141

Letting November 8, 2024

Notice to Bidders, Specifications and Proposal

Contract No. 89816
PEORIA County
Section 19-00115-01-PV
Route FAU 6577A (Maxwell Road)
Project YUFR-842 ()
District 4 Construction Funds

Prepared by	F
Checked by	

(Printed by authority of the State of Illinois)

Illinois Department of Transportation

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. November 8, 2024 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. 89816
   PEORIA County
   Section 19-00115-01-PV
   Project YUFR-842 ()
   Route FAU 6577A (Maxwell Road)
   District 4 Construction Funds

Pavement reconstruction, and the construction of a multi-use path on Maxwell Road from Middle Road to south of Fauber Road.

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

Omer Osman,
Secretary

CONTRACT 89816

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2024

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 1-1-24)

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

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

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

Table of Contents

Route: Maxwell Road
County: Peoria
Local Agency: Peoria County
Section: 19-00115-01-PV

INDEX OF SPECIAL PROVISIONS

BDE SPECIAL PROVISIONS

The following special provisions indicated by an "X" are applicable to this contract. An * indicates a new or revised special provision for the letting.

File Name	Pg.		Special Provision Title	Effective	Revised
80099		☐	Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2022
80274	208	☒	Aggregate Subgrade Improvement	April 1, 2012	April 1, 2022
80192	211	☒	Automated Flagger Assistance Device	Jan. 1, 2008	April 1, 2023
80173		☐	Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80426		☐	Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	Jan. 1, 2022
80241		☐	Bridge Demolition Debris	July 1, 2009	
5053I		☐	Building Removal	Sept. 1, 1990	Aug. 1, 2022
5026I		☐	Building Removal with Asbestos Abatement	Sept. 1, 1990	Aug. 1, 2022
80449	212	☒	Cement, Type IL	Aug. 1, 2023	
80384	213	☒	Compensable Delay Costs	June 2, 2017	April 1, 2019
80198		☐	Completion Date (via calendar days)	April 1, 2008	
80199		☐	Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80453		☐	Concrete Sealer	Nov. 1, 2023	
80261		☐	Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
80434		☐	Corrugated Plastic Pipe (Culvert and Storm Sewer)	Jan. 1, 2021	
80029	217	☒	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
80229		☐	Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
80452		☐	Full Lane Sealant Waterproofing System	Nov. 1, 2023	
80447		☐	Grading and Shaping Ditches	Jan 1, 2023	
80433		☐	Green Preformed Thermoplastic Pavement Markings	Jan. 1, 2021	Jan. 1, 2022
80443		☐	High Tension Cable Median Barrier Removal	April 1, 2022	
80456		☐	Hot-Mix Asphalt	Jan. 1, 2024	
80446		☐	Hot-Mix Asphalt – Longitudinal Joint Sealant	Nov. 1, 2022	Aug. 1, 2023
80438		☐	Illinois Works Apprenticeship Initiative – State Funded Contracts	June 2, 2021	April 2, 2024
80045		☐	Material Transfer Device	June 15, 1999	Jan. 1, 2022
80450		☐	Mechanically Stabilized Earth Retaining Walls	Aug. 1, 2023	
80441		☐	Performance Graded Asphalt Binder	Jan 1, 2023	
80451	227	☒	Portland Cement Concrete	Aug. 1, 2023	
80459		☐	Preformed Plastic Pavement Marking	June 2, 2024	
3426I		☐	Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2022
80455	228	☒	Removal and Disposal of Regulated Substances	Jan. 1, 2024	April 1, 2024
80445	230	☒	Seeding	Nov. 1, 2022	
80457	236	☒	Short Term and Temporary Pavement Markings	April 1, 2024	April 2, 2024
80448	240	☒	Source of Supply and Quality Requirements	Jan. 2, 2023	
80340		☐	Speed Display Trailer	April 2, 2014	Jan. 1, 2022
80127		☐	Steel Cost Adjustment	April 2, 2014	Jan. 1, 2022
80397	241	☒	Subcontractor and DBE Payment Reporting	April 2, 2018	
80391	242	☒	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
80437	243	☒	Submission of Payroll Records	April 1, 2021	Nov. 2, 2023
80435		☐	Surface Testing of Pavements – IRI	Jan. 1, 2021	Jan. 1, 2023
80410		☐	Traffic Spotters	Jan. 1, 2019	
20338	245	☒	Training Special Provisions	Oct. 15, 1975	Sept. 2, 2021
80429		☐	Ultra-Thin Bonded Wearing Course	April 1, 2020	Jan. 1, 2022
80439	248	☒	Vehicle and Equipment Warning Lights	Nov. 1, 2021	Nov. 1, 2022
80458		☐	Waterproofing Membrane System	Aug. 1, 2024	
80302	249	☒	Weekly DBE Trucking Reports	June 2, 2012	Nov. 1, 2021
80454		☐	Wood Sign Support	Nov. 1, 2023	
80427	250	☒	Work Zone Traffic Control Devices	Mar. 2, 2020	
80071		☐	Working Days	Jan. 1, 2002	

CONTRACT SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge construction, adopted January 1, 2022 (revised January 1, 2024)", 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, and the "Recommended Standards for Water Works", (Ten State Standards), latest edition, which apply to and govern the construction of Maxwell Road Reconstruction and associated roadway improvements, and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

The project involves County Highway R46 (Maxwell Road) from Middle Road to south of the Fauber Road and Middle Road from Maxwell Road to end of previous improvements under Section 14-00102-01-PV, in Peoria County in Sections 10 and 15, Township 8N, Range 7E of the 4th Principal Meridian.

DESCRIPTION OF WORK

Project improvements include full-depth pavement removal and reconstruction with new PCC pavement with new curb and gutters including sidewalks, underdrain, storm sewer drainage, and water main relocation on Maxwell Road (CH R46) and Middle Road.

SEQUENCE OF CONSTRUCTION

The Contractor shall submit a progress schedule to the Resident Engineer before any work begins. The schedule shall identify the proposed sequence of work, the controlling item of work for each stage, and a calendar day schedule based on typical working day conditions. The progress schedule shall be updated by the Contractor as the work proceeds. Payment under this contract may be withheld if the Contractor has not submitted a satisfactory progress schedule.

Proposed improvements shall be constructed in an orderly and continuous manner. The Contractor shall make daily progress and not interrupt construction activity unless weather or unexpected utility conflicts prevent progress. The Contractor shall be solely responsible for providing sufficient materials, labor and equipment to complete the project within the contract time. All utility companies listed in the plans have been contacted and conflicts with proposed improvements discussed. The Contractor shall be responsible for coordinating with utility companies for all relocations or adjustments not completed prior to start of construction in order to complete the project within the contract time. Once the Contractor begins to remove driveways or street pavement, the Contractor is expected to work expeditiously in completing the project. The Contractor shall inform the Resident Engineer on a weekly basis what work will be performed the next week. The Contractor shall also inform the Resident Engineer of any changes to the weekly work plan at the earliest opportunity.

NOTIFICATION OF THE PUBLIC

The County will be responsible for notifying the property owners that will be impacted by this work in writing and at a public open house, a minimum of 7 days in advance of the start of work.
The Contractor is responsible for attending the public open house and answering the property owners questions.

The County will issue press releases based on the information provided by the Contractor. Press releases will be issued 1-2 days in advance of the work. The Contractor shall provide press release information to the County a minimum of 2 days in advance of work starting and prior to changes in construction traffic.

It is the responsibility of the Contractor to post "NO PARKING" signs at least 7 days in advance of the start of work. If there are any vehicles that have to be towed the Contractor will contact the Peoria County Sheriff's Office (309-697-8515) to have the vehicle towed.

DATE OF COMPLETION (PLUS WORKING DAYS)

The Contractor shall schedule their operations to be substantially complete and open the roadway to traffic on or before November 30, 2025. Substantial completion shall be defined as having completed all watermain, storm sewer, curb and gutter, and pavement work. The Contractor will be allowed 30 additional working days to complete driveways, sidewalks, pavement markings, landscaping, punch list items and final stabilization. Should the Contractor fail to achieve substantial completion by November 30, 2025, liquated damages shall be applied in accordance with article 108.09. The Contractor must maintain the driveways during winter shutdown and that associated work is to be included in the cost of the contract.

EXISTING UNDERGROUND FACILITIES

Peoria County assumes no responsibility for the presence, specific size or location of underground distribution systems of the several public utility corporations. No responsibility for the protection of said underground systems will be assumed by Peoria County. If such protection is found to be necessary for water mains, gas mains, underground electrical, distributions systems, underground telephone circuit systems or any other underground systems of non-county ownership, the cost of same, in whole or in part, is disclaimed by Peoria County.

TRAFFIC CONTROL AND PROTECTION, (SPECIAL)

This work shall consist of all the furnishing of labor, materials, and equipment necessary to control and direct traffic traveling within the project limits for the purposes of protecting persons and property within the work zone from damage and injury. The Contractor's efforts shall be guided by the standard detail drawings produced by the Illinois Department of Transportation and accepted standard practice. Section 701 of the Standard Specifications provides material and equipment requirements and operational practices to be employed by the Contractor. Section 701 is modified by this special provision to remove responsibility from the Engineer and Peoria County for the administration, approval, and consent of the traffic control.

The construction drawings include project specific Stage Construction plans to be followed by the Contractor. The traffic control measures shall be tailored to the Sequence of Work that is employed by the Contractor. The Contractor is solely responsible for traffic control and protection within the project limits from the inception of the work until the final completion. The Resident Engineer is available to the Contractor for consultation about the minimum requirements of the Standard Details and Standard Specifications. Any modifications to the sequence of staging or maintenance of traffic shall be approved by the Engineer prior to implementation.

Traffic control and protection measures shall also be placed along intersecting streets to notify drivers of the construction activity ahead. The Contractor shall place traffic control and protection measures as needed, specifically advance signing in accordance with the standard details referenced in the Plans and to the satisfaction of the Engineer.

The Contractor shall sweep and remove any soil tracked onto the street by the end of the workday or before four (4) hours has elapsed, whichever is sooner.

All labor, materials, and equipment required to plan and implement a traffic control plan throughout the contract duration will be paid for at the contract unit price per Lump Sum for TRAFFIC CONTROL

AND PROTECTION, (SPECIAL).

TRAFFIC CONTROL PLAN
Traffic control shall be in accordance with the applicable sections of the "Standard Specifications for Road and Bridge Construction," the applicable guidelines contained in the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways," these Special Provisions, and any special details and Highway Standards contained herein and in the plans. Special attention is called to Section 701 and Articles 107.09 and 107.14 of the "Standard Specifications for Road and Bridge Construction" and the following Highway Standards relating to traffic control:

701006, 701011, 701201, 701301, 701501, 701502, 701602, 701901

Contractor Access
At road closure locations where Type III Barricades are installed in a manner that will not allow Contractor access to the project without relocation of one or more of the barricades, the arrangement of the barricades at the beginning of each work day may be relocated, when approved by the Engineer, in the manner shown on Highway Standard 701901 for Road Closed to Through Traffic. "Road Closed" signs (R11-2), supplemented by "Except Authorized Vehicles" signs (R3-I101), shall be mounted on both the near-right and far-left barricade(s). At the end of each work day the barricades shall be returned to their in-line positions. This work will be included in the cost of the contract, and no extra compensation will be allowed.

CONSTRUCTION ACCESS
The contractor shall present a plan of the access that will be used during construction of said project by the Contractor or Subcontractor and Residents to the Engineer at the time of the Pre-Construction Meeting. The Engineer and Contractor shall both examine the plan noting any areas of concern before construction begins.

Upon completion of the project the Engineer shall examine the streets prior to approving final payment to the Contractor. Any areas that have been damaged, due to construction activity, shall be repaired by the Contractor to the satisfaction of the Engineer. When work is complete, the Contractor shall arrange, within a reasonable time period, to clean up and restore areas where equipment or material has been stored on the right-of-way or easement. This work shall be included in the cost of the contract.

The Engineer may restrict the movement of construction vehicles on the completed surface in order to prevent damage to these surfaces.

FLASHING BEACON, POST MOUNTED, SOLAR-POWERED
Description:
This work shall be performed in accordance with the applicable portions of Sections 702, 801, and 806 of the Standard Specifications insofar as applicable, and the latest edition of the MUTCD except as modified herein. This work consists of furnishing and installing a photovoltaic (solar) powered flashing LED warning sign system complete in place.

Solar Electric System Design:
The solar electric system shall be designed to act as a standalone power source for the system. It shall be designed for a flashing output for 25 seconds with a duty cycle of 50 calls per day at the location shown in the plans in the month with the lowest solar radiation. Loading shall be calculated based on the maximum power consumption of each Individual component. If a manufacturer provides a range of power consumption for an item, the largest possible value of the load shall be used for design purposes.

The projected days of autonomy shall be no less than 5 days. The projected battery state-of-charge (SOC) shall be no less than 85% throughout the year. The minimum acceptable array to load ratio shall be 1.1 in the month with the lowest solar radiation. System deratings shall be accounted for in the design to cover any losses from module output mismatch loss, dirt/dust accumulation losses and wiring losses.

Solar Electric Modules and Mounting Structures:
The module cells shall feature an antireflective coating and a low iron glass covering. Cells shall be encapsulated to protect them from the environment. Each module shall feature a weather tight junction box for connecting the array output cable to the module terminals. Modules shall feature a minimum manufacturer's warranty of 15 years for power output. All modules shall feature an anodized aluminum frame for mechanical support. Modules shall be from an established manufacturer/supplier with at least a 15 year history of production.

Solar modules shall be securely mounted to a suitable top of pole or side of pole mount structure that has been specifically designed to hold solar modules. All hardware used to install the modules to the mounts and the mount to the pole and all security hardware shall be stainless steel. Any specialty tools required for the security hardware shall be furnished to the County. Mounts shall be powder coated or hot dip galvanized steel. Mill finished or powder coated aluminum mounts are considered acceptable alternates for smaller solar arrays (40W or less).

Solar/Flasher Controls:
The system shall feature an integrated control unit. The controller shall be a solid-state unit capable of managing battery charging and load/flasher control in a single unit. Charge control/flasher circuitry built from multiple components will not be allowed.

The charge control portion shall be designed such that it draws low power to minimize the parasitic load on the system. The unit shall use an ambient temperature sensor to adjust the charge termination point thus prolonging battery life (temperature compensated charging).

The charge circuit shall also employ a pulse-width-modulation algorithm for charging the batteries and be a solid-state series switch type configuration.

Load/flasher control shall be accomplished using a low-voltage-disconnect (LVD) circuit to disconnect power to the flasher control circuit when battery voltage falls to a low state-of-charge (typically 20%). The flasher circuitry shall be all solid-state and provide two complimentary drive outputs. When flashing, the unit shall have an output duty cycle of 50% per circuit and shall be capable of 50-60 flashes per minute for each lamp. On board short circuit protection shall be provided.

An 8-position terminal block with all positions labeled for ease of maintenance shall be included. Manual switches shall be provided to select the lamp activation source as either manual on or control from an external source. A status LED for charging and LVD shall be included on the face of the controller. The controller shall include an integral heat sink.

Spread Spectrum Radio Link:
The crosswalk flasher units shall be linked to each other and shall operate wirelessly to minimize effects of external RF interference. The radio shall have an output of no less than 4-milliwatt and shall not require a license for operation. The radio shall operate from a nominal 12VDC source and include a status LED lamp to indicate power on. The radio shall also include transmit-receive status LED lamps to show message traffic between units.

The radio shall use a Frequency Hopping Spread Spectrum (FHSS) radio protocol. The minimum antenna configuration shall be an omni directional whip with a stainless steel mounting bracket. A data cable between the radio and the logic control unit shall be included. In the event that multiple systems are collocated, the radio hop sequence shall be field adjustable with programming software, straight data cable and a laptop computer. Changing hop sequences between collocated systems shall ensure that all can function without cross interference.

Additionally the radio shall be capable of using up to two additional levels of encryption including DT address settings to further encrypt data transfer.

Logic Control Unit:
The system shall be equipped with a logic control device consisting of a PLC type device. The logic control device shall include input status indicators consisting of LED lamps. The device shall also include status Indicators consisting of LED lamps showing run, power and error status indicators. The control device shall include a data cable to allow connection between its communications port and the radio. The logic device shall have a minimum of 4 dry contact output relays with a minimum output rating of .5A.

The software for the logic control device shall allow the user to adjust the run time of the flashers from a minimum run time of 10 seconds to a maximum of 80 seconds. A set of toggle switches on the electronics panel shall allow the user to set the time. Toggle switches in the ON position shall be indicated by an input status LED lamp. A TEST button shall also be included with the time selection switches to allow each flasher unit to be tested individually.

The software shall include a communications fault routine that causes the lamps to flash intermittently in the event that the radios lose link with each other. The controller shall also have an input dedicated to monitoring the battery. The logic devices shall be configured as a master-slave system using a MODBUS protocol for operation.

PED Push Button:
The PED push button shall be a vandal resistant unit. It shall have minimal travel and include both a visible and audible feedback to indicate when the button is pressed.

Visible feedback shall be a high intensity LED built into the unit and the audible feedback shall be a piezo beeper. The button assembly shall include a minimum of a 5"x 7" adjustable push button station assembly with an international crossing sign mounted on it showing the direction of travel desired.

System Batteries:
The system shall come equipped with the number and type of batteries required for loading. The battery type shall be a sealed-maintenance free valve-regulated design. The battery shall use an Absorbed Glass Mat (AGM) to suspend the electrolyte making it immobile. Alternately, the battery may be a gel type that employs a thixotropic gel to immobilize the electrolyte. Acceptable battery sizes shall be group U1, 22, 24, 27 and group 31.

Capacity of the batteries at 25°C shall be 36Ah to 115Ah, respectively, at the C/100 rate depending on battery size. Batteries shall use a copolymer polypropylene case and cover. Non-removable pressure regulated flame arresting safety valves shall be standard.

Rated operating temperature shall be from -40°F to +176°F.

System Enclosure:

The system shall include a single pre-wired enclosure for ease of installation. The unit shall be an aluminum enclosure with a minimum material thickness of 0.125". The cabinet shall have a mill finish. Mounts shall be included as part of the enclosure and shall be suitable for mounting to a 4.5" outer diameter pole. The enclosure shall also be capable of accepting band style mounts if needed. The enclosure shall feature a minimum of one police lock with key. The keyhole for the lock shall have a cover attached to the door with a rivet. The door shall be attached to the unit using a continuous stainless steel hinge that is riveted to the door and the enclosure body. The hinges shall be installed such that the rivets are not exposed when the door is closed. An integral rigid doorstop shall be included in the unit so that the door can be fixed in the open position. The door shall cover the entire front side of the cabinet and be constructed of a single piece of aluminum. It shall have a neoprene gasket around the entire edge of the door and have three screened louvered vents on each side of each compartment. The louver screening shall be aluminum for longevity. An integral rain lip shall also be provided at the top of the main cabinet body to minimize entry of rain. An adjustable latch striker shall be included in the side of the main cabinet body to allow the user to adjust the pressure between the door gasket and the body of the cabinet.

The battery compartment shall have a minimum of ½" of styrofoam sheeting around the battery to minimize heat transfer between the battery and the wall of the enclosure. The name of the system manufacturer shall be stamped on the inside of the enclosure door along with a phone number for troubleshooting assistance.

System Wiring:
All systems shall feature a color-coded wiring harness for both the lamps and the solar array output. The lamp harness shall consist of a wiring assembly suitable for use with a two-lamp system to be installed on a 15' pole. The harness shall be color coded for ease of connection to the lamps. A seven pin keyed locking connector shall be included in the harness to allow the lamps to be disconnected from the control electronics. An integral fuse assembly shall be included in the lamp positive wire of the harness. All connections shall be terminated with a crimped spade terminal for easy installation. Wire for the harness shall be TEW or MTW.

The solar array output harness shall consist of a jacketed pair of conductors suitable for the solar array output current. The jacket shall be a UV resistant PVC or XLP material. Spade terminals shall be included for ease of installation.

Systems using solar arrays over 225-watts shall include supplemental harnesses for any additional electronics needed for power control. Supplemental harness assemblies shall also be keyed to prevent confusion in the connector orientation.

Posts:
Posts shall be UL classified and designed to current AASHTO standards for 90 mph wind, 3-second gusts, and minimum 50-year life with all attached components and shall arrive at the job site in a black powder coat finish with a matching shroud or aluminum nut covers and ground connector. Post length shall be in accordance with the MUTCD for proper sign mounting height and the manufacturer's recommendations.

Foundations:
24" diameter concrete foundations shall be constructed in accordance with the foundation detail in the plans.

Signs:
Each post shall have a R10-25 sign, pedestrian crossing sign (W11-2, 30" x 30") with flashing LEDs in

the border and a diagonal arrow plaque (W16-7L or W16-7R, 24" x 12") mounted on both sides of the post facing traffic.

Documentation:
Each system shall come with a complete installation and user's guide.
Minimum information to be covered shall be as follows:

1. Description of all the system components and their basic function.

2. Installation of a typical system including sections specifically covering pole installation, all aspects of installation of the solar power system and LED lamp installation.

3. Troubleshooting and maintenance of the system.

4. Complete appendices on all of the components used in the system

5. Quick start timer programming instructions.

6. Complete drawings or illustrations throughout to support and clarify the text.

7. Phone/FAX numbers for technical support of the system.

Method of Measurement:
This work will be measured for payment for each sign assembly installed.

Basis of Payment:
This work will be paid for at the contract unit price per each for FLASHING BEACON, POST MOUNTED, SOLAR POWERED INSTALLATION, which price shall include all labor, equipment, materials, and incidental expenses necessary to furnish the components, signs, posts, foundations, hardware, cables, connectors, and brackets necessary for installation of each sign assembly.

MAILBOX COORDINATION AND RELOCATION
The Contractor shall be responsible for determining and coordinating with the Engineer and the local Post Office (Post Master) an acceptable method for mail service during construction. Notice shall be provided to all affected homeowners that will experience a change in mail delivery procedures. Temporary mailbox facilities may be required to be furnished by the Contractor. In addition to this coordination, all existing mailbox assemblies within the project limits and as noted in the plans shall be relocated to accommodate the conditions of the final roadway improvements.

Contractor will need to form a block out for the mailbox post that is in between the driveways in the concrete at STA. 118+33.

This work will be paid for at the contract unit price per each for RELOCATE EXISTING MAILBOX.

PAVEMENT REMOVAL
Existing HMA and concrete pavement materials shall be removed and paid as described in Section 440 of the Standard Specifications. The thickness of existing pavements was determined by coring at various locations throughout the project. Existing thicknesses from the cores samples are provided in the contract plans. Existing aggregate base materials are not included in the pavement thickness and are not to be measured for payment.

When portions of the existing pavement and appurtenances are to remain in place, the contractor shall form a perpendicular straight joint by full-depth machine sawing at the ends and at all edges of portions to be removed to prevent surface spalling when the pavement is broken out. Sawcutting will not be measured separately for payment.

The work associated with removal of temporary pavements constructed as part of these improvements shall be measured and paid for at the contract unit price for PAVEMENT REMOVAL.

SUBGRADE PREPARATION

Subgrade preparation shall be in accordance with Section 301 of the Standard Specifications and the following. Some areas within the project limits have moisture content values of the subgrade soils at or above 10 percentage points above the optimum moisture content. Depending upon the weather conditions at the time of subgrade preparation is completed, treatment of the subgrade over a more extensive time period than specified in Article 301.04 of the Standard Specifications may be required. The Contractor shall be responsible for scheduling construction activities accordingly to accommodate additional subgrade processing time into the project schedule for anticipated areas of high moisture.

A summary of the sections where these relatively high moisture content values were noted follows.
Maxwell Road Station 100+00 to 109+00
Maxwell Road Station 113+50 to 117+00
Maxwell Road Station 127+50 to 137+50
Middle Road Station 307+50 to 310+00

Subgrade not meeting the criteria in Section 301.04 will be declared unstable by the Engineer and shall be rendered stable through reprocessing and recompacting, and/or more extensive ground treatments. Subgrade preparation shall not be measured separately for payment.

Revise first sentence of first paragraph of Article 301.04 as follows:

> "When compacted, the subgrade shall have a minimum dry density of 95 percent of the standard laboratory dry density and a minimum immediate bearing value (IBV) of 4."

Delete the second paragraph (including subparagraphs a, b, and c) of Article 301.04 of the Standard Specifications and replace it with the following:

> "In cut sections the Contractor responsible for the rough grading shall obtain not less than 95% of the standard laboratory density and not more than 110% of the optimum moisture for the top 1' (300 mm) of the subgrade.
>
> The Contractor may, at his/her option, add a drying agent to lower the moisture content as specified. The drying agent must be approved by the Engineer prior to use. Additional compensation will not be allowed for the use of a drying agent but will be considered as included in the cost of the various earthwork items."

STORM SEWER REMOVAL

This work shall be completed in accordance with Section 551 of the Standard Specifications. Backfill of storm sewers removed under and within 2 feet of the pavement subgrade, curb and gutters, or sidewalk shall be backfilled according to Section 208 of the Standard Specifications. This backfill will be paid for at the contract unit price per cubic yard of TRENCH BACKFILL. All other locations of storm sewer removal will not have backfill materials measured for payment and backfilling shall be

considered included in the cost the various storm sewer removal pay items.

REMOVE AND RELOCATE SIGN PANEL AND POLE ASSEMBLY
Sign panels and pole assemblies identified for relocation in the plans shall be removed and protected from damage until the sign can be erected. Signs and/or poles damaged in the removal process or, while in storage, shall be replaced with new materials at no additional cost to the contract. Work shall be completed in accordance with Section 724 of the Standard Specifications. The work shall be paid for at the contract unit price per Each for REMOVE AND RELOCATE SIGN PANEL AND POLE ASSEMBLY.

TEMPORARY PAVEMENT REMOVAL
This work consists of removal of the existing temporary pavement surface of the roadway as shown in the plans. The removal shall be done in such a manner that the existing concrete pavement is not damaged. The contractor shall form a straight joint by full-depth machine sawing at the ends and at all edges of portions to be removed to prevent surface spalling when the pavement is broken out. Sawcutting will not be measured for pavement. This work shall be completed in accordance with Section 440 of the Standard Specifications.
The work shall be paid for at the contract unit price per square yard for TEMPORARY PAVEMENT REMOVAL, which price shall include all material, equipment, and labor necessary to complete the work.

RETAINING WALL REMOVAL
This item of work shall consist of furnishing all labor, equipment, and materials necessary to remove existing concrete and stone retaining walls including associated foundations at the locations indicated in the plans and as directed by the Engineer. This work will be paid for at the contract unit price per square foot for RETAINING WALL REMOVAL.

REMOVE EXISTING FLARED END SECTION
This item of work shall consist of furnishing all labor, equipment, and materials necessary to remove existing flared end section at the locations indicated in the plans and as directed by the Engineer. This work shall be completed in accordance with Section 501 of the Standard Specifications. This work will be paid for at the contract unit price per each for REMOVE EXISTING FLARED END SECTION.

EROSION CONTROL BLANKET
This work shall be completed in accordance with Section 251 of the Standard Specifications. Material used shall be knitted straw blanket.

CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED
This work shall consist of the removal and reinstallation of chain link fencing measured in linear feet along the bottom of the fence fabric, including any foundations or anchors. Work shall include removing vegetation, removing all fence fabric, appurtenances, and posts; removal of concrete encasement from posts; storage of the removed fencing materials to prevent damage; reinstallation of the posts and fabric, including all appurtenances; and replacement of any fence parts that are not able to be salvaged and reinstalled. Fabric and/or posts damaged in the removal process or, while in storage, shall be replaced with new materials at no additional cost to the contract.
Locations where such removal will be required in order to build the proposed improvements are identified in the plans. The Engineer's Representative shall confirm the removal limits with the Contractor before removal. The reinstallation shall be completed in accordance with Section 664 of the Standard Specifications.
This work will be paid for at the contract unit price per foot for CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED.

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (PROJECT SPECIFIC)
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 Work Areas. The excavated soil and groundwater within the work 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.

Site 11 – Woolf Distributing Company – 515 S Maxwell Road, Peoria County, Illinois
Station 129+98 to 130+60 (Maxwell Rd.), 0 to 60 feet LT, 0-5 feet bgs. All excavation planned for storm sewer and underdrain excavation. The Engineer has determined this material meets to criteria of and shall be managed in accordance with Article 669.05(c). Contaminants of concern sampling parameters: Manganese.

Station 131+45 to 132+40 (Maxwell Rd.), 0 to 60 feet LT, 0-5 feet bgs. All excavation planned for storm sewer and underdrain excavation. The Engineer has determined this material meets to criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Arsenic, Manganese, pH

Station 133+60 to 134+50 (Maxwell Rd.), 0 to 60 feet LT, 0-5 feet bgs. All excavation planned for storm sewer and underdrain excavation. The Engineer has determined this material meets to criteria of and shall be managed in accordance with Article 669.05(c). Contaminants of concern sampling parameters: 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), or 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

Additional information on the above sites collected during the Phase I Engineering process is available through Peoria County's Highway Department.

State of Illinois
Department of Transportation
Bureau of Local Roads and Streets

SPECIAL PROVISION FOR INSURANCE

Effective: February 1, 2007
Revised: August 1, 2007

All references to Sections or Articles in this specification shall be construed to mean specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

The Contractor shall name the following entities as additional insured under the Contractor's general liability insurance policy in accordance with Article 107.27:

Peoria County

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

UTILITIES – LOCATIONS/INFORMATION ON PLANS

Effective: November 8, 2013

The locations of existing water mains, gas mains, sewers, electric power lines, telephone lines, and other utilities as shown on the plans are based on field investigation and locations provided by the utility companies, but they are not guaranteed. Unless elevations are shown, all utility locations shown on the cross sections are based on the approximate depth supplied by the utility company. It shall be the Contractor's responsibility to ascertain their exact location from the utility companies and by field inspection.

EMBANKMENT (RESTRICTIONS)

Effective: January 21, 2005 Revised: August 5, 2022

Replace the sixth and seventh paragraphs of Article 205.04 with the following:

Alternating layers of suitable soil and restricted-use material will not be permitted. Restricted-use materials may only be incorporated into the embankment by using one of the following procedures:

a. Restricted-use materials shall be placed in 4" lifts and disked with the underlying lift material until a uniform and homogenous material is formed having more than 35% passing the number 200 sieve.

b. Sand, gravel or crushed stone embankment when placed on the existing ground surface will be drained using a 10' (3 m) by 10' (3 m) French drain consisting of nonwoven geotechnical fabric with 12" (0.3 m) of B-3 riprap. This shall be constructed on both sides of the embankment at the toe of the foreslope spaced 150' (46 m) apart. At locations requiring a French drain the 3' (1 m) cohesive cap shall not be installed within the 10' by 10' riprap area. If the Engineer determines that the existing ground is a granular free draining soil, the French drain may be deleted.

c. Sand, gravel or crushed stone embankment when placed on top of a cohesive embankment will be drained with a permanent 4" (100 mm) underdrain system. The underdrain system shall consist of a longitudinal underdrain on both sides of the embankment and transverse underdrains spaced at 250' (75 m) centers. The underdrain shall consist of a 2' (0.6 m) deep by 1' (0.3 m) wide trench, backfilled with FA4 sand and a 4" (100 mm) diameter underdrain. In addition, both sides of the embankment will have a 6" (150 mm) diameter pipe drain which will drain the underdrain system and outletted into a permanent drainage structure or outletted by a headwall at the toe of the embankment.

The above work will not be paid for separately but shall be included in the cost of EARTH EXCAVATION, FURNISHED EXCAVATION, or BORROW EXCAVATION.

STORM SEWER, (WATER MAIN QUALITY PIPE)

Effective January 1, 2011
Revised January 1, 2021

This work consists of constructing storm sewer to meet water main standards, as required by the IEPA or when otherwise specified. The work shall be performed in accordance with applicable parts of Section 550 of the Standard Specifications, applicable sections of the current edition of the IEPA Regulations (Title 35 of the Illinois Administrative Code, Subtitle F, Chapter II, Section 653.119), the applicable sections of the current edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and as herein specified.

