the environment (Note: acidity, not particulates, is environmentally detrimental). Facilitate evaporation of low volume washout water. Clean and remove any discharges within 24 hours of discovery. If effluent cannot be removed prior to anticipated rainfall event, place and secure a non- collapsing, non-water collecting cover over the washout facility to prevent accumulation and precipitation overflow. Replace damaged liner immediately. Remove washout when no longer needed and restore disturbed areas to original condition. Properly dispose of solidified concrete waste.

Below, describe procedures to maintain in good and effective operating conditions

Permanent Seeding: Reapply seed if stabilization hasn't been achieved. Apply temporary mulch to hold seed in place if seed has been washed away or found to be concentrated in ditch bottoms. Restore rills, greater than 4 inches deep, as quickly as possible on slopes steeper than 1V:4H to prevent sheet-flow from becoming concentrated flow patterns. Mow, if necessary, to promote seed soil contact when excessive weed development occurs, a common indication of ineffective seeding. Supplement BMP if weather conditions (extreme heat or cold) are not conducive for germination.

http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Manuals-Guides-&-Handbooks/Highways/Environment/Erosion%20and%20Sediment%20Control%20Field%20Guide%20for%20Construction%20Inspection.pdf

Part XI. Inspections

Qualified personnel shall inspect disturbed areas of the construction site that have not been finally stabilized, structural control measures, and locations where vehicles enter or exit the site at least once every seven calendar days and within 24 hours of the end of a storm or by the end of the following business or workday that is 0.50 inches or greater or equivalent snowmelt (except as allowed for Frozen Conditions).

In addition, all areas where storm water typically flows within the site should be inspected periodically to check for evidence of pollutants entering the drainage system, as well as all locations where stabilization measures have been implemented to ensure they are operating correctly.

Inspections shall be documented on the form BC 2259 (Storm Water Pollution Prevention Plan Erosion Control Inspection Report).

The Erosion and Sediment Control Field Guide for Construction Inspection shall be consulted as needed.

Dewatering

For site(s) discharging dewatering water, an inspection during the discharge shall be done once per day on which the discharge occurs and record the following in a report within 24 hours of completing the Inspection:

- The inspection date;
- Names and titles of personnel performing the inspection;
- Approximate times that the dewatering discharge began and ended on the day of inspection;
- Estimates of the rate (in gallons per day) of discharge on the day of inspection;
- Whether or not any of the following indications of pollutant discharge were observed at the point of discharge: a sediment plume, suspended solids. unusual color, presence of odor, decreased clarity, or presence of foam; and/or a visible sheen on the water surface or visible oily deposits on the bottom or shoreline of the receiving water.

Frozen Conditions

Inspections may be reduced to once per month when all construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities resume, either temporarily or continuously, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

Flooding or unsafe conditions

Areas that are inaccessible during required inspections due to flooding or other unsafe conditions must be inspected within 72 hours of becoming accessible.

Part XII. Incidence of Noncompliance (ION)

The Department shall notify the appropriate Agency Field Operations Section office by email as described on the IEPA ION form, within 24 hours of any incidence of noncompliance for any violation of the storm water pollution prevention plan observed during any inspection conducted, or for violations of any condition of this permit.

The Department shall complete and submit within 5 days an "Incidence of Noncompliance" (ION) report for any violation of the storm water pollution prevention plan observed during any Inspection conducted, or for violations of any condition of this permit. Submission shall be on forms provided by the IEPA and include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detalling any environmental impact which may have resulted from the noncompliance. Corrective actions must be undertaken immediately to address the identified non-compliance issue(s).

Illinois EPA
2520 W. Iles Ave./P.O. Box 19276
Springfield, IL 62794-9276

Please note that if these are delivered via FedEx or UPS, these carriers cannot deliver to our P.O. Box and this number must be excluded from the mailing address.

Part XIII. Corrective Actions

Corrective actions must be taken when:

- A storm water control needs repair or replacement;
- A storm water control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly;
- Discharges are causing an exceedance of applicable water quality standards; or
- A prohibited discharge has occurred.

Corrective Actions must be completed as soon as possible and documented within 7 days in an Inspection Report or report of noncompliance. If it is infeasible to complete the installation or repair within 7 calendar days, it must be documented in the records why it is infeasible to complete the installation or repair within the 7 day time-frame and document the schedule for installing the storm water control (s) and making it operational as soon as feasible after the 7-day time-frame.. In the event that maintenance is required for the same storm water control at the same location three or more times, the control must be repaired in a manner that prevents continued failure to the extent feasible, and it must be documented the condition and how it was repaired in the records. Alternatively, it must be documented why the specific re-occurrence of this same issue must continue to be addressed as a routine maintenance fix.

Part XIV. Retention of Records

The Department must retain copies of the SWPPP and all reports and notices required by this permit, records of all data used to complete the NOI to be covered by this permit, and the Agency Notice of Permit Coverage letter for at least three years from the date that the permit coverage expires or is terminated. the permittee must retain a copy of the SWPPP and any revisions to the SWPPP required by this permit at the construction site from the date of project initiation to the date of final stabilization. Any manuals or other documents referenced in the SWPPP must also be retained at the construction site.

Part XV. Failure to Comply

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the contractor (See Article 105.03 Conformity with Contract)

Part XVI. Keeping the SWPPP ("plan") Current

IDOT shall amend the plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to Waters of the United States and which has not otherwise been addressed in the plan or if the plan proves to be ineffective in eliminating or significantly minimizing sediment and/or pollutants identified under paragraph Part II. Water Quality or in otherwise achieving the general objectives of controlling pollutants in storm water discharges associated with construction site activity.

In addition, the plan shall be amended to identify any new contractor and/or subcontractor that will implement a measure of the plan. Amendments to the plan may be reviewed by the IEPA the same manner as the SWPPP and Erosion and Sediment Control Plan (ESCP) submitted as part of the Notice of Intent (NOI). The SWPPP and site map must be modified within 7 days for any changes to construction plans, storm water controls or other activities at the site that are no longer accurately reflected in the SWPPP.

In addition, the NOI shall be modified using the CDX system for any substantial modifications to the project such as:

- address changes
- new contractors
- area coverage
- additional discharges to Waters of the United States, or
- other substantial modifications (e.g. addition of dewatering activities.

The notice of intent shall be modified within 30 days of the modification to the project.

Part XVII: Notifications

In addition to the NOI submitted to IEPA, all MS4 permittees identified in Part I. Site Description shall receive a copy of the NOI.

Part XVIII. Notice of Termination

Where a site has completed final stabilization and all storm water discharges from construction activities that are authorized by this permit are eliminated, the permittee must submit a completed Notice of Termination (NOT) that is signed in accordance with ILR10 permit.

Method of Measurement: NPDES Compliance shall not be measured for payment separately. Measurement for payment for Temporary Erosion and Sediment Control shall be in accordance with Section 280 or as otherwise provided in the contract. Permanent BMPs necessary to comply with this provision shall be measured for payment in accordance with their respective provisions in the contract.

Basis of Payment: NPDES Compliance shall not be paid for separately. Payment for Temporary Erosion and Sediment Control shall be in accordance with Section 280 or as otherwise provided in the contract. Permanent BMPs necessary to comply with this provision shall be paid for in accordance with their respective payment provisions in the contract.

Illinois Department of Transportation

Contractor Certification Statement

Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Part IX. Contractor Required Submittals of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractor/subcontractor completing this form.

Route	Marked Route	Section Number
FAI Route I-80	Interstate 80	FAI 80 21 STRUCTURE 2
Project Number	**County**	**Contract Number**
NHPP-8PC(116)	Will	62R23

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR 10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Additionally, I have read and understand all of the information and requirements stated in SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

☐ Contractor
☐ Sub-Contractor

Signature	Date

Print Name	Title

Name of Firm	Phone

Street Address	City	State	Zip Code

Items which this Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP

BDE 2342A (Rev. 02/21/25)

NATIONWIDE PERMIT 15

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT
231 SOUTH LA SALLE STREET, SUITE 1500
CHICAGO IL 60604-1437

November 13, 2025

Regulatory Branch (LRC-2023-00534)

SUBJECT: Nationwide Permit Authorization for 0.236 ac of Permanent Impacts and 2.283 acres of Temporary Impacts to the Des Plaines River for the I-80 Bridge Replacement Project, Joliet, Will County, Illinois (Latitude 41.511727°N, Longitude –88.092342°W)

IDOT Contract 62R23

Jose Rios
Illinois Department of Transportation
201 West Center Court
Schaumburg, Illinois 60196

Dear Mr. Rios:

The U.S. Army Corps of Engineers, Chicago District, has completed its review of your pre-construction notification for the above referenced project, dated May 14, 2024, for authorization under the Nationwide Permit (NWP) Number 15 (NWP 15 U.S. Coast Guard Approved Bridges), submitted on your behalf by WSP USA. This office has verified that your proposed activity complies with the terms and conditions of the NWP. This verification also serves as permission for your proposed activity under the authority of Section 14 of the Rivers and Harbors Act of 1899, (33 U.S.C. 408, "Section 408"), subject to compliance with the terms and conditions below and attached. Permission under Section 408 is required since your request will alter the Congressionally authorized Brandon Road Lock and Dam Navigation Project.

This determination covers only your project as described above and in the approved project plans titled, "DRAFT – Proposed Highway Plans FAI Route I-80 at Des Plaines River Section FAI 80 21 Structure 2", dated January 31, 2025, plot date September 11, 2025, prepared by WSP. It has been determined that the activities authorized do not impair the usefulness of the USACE Navigation project and are not injurious to the public interest. Caution must be taken to prevent construction materials and activities from impacting waters of the United States and/or the USACE Navigation Project beyond the scope of this authorization. If the design, location, or purpose of the project is changed, it is recommended that you contact this office to determine the need for further authorization.

The subject activity may be performed without further authorization from this office provided that the activity complies with the NWP terms and general conditions, the regional conditions for Illinois, the special conditions listed below, and the Section 401 Water Quality Certification ("WQC") conditions added by the Illinois Environmental Protection Agency ("IEPA"). The NWP Program terms, general conditions, and regional conditions are listed in the enclosed NWP Summary. The WQC conditions are listed in the enclosed Fact Sheet.

The subject activity may be performed without further authorization from this office provided that the activity complies with the NWP terms and general conditions and the regional conditions for Illinois, as well as the special conditions listed below. The NWP Program terms, general conditions, and regional conditions are listed in the enclosed NWP Summary.

Specifically, we wish to draw your attention to General Condition 21, which requires permittees to notify our office immediately in the event of discovery of previously unknown human remains, Native American cultural items, or archaeological artifacts; and a term of the NWP program, which states that NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

In addition to the general, regional, and water quality conditions of this permit verification, the following special conditions also apply to this verification:

1. To avoid potential impacts to the northern long-eared bat (*Myotis septentrionalis*), tree clearing (trees 3" DBH or greater) shall only occur between October 1 and March 31 of any construction year.

2. This authorization is contingent upon implementing and maintaining soil erosion and sediment controls in a serviceable condition throughout the duration of the project. You shall comply with the project's soil erosion and sediment control (SESC) plans and the installation and maintenance requirements of the SESC practices on-site. You shall notify this office any changes or modifications to the approved plan set. Please be aware that field conditions during project construction may require the implementation of additional SESC measures for further protection of aquatic resources. If you fail to implement corrective measures, this office may require more frequent site inspections to ensure the installed SESC measures are acceptable. Please be aware that work authorized herein may not commence until you receive written notification from this office that your plans meet technical standards.

As part of the SESC process, you are required to retain a qualified Independent SESC Inspector (ISI) to review the project's SESC plans and provide a detailed narrative that explains the measures to be implemented at the project site. The ISI is also required to perform site inspections of the implemented SESC measures to ensure proper installation and regular maintenance of the approved methods.

a. You shall contact this office and the ISI at least 10 calendar days prior to the preconstruction meeting so that a representative of this office may attend. The meeting agenda will include a discussion of the SESC plan and the installation and maintenance requirements of the SESC practices on the site;

b. Prior to commencement of any in-stream work, you shall submit construction plans and a detailed narrative to this office that disclose the contractor's preferred method of cofferdam and dewatering method;

c. The ISI will perform weekly inspections of the implemented SESC measures to ensure proper installation and regular maintenance of the approved methods. The ISI contact information form shall be submitted to this office via e-mail and/or hard copy prior to commencement of the permitted work; and

d. The ISI shall submit to the Corps an inspection report with digital photographs of the SESC measures on a weekly basis during the active and non-active phases of construction. An inspection report shall also be submitted at the completion of the project once the SESC measures have been removed and final stabilization has been completed.

3. You shall provide written notification to this office at least ten (10) days prior to the commencement of work indicating the start date and estimated end date of construction. If possible, this notification should be provided by email to patrick.j.verhalen@usace.army.mil.

4. You are responsible for all work authorized herein and for ensuring that all contractors are aware of the terms and conditions of this authorization.

5. A copy of this authorization must be present at the project site during all phases of construction.

6. Prior to commencement of work, you shall submit construction plans and a narrative of the contractor's preferred method of cofferdam, causeway, and dewatering. This plan shall include the details regarding materials and equipment, monitoring and maintenance requirements of installed measures, contingencies for potential flood events, and contact information of those responsible for the work included in the plan. Work in the waterway shall not commence until this office notifies you, in writing, that the plans have been approved.

7. Work in the waterway should be timed to take place during low or no-flow conditions. Low flow conditions are flow at or below the normal water elevation.

8. Work must be designed to allow for the conveyance of the 2-year peak flow past the work area without overtopping the cofferdam or causeway. The Corps has the discretion to reduce this requirement if documented by the applicant to be infeasible or unnecessary.

9. Water shall be isolated from the in-stream work area using a causeway or cofferdam constructed of non-erodible materials (steel sheets, aqua barriers, rip rap and geotextile liner, etc.). Earthen cofferdams are not permissible.

10. The cofferdam must be constructed from the upland area and no equipment may enter flowing water at any time. If the installation of the cofferdam cannot be completed from shore and access is needed to reach the area to be coffered, other measures, such as the construction of a causeway, will be necessary to ensure that equipment does not enter the water. Once the cofferdam is in place and the isolated area is dewatered, equipment may enter the coffered area to perform the required work.

11. If bypass pumping is necessary, the intake hose shall be placed on a stable surface or floated to prevent sediment from entering the hose. The bypass discharge shall be placed on a non-erodible, energy dissipating surface prior to rejoining the stream flow and shall not cause erosion. Filtering of bypass water is not necessary unless the bypass water has become sediment-laden as a result of the current construction activities.

12. During dewatering of the coffered work area, all sediment-laden water must be filtered to remove sediment. Possible options for sediment removal include baffle systems, anionic polymers systems, dewatering bags, or other appropriate methods. Water shall have sediment removed prior to being re-introduced to the downstream waterway. A stabilized conveyance from the dewatering device to the waterway must be identified in the plan. Discharge water is considered clean if it does not result in a visually identifiable degradation of water clarity.

13. The portion of the side slope that is above the observed water elevation shall be stabilized as specified in the plans prior to accepting flows. The substrate and toe of slope that has been disturbed due to construction activities shall be restored to proposed or pre-construction conditions and fully stabilized prior to accepting flows.

14. Upon completion of the work and prior to the submission of the compliance certificate, a copy of the As-Built Plans shall be submitted to the USACE PM at patrick.j.verhalen@usace.army.mil illustrating the final conditions of the impacted areas.

15. Upon completion of the work and prior to the submission of the compliance certificate, a copy of the As-Built Plans shall be submitted to the USACE PM at

patrick.j.verhalen@usace.army.mil illustrating the final conditions of the impacted areas.

16. You must contact the United States Coast Guard, Marine Safety Unit Chicago, Waterways Management Division, (630-986-2155 or D09-DG-MSUChicago-Waterways@uscg.mil) at least 30 days prior to the anticipated start of construction to determine whether a Notice to Mariners is advisable for any construction period(s) and/or to notify mariners of the new completed structure. You must retain documentation of any such discussions, and you must provide such information to the USCG as they may require you to prepare the Notice(s) to Mariners prior to commencing construction of the structure. If you anticipate starting construction within 30 days of this authorization, you must contact the MSU within 3 business days of this authorization.

17. Within 21 days of completion of construction, in order to facilitate updating federal navigation charts, you must file a "Permit/Public Notice Report" form with the NOAA National Ocean Service, Office of the Coast Survey, including as-built drawings and geo-referenced CADD or GIS files in electronic format. Submit the form, drawings, and files to ocs.ndb@noaa.gov, agc-ienc@usace.army.mil, and patrick.j.verhalen@usace.army.mil

Please ensure the conditions oof you Section 408 Validation Letter are adhered to, including Appendix K "Standard Terms and Conditions". **In particular, please note the items that must be submitted to and approved by the USACE prior to construction.**

Please note that IEPA has issued Section 401 Water Quality Certification for this NWP. The conditions of this WQC are automatically conditions of this NWP verification and are included in the enclosed Fact Sheet. If you have any questions regarding Section 401 certification, please contact IEPA's Division of Water Pollution Control, Permit Section #15, by telephone at (217) 785-6939.