This provision shall govern the installation of all storm sewers which do not meet IEPA criteria for separation distance between storm sewers and water mains. Separation criteria for storm sewers placed adjacent to water mains and water service lines are as follows:

(1) Water mains and water service lines shall be located at least 10 feet (3.05 meters) horizontally from any existing or proposed drain, storm sewer, sanitary sewer, or sewer service connections.

(2) Water mains and water service lines may be located closer than 10 feet (3.05 meters) to a sewer line when:

   (a) Local conditions prevent a lateral separation of 10 feet (3.05 meters); and

   (b) The water main or water service invert is 18 inches (460 mm) above the crown of the sewer; and

   (c) The water main or water service is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.

(3) A water main or water service shall be separated from a sewer so that its invert is a minimum of 18 inches (460 mm) above the crown of the drain or sewer whenever water mains or services cross storm sewers, sanitary sewers or sewer service connections. The vertical separation shall be maintained for that portion of the water main or water services located within 10 feet (3.05 meters) horizontally of any sewer or drain crossed.

When it is impossible to meet (1), (2) or (3) above, the storm sewer shall be constructed of concrete pressure pipe, slip-on or mechanical joints ductile iron pipe, or PVC pipe equivalent to water main standards of construction. Construction shall extend on each side of the crossing until the perpendicular distance from the water main or water service to the sewer or drain line is at least 10 feet (3.05 meters). Storm sewer meeting water main requirements shall be constructed of the following pipe materials:

Concrete Pressure Pipe

Concrete pressure pipe shall conform to the latest ANSI/AWWA C300, C301, or C303.

Joints shall conform to Article 41-2.07B of the "Standard Specifications for Water and Sewer Main Construction in Illinois."

Ductile Iron Pipe

Ductile Iron pipe shall conform to ANSI A 21.51 (AWWA C151), class or thickness designed per ANSI A 2150 (AWWA C150), tar (seal) coated and/or cement lined per ANSI A 21.4 (AWWA C104), with a mechanical or rubber ring (slip seal or push on) joints.

Joints for ductile iron pipe shall be in accordance with the following applicable specifications.

1. Mechanical Joints - AWWA C111 and C600
2. Push-On Joints - AWWA C111 and C600

Plastic Pipe

Plastic pipe shall be marked with the manufacturer's name (or trademark); ASTM or AWWA specification; Schedule Number, Dimension Ratio (DR) Number or Standard Dimension Ratio (SDR) Number; and Cell Class. The pipe and fittings shall also meet NSF Standard 14 and bear the NSF seal of approval. Fittings shall be compatible with the type of pipe used. The plastic pipe options shall be in accordance with the following:

1. Polyvinyl Chloride (PVC) conforming to ASTM Standard D 1785. Schedule 80 is the minimum required for all pipe sizes, except when the pipe is to be threaded, and then it shall be Schedule 120. It shall be made from PVC compound meeting ASTM D 1784, Class 12454C.
2. Polyvinyl Chloride (PVC) conforming to ASTM D 2241. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454B.
3. Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM F 441. A minimum of Schedule 80 is required for all pipe sizes. Threaded joints are not allowed. It shall be made from CPVC compound meeting ASTM D 1784, Class 23447B.
4. Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM F 442M/F422M. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from CPVC compound meeting ASTM D 1784.
5. Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C900. A minimum of wall thickness of DR 25 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.
6. Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C905. A minimum of wall thickness of DR 26 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

Joining of plastic pipe shall be by push-on joint, solvent welded joint, heat welded joint, flanged joint, or threaded joint, butt fused or electro fused, in accordance with the pipe manufacturer's instructions and industry standards. Special precautions shall be taken to insure clean, dry contact surfaces when making solvent or heat welded joints. Adequate setting time shall be allowed for maximum strength.

Elastometric seals (gaskets) used for push-on joints shall comply with ASTM F477.

Solvent cement shall be specific for the plastic pipe material and shall comply with ASTM D 2564 (PVC) or ASTM F 493 (CPVC) and be approved by NSF.

This work will be measured and paid for at the contract unit price per Foot (Meter) for STORM SEWER (WATER MAIN QUALITY PIPE) of the diameter and type specified.

INLETS, TYPE G-1

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and material for the construction of Type G-1 Inlets and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLETS, TYPE G-1" to Article 602.16 of the Standard Specifications. Delete the first paragraph in Articles 606.14 and 606.15.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLETS, TYPE G-1" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLETS, TYPE G-1.

INLETS, TYPE G-1, SPECIAL

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and material for the construction of Type G-1, Special inlets and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLETS, G-1, SPECIAL" to Article 602.16 of the Standard Specifications. Delete the first paragraph in Articles 606.14 and 606.15.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLETS, TYPE G-1, SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLETS, TYPE G-1, SPECIAL.

INLETS, TYPE G-1, DOUBLE, SPECIAL

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing equipment, labor, and materials for the construction of Type G-1, Double, Special Inlets and Combination Concrete Curb and Gutter in accordance with Section 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLETS, TYPE G-1, DOUBLE, SPECIAL" to Article 602.16 of the Standard Specifications. Delete the first paragraph in Articles 606.14 and 606.15.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLETS, TYPE G-1, DOUBLE SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLETS, TYPE G-1, DOUBLE, SPECIAL.

INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and materials for the construction of Inlet-Manhole, Type G-1, 5' (1.5 m) Diameter and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER" to Article 602.16 of the Standard Specifications. Delete the first paragraph of Articles 606.14 and 606.15 of the Standard Specifications.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER" in accordance with details shown in the plans.

The work will be paid for at the contract unit price Each for INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER.

INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER, SPECIAL

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and materials for the construction of Inlet-Manhole, Type G-1, 1.5 m (5') Diameter, Special and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER, SPECIAL" to Article 602.16 of the Standard Specifications. Delete the first paragraph of Articles 606.14 and 606.15.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER, SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER, SPECIAL.

PCC SLIPFORM PAVING AGGREGATE OPTIMIZATION

Effective: August 3, 2012 Revised: January 1, 2022

Delete Note 7/ of Article 1004.01(c) and replace Article 1004.02(d)(1) with the following:

For the slipform paving of concrete pavement, the Class PV concrete shall be uniformly graded. This may be accomplished by using a uniformly graded single coarse aggregate, or by blending two or more coarse aggregate sizes. As a minimum for multiple coarse aggregate sizes, CA 7 or CA 11 shall be blended with CA 13, CA 14, or CA 16. The final single coarse aggregate or combined coarse aggregate gradation shall have minimum 45 percent and maximum 60 percent passing the 1/2 in. (12.5 mm) sieve. However, the Contractor may propose for approval by the Engineer an alternate uniformly graded concrete mixture using the information in the "Portland Cement Concrete Level III Technician Course – Manual of Instructions for Design of Concrete Mixtures".

MEMBRANE CURING METHOD

Effective: July 29, 2016
Revised: November 17, 2017

Revise Article 1020.13(a)(4) paragraph 2 to read:

"After all finishing work to the concrete surface has been completed, the surface and all exposed edges shall be sealed with membrane curing compound of the type specified within ten minutes. The seal shall be maintained for the specified curing period. The edges of the concrete shall, likewise, be sealed within ten minutes after the forms are removed. Two separate applications, applied at least one minute and no more than fifteen (15) minutes apart, each at the rate of not less than 1 gal./250 sq. ft. (0.16L/sq. m) will be required upon the surfaces and edges of the concrete. These applications shall be made with the mechanical equipment specified. Type III compound shall be agitated immediately before and during the application.

PCC QMP ELECTRONIC REPORT SUBMITTALS

Effective January 13, 2022

The Contractor’s QC personnel shall be responsible for electronically submitting the following reports to the Department: PRO and IND data for BMPR MI654 "Air, Slump, & Quantity"; PRO data for BMPR MI655 "PCC Strength"; and PRO data for BMPR MI504 "Field/Lab Gradation". The format for the electronic submittals will be the "QMP" reporting program which will be provided by the Department. Microsoft Office 2007 or newer is required for this program which must be provided by the Contractor.

PCC AUTOMATIC BATCHING EQUIPMENT

Effective: April 23, 2010 Revised: August 1, 2023

Portland cement concrete provided shall be produced from batch plants that conform to the requirements of Article 1103.03 (a) and (b) of the Standard Specifications for Road and Bridge Construction. Semi-automatic batching will not be allowed.

Plants shall have computerized batching interfaced with a printer. IDOT Producer Number, IDOT Concrete Material Code, batch weights, aggregate mixtures, water added, amount of each admixture or additive, and percent variance from design shall be printed for each batch. The ticket shall state the actual water-cement ratio as batched, and the amount of water that can be added to the batch without exceeding the maximum water-cement ratio. Truck delivery tickets will still be required as per Article 1020.11 (a)(7) of the Standard Specifications.

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	Marked Route	Section Number
FAU 6577	Maxwell Road	19-00115-00-PV
Project Number	**County**	**Contract Number**
YUFR(842)	Peoria	89816

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.

Signature	Date
Christopher Whitfield	6/21/24

Print Name	Title	Agency
Christopher Whitfield	Project Engineer	Crawford, Murphy & Tilly

Note: Guidance on preparing each section of BDE 2342 can be found in Chapter 41 of the IDOT Bureau of Design and Environment (BDE) Manual. Chapter 41 and this form also reference the IDOT Drainage Manual which should be readily available.

I. Site Description:

A. Provide a description of the project location; include latitude and longitude, section, town, and range:

Maxwell Road Reconstruction
Maxwell Road from Middle Road to south of Fauber Road intersection in Peoria, IL.
Section 15 Township 8N Range 7E 4th Principal Meridian
Latitude = 40.67916 Longitude = -89.68966

B. Provide a description of the construction activity which is the subject of this plan. Include the number of construction stages, drainage improvements, in-stream work, installation, maintenance, removal of erosion measures, and permanent stabilization:

The proposed improvements consist of reconstruction of Maxwell Rd. from Middle Road to south of Fauber Rd. intersection, including new sidewalk and multi-use path. Improvements also include reconstruction of Middle Rd. from Maxwell Rd. to the end of previous improvements. This project includes full-depth pavement reconstruction with new curb and gutters and new storm sewer and under drain drainage.

Construction activities shall proceed in a single stage with sub stages for maintenance of property access. Initial activity shall include installation of temporary erosion control measures followed by removal of pavements and installation of new storm sewer drainage.

C. Provide the estimated duration of this project:

The work is expected to begin in Spring 2025 and conclude in Fall 2025.

D. The total area of the construction site is estimated to be 7.92 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 7.92 acres.

E. The following are weighted averages of the runoff coefficient for this project before and after construction activities are completed; see Section 4-102 of the IDOT Drainage Manual:

The runoff coefficient before and after construction are the same weighted average of 0.37

F. List all soils found within project boundaries; include map unit name, slope information, and erosivity:

Keomah silt loam (17A): 0-2% slopes, consists of 45.0% of the project area
Sylvan silty clay loam (19C3): 5-10% slopes, consists of 21.7% of the project area
Rozetta silt loam (279B): 2-5% slopes, consists of 16.0% of the project area
Rozetta silt loam (279C2): 5-10% slopes, consists of 0.4% of the project area
Marseilles silt loam (549G): 35-60% slopes, consists of 2.7% of the project area
Orthents, loamy (802B): 1-7% slopes, consists of 14.3% of the project area

G. If wetlands were delineated for this project, provide an extent of wetland acreage at the site; see Phase I report:

Wetlands are not present.

H. Provide a description of potentially erosive areas associated with this project:

No bare soils are present within the project. Construction activity will expose soils and all soils are subject to erosive forces during rainfall events. There are no slopes exceeding 3:1 slope.

I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g., steepness of slopes, length of slopes, etc.):

Soil disturbing activities will include removing pavements, removing existing storm sewer structures and pipes, installation of new storm sewer structures and pipes, removal and replacement of curb and gutter, grading, and earthwork. After installation of the perimeter erosion control barrier and inlet and pipe protection, removal of existing pavements will begin and rough grading of the site.

J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) , and locations where storm water is discharged to surface water including wetlands.

K. Identify who owns the drainage system (municipality or agency) this project will drain into:

Peoria County owns the storm sewer system which ultimately outlets to the Illinois River.

L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located:

Peoria County

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. In addition, include receiving waters that are listed as Biologically Significant Streams by the Illinois Department of Natural Resources (IDNR). The location of the receiving waters can be found on the erosion and sediment control plans:

Runoff from the Maxwell Road project area and the serving drainage system drain to East Branch Lamarsh Creek, which will flow into Lamarsh Creek and will ultimately flow to the Illinois River. East Branch Lamarsh Creek's water body condition is listed as unknown.

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes (i.e., 1:3 or steeper), highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc. Include any commitments or requirements to protect adjacent wetlands.

For any storm water discharges from construction activities within 50-feet of Waters of the U.S. (except for activities for water-dependent structures authorized by a Section 404 permit, describe: a) How a 50-foot undisturbed natural buffer will be provided between the construction activity and the Waters of the U.S. or b) How additional erosion and sediment controls will be provided within that area.

All vegetation outside of the construction limits shall be protected from disturbance from construction operations.

Special care shall be given to trees to remain, to protect limb, trunk, or root damage.

There are no storm water discharges within 50-geet of Waters of the U.S.

O. Per the Phase I document, the following sensitive environmental resources are associated with this project and may have the potential to be impacted by the proposed development. Further guidance on these resources is available in Section 41-4 of the BDE Manual.

None

☒ 303(d) Listed receiving waters for suspended solids, turbidity, or siltation.
The name(s) of the listed water body, and identification of all pollutants causing impairment:

Lamarsh Creek is listed as an impaired water body, but no impaired parameters are listed on the water body report found on the United States Environmental Protection Agency website. The Illinois River is also listed as an impaired water body for issues identified in Fish Consumption and Primary Contact. The fish consumption impaired parameters include: aldrin, dieldrin, endrin, heptachlor, mercury, mirex, polychlorinated biphenyls (pcbs), and toxaphene. There are currently no plans in place to fix impairments. The primary contact impaired parameter include fecal coliform, which does have a plan in place to fix the impairment.

Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

Temporary erosion control seeding will stabilize disturbed earth to reduce soil erosion. Inlet filters will be installed and maintained throughout the project to protect the storm sewer system.

Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

None

Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

None

☐ Applicable Federal, Tribal, State, or Local Programs

None

☐ Floodplain

None

☐ Historic Preservation

None

☐ Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation

TMDL (fill out this section if checked above)

The name(s) of the listed water body:

None

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

☒ Threatened and Endangered Species/Illinois Natural Areas (INAI)/Nature Preserves

The Illinois Natural Heritage Database shows the following protected resources may be in the project location vicinity: Northern Long-Eared Myotis (Myotis septentrionalis)

The Department has evaluated this information and concluded that adverse effects are unlikely. However, if tree

clearing is necessary, the Department recommends removing trees between November 1st and March 31st to avoid impacts to bats and birds.

☐ Other

None

☐ Wetland

None

P. The following pollutants of concern will be associated with this construction project:

- ☐ Antifreeze / Coolants
- ☒ Concrete
- ☒ Concrete Curing Compounds
- ☒ Concrete Truck Waste
- ☒ Fertilizers / Pesticides
- ☐ Paints
- ☐ Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)
- ☒ Soil Sediment
- ☐ Solid Waste Debris
- ☐ Solvents
- ☒ Waste water from cleaning construction equipments
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

II. Controls:

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in Section I.C above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor, and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

A. **Erosion and Sediment Controls:** 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.

B. **Stabilization Practices:** Provided below is a description of interim and permanent stabilization practices, including site- specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II.B.1 and II.B.2, stabilization measures shall be initiated **immediately** where construction activities have temporarily or permanently ceased, but in no case more than **one (1) day** after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.

1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.

2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

- ☒ Erosion Control Blanket / Mulching
- ☐ Geotextiles
- ☒ Permanent Seeding
- ☒ Preservation of Mature Seeding
- ☐ Protection of Trees
- ☐ Sodding
- ☒ Temporary Erosion Control Seeding
- ☐ Temporary Turf (Seeding, Class 7)
- ☐ Temporary Mulching
- ☐ Vegetated Buffer Strips
- ☒ Other (Specify) Stone Riprap
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Describe how the stabilization practices listed above will be utilized during construction:

Construction limits will be limited to the area necessary for grading and constructing driveways and multi-use paths/sidewalks. Temporary seeding will be used as a control during construction and before final stabilization. Contractor shall be responsible for taking measures to protect and minimize damage to tree limbs, trunks, and roots within and adjacent to the limits of construction.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

All disturbed areas will be stabilized with seeding and mulch, seeding and erosion control blanket, or stone rip-rap.

C. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

- ☐ Aggregate Ditch
- ☐ Concrete Revetment Mats
- ☐ Dust Suppression
- ☐ Dewatering Filtering
- ☐ Gabions
- ☐ In-Stream or Wetland Work
- ☐ Level Spreaders
- ☐ Paved Ditch
- ☐ Permanent Check Dams
- ☒ Perimeter Erosion Barrier
- ☐ Permanent Sediment Basin
- ☐ Retaining Walls
- ☒ Riprap
- ☐ Rock Outlet Protection
- ☐ Sediment Trap
- ☒ Storm Drain Inlet Protection
- ☒ Stabilized Construction Exits
- ☐ Stabilized Trench Flow
- ☐ Slope Mattress
- ☐ Slope Walls
- ☐ Temporary Ditch Check
- ☐ Temporary Pipe Slope Drain
- ☐ Temporary Sediment Basin
- ☐ Temporary Stream Crossing
- ☐ Turf Reinforcement Mats
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Describe how the structural practices listed above will be utilized during construction:

Practices shall be used to prevent eroded soils from entering the storm sewers or ditches leaving the project site. Storm drain inlet protection will consist of inlet filters on all existing and proposed storm sewer structures to prevent sediment from entering storm drains. Inlet filters will stay in existing structures until those structures are removed.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

Inlet filters will be removed once potential sources of sedimentation are stabilized. Stone riprap shall remain in place after construction as a permanent measure for stabilization of the storm sewer outfalls to open channels.

D. **Treatment Chemicals**

Will polymer flocculants or treatment chemicals be utilized on this project: ☐ Yes ☒ No

If *yes* above, identify where and how polymer flocculants or treatment chemicals will be utilized on this project.

N/A

E. **Permanent (i.e., Post-Construction) Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed.The installation of these devices may be subject to Section 404 of the Clean Water Act.

1. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

   The practices selected for implementation were determined based on the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT BDE Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

2. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of permanent storm water management controls:

Storm sewer outfalls to open channels shall have stone riprap to dissipate runoff velocities. After the riprap, open channels will be vegetated to promote infiltration and continue reduction of runoff velocities.

F. **Approved State or Local Laws:** The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the IEPA's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.
Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

N/A

G. **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 cons
   - 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.
   - 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 (chemicals, concrete curing compounds, petroleum, etc.)
- 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.
- Polymer Flocculants and Treatment Chemicals - Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
- Additional measures indicated in the plan.

III. Maintenance:

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. Describe how all items will be checked for structural integrity, sediment accumulation and functionality. Any damage or undermining shall be repaired immediately. Provide specifics on how repairs will be made. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. 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.

Storm drain inlet protection: the frequency of inlet filter inspections shall be as described below in Section IV. Inlet filters shall be cleaned in accordance with the manufacturer specifications. If no manufacturer cleaning specifications are provided, inlet filters shall be cleaned by removing and properly disposing the collected sediment. Once sediment is removed, filters shall be rinsed with clean water and checked for permeability. If filters cannot be cleaned to the satisfaction of the Engineer, they shall be replaced. Filters can be reused if permitted by the manufacturer and if cleaned as stated above, and with approval of the Engineer.

Refer to IDOT Erosion and Sediment Control Field Guide for more maintenance requirements.

IV. Inspections:

Qualified personnel shall inspect disturbed areas of the construction site including Borrow, Waste, and Use Areas, which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report, BC 2259. Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by email at: epa.swnoncomp@illinois.gov, telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:
Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276

Springfield, Illinois 62794-9276

V. 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.

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 Section II.G of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractor/subcontractor completing this form.

Route	Marked Route	Section Number
FAU 6577	Maxwell Road	19-00115-00-PV

Project Number	County	Contract Number
YUFR(842)	Peoria	89816

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

Storm Water Pollution Prevention Plan

General Notes:

1. A copy of the letter of notification of coverage along with the General NPDES Permit for Storm Water Discharges from Construction Site Activities or other indication that storm water discharges from the site are covered under an NPDES permit shall be posted at the site in a prominent place for public viewing (such as alongside a building permit).
2. All storm water pollution prevention plans and all completed inspection forms/reports required under this permit are considered reports that shall be available to the public within 30 days upon request. If a storm water pollution prevention plan or inspection form/report cannot be provided, the permittee shall respond to the request within 30 days with a statement that explains why the document cannot be provided. However, the permittee may claim any portion of a storm water pollution prevention plan as confidential in accordance with 40 CFR Part 2.
3. Contractor shall establish locations where vehicles enter and exit the project location, where on- or off-site material storage is located, and erosion control measures at each location.
4. Contractor shall install and maintain effective erosion and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be installed and maintained to:

    a. Control storm water volume and velocity within the site to minimize soil erosion;
    b. Control storm water discharges, including both peak flowrates and total storm water volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;
    c. Minimize the amount of soil exposed during construction activity through the use of project phasing or other appropriate techniques;
    d. Minimize the disturbance of steep slopes;
    e. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting storm water runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site. Install sediment controls along any installed upslope (e.g. at 45 degrees) to prevent stormwater from circumventing the edge of the perimeter control. After a storm event if there is evidence of stormwater circumventing or undercutting the perimeter control, extend controls and/or repair undercut areas to fix the problem.
    f. Minimize soil compaction and unless infeasible, preserve topsoil;
    g. Minimize sediment track-out. Where sediment has been tracked-out from your site onto paved roads, sidewalks, or other paved areas outside of your side, remove the deposited sediment by the end of the same business day in which the track-out occurs or by the end of the next business day if track-out occurs on a non-business day. Remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out sediment into any Water of the U.S., or to any stormwater conveyance or storm drain inlet, or constructed or natural site drainage features, unless the feature is connected to a sediment basin, sediment trap, or similarly effective control; and

h. Minimize dust. On areas of exposed soils, minimize the generation of dust through the appropriate application of water or other dust suppression techniques.

5. Contractor must record 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. Stabilization of disturbed areas must be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will note resume for a period exceeding 14 calendar days.
6. The Contractor shall design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. 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 waste waters. Waste 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, detergents, sanitary waste and other materials present on the site to precipitation and to storm water. Minimization to exposure is not required for any products or materials where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or when exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use);
    c. 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 you SWPPP the specific reasons why the 50-foot setback is infeasible and how the containers will be stored; and
    d. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.
7. No solid materials will be discharged to Waters of the United States.
8. Contractors SWPPP shall:
    a. Ensure and demonstrate compliance with applicable State and/or local waste disposal or sanitary sewer regulations.
    b. Identify and include appropriate controls and measures to reduce or eliminate discharges from off-site concrete or asphalt production location.
    c. Include spill response procedures and provisions for reporting if there are releases in excess of reportable quantities.
    d. Ensure that regulated hazardous or toxic waste must be stored and disposed in accordance with any applicable State and Federal regulations.
9. Disturbed areas, areas used for storage of materials that are exposed to precipitation and all areas where stormwater typically flows within the site shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. All locations where stabilization measures have been implemented shall be observed to ensure that they are still stabilized. Where discharge locations or points are

accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

10. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan and actions taken in accordance with General Note #9 above shall be made and retained as part of the storm water pollution prevention plan for at least three years from the date that the permit coverage expires or is terminated. All inspection reports shall be retained at the construction site. Any flooding or other unsafe conditions that delay inspections shall be documented in the inspection reports. See the attached sample site inspection report.
11. Contractor must take corrective action to address any of the following conditions identified at your site:
    a. A stormwater control needs repair or replacement; or
    b. A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly; or
    c. Discharges are causing an exceedance of applicable water quality standards; or
    d. A prohibited discharge has occurred.

    Corrective Actions shall 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 seven (7) calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7-day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as feasible after the 7-day timeframe. In the event that maintenance is required for the same stormwater control at the same location three or more times, the control shall be repaired in a manner that prevents continued failure to the extend feasible, and you must document the condition and how it was repaired in your records. Alternatively, you must document in your records why the specific reoccurrence of this same issue should continue to be addressed as a routine maintenance fix. See the attached sample Corrective Action log.
12. Contractor shall retain copies of storm water pollution prevention plans and all reports and notices required by this permit, records of all data used to complete the Notice of Intent to be covered by this permit and the Agency Notice of Permit Coverage letter for a period of at least three years from the date that the permit coverage expires or is terminated. This period may be extended by request of the Agency at any time.
13. Contractor shall retain a copy of the storm water pollution prevention plan and any revisions to said plan required by this permit at the construction site from the date of project intention to the date of final stabilization. Any manuals or other documents referenced in the SWPPP shall also be retained at the construction site.

Attachments

Sample Site Inspection Report

Sample Corrective Action Log

Soil Map

Project Name: _____
NPDES ID Number: _____

Section A – General Information (If necessary, complete additional inspection reports for each separate inspection location.)	
Inspector Information	
Inspector Name:	**Title:**
Company Name:	**Email:**
Address:	**Phone Number:**
Inspection Details	
Inspection Date:	**Inspection Location:**
Inspection Start Time:	**Inspection End Time:**
Current Phase of Construction:	**Weather Conditions During Inspection:**

Was this inspection triggered by a storm event producing 0.5 inches or more of rain within a 24-hour period? ☐ Yes ☐ No

If "Yes," how did you determine whether the storm produced 0.5 inches or more of rain?

- ☐ On-site rain gauge
- ☐ Weather station representative of site.
  Weather station location:

Total rainfall amount that triggered the inspection (inches):

Was this inspection triggered by a snowmelt discharge from a storm event producing 3.25 inches or more of snow within a 24-hour period? ☐ Yes ☐ No

If "Yes," how did you determine whether the storm produced 3.25 inches or more of snow?

- ☐ On-site rain gauge
- ☐ Weather station representative of site.
  Weather station location:

Total snowfall amount that triggered the inspection (inches):

Section B – Condition and Effectiveness of Erosion and Sediment (E&S) Controls (Insert additional rows if needed)					
Type and Location of E&S Control	**Conditions Requiring Routine Maintenance?[1]**	**If "Yes," How Many Times (Including This Occurrence) Has This Condition Been Identified?**	**Conditions Requiring Corrective Action?[2]**	**Date on Which Condition First Observed (If Applicable)?**	**Description of Conditions Observed**
1.	☐ Yes ☐ No		☐ Yes ☐ No		
2.	☐ Yes ☐ No		☐ Yes ☐ No		
3.	☐ Yes ☐ No		☐ Yes ☐ No		
4.	☐ Yes ☐ No		☐ Yes ☐ No		
5.	☐ Yes ☐ No		☐ Yes ☐ No		
If the same routine maintenance was found to be necessary three or more times for the same control at the same location (including this occurrence), follow the corrective action requirements and record the required information in your corrective action log, or describe here why you believe the specific condition should still be addressed as routine maintenance:					

[1] Routine maintenance includes minor repairs or other upkeep performed to ensure that the site's stormwater controls remain in effective operating condition, not including significant repairs or the need to install a new or replacement control. Routine maintenance is also required for specific conditions: (1) for perimeter controls, whenever sediment has accumulated to half or more the above-ground height of the control ; (2) where sediment has been tracked-out from the site onto paved roads, sidewalks, or other paved areas; (3) for inlet protection measures, when sediment accumulates, the filter becomes clogged, and/or performance is compromised; and (4) for sediment basins, as necessary to maintain at least half of the design capacity of the basin

[2] Corrective actions are triggered only for specific conditions:

1. A stormwater control needs a significant repair or a new or replacement control is needed, or, in accordance with Part 2.1.4.c, you find it necessary to repeatedly (i.e., three (3) or more times) conduct the same routine maintenance fix to the same control at the same location (unless you document in your inspection report under Part 4.7.1.c that the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under 2.1.4); or
2. A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly; or
3. Your discharges are not meeting applicable water quality standards; or
4. A prohibited discharge has occurred ; or
5. During the discharge from site dewatering activities:
   a. The weekly average of your turbidity monitoring results exceeds the 50 NTU benchmark (or alternate benchmark if approved by EPA pursuant to Part 3.3.2.b); or
   b. You observe or you are informed by EPA, State, or local authorities of the presence of the conditions specified in Part 4.6.3.e.

Section C – Condition and Effectiveness of Pollution Prevention (P2) Practices and Controls (Insert additional rows if needed)					
Type and Location of P2 Practices and Controls	**Conditions Requiring Routine Maintenance?[1]**	**If "Yes," How Many Times (Including This Occurrence) Has This Condition Been Identified?**	**Conditions Requiring Corrective Action?[2]**	**Date on Which Condition First Observed (If Applicable)?**	**Description of Conditions Observed**
1.	☐ Yes ☐ No		☐ Yes ☐ No		
2.	☐ Yes ☐ No		☐ Yes ☐ No		
3.	☐ Yes ☐ No		☐ Yes ☐ No		
4.	☐ Yes ☐ No		☐ Yes ☐ No		
5.	☐ Yes ☐ No		☐ Yes ☐ No		
If the same routine maintenance was found to be necessary three or more times for the same control at the same location (including this occurrence), follow the corrective action requirements and record the required information in your corrective action log, or describe here why you believe the specific condition should still be addressed as routine maintenance:					

Project Name: _____
NPDES ID Number: _____

Section D – Stabilization of Exposed Soil (Insert additional rows if needed)					
Specific Location That Has Been or Will Be Stabilized	**Stabilization Method and Applicable Deadline**	**Stabilization Initiated?**	**Final Stabilization Criteria Met?**	**Final Stabilization Photos Taken?**	**Notes**
1.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
2.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
3.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
4.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
5.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	

Section E – Description of Discharges (Insert additional rows if needed)	
Was a discharge (not including dewatering) occurring from any part of your site at the time of the inspection?[4] ☐ Yes ☐ No **If "Yes," for each point of discharge, document the following:** • The visual quality of the discharge. • The characteristics of the discharge, including color; odor; floating, settled, or suspended solids; foam; oil sheen; and other indicators of stormwater pollutants. • Signs of the above pollutant characteristics that are visible from your site and attributable to your discharge in receiving waters or in other constructed or natural site drainage features.	
Discharge Location	**Observations**
1.	
2.	
3.	
4.	
5.	

[4] If a dewatering discharge was occurring, you must conduct a dewatering inspection pursuant to CGP Part 4.3.2 and complete a separate dewatering inspection report.