This verification is valid until March 14, 2026, when NWP 15 is scheduled to be modified, reissued, or revoked. Furthermore, if you commence or are under contract to commence this activity before the date the NWP is modified, reissued, or revoked, you will have 12 months from the date of the modification, reissuance or revocation to complete the activity under the present terms and conditions. Failure to comply with the general and regional conditions of this NWP, or any project-specific special conditions of this authorization, may result in the suspension or revocation of your authorization.

This office is in receipt of the ledger confirming your use of 183 ft of stream mitigation credit previously purchased from Muirhead Springs Mitigation Bank. This requirement was calculated by multiplying 183 LF by a ratio of 1:1, which equals 183 LF.

Once you have completed the authorized activity, please sign and return the enclosed compliance certification as required by general condition 30. If you have any questions, please contact Patrick VerHalen of this office by telephone at (312) 846-5545, or email at Patrick.J.VerHalen@usace.army.mil.

Sincerely,

Teralyn Pompeii
Digitally signed by Teralyn Pompeii
Date: 2025.11.13 17:54:23 -06'00'

Teralyn Pompeii
Chief, Regulatory Branch

Enclosures

cc:
U.S. Coast Guard, District 8 (Peter Sambor)
U.S. Coast Guard, Marine Safety Unit Chicago (LT James Fortin)
U.S. Army Corps of Engineers – MVR (Alexis Ryckaert, Amber Leech)
Illinois Department of Natural Resources/OWR (Bill Boyd)
Illinois Environmental Protection Agency (Darren Gove)
Illinois Department of Transportation (Fawad Aqueel, Vanessa Ruiz, Alycia Kluenenberg)

PERMIT COMPLIANCE

CERTIFICATION

Permit Number: LRC-2023-00534

Permittee: Jose Rios
Illinois Department of Transportation

Date: November 13, 2025

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of said permit and if applicable, compensatory wetland mitigation was completed in accordance with the approved mitigation plan.[1]

_____ _____
PERMITTEE DATE

Within 30 days after completion of the activity authorized by this permit and any mitigation required by the permit, this certification must be signed and returned to the following address:

Email to: ChicagoRequests@usace.army.mil
Subject: Compliance Certification, LRC-2023-00534

Please note that your permitted activity is subject to compliance inspections by Corps of Engineers representatives. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.

[1] If compensatory mitigation was required as part of your authorization, you are certifying that the mitigation area has been graded and planted in accordance with the approved plan. You are acknowledging that the maintenance and monitoring period will begin after a site inspection by a Corps of Engineers representative or after thirty days of the Corps' receipt of this certification. You agree to comply with all permit terms and conditions, including additional reporting requirements, for the duration of the maintenance and monitoring period.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397
JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

Corrected Copy

October 8, 2021 **Corrected Copy Date:** DEC 2 1 2021

U.S. Army Corps of Engineers, Rock Island
ATTN: Ms. Samantha Chavez, Regulatory Branch
Post Office Box 2004
Clock Tower Building
Rock Island, IL 61204-2004

Re: Federal Register [Docket Number: COE–2020–0002] Proposal to Reissue and Modify Nationwide Permits, September 15, 2020
CWA §401 Certification/Denial and applicable conditions
Illinois EPA Log no. C-0210-20

Dear Ms. Chavez:

On September 15, 2020 the Corps of Engineers issued the notice of proposed rulemaking concerning their determination to reissue and modify the current Nationwide Permits (NWPs) that are set to expire on March 18, 2022. By letter dated August 19, 2021 your office extended the reasonable period of time to revise the §401 water quality certification to October 13, 2021 for thirty-two (32) NWPs. The Agency has made modifications to the certification conditions issued on December 11, 2020. By this final determination document the Illinois EPA grants §401 water quality certification for NWPs 3, 4, 5, 6, 7, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 25, 27, 30, 31, 32, 33, 36, 37, 38, 41, 45, 53, and 54 with the special and/or general conditions specified below. This document also provides the certification conditions for NWPs 12, 29, 39, 40, 42, 43, 51, 52, 57, and 58 and notice of the Agency determination to deny eight (8) of the proposed nationwide permits which are provided below with reasons in accordance with 40 CFR 121.7(e)(2).

CWA §401 certification is hereby granted, subject to General Conditions 1 through 12 below, for the following nationwide permits:

NWP 3 – Maintenance
NWP 4 – Fish and Wildlife Harvesting, Enhancement, and Attraction Device and Activities
NWP 5 – Scientific Measurement Devices
NWP 7 – Outfall Structures and Associated Intake Structures
NWP 18 – Minor Discharges
NWP 19 – Minor Dredging
NWP 20 – Response Operations for Oil or Hazardous Substances
NWP 22 – Removal of Vessels
NWP 25 – Structural Discharges
NWP 30 – Moist Soil Management for Wildlife
NWP 31 – Maintenance of Existing Flood Control Facilities
NWP 33 – Temporary Construction, Access and Dewatering
NWP 36 – Boat Ramps
NWP 41 – Reshaping Existing Drainage Ditches
NWP 45 – Repair of Uplands Damaged by Discrete Events

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
2009 Mall Street Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131
2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

PLEASE PRINT ON RECYCLED PAPER

CWA §401 certification is hereby granted, subject to General Conditions 1 through 12 below and the Special Conditions which are contained in the referenced attachment for the following identified nationwide permits:

NWP 6 – Survey Activities. Refer to Special Conditions for NWP 6 in Attachment.
NWP 12 – Oil or Natural Gas Pipeline Activities. Refer to Special Conditions for NWP 12 in Attachment.
NWP 13 – Bank Stabilization. Refer to Special Conditions for NWP 13 in Attachment.
NWP 14 – Linear Transportation Projects. Refer to Special Conditions for NWP 14 in Attachment.
NWP 15 – U.S. Coast Guard Approved Bridges. Refer to Special Conditions for NWP 15 in Attachment.
NWP 16 – Return Water from Upland Contained Disposal Areas. Refer to Special Conditions for NWP 16 in Attachment.
NWP 17 – Hydropower Projects. Refer to Special Conditions for NWP 17 in Attachment.
NWP 23 – Approved Categorical Exclusions. Refer to Special Conditions for NWP 23 in Attachment.
NWP 27 – Aquatic Habitat Restoration, Establishment, and Enhancement Activities. Refer to Special Conditions for NWP 27 in Attachment.
NWP 29 – Residential Developments. Refer to Special Conditions for NWP 29 in Attachment.
NWP 32 – Completed Enforcement Actions. Refer to Special Conditions for NWP 32 in Attachment.
NWP 37 – Emergency Watershed Protection and Rehabilitation. Refer to Special Conditions for NWP 37 in Attachment.
NWP 38 – Cleanup of Hazardous and Toxic Waste. Refer to Special Conditions for NWP 38 in Attachment.
NWP 39 – Commercial and Institutional Developments. Refer to Special Conditions for NWP 39 in Attachment.
NWP 40 – Agricultural Activities. Refer to Special Conditions for NWP 40 in Attachment.
NWP 42 – Recreational Facilities. Refer to Special Conditions for NWP 42 in Attachment.
NWP 43 – Stormwater Management Facilities. Refer to Special Conditions for NWP 43 in Attachment.
NWP 51 – Land-Based Renewable Energy Generation Facilities. Refer to Special Conditions for NWP 51 in Attachment.
NWP 52 – Water-Based Renewable Energy Generation Pilot Projects. Refer to Special Conditions for NWP 52 in Attachment.
NWP 53 – Removal of Low-Head Dams. Refer to Special Conditions for NWP 53 in Attachment.
NWP 54 – Living Shorelines. Refer to Special Conditions for NWP 54 in Attachment.
NWP 57 – Electric Utility Line and Telecommunications Activities. Refer to Special Conditions for NWP 12 in Attachment.
NWP 58 – Utility Line Activities for Water and Other Substances. Refer to Special Conditions for NWP 12 in Attachment.

CWA §401 certification is hereby denied with reasons provided in accordance with 401 CFR 121.7 for the following NWPs:

NWP 21 – Surface Coal Mining Activities. The Illinois EPA has determined that a case-specific review is warranted for all surface mining activities including carbon extraction because pursuant to 35 Ill. Admin. Code Section 401.102, mining activities are identified as having, when certain refuse materials are used, the capability to cause or threaten to cause a nuisance or render waters harmful or detrimental to public health and to all legitimate uses including but not limited to livestock and wildlife uses. The likelihood that contaminants related to coal extraction, particularly acid producing minerals in mine refuse, would be found within overburden and soil stockpiles and therefore present within fill materials warrant a facility specific antidegradation assessment pursuant to 35 Ill. Admin. Code Section 302.105. Additionally, Illinois' Section 401 implementation rules at 35 Ill. Admin. Code Part 395 regarding material testing exemptions specifically exclude material with known sources of pollution. Therefore, Section 401 certification is denied for this nationwide permit (NWP21).

NWP 34 – Cranberry Production Activities: The Illinois EPA has determined that the area of impact that is allowed by an authorization under this nationwide permit exceeds 1/2 acre. 1/2 acre is determined to be representative of the maximum threshold for minimal degradation of existing uses of aquatic resources. Consequently, any activity authorized under this nationwide permit must be subject to a case-specific antidegradation assessment pursuant to 35 Ill. Admin. Code Section 302.105. Therefore, the Illinois EPA denies 401 certification for NWP 34.

NWP 44 – Mining Activities: The Illinois EPA has determined that a case-specific review is warranted for all surface mining activities because pursuant to 35 Ill. Admin. Code Section 401.102, mining activities are identified as having, when certain refuse materials are used, the capability to cause or threaten to cause a nuisance or render waters harmful or detrimental to public health and to all legitimate uses including but not limited to livestock and wildlife uses. Furthermore, all mining activities are regulated by the Illinois EPA under federal and state statute because of their potential to cause or threaten to cause water pollution. Therefore, for the above reasons, the Illinois EPA denies 401 certification for NWP 44.

NWP 46 – Discharges into Ditches: The Illinois EPA has determined that a case-specific review is warranted for all discharge activities into ditches because of the nationwide permit exceeds the 1/2 acreage determined to be the maximum threshold for minimal degradation of existing uses of aquatic resources. Consequently, any activity authorized under this nationwide permit must be subject to a case-specific antidegradation assessment pursuant to 35 Ill. Admin. Code Section 302.105. Therefore, the Illinois EPA denies 401 certification for NWP 46.

NWP 48 – Commercial Shellfish Mariculture Activities: As proposed, the Illinois EPA believes this nationwide permit is inapplicable to waters of the U.S. that are found within the State of Illinois. Therefore, the Illinois EPA denies 401 certification for NWP 48.

NWP 49 – Coal Remining Activities: By reference to the certification denial explanation for NWP 21, the Illinois EPA denies 401 certification for NWP 49.

NWP 50 – Underground Coal Mining: By reference to the certification denial explanation for NWP 21, the Illinois EPA denies 401 certification for NWP 50.

NWP 59 – Water Reclamation and Reuse Facilities: As proposed in the Federal Register, this proposed nationwide permit would appear to allow utilization of existing natural waterbodies as treatment devices. According to 35 Ill. Admin. Code 301.440 such utilization is not permissible. Therefore, the Illinois EPA denies 401 certification for NWP 59.

401 Certification General Conditions

General Conditions 1 through 12 shall be applicable to all NWPs that are granted 401 certification.

General Condition 1: Waterbodies that Require Individual Certification

Pursuant to 35 Ill. Adm. Code Section 302.105(d)(6), an individual 401 water quality certification will be required for activities permitted under these Nationwide Permits for discharges to waters designated by the State of Illinois as waters of particular biological significance or Outstanding Resource Waters under 35 Ill. Adm. Code 302.105(b). Biologically Significant Streams (BSS) are cataloged in Illinois DNR's publication

"Integrating Multiple Taxa in a Biological Stream Rating System" and may be identified at: https://www2.illinois.gov/dnr/conservation/BiologicalStreamratings/Pages/default.aspx.

General Condition 2: Water Quality Impairments

Pursuant to 35 Ill. Adm. Code Sections 302.105(a), 302.105(c)(2)(B), and 395.401(a), an individual 401 water quality certification will be required for activities permitted under these Nationwide Permits that may cause a discharge that, whether temporarily or permanently, may cause or contribute to additional loading of any pollutant, or deterioration of any water quality parameter, such as pH or dissolved oxygen, where such pollutant or parameter is also designated by the State of Illinois as a cause of water quality impairment of the particular segment of the receiving water body according to the Illinois Environmental Protection Agency's Section 303(d) list. The most recent Illinois Integrated Water Quality Report and Section 303(d) List can be found at https://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/303d-list.aspx.

General Condition 3: Threatened and Endangered Species

Pursuant to 35 Ill. Admin. Code Section 302.105(f)(1)(F), prior to proceeding with any work in furtherance of activities permitted under these Nationwide Permits, potential impacts to State threatened or endangered species and Natural Areas shall be determined in accordance with applicable consultation procedures established under 17 Ill. Admin Code Part 1075. The Department of Natural Resources (IDNR) Ecological Compliance Assessment Tool (EcoCAT) is available to complete consultation at http://dnr.illinois.gov/EcoPublic/. If IDNR determines that adverse impacts to protected natural resources are likely, the applicant shall address those identified concerns with IDNR through the consultation process. Please contact IDNR, Impact Assessment Section at 217-785-5500 if you have any questions regarding consultation.

General Condition 4: TMDLs

Pursuant to 35 Ill. Admin. Code Sections 302.105(a), 302.105(c)(2)(B), and 395.401(a), activities permitted under these Nationwide Permits that may cause a discharge that, whether temporarily or permanently, may cause or contribute to additional loading of any pollutant, or deterioration of any water quality parameter, such as pH or dissolved oxygen, where such pollutant or parameter is addressed by a USEPA approved Total Maximum Daily Load (TMDL) report for the receiving water body shall develop and implement additional measures and or procedures which ensure consistency with the load allocations, assumptions and requirements of the TMDL report. TMDL program information and water listings are available at https://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/reports.aspx.

General Condition 5: Prohibitions

Pursuant to 35 Ill. Admin. Code Section 395.401(a), the applicant shall not cause:

a. violation of applicable provisions of the Illinois Environmental Protection Act;
b. water pollution defined and prohibited by the Illinois Environmental Protection Act;
c. violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulation; or
d. interference with water use practices near public recreation areas or water supply intakes.

General Condition 6: Erosion and Sedimentation Control Measures

Pursuant to the Illinois Environmental Protection Act Section 39(a)[415 ILCS 5/39(a)] and 35 Ill. Admin. Code Sections 302.203 and 395.402(b)(2), the applicant shall implement all necessary sedimentation and erosion control measures consistent with the current edition of

the "Illinois Urban Manual" found at https://illinoisurbanmanual.org/. Interim measures to prevent erosion during construction shall be taken and may include the installation of sedimentation basins, silt fencing and temporary mulching. All construction within the waterway shall be conducted during zero or low flow conditions. All areas affected by construction shall be seeded and stabilized as soon after construction as possible.

General Condition 7: NPDES Stormwater Construction Permit

Pursuant to the Illinois Environmental Protection Act Section 39(a)[415 ILCS 5/39(a)] and 35 Ill. Admin. Code Section 395.402(b)(2), the applicant shall be responsible for obtaining an NPDES Storm Water Permit required by the federal Clean Water Act prior to initiating construction if the construction activity associated with the project will result in the disturbance of 1 (one) or more acres, total land area. An NPDES Storm Water Permit may be applied for at https://www2.illinois.gov/epa/topics/forms/water-permits/storm-water/Pages/construction.aspx.

General Condition 8: Spill Response Plan

Pursuant to 35 Ill. Admin. Code Sections 395.401, 302.203, and 302.208, the applicant shall ensure that a spill avoidance and response plan has been developed and implemented for management of accidental releases of petroleum, oil, and lubricant products to the aquatic environment during construction and for emergency notification of applicable downstream water supply operators. Absorbent pads, containment booms and skimmers shall be available to facilitate the cleanup of petroleum spills. If floating hydrocarbon (oil and gas) products are observed, the applicant or his designated individual will be responsible for directing that work be halted so that appropriate corrective measures are taken in accordance with the plan prior to resuming work.

General Condition 9: Hydraulic Machinery

Pursuant to 35 Ill. Admin. Code Sections 302.203, 302.304, and 302.515, all hydraulic machinery utilized for the permitted activity and used in or immediately adjacent to waters of the State shall utilize biodegradable or bio-based hydraulic fluids to minimize pollution in the case of broken or leaking hydraulic equipment.

General Condition 10: Temporary Structures and Work

Pursuant to 35 Ill. Admin. Code Sections 302.203, 395.204, and 395.401(b), temporary work pads, cofferdams, access roads and other temporary fills are approved provided that such activities are constructed with clean coarse aggregate or non-erodible non-earthen fill material that will not cause siltation. Sandbags, pre-fabricated rigid materials, sheet piling, inflatable bladders and fabric lined basins may be used for temporary facilities. Temporary fills within streams, creeks or rivers shall utilize adequate bypass measures (i.e. dam and pump, flumes, culverts, etc.) to minimize sedimentation and erosion and to maintain normal stream flow during construction.