Section F – Signature and Certification	
"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 contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than 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."	
MANDATORY: Signature of Operator or "Duly Authorized Representative:"	
Signature:	**Date:**
Printed Name:	**Affiliation:**
OPTIONAL: Signature of Contractor or Subcontractor	
Signature:	**Date:**
Printed Name:	**Affiliation:**

Corrective Action Log
Project Name: _____
NPDES ID Number: _____

Section A – Individual Completing this Log	
Name:	**Title:**
Company Name:	**Email:**
Address:	**Phone Number:**
Section B – Details of the Problem Complete this section within 24 hours of discovering the condition that triggered corrective action.	
Date problem was first identified:	**Time problem was first identified**:
What site conditions triggered this corrective action? *(Check the box that applies. See instructions for a description of each triggering condition (1 thru 6).)* ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5a ☐ 5b ☐ 6	
Specific location where problem identified:	
Provide a description of the specific condition that triggered the need for corrective action and the cause (if identifiable):	
Section C – Corrective Action Completion Complete this section within 24 hours after completing the corrective action.	
For site condition # 1, 2, 3, 4, or 6 (those not related to a dewatering discharge) confirm that you met the following deadlines:	
☐ Immediately took all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events. **AND**	
☐ Completed corrective action by the close of the next business day, unless a new or replacement control, or significant repair, was required. **OR**	
☐ Completed corrective action within seven (7) calendar days from the time of discovery because a new or replacement control, or significant repair, was necessary to complete the installation of the new or modified control or complete the repair. **OR**	
☐ It was infeasible to complete the installation or repair within 7 calendar days from the time of discovery. Provide the following additional information: Explain why 7 calendar days was infeasible to complete the installation or repair:	

Provide your schedule for installing the stormwater control and making it operational as soon as feasible after the 7 calendar days:

Section D - Signature and Certification	
"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 contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than 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."	
MANDATORY: Signature of Operator or "Duly Authorized Representative:"	
Signature:	**Date:**
Printed Name:	**Affiliation:**
OPTIONAL: Signature of Contractor or Subcontractor	
Signature:	**Date:**
Printed Name:	**Affiliation:**


89° 41' 44" W
89° 40' 57" W
40° 41' 9" N
40° 40' 22" N
272300
272400
272500
272600
272700
272800
272900
273000
273100
273200
4507300
4507200
4507100
4507000
4506900
4506800
4506700
4506600
4506500
4506400
4506300
4506200
4506100
4506000
802B
17A
19C3
279B
W Fairview Rd
279C2
549G
W Overland Pass
Middle
Dirksen
Soil Map may not be valid at this scale.
Map Scale: 1:7,020 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
100
200
400
600
Feet
0
300
600
1200
1800
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Peoria County, Illinois
Survey Area Data: Version 18, Aug 28, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 14, 2020—Aug 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
17A	Keomah silt loam, 0 to 2 percent slopes	7.1	45.0%
19C3	Sylvan silty clay loam, 5 to 10 percent slopes, severely eroded	3.4	21.7%
279B	Rozetta silt loam, 2 to 5 percent slopes	2.5	16.0%
279C2	Rozetta silt loam, 5 to 10 percent slopes, eroded	0.1	0.4%
549G	Marseilles silt loam, 35 to 60 percent slopes	0.4	2.7%
802B	Orthents, loamy, 1 to 7 percent slopes	2.3	14.3%
Totals for Area of Interest		**15.8**	**100.0%**

MAXWELL ROAD WATERMAIN RELOCATION

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MAXWELL ROAD WATERMAIN RELOCATION

DIVISION 1 – GENERAL REQUIREMENTS

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SECTION 01000

SUMMARY OF WORK

PART 1: GENERAL

1.01 WORK UNDER THIS CONTRACT

A. Furnish all labor, materials (except as herein noted), equipment and means to construct the project as described in the Bid Documents and shown on the Drawings.

B. The above general outline of principal features does not in any way limit the responsibility of the Contractor to perform all Work and furnish the required materials, equipment, labor and means as shown or required by the Contract Documents.

C. Materials, equipment, labor, etc., obviously a part of the Work and necessary for the proper operation and installation of same, although not specifically indicated in the Contract Documents, shall be provided as if called for in detail without additional cost to the Owner.

1.02 LOCATION

Project Location as described in the Bid Documents and as shown on the Drawings.

1.04 OWNER FURNISHED PRODUCTS

A. Products furnished to the site and paid for by Owner:
   a. ~~Ductile Iron Push-on Joint Pipe~~
   b. ~~Ductile Iron Restraint Joint Pipe~~
   c. ~~Fire Hydrants~~
   d. Meters
   e. All material for service line reconnections

B. Work by Illinois American Water company – Owner may perform certain items of Work related to this project which may include the following:
   a. Mark locations of existing services, mains, etc.
   b. Operate all valves necessary to shut-off, flush, and reactivate its existing pipelines
   c. Install pipe taps (Contractor is responsible for excavation, trench support system, maintenance of traffic, thrust block, and restoration for all pipe tapping locations)
   d. Install services during construction
   e. Provide meter sets
   f. Install meters
   g. Abandonments of existing water facilities including hydrants and valves

h. Perform cut and caps

C. Owner's Responsibilities:
   a. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.

D. Contractor's Responsibilities:
   a. Review Owner reviewed shop drawing's product data, and samples.
   b. Receive and unload products at site; inspect for completeness or damage, jointly with Owner.
   c. Handle, store, install and finish products.
   d. Repair or replace items damaged after receipt.
   e. Arrange for manufacturers inspections, service, start-up services and training.

1.07 WORK SEQUENCE

A. Roadway reconstruction shall be completed at the same time as the watermain installation. The Contractor shall coordinate with the roadway contractor to complete pipe installation, existing main cut and cap, and all other associated subgrade work prior to roadway final pavement.

B. Work shall be scheduled, sequenced and performed in a manner which minimizes disruption to the public and plant operations and shall not interrupt or impact the Water Company's ability to operate and maintain service of the existing facility. During the construction periods coordinate construction schedule and operations with the Water Company, Inspectors and Engineer.

C. Allow for construction and schedule constraints in preparing the construction schedules required under Section 01300 - Submittals. The schedule shall include the Contractors activities necessary to satisfy all constraints included and referenced in the Contract Documents.

D. The Contractor is responsible for sequencing the work. It is a requirement that the Contractor's sequence result in the minimum number and duration of total or partial outages. The listing of Schedule Requirements identified below does not mean that all constraints or special conditions have been identified. The list does not substitute for the Contractor's coordination and planning for completion of the work within the Contract Time in the Agreement. The sequence is general in nature and meant to depict a possible approach by the Contractor that would minimize plant downtime and permit timely completion of the project.

1.08 CHANGE PROCEDURES

A. The Engineer may issue to Contractor a Proposal Request which includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Times for executing the change and the period of time during which the requested price will be considered valid. Contractor will

prepare and submit an estimate within 15 working days. The estimate shall contain a detailed breakdown of the labor, equipment, material, subcontract, equipment rental, contingencies, overhead, and profit costs associated with the requested change. The estimate shall also include any requested adjustments to Contract Times including the window of time the Owner has to render a decision on the matter.

1.09 DEFINED TERMS

A. Terms used in these Specifications which are defined in the General Conditions of the Contract Documents shall have the meanings assigned to them in the General Conditions.

1.10 ABBREVIATIONS

A. Where any of the following abbreviations are used in the Contract Documents, they shall have the meaning set forth opposite each.

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AFBMA	Anti-Friction Bearing Manufacturers Association
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
IEEE	Institute of Electrical and Electronics Engineers, Inc.
AISC	American Institute of Steel Construction
AMCA	Air Moving and Conditioning Association
ANS	American National Standard
ANSI	American National Standards Institute
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials

AWPA	American Wood-Preservers' Association
AWWA	American Water Works Association
CS	Commercial Standard
IBR	Institute of Boiler and Radiator Manufacturers
IPS	Iron Pipe Size
JIC	Joint Industry Conference Standards
NBS	National Bureau of Standards
NEC	National Electrical Code; Latest Edition
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc.
Fed.Spec.	Federal Specifications issued by the Federal Supply Service of the General Services Administration, Washington, D.C.
125lb ANS	American National Standard for Cast-Iron Pipe
250lb ANS	Flanges and Flanged Fittings, Designation B16.1-1975, for the appropriate class
AWG	American or Brown and Sharpe Wire Gage
NPT	National Pipe Thread
OS&Y	Outside Screw and Yoke
Stl.WG	U.S. Steel Wire, Washburn and Moen, American Steel and Wire or Roebling Gage
UL	Underwriters' Laboratories
USS Gage	Untied States Standard Gage
WOG	Water, Oil, Gas
WSP	Working Steam Pressure

PART 2: PRODUCTS

Not Used.

PART 3: EXECUTION

3.01 FIELD SURVEY WORK

A. Unless otherwise provided in the Supplementary Conditions, the Owner shall provide engineering surveys to establish reference points for construction as provided in Article 4.05 of the General Conditions. Utilizing Owner's reference points, establish the initial control base line and all control benchmarks to be utilized throughout the project. Base line shall be set in accordance with all lines, dimensions, reference points, and elevations given in the Contract Drawings.

B. If there is a discrepancy between the information as presented in the Contract Drawings and any existing survey grid work, benchmarks, structures, etc., notify the Engineer immediately. New construction shall not commence until accurate control base lines and benchmarks have been established.

C. Throughout the course of the project, set all additional stakes which are needed for offset stakes, reference points, slope stakes, pavement and curb line and grade stakes, stakes for structures, sewers, utilities, roadway drainage, pipe underdrains, paved gutter, fence, culverts, or other structures, supplementary benchmarks, and any other horizontal or vertical controls necessary to secure a correct layout and construction of the work. Stakes for line and grade for pavements, curbs, storm drains, sewers, etc., shall be set at twenty-five (25) foot maximum intervals. Base lines shall be staked in such manner as to clearly define them for the project.

D. The finished work shall conform to the lines, grades, elevations and dimensions called for in the Contract Documents. The Work shall be subject to checking by the Engineer, but any inspection or checking of Contractor's layout by the Engineer and the acceptance of all or part of it shall not relieve the Contractor of his responsibility to secure the proper dimensions, grades, elevations and locations on the several parts of the Work. The Contractor shall exercise care in the preservation of stakes, monuments and benchmarks and shall have them reset at his expense when they are lost or displaced.

E. Prior to the commencement of any Work activity, the contractor shall survey and layout the Work to be performed and advise the Engineer of any conflicts, obstructions, concerns, etc. that will prevent completion of such work in accordance with the requirements of the Contract Documents. If the Contractor fails to conduct such survey and layout or if the survey and layout fails to identify a conflict, obstruction, etc., which it reasonably should have, and a conflict, obstruction, concern, etc., is discovered, the Contractor shall bear the cost of any standby time for

labor and/or equipment which occurs pending the Engineer's direction and the cost of rework of any Work installed which is affected by the conflict, obstruction, etc.

F. Where the dimensions and locations of existing structures are of importance in the installation or connection of any part of the Work, verify such dimensions and locations in the field before the fabrication of any material or equipment which is dependent on the correctness of such information.

3.02 COORDINATION AND MEETINGS

A. Coordinate work, to phase the construction operations, and provide, install and maintain any temporary connections necessary to prevent interference to operation of Owner's facilities. Any construction work requiring the shutdown of facilities must be scheduled and performed only at such times as shall be authorized by the Owner. Such Work must be completed during the specific periods authorized by the Owner. It may be necessary that Work will be performed during several shutdown periods and/or during periods of premium time payment to accomplish the desired construction. All costs to perform the Contractor's Work, including premium time payments, shall be borne by the Contractor and are included in the Contract Price

B. Additionally:

1. Coordinate scheduling, submittals, and work of the various sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

2. Verify the utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

3. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

4. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

5. Coordinate completion and clean up of Work of separate sections in preparation for substantial completion and for portions of Work designated for Owner's partial occupancy.

6. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

C. Job Progress Meetings

Progress meetings will generally be held monthly. Contractor's attendance shall be required.

1. Schedule - The Engineer will establish the meeting place, time and date, notify participants and administer the meeting. Contractor shall notify major subcontractors and suppliers, as appropriate.

2. Attendance

   a. Engineer and/or resident project representative.
   b. Contractor's project manager and project superintendent
   c. Owner's representative
   d. Subcontractor, as appropriate to the agenda
   e. Suppliers, as appropriate to the agenda
   f. Other parties as determined by Engineer and/or Owner

3. Agenda

   a. Review minutes of previous meeting.
   b. Review of work progress since previous meeting.
   c. Review field observations, problems, and/or conflicts.
   d. Review problems which impede construction schedules.
   f. Review of off-site fabrication, delivery schedules.
   g. Review corrective measures and procedures to regain projected schedule.
   h. Review revisions to construction schedules.
   i. Review plan progress, schedule, during succeeding work period.
   j. Review coordination of schedules.
   k. Review submittal schedules; expedite as required.
   l. Review maintenance of quality standards.
   m. Review proposed changes for:
      - Effect on construction schedule and on completion date
      - Effect on other contracts of the project
   n. Other business

4. Minutes - Engineer will prepare and distribute copies to participants and Owner for review at the next meeting.

END OF SECTION 01000

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SECTION 01075

BASIS OF PAYMENT

PART 1: GENERAL

1.01 SCOPE

Work to be performed under this Contract shall be paid in accordance with the Bid Schedule submitted with the Bid. The cost of labor, equipment, materials or work called for in the Specifications, shown on the Drawings, or necessary for a complete and satisfactory installation, but which are not specifically mentioned in this Section shall be included in the appropriate pay item by the Contractor at no additional expense to the Owner.

All lien waivers submitted in connection with any request for payment shall include and be deemed to include a waiver of any and all rights under The Public Construction Bond act (30 ILCS 550/2) as amended from time to time.

Quantities necessary to complete the Work as shown on the Drawings or as specified herein shall govern over those shown in the Proposal. The Contractor shall take no advantage of any apparent error or omission in the Drawings or Specifications, and the Owner Representative shall be permitted to make corrections and interpretations as may be deemed necessary for fulfillment of the intent of the Contract Documents.

PART 2: PRODUCTS

Not Used.

PART 3: EXECUTION

Not Used.

END OF SECTION 01075

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SECTION 01100

ALTERNATIVES

PART 1: GENERAL

1.01 RELATED WORK

A. Alternative equipment and/or materials must be listed in the Bid. Failure to submit information on alternative equipment and/or materials as requested by the Engineer is cause for rejection of the proposed alternative and only the specified equipment and/or materials will be permitted to be incorporated in the finished project.

B. All alternative equipment and/or materials offered in the Bid must comply with the detailed requirements of the Drawings and Specifications and shall be covered by the specified guarantees and warranties. If it is determined that the alternative equipment and/or materials do not conform to the Specifications, such proposed alternative shall not be accepted, and installation of the specified equipment and/or materials shall be required.

C. No alternative materials and/or equipment will be incorporated in the finished project except an alternative accepted in writing by Owner pursuant to the requirements of this Section 01100. Acceptance by Owner of any such alternative shall not relieve Contractor of responsibility for assuring that any such alternative will, after installation or incorporation in the Work, conform to any performance requirements and other information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

1.02 SUBMITTALS

A. Specified equipment and materials have been used to prepare the Drawings. Changes in piping, wiring, structure, etc., necessary to accommodate alternatives accepted by Owner shall be submitted to the Engineer for approval.

1.03 PAYMENT

A. All installation costs necessitated by the selection of alternative equipment and material shall be included in the Contract price and any modifications as stated in the Bid.

PART 2: PRODUCTS

Not Used.

PART 3: EXECUTION

Not Used.

END OF SECTION 01100

SECTION 01300

SUBMITTALS

PART 1: GENERAL

1.01 BEFORE STARTING WORK

A. Preliminary Progress Schedule

In accordance with Section 2.05 of the General Conditions, prepare and submit to the Engineer for approval, a preliminary construction progress schedule. This submittal is to be made within ten (10) days from the Notice of Award. The construction work shall be detailed to an extent that progress can be readily monitored.

B. Shop Drawings and Samples Submittal Schedule

The preliminary progress schedule shall contain activities in the network representing submittal and review of shop drawings and material samples. The shop drawing and sample submittal schedule required per Paragraph 6.17 of the General Conditions shall be developed by sorting these activities from the progress schedule. The schedule shall be presented in a report format containing the following:

a. Activity number
b. Activity description (including reference to the appropriate specification section)
c. Early and Late start dates
d. Early and Late finish dates
e. Total and free float
f. Successor activities

C. Schedule of Values

The Bid Schedule will be used as the Schedule of Values for this project.

D. Schedule of Property Unit Values

Not Used.

E. Cash Flow Schedule

Accompanying the CPM Schedule required above, submit to the Engineer for approval a Cash Flow Schedule. The Cash Flow Schedule shall show the amounts of money by months which will be required to reimburse the Contractor for Work performed during each month of the Contract Times. The sum of all the monthly cash

requirements shall equal the Contract Price. The monthly cash requirements shall be proportioned based on the CPM Schedule. The initial cash flow schedule shall depict monthly cash requirements based on the early start dates of the CPM Schedule as well as the monthly cash requirements based on late start dates of the CPM Schedule. The approval cash flow schedule will be developed by the Engineer and will reflect the scheduled performance as of the date of approval. This process of approving cash flow schedules will occur with each required schedule update.

The approval Cash Flow Schedule will be used by the Owner to program funds for progress payments. Monthly payments will be made in accordance with the Contract Agreement, but at no time will the aggregate amount of payments exceed the accumulated amount of payments for the same period of the approval Cash Flow Schedule.

F. Preconstruction Digital Recording

Prior to mobilization at the site, furnish to the Engineer a video recording of all planned construction areas, material storage areas, areas adjacent to these areas, including but not limited to, streets, driveways, sidewalks, curbs, ditches, fencing, railing, visible utilities, retaining structures and adjacent building structures. The purpose of the recording is to document existing conditions and to provide a fair measure of required restoration. Care should be taken to record all existing conditions which exhibit deterioration, imperfections, structural failures or situations that would be considered substandard.

The recording shall be high quality, in color and in a digital format. Temporary lighting shall be provided as necessary to properly record areas where natural lighting is insufficient (indoors, shadows, etc.). The recording shall include an audio soundtrack to provide the following information:

- detailed description of location being viewed referenced to Contract Drawings (ie. station no., building designation, pipeline route etc.)
- direction (N, S, E, W, looking up, looking down, etc.) of camera view
- date, time, temperature, environmental conditions at time of taping.

Any areas not readily visible by the recording shall be described in detail. Unless otherwise approved by Engineer, recording shall not be performed during inclement weather or when the ground is covered partially or totally with snow, ice, leaves, etc.

Prepare and provide as many copies/formats as are necessary to satisfy the requirements of this section. The original recording shall be submitted to the Engineer accompanied by a detailed log of the contents of each video. The recording will be maintained by the Engineer during construction and may be viewed at any time upon request. Upon final acceptance, the recording will become the permanent property of the Owner.

1.02 FINALIZING SCHEDULES

A. Prepare to present and discuss at the preconstruction meeting the schedules submitted in accordance with this specification. Unless additional information is required to be submitted, the Engineer will, within 15 working days of the preconstruction conference, provide comments. Then, resubmit the affected schedules addressing the Engineer's comments.

B. Approval of the final schedules by the Engineer is advisory only and shall not be relief of responsibility for accomplishing the work within the Contract Times. Omissions and errors in the approved schedule shall not excuse performance less than that required by the Contract. Approval by the Engineer in no way makes the Engineer an insurer of the success of those schedules or liable for time or cost overruns flowing from shortcomings in such schedules.

1.03 REQUIREMENTS FOR CONFORMING WITH SCHEDULE

A. If, in the opinion of the Engineer, work falls behind the progress schedule, the steps shall be taken, as necessary, to improve progress, and Engineer may require an increase to the number of shifts and/or overtime operations, days of work, and/or the amount of construction planned, and to submit for approval such supplementary schedule or schedules as may be deemed necessary to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to the Owner. An updated cash flow schedule will be required in this occurrence and will be provided with the supplementary schedules referenced above.

1.04 UPDATING SCHEDULES

A. Submit to the Engineer monthly updates of the schedules required per this specification section.

B. Progress and shop drawing schedule updates shall reflect the progress to date by providing actual start dates for activities started, actual finish dates for completed activities, and identifying out of sequence work, schedule logic changes and any circumstances or events impacting the current schedule. The updates shall also contain best estimates of the remaining duration for activities not completed as of the date of the update. All graphic presentations, reports and computer discs required per the initial submittal of these schedules shall be provided with each update.

C. Updated as necessary the schedule of values and cash flow schedules to reflect any changes.

1.05 ADJUSTMENT OF PROGRESS SCHEDULE AND CONTRACT TIMES

A. If there is a desire to make changes to the method of operating which affect the approved progress schedule, notify the Engineer in writing stating what changes are

proposed and the reason for the change. If the Engineer approves these changes, revise and submit for approval, without additional cost to the Owner, all of the affected portions of the schedule.

B. Shop drawings and samples which are not approved on the first submittal or within the scheduled time shall be immediately rescheduled, as well as any work which fails to pass specified tests or has been rejected.

C. The Contract Times will be adjusted only for causes specified in the General Conditions. In the event a request to adjust the Contract times is desired, furnish such justification and supporting evidence as the Engineer may deem necessary for a determination as to whether such an entitled to an adjustment of Contract Times under the provisions of the General Conditions is warranted. The Engineer will, after receipt of such justification and supporting evidence, make findings of fact and will advise in writing thereof. If the Engineer finds that any adjustment of the Contract Times is entitled, the Engineer's determination as to the total number of days adjustment shall be based upon the currently approved progress schedule and on all data relevant to the adjustment. The actual delays in activities which, according to the progress schedule, do not affect the Contract completion date shown by the critical path in the network will not be the basis for an adjustment of Contract Times.

D. From time to time it may be necessary for the progress schedule and/or Contract Times to be adjusted by the Owner to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the Owner and other unforeseeable conditions which may indicate schedule and/or Contract Times adjustments. Under such conditions, the Engineer shall require the rescheduling of the work and/or Contract Time to reflect the changed conditions, and the schedule shall be revised accordingly. No additional compensation shall be made for such changes except as provided in the General Conditions. Unless otherwise directed, take all possible actions to minimize any extension to the Contract Times and any additional cost to the Owner.

1.06 SHOP DRAWINGS

A. Promptly supply to the Engineer for approval, shop drawings with details and schedules for all items contained in the list of required Shop Drawings included at the end of this Section, or for other items as may be required by the Engineer.

B. A sufficient number of copies to allow the Owner to retain **four (4)** reviewed copies of all drawings, schedules and brochures shall be submitted for approval. Black line prints, blue line prints or reproducible transparencies are required. Blueprints (white lines on a blue background) are <u>not</u> acceptable. Each submittal shall have the job name on it and the appropriate specification section or contract drawing reference.

C. Shop drawings shall be numbered with the Water Company's file number **XXXX-XXXX** Rev. _____. Detailed procedures for numbering will be outlined at the pre-construction meeting.

D. Each copy of the submittals made to the Water Company for approval shall be prepared by the Contractor and shall have an identifying title stamp as follows:

_____-American Water
_____ Division - _____ District
_____**(Project Title)**
Specification Section _____
Shop Drawing No. ___-___-___ Rev. _____

E. As required by the General Conditions, each copy of the submittals shall also be stamped with the Contractor's approval indicating that the shop drawing has been reviewed for conformance to the Contract Documents and has been coordinated with all other work and/or trades. Identify and bring to the attention of the Engineer any deviations to the Contract Documents contained in the submittal. For shop drawings being resubmitted, identify and bring to the attention of the Engineer any revisions other than those originally requested by the Engineer.

Submittals smaller than 8½x11 inches shall be secured to paper 8½x11 inches.

Submittals will be returned, stamped with the following classifications:

a. "Approved" - There are no notations or comments on the submittal, and, in Owner's opinion, the submittal meets the requirements of the Contract Documents and the equipment may be released for production.

b. "Approved as Noted" - Notations have been made on the submittals to insure conformance with the Contract Documents. The equipment may be released for production in accordance with the notations.

c. "Not Approved" - The submittal does not meet the requirements of the Contract Documents. Submit the specified product.

d. "Revise and Resubmit" - When the material submitted is incorrect or insufficient to review properly and it is necessary to see the complete package again.

e. "Resubmit Record Copy" - Used with the review action "Approved As Noted". The resubmittal shall incorporate notations.

F. Where a submittal indicates a departure from the Contract which the Engineer deems to be a minor adjustment in the interest of the Owner not involving a change in

Contract Price or extension of Contract Times, the Engineer may approve the submittal, but the approval will contain, in substance, the following notation:

"The modification indicated on the attached submittal is approved in the interest of the Owner to effect an improvement for the Project and is accepted with the understanding that it does not involve any change in the Contract Price or Times; that it is subject generally to all Contract stipulations and covenants; and that it is without prejudice to any and all rights of the Owner under the Contract Bonds."

G. It is emphasized that the Engineer's approval of submitted data is for general conformance to the Contract Drawings and Specifications, but subject to the detailed requirements of Drawings and Specifications. Although the Engineer may check submitted data in more or less detail, such checking is an effort to discover errors and omissions in Contractor's drawings and to assist in coordinating and expediting site work, and shall in no way relieves the Contractor of the responsibility to engineer the details of the Work in such manner that the purpose and intent of the Contract will be achieved, nor shall such detail check by the Engineer be construed as placing on the Engineer, any responsibility for the accuracy, and for proper fit, functioning and performance of any phase of the Work included under this Contract.

1.07 SAMPLES

A. When required by the Engineer or where noted in other Sections of these Specifications, samples or materials shall be submitted for approval.

B. Submit samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

C. Submit samples of finishes from the full range of manufacturer's standard colors, textures, and patterns for Engineer's selection.

a. Include identification on each sample, with full project information.

b. Submit the number or samples specified in individual specification sections; one of which will be retained by Engineer.

c. Reviewed samples which may be used in the Work are indicated in individual specification sections.

1.08 PROGRESS PAYMENTS

A. The detailed arrangement for submittal of progress payments shall be discussed at the preconstruction meeting and will be in accordance with Article 14 of the General Conditions. In general, progress payments shall be submitted monthly in a format acceptable to the Engineer. The progress payment request shall be based on the

approved schedule of values and should provide the number of unites completed, total dollar value completed, dollar value completed prior to the current payment, and the amount requested for this progress payment for each line item contained in the schedule of values. Progress payment requests for material and/or equipment suitably stored but not yet incorporated into the work shall be accompanied by a copy of the appropriate manufacturers invoice, shipping order, bill of lading, etc. and the progress payment amount shall be the direct cost to the Contractor, or subcontractor, for such material and/or equipment. Payment will not be made if, upon inspection by the Engineer, it is determined that the material and/or equipment does not conform to the requirements of the Contract Documents including proper storage, receipt of approved shop drawings, receipt of any special guarantees, Bonds, insurance coverage, any evidence of damage or imperfections, etc.

1.09 CONTRACTOR'S DAILY REPORTS

A. If requested by the Engineer or the Resident Project Representative, prepare and submit daily reports containing the following information:

   a. number of craftsmen and hours worked of each subcontractor,
   b. number of hours worked by each trade,
   c. number of hours worked of each type of equipment,
   d. description of work activities performed,
   e. description of any material or equipment deliveries,
   f. description of obstructions encountered,
   g. temperature and weather conditions.

B. The daily reports shall be submitted on a daily basis, by the end of the next business day.

C. Information provided on the daily report shall not constitute notice of delay or any other notice required by the Contract Documents. Notice shall be as required therein.

1.10 OPERATING AND MAINTENANCE INSTRUCTION MANUALS

Not Used

1.11 CONSTRUCTION PHOTOGRAPHS

A. Provide construction photographs taken within the first three working days of each month. Take a minimum of twelve (12) digital exposures each and submit digital copies of each exposure.

B. When work is complete take twelve (12) additional digital photographs and submit electronic copies of each exposure.

C. Employ a mutually acceptance commercial photographer who has shown Owner samples of his/her work. Photographer shall be equipped at all times to make either interior or exterior exposures.

D. Digital copies shall be in JPG (Joint Photographic Experts Group) format.

E. Consult with Engineer for instructions concerning view required at each specified visit to the site. Provide digital copies on computer disks or thumb drive.

F. Deliver photographs monthly to Engineer.

PART 2: PRODUCTS

Not Used.

PART 3: EXECUTION

Not Used.

END OF SECTION 01300

SECTION 01500

TEMPORARY FACILITIES

PART 1: GENERAL

1.01 WATER SUPPLY

A. If reasonably available, water for the purpose of this Contract will be supplied by the Owner. All necessary meters, temporary piping and valves in connection with such water supply shall be furnished and installed by the Contractor.

B. The Owner reserves the right to impose limitations upon use of water as the Owner determines may be necessary to assure continued ability to meet the demands of its customers and the volumes and pressures required for fire protection. Any water required in excess of the quantities the Owner provides shall be furnished by the Contractor at cost.

1.02 TEMPORARY LIGHTING

A. Provide and maintain lighting for construction operations and lighting to exterior staging and storage areas after dark for security purposes.

1.03 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing buildings. Provide protection for plant life designated to remain. Replace damaged plant life.

1.04 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition. Remove waste materials, debris, and rubbish from site weekly and dispose off-site.

1.05 SANITARY FACILITIES

A. Provide suitable temporary facilities and enclosures for the use of workmen and shall maintain same in a sanitary condition.

B. Be advised that the Owner is in the business of providing potable water and the Contractor's sanitary arrangements shall not endanger the Owner's facilities.

1.06 DUST CONTROL

A. Take all necessary measures to control dust from his operations, and to prevent spillage of excavated materials on public roads.

B. Remove all spillage of excavated materials, debris or dust from public roads by methods approved by the Engineer.

C. Sprinkle water at locations and in such quantities and at such frequencies as may be required by the Engineer to control dust and prevent it from becoming a nuisance to the surrounding area.

D. Dust control and cleaning measures shall be provided at no additional cost to the Owner.

1.07 USE OF PROJECT SITE

A. Construct and maintain suitable and safe crossings over trenches or provide detours as necessary to care for public and private traffic. Provide flagmen at junctions of public traffic and Contractor vehicles and equipment.

B. Usage, and requirements for usage, of site shall be coordinated with the local jurisdiction. Costs related to temporary usage shall be considered incidental to Traffic Control.

PART 2: PRODUCTS

Not Used.

PART 3: EXECUTION

Not Used.

END OF SECTION 01500

SECTION 01560

TEMPORARY ENVIRONMENTAL CONTROLS

PART 1: GENERAL

1.01 REQUIREMENTS INCLUDE

A. The Contractor shall provide controls over environmental conditions at the construction site and related areas under the Contractor's control.

B. The Contractor shall remove physical evidence of temporary controls at completion of work or as directed.

1.02 RELATED REQUIREMENTS

A. Specified elsewhere:

1. Section 02222 – Excavation
2. Section 02223– Backfill and Compaction

B. *ILLINOIS URBAN MANUAL, A Technical Manual Designed for Urban Ecosystem Protection and Enhancement by the Natural Resources Conservation Service and Illinois Environmental Protection Agency*, January 2002 or latest edition.

1.03 NOISE CONTROL

A. All engines and engine driven equipment used for hauling or construction shall be equipped with an adequate muffler in constant operation and properly maintained to prevent excessive or unusual noise.

1.04 DUST CONTROL

A. Provide dust control materials to minimize dust from construction operations. Prevent air-borne dust from dispersing into the atmosphere.

1.05 WATER CONTROL

A. Provide methods to control surface water to prevent damage to the project, the site or adjoining properties.

B. Provide, operate and maintain hydraulic equipment of adequate capacity to control surface water.

C. Dispose of drainage water in a manner to prevent flooding, erosion, silting or runoff of silt or sediment or other damage to all portions of the site or to adjoining areas.

D. Provide methods to control surface and rain water so that water is not allowed into open excavations.

1.06 DEBRIS CONTROL

A. Maintain all areas under Contractor's control free of extraneous debris.

B. Initiate and maintain a specific program to prevent accumulation of debris at construction site, storage and parking areas or along access roads and haul routes.

1. Provide containers for deposit of debris as specified in 01740.
2. Prohibit overloading of trucks to prevent spillages on access and haul routes.

C. Provide daily inspection of traffic areas to enforce requirements.

D. Schedule collection and disposal of debris as specified in 01740.

E. Provide additional collections and disposals of debris whenever regular schedule is inadequate to prevent accumulation.

1.07 POLLUTION CONTROL

A. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.

B. Provide equipment and personnel, perform emergency measures required to contain all spillage, and to remove contaminated soils or liquids.

C. Take special measures to prevent harmful substances from entering public waters.

D. Prevent disposal of wastes, effluents, chemicals or other such substances adjacent to streams, drainage ditches, or in sanitary or storm sewers.

E. Provide temporary concrete washout area/facility as detailed in the Illinois Urban Manual (Latest Edition).

F. Provide systems for control of atmospheric pollutants.

1. Prevent toxic concentrations of chemicals.
2. Prevent harmful dispersal of pollutants into the atmosphere.

1.08 EROSION CONTROL

A. Plan and execute construction and earthwork in a manner to control surface drainage from cuts and fills, and from contaminated soil staging areas, to prevent erosion and sedimentation. The design and implementation of erosion control measures and construction activities in accordance with *"ILLINOIS URBAN MANUAL, A Technical Manual Designed for Urban Ecosystem Protection and Enhancement by the Natural Resources Conservation Service and Illinois Environmental Protection Agency,"* January 2002 or latest edition.

1. Minimize the areas of bare soil exposed at one time.
2. Provide temporary control measures such as berms, dikes and drains.
3. Provide temporary control measures to prevent silting or runoff of silt or sediment from site.

B. Construct fills and waste areas by selective placement to eliminate surface silts or clays which will erode.

C. Periodically inspect earthwork to detect evidence of the start of erosion. Apply corrective measures to control erosion.

PART 2: PRODUCTS (RESERVED)

PART 3: EXECUTION (RESERVED)

END OF SECTION 01560

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SECTION 01600

PRODUCTS

PART 1: GENERAL

1.01 PROTECTION OF MATERIAL AND EQUIPMENT

A. The interior of all pipes and accessories shall be kept free from dirt and foreign matter at all times.

B. After valves and hydrants have been inspected, properly store them prior to use. In order to prevent entry of foreign material that could cause damage to the seating surfaces, the valves and hydrants shall be stored in a fully closed position unless recommended otherwise by the manufacturer. Resilient seated valves shall be stored in accordance with the manufacturer's recommendations. This may include storage with protective covers for rubber seats and in marginally open condition. Valves and hydrants should be stored indoors.

C. If valves must be stored outdoors, protect the operating mechanism, such as gears, motor, actuators and cylinders, from weather elements. Valve ports and flanges must be protected from the weather and foreign materials. If valves are subject to freezing temperatures, all water must be removed from the valve interior and the valve closed tightly before storage, unless specifically recommended otherwise by the manufacturer. Valves shall be stored on pallets with the discs in a vertical position to prevent rainwater from accumulating on top of the disc, seeping into the valve body cavity and freezing and cracking the casting.

1.02 SERVICING EQUIPMENT

A. Check all equipment upon acceptance to determine if oil reservoirs are full and areas to be greased are properly packed with grease. Provide the proper grease or oil for use in lubricating the required areas in the equipment. Perform any service to equipment while in storage, or installed pending acceptance, per manufacturer's requirements, industry standards or as stated specifically in the technical specifications.

1.03 MATERIAL/EQUIPMENT FURNISHED BY OWNER

A. Certain material and equipment will be furnished by the Owner as noted in the Contract Documents. Responsibility for material and/or equipment furnished by the Owner shall begin upon the Contractor's acceptance of such material and/or equipment at the point of delivery to him. All material and equipment shall be examined, and items found to be defective in manufacture and/or otherwise damaged shall be rejected at the time and place of delivery to him. The Owner will thereupon repair or replace the damaged items.

B. After acceptance of material and/or equipment by Contractor at point of delivery to him, Contractor shall be responsible for the proper storage, handling, servicing and installation of such material and/or equipment in accordance with manufacturer's recommendations, industry standards or specific requirements of the Contract Documents. Any material and/or equipment found to be defective prior to acceptance by the Engineer shall be repaired or replaced by contractor at no additional cost to Owner unless Contractor submits proof that such defect was latent and could not have been detected by Contractor when performing his duties and responsibilities under these Contract Documents.

C. Contractor's vs. Owner's responsibilities for providing guarantees or warranty and manufacturer's representatives for service, inspection, certification of installation, installation, field training, start-up, etc. for material and/or equipment furnished by Owner shall be as follows unless otherwise specified: The Owner will provide the warranty and Contractor is responsible for providing manufacturer's representatives for all necessary field service, start-up service, installation certifications, installation, field training of Owner's personnel, etc. for Owner furnished material and/or equipment as required for acceptance of such material and/or equipment in the completed project.

PART 2: PRODUCTS

2.01 GENERAL

A. Unless otherwise specifically provided for in these Specifications, all equipment, materials and articles incorporated in the work shall be new, in current production and the best grade obtainable consistent with general construction usage.

2.02 COORDINATION OF DIMENSIONS

A. Verify and make necessary corrections to construction dimensions so that all specified and/or alternative equipment, which is approved by the Engineer, can be installed and will function within the intent of the Contract Drawings and Specifications. Promptly notify the Engineer of all necessary corrections required.

2.03 SAFETY AND HEALTH REQUIREMENTS

A. All materials, equipment, fixtures and devices furnished shall comply with applicable Laws and Regulations.

B. All equipment furnished and installed under this Contract shall be equipped with suitable and approved safety guards and devices required for the safety of the public and operating personnel. Such guards and safety devices shall be in accord with the latest requirements of safety codes approved by the American National Standards Institute as well as the safety requirements of applicable Laws and Regulations. Where said safety codes of the ANSI are incompatible with applicable Laws and Regulations, said Laws and Regulations shall prevail.

PART 3: EXECUTION

3.01 INSTALLATION

A. Material and equipment shall be installed in accordance with the appropriate Sections of these Specifications.

END OF SECTION 01600

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SECTION 01700

PROJECT CLOSEOUT

PART 1: GENERAL

1.01 TESTING OF FACILITIES

A. Produce a first-class job and all Work shall be tested under operating conditions and pressures. Any leaks or malfunctions shall be repaired to the satisfaction of the Engineer at no additional expense to the Owner. This provision with reference to leakage shall also apply to water tightness of buildings.

1.02 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's inspection. Provide submittals to Engineer that are required by governing or other authorities. Submit Application for final payment identifying total adjusted Contract sum, previous payments, and sum remaining due.

1.03 FINAL CLEANING

A. Execute final cleaning prior to final inspection. Clean debris from drainage systems. Clean site; sweep paved areas, rake clean landscape surfaces. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.04 PROJECT RECORD DOCUMENTS

A. Maintain on site, one set of the following record documents; record actual revisions to the Work:

1. Contract drawings
2. Specifications
3. Addenda
4. Change orders and other modifications to the Contract
5. Reviewed shop drawings, product data, and samples

B. Store record documents separate from documents used for construction. Record information concurrent with construction progress.

C. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:

1. Manufacturer's name and product model and number

2. Product substitutions or alternates utilized
3. Changes made by addenda and modifications

D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured depths of foundations in relation to finish floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract Drawings.

E. Submit documents to Engineer with final Application for Payment.

1.05 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.

1.06 GUARANTEES AND WARRANTIES

A. The Contractor expressly warrants that all workmanship and materials performed or furnished under this Contract will conform to the Specifications, Drawings, samples and other applicable descriptions furnished or adopted by the Contractor and with all applicable laws, provisions and requirements of the Contract Documents. The Contractor shall remedy any defects due to faulty materials or workmanship which shall appear within a period of one (1) year from the date of acceptance of the work hereunder and pay for any damage to other work resulting therefrom. The Owner shall give notice of observed defects with reasonable promptness. The Contractor warranty hereunder is in addition to, and not in limitation of, any obligations found elsewhere in the Contract Documents, any special guarantees provided by the Contractor or his suppliers, and any obligations imposed by law.

B. In addition to the above requirements, the Contractor shall assign material and equipment guarantees and warranties from all manufacturers and suppliers to the Owner and deliver copies of such guarantees and warranties and the assignments thereof to the Owner in order to assure the Owner of the full benefit of such guarantees and warranties.

1.07 RESTORATION

A. Restore and/or replace paving, curbing, sidewalks, gutters, shrubbery, fences, sod or other disturbed surfaces and structures to a condition equal to that before the work began and to the satisfaction of the Engineer and shall furnish all labor and materials incidental thereto.

B. The Contractor shall coordinate with the roadway contractor to determine the responsibilities of each project in terms of final surface restoration.

PART 2: PRODUCTS

Not Used.

PART 3: EXECUTION

Not Used.

END OF SECTION 01700

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SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1: GENERAL

1.01 SUMMARY

A. Section Includes requirements for preparation of Record Documents (also known as "As-Builts").

B. Related Requirements Specified Elsewhere:
   1. Section 01300 – Submittals: Procedural requirements for Submittals.
   2. Section 01700 – Contract Closeout: Substantial Completion requirements.

1.02 DESCRIPTION

A. Project Record Documents are a complete set of Contract Documents and Drawings prepared by Contractor from a set of Base Documents furnished by Engineer and from Field Sets of Contract Documents.

B. Field Sets of Contract Documents be used for field construction purposes shall be maintained and annotated by the Contractor during construction to record approved changes, additions, addenda, options and deviations and pertinent field notes to Contract Documents.

1.03 SUBMITTALS

A. In accordance with Section 01300 – Submittals.

B. Submit, at Substantial Completion, one set of Project Record Documents. A Field Set of Contract Documents will not be acceptable.

C. Submit record drawings as follows:
   1. Initial Submittal: Submit one set of marked-up Record Prints. Engineer will review and return with comments whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
   2. Final Submittal. Submit one set of marked-up Record Prints complete whether or not changes and additional information were recorded on each sheet.

D. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications.

E. Record Product Data: Submit one copy of each Product Data submittal.
    1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2: PRODUCTS

2.01 BASE DOCUMENTS

A. Engineer will furnish the Contractor with two (2) sets of Contract Drawings (black line prints), one set of Contract Specifications and one set of Contract Addenda to be used in preparation of Record Documents.

2.02 RECORD DOCUMENTS

A. Record Documents shall not be used for field construction purposes.

B. All changes, additions, addenda, options and deviations and pertinent field notes shall be clearly marked using neat, ruled lines and legible notes and dimensions as follows.
    1. Options and deviations to Contract Documents with red ballpoint pen.
    2. All notes, explanations, and sketches with blue ballpoint pen.

C. Maintain on project site, one (1) copy each of the following:
    1. Contract Drawings
    2. Bid Booklet
    3. Interpretations and Supplemental Instructions
    4. Addenda
    5. Reviewed Shop Drawings
    6. Change Orders
    7. Other Modifications to Contract
    8. Field Test Records
    9. All Schedules
    10. Correspondence File

2.03 FIELD SETS

A. Field Sets of Contract Documents shall be used for field construction purposes and shall be marked with information required for Project Record Documents.

2.04 INFORMATION TO RECORD

A. Label "PROJECT RECORD DOCUMENTS" in 2" high printed letters on each document. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

1. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
2. Accurately record information in an understandable drawing technique.
3. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
4. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Contract Drawings - record actual construction to include but not be limited to the following:
    1. Depths of various elements of foundation in relation to floor level.
    2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
    3. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
    4. Field changes of dimension and detail.
    5. Changes made by Change Order.
    6. Details not on original contract drawings.

C. Specifications and Addenda - legibly mark up each section to record:
    1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
    2. Changes made by Change Order or Field Order.
    3. Other matters not originally specified.

E. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
    1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
    2. Consult Engineer for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.

F. Format: Identify and date each Record Drawing; include the designation “PROJECT RECORD DRAWING” in a prominent location. Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2.05 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
   1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
   2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
   3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
   4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
   5. Note related Change Order, Record Product Data and Record Drawings where applicable.

2.06 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
   1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
   2. Include significant changes in the product delivered to Project site and changes in manufacturer’s written instructions for installation.
   3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.07 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3: EXECUTION

3.01 MAINTENANCE

A. Keep record documents up to date during progress of the Work by marking any and all changes, additions, addenda, options and deviations and pertinent field notes at the time the work is executed.

B. Indicate on Field Sets all alterations and deviations from original documents known to Each Contractor's and Sub-Contractor's Superintendent on job during course of completion of project.

C. Transfer required information to Record Documents using neat, ruled lines and legible notes and dimensions.

3.02 STORAGE

A. Store documents in temporary field office apart from documents used for field construction.

B. Provide files and racks for document storage.

C. Maintain documents in clean, dry legible condition. Protect from deterioration and loss in secure, fire-resistive location.

D. Make documents available during normal working hours for inspection by Engineer and Owner.

3.03 COMPLETION

A. Maintain and store record documents until satisfactory completion of the Contract and submittal of record documents to the Engineer.

B. The contract closeout and final payment under this contract **will not** be finalized and approved until a complete and accurate set of record documents, as described above, have been submitted to the Engineer, reviewed for accuracy and accepted.

END OF SECTION 01720

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SECTION 01740

CLEANING

PART 1: GENERAL

1.01 SUMMARY

A. Section Includes:

1. Requirements for site maintenance during progress of the Work and for final cleaning.

B. Related Requirements Specified Elsewhere:

1. Section 01010 - Summary of Project.
2. Division 2: Cleaning requirements for specific products or work.

1.02 GENERAL

A. At all times maintain areas covered by the Contract, public properties, and adjacent properties free of waste, debris and rubbish caused by construction operations.

B. At completion of work, or at such other times as directed by the Engineer, remove all waste, debris, rubbish, tools, equipment, machinery and surplus materials. Clean all sight-exposed surfaces; leave work clean and ready for occupancy.

C. At completion of project, leave project clean and ready for occupancy.

1.03 QUALITY REQUIREMENTS

A. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

B. Do not burn or bury rubbish, extra or waste materials on project site.

C. Do not dispose of volatile, harmful or dangerous materials into drainage systems or sanitary drains. Do not dispose of waste into streams or waterways.

D. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

E. Provide approved on-site containers for collection and disposal of waste materials, debris, and rubbish as required.

F. Handle materials in a controlled manner with as few handlings as possible; do not drop

or throw materials from heights.

1.04 SAFETY REQUIREMENTS

A. Standards:

1. Maintain project in accordance with following safety and insurance standards:

a. Applicable Federal and State requirements.
b. National Fire Protection Association (NFPA).

B. Hazards Control:

1. Store volatile waste in covered metal containers and remove from premises daily.
2. Prevent accumulation of waste which create hazardous conditions.
3. Provide adequate ventilation during use of volatile or noxious substances.

PART 2: PRODUCTS

2.01 CLEANING MATERIALS

A. Select and use all cleaning materials and equipment with care to avoid scratching, marring, defacing, staining or discoloring surfaces cleaned.

B. Use only cleaning materials recommended by the manufacturer of surface to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3: EXECUTION

3.01 DURING CONSTRUCTION

A. During execution of work, clean site and public properties and dispose of waste materials, debris, and rubbish to assure that site and public properties are maintained free from accumulations of waste materials and rubbish.

B. Wet down materials and rubbish to lay dust and to prevent blowing dust.

C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed and semi-exposed surfaces that are the finished surface.

D. Repair, patch, and touch up marred surfaces to specified finish to match adjacent surfaces.

E. Broom clean paved and smooth surfaces; rake clean other surfaces.

F. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

G. Conduct daily cleanup of adjacent roads as required due to truck traffic and transportation of materials and worker's onsite and offsite.

3.02 FINAL CLEANING

A. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion in accordance with Section 01700 - Closeout Procedures.

1. Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition.

2. Clean the site, including landscaping development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

3. Remove grease, dust, dirt, stains, labels, fingerprints, protection and other foreign materials from sight-exposed interior and exterior finished surfaces.

4. Repair, patch and touch up marred surfaces to specified finish to match adjacent surfaces.

B. Removal of Protection:

1. Remove temporary protection and facilities installed for protection of work during construction.

END OF SECTION 01740

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MAXWELL ROAD WATERMAIN RELOCATION

DIVISION 2 – SITE WORK

TABLE OF CONTENTS

SECTION 02000

SITE PREPARATION

PART 1: GENERAL

1.01. SUMMARY

This section includes preparing the site for construction including dewatering; identification, location, and protection of existing utilities and structures, exploratory excavation; and clearing and grubbing.

1.02. SCOPE OF WORK

A. Dewatering - Should water be encountered, furnish and operate pumping equipment of sufficient capacity to dewater the trench. Dewater the trench so that the laying and joining of the pipe is made in a dry environment to prevent water from entering the pipe during construction.

B. Existing Utilities and Structures - Certain information regarding the reputed presence, size, character, and location of existing Underground Facilities such as pipes, drains, sewers, electrical lines, telephone lines, cable TV lines, gas lines, and water lines has been shown on the Contract Drawings and/or provided in the contract documents. This information with respect to Underground Facilities is provided by the Owner in accordance with conditions described in the General Conditions and for information purposes only. Contractor is responsible to determine actual location of all utilities in proximity to the Work. Furnish all materials for temporary support, adequate protection, and maintenance of all underground and surface utility structures, supports, drains, sewer and other obstructions encountered in the progress of the Work.

C. Exploratory Excavation – When the owner's assets are incorrectly shown on the plans, or marked in the field, it may be necessary to utilize Exploratory Excavation in order to locate the assets required to advance the construction. Exploratory Excavation may be shown on the plans or as approved by the Engineer.

D. Clearing and Grubbing – Provide all materials and equipment required to complete all clearing and grubbing in accordance with this Specification Section. Remove and dispose of all obstructions within the clearing limits, unless otherwise noted for replacement. Protect existing trees, shrubs and bushes located outside the clearing limits from damage for the life of this Contract.

PART 2: PRODUCTS

Not Used.

PART 3: EXECUTION

3.01. PERMITS

The Contractor shall obtain and pay for any permits required for site preparation.

A. Dewatering - Convey all trench water to a natural drainage channel or storm sewer without causing any property damage. Discharge shall be in strict accordance with State and/or Local requirements. Dispose of silt and debris which accumulates during construction in strict accordance with State and/or Local requirements.

B. Notification of Utilities - Notify the applicable State Agency with jurisdiction over underground facilities and/or all utility companies that construction work under this Contract will pass through containing their underground facilities. Notify these parties in advance to support the construction work (**minimum 72 hours**). All excavation in the vicinity of existing underground utilities shall be performed in accordance with applicable regulations.

C. Clearing and Grubbing - Comply with State and Local code requirements when disposing of trees, shrubs and all other materials removed under this Specification Section. Burning of logs, stumps, roots, cuttings and other material on the site will not be permitted.

3.02. OBSTRUCTIONS BY OTHER UTILITY STRUCTURES

A. Support, relocate, remove, or reconstruct existing utility structures such as conduits, ducts, pipes, branch connections to main sewers, or drains. The obstruction shall be permanently supported, relocated, removed or reconstructed where they obstruct the grade or alignment of the pipe. Contractor must do so in cooperation with the owners of such utility structures. Before proceeding, the Contractor must reach an agreement with the Engineer on the method to work around the obstruction.

B. No deviation shall be made from the required line or depth without the consent of the Engineer.

3.03. REPAIRS TO/RELOCATION OF EXISTING UTILITIES

A. Repair or replace any damage to existing structures, work, materials, or equipment incurred by Contractor’s operations.

B. Repair all damage to streets, roads, curbs sidewalks, highways, shoulders, ditches, embankments, culverts, bridges, trees, shrubs or other public or private property caused by transporting equipment, materials or personnel to or from the work site. Make satisfactory and acceptable arrangements with the persons or agencies having jurisdiction over the damaged property concerning repair or replacement.

C. Repair or replace all utility services broken or damaged at once to avoid inconvenience to customers. Storm sewers shall not be interrupted overnight. Use temporary arrangements, as approved by the Engineer, until any damaged items can be

permanently repaired. Maintain all items damaged or destroyed by construction and subsequently repaired.

D. Relocate existing utilities or structures, where necessary, and restore it to a condition equal to that of the original facility. Obtain approval of the owner of the utility or structure prior to relocating and/or restoring the facility.

E. See Standard Details for requirements for repair or replacement of sanitary or storm drains removed or damaged during installation of the water main.

3.04. WATER MAIN AND WATER SERVICE LINE PROTECTION FROM SEWERS

A. Water mains and water service lines shall be protected from sewers, sewer laterals, drains, and septic fields in accordance with Illinois Administrative Code, Title 35, Subtitle F, Chapter II, Parts 651-654 and as shown on the Drawings.

B. Notify Engineer if existing site conditions prevent proper protection of water main and water service lines as shown in the Drawings.

3.05. EXPLORATORY EXCAVATION

A. All Exploratory Excavation shall be in accordance with Section 02210 of these specifications and at the direction of the Engineer.

3.06. CLEARING AND GRUBBING

A. Clear and grub the Work site within easement and/or clearing limit lines shown on the Drawings or as shown elsewhere in the Contract Documents. Remove those items that are designated for removal or obstruct construction. This includes, but is not limited to; trees, downed timber, shrubs, bushes, vines, roots, stumps, undergrowth, rubbish, paving materials, debris, and all other objectionable materials. Site objects outside clearing limits shall not be removed. Only those portions of the construction area which are absolutely necessary and essential for construction shall be cleared. Minimize the length of time of ground disturbance as much as practical, especially within environmentally sensitive areas. Ground shall not be cleared and grubbed until immediately prior to construction.

B. Notify the Engineer of locations where additional trees and shrubs will interfere with installation of facilities. Do not remove additional trees or shrubs without written permission of Engineer. Conduct operations to minimize disturbance of trees and shrubs. Trim trees and roots in accordance with the best horticultural practices, including sealing cuts to preserve the tree.

C. Remove site improvement objects such as signs, lawn ornaments, etc. which interfere with construction. Removed site improvement objects shall be stored in a manner protecting objects for reinstallation after construction is complete. Relocate the mailbox as necessary. Provide temporary traffic control signs when permanent signs are removed for construction. Temporary signs shall be worded to match permanent

signs, except as necessary to be compatible with construction operations.

D. Remove pavement, curb and sidewalk in accordance with applicable State Standards for Road and Bridge Construction and as specified in these Contract Documents. Saw cuts may be eliminated where paving abuts curb or roadway expansion joints or construction joints, and pavement can be removed without damaging or disturbing curbs or remaining pavement. Remove sidewalks in full squares only. Saw cut sidewalks if no true joint exists.

3.07. BASIS OF PAYMENT

Site Preparation will be considered incidental to the project. No additional compensation will be provided for Site Preparation.

No additional compensation will be allowed for any reasonably anticipated dewatering operation, overtime, equipment rental or any other expense incurred due to the occurrence of ground water, surface water or water from possible leakage of existing buildings, structures and piping in the vicinity of the Contractor's operations. If Contractor believes unreasonable, unanticipated wet conditions exist, immediately contact Engineer to decide appropriate measures and to determine whether Contractor is entitled to additional compensation.

END OF SECTION 02000

SECTION 02210

TRENCHING, BACKFILLING AND COMPACTING

PART 1: GENERAL

1.01. SUMMARY

This section includes trenching, backfilling and compacting at locations and elevations shown on the Drawings and as needed to meet requirement of Contract Documents. Furnishing and installing identification tape and location wire over the centerline of water mains, hydrant branches, and trenched services as indicated in this specification or noted in the Drawings.

1.02. DEFINITIONS

Refer to the Standard Details for Trench Terminology and Definitions.

1.03. REFERENCES

Refer to current standards:

A. ASTM: American Society for Testing and Materials

B. AASHTO: American Association of State Highway and Transportation Officials

C. Standard Specifications for Water and Sewer Construction in Illinois

1.04. SUBMITTALS

A. All backfill materials (to be used for backfilling, haunching, and bedding depending on local requirements), including common fill and selected fill, ¾-inch clean granular fill, ¾-inch modified stone, ¾-inch minus granular fill, and sand shall be approved by the Engineer prior to placing the materials in the pipe trench. Test all backfill materials, whether obtained from the trench excavation or from an off-site source, as directed by the Engineer.

B. Submit samples of the materials to an approved testing agency for analysis as required by the Engineer. Submit the testing agency's test results and report to the Engineer. The report must state that the materials meet the requirements of these Specifications and the Specifications of Federal, State and Local authorities (where applicable). Provide flowable fill in areas where it is required by the local street regulator and other areas specified in the Drawings.

C. Submit in accordance with Section 01300.

1.05. SITE CONDITIONS

A. Contours, topography and profiles of the ground shown on the Drawings are believed to be reasonable approximations and are not guaranteed.

B. The Contractor accepts the construction site with the conditions that existed at the time of bidding.

PART 2: PRODUCTS

2.01. COARSE AGGREGATE

A. ¾ inch clean granular fill material shall meet the sieve analysis requirements of AASHTO as follows: 1-inch sieve passing 100%, ½-inch sieve passing 0-5%, and sieve size No 4 passing 0-1%. This material may be wrapped in filter fabric (trench bottom, side, and over top of clean granular fill), as directed by the Engineer, to prevent the migration of finer grained soils into this material or the migration of this material into the trench bottom or sidewall.

B. ¾ inch Minus or Modified granular fill material contains additional fine material and may be used as noted in specific pipe specifications. Material shall meet the sieve analysis requirements of AASHTO as follows: 1-inch sieve passing 100%, ¾-inch sieve passing 80-90%, No 4 sieve passing 25-50%, No 10 sieve passing 0-20% No 200 passing sieve 0-5%.

2.02. FINE AGGREGATE

A. Fine Aggregate shall be natural or manufactured sand, or a combination thereof, free from injurious amounts of salt, alkali, vegetable matter or other objectionable material. The fine aggregate shall conform to the following gradation:

Sieve Size	**% Passing**
3/4 inch	100
No. 200	0-10

2.03. COMMON FILL

A. Common fill is suitable for final backfill.

B. Common Fill shall be earth materials entirely free of: vegetation; trash; lumber; and frozen, soft or organic materials. No stones or rocks larger than the sizes listed below will be permitted in the Common Fill:

Common Fill-Type A: No stones or rocks larger than 1-inch

Common Fill-Type B: No stones or rocks larger than 4-inches (measured longest dimension). At the discretion of the Engineer and depending upon the quality of

the material, stones and rocks up to a maximum of 6 inches may be allowed on the area one foot above the pipe.

C. Common fill material may be obtained from the trench excavation provided it has been tested in accordance with the requirements of Specification Section 02210.1.04 above and approved by the Engineer. Furnish the necessary approved common fill materials from an off-site source whenever approved material obtained from the trench excavation is insufficient to complete the backfill.

2.04. FILTER FABRIC

Filter fabric shall be porous, non-woven fabric with multiple layers of randomly arranged fibers minimum 4.0 ounce per square yard.

Acceptable manufacturers are listed in the most current version of the Supplemental Technical Specifications.

2.05. FLOWABLE FILL

A. Flowable fill is suitable for use as backfilling for utility trenches. The basic requirements for furnishing, mixing, and transporting flowable fill are as follows. Materials shall conform to the following standards: Cement ASTM C 150, Fly Ash ASTM C 618, Class C or Class F. Fine Aggregate shall be natural or manufactured sand, or a combination thereof, free from injurious amounts of salt, alkali, vegetable matter or other objectionable material. It is intended that the fine aggregate be fine enough to stay in suspension in the mortar to the extent required for proper flow. The fine aggregate shall conform to the following gradation:

Sieve Size	**% Passing**
3/4 inch	100
No. 200	0-10

If a flowable mixture cannot be produced, the sand may be rejected.

B. The following are given as typical mix designs for trial mixes. Adjustments of the proportions may be made to achieve proper solid suspension and optimum flowability. Admixtures may be used if desired to improve the characteristics of the mix. The suggested quantities of dry material per cubic yard are as follows:

- **Option 1**
  Cement 50 lbs., Fly Ash 250 lbs., Fine Aggregate 2910 lbs., Water approximately 60 gallons
- **Option 2**
  Cement 100 lbs., Fly Ash 250 lbs., Fine Aggregate 2800 lbs., Water approximately 60 gallons
- **Option 3**
  Cement 100 lbs., Fly Ash 300 lbs., Fine aggregate 2600 lbs., Water approximately 70 gallons

C. Consistency may be tested by filling an open-ended three-inch diameter cylinder six inches high to the top with flowable fill. The cylinder shall be immediately pulled straight up and the correct consistency of the flowable fill shall produce a minimum eight-inch diameter circular-type spread with no segregation.

Materials are to be measured by weight and/or volumetric methods. The flowable fill may be mixed in a central concrete mixer, a ready-mix truck, or by other acceptable methods. The flowable fill shall be transported to the point of placement in a revolving drum mixer or in an agitator unit.

PART 3: EXECUTION

3.01. CONSTRUCTION EQUIPMENT

All backfilling and materials handling equipment shall have rubber tires when mains are located in or adjacent to pavements. Crawler equipment shall be permitted when there is no danger of damaging pavement. It is the Contractor's responsibility to repair, at their expense, any damages due to the use of any equipment to complete the Work.

3.02. NOSE, DUST AND ODOR CONTROL

Conduct all construction activities so as to eliminate all unnecessary noise, dust and odors.

3.03. PROTECTION OF TREES

Take special care to avoid damage to trees and their root system. Open trenching shall not be used for areas marked on the Drawings and designated "ROOT PROTECTION ZONE". In these areas, methods to be used include tunneling or boring. In other areas where established trees are to remain with roots in the path of the trench line, the Engineer shall direct acceptable means to install pipe through tree roots. In these areas, methods to be used shall include careful cutting (not ripping or tearing) of larger tree roots. In all cases, operate equipment within the limb spread in a manner which will not injure trees, trunks, branches or their roots. Pay particular attention when employing booms, storing materials, and handling excavated materials.

3.04. TRENCH SUPPORT

Support open cut excavation for mains where trenching may cause danger to life, unnecessary damage to street pavement, trees, structures, poles, utilities, or other private or public property. Support the sides of the excavation by adequate and suitable sheeting, shoring, bracing or other approved means in accordance with all applicable Federal, State, County, Municipal, and OSHA rules and regulations during the progress of the Work, whenever and wherever it is necessary. Maintain the trench support materials and equipment in place until backfilling operations have progressed to the point where the supports may be withdrawn without endangering life or property.

3.05. TRENCH EXCAVATION AND BOTTOM PREPARATION

A. General Excavation shall consist of the satisfactory removal and disposal of all material taken from within the limits of the Work contracted, meaning the material lying between the original ground line and the finished ground line as shown on the Drawings regardless of whether the original ground line is exposed to air or is covered by water. Excavation below existing ground line to enable any required construction or removals is included. It is distinctly understood that any reference to earth, rock, silt, debris or other materials on the Drawings or in the Specifications is solely for the Owner's information and shall not be taken as an indication of classified excavation or the quantity of earth, rock, silt, debris or other material encountered.

General Excavation includes excavation to the lines and grades indicated on the Drawings or established in the field by the Engineer. Backfill over-excavated areas with approved fill material. All labor and materials shall be furnished at the Contractor's expense.

Keep all excavations free from water. Maintain groundwater a minimum of 6 inches below excavations. Remove soil which is disturbed by pressure or flow of groundwater and replace with free draining material.

Remove pavement over excavations made in paved roadways by saw cutting, milling, or removal by a trench machine. Cut the full depth of the pavement with straight lines and squared edges.

Dispose of excess excavated materials and excavated materials unsuitable for backfilling off site. Furnish the Engineer with satisfactory evidence that an appropriate disposal site was used.

B. Rock Excavation shall consist of the removal, hauling, stockpiling and/or proper disposal of the rock. Rock is defined as

1. Boulders, or pieces of concrete or masonry, having a volume of one-half (1/2) cubic yard or more;
2. Material which cannot be loosened or broken down by ripping with a hydraulic ripper or other Engineer approved devices and equipment designed to remove rock; or
3. Material that requires systematic blasting, backhoe ramming, barring, or wedging for removal.

Notify the Engineer promptly upon encountering rock. The Engineer's determination as to whether the material meets the definition of rock and Engineer's measurement of the volume of rock removal for which the Contractor is entitled to payment will be final and conclusive. No payment will be made for rock removed without Engineer's approval.

Strip rock for measurements as directed by the Engineer. No payment will be made for rock excavated or loosened before measurement. Only rock actually removed will be

paid for, and in no case will payment be made for rock removal beyond the payment limits shown for a standard trench or more than 12 inches beyond the edge of a pipeline or 8 inches below its bottom for pipes of nominal OD 24 inches and less, unless such rock has been removed at the direction of Engineer.

C. Blasting Rock is not allowed unless expressly permitted by the Engineer. Notify the Engineer in advance of blasting activity. Provide evidence to the Engineer that the proposed blasting will comply fully with Laws or Regulations.