General Condition 11: Construction Site Dewatering

Pursuant to Illinois Environmental Protection Act Section 39(a)[415 ILCS 5/39(a)] and 35 Ill. Admin. Code Section 395.402(b)(2), dewatering of a construction site is authorized provided the dewatering activity is limited to the immediate work area within a cofferdam or otherwise isolated from waters of the State, and the work site is free from sources of contamination including those of natural origin. Dewatering activities shall incorporate Best Management Practices in accordance with the current edition of the "Illinois Urban Manual"

https://illinoisurbanmanual.org/. Practice Standard for Dewatering (no. 813) or as otherwise appropriate to ensure that return flows from the dewatering activity are free of unnatural turbidity and floating debris and meet applicable water quality standards. Dewatering or discharge of flush water from construction of drilled piers or boreholes is not authorized and must be conducted in accordance with an NPDES permit issued by the Illinois EPA.

General Condition 12: Discharged Material Quality

Pursuant to 35 Ill. Admin. Code Sections 302.203, 302.208, and 395.401(b), any spoil material excavated, dredged or otherwise produced must not be returned to the water body but must be deposited in a self-contained area in compliance with all state statutes. Except as specifically allowed by special condition, any backfilling must be done with clean material that is predominantly sand or larger size material, with no more than 20% passing a #230 U. S. sieve and placed in a manner to prevent violation of applicable water quality standards.

401 Certification Special Conditions

Special Conditions including the conditional exclusions of 401 certification coverage that are listed within the Attachment: "Special Conditions for Illinois EPA 401 Water Quality Certifications of Certain Nationwide Permits" shall be applicable as stated therein.

Should you have any questions or comments regarding the content of this nationwide certification, please contact Darren Gove at 217-782-3362.

Sincerely,

ORIGINAL SIGNED

Darin E. LeCrone, P.E.
Manager, Permit Section
Division of Water Pollution Control

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Attachment: Special Conditions for Illinois EPA 401 Water Quality Certifications of Certain Nationwide Permits Regarding Federal Register [Docket Number: COE–2020–0002] Proposal to Reissue and Modify Nationwide Permits dated September 15, 2020

cc: Records Unit
CoE, Chicago District
CoE, Louisville District (Indianapolis Office)
CoE, Louisville District (Newburgh Regulatory Office)
CoE, Memphis District
CoE, St. Louis District
IDNR, Bartlett
IDNR, OWR, Chicago
IDNR, OWR, Springfield
USEPA, Region 5
USFWS, Rock Island, Barrington and Marion

ILLINOIS EPA WATER QUALITY CERTIFICATION
SPECIAL CONDITIONS FOR NATIONWIDE PERMIT 15
U.S. Coast Guard Approved Bridges

1. Pursuant to 35 Ill. Admin. Code Sections 395.401(a), 302.105(a), and 302.105(c)(2)(B), a case-specific (individual) 401 water quality certification from the Illinois EPA shall be required for linear transportation activities covered by this nationwide permit that include the temporary or permanent placement of demolished structural or decking materials within the waterbody as result of demolition work of previous structures.

2. Pursuant to 35 Ill. Admin. Code Sections 395.401(a), 302.105(a), and 302.105(c)(2)(B), a case-specific (individual) 401 water quality certification from the Illinois EPA shall be required for new bridges (not replacing another) that affect waterways which are designated by the State of Illinois as having water quality impairments caused by chloride. The most recent Illinois Integrated Water Quality Report and Section 303(d) List can be found at https://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/303d-list.aspx.

U.S. Army Corps of Engineers
Chicago District

Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide Permits – February 25, 2022
Illinois

15. U.S. Coast Guard Approved Bridges.

Discharges of dredged or fill material incidental to the construction of a bridge across navigable waters of the United States, including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills, provided the construction of the bridge structure has been authorized by the U.S. Coast Guard under Section 9 of the Rivers and Harbors Act of 1899 or other applicable laws. Causeways and approach fills are not included in this NWP and will require a separate Clean Water Act Section 404 permit. (Authority: Section 404 of the Clean Water Act (Section 404)).

A. **Regional Conditions**

☐ 1. For NWP 12, NWP 57, and NWP 58, pre-construction notification is required in accordance with General Condition 32 for the following activities;

☐ (a) activities that involve mechanized land clearing in a forested wetland for the utility line right-of-way;

☐ (b) utility lines placed within, and parallel to or along a jurisdictional stream bed.

☐ 2. For Nationwide Permit 14, all proposed projects that result in the loss of greater than 300 linear feet of streambed located within Waters of the U.S., requires a Pre-Construction Notice in accordance with General Condition No. 32.

☐ 3. Any bank stabilization activity involving a method that protrudes from the bank contours, such as jetties, stream barbs, and/or weirs, will require a pre-construction notification in accordance with General Condition 32.

B. **Nationwide Permit General Conditions**

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

☐ 1. **Navigation**.

☐ (a) No activity may cause more than a minimal adverse effect on navigation.

☐ (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

☐ (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

☐ 2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

☐ 3. **Spawning Areas**. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

☐ 4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

☐ 5. **Shellfish Beds**. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

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☐ 6. **Suitable Material**. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

☐ 7. **Water Supply Intakes**. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

☐ 8. **Adverse Effects from Impoundments**. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

☐ 9. **Management of Water Flows**. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

☐ 10. **Fills Within 100-Year Floodplains**. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

☐ 11. **Equipment**. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

☐ 12. **Soil Erosion and Sediment Controls**. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

☐ 13. **Removal of Temporary Fills**. Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

☐ 14. **Proper Maintenance**. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

☐ 15. **Single and Complete Project**. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

☐ 16. **Wild and Scenic Rivers**.

☐ (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

☐ (b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

☐ (c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

☐ 17. **Tribal Rights**. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

☐ 18. **Endangered Species**.

☐ (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of "effects of the action" for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding "activities that are reasonably certain to occur" and "consequences caused by the proposed action."

☐ (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

☐ (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

☐ (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

☐ (e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

☐ (f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

☐ (g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

☐ 19. **Migratory Birds and Bald and Golden Eagles**. The permittee is responsible for ensuring that an action authorized by NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

☐ 20. **Historic Properties**.

☐ (a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

☐ (b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

☐ (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: No historic properties affected, no adverse effect, or adverse effect.

☐ (d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

☐ (e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

☐ 21. **Discovery of Previously Unknown Remains and Artifacts**. Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

☐ 22. **Designated Critical Resource Waters**. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

☐ (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57, and 58 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

☐ (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters.

The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

☐ 23. **Mitigation**. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

☐ (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

☐ (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

☐ (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

☐ (d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement.

This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

☐ (e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient.

Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

☐ (f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

☐ (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

☐ (2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

☐ (3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

☐ (4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request,

but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

☐ (5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

☐ (6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

☐ (g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

☐ (h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b).

For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

☐ (i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

☐ 24. **Safety of Impoundment Structures**. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

☐ 25. **Water Quality**.

☐ (a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

☐ (b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

☐ (c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

☐ 26. **Coastal Zone Management**. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

☐ 27. **Regional and Case-By-Case Conditions**. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

☐ 28. **Use of Multiple Nationwide Permits**. The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

☐ (a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

☐ (b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

☐ 29. **Transfer of Nationwide Permit Verifications**. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

☐ 30. **Compliance Certification**. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

☐ (a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

☐ (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

☐ (c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

☐ 31. **Activities Affecting Structures or Works Built by the United States.** If an NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32.

An activity that requires section 408 permission and/or review is not authorized by NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

☐ 32. **Pre-Construction Notification**.

☐ (a) **Timing**. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

☐ (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

☐ (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer.

However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

☐ (b) **Contents of Pre-Construction Notification**. The PCN must be in writing and include the following information:

☐ (1) Name, address and telephone numbers of the prospective permittee;

☐ (2) Location of the proposed activity;

☐ (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

☐ (4) (i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

☐ (ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.

☐ (iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

☐ (5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, perennial, and intermittent, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

☐ (6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

☐ (7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity.

For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

☐ (8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

☐ (9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

☐ (10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

☐ (c) **Form of Pre-Construction Notification.** The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

☐ (d) **Agency Coordination**:

☐ (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

☐ (2) Agency coordination is required for:

i) All NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States;

ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and

(iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

☐ (3) When agency coordination is required, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or email that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

☐ (4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

☐ (5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

C. District Engineer's Decision

☐ 1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by NWP.