Do not blast where limited or prohibited by any Federal, State or Local laws or regulations, or in violation of any limitation or restriction contained in any right-of-way, or wherever specifically prohibited in any Drawing or other Contract Document. Do not blast within forty (40) feet of any pipe or structure without specific permission from the Owner. Properly cover blasts and protect the pipe or structure. Warn all persons in the vicinity. Blasting shall be at the risk of the Contractor who shall be liable for all damages to persons or property. Secure and pay for all necessary permits. Perform whatever pre-blast surveys and investigations that may be required by the circumstances and/or by Federal, State or Local laws.

Prepare a blasting plan and submit it to the Engineer for approval prior to commencing any blasting work. The plan shall state all procedures and methods which will be used to monitor and mitigate the effect or impact of the proposed blasting work.

Employ an experienced blaster holding a blasting license issued by the applicable State to carry out the blasting work. Use, handle, and store explosives as prescribed by the applicable State and Federal regulations. Keep all explosives in a safe place at a sufficient distance from the Work so that, in case of accident, no damage will occur to any part of the Work. Contractor shall be held responsible for and shall pay for all damage caused by blasting operations or accidental explosion.

D. Trench Width shall be held to a minimum to accommodate the pipe and appurtenances. The trench width shall be measured at the top of the pipe barrel and shall conform to the following limits. Contractor will only be compensated for the minimum trench width described below for the purposes of determining excavation and backfill pay items when items are not considered incidental:

Trench Depth	
4’ or less:	Outside diameter of the pipe barrel plus 24 inches, i.e., 12 inches each side.
5’ or more:	Outside diameter of the pipe barrel plus 36 inches, i.e., 18 inches each side.

E. Excessive Trench Width shall be provided additional backfill, haunching, and bedding material as specified in Specification Sections 02210-3.06, 02210-3.07, and 02210-3.08 as approved by the Engineer to fill any trench excavation that exceeds the trench width defined in Specification Section 02110-3.05.D. Dispose of excess excavated

materials off site. Furnish the Engineer with satisfactory evidence that an appropriate disposal site was used. The excavation, backfill, and disposal resulting from excessive trench width shall be at no additional cost to the Owner.

F. Trench Depth shall provide prescribed minimum cover from the top of the pipe barrel to the top of the finished grade, unless otherwise authorized by the Engineer or as shown on the Drawings.

1. Earth - Excavate to the depth required, so as to provide a uniform and continuous bearing and support for the pipe barrel on solid and undisturbed ground at every point between joints. It will be permissible to disturb the finished trench bottom over a maximum length of 18 inches near the middle of each length of pipe by the withdrawal of pipe slings or other lifting tackle. Provide bell holes and prepare the finished trench bottom accurately using hand tools.
2. Rock - Excavate trenches in rock or boulders 8-inches below the pipe barrel for pipe 24-inches or less in diameter. Remove all loose material from the trench bottom. Prepare a pipe bed using bedding material as specified in Specification Section 02210-2.01.
3. Unsuitable Bottom - Notify the Engineer whenever unsuitable material is found. Remove the material over the area and to the depth determined by the Engineer. Provide compacted bedding material as specified in Specification Sections 02210-2.01 to restore the trench bottom to the required grade.

G. Open Trench Length shall be controlled by the particular surrounding conditions, but shall always be confined to the limits prescribed by Engineer. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, Engineer may require special construction procedures such as limiting the length of the open trench or prohibiting stacking excavated material in the street. Take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public, shall be well lighted.

3.06. TRENCH BACKFILLING - OPEN TERRAIN

All trench backfilling shall be compacted so that no settlement occurs and is stable with surrounding soil that also shall not have settled.

A. Bedding

1. Ductile Iron Pipe

i. Undisturbed Earth
ii. In Rock or Unsuitable Soil - When encountering rock or unsuitable material, prepare pipe bedding immediately before pipe is laid. Provide compact Coarse Aggregate as described in Specification Section 02210-2.01 from 6 inches below the pipe to the bottom of the pipe.

2. PVC or HDPE
    i. Prepare pipe bedding immediately before pipe is laid. Use compacted Coarse Aggregate as described in Specification Section 02210-2.01 from 6 inches below the pipe to the bottom of the pipe.

B. Haunching shall be placed from the bottom of the pipe barrel to the centerline (springline) of the pipe barrel with Coarse Aggregate as described in Specification Section 02210-2.01. Take care to avoid injuring or moving the pipe. Place the material in uniform 6-to-12-inch loose layers and compact each layer to eliminate the possibility of settlement, pipe misalignment, or damage of joints.

1. Ductile Iron Pipe – Haunching fill material for Ductile Iron Pipe may also include the following:
    i. Coarse to fine, sandy natural soil material with maximum stone size of 1-inch or local approved selected backfill materials as noted on Standard Details and defined below in Specification Section 02210.2.03. The material shall conform to ASTM D 2487 "Standard Method for Classification of Soils for Engineering Purposes" using the "Unified Soil Classification System", except where a higher standard is required elsewhere in the Contract Documents or by rules or regulations of Federal, State or Local governmental bodies having jurisdiction over the site of the Work.
    ii. Materials shall meet the Class II soil type designation. Class II soil types include GW, GP, SW and SP that are described as non-cohesive, well graded and containing some fines. Voids, finer grained soils or movement can allow undesirable migration of haunching material or migration of the trench sidewall material into the haunching material. In such instances place filter fabric, as directed by the Engineer, in the trench bottom and sides before placing the haunching material.
    iii. Haunching material may be obtained from the trench excavation provided it has been approved by the Engineer who may, at their discretion, require testing in accordance with the requirements of Specification Section 02210-1.04 above. Furnish the necessary approved haunching materials from an off-site source whenever approved material obtained from the trench excavation is insufficient to complete the haunching.

C. Initial Backfill - Backfill from the centerline (springline) of the pipe barrel to 12 inches above the pipe with Common Fill-Type A as described in Specification Section 02210-2.03 or Coarse Aggregate as described in Specification Sections 02210-2.01. See Standard Details for required initial trench backfill material. Mechanical equipment may be used to place the backfill. Place the material in such a manner that the material does not free fall, but rather flows onto the previously placed material. Consolidate the

backfill in such a manner as will ensure the minimum possible settlement and the least interference with traffic. Do not compact the backfill with mechanical equipment, such as wheeled vehicles, unless sufficient cover is provided over the pipe to prevent damage to the pipe.

1. The use of common fill is permitted in some circumstances, with approval of the Engineer, as initial backfill for HDPE pipe; however, the size of stone and rock for backfill is limited in accordance with the pipe diameter. The maximum stone or rock size is limited to 1/2-inch for pipes up to 4-inch diameter, 3/4-inch for pipes 6-inch to 8-inch diameter, 1-inch for pipes 10-inch to 16-inch diameter and 1-1/2-inch for larger pipes.

D. Final Trench Backfill - Backfill trench from 12 inches above the pipe to final grade with Common Fill-Type B as described in Specification Section 02210-2.03. Mechanical equipment may be used to place the backfill. Place the material in such a manner that the material does not free fall, but rather flows onto the previously placed material. Consolidate the backfill in such a manner as will ensure the minimum possible settlement and the least interference with traffic. Do not compact the backfill with mechanical equipment, such as wheeled vehicles, unless sufficient cover is provided over the pipe to prevent damage to the pipe.

E. Surface Conditions - Attend to the trench surface regularly during the course of the Contract. Take prompt corrective measures to correct any settlement or washout. Maintain the trench surface in a safe condition that does not interfere with natural drainage.

F. Deficiency of Backfill - Any material required for backfilling the trenches or for filling depressions caused by settlement or washout shall be supplied and placed by the Contractor at no additional cost to the Owner.

3.07. TRENCH BACKFILLING – Under or within 24 inches of driveways, sidewalks and roads

A. Bedding

1. Ductile Iron Pipe
   i. Undisturbed Earth
   ii. In Rock or Unsuitable Soil - When encountering rock or unsuitable material, prepare pipe bedding immediately before pipe is laid. Provide compact Coarse Aggregate as described in Specification Section 02210-2.01 from 6 inches below the pipe to the bottom of the pipe.
2. PVC or HDPE
   i. Prepare pipe bedding immediately before pipe is laid. Use compacted Coarse Aggregate as described in Specification Section 02210-2.01 from 6 inches below the pipe to the bottom of the pipe.

B. Haunching shall be placed from the bottom of the pipe barrel to the centerline (springline) of the pipe barrel with Coarse or Fine Aggregate as described in Specification Section 02210-2.01 and 2.02. Take care to avoid injuring or moving the pipe. Place the material in uniform 6-to-12-inch loose layers and compact each layer to eliminate the possibility of settlement, pipe misalignment, or damage of joints.

C. Initial Backfill - Backfill from the centerline (springline) of the pipe barrel to 12 inches above the pipe with Coarse or Fine Aggregate as described in Specification Sections 02210-2.01 or 2.02. Mechanical equipment may be used to place the backfill. Place the material in such a manner that the material does not free fall, but rather flows onto the previously placed material. Consolidate the backfill in such a manner as will ensure the minimum possible settlement and the least interference with traffic. Do not compact the backfill with mechanical equipment, such as wheeled vehicles, unless sufficient cover is provided over the pipe to prevent damage to the pipe.

D. Final Trench Backfill - Backfill trench from 12 inches above the pipe to final grade with CA-6 or CA-7. Mechanical equipment may be used to place the backfill. Place the material in uniform 6-to-12-inch loose layers and compact each layer to eliminate the possibility of settlement, pipe misalignment, or damage of joints. Consolidate the backfill in such a manner as will ensure the minimum possible settlement and the least interference with traffic. Do not compact the backfill with mechanical equipment, such as wheeled vehicles, unless sufficient cover is provided over the pipe to prevent damage to the pipe.

E. Surface Conditions - Attend to the trench surface regularly during the course of the Contract. Take prompt corrective measures to correct any settlement or washout. Maintain the trench surface in a safe condition that does not interfere with natural drainage.

F. Deficiency of Backfill - Any material required for backfilling the trenches or for filling depressions caused by settlement or washout shall be supplied and placed by the Contractor at no additional cost to the Owner.

3.08. SPECIAL BACKFILLING – Under roads – option to the Contractor

A. Bedding – See Section 3.07

B. Haunching and Initial Backfill – See Section 3.07

C. Remaining Trench Backfill - Backfill from 12 inches above the pipe to subgrade, all cuts, excavations, or other damage done to the public right-of-way with flowable fill as described in Specification Section 02210-2.05. Use flowable fill when required as a condition of the right-of-way excavation permit.

1. Placement of flowable fill - Discharge the mixture from the mixing equipment into the space to be filled by a reasonable means. The flowable fill shall be brought up uniformly to the fill line. Each filling stage shall be as continuous as practicable. Do not place concrete on the flowable fill until all bleeding water has disappeared and the resistance, as measured by ASTM C403, is at least 60 psi, or as directed by Engineer. Do not place pavement until at least 24 hours after the fill is completely in place.

2. Limitations of flowable fill - Do not place flowable fill on frozen ground. Protect flowable fill from freezing until the material has stiffened and bleeding water has disappeared. As the temperature nears freezing, additional curing time may be needed.

D. Surface Conditions - Attend to the trench surface regularly during the course of the Contract. Take prompt corrective measures to correct any settlement or washout. Maintain the trench surface in a safe condition that does not interfere with natural drainage.

E. Deficiency of Backfill - Any material required for backfilling the trenches or for filling depressions caused by settlement or washout shall be supplied and placed by the Contractor at no additional cost to the Owner.

3.09. QUALITY ASSURANCE TESTING

The Owner reserves the right to have the Contractor provide independent quality assurance testing for the backfill material, at the Contractor's expense.

3.010. TRENCH MAINTENANCE

Contractor shall assume full responsibility for the condition of the trenches for a period of one (1) year from the date of the final acceptance of the Contractor's Work, or as required by State, County or Local authorities. Any materials required for filling depressions caused by settlement or washout shall be supplied and placed by the Contractor at no additional cost to the Owner.

3.011. BASIS OF PAYMENT

Payment for work included in this item shall be made at the contract unit price per linear foot of watermain.

END OF SECTION 02210

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SECTION 02225

CASING INSTALLATION (PVC)

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing and installing PVC casing pipe at locations shown on the Drawings in accordance with any Federal, State, or Local, whichever may be more restrictive.

1.02. RELATED WORK

A. Specification Section 02210 – Trenching, Backfilling, and Compacting

1.03. REFERENCES

Refer to current standards:

A. Illinois Administrative Code, Title 35, Subtitle F, Chapter II, Parts 651-654

B. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, and Fabricated Fittings, 4 In. Through 12 In. (100 mm Through 300 mm), for Water Distribution

C. AWWA C905 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 In. Through 48 In. (350 mm Through 1,200 mm), for Water Transmission and Distribution

1.04. SUBMITTALS

A. Submit manufacturer's literature for spacers, end seals, and casing vents.

B. Submit in accordance with Section 01300.

PART 2: PRODUCTS

2.01. PVC CASING PIPE

PVC casing pipe shall conform to the latest edition of American Water Works Association (AWWA) Standards C900/C905. PVC casing pipe shall have a Dimension Ratio of 25 and shall be certified suitable for potable water products by the National Sanitation Foundation (NSF) Testing Laboratory (NSF Standard No. 61). The size of the pipe casing shall be shown on the Drawings. Bored casings shall be restrained joint PVC.

2.02. CASING END SEAL

A. Casing end seals shall be a pull-over type construction and made from minimum 1/8-inch Neoprene with ½-inch wide T-304 stainless steel bands for securing the ends of the end seal to the casing pipe and carrier pipe.

B. Acceptable manufacturers are listed in the most current version of the Supplemental Technical Specifications.

2.03. CASING INSULATORS

The use of casing spacers is not required in encasements of less than 30 feet. Encasements greater than 30 feet shall include casing spacers in accordance with Specification Section 02220 – Casing Installation (Steel).

PART 3: EXECUTION

3.01. ALIGNMENT AND GRADE

Locate pipelines to cross sewers, roadways, or tracks as shown on the Drawings. Install the casing pipe on an even grade for its entire length and sloped to one end or as noted in a profile plan if provided. Satisfy a maximum tolerance of 1.5% (18 inches in one hundred feet) with the desired location of the casing or as otherwise required by regulation or specified on the Drawings, whichever is more restrictive.

3.02. PROTECTION AT ENDS OF CASING

Block up both ends of casings in such a way as to prevent the entrance of foreign material, but to allow leakage to pass in the event of a carrier break.

3.03. DEPTH OF INSTALLATION

Unless the depth of casing pipe is specifically specified on the Drawings, the casing pipe depth shall be in accordance with local requirements.

3.04. BASIS OF PAYMENT

The Work included in this Section will be paid for per linear foot of watermain casing pipe and shall include all casing pipe, casing end seals, casing insulators, strapping, skids, anchors, harnesses, etc. as required or as necessary for a complete and satisfactory installation. The Work shall include all excavation (soil) de-watering, backfilling, sheeting, bracing, shoring, temporary construction, and all safety measures as necessary for a complete and satisfactory installation.

END OF SECTION 02225

SECTION 02540

EROSION AND SEDIMENTATION CONTROL

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing all labor, materials, and equipment necessary to provide erosion and sedimentation control including, but limited to, temporary and permanent vegetation covers, mulching, silt fence, and baling at the construction site and all areas disturbed during construction, including borrow areas. In addition to the requirements of these Specifications, comply with all local Conservation District laws, rules and regulations and all other Federal, State, County and local requirements for erosion and sedimentation control.

1.02. RELATED WORK

A. Specification Section 02820 – Lawn Restoration

1.03. REFERENCES

A. Association of Illinois Soil and Water Conservation Districts - Illinois Urban Manual Practice Standards

B. Storm Water Pollution Prevention Plan (SWPPP), if required.

C. Comply with the highest erosion and sedimentation control standards, whether Conservation District, Federal, State or Local. If in doubt as to the applicable standard, notify the Engineer and comply with the Engineer's directions concerning the prevailing jurisdiction.

1.04. SUBMITTALS

A. Submit plan to comply with regulators and Engineer for approval using established best practices.

B. Submit in accordance with Section 01300.

PART 2: PRODUCTS

2.01. MATERIALS - GENERAL

All materials such as seeds, mulch, silt fencing, Inlet Filter Sacks and bales shall conform to the Specifications of the local Conservation District and all other applicable Federal, State, County and Local requirements.

PART 3: EXECUTION

3.01. GENERAL

A. Construct silt fences, diversion ditches with catch basins and drains as shown on the Drawings prior to any other construction activity.

B. Take precautions to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed before the end of each workday.

C. Drain the settled water from the catch basins to the natural local drains. Clean the catch basins regularly.

3.02. BASIS OF PAYMENT

Erosion and Sedimentation Control will be considered incidental to the project. No additional compensation will be provided for Erosion and Sedimentation Control.

END OF SECTION 02540

SECTION 02610

PAVEMENT RESTORATION

PART 1: GENERAL

1.01. SUMMARY

This section includes providing all labor, tools, material and equipment to saw cut, remove, and replace pavement which is damaged or disturbed during the course of the Work and as shown on the Drawings. Pavement includes, but is not limited to, roadways, curbs, gutters, ADA ramps, driveways, and sidewalks.

Roadway reconstruction shall be completed at the same time as the watermain installation; therefore, only roadway restoration outside the roadway project limits is anticipated. Driveway reconstruction shall be the responsibility of the roadway contractor. If the Contractor damages or disturbs pavement outside the roadway restoration limits, the Contractor shall be responsible for providing all labor, tools, materials, and equipment necessary to replace the pavement to the same design standards as shown on the roadway plans and specifications and as required by Local, State or Federal regulations or as directed by the Owner.

1.02. RELATED WORK (RESERVED)

PART 2: PRODUCTS

2.01. MATERIAL - GENERAL

Watermain contractor shall refer to and abide by the Roadway Project pavement specifications.

PART 3: EXECUTION

3.01. INSTALLATION

Watermain contractor shall refer to and abide by the Roadway Project pavement specifications.

3.02. BASIS OF PAYMENT

The Work included in this Section will be paid for per square yard of roadway pavement removal and replacement outside the roadway restoration limits and shall include all material and labor as required by the roadway project pavement specifications and/or as required by Federal, State or Local agencies.

END OF SECTION 02610

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SECTION 02820

LAWN RESTORATION

PART 1: GENERAL

1.01. SUMMARY

This section includes providing all labor, tools, material and equipment to prepare the ground surface, restore, replace, and maintain lawn areas where surfaces are disturbed as part of the Work. Surfaces shall be restored to conditions equal to that before the Work began and in accordance with local requirements.

The Contractor shall coordinate with the roadway contractor to determine the responsibilities of each project in terms of final lawn restoration.

1.02. REFERENCES

Refer to current standards:

A. Illinois Department of Transportation (IDOT) Standard Specifications for Road and Bridge Construction

PART 2: PRODUCTS

2.01. TOPSOIL

Topsoil shall not contain more than 40 percent clay in that portion passing a No. 10 sieve and shall not contain less than 5 percent or more than 20 percent organic matter as determined by loss on ignition of samples oven-dried to constant weight at 212 degrees Fahrenheit.

2.02. FERTILIZER

Fertilizer shall be lawn or turf grade 12-12-12 unless otherwise specified by the Engineer.

2.03. SEED

Lawn Areas include all areas, whether residential, commercial or office areas, where lawns are, or have been regularly maintained. Lawn areas shall be seeded to match the existing grass as closely as possible.

2.04. MULCH

Mulch shall be straw reasonably free of weed seed and any foreign materials which may affect plant growth. Other materials may be used if approved by the Engineer.

2.05. ASPHALT EMULSION

Emulsion shall be non-toxic to plants and shall conform to AASHTO M140 or AASHTO M208.

PART 3: EXECUTION

3.01. APPROVED RESTORATION CONTRACTORS

An approved Lawn Restoration Contractor shall be used for lawn restoration. A list of approved Lawn Restoration Contractors is included in Bidding Documents.

3.02. PREPARATION OF SURFACE

A. If suitable topsoil is available as part of the excavated material it shall be removed, stored, and used to backfill the top 4 inches of the excavation. All grass, weeds, roots, sticks, stones, and other debris shall be removed and disposed of by the Contractor and the topsoil carefully brought to the finished grade by raking.

B. When there is insufficient topsoil available from the site excavated materials, furnish 4 inches of topsoil to be used as a seed bed in lawn areas as described in Part 2.03 of this Specification Section.

C. The trench backfill may be used as a seed bed where approved by the Engineer.

D. After the backfill has been given a reasonable time to settle, it shall be graded off to the finished grade and harrowed to a depth of 3 inches. All grass, weeds, roots, sticks, stones and other debris 2-inches or greater in diameter are to be removed and disposed of by the Contractor and the soil carefully brought to the finished grade by raking.

3.03. FERTILIZING

Apply fertilizer uniformly to all areas to be seeded at the rate of 1 pound per 100 square feet in topsoil, or 2 pounds per 100 square feet in non-topsoil, or according to manufacturer's recommendations, whichever is greater. Disk, harrow, or rake the fertilizer thoroughly into the soil to a depth of not less than 2 inches. Immediately before sowing the seed, rework the surface until it is a fine, pulverized, smooth seed bed varying not more than 1 inch in 10 feet.

3.04. SEEDING

Seed immediately after the preparation and fertilization of the seed bed. Mix the seed thoroughly and sow it evenly over the prepared areas at the rate of 3 pounds per 1,000 square feet. Sow the seed dry or hydraulically. After sowing, rake or drag the area to cover the seed to a depth of approximately ¼ inch.

3.05. SODDING (RESERVED)

3.06. MULCHING

Place mulching material evenly over all seeded areas within 48 hours of seeding. Place mulch at the rate of approximately 2 tons per acre, when seeding is performed between the dates of March 15 and October 15 of the same year, and at the approximate rate of 3 tons per acre when seeding is performed between the dates of October 15 and March 15 of the succeeding year.

3.07. EMULSION

Keep mulching materials in place with asphalt emulsion applied at a minimum rate of 60 gallons per ton of mulch or by other methods approved by the Engineer. When mulch is displaced, immediately repair any damage to the topsoil and fertilizer, re-seed, and re-mulch per the requirements of this Specification Section.

3.08. MAINTENANCE

Carefully maintain, tend, and water all seeded and sodded areas necessary to secure a good turf. Fill, grade, and re-seed or re-sod settled areas. Maintain the condition of the restored areas of vegetation in accordance with the requirements of this Specification Section for a period of one year from the date of final completion.

3.09. BASIS OF PAYMENT

Minimal lawn restoration is anticipated on this project. Lawn Restoration will be considered incidental to the project. No additional compensation will be provided for Lawn Restoration.

END OF SECTION 02820

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SECTION 02899

TRAFFIC CONTROL AND PROTECTION

PART 1: GENERAL

1.01 SECTION INCLUDES

Layout, installation, maintenance and removal of traffic control devices to warn traffic of road closures, detour traffic around the construction site and prevent traffic from entering the construction zone.

1.02 RELATED SECTIONS

A. Division 1 – General Requirements

1.03 REFERENCE TO STANDARDS

A. Conform to applicable portions of Articles 107 and 701 of IDOT's Standard Specifications for Road and Bridge Construction adopted Jan. 1, 2012, and the Supplemental Specifications and Recurring Special Provisions adopted Jan. 1, 2015 and Special Provisions LRS 3 Work Zone Traffic Control, LRS 4 Flaggers in Work Zones, and LR 702 Construction and Maintenance Signs.

B. Conform to the Manual on Uniform Traffic Control Devices.

1.04 REGULATORY REQUIREMENTS

A. Contractor shall be responsible to repair damage to all federal, state, city and township roadways caused by their equipment or by subcontractors or suppliers performing work under the contract. It is advisable that Contractor document the condition of all the roadways prior to starting work.

B. The following Highway Standards are the minimum requirements for the traffic control for this project and shall be utilized by the Contractor during construction of the improvement:

   a. Standard 701001 and 701006: Streets with shoulder closure for construction activities beyond the pavement.
   b. Standard 701606, 701611 and 701701: Lane closure for construction activities along various streets.
   c. Standard 701801: Sidewalk closure for construction activities along various streets.
   d. Standard 701901: Traffic control devices.

C. The traffic control and protection required to protect the work zone and public use of the street will not be paid for separately, but shall be included in the contract lump sum price for Traffic Control and Protection, and no additional compensation will be allowed.

D. The Contractor shall provide and maintain access to public and private properties abutting the construction in accordance with Article 107.09 of the Standard Specifications.

E. This work shall consist of providing the necessary traffic control personnel and devices and the installation, inspection, maintenance, relocation, and removal of these devices during construction of the improvements. The Contractor shall notify Illinois American Water Company and the City of Peoria of all lane and road closures a minimum of 48 hours in advance of closures. The City of Peoria will be responsible for notifying the public, the United States Postal Service, the City of Peoria Public Transit System, and the emergency service agencies of all road closures and detours.

F. The Contractor shall obtain any permits, bonds and insurance required by the jurisdictional authority (Local, County, or State) prior to beginning any traffic control or roadway closures. The cost of obtaining these items shall be included in the price for Traffic Control & Protection (Special).

1.05 SUBMITTALS

The contractor shall submit a maintenance of traffic and road closure plan to the Owner for review and approval prior to beginning any work.

PART 2: PRODUCTS

2.01 TRAFFIC CONTROL DEVICES

A. Traffic Control Devices: As specified in IDOT Highway Standards and as provided in the Drawings.

B. Materials may be new or used, suitable for purpose. Comply with specified codes.

2.02 LANE CLOSURES AND OFF-ROAD OPERATIONS

A. Lane Closures shall be per the standards noted above. The Contractor shall ensure that all traffic control devices installed by him/her are operational, functional, and effective 24 hours a day, including Saturdays, Sundays, and holidays.

B. Lane closures and the conveyance of local traffic within and around the construction zone shall be provided for in accordance with the listed Highway. Except as otherwise provided herein, the Contractor shall provide at least one entrance/exit point to the commercial properties at all times. The Contractor shall submit his/her proposed sequence of operations and any necessary revisions to attendant traffic control to the Owner for approval before actual construction operations begin. All traffic control

devices shall remain in place until conditions are restored and hazards due to construction operations are removed.

C. The following road closure and special requirements are:

   a. Maxwell Road may be closed to local traffic during the project. Contractor shall install and maintain advanced road closure signs on all side streets. Contractor shall provide access to residential houses at the end of each working day.

PART 3: EXECUTION

3.01 LAYOUT

A. The contractor shall be responsible for the proper location, installation, and arrangement of all traffic control. Coordinate all traffic control with the City of Peoria.

B. Verify and document existing conditions. Prior to the beginning of construction operations, the Contractor shall prepare 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. The Contractor shall maintain, furnish and replace at his own expense, any traffic sign or post, which has been damaged or lost by the Contractor or a third party.

C. Any existing sign located on public right-of-way which interferes with the work shall be removed by the City of Peoria unless otherwise directed by the Owner. The City of Peoria will remove and replace any sign installation at no charge to the Contractor if the Contractor provides the City with not less than two (2) working days' notice for sign removal. Any Contractor or private party removing any sign will be billed for the replacement costs associated with the reinstallation of the sign.

D. Evaluate placement of traffic control devices in addition to the devices shown on the plans.

E. Consider flow of traffic and maintain access to the adjacent properties.

F. The Contractor shall maintain at least one open lane of traffic at all times on roads during the construction of this project. Two flaggers will be required at all times, for each separate operation where two-way traffic is maintained over one lane of pavement.

G. The Contractor shall maintain entrances and side roads along the proposed improvement as shown in the plans and as directed by the Owner. Interference with traffic movements and inconvenience to owners of abutting property and the public shall be kept to a minimum. Any delays or inconveniences caused to the Contractor by complying with these requirements shall be included in the contract lump sum price for Traffic Control and Protection (Special), and no additional compensation will be allowed.

3.02 INSTALLATION

A. Implement traffic control devices to promote flow of traffic.

B. Ensure traffic control devices are visible at night.

C. Sidewalks and entrances access shall be maintained at all times unless directed otherwise by the Owner. The placement, replacement and removal of aggregate used for temporary access shall be included in the contract lump sum price for Traffic Control and Protection and no additional compensation shall be allowed.

3.03 MAINTENANCE

A. Correct traffic control devices that fail or are shifted by traffic.

B. Adjust traffic control devices to respond to changes in traffic patterns and flow.

C. Replace traffic control lighting that has failed. Traffic control surveillance shall be required, but will not be paid for separately on this project. Local Roads and Streets Recurring Special Provision LRS 3 "Work Zone Traffic Control" shall apply for the inspection of traffic control devices on this project.

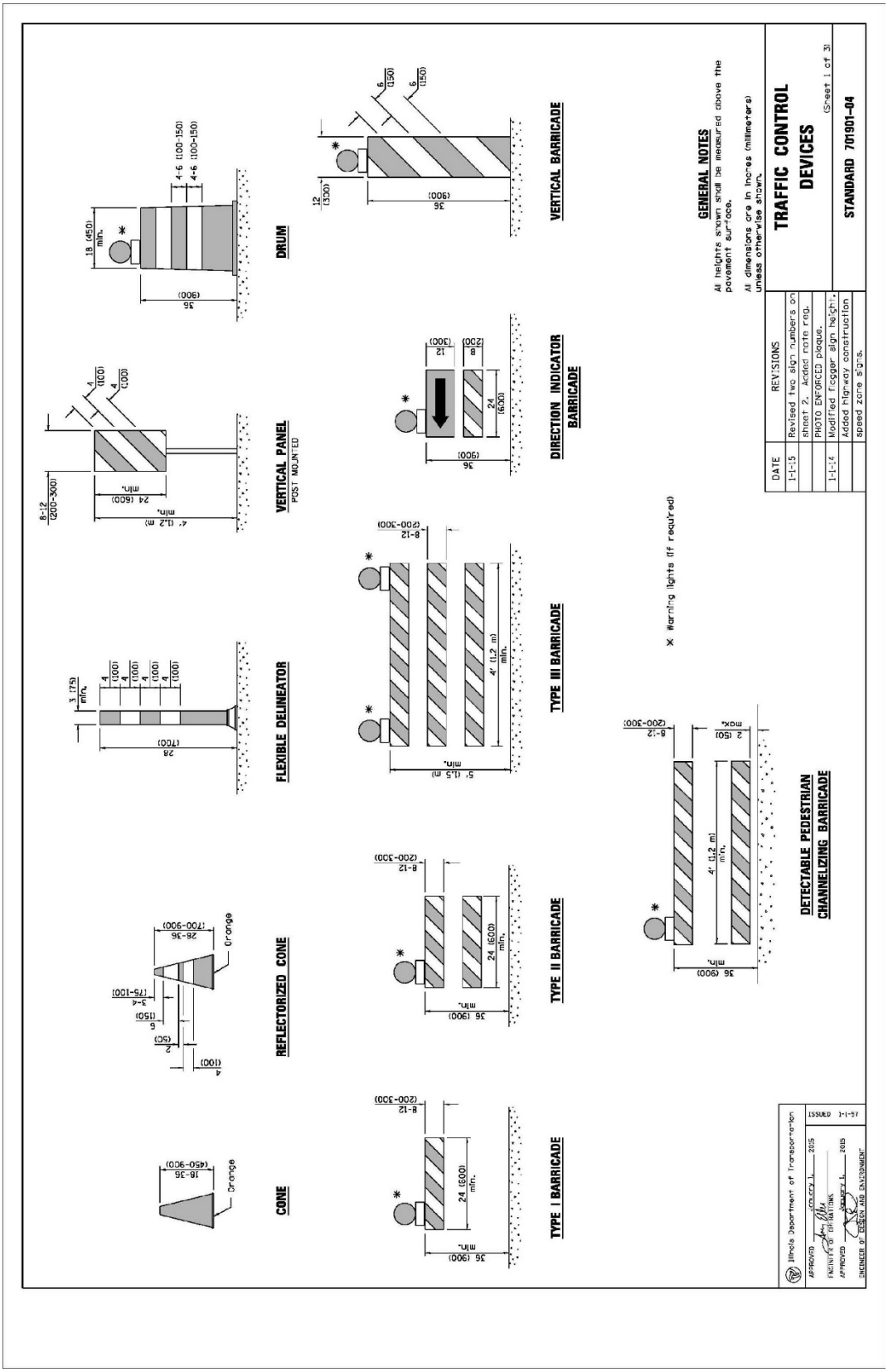
D. The Contractor shall provide a telephone number where a responsible individual can be contacted on a 24-hour-a-day basis to receive notification of any deficiencies regarding traffic control and protection. The Contractor shall dispatch personnel, materials, and equipment to correct any such deficiencies. The Contractor shall respond to any call from the City of Peoria concerning any request for improving or correcting traffic control devices and begin making the requested repair within two hours from the time of notification.

E. Where equipment has operated on any pavement to be used by traffic or adjacent to the section under construction, the Contractor shall eliminate tracking of mud, dust, and debris, and clean the pavement of all mud and debris at the end of each day's operations or as otherwise directed by the Owner. No additional compensation shall be allowed for this work. The Contractor's method for cleaning the pavement surfaces shall be approved by the Owner prior to the start of construction. If the Contractor chooses to wash down the pavement surfaces manually, then approved inlet sediment collection filter bags shall be installed at all inlets that will collect wash water. The Contractor shall maintain the filters and remove sediment from the bags upon collection of 50% of the bag's capacity. If the Contractor fails to clean up site within 18 hours of a request to do so, all progress payments shall be suspended until cleanup has occurred.

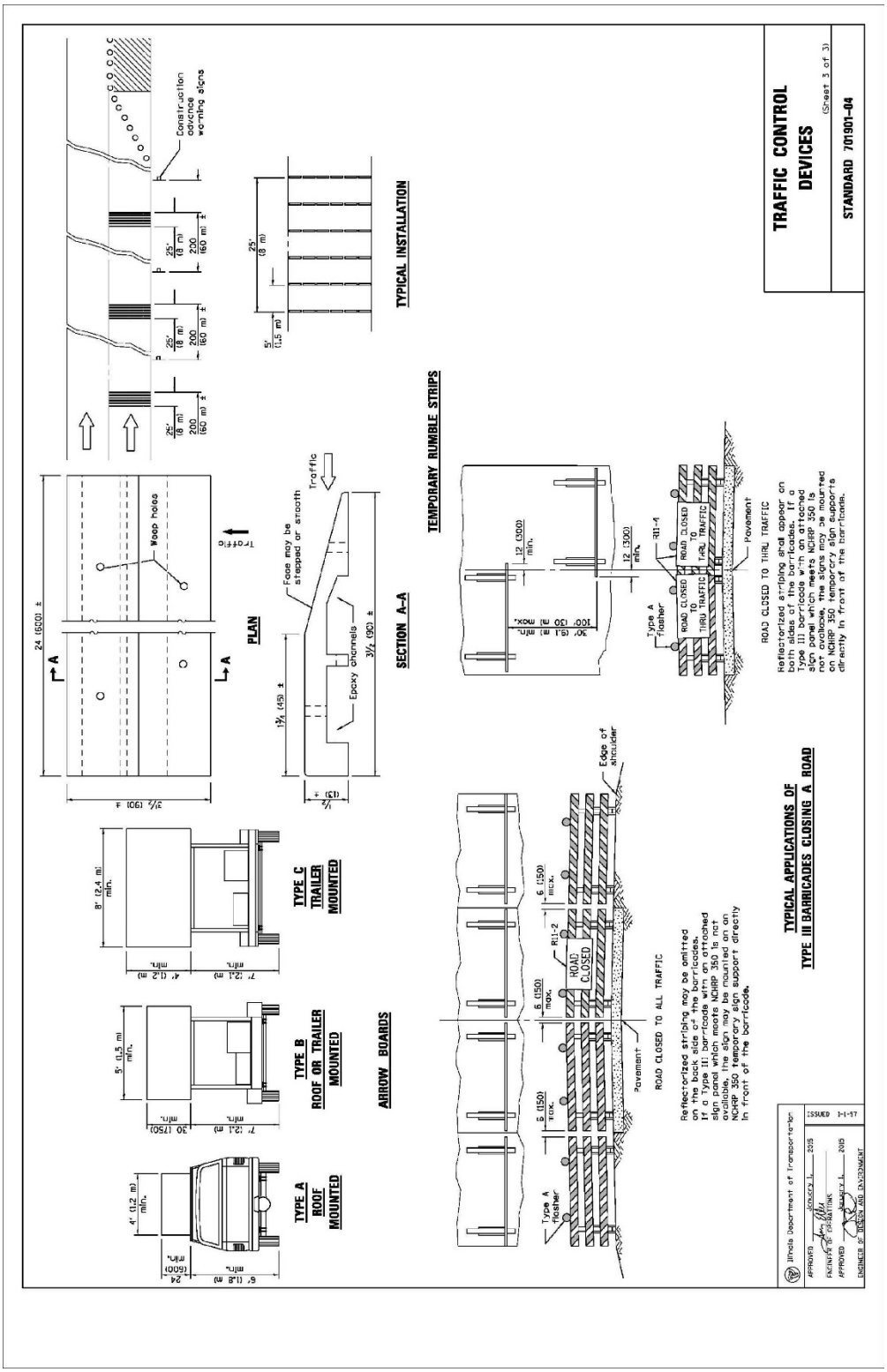
3.04 REMOVAL

A. Upon final completion of the project, remove all traffic control devices.

B. Remove dirt and debris from roadway open to traffic daily. All traffic lanes which are closed to through traffic during construction shall be swept free of all loose gravel or construction debris before the traffic lane is reopened to traffic. All roadway surface conditions shall be approved by the Owner before they are r e opened to traffic. This work will not be paid for separately, but shall be included in the contract lump sum price for Traffic Control and Protection, and no additional compensation will be allowed.


TRAFFIC CONTROL DEVICES
(Sheet 1 of 3)
STANDARD 701901-04
GENERAL NOTES
All heights shown shall be measured above the pavement surface.
All dimensions are in inches (millimeters) unless otherwise shown.
DATE
REVISIONS
1-1-15 Revised two sign numbers on sheet 2. Added note reg. PHOTO ENFORCED plaque.
1-1-14 Modified flagger sign height. Added highway construction speed zone signs.
CONE
REFLECTORIZED CONE
FLEXIBLE DELINEATOR
VERTICAL PANEL
POST MOUNTED
DRUM
VERTICAL BARRICADE
DIRECTION INDICATOR BARRICADE
TYPE III BARRICADE
TYPE II BARRICADE
TYPE I BARRICADE
DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE
* Warning lights if required
Illinois Department of Transportation
ENGINEER OF DESIGN AND ENVIRONMENT
ISSUED 1-1-57

TRAFFIC CONTROL DEVICES
(Sheet 2 of 3)
STANDARD 701901-04
Illinois Department of Transportation
APPROVED
ISSUED 1-1-97
FLAGGER TRAFFIC CONTROL SIGN
FRONT SIDE
REVERSE SIDE
STOP
SLOW
8 (230) Federal series C
7 (180) Federal series B
POST MOUNTED SIGNS
SIGNS ON TEMPORARY SUPPORTS
HIGH LEVEL WARNING DEVICE
WORK LIMIT SIGNING
HIGHWAY CONSTRUCTION SPEED ZONE SIGNS
ROAD CONSTRUCTION NEXT X MILES
G20-110410-6036
END CONSTRUCTION
G20-110501-6024
This signing is required for all projects 2 miles (3200 m) or more in length.
ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.
END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).
Dual sign displays shall be utilized on multi-lane highways.
WORK ZONE
SPEED LIMIT
XX
PHOTO ENFORCED
$XXX FINE MINIMUM
W21-110501-3618
R2-1-3618
R10-1108p-3618 ••••
R2-1106p-3618
Sign assembly as shown on Standards or as allowed by District Operations.
END WORK ZONE SPEED LIMIT
G20-110301-6036
This sign shall be used when the above sign assembly is used.
•••• R10-1108p shall only be used along roadways under the jurisdiction of the State.
Type B monodirectional flashing light
Metal or wood post
Edge of pavement
Elevation of edge of pavement
Edge of pavement or face of curb
SIGN (IF SPECIFIED)
18x18 (450x450) Orange flags



END OF SECTION 02899

MAXWELL ROAD WATERMAIN RELOACTION

DIVISION 15 – MECHANICAL

TABLE OF CONTENTS

SECTION 15000

PIPING – GENERAL PROVISIONS

PART 1: GENERAL

1.01. SUMMARY

This section includes general provisions for handling material, general installation requirements, and installation methods to avoid contamination.

1.02. RELATED WORK

A. Specification Section 01600 – Products

B. Specification Section 02000 – Site Preparation

C. Specification Section 15025 – Cleaning Pipelines

1.03. REFERENCES

Refer to current standards:

A. AWWA C600, C605, C906, C105

B. AWWA C217 – Petrolatum and Petroleum Wax Tape Coatings

PART 2: PRODUCTS

2.01. CONTRACTOR'S RESPONSIBILITY FOR MATERIAL

A. Examine all material carefully for defects. Do not install material which is known or thought to be defective.

B. The Engineer reserves the right to inspect all material and to reject all defective material shipped to the job site or stored on the site. Failure of the Engineer to detect damaged material shall not relieve the Contractor from the total responsibility for the completed Work if it leaks or breaks after installation.

C. Lay all defective material aside for final inspection by the Engineer. The Engineer will determine if corrective repairs may be made, or if the material is rejected. The Engineer shall determine the extent of the repairs.

D. Classify defective pipe prior to Engineer's inspection as follows:

1. Damage to interior and/or exterior paint seal coatings.
2. Damage to interior cement-mortar or epoxy lining.
3. Insufficient interior cement-mortar lining or epoxy thickness.
4. Excessive pitting of pipe.
5. Poor quality exterior paint seal coat.

6. Pipe out of round.
7. Pipe barrel area damaged to a point where pipe class thickness is reduced (all pipe).
8. Denting or gouges in plain end of pipe (all pipe).
9. Excessive slag on pipe affecting gasket seal (DI).
10. Any visible cracks, holes.
11. Embedded foreign materials.
12. Non-uniform color, density and other physical properties along the length of the pipe.

E. The Contractor shall be responsible for all material, equipment, fixtures, and devices furnished. These materials, equipment, fixtures and devices shall comply with the requirements and standards of all Federal, State, and Local laws, ordinances, codes, rules, and regulations governing safety and health.

F. The Contractor shall take full responsibility for the storage and handling of all material furnished until the material is incorporated in the completed project and accepted by the Engineer. Contractor shall be solely responsible for the safe storage of all material furnished to or by the Contractor until incorporated in the completed project and accepted by the Engineer.

G. Load and unload pipes, fittings, valves, hydrants and accessories by lifting with hoists or skidding to avoid shock or damage. Do not drop these materials. Pipe handled on skidways shall not be skidded or rolled against other pipe. Handle this material in accordance with AWWA C600, C605 or C906, whichever is applicable.

H. Drain and store fittings and valves prior to installation in such a manner as to protect them from damage due to freezing of trapped water. Drain, store, and protect fittings and valves in accordance with Specification Section 01600.

2.02. PETROLATUM TAPE COATING

A. The tape coating shall be in accordance with AWWA Standard C217. The tape coating shall be a cold applied, saturant tape made from either petrolatum or petroleum wax with a non-cellulosic synthetic fiber fabric. The fabric shall be encapsulated and coated on both sides with the petrolatum or petroleum wax. The thickness of the tape shall be no less than 40 mil. The petrolatum or petroleum wax shall be at least 50% of the product by weight. Follow manufacturer's recommendations for storage and application.

B. The tape coating shall be supplied in sheets, pads or rolls. Pads and sheets shall be sized to fit the area that is to be covered, allowing for an overlap per AWWA Standard C217.

C. Acceptable manufacturers are listed in the most current version of the Supplementary Technical Specifications.

2.03. RUBBERIZED-BITUMEN BASED SPRAY-ON UNDERCOATING

Subject to approval by the Engineer, an alternative corrosion protection for exposed buried metal is an aerosol applied rubberized coating. The material shall be rapid dry and specifically designed for corrosion protection. Follow manufacturer's recommendations for storage and application.

Acceptable manufacturers are listed in the most current version of the Supplementary Technical Specifications.

PART 3: EXECUTION

3.01. INSTALLATION – GENERAL REQUIREMENTS

A. Lay and maintain all pipes to the required lines and depths. Install fittings, valves and hydrants in strict accordance with the Specifications at the required locations with joints centered, spigots home, and all valve and hydrant stems plumb. Do not deviate from the required alignment, depth or grade without the written consent of the Engineer.

B. Buried steel lugs, rods, brackets, and flanged joint nuts and bolts are not permitted unless specifically shown on the Drawings or approved in writing by the Engineer. Cover any and all buried steel lugs, rods, brackets, and flanged joint nuts and bolts with approved coating in accordance with AWWA Standard C217 prior to backfilling. Encase the same in polyethylene encasement if the specifications require polyethylene encasement of the pipe.

C. Do not lay pipe in a wet trench, on subgrade containing frost, or when trench conditions are unsuitable for such work. If all efforts fail to obtain a stable dry trench bottom and the Engineer determines that the trench bottom is unsuitable for such work, the Engineer will order the kind of stabilization to be constructed, in writing. In all cases, water levels must be at least 6 inches below the bottom of the pipe. See Specification Section 02000, Site Preparation.

D. Thoroughly clean the pipes and fittings before they are installed. Keep these materials clean until the acceptance of the completed Work. Lay pipe with the bell ends facing in the direction of laying, unless otherwise shown on the Drawings, or directed by the Engineer. Exercise care to ensure that each length abuts the next in such a manner that no shoulder or unevenness of any kind occurs in the pipe line.

E. Do not wedge or block the pipe during laying unless by written order of the Engineer.

F. Before joints are made, bed each section of pipe the full length of the barrel, at the required grade, and at the invert matching the previously laid pipe. Dig bell holes

sufficiently large to permit proper joint making. Do not bring succeeding pipe into position until the preceding length is embedded and secure in place.

G. Take up and relay pipe that is out of alignment or grade, or pipe having disturbed joints after laying. Take up, such in-place pipe sections found to be defective and replace them with new pipe. Take up, relaying, and replacement will be at the Contractor's expense.

H. Place enough backfill over the center sections of the pipe to prevent floating. Take all other necessary precautions to prevent the floating of the pipeline by the accumulation of water in the trench, or the collapse of the pipeline from any cause. Place enough backfill over the center sections of the pipe to prevent floating. Should floating or collapse occur, restoration will be at the Contractor's expense.

I. Bedding materials and concrete work for the pipe bedding and thrust restraint shall be as specified in Divisions 2, 3, and 15 as well as Standard Details.

J. Prevent foreign material from entering the pipe while it is being placed. Do not place debris, tools, clothing, or other materials in the pipe during laying operations. Close all openings in the pipeline with watertight plugs when pipe laying is stopped at the close of the day's work, or for other reasons such as rest breaks or meal periods.

K. Cut pipe in accordance with the latest edition of the American Water "Cut-off and Ring Saw Safety Operations Practice." Grind cut ends and rough edges smooth. Bevel the cut end slightly for push-on connections in accordance with manufacturer's recommendations.

L. In distributing material at the site of the Work, unload each piece opposite or near the place where it is to be laid in the trench. If the pipe is to be strung out, do so in a straight line or in a line conforming to the curvature of the street. Block each length of pipe adequately to prevent movement. Block stockpiled pipe adequately to prevent movement. Do not place pipe, material, or any other object on private property, obstructing walkways or driveways, or in any manner that interferes with the normal flow of traffic.

M. Exercise special care to avoid damage to the bells, spigots or flanged ends of pipe during handling, temporary storage, and construction. Replace damaged pipe that cannot be repaired to the Engineer's satisfaction, at the Contractor's expense.

N. Remove all existing pipe, fittings, valves, pipe supports, blocking, and all other items necessary to provide space for making connections to existing pipe and installing all piping required under this Contract.

O. Maintain the minimum required distance between the water line and other utility lines in strict accordance with all Federal, State, and Local requirements and all right-of-way limitations.

P. Provide and install polyethylene encasement for ductile iron pipe in accordance with Specification Section 15130 and Standard Details.

Q. Joint deflection is only allowed on ductile iron pipe. The maximum allowable deflection at the joints for push-on joint pipe shall be the lesser of manufacturer's recommendations or as described in the DIPRA Guideline, Ductile Iron Pipe Joints and Their Uses, as follows:

Size of Pipe (inches)	Deflection Angle	Maximum Deflection (inches)	
		18-ft Length of Pipe	20-ft Length of Pipe
3 – 12	5°	19	21
14 – 42	3°	11	12
48 – 64	3°	N/A	12

R. Use short lengths of pipe (minimum length 3 feet, no more than three short sections), when approved by the Engineer, to make curves that cannot be made with full length sections of pipe without exceeding the allowable deflection. Making these curves will be at no additional cost to the Owner.

S. Furnish air relief valve assemblies in accordance with Standard Details and at locations shown on the Drawings. Any deviation from the standard detail proposed by the Contractor must be approved in advance.

T. Exercise particular care so that no high points are established where air can accumulate. If the Contractor requests a change in the pipe profile solely for ease of construction, and the requested change requires the installation of an air release valve and manhole as determined by the Engineer, the cost of furnishing and installing the air release valve and manhole will be at the expense of the Contractor.

U. Connection to existing pipelines may require shutdown of Owner facilities. Closely coordinate construction work and connections with the Owner through the Engineer. The Engineer, in consultation with the Owner, may select the time for connection to existing pipelines, including Saturdays, Sundays, or holidays, which, in the opinion of the Engineer, will cause the least inconvenience to the Owner and/or its customers. Make such connections at such times as may be directed by the Owner. If not identified in the Bidding documents, this will be considered extra Work to the Contract.

3.02. CONSTRUCTION METHODS TO AVOID CONTAMINATION

A. Heavy particulates generally contain bacteria and prevent even very high chlorine concentrations from contacting and killing such organisms. It is essential that the procedures of this Specification Section be observed to assure that a water main and its appurtenances are thoroughly clean for the final disinfection by chlorination.

B. Take precautions to protect the interior of pipes, fittings, and valves against contamination. String pipe delivered for construction so as to keep foreign material out of the pipe. Close all openings in the pipeline with watertight plugs when pipe

laying is stopped at the close of the day's work or for other reasons, such as rest breaks or meal periods. Use rodent-proof plugs approved by Engineer, where it is determined that watertight plugs are not practical and where thorough cleaning will be performed.

C. Delay in placement of delivered pipe invites contamination. The more closely the rate of delivery is correlated to the rate of pipe laying, the lower the likelihood of contamination. Complete the joints of all pipe in the trench before stopping work. If water accumulates in the trench, keep the plugs in place until the trench is dry.

D. Do not use contaminated material or any material capable of supporting prolific growth of microorganisms for sealing joints. Handle sealing material or gaskets in a manner that avoids contamination. The lubricant used in the installation of sealing gaskets shall be suitable for use in potable water. Deliver the lubricant to the job in closed containers and keep it clean.

E. If dirt enters the pipe, and in the opinion of the Engineer the dirt will not be removed by the flushing operation, clean the interior of the pipe by mechanical means, then swab with a 1% hypochlorite disinfecting solution. Clean using a pig, swab, or "go-devil" only when the Engineer has specified such and has determined that such operation will not force mud or debris into pipe joint spaces. Clean the pipeline in accordance with Specification Section 15025.

F. If the main is flooded during construction, the flooded section must be isolated from the remainder of the installation as soon as practical. Submit a plan to the Engineer on correcting the condition and do not proceed until authorized by the Engineer. Replace or fully clean and disinfect the affected pipe at no additional cost to the Owner.

3.03. VALVE INSTALLATION

A. Prior to installation, inspect valves for direction of opening, number of turns to open, freedom of operation, tightness of pressure-containing bolting, cleanliness of valve ports, cleanliness of seating surfaces, handling damage, and cracks. Correct defective valves or hold for inspection by the Engineer.

B. Set valves and join to the pipe in the manner specified in Specification Section 3.01. Provide valves with adequate support, such as crushed stone and concrete pads, so that the pipe will not be required to support the weight of the valve. Set truly vertical. After field installation of the valve all exposed ferrous restraint materials and external bolts except the operating nut shall receive a layer of petrolatum tape coating or, where approved, rubberized-bitumen based spray-on undercoating applied before backfilling. If polyethylene is applied to the pipe, the entire valve shall be encased in polyethylene encasement prior to backfill. The polyethylene encasement shall be installed up to the operating nut leaving the operating nut exposed and free to be operated.

C. Provide a valve box for each valve. Set the top of the valve box neatly to existing grade, unless directed otherwise by the Engineer. Do not install in a way that allows the transfer of shock or stress to the valve. Center and plumb the box over the wrench

nut of the valve. Do not use valves to bring misaligned pipe into alignment during installation. Support pipe in such manner as to prevent stress on the valve. See Standard Details for a typical valve box installation detail.

D. Provide valve marking posts, when required by the Owner, at locations designated by the Engineer.

3.04. THRUST RESTRAINT

A. Provide all plugs, caps, tees, and bends (both horizontal and vertical) with concrete thrust blocking and/or restrained joint pipe as represented on the Drawings and Standard Details.

B. Place concrete thrust blocking between undisturbed solid ground and the fitting to be anchored. Install the concrete thrust blocking in accordance with Specification Section 03300 and Standard Details. Locate the thrust blocking to contain the resultant thrust force while keeping the pipe and fitting joints accessible for repair, unless otherwise shown or directed.

C. Provide temporary thrust restraint at temporary caps and plugs. Submit details of temporary restraint to the Engineer for approval.

D. At connections with existing water mains where there is a limit on the time the water main may be removed from service, use metal harnesses of anchor clamps, tie rods and straps; mechanical joints utilizing set-screw retainer glands; or restrained push-on joints as permitted by Engineer. No restraining system can be installed without the approval of the Engineer. Submit details of the proposed installation to the Engineer for approval. For pipe up to 12 inches in size, use a minimum of two 3/4-inch tie rods. If approved for use, install retainer glands in accordance with the manufacturer's instructions. Material for metal harnessing and tie-rods shall be ASTM A36 or A307, as a minimum requirement.

E. Protection of Metal Harnessing: Protect ties rods, clamps and other metal components against corrosion by hand application of petrolatum tape and by encasement of the entire assembly with 8-mil thick (12 mil thick in corrosive soils) loose polyethylene film in accordance with AWWA C105. Apply tape on all exposed tie rods prior to installing polyethylene.

END OF SECTION 15000

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SECTION 15020

DISINFECTING PIPELINES

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing necessary labor, tools, transportation, and other equipment for flushing and disinfecting all pipelines installed under this Contract. Install, and if directed remove, all chlorination taps required for disinfection. The disinfection will be performed under the supervision of Owner.

1.02. RELATED WORK

A. Specification Section 1000 – Summary of Work

B. Specification Section 15000 – Piping – General Provisions

C. Specification Section 15025 – Cleaning Pipelines

1.03. REFERENCES

Refer to current standards:

A. AWWA C651 – Disinfecting Water Mains

B. AWWA B300 and B301

C. AWWA Manual M12

D. *Standard Methods for the Examination of Water and Wastewater*

1.04. SUBMITTALS

A. Submit a plan of disposal of flushed water.

B. Submit in accordance with Section 01300.

1.05. PROTECTION

A. Chlorine disinfection and dechlorination shall be performed under the direct supervision of someone familiar with the physiological, chemical, and physical properties of the form of chlorine used. They shall be trained and equipped to handle any emergency that may arise. All personnel involved shall observe appropriate safety practices to protect working personnel and the public.

B. The forwards of AWWA Standards B300 and B301 contain information and additional reference material regarding the safe handling of hypochlorite and liquid chlorine. The Contractor's supervision shall be familiar with this information prior to performing any disinfection work.

C. See Specification Section 15025-1.05 for Protection During Flushing and Cleaning.

PART 2: PRODUCTS

2.01. MATERIALS AND EQUIPMENT

A. Furnish liquid chlorine and injection equipment and/or calcium hypochlorite (HTH) as needed to disinfect all pipelines and appurtenances.

B. Liquid chlorine contains 100% available chlorine and is packaged in steel containers, usually of 100 pound, 150 pound, or 1 ton net chlorine weight. Liquid chlorine is to be furnished in accordance with AWWA B301.

C. Calcium hypochlorite is available in granular form or in approximately 5-g tablets, and contains approximately 65% available chlorine by weight. The material should be stored in a cool, dry, and dark environment to minimize its deterioration. Do not use calcium hypochlorite intended for swimming pool disinfection, as this material (containing trichloroisocyanuric acid) has been sequestered and is extremely difficult to eliminate from the pipe after the desired contact time had been achieved.

D. Calcium hypochlorite must conform to AWWA B300.

E. Field testing for chlorine and other parameters must be performed with equipment approved and calibrated for the range and resolution applicable. For example, pen chlorimeters typically do not accurately measure the concentration of chlorine in the high strength solution. High Strength Testing Strips are preferred. Any field testing equipment must be approved by Owner's local Water Quality personnel.

PART 3: EXECUTION

3.01. PREPARATION

All pipelines shall be pressure and leak tested, flushed, and cleaned of debris and dirt prior to application of the disinfectant. Flushing shall continue until the volume in the newly installed main has turned over at least one time unless the Engineer determines that conditions do not permit the required volume to be safely discharged to waste.

3.02. APPLICATION OF DISINFECTANT

Methods to be used for disinfection are those detailed in ANSI/AWWA C651 Disinfecting Water Mains.

3.03. WATER MAINS

Two (2) methods of chlorination are described below. Information in the forward of AWWA Standard C651 will be helpful in determining the best method to be used. The tablet method cited in the AWWA standard is not approved for use.

A. Continuous Feed Method

1. Set up. The continuous feed method consists of completely filling the main to remove all air pockets, flushing the completed main to remove particulates, and then refilling the main with chlorinated potable water. The potable water shall be chlorinated, so that after a 24-hour holding period in the main, there will be a free chlorine residual of not less than 10 mg/L in collected samples.

   Chlorine can be applied in advance of preliminary flushing by swabbing joints with bleach or placing hypochlorite granules in the pipe in areas where contamination is suspected. In any such case, the Contractor shall make sure and take appropriate action to make sure that the flushed water is dechlorinated.

2. Preliminary flushing. Prior to being chlorinated, fill the main to eliminate air pockets and flush to remove particulates. The flushing velocity in the main shall be not less than 3 fps unless the Engineer determines that conditions do not permit the required flow to be discharged to waste. **Table 1** shows the rates of flow required to produce a velocity of 3 fps in pipes of various sizes. In mains of 24-inches or larger diameter, an acceptable alternative to flushing is to broom-sweep the main, carefully removing all sweepings prior to chlorinating the main. WARNING: OSHA requirements for confined space need to be addressed before entering a pipeline.

   NOTE: Flushing is no substitute for preventive measures during construction. Certain contaminants such as caked deposits resist flushing at any feasible velocity.

Table 1
Required Flow and Openings to Flush Pipelines at 3 fps
(40 psi Residual Pressure in Water Main)*

Pipe Diameter (in.)	Flow Required to Produce 3 fps Velocity in Main (gpm)	Size of Tap Used (in.) Number of Taps Required on Pipe** 1	1-1/2	2	Number of 2-1/2 in. Hydrant Outlets to Use
4	120	1			1
6	260		1		1
8	470		2		1
10	730		3	2	1
12	1060			3	2
16	1880			5	2

*With a 40 psi pressure in the main with the hydrant flowing to atmosphere, a 2½-inch hydrant outlet will discharge approximately 1,000 gpm and a 4½-inch hydrant outlet will discharge approximately 2,500 gpm.

**Number of taps on pipe based on discharging through 5 feet of galvanized iron pipe with one 90 degree elbow.

3. Chlorinating the Main.

   a. Potable water may be supplied from a temporary backflow-protected connection to the existing distribution system or other approved source. The flow shall be at a constant, measured rate into the newly installed water main. In the absence of a meter, approximate the rate by placing a pitot gauge in the discharge or measuring the time to fill a container of known volume.

   b. At a point not more than 10 feet downstream from the beginning of the new main, dose the water entering the new main with chlorine fed at a constant rate such that the water will have not less than 25 mg/L free chlorine. Measure the chlorine concentration at regular intervals to ensure that this concentration is provided. Measure chlorine in accordance with the procedures described in the current edition of the AWWA Manual M12 or of *Standard Methods for the Examination of Water and Wastewater.*

   c. **Table 2** gives the amount of chlorine required for each 100 feet of pipe of various diameters. Solutions of 1 percent chlorine may be prepared with calcium hypochlorite. The solution requires 1 pound of calcium hypochlorite in 8 gallons of water.

Table 2
Chlorine Required to Produce 25 mg/L
Concentration in 100 feet of Pipe by Diameter

Pipe Diameter (in.)	100% Chlorine (lb.)	1% Chlorine (gal.)
4	0.013	0.16
6	0.030	0.36
8	0.054	0.65
10	0.085	1.02
12	0.120	1.44
16	0.217	2.6

   d. During the application of chlorine, position valves so that the strong chlorine solution in the main being treated will not flow into water mains in active service. Do not stop the chlorine application until the entire main is filled with heavily chlorinated water. Keep the chlorinated water in the main for at least 24 hours. During this time, operate all valves and hydrants in the section treated in order to disinfect the appurtenances. At the end of this 24-hour period, the treated water in all portions of the main shall have a residual of not less than 10 mg/L free chlorine.

e. Hypochlorite solution may be applied to the water main with a gasoline or electrically powered chemical feed pump designed for feeding chlorine solutions. Feed lines shall be of such material and strength as to safely withstand the corrosion caused by the concentrated chlorine solutions and the maximum pressures that may be created by the pumps. Check all connections for tightness before the solution is applied to the main. The main should undergo hydrostatic testing prior to disinfection.

f. If gaseous chlorine in solution is permitted by the Engineer and proposed by the Contractor, the preferred equipment for the gas application employs a feed vacuum-operated chlorinator to mix the chlorine gas, in combination with a booster pump for injecting the chlorine gas solution water into the main to be disinfected. Direct feed chlorinators cannot be used. (A direct feed chlorinator is one which operates solely from the pressure in the chlorine cylinder.)

B. Slug Method

1. Set up. The slug method consists of placing calcium hypochlorite granules in the main during construction; completely filling the main to eliminate all air pockets, flushing the main to remove particulates, and slowly flowing a slug of water containing 100 mg/L of free chlorine through the main so that all parts of the main and its appurtenances will be exposed to the highly chlorinated water for a period of not less than 3 hours.

2. Preliminary flushing. Same as 3.03.A.2 in this Specification Section

3. Chlorinating the Main.

a. Potable water may be supplied from a temporary backflow-protected connection to the existing distribution system or other approved source. The flow shall be at a constant, measured rate into the newly installed water main. In the absence of a meter, approximate the rate by placing a pitot gauge in the discharge or measuring the time to fill a container of known volume. The main should undergo hydrostatic testing prior to disinfection.

b. At a point not more than 10 feet downstream from the beginning of the new main, dose the water entering the new main with chlorine fed at a constant rate such that the water will have not less than 100 mg/L free chlorine. Measure the chlorine concentration at regular intervals to ensure that this concentration is provided. Measure chlorine in accordance with the procedures described in the current edition of the AWWA Manual M12 or of *Standard Methods for the Examination of Water and Wastewater*. The chlorine shall be applied continuously and for a sufficient period to develop a solid column or "slug" of chlorinated

water that will, as it moves through the main, expose all interior surfaces to a concentration of approximately 100 mg/L for at least 3 hours.

c. The free chlorine residual shall be measured in the slug as it moves through the main. If at any time it drops below 50 mg/L, stop the flow, relocate the chlorination equipment to the head of the slug, and as flow is resumed, apply chlorine to restore the free chlorine in the slug to not less than 100 mg/L.

d. As the chlorinated water flows past fittings and valves, operate related valves and hydrants so as to disinfect appurtenances and pipe branches.