If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

☐ 2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

☐ 3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

☐ 4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) That the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

D. **Further Information**

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

E. **Definitions**

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal Start Printed Page 57394waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: Re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: (1) Held in trust by the United States for the benefit of any Indian tribe or individual; or (2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a "water of the United States." If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT
PO BOX 2004 CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61204-2004

October 28, 2025

Programs and Project
Management Division

Mr. Jose Rios
Illinois Department of Transportation
201 West Center Court
Schaumberg, IL 60196-1096

Section 408 Request Number: 408-MVR-2024-0014

Dear Mr. Rios:

The U.S. Army Corps of Engineers, Rock Island District (District), has completed its evaluation of your request for permission to reconstruct the Interstate 80 (I-80) bridges spanning the Des Plaines River, part of the Illinois Waterway navigation project, at RM 287 in the City of Joliet, Will County, Illinois pursuant to Section 14 of the Rivers and Harbors Act of 1899, 33 U.S.C. 408 (Section 408). This evaluation was performed in accordance with Engineer Circular (EC) 1165-2-220, Policy and Procedural Guidance for Processing Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to Section 408.

Your request meets the requirements of the District Categorical Permission No. 7. The Section 408 alterations referenced in this letter are acceptable, provided you adhere to the attached EC 1165-2-220 Appendix K, Standard Terms and Conditions, and the following Special Conditions:

a. Ensure PDF-versions of as-built drawings, final construction plans, specifications, and any supporting documentation are submitted to the District showing details of the alteration within 180 days of project completion.

b. Ensure the District is notified 72 hours prior to the commencement of work.

c. A Flood Contingency Plan must be reviewed and approved by the District prior to construction. EC 1165-2-220, Appendix E, Section E-5.h.(5) outlines general requirements for a flood contingency plan.

d. A pre-construction survey and a post-construction survey evaluation shall be completed and submitted to USACE to establish a baseline and identify any debris in the navigation channel resulting from construction activities. If construction activities have the potential to place debris in the navigation channel, interim surveys should be conducted to ensure marine traffic can transit the area safely.

e. All obstructions are to be removed to 15 feet below flat pool elevation or two feet below the existing mudline, whichever is greater. If the existing mudline is comprised of competent rock, obstructions are to be removed to bedrock elevation.

f. The existing Joliet Channel Walls that contain the Des Plaines River in the project area must be outfitted with instrumentation to monitor vibrations and movement during construction. Pre-construction and post-construction inspections and surveys of the channel walls in this vicinity must be conducted to establish baseline conditions and identify any damages resulting from the construction of the bridge project. Any damages to the channel walls caused by the construction of the bridge project must be repaired by the requestor.

g. If the rock placed for the temporary causeways touches the channel wall sections, a structural analysis should be completed to ensure the channel wall can resist any loading applied by the rock. Failure of the channel wall on the left descending bank has estimated life loss consequences at this location.

The District's review was limited to the information provided by the requestor. Future structural, elevation, alignment, or other significant design changes must be resubmitted to the District for further review and approval.

If you have further questions regarding this matter, please contact me at 309-794-5833, or e-mail: Alexis.F.Ryckaert@usace.army.mil.

Sincerely,

Alexis Ryckaert

Alexis Ryckaert
Section 408 Coordinator
Rock Island District

Enclosure

EC 1165-2-220
10 Sep 18

APPENDIX K

Standard Terms and
Conditions

This appendix includes the standard conditions that must be included in all Section 408 approval notifications, except where marked as optional. Use of optional conditions should be based on scope and scale of the approved activity:

LIMITS OF THE AUTHORIZATION

1. This permission only authorizes you, the requester, to undertake the activity described herein under the authority provided in Section 14 of the Rivers and Harbors Act of 1899, as amended (33 USC 408). This permission does not obviate the need to obtain other federal, state, or local authorizations required by law. This permission does not grant any property rights or exclusive privileges, and you must have appropriate real estate instruments in place prior to construction and/or installation.
2. The time limit for completing the work authorized ends five (5) years from the date stated on the 408 alteration Request Approval Letter. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
3. Without prior written approval of the USACE, you must neither transfer nor assign this permission nor sublet the premises or any part thereof, nor grant any interest, privilege or license whatsoever in connection with this permission. Failure to comply with this condition will constitute noncompliance for which the permission may be revoked immediately by USACE.
4. The requester understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration of the work herein authorized, or if, in the opinion of the Secretary of the Army or an authorized representative, said work will cause unreasonable conditions and/or obstruction of USACE project authorized design, the requester will be required upon due notice from the USACE, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim can be made against the United States on account of any such removal or alteration.

INDEMNIFICATION AND HOLD HARMLESS

5. The United States will in no case be liable for:
    a. any damage or injury to the structures or work authorized by this permission that may be caused or result from future operations undertaken by the United States, and no claim or right to compensation will accrue from any damage; or
    b. damage claims associated with any future modification, suspension, or revocation of this permission.

Standard Terms and Conditions

6. The United States will not be responsible for damages or injuries which may arise from or be incident to the construction, maintenance, and use of the project requested by you, nor for damages to the property or injuries to your officers, agents, servants, or employees, or others who may be on your premises or project work areas or the federal project(s) rights-of-way. By accepting this permission, you hereby agree to fully defend, **indemnify,** and **hold harmless** the United States and USACE from any and all such claims, subject to any limitations in law.
7. Any damage to the water resources development project or other portions of any federal project(s) resulting from your activities must be repaired at your expense.

REEVALUATION OF PERMISSION

8. The determination that the activity authorized by this permission would not impair the usefulness of the federal project and would not be injurious to the public interest was made in reliance on the information you provided.
9. This office, at its sole discretion, may reevaluate its decision to issue this permission at any time circumstances warrant, which may result in a determination that it is appropriate or necessary to modify or revoke this permission. Circumstances that could require a reevaluation include, but are not limited to, the following:
    a. you fail to comply with the terms and conditions of this permission;
    b. the information provided in support of your application for permission proves to have been inaccurate or incomplete; or
    c. significant new information surfaces which this office did not consider in reaching the original decision that the activity would not impair the usefulness of the water resources development project and would not be injurious to the public interest.

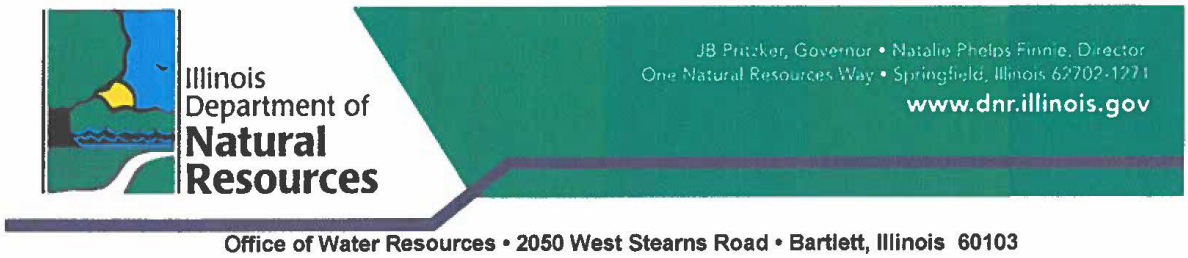
CONDUCT OF WORK UNDER THIS PERMISSION

10. You are responsible for implementing any requirements for mitigation, reasonable and prudent alternatives, or other conditions or requirements imposed as a result of environmental compliance.
11. Work/usage allowed under this permission must proceed in a manner that avoids interference with the inspection, operation, and maintenance of the federal project.
12. In the event of any deficiency in the design or construction of the requested activity, you are solely responsible for taking remedial action to correct the deficiency.
13. The right is reserved to the USACE to enter upon the premises at any time and for any purpose necessary or convenient in connection with government purposes, to make inspections, to operate and/or to make any other use of the lands as may be necessary in connection with government purposes, and you will have no claim for damages on account thereof against the United States or any officer, agent or employee thereof.

Standard Terms and Conditions

14. You must provide copies of pertinent design, construction, and/or usage submittals/documents. USACE may request that survey and photographic documentation of the alteration work and the impacted project area be provided before, during, and after construction and/or installation.
15. You may be required to perform an inspection of the federal project with the USACE, prior to your use of the structure, to document existing conditions.
16. USACE shall not be responsible for the technical sufficiency of the alteration design nor for the construction and/or installation work.