C. Alternative Methods

1. Alternative methods for disinfection may be considered with the approval of the Engineer and Owner's Water Quality personnel.

3.04. FINAL FLUSHING AND DISPOSAL OF HEAVILY CHLORINATED WATER

A. Do not keep heavily chlorinated water in contact with pipe for more than 48 hours after the applicable retention period. In order to prevent damage to the pipe lining or corrosion damage to the pipe itself, flush the heavily chlorinated water from the main fittings, valves, and branches until chlorine measurements show that the concentration in the water leaving the main is no higher than that generally prevailing in the system or is acceptable for domestic use. Take all steps necessary to dechlorinate water where required per section 3.04B and 3.04C below. Contact the local sewer department to arrange for disposal of the heavily chlorinated water to the sanitary sewer if applicable.

B. Neutralize the chlorine residual of the water being disposed of by treating with one of the chemicals listed in **Table 3**. Select an alternative disposal site if a sanitary sewer system is unavailable for disposal of the chlorinated water.

C. The proposed alternative disposal site shall be inspected and approved of by the Engineer. Apply a reducing agent to the chlorinated water to be wasted to completely neutralize the chlorine residual remaining in the water. (See **Table 3** for neutralizing chemicals. Do not overdose neutralizing chemicals as this may result in adverse environmental impacts. Only dose the amount required to neutralize the amount of chlorine present). Contact Federal, State and Local regulatory agencies, where necessary, to determine special provisions for the disposal of heavily chlorinated water.

Table 3
Pounds of chemicals required to neutralize various residual chlorine concentrations in 100,000 gallons of water.

Residual Chlorine Concentration (mg/L)	Sulfur Dioxide (SO_2)	Sodium Bisulfite ($NaHSO_3$)	Sodium Sulfite (Na_2SO_3)	Sodium Thiosulfate ($Na_2S_2O_3 \cdot 5H_2O$)	Ascorbic Acid ($C_6O_8H_6$)
1	0.8	1.2	1.4	1.2	2.1
2	1.7	2.5	2.9	2.4	4.2
10	8.3	12.5	14.6	12.0	20.9
50	41.7	62.6	73.0	60.0	104.0

D. Test for chlorine residual throughout the disposal process to be sure that the chlorine is neutralized.

E. Submit a plan of disposal of flushed water to the Engineer for approval.

3.05. BACTERIOLOGICAL TESTING

A. After final flushing and before the water main is placed in service, samples must be collected and tested.

B. At least one set of samples shall be collected from every 1,200 feet of the new water main, plus one set from the end of the line and at least one set from each branch greater than one pipe length.

C. Samples shall be collected by the Owner, or other qualified person approved by the Engineer. Coordinate with Owner and submit samples to the Owner for testing of bacteriological (chemical and physical) quality. Testing will be in accordance with *Standard Methods of the Examination of Water and Wastewater*. Samples shall show the absence of coliform organisms; and the presence of a chlorine residual. Samples shall also be tested for turbidity, pH, and standard heterotrophic plate count (HPC). HPC levels must be consistent with levels normally found in the distribution system to which the new main is connected.

D. Bacteriological tests must show complete absence of coliforms and acceptable HPCs. If tests show the presence of coliform or unacceptable HPCs, perform additional flushing and disinfection of the pipeline until acceptable tests are obtained, all at no cost to the Owner. The Contractor will not be charged for the additional testing performed by the Owner.

3.06. RETESTING AND TESTING SOURCE WATER

A. At the time of initial flushing the main to remove material and test for air pockets, Contractor may request the Owner to continue flushing until the desired chlorine residual is met at the discharge point. Notification must be provided in advance and

the Contractor shall be prepared to test for chlorine at intervals of no more than five minutes as the water clears. This will provide the Contractor with some assurance that the source water is chlorinated.

B. If the subsequent tests for bacteriological contamination conducted by the Contractor fail, the Contractor may request the Owner to continue flush from the source water into the new pipe system until a chlorine residual is found at the discharge point. Notification must be provided in advance and the Contractor shall be prepared to test for chlorine at intervals of no more than five minutes as the water clears. The operation of all existing system valves shall be by the Owner at the Contractor expense and the discharge point must be opened prior to opening existing valves to avoid contamination. This will provide the Contractor with some assurance that the source water is chlorinated for subsequent tests.

3.07. BASIS OF PAYMENT

The Work included in this item shall be made on a lump sum basis.

END OF SECTION 15020

SECTION 15025

CLEANING PIPELINES

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing necessary labor, material, tools, transportation, and other equipment for cleaning the required pipeline when it is determined that normal flushing will not sufficiently remove dirt and debris introduced during construction. The cleaning shall use foam pigs, swabs or "go-devils" as described herein.

1.02. GENERAL

After the installation of water mains normal flushing often proves inadequate to remove all the entrapped air, loose debris and other objects that may have been left in the main during installation. Therefore, after the installation of water mains it may be necessary to use polyurethane foam pigs and/or polyurethane hard foam swabs to remove all foreign matter from the pipeline (i.e. "pig" the pipeline).

Cleaning per the requirements of this section shall be performed prior to testing and disinfection of the main.

1.03. RELATED WORK

A. Specification Section 15000-3.02-Construction Methods to Avoid Contamination.

B. Specification Section 15020-3.01-Preparation (prior to disinfecting pipelines).

1.04. SUBMITTALS

A. Submit a cleaning plan.

B. Submit in accordance with Section 01300.

1.05. PROTECTION DURING FLUSHING AND CLEANING

A. Coordinate with Engineer and Owner before flushing to ensure that an adequate amount of flushing water is available, at sufficiently high pressure. Determine if the water can be disposed of safely. Notify the Owner, Engineer, and the following prior to flushing or cleaning:

1. Fire Department
2. Other utilities, such as gas, electric and telephone companies, who may have underground facilities in the area.

3. Customers who may be inconvenienced by reduced pressure or dirty water.

B. Operation of Water System – The operation of main valves and fire hydrants on the water system in service often results in disturbance of the natural sediments and mineral deposits in mains, causing problems for Illinois-American's customers. Illinois-American has a responsibility to provide its customers the highest level of service possible. Therefore Illinois-American has adopted a strict policy that no one, other than an employee of Illinois-American, unless expressly authorized, is to operate any valve, fire hydrant, or other appurtenance of water system that is in service, or which will affect the system that is in service. This operation is to be performed by an employee of Illinois-American or under Illinois-American direct supervision.

C. Coordinate with the Owner to isolate the section to be flushed from the operating distribution system. Provide a minimum notice of two (2) working days to schedule Illinois American staff to report to site.

D. Protect the work staff and the public during flushing and cleaning operation. Keep children away from the flow of flushing water. Where practical, employ energy dissipators to help avoid damage to property and the flooding of streets. See General Conditions Article 6.

PART 2: PRODUCTS

2.01. MATERIALS AND EQUIPMENT

As the cleaning described in this section pertains to new water mains, the use of pipe cleaning plugs which utilize bristles, wire brushes, carbide abrasives, steel studs or any other type of abrasive is not permitted unless specifically approved by the Engineer. Consult a manufacturer of pipe cleaning plugs, such as Knapp Polly Pig (Houston, Texas), to determine the type and size of cleaning plug best suited for the application. Two types of plugs shall be considered and are described as follows:

A. Swabs used for cleaning mains shall be made of polyurethane foam. This foam has a density of 1 to 2 pounds per cubic foot. Swabs shall be purchased from commercial manufacturers of swabs for pipes. Both soft and hard grade foam swabs are available. New mains are typically cleaned with hard foam swabs.

Use swabs cut into cubes and cylinders slightly larger than the size of the pipe to be cleaned. Cubes one inch larger in dimension than the nominal diameter of the pipe being cleaned have worked well for cleaning pipes up to 12-inches in diameter.

For mains greater than 12-inches in diameter, the swab diameter must be considered individually for each operation. For new mains, swabs three inches larger than the

pipe diameter have worked well. Swabs for the larger mains are usually 1-1/2 times the diameter in length.

B. Pigs, if used, shall be commercially manufactured for the specific purpose of cleaning pipes. They shall be made of polyurethane foam weighing 2 to 15 pounds per cubic foot. Pigs are bullet shaped and come in various grades of flexibility and roughness. Pigs are typically 1/4 -inch to 1/2-inch larger in diameter than the pipe to be cleaned.

PART 3: EXECUTION

3.01. PLUG INSTALLATION AND REMOVAL

A. Satisfactorily expose cleaning wyes, or other entry or exit points. Remove cleaning wye covers, etc., as required by the Engineer to insert the plugs into the mains.

B. If approved by the Engineer, stripped fire hydrants, air valves and blow-offs may serve as entry and exit points for smaller sized mains. The Engineer will examine these appurtenances and the connecting laterals to ensure that adequate openings exist through which a plug may be launched. If these appurtenances are used, a special launcher to ease the insertion and launching of the plug is required. If available a pressurized water source such as a fire hydrant can be used to launch the plug. If water from the system is not available nearby, use a water truck with pump.

C. If hydrants are used as entry and exit points, remove the internal mechanisms and plug the drains. Insert the plug and replace the cap with a special flange with a 2-1/2-inch fitting. Connect the 2-1/2-inch fitting with a pressure gauge and valve to a pressurized water source. After the last valve isolating the section to be cleaned is closed, open the hydrant supply valve. Propel the swab or pig into the main by opening the exit valve.

D. In mains greater than 8-inches, wyes shall be used at the entry and exit points. Fabricate the wye section one size larger than the main to ease the insertion and extraction of the plug. The use of wyes, as with the previously mentioned appurtenances, requires an outside source of pressurized water for launching. Cap the wye with a flange with a 2-to-6-inch fitting for connecting with the pressurized water source.

E. Many pigs, since they are less flexible than swabs, are harder to insert into a pipe. Other methods acceptable to insert pigs include:

1. winching with a double sling,
2. winching with a rope attached to the pig,
3. compression with a banding machine prior to insertion, and

4. the use of a specially designed tapered steel pipe which is removed after use.

F. During swab or pig installation, leave as much water as possible in the main to be cleaned. The water suspends the material being removed from the pipe and minimizes the chance of the material forming a solid plug. Water in the pipe also keeps the swab or pig from traveling through the pipe at excessive rates. If swabs or pigs travel too fast, they will remove less material. The swab or pig will also wear more rapidly in such a case.

G. At the exit point or blow-off, install a wye long enough to house the swab or pig. Attach temporary piping to the end cap to allow the drainage of the water.

H. Take precautions to prevent backflow of purged water into the main when the cleaning plug exits through a dead end main. This can be accomplished by installing mechanical joint bends and pipe joints to provide a riser out of the trench. Additional excavation of the trench may serve the same purpose.

3.02. PRE-CLEANING PROCEDURES

A. Prepare a written cleaning plan for the Engineer's review.

B. Suggested pre-cleaning procedures include the following:

1. Identify mains to be cleaned on a map. Mark the location of the entry, water supply and exit points, any blow-offs to be used, valves to be closed, and the path of the swab or pig.
2. Under the Engineer's supervision and with Owner staff as required, inspect and operate all valves and hydrants to be used in the cleaning operation. Ensure that all operate correctly and that a tight shutdown is possible.
3. Check location and type of hydrants, launch and exit location, and blow-offs to be used. Make blow-off tap connections if necessary.
4. The Owner will notify customers served by the main to be cleaned that their water will be off for a specified period on the day of the cleaning.
5. The Owner will identify customers who may require temporary services during the main cleaning operation. The Contractor shall provide the temporary connections.
6. Determine the number and size of plugs to be used.

3.03. CLEANING PROCEDURE

Clean the pipeline using the following procedures and the Contractor’s cleaning plan, as approved by the Engineer.

A. Swab Cleaning Procedures

1. Open the water supply upstream of the swab. Throttle the flow in the main at the discharge (plug exit) point so that the swab passes through the main at a speed of 2 to 4 fps. At this velocity, swabs will effectively clean pipes for distances of up to 4000 feet before disintegrating to a size smaller than the main. Use pitot gauges at the existing hydrant or blow-off to estimate the flowrate in the main.
2. Note the time of entry of the swab into the main and estimate its time or arrival at the exit point. If the swab does not reach the exit point in the estimated time plus ten minutes, then a blockage has probably occurred. Reverse the flow in the main and note the time required for the swab to reach the original entry point. From the return travel time, approximate the location of the blockage. The Engineer may require a swab to which a transmitter has been attached to be used to accurately locate a blockage.
3. Swab repeatedly as needed. Stop swabbing when the water behind the swabs emerging at the exit clears up within one minute. Account for all swabs inserted into the main.
4. After the last swab has been recovered, flush the main to remove swab particles. This may require up to an hour of flushing.

B. Pig Cleaning Procedures

1. Remove all air valves along the line. This will provide pressure relief should the pig suddenly stop and assure that no air is trapped in the main.
2. If the pig is inserted directly into the main, set it in motion by opening the upstream gate valve and a downstream fire hydrant or blow-off valve (usually the valve on the capped end at the exit point). If the pig is launched from a wye, fire hydrant, or other appurtenance, use an external pressurized water source to inject the pig into the main as described in Section 3.01.
3. Once the pig is in motion in the main, control its speed by throttling the discharge at a downstream fire hydrant or blow-off. Operate pigs typically at 1 fps. This slow speed will help prevent pressure surges when the pig passes through undersized valves, enters smaller pipes, or turns through tees or crosses. Speeds of up to 2 fps can be used on straight runs with no restrictions or sharp turns.
4. Make sufficient passes of the pig to obtain thorough cleaning. Two pigs may be used in tandem to save time and water. Sufficient cleaning is established when the water discharging after the pig becomes clear within one minute.

3.04. POST CLEANING PROCEDURE

After successful completion of cleaning the main shall be tested, flushed and disinfected in accordance with applicable sections of these Specifications.

END OF SECTION 15025

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SECTION 15030

PRESSURE AND LEAKAGE TESTS

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing necessary labor, tools, material, and equipment for testing all pipelines installed under this Contract. Testing shall be performed concurrent with installation.

1.02. RELATED WORK

A. Specification Section 15000 – Piping – General Provisions

1.03. REFERENCES

Refer to current standards:

A. AWWA C600

B. Standard Specifications for Water and Sewer Construction in Illinois

1.04. SUBMITTALS

A. Submit schedules and procedures to the Engineer for testing of all parts of the water main installed.

B. Submit the schedule at least seven days prior to any testing.

C. Submit in accordance with Section 01300.

PART 2: PRODUCTS

2.01. EQUIPMENT

Furnish the pump, pipe connections, and all necessary apparatus for the pressure and leakage tests including gauges and metering devices. The Owner reserves the option to furnish the gauges and metering devices for the tests. Excavate, backfill, and furnish all necessary assistance for conducting the tests.

PART 3: EXECUTION

3.01. GENERAL

A. Perform hydrostatic pressure and leak tests in accordance with AWWA C600, Section 4 - Hydrostatic Testing after the pipe or section of pipe has been laid, thrust blocking cured (min. 5 days), and the trench is completely or partially backfilled. Where practical, testing shall be performed fully isolated from the active distribution system.

B. The Contractor may completely backfill the trench or partially backfill the trench over the center portion of each pipe section to be tested. However, the Engineer may direct the Contractor to completely backfill the trench if local traffic or safety conditions require.

C. For system operating pressures of 200 psi or less, perform the hydrostatic test at a pressure of no less than 100 psi above the normal operating pressure without exceeding the rating of the pipe and appurtenances, or a minimum of 150 psi. For system operating pressures in excess of 200 psi, perform the hydrostatic test at a pressure that is 1.5 times the normal operating pressure, but no more than the design rating of the pipe and appurtenances.

D. Valves shall not be operated in either direction at a differential pressure exceeding the rated valve working pressure. A test pressure greater than the rated valve working pressure can result in trapped test pressure between the gates of a double-disc gate valve. For tests exceeding the rated valve working pressure, the test setup should include a provision, independent of the valve, to reduce the line pressure to the rated valve working pressure on completion of the test. The valve can then be opened enough to equalize the trapped pressure with the line pressure, or the valve can be fully opened if desired.

E. The test pressure shall not exceed the rated working pressure or differential pressure of the valves when the pressure boundary of the test section includes closed, resilient-seated gate valves or butterfly valves.

F. Attach a tapping sleeve and valve assembly to the main. Pressure test the assembly prior to making the tap. The required test pressure shall be determined in the same manner as for pipe. The test is acceptable if there is no pressure drop in 15 minutes at test pressure.

3.02. FILLING AND TESTING

A. Slowly fill each segregated section of pipeline with water ensuring that all air is expelled. Extreme care must be taken to ensure that all air is expelled during the filling of pipe. The line shall stand full of water for at least twenty-four hours prior to testing to allow all air to escape. If necessary, tap the main at points of highest elevation to expel air as the pipe is filled. Remove the corporation stops and plug the taps after successfully filling the pipeline and expelling all air as approved by the Engineer.

B. Apply the specified test pressure, measured at the point of lowest elevation, using a pump connected to the pipe in a manner satisfactory to the Engineer. If the elevation of the high point of the pipeline being tested is such that the pressure during testing will be below 85% of the required test pressure, the Engineer will require a separate test to be performed on this section of pipeline. In lieu of a separate test, the test pressure measured at the lowest elevation may be increased, within the pressure rating of the pipeline material, such that the resulting pressure at the highest point exceeds 85% of the required test pressure. The test will be conducted for at least two hours at the required test pressure ± 5 psi.

C. Conduct a leakage test concurrently with the pressure test. Leakage is defined as the volume of the water that must be supplied into the newly laid pipeline to maintain pressure within 5 psi of the test pressure after it is filled and purged of air. Measure the volume of water using a calibrated container or meter.

D. No pipeline installation will be accepted by the Engineer if the leakage is greater than that shown in the following table:

Allowable Leakage per 1000 ft. of Pipeline*---gph

Avg. Test Pressure	Nominal Pipe Diameter—*in.*													
psi	4	6	8	10	12	14	16	18	20	24	30	36	42	48
450	0.57	0.86	1.15	1.43	1.72	2.01	2.29	2.58	2.87	3.44	4.30	5.16	6.02	6.88
400	0.54	0.81	1.08	1.35	1.62	1.89	2.16	2.43	2.70	3.24	4.05	4.86	5.68	6.49
350	0.51	0.76	1.01	1.26	1.52	1.77	2.02	2.28	2.53	3.03	3.79	4.55	5.31	6.07
300	0.47	0.70	0.94	1.17	1.40	1.64	1.87	2.11	2.34	2.81	3.51	4.21	4.92	5.62
275	0.45	0.67	0.90	1.12	1.34	1.57	1.79	2.02	2.24	2.69	3.36	4.03	4.71	5.38
250	0.43	0.64	0.85	1.07	1.28	1.50	1.71	1.92	2.14	2.56	3.21	3.85	4.49	5.13
225	0.41	0.61	0.81	1.01	1.22	1.42	1.62	1.82	2.03	2.43	3.04	3.65	4.26	4.86
200	0.38	0.57	0.76	0.96	1.15	1.34	1.53	1.72	1.91	2.29	2.87	3.44	4.01	4.59
175	0.36	0.54	0.72	0.89	1.07	1.25	1.43	1.61	1.79	2.15	2.68	3.22	3.75	4.29
150	0.33	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.66	1.99	2.48	2.98	3.48	3.97
125	0.30	0.45	0.60	0.76	0.91	1.06	1.21	1.36	1.51	1.81	2.27	2.72	3.17	3.63
100	0.27	0.41	0.54	0.68	0.81	0.95	1.08	1.22	1.35	1.62	2.03	2.43	2.84	3.24

*If the pipeline under test contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size. The table has been generated from the formula:
$L = \frac{S*D*P^{1/2}}{148{,}000}$ where L is the allowable leakage in gallons per hour, S is the length of pipe in feet, D is the nominal pipe diameter in inches, and P is the test pressure in psig.

E. Should any test disclose damaged or defective materials or leakage greater than that permitted, the Contractor shall, at Contractor's expense, locate and repair and/or replace the damaged or defective materials. Materials used for repair must be approved by the Engineer and meet the Specifications. Repeat the tests until the leakage is within the permitted allowance and is satisfactory to the Engineer.

END OF SECTION 15030

SECTION 15105

DUCTILE IRON PIPE AND FITTINGS

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing and installing ductile iron pipe and fittings as shown on the Drawings and Standard Details. The Owner reserves the right to provide the ductile iron pipe. A list of additional materials to be provided by the Owner, if applicable, is shown in Specification Section 01000.

1.02. RELATED WORK

A. Specification Section 01000 – Summary of Work

B. Specification Section 15000 – Piping – General Provisions

C. Specification Section 02210 – Trenching, Backfilling, and Compacting

D. Specification Section 15130 – Piping Specialties

1.03. REFERENCES

Refer to current Standards:

A. AWWA C104 - American National Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water

B. AWWA C105 - American National Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems

C. AWWA C110 - American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids

D. AWWA C111 - American National Standard for Rubber-Gasket Joints for Ductile- Iron Pressure Pipe and Fittings

E. AWWA C115 - American National Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges

F. AWWA C116 - American National Standard for Protective Fusion-Bonded Epoxy

Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings for Water Supply Service

G. AWWA C150 - American National Standard for the Thickness Design of Ductile-Iron Pipe

H. AWWA C151 - American National Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water

I. AWWA C153 - American National Standard for Ductile-Iron Compact Fittings, 3-inch through 24-inch and 54-inch through 64-inch, for Water Service

J. AWWA C600 -- AWWA Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances

K. ISO 8179-1 – Ductile Iron Pipes-External Zinc-based coating-Part1: Metallic Zinc with Finishing Layer

1.04. SUBMITTALS

A. Submit shop drawings and manufacturer's literature for all Contractor supplied materials.

B. Submit in accordance with Section 01300.

PART 2: PRODUCTS

Research has documented that certain elastomers (such as those used in gasket material) may be subject to permeation by lower-molecular weight organic solvents or petroleum products. Products supplied under this Specification Section assume that petroleum products or organic solvents will not be encountered. If during the course of pipeline installation the Contractor identifies, or suspects the presence of petroleum products or any unknown chemical substance, notify the Engineer immediately. Stop installing piping in the area of suspected contamination until direction is provided by the Engineer.

2.01. PIPE MATERIALS

A. General

Ductile iron pipe shall conform to the latest specifications as adopted by the American National Standards Institute, Inc., (ANSI) and the American Water Works Association (AWWA). Specifically, ductile iron pipe shall conform to AWWA Standard C151.

The exterior of ductile iron pipe shall be coated with a layer of arcsprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m2 of pipe surface area. A

finishing layer topcoat shall be applied to the zinc. 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.”

The pipe or fitting exterior shall be topcoated with a bituminous coating in accordance with AWWA Standard C151. The pipe or fitting interior shall be cement mortar lined and seal coated in compliance with the latest revision of AWWA Standard C104.

B. Quality

Pipe and fittings shall meet the minimum quality requirements by conforming to the following:

1. AWWA C105 / ANSI A21.5 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water Polyethylene Encasement for Ductile-Iron Pipe Systems
2. AWWA C110 / ANSI A21.10 Ductile Iron and Gray Iron Fittings, 3 NPS through 48 NPS for Water AWWA C111 / ANSI A21.11 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
3. AWWA C115 / ANSI A21.15 Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
4. AWWA C116 / ANSI A21.16 Protective Fusion-Bonded Epoxy Coating for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings for Water Supply Service
5. AWWA C150 / ANSI A21.50 Thickness Design of Ductile-Iron Pipe
6. AWWA C151 / ANSI A21.51 Ductile-Iron Pipe, Centrifugally Cast, for Water
7. AWWA C153 / ANSI A21.53 Ductile-Iron Compact Fittings, 3 NPS through 24 NPS and 54 NPS through 64 NPS, for Water Service

Ductile iron water pipe and fittings will be accepted on the basis of the Manufacturer’s certification that the material conforms to this specification. The certification for iron fittings shall list a fitting description, quantity, bare fitting weight and source, (AWWA Standard C110, C153 or Manufacturer, if fitting is not listed in either standard). The certification shall accompany the material delivered to the project site. The Owner reserves the right to sample and test this material subsequent to delivery at the project site. If foreign manufactured fittings are provided, then the Contractor is obligated to notify the Engineer with a submittal and provide the necessary documentation to satisfy the Engineer and the Owner that the materials provided meet the specified AWWA standards and, among other documentation that may be required, provide certificates of compliance on the component supplied.

C. Pipe Class

The pressure and thickness class of pipe to be furnished shall be in accordance with **Table 1** and the notes listed below.

Table 1
MINIMUM Rated Working Pressure
For Ductile Iron Pipe Manufactured In Accordance
With AWWA Standard C151

Pipe Size (Inch)	Pressure Class	Thickness Class
6	350	52
8	350	52
12	350	54
16	300	54
20	300	54
24	250	54

NOTES:

1. Larger pipe sizes up to 54-inch can be installed as pressure Class 200 with cover up to nine (9) feet and an operating pressure of 200 psi, where approved by the Engineer. When trench depths exceed fifteen (15) feet for pipe sizes of 16-inch or larger, the Engineer shall direct the Contractor on the proper class pipe to use.

2. The noted pressure class is adequate to support 3/4 and 1-inch corporation stops. Use a full saddle for larger taps (e.g.., air relief valves or larger corporations) due to limited wall thickness.

3. There are special conditions where a larger wall thickness is required. The Engineer shall direct the Contractor on the proper pressure class pipe to use in specific instances; e.g. at treatment plant or booster station sites where frequent excavation can be anticipated in the vicinity of pipe, where the pipeline is laid on a river channel bottom to prevent external damage to the pipe and minimize the potential for costly pipe replacement, etc.

D. Testing

Perform a hydrostatic test of all pipes and appurtenances as required by AWWA Standard C151 and Specification Section 15030.

E. Joints

1. Mechanical and Push-On joints including accessories shall conform to AWWA Standard C111.

2. Flanged joints shall conform to AWWA Standard C110 or ANSI B16.1 for fittings and AWWA Standard C115 for pipe. Do not use flanged joints in underground installations except within structures.

   Furnish all flanged joints with 1/8-inch thick, red rubber or styrene butadiene rubber gaskets. The bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all as specified in American Standard for

Wrench Head Bolts and Nuts and Wrench Openings (ANSI B18.2). For bolts of 1-3/4-inches in diameter and larger, bolt studs with a nut on each end are recommended. The high-strength, low-alloy steel for bolts and nuts shall have the characteristics listed in Table 6 of AWWA Standard C111. Exposed bolts and nuts in aggressive soils shall be Xylan or FluoroKote #1. Allowed Manufacturer for bolts is Cor-Blue.

3. Restrained Joint for pipes shall be of the boltless push-on type which provides joint restraint independent of the joint seal. Restrained push-on joints allowed for pipe only shall have accessories conforming to AWWA Standard C111. Restrained system shall be suitable for the following minimum working pressures:

Pipe Size (Inch)	Pressure (psi)
Less than 20	350
20	300
24	250
30 - 64	200

F. Acceptable Suppliers are listed in the most current version of the Supplemental Technical Specifications.

2.02. FITTINGS

A. Ductile Iron Fittings

Standard fittings shall be ductile iron conforming to AWWA Standard C110. Compact ductile iron fittings shall meet the requirements of AWWA Standard C153.

1. Working Pressures - Fittings shall be suitable for the following working pressures unless otherwise noted in AWWA Standard C110 or C153:

Size (inch)	Compact Fittings Working Pressure (psi)	Standard Fitting Working Pressure (psi)
3 - 24	350	250 (350 with special gaskets)
30 - 48	250	250
54 - 64	150	N/A

The use of standard ductile iron fittings having a 250-psi pressure rating with ductile iron pipe (having a rating of 350 psi) is not permitted except by the expressed written approval by the Engineer.

2. Coating and Lining - The exterior of ductile iron pipe fittings shall be coated with a layer of arcsprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m2 of pipe surface area. A finishing layer topcoat shall be applied to the zinc. 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." The fittings shall be topcoated on the outside with a petroleum asphaltic coating in accordance with AWWA Standard C110 or fusion coated epoxy in accordance with AWWA Standard C116 and lined inside with cement-mortar and seal coated in accordance with AWWA Standard C104 or fusion coated epoxy in accordance with AWWA Standard C116.

B. Acceptable Suppliers are listed in the most current version of the Supplemental Technical Specifications.

C. Joints

1. Mechanical and Push-On joints including accessories shall conform to AWWA Standard C111. Anti-Rotational T-Bolts shall be used on mechanical joints and shall be of domestic origin, high strength, low alloy steel, meeting the current provisions of ANSI/AWWA C111/A21.1-90 for rubber gasket joints for cast iron or ductile iron pipe and fittings. Bolt manufacturer's certification of compliance must accompany each shipment. T-bolts shall be Xylan or FluoroKote #1, (corrosion resistant) to handle corrosive conditions on any buried bolts. Standard T-Bolts may be allowed by the Owner, but must adhere to the above characteristics.

2. Flanged joints shall meet the requirements of AWWA Standard C115 or ANSI B16.1. Do not use flanged joints in underground installations except within structures. Furnish all flanged joints with a minimum 1/8-inch-thick red rubber or styrene butadiene rubber gasket. The bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all as specified in ANSI B18.2. Xylan or FluoroKote #1 Hex Bolts (corrosion resistant) to handle corrosive conditions shall be used on any buried flanged bolts. Flange gaskets shall be rubber in composition; paper gaskets are not permitted.

   Bolts and nuts shall be threaded in accordance with ASME/ANSI B1.1, Unified Inch Screw Threads (UN and UNR Thread Form) class 2A external and class 2B internal. For bolts of 1-3/4-inches in diameter and larger, boltstuds with a nut on each end are recommended. Material for bolts and nuts shall conform to ASTM A307, 60,000 psi Tensile Strength, Grade B, unless otherwise specified. Bolt manufacturer's certification of compliance must accompany each shipment.

3. Restrained joints for valves and fittings shall be of the boltless push-on type which provides joint restraint independent of the joint seal. Field Lok gaskets are not permitted on valves or fittings. Restrained push-on joints allowed for pipe

only shall have accessories conforming to AWWA Standard C111. Restrained system shall be suitable for the following minimum working pressures:

Pipe Size (Inch)	Pressure (psi)
Less than 20	350
20	300
24	250
30 - 64	200

Where adjacent fittings are to be placed (as in a mechanical joint hydrant tee and a mechanical joint hydrant valve), the use of a suitably sized Foster adaptor is permitted to facilitate restraint between the fittings.

PART 3: EXECUTION

3.01. INSTALLATION

Follow the provisions of Specification Section 15000 and 02210 in addition to the following requirements:

A. Push-On Joints - Clean the surfaces that the gasket will contact thoroughly, just prior to assembly using a bacteria free solution (bleach, potable water or NSF approved material). Insert the gasket into the groove in the bell. Apply a liberal coating of special lubricant to the gasket and the spigot end of the pipe before assembling the joint. Center the spigot end in the bell and push home the spigot end.

B. Mechanical Joints - Clean the surfaces that the gasket will contact thoroughly, just prior to assembly using a bacteria free solution (bleach, potable water or NSF approved material). Apply a liberal coating of special lubricant to all of the surfaces that the gasket will contact. Slip the follower gland and gasket over the pipe plain end making sure that the small side of the gasket and lip of the gland face the bell socket. Insert the plain end into socket. Push the gasket into position with fingers. Seat gasket evenly. Slide gland into position, insert bolts, and tighten nuts by hand. Tighten bolts alternately (across from one another) to the recommended manufacturing rating or if not provided, to the following normal torques:

Bolt Size (inch)	Range of Torque (foot-pounds)
5/8	40 - 60
3/4	60 - 90
1	70 - 100
1-1/4	90 - 120

C. Restrained Joints

1. Ball and Socket. Assemble and install the ball and socket joint according to the manufacturer's recommendations. Thoroughly clean and lubricate the joint. Check the retainer ring fastener.