IDNR PERMIT



Office of Water Resources • 2050 West Stearns Road • Bartlett, Illinois 60103

November 7, 2025

SUBJECT: Permit No. NE2025066
I-80 Des Plaines River Bridges Reconstruction Project
Des Plaines River
Will County, Application No. N20250002

Jose Rios
Region 1 Engineer
Illinois Department of Transportation
201 West Center Court
Schaumburg, Illinois 60196-1096

Attention: Fawad Aqueel

Dear Mr. Rios:

Enclosed is the Illinois Department of Natural Resources, Office of Water Resources (IDNR/OWR) Permit No. NE2025066 authorizing the subject project. This permit does not supersede any other federal, state, or local authorizations that may be required for the project. Upon receipt and review of this permit and all conditions included therein, please properly execute and return the attached acceptance slip within sixty (60) days from the date of this permit.

Please be advised that the Illinois Department of Natural Resources, Division of Ecosystems and Environment (DEE) participates in the regulatory programs of the U.S. Army, Corps of Engineers (USACE) and may review this project if a USACE Section 10 or 404 permit is required. Issuance of a permit by the Office of Water Resources does not preclude DEE's provision of comments and/or recommendations, primarily related to biological effects of the proposed action, to the USACE and other federal agencies concerning your project.

We received a February 13, 2025, sign-off letter from Grant Gebhards of DEE regarding this project. Please note that the sign-off letter references a December 23, 2024, Illinois Department of Transportation, Natural Resources Review memorandum. The sign-off from DEE has advised that the commitments made in the memorandum be strictly followed.

Furthermore, this permit does not authorize the temporary structures associated with the construction and demolition phases of this project. Separate permit applications must be submitted for each of these phases.

If any changes of the permitted work are found necessary, revised plans should be submitted promptly to this office for review and approval. Also, this permit expires on the date indicated in Condition (13). If you are unable to complete the work by that date, you must make a written for an extension of time to the permit. Please contact Jay Kessen of my staff at 847/608-3116 if you have questions.

Sincerely,

William T Boyd

William T. Boyd, P.E.
Chief, Northeastern Illinois Regulatory Programs Section

WTB: JK: EW
Enclosure
cc: Chicago District, U.S. Army Corps of Engineers
City of Joliet, Engineering Department

PERMIT NO. NE2025066
DATE: November 7, 2025

State of Illinois
Department of Natural Resources, Office of Water Resources

Permission is hereby granted to:

Illinois Department of Transportation
201 West Center Court
Schaumburg, Illinois 60196

to reconstruct the I-80 bridges over the Des Plaines River approximately 300 ft upstream of the location of the existing I-80 bridges within the floodway and public waters of the Des Plaines River in the Southwest and Southeast Quarters of Section 16, Township 35 North, Range 10 East of the Third Principal Meridian in Will County,

in accordance with an application dated May 10, 2024, and the plans and specifications entitled:

STATE OF ILLINOIS, DEPARTMENT OF TRANSPORTATION, UNTITLED, SHEET 542 OF 1063, NOT DATED, RECEIVED JULY 22, 2025, STATE OF ILLINOIS, DEPARTMENT OF TRANSPORTATION, GENERAL PLAN AND ELEVATION – UNITS 1 & 2 STRUCTURE NUMBER 099-82309 WB AND 099-8325 EB, SHEET 543 OF 1063, NOT DATED, RECEIVED JULY 22, 2025, STATE OF ILLINOIS, DEPARTMENT OF TRANSPORTATION, I-80 PIER DETAIL EXHIBIT FOR DES PLAINES RIVER, ONE SHEET, NOT DATED, RECEIVED JULY 22, 2025.

Examined and Recommended:

William T. Boyd, Chief
Northeastern IL Regulatory
Programs Section

Approval Recommended:

Rick Pohlman, Acting Director
Office of Water Resources

Approved:

Natalie Phelps Finnie, Director
Department of Natural Resources

This PERMIT is subject to the terms and special conditions contained herein.

PERMIT NO. NE2025066

THIS PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:

1) This permit is granted in accordance with the Rivers, Lakes, and Streams Act "615 ILCS 5."

2) This permit does not convey title to the permittee or recognize title of the permittee to any submerged or other lands, and furthermore, does not convey, lease or provide any right or rights of occupancy or use of the public or private property on which the activity or any part thereof will be located, or otherwise grant to the permittee any right or interest in or to the property, whether the property is owned or possessed by the State of Illinois or by any private or public party or parties.

3) This permit does not release the permittee from liability for damage to persons or property resulting from the work covered by this permit; and does not authorize any injury to private property or invasion of private rights.

4) This permit does not relieve the permittee of the responsibility to obtain other federal, state, or local authorizations required for the construction of the permitted activity; and if the permittee is required by law to obtain approvals from any federal or state agency to do the work, this permit is not effective until the federal and state approvals are obtained. If construction does not begin within two years of the date of this permit, the permittee must submit the project to EcoCat (http://dnr.illinois.gov/EcoPublic/) for an updated consultation under the Illinois Endangered Species Protection Act and the Illinois Natural Areas Preservation Act.

5) The permittee shall, at the permittee's own expense, remove all temporary piling, cofferdams, false work, and material incidental to the construction of the project. If the permittee fails to remove such structures or materials, the Department may have removal made at the expense of the permittee.

6) In public waters, if future need for public navigation or other public interest by the state or federal government necessitates changes in any part of the structure or structures, such changes shall be made by and at the expense of the permittee or the permittee's successors as required by the Department or other properly constituted agency, within sixty (60) days from receipt of written notice of the necessity from the Department or other agency, unless a longer period of time is specifically authorized.

7) The execution and details of the work authorized shall be subject to the review and approval of the Department. Department personnel shall have the right of access to accomplish this purpose.

8) Starting work on the activity authorized will be considered full acceptance by the permittee of the terms and conditions of the permit.

9) The Department in issuing this permit has relied upon the statements and representations made by the permittee; if any substantive statement or representation made by the permittee is found to be false, this permit will be revoked; and when revoked, all rights of the permittee under the permit are voided.

10) In public waters, the permittee and the permittee's successors shall make no claim whatsoever to any interest in any accretions caused by the activity.

11) In issuing this permit, the Department does not ensure the adequacy of the design or structural strength of the structure or improvement.

12) Noncompliance with the conditions of this permit will be considered grounds for revocation.

13) If the construction activity permitted is not completed on or before December 31, 2028, this permit shall cease and be null and void.

THIS PERMIT IS SUBJECT TO THE FOLLOWING SPECIAL CONDITION:

a) The permit will be suspended, and no further construction or development may continue if the start of construction, as defined in 17 IAC Ch. I, Sec. 3710, for work authorized by this permit is not commenced within 180 days after the date of this permit or if the work authorized is suspended or abandoned for a period of 180 days after work commences.

COAST GUARD PERMIT

Illinois Environmental Protection Agency
2520 West Iles Avenue • P.O. Box 19276 • Springfield, Illinois • 62794-9276 • 217-782-3397

JB Pritzker, Governor **James Jennings**, Acting Director

OCT 2 4 2025

U.S. Coast Guard
Eighth Coast Guard District
1222 Spruce Street
St. Louis, MO 63103-2398

Subject: Clean Water Act Section 401 Water Quality Certification
RE: I-80 Des Plaines River Bridges Reconstruction Project, Will County
Illinois EPA Log No.: C-0117-25

Sir or Madam:

The Illinois Environmental Protection Agency (Agency) received a request for water quality certification subject to Section 401 of the federal Clean Water Act from Illinois Department of Transportation (Proponent) on Thursday, July 31, 2025, concerning the subject project. This request was submitted pursuant to a U.S. Coast Guard permit subject to the provisions of Title 33, Code of Federal Regulations, Parts 114 through 118. The project activity will result in 0.236 acre of permanent impacts to Waters of the US (WOUS) from the discharge of approximately 2,444 cubic yards of structural fills for the addition of 4 new foundations including 32 new drilled shafts and 2.283 acres of temporary impacts from the placement of riprap in WOUS for the construction of two temporary causeways to construct two wider bridge structures to provide an improved transportation system along I-80 Ridge Road to U.S. Route 30. Permanent impacts to the Waters of the US will be mitigated within the Des Plaines watershed by purchasing stream bank credits at 1:1 ratio. This activity is described in the application material titled:

"Encl 1_62R23_I-80_DRB_JointApplicationForm_20250613.pdf",
"Encl 2_62R23_I-80_FINAL_Section 401 Permit Anti-Deg_2025-06-13.pdf",
"Encl 3_62R23_I-80_DRB_ProjectLocationMaps_AdjPropertyOwners.pdf",
"Encl 4_62R23_I-80_DRB_RepresentativePhotosOfBridges.pdf",
"Encl 5_62R23_PL_WSP_PreFinal Plans_2025-01-31.pdf", "Encl 6_62R23_I-80_DRB_Environmental Documentation_Link.pdf",
"Encl 7_62R23_I-80_DRB_WIE Exhibits_Plan and Profile Exhibits.pdf",
"Encl 8_62R23_I-80_DRB_Wetland Delineation Report.pdf",
"Encl 9_62R23_I-80_DRB_Community Impact Assessment.pdf",
"Encl 10_62R23_I-80_DRB_Natural Resources Agency Approval Documentation.pdf",
"I-80_DRB_62R23_IEPA 401 WQC Submittal Ltr_2025-06-13.pdf", submitted June 18, 2025, and
"EML_USCG_CWA_Sec 401 Water Quality Certifications_2024-09-17.pdf",
"FW_I-80 Des Plaines River Bridge Water Quality Certification request.pdf" submitted July 11, 2025

2125 S. First Street, Champaign, IL 61820 • 217-278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 • 618-346-5120
595 S. State Street, Elgin, IL 60123 • 847-608-3131
412 SW Washington Street, Suite D, Peoria, IL 61602 • 309-671-3022
115 S. LaSalle Street, Suite 2203, Chicago, IL 60603
9511 Harrison Street, Des Plaines, IL 60016 • 847-294-4000
2309 W. Main Street, Suite 116, Marion, IL 62959 • 618-993-7200
4302 N. Main Street, Rockford, IL 61103 • 815-987-7760

Please print on recycled paper.

Based on our review of the application material and finalization of this Agency's public participation process, it is the judgment of this office that the proposed project may be completed without causing water pollution as defined in the Illinois Environmental Protection Act and will comply with applicable provisions of Sections 301, 302, 303, 306 and 307 of the Clean Water Act, provided the project is carefully planned, supervised and is performed in compliance with conditions specified in this water quality certification.

This Agency hereby issues certification under Section 401 of the Clean Water Act (PL 95-217), subject to the conditions identified below. This certification becomes effective when the U.S Coast Guard includes the following conditions no. 1 through no. 10 as conditions of the requested U.S. Coast Guard permit. These conditions are directed at the effect on water quality of the construction procedures involved in the above described project and are not an approval of any discharge resulting from the completed facility, nor an approval of the design of the facility. These conditions do not supplant any permit responsibilities of the applicant toward the Agency.

Any modifications to the proposed activity that is not described in the application material or covered by conditions below and 1) would not meet all the conditions of this certification or 2) may cause a new or an additional pollutant loading to waters of the State of Illinois are not approved.

Water Quality Condition No. 1. General.
The Proponent shall provide adequate planning and supervision for construction methods, processes, and cleanup procedures necessary to prevent water pollution and control erosion. The discharge and associated activity shall not cause:
a. violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C, Water Pollution Rules and Regulations;
b. water pollution defined and prohibited by the Illinois Environmental Protection Act;
c. interference with water use practices near public recreation areas or water supply intakes; or
d. violation of applicable provisions of the Illinois Environmental Protection Act.

Water Quality Condition No. 2. NPDES Stormwater Construction Permit.
The Proponent shall be responsible for obtaining an NPDES Storm Water Permit required by the federal Clean Water Act prior to initiating construction if the construction activity associated with the project will result in the disturbance of 1 (one) or more acres, total land area. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form and application at https://www2.illinois.gov/epa/topics/forms/water-permits/storm-water/Pages/construction.aspx.

Water Quality Condition No. 3. Spill Response Plan.
The Proponent shall ensure that a spill avoidance and response plan has been developed and implemented for management of accidental releases of petroleum products to the aquatic environment during construction and for emergency notification of applicable downstream water supply operators and the Illinois EPA. Absorbent pads, containment booms and skimmers shall be available to facilitate the cleanup of petroleum spills. If floating hydrocarbon (oil and gas) products are observed, the proponent or their designee will be responsible for directing that work be halted so that appropriate corrective measures are taken in accordance with the plan prior to resuming work. For the purposes of this certification, "petroleum" means crude oil, refined petroleum, intermediates, fractions or constituents of petroleum, oil sheens, lubricants, and any other form of oil or petroleum.

Water Quality Condition No. 4. Erosion and Sedimentation Control Measures.
The Proponent shall implement all necessary sedimentation and erosion control measures consistent with the current edition of the "Illinois Urban Manual" found at https://illinoisurbanmanual.org/. Interim measures to prevent erosion during construction shall be taken and may include the installation of sedimentation basins, silt fencing and temporary mulching. All construction within the waterway shall be conducted during zero or low flow conditions. All areas affected by construction shall be seeded and stabilized as soon after construction as possible.

Water Quality Condition No. 5. Construction Site Dewatering.
Dewatering of a construction site is authorized provided the dewatering activity is limited to the immediate work area within a cofferdam or otherwise isolated from waters of the State, and the work site is free from sources of contamination including those of natural origin. Dewatering activities shall incorporate Best Management Practices in accordance with the current edition of the "Illinois Urban Manual" https://illinoisurbanmanual.org/ Practice Standard for Dewatering (no. 813) or as otherwise appropriate to ensure that return flows from the dewatering activity are free of unnatural turbidity and floating debris and meet applicable water quality standards. Dewatering or discharge of flush water from construction of drilled piers or boreholes is not authorized and must be conducted in accordance with an NPDES permit issued by the Illinois EPA.

Water Quality Condition No. 6. Discharged Material Quality.
Any spoil material excavated, dredged or otherwise produced must not be returned to the water body but must be deposited in a self-contained area in compliance with all state statutes. Except as specifically allowed by other conditions of this final determination, any backfilling must be done with uncontaminated material that is predominantly sand or larger size material, with no more than 20% passing a #230 U. S. sieve and placed in a manner to prevent violation of applicable water quality standards.

Water Quality Condition No. 7. Equipment within Waterbody.
All construction equipment and material that enter the waterbody shall be free of contaminants of any kind including, but not limited to sludge, clay, dirt, oil, grease, organic matter, or any other pollutant that would produce offensive conditions or otherwise violate water quality standards.

Water Quality Condition No. 8. Hydraulic Machinery.
All hydraulic machinery utilized for the permitted activity and used in or immediately adjacent to waters of the State shall utilize biodegradable or bio-based hydraulic fluids to minimize pollution in the case of broken or leaking hydraulic equipment. More information about environmentally acceptable alternatives are available at: https://www3.epa.gov/npdes/pubs/vgp_environmentally_acceptable_lubricants.pdf

Water Quality Condition No. 9. Construction within Waterway.
All construction within the waterway shall be conducted during zero or low flow conditions or otherwise provide appropriate bypass measures (i.e. flumes, culverts, etc.) to minimize sedimentation and maintain normal stream flow during construction. Construction activities shall be conducted in a manner to minimize resuspension of materials in the water column. Techniques such as careful equipment use, construction during favorable weather conditions that minimize turbulence and transport of suspended contaminants and other methods such as turbidity curtains should be used as necessary to minimize re-suspension of sediment

material. Turbidity curtains shall be used in accordance with the current version of the "Illinois Urban Manual" https://illinoisurbanmanual.org/ Practice Standard for Floating Silt Curtain (no. 917).

Water Quality Condition No. 10. Temporary Structures and Work.
Temporary work pads, cofferdams, access roads and other temporary fills are approved provided that such activities are constructed with clean coarse aggregate or non-erodible non-earthen fill material that will not cause siltation. Sandbags, prefabricated rigid materials, sheet piling, inflatable bladders and fabric lined basins may be used for temporary facilities. Temporary fills within streams, creeks or rivers shall utilize adequate bypass measures (i.e. dam and pump, flumes, culverts, etc.) to minimize sedimentation and erosion and to maintain normal stream flow during construction.

This Section 401 water quality certification does not obviate the permittee's responsibility to obtain other required federal, state, or local authorizations, nor does it grant immunity from any enforcement action found necessary by this Agency to meet its responsibilities in prevention, abatement, and control of water pollution.

If you have any questions about this final determination, please contact Oyetunde Tinuoye of my staff at either 217/782-0610 or Oyetunde.Tinuoye@illinois.gov.

Sincerely,

Darin E. LeCrone, P.E.
Manager, Permit Section
Division of Water Pollution Control

DEL:OST:C-0032-25 Water Quality Certification.docx

Attachment (1)

CC: Applicant
USEPA
Consultant
IDNR
FOS
BOW_File

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Non-segregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
XI. Certification Regarding Use of Contract Funds for Lobbying
XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA- 1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal- aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. **Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

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3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

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4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

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XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B) This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.