2. Push-On. Assemble and install the push-on joint according to the manufacturer's recommendations. Thoroughly clean and lubricate the joint. Check the retainer ring fastener.

   Protect pipe from damage from the jacking device (backhoe bucket, pipe jack, etc.) when "pushing home" any pipe by using wood or other suitable (non-metallic) material.

3. Mechanical Joint. Assemble and install the mechanical joint according to the manufacturer's recommendations. Thoroughly clean and lubricate the joint. Use approved restrained joint device on fittings and valves where required and approved for use by Engineer.

D. Pipe Protection

Protect pipe from damage from the jacking device (backhoe bucket, pipe jack, etc.) when "pushing home" any pipe. Wood or other suitable material (non-metallic) shall be used to push home the pipe.

E. Gaskets

Gaskets shall be as provided or recommended by the manufacturer and satisfy AWWA standard C111 in all respects. As noted in the products section of this specification, some gasket materials are prone to permeation of certain hydrocarbons which may exist in the soil (see part 2). Under these conditions and at the Engineer's discretion provide FKM (Viton, Flourel) gasket material in areas of concern.

3.02. BASIS OF PAYMENT

The installation of water main, or restrained joint water main, will be paid for per linear foot of watermain and shall include furnishing labor, material (except when provided by Owner), and equipment to install water main. Items specified in other Specification Sections that are considered incidental to water main installation shall be included in this Work including, but not limited to, excavation, backfill, shoring, polywrap, tracer wire, location tape, testing, disinfection, thrust restraint, and temporary blow-off outlets.

END OF SECTION 15105

SECTION 15130

PIPING SPECIALTIES

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing and installing miscellaneous piping specialties as shown on the Drawings. Piping specialties include polyethylene encasement (polywrap); valve boxes; rods, bolts, lugs, and brackets; retaining glands; test/tracer wire boxes; and marking posts.

1.02. RELATED WORK

A. Specification Section 02210 – Trenching, Backfilling, and Compacting

B. Specification Section 15000 – Piping – General Provisions

C. Specification Section 15105 – Ductile Iron Pipe and Fittings

1.03. REFERENCES

Refer to current Standards:

A. AWWA C105 - American National Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems

B. AWWA C217 – Petrolatum and Petroleum Wax Tape Coatings

C. AWWA C600 – Installation of Ductile Iron Water Mains and Their Appurtenances

D. DIPRA Field Polyethylene Installation Guide

PART 2: PRODUCTS

2.01. POLYETHYLENE ENCASEMENT

A. Polyethylene encasement shall conform to AWWA Standard C105 and shall be enhanced with V-Bio. The polyethylene encasement shall be 8 mils thick (12 mils thick in corrosive soil). The polyethylene film shall be translucent and blue in color and distinctly marked (at minimum 2-foot intervals) with the following information:

1. manufacturer's name (or trademark),
2. year manufactured,

3. minimum film thickness and material type (LLDPE or HDCLPE),
4. range of nominal pipe diameter size
5. ANSI/AWWA C105/A21.5 (compliance)
6. A warning "WARNING–CORROSION PROTECTION-REPAIR ANY DAMAGE
7. labeled "WATER"

B. Tape shall be polyethylene compatible adhesive and a minimum of 1.5 inches wide. Acceptable suppliers are listed in the most current version of the Supplemental Technical Specifications.

C. Store all polyethylene encasement out of the sunlight. Exposure of wrapped pipe should be kept to a minimum.

D. Acceptable Suppliers of polyethylene encasement are listed in the most current version of the Supplemental Technical Specifications.

2.02. VALVE BOXES

A. All valves shall be provided with valve boxes. Valve boxes shall be of the standard, adjustable, cast-iron extension type, multiple piece, 5-1/4-inch shaft, screw type, and of such length as necessary to extend from the valve to finished grade. Cast iron valve boxes shall be hot coated inside and out with an asphaltic compound.

B. Valve boxes shall be positioned with a Box Alignment Tool or Box Aligner ("top hats").

C. Valve box bases shall conform to the following:

Valve Size (inch)	Base
4 and smaller	Round, 8-inch high, 10-7/8-inch diameter at bottom.
6 and 8	Round, 11-inch high, 14-3/8-inch diameter at bottom
10 and larger	Oval, 11-inch high, 15-inch by 11-1/8-inch at bottom

D. Acceptable Manufacturers are listed in the Supplemental Technical Specifications.

2.03. RODS, BOLTS, LUGS AND BRACKETS

A. All steel rods, bolts, lugs and brackets, shall be ASTM A36 or A307 carbon steel with xylan coating as a minimum requirement. The bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all as specified in ANSI B18.2. Xylan or FluoroKote #1 T-Bolts, corrosion resistant to handle corrosive conditions shall be used on any buried flanged bolts.

B. After field installation, all steel surfaces shall receive a petrolatum wax tape coating in accordance with Specification Section 15000 and AWWA Standard C217. Subject to approval by the Engineer, an alternative corrosion protection for exposed buried metal is an aerosol applied rubberized coating per Specification Section 15000.

C. Acceptable manufacturers are listed in the most current version of the supplemental Technical Specifications.

2.04. RETAINING GLANDS

A. All retaining glands shall be ductile iron with ductile iron set screws. Pressure ratings for use with ductile iron pipe shall be a minimum of 250 psi. Retainer Glands shall be coated with electrostatically applied baked-on polyurethane coating or approved equal. Locking wedges, bolts, and set screws shall be coated with Xylan or FluoroKote #1.

B. Acceptable Manufacturers are listed in the most current version of the Supplemental Technical Specifications.

2.05. TEST /TRACER BOXES

A. All test/tracer boxes shall be 18-inch plastic box flared and squared at base and have a 4-inch I.D. with a 1 ½-inch cast iron flange. Lid shall be a one-piece locking lid with “Test Station” marked on lid and shall contain 5 screw-type brass terminals on a non conductive terminal board.

B. Acceptable Manufacturers are listed in the most current version of the Supplemental Technical Specifications.

2.06. MARKING POSTS

A. All marking posts shall be Rhino FiberCurveTM with PolyTechCoating or equivalent fiber-composite marking posts. The color shall be standard blue for water and the length shall be a minimum 66-inches. The decals shall be UV stable, all-weather type with a no dig symbol in white and contrasting white and blue vertical lettering:

Butterfly and Gate Valves decals (Rhino GD-5226K) Blow-Offs decals (Rhino GD-5411K) Pipeline decals (Rhino GD-1333K).

B. Acceptable Manufacturers are listed in the most current version of the Supplemental Technical Specifications.

2.07. IDENTIFICATION TAPE

A. Identification tape shall be manufactured of polyethylene with a minimum thickness of 4-mils. The tape shall be highly resistant to alkalis, acid and other destructive agents found in soil. Tape width shall be a minimum of 3 inches and a maximum of 6 inches and shall have a blue background color, imprinted with black letters. Imprint shall be "CAUTION CAUTION – WATER LINE BURIED BELOW" and shall repeat itself a minimum of once every 2 feet for entire length of the tape.

B. Acceptable manufacturers are listed in the most current version of the Supplemental Technical Specifications.

2.08. LOCATION WIRE

A. Location wire shall be used at all pipe installations. Location wire shall be a direct burial #12 AWG (0.0808-inch diameter) fully annealed; high strength solid copper clad steel conductor (HS-CCS); insulated with a 30-mil high molecular weight, high density blue polyethylene jacket complying with ASTM D1248; and rated for direct burial use at 30 volts. HS-CCS conductor must be at 21% conductivity with 452-pound average tensile break load for open cut and 1150-pound average tensile break load for boring. Location wire may only be spliced with approved connectors.

B. Acceptable manufacturers are listed in the most current version of the Supplemental Technical Specifications.

2.09. RESTRAINED JOINT MARKING TAPE

A. Restrained Joint Marking Tape shall be used when restrained joint pipe or fittings are installed. Joint restraint tape is specifically to warn Water Company workers/contractors that the water main joint is restrained. It is not to be used in place of regular marking tape.

B. Restrained Joint Marking Tape shall be polyethylene 4-mil thick and 2 ½-inches wide with blue lettering on white background color and imprinted with the words "RESTRAINED JOINT" at 2-foot intervals. The tape shall have an adhesive backer. The tape shall be highly resistant to alkalis, acid and other destructive agents found in soil.

C. Acceptable manufacturers are listed in the most current version of the Supplemental Technical Specifications.

PART 3: EXECUTION

3.01. INSTALLATION

Install "piping specialties" in accordance with the general provisions provided in Specification Section 15000 and the following:

A. Polyethylene Encasement

1. Encase piping in polyethylene as required to prevent contact with surrounding backfill and bedding material in all areas shown on the Drawings or designated by the Engineer.
2. Install the polyethylene wrap in accordance with DIPRA V-Bio Enhanced Polyethylene Encasement brochure found at:

   https://www.dipra.org/component/phocadownload/category/15-ductile-iron-pipe-research-association-brochures?download=56:v-bio-enhanced-polyethylene-encasement-brochure

B. Valve Boxes

Valve boxes shall be supported so that no load can be transmitted from the valve box to the valve. See Standard Details. Using the Box Alignment Tool/Box Aligner according to the manufacturer's instructions, make sure that the bottom of the box is centered over the operating nut and runs perpendicular to the horizontal prior to backfilling.

C. Test/Tracer Wire Boxes

Boxes shall be placed at areas designated in the Drawings and shall be flush with existing grade unless otherwise noted.

D. Marker Posts

Install Marker Posts per manufacturer guidelines and place at locations noted in the Drawings or as approved by Engineer.

E. IDENTIFICATION TAPE, LOCATION WIRE, AND RESTRAINED JOINT MARKING TAPE

1. Install in accordance with manufacturer's installation instructions and as specified in the Contract Documents.
2. Install identification tape one foot above the top of the pipe.

3. Install location wire directly on top of the buried pipe.

4. Loop the location wire up the outside of valve box to one foot from the surface. Insert the wires into the valve box at that depth for connection to a locating device. The wire shall be one continuous piece from valve box to valve box up to 1250 feet maximum. When distance between valve boxes exceeds 1250 feet, or when shown on the Drawings, install tracer boxes near the mid-point of such lengths that no continuous piece of location wire exceeds 1250 feet.

5. Install the joint marking tape by adhering directly to the pipe as it is installed. The marking tape shall be installed along the entire length of pipe, including around the circumference of the bells of all fittings and valves. The pipe must be free of any foreign matter along the surface of the pipe for the marking tape installation. If clear polywrap is used, the restrained joint tape can be applied on the top of the pipe so long as it is visible. Otherwise, the joint marking tape shall be applied on top of the polywrap and secured so the tape is not shifted by backfilling.

6. The tape does not adhere in wet or cold conditions. The tape should be stored in temperatures above 50 degrees F until the time of application. The pipe must be free of frost and moisture along the surface of the pipe receiving the tape.

7. Contractor and/or Owner shall test the performance of the location wire prior to conducting pavement or landscape restoration.

END OF SECTION 15130

SECTION 15150

GATE VALVES

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing and installing gate valves as shown on the Drawings. Insertion valves may be approved for use on certain projects. If insertion valves are shown on the Drawings, see Supplemental Technical Specifications.

1.02. RELATED WORK

A. Specification Section 02210 – Trenching, Backfilling and Compacting

B. Specification Section 15000 – Piping – General Provisions

C. Specification Section 15130 – Piping Specialties

1.03. REFERENCES

Refer to current standards:

A. AWWA C509 OR C515, C111, C550, C500

1.04. SUBMITTALS

A. Submit shop drawings and manufacturer's data

B. Submit in accordance with Section 01300.

PART 2: PRODUCTS

2.01. SMALL GATE VALVES

A. All gate valves, 3 inches through 12 inches NPS, shall be iron body, resilient-seated, nut-operated, non-rising stem gate valves suitable for buried service. The valve interior and exterior shall be epoxy coated at the factory by the valve manufacturer in accordance with AWWA Standard C550 (6-8 mil average, 4 mil minimum). The valves shall be designed for a minimum differential pressure of 250 psi and a minimum internal test pressure of 500 psi unless otherwise noted on the Drawings. Valves shall be designed to operate in the vertical position.

B. Valves shall comply fully with AWWA Standard C509 OR C515. Valve ends shall be push on joint or MJ (when restrained), or as shown on the Drawings or approved in writing in accordance with AWWA Standard C111. Stems shall be made of a low zinc alloy in accordance with AWWA C509 OR C515. Stem seals shall be double O-ring stem seals. Square operating nuts conforming to AWWA Standard C509 OR C515

shall be used. Valves shall open by turning clockwise. All valve materials shall meet the requirements of NSF 61.

C. Test valves (Operation Test and Hydrostatic Tests) at the manufacturer's plant in accordance with AWWA Standard C509 OR C515. If requested, provide the Engineer with certified copies of all tests prior to shipment. The Engineer reserves the right to observe all tests.

D. Acceptable Manufacturers are listed in the Supplemental Technical Specifications.

PART 3: EXECUTION

3.01. INSTALLATION

A. Install the valves in strict accordance with the requirements contained in Specification Section 15000, Drawings, and Standard Details.

B. Install valve box in accordance with Specification Section 15130.

3.02. PROTECTION

After installation of the valve all external bolts shall be protected as described in Technical Specification 15130-2.03 before backfilled in accordance with Specification Section 15000. If polyethylene is applied to the pipe, the entire valve shall be encased in the polyethylene encasement prior to backfill. The polyethylene encasement shall be installed up to the operating nut leaving the operating nut exposed and free to be operated.

3.03. BASIS OF PAYMENT

The Work included in this Section will be paid for per each and shall include all labor, material, and equipment for the valve installation including excavation and backfilling, valve box installation, protection, location tape, tracer wire, rough grading, removal of excess excavated material, and any other ancillary Work related to valve installation.

END OF SECTION 15150

SECTION 15170

TAPPING SLEEVES, SADDLES AND VALVES

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing and installing tapping sleeves, tapping valves, and tapping saddles as shown on the Drawings.

1.02. RELATED WORK

A. Specification Section 02210 – Trenching, Backfilling and Compacting

B. Specification Section 15000 – Piping – General Provisions

C. Specification Section 15130 – Piping Specialties

1.03. REFERENCES

Refer to current standards:

A. AWWA C509 – Resilient-Seated Gate Valves for Water Supply Service

B. AWWA C550 – Protective Interior Coatings for Valves and Hydrants

C. AWWA C207 – Steel Pipe Flanges for Waterworks Service, Sizes 4 In. Through 144 In. (100 mm Through 3,600 mm)

D. AWWA C223 – Fabricated Steel and Stainless Steel Tapping Sleeves

E. Manufacturer's Standardization Society (MSS) Standard Practice 60 – Connecting Flange Joints Between Tapping Sleeves and Tapping Valves

F. Manufacturer's Standardization Society (MSS) Standard Practice 124 – Fabricated Tapping Sleeves

1.04. SUBMITTALS

A. Submit shop drawings and manufacturer's data.

B. Submit in accordance with Section 01300.

PART 2: PRODUCTS

2.01. GENERAL

A. All tapping sleeves, saddles and valves shall be designed for a working pressure of at least 250 psi for 12-inch and smaller. The valves shall be designed for a minimum

differential pressure of 250 psi and a minimum internal test pressure of 500 psi unless otherwise noted on the Drawings.

B. Verify the type of existing pipe and the outside diameter of the pipe on which the tapping sleeve is to be installed.

2.02. TAPPING VALVES

A. The horizontal tapping valves, 3-inch through 12-inch, shall conform to the applicable requirements of AWWA Standard C509. The tapping valves, 3-inch through 12-inch, shall be ductile iron body, resilient-seated, nut-operated, non-rising stem gate valves suitable for buried service. The valve interior and exterior shall be epoxy coated at the factory by the valve manufacturer in accordance with AWWA Standard C550 (6-8 mil average, 4 mil minimum). The tapping valves shall have mechanical joint inlets with mechanical joint outlets, enclosed bevel gears, bypass valve, rollers, tracks and scrapers. All valves furnished shall open (left or right) in accordance with the **Table 1 of the Supplemental Technical Specifications**.

B. Test valves (Operation Test and Hydrostatic Tests) at the manufacturer's plant in accordance with AWWA Standard C509. If requested, provide the Engineer with certified copies of all tests prior to shipment. The Engineer reserves the right to observe all tests.

C. Acceptable Manufacturers are listed in the most current version of the Supplemental Technical Specification.

2.03. STAINLESS STEEL TAPPING SLEEVES

Stainless steel tapping sleeves shall meet the requirements of MSS SP-124 and AWWA C223 and be suitable for use with the tapping valves listed in this Specification. Tapping sleeves shall provide full circumferential seal, include a ¾" NPT test plug, have a mechanical joint outlet, and be compatible with multiple pipe materials including, but not limited to, ductile iron, steel, cast iron, asbestos cement, and PVC.

A. Acceptable Manufacturers are listed in the Supplemental Technical Specifications.

2.04. CONCRETE PIPE TAPPING SLEEVES

Concrete pipe tapping sleeves shall meet the requirements of MSS SP-124, AWWA C223 and AWWA M-9 Manual and be suitable for use with the tapping valves listed in this Specification. Tapping sleeves shall provide a full circumferential seal.

A. Acceptable Manufacturers are listed in the Supplemental Technical Specifications.

2.05. TAPPING SADDLES

Unless otherwise specified by the Drawings, tapping saddles shall conform to the requirements of AWWA Standard C800 for the High Pressure class tapping saddles. Tapping saddles shall have a brass or bronze body and consist of ductile iron outlet castings, attached to the pipeline with high strength stainless steel straps. Castings shall be

sealed to pipeline with O-ring seals. Saddles shall have ANSI A21.10 flanged outlets counterbored for use with tapping valves and tapping equipment.

A. Acceptable Manufacturers are listed in Supplemental Technical Specifications.

PART 3: EXECUTION

3.01. INSTALLATION

A. Install the tapping sleeves, saddles, and valves in strict accordance with the requirements contained in Specification Section 15000 and Drawings.

B. Install the tapping sleeves, tapping saddles, and tapping valves in accordance with the manufacturer's instructions. The tapping procedure is to be in accordance with the tapping machine manufacturer's instructions.

C. Install valve box in accordance with Specification Section 15130.

3.02. PROTECTION

After installation of the tapping sleeve, tapping saddle, and tapping valve all external bolts except the operating nut shall be protected as described in Technical Specification 15130-2.03 before backfilled in accordance with Specification Section 15000. If polyethylene is applied to the pipe, the entire valve shall be encased in the polyethylene encasement prior to backfill. The polyethylene encasement shall be installed up to the operating nut leaving the operating nut exposed and free to be operated.

3.03. PRELIMINARY TESTING

Perform a hydrostatic test of the tapping sleeve and valve assembly in accordance with Specification Section 15030 after installation of the tapping sleeve and valve, but prior to making the tap. The test shall be made with the valve open using a tapped mechanical joint cap. No leakage is acceptable. The test pressure shall be maintained for a minimum of 15 minutes. Close the valve, remove the cap and observe for leakage at the valve seal. No leakage is acceptable.

Perform hydrostatic test of tapping saddles in accordance with AWWA Standard C800.

END OF SECTION 15170

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SECTION 15180

FIRE HYDRANTS

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing and installing fire hydrant assemblies at locations shown on the Drawings and in accordance with Standard Details and local regulations. The fire hydrant assembly includes the connection to the water main, hydrant valve and valve box, anchor couplings, hydrant lateral, hydrant extensions, and the fire hydrant (including base and hydrant barrel). The Owner reserves the right to provide the fire hydrant (including base and hydrant barrel). A list of additional materials to be provided by the Owner, if applicable, is shown in Specification Section 01000.

1.02. RELATED WORK

A. Specification Section 01000 – Summary of Work

B. Specification Section 02210 – Trenching, Backfilling and Compacting

C. Specification Section 15105 – Ductile Iron Pipe and Fittings

D. Specification Section 15000 – Piping – General Provisions

E. Specification Section 15130 – Piping Specialties

1.03. REFERENCES

Refer to current standards:

A. AWWA C502 – Dry Barrel Fire Hydrants

B. AWWA C550 – Protective Interior Coatings for Valves and Hydrants

1.04. SUBMITTALS

A. Submit shop drawings and manufacturer's data

B. Submit in accordance with Section 01300.

PART 2: PRODUCTS

2.01. MATERIAL

A. All fire hydrants shall be ductile iron and conform to the requirements of AWWA C502, traffic-model break-away type fire hydrants.

B. Contact the local water district and obtain written fire hydrant mechanical details for the water district prior to ordering any fire hydrants for the Work. All fire hydrants

shall open left or right as required and be clearly marked on the top of the hydrant with a 1-1/2-inch pentagon top nut and have not less than two (2) O- ring stem seals. The number and size of hose nozzle outlets is dependent on the local regulation. (Most Districts use two (2) bronze male threaded 2-1/2-inch hose outlet nozzles and one (1) bronze male threaded 4-1/2-inch pumper outlet nozzle with American National Fire Hose Connection Screw Threads (NH).) The hydrant shall be break-away traffic flange, 5-1/4-inch valve opening, 6-inch mechanical joint pipe connection. The hydrant interior and exterior shall be epoxy coated at the factory by the hydrant manufacturer in accordance with AWWA Standard C550 (6-8 mil average, 4 mil minimum).

C. All hydrant materials shall meet the requirements of NSF 61.

D. Acceptable manufacturers and model numbers are listed in the Supplemental Technical Specifications.

PART 3: EXECUTION

3.01. INSPECTION PRIOR TO INSTALLATION

A. Contractor shall inspect all fire hydrants upon receipt. Cycle each hydrant to full open and full closed positions to ensure that no internal damage or breakage has occurred during shipment and handling. Check all external bolts for proper tightness.

B. After inspection, close the hydrant valves and replace the outlet nozzle caps to prevent the entry of foreign matter. Protect stored hydrants from the weather/elements with the inlets facing downward.

3.02. INSTALLATION

A. The location shall provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians. When placed behind the curb, the hydrant barrel shall be set so that no portion of the pumper or hose nozzle cap will be less than eighteen to twenty-four inches, depending on local requirements, from the gutter face of the curb. All hydrants shall stand plumb with the pumper nozzle facing the curb. Set hydrants with nozzles at least eighteen inches above the finished grade as shown on the Standard Details. Set the break flange at least two but no more than six inches above finished grade, or as directed by the Engineer. Connect each hydrant to the main with a six-inch branch connection controlled by an independent six-inch gate valve, unless otherwise shown on the Drawings. All hydrant assemblies must be restrained from the hydrant to the main.

B. The Engineer may authorize hydrant protection using steel pipe bollards when hydrant installations have a greater than normal exposure to vehicular damage (e.g. parking lot installations, unusual driving situation, etc.). Install all such protection designated by the Engineer. Locate bollards as necessary adjacent to the hydrant and in such a manner as to not interfere with the ability to connect hoses or operate the hydrant as shown in the Drawings. Additionally, locate the bottom of the bollard and encasement above the

hydrant supply piping and valve to prevent the possibility of damage to the piping should the bollard be displaced when hit.

C. Unless otherwise directed by the Engineer, excavate a drainage pit two feet in diameter and two feet deep below but not beyond each hydrant. Fill the pit with compacted Coarse Aggregate, as described in Specification Section 02210, under and around the base of the hydrant to a level 12 inches above the hydrant drain opening. No hydrant drainage pit shall be connected to a sewer.

D. Cover the drainage area with geotextile fabric. The fabric shall completely isolate the gravel or stone so that no fill material or adjacent earth comes in contact with pit material.

E. Notify the Engineer of situations where the ground water table is above the drain opening of dry barrel hydrants. If directed by Engineer, plug the drain opening using a method acceptable to the hydrant manufacturer. No drainage pit is required when the hydrant drain is plugged. Mark the hydrant, in a manner acceptable to the Owner, to indicate that the drain opening has been plugged. Operation of a hydrant with plugged drain leaves the hydrant barrel full of water. Pump the hydrant barrel dry after each use.

F. Install connection to water main and hydrant lateral in accordance with Specification Sections 15000, 15130, 15150, and Standard Details.

G. Install hydrant valve and valve box in accordance with Specification Sections 15000, 15130, and 15150.

H. If thrust blocks are called for by the Drawings or the Engineer, reaction or thrust blocking at the base of each hydrant must not obstruct the drainage outlet of the hydrant. The size and shape of concrete thrust blocking and the number and size of tie rods, when required, shall be approved by the Engineer. Use the thrust blocking material specified in Specification Section 03300. See Specification Section 15000 for tie rod requirements.

I. Paint all hydrants above the bury line in accordance with the local operations standards listed in the Supplemental Technical Specifications. Touch up paint shall be applied upon completion of installation as needed. Take extreme care to avoid getting any paint on the “O” ring under the top operating nut or on the hydrant nozzles. Should paint be found on the “O” ring, the Contractor shall remove the paint and replace the “O” ring at no additional cost to the Owner. Any paint on the hydrant nozzles shall be removed at the Contractor’s expense.

3.03. TESTING

After installation and before backfilling (and after pressure testing the water main) testthe hydrant as follows:

A. Pressure Test

1. Open the hydrant fully and fill with water; close all outlets.
2. To prevent caps from being blown off dry-barrel hydrants and to prevent other possible damage, vent air from the hydrant by leaving one of the caps slightly loose as the hydrant is being filled. After all air has escaped, tighten the cap before proceeding.
3. Apply line pressure.
4. Check for leakage at flanges, nozzles and operating stem.
5. If leakage is noted, repair or replace components or complete hydrant until no leaks are evident.

B. Drainage Test for Dry Barrel Hydrants

1. Following the pressure test, close hydrant.
2. Remove one nozzle cap and place pylon or hand over nozzle opening.
3. Drainage rate should be sufficiently rapid to create a noticeable suction.
4. After backfilling, operate the hydrant to flush out any foreign material.
5. Tighten nozzle caps, then back them off slightly so that they will not be excessively tight; leave tight enough to prevent removal by hand.

3.04. BASIS OF PAYMENT

The installation of fire hydrants will be paid for per each and shall include furnishing labor, material (except when provided by Owner), and equipment to install fire hydrants. Items specified in other Specification Sections that are considered incidental to fire hydrant installation shall be included in this Work including, but not limited to, excavation, backfill, shoring, Polywrap, tracer wire, location tape, testing, disinfection, fittings, and thrust restraint.

END OF SECTION 15180

SECTION 15195

WATER MAIN ABANDONMENT

PART 1: GENERAL

1.01. SUMMARY

This section includes abandoning existing water mains, cutting & capping existing water mains (Owner reserves the right to perform cut and cap of existing water mains), and removing associated items as shown on the Drawings and Standard Details. When shown on the Drawings or required by local agencies place flowable fill in water mains to be abandoned.

1.02. RELATED WORK

A. Specification Section 02210 – Trenching, Backfilling, and Compacting

B. Specification Section 15000 – Piping-General Provisions

C. Specification Section 15150 – Ductile Iron Pipe & Fittings

1.03. SUBMITTALS

A. Contractor's plan for filling abandoned pipe completely with flowable fill, if required

B. Submit in accordance with Section 01300

PART 2: PRODUCTS

2.01. FLOWABLE FILL

A. Flowable fill for abandoned water mains shall meet the requirements of flowable fill for trench backfill in accordance with Specification Section 02210, or as approved by Engineer.

PART 3: EXECUTION

All work shall be coordinated with Owner and Engineer. Provide a minimum of 72 hours' notice prior to beginning abandonment Work. The Work described in this section shall not proceed until the Engineer has determined that all hydrants and customer service lines are transferred to the new main and placed in service.

3.01. ABANDONING WATER MAIN

A. Contractor shall have all labor, equipment, and material on site for all reasonable water main abandonment possibilities. Excavate at water main and locate the connection to the water main to be abandoned or point of abandonment. Engineer shall determine type of abandonment to be performed and its exact location for each water main abandonment. Owner will be responsible for operating valves necessary for isolating the abandonment.

B. Water main to be abandoned shall be physically separated from the rest of the system at the points determined by the Engineer. Cut and remove a sufficient length of the pipe to provide access for installing cap and thrust restraint on the portion of the main to remain in service and, if required, placing flowable fill in the portion of water main to be abandoned. The abandoned water main shall be drained, and the water safely discharged. Install the type of abandonment determined by the Engineer and install thrust restraint.

C. Remove valve boxes on all valves located on abandoned water main a minimum of 1' below grade.

D. When shown on the Drawings or required by local agencies, the abandoned main shall be filled with flowable fill. The main shall be completely filled, leaving no voids.

E. Backfill excavations in accordance with Specification Section 02210.

3.02. BASIS OF PAYMENT

Abandonments of existing water facilities including fire hydrants and valves and all cut and caps will be performed by the Owner and shall not be included in the Contractor bid.

END OF SECTION 15195

SECTION 15200

SERVICE LINES

PART 1: GENERAL

1.01. SUMMARY

This section includes furnishing and installing the water service line and ancillary items originating at the water main and terminating at the property line (typically at a curb stop/meter box) at locations shown on the Drawings or described in the Supplemental Technical Specifications. This section also includes furnishing and installing required items for Service Renewals as determined by the Owner/Engineer. This Specification Section does not include service lines or meter installation beyond the property line. Refer to Standard Details for typical service line installation(s).

The Owner reserves the right to furnish materials and labor for service line transfers. The Contractor shall coordinate with the Owner and provide all prep work to transfer service lines.

1.02. RELATED WORK

A. Specification Section 01000 – Summary of Work

B. Specification Section 02210 – Trenching, Backfilling and Compacting

C. Specification Section 15130 – Piping Specialties

1.03. REFERENCES

Refer to current standards:

A. AWWA C800 - Underground Service Line Valves and Fittings

B. Illinois State Plumbing Code

1.04. SUBMITTALS

A. Product Data – Submit manufacturer's data on the following:
   1. Service line material
   2. Corporation stops
   3. Curb stops
   4. Curb boxes
   5. Meter boxes
   6. Meter box frame and lid
   7. Meter setter

B. Submit in accordance with Section 01300.

PART 2: PRODUCTS

All Products described below shall meet the requirements of NSF 61.

Research has documented that certain pipe materials (such as polyethylene) and certain elastomers (such as those used in gasket material and packing glands) may be subject to permeation by lower-molecular weight organic solvents or petroleum products. Products supplied under this Specification Section assume that petroleum products or organic solvents will not be encountered. If during the course of pipeline installation, the Contractor identifies, or suspects the presence of petroleum products or any unknown chemical substance, notify the Engineer immediately. Stop installing piping in the area of suspected contamination until direction is provided by the Engineer.

2.01. COPPER SERVICE LINE MATERIAL

Copper pipe shall be Type L or Type K, as specified on the Drawings or Supplemental Technical Specifications, meeting the requirements of ASTM Standard B88. The pipe size (3/4", 1", 1-1/2", or 2") and type are to be determined by the Engineer. Type K is normally required in corrosive environments where polyethylene is not allowed.

Acceptable manufacturers are listed in the Supplemental Technical Specifications.

2.02. POLYETHYLENE SERVICE LINE MATERIAL

Polyethylene service line material shall be Class 160 (minimum), ultra high molecular weight, as specified on the drawings or Supplemental Technical Specifications, conforming to AWWA Standard C901. Pipe sizes (3/4", 1", 1-1/2" and 2", copper tube size (CTS) or iron pipe size (IPS)) to be determined by the Engineer. PE service lines will typically not be allowed in systems with surface water sources due to temperature fluctuations. PE service lines will typically not be allowed in high pressure systems.

Acceptable manufacturers are listed in the Supplemental Technical Specifications.

2.03. CORPORATION STOPS

Corporation stops shall be of the brass, ball valve type manufactured in accordance with AWWA Standard C800. The inlet connection shall have standard AWWA tapered threads unless otherwise required by the Engineer. The outlet connection shall be copper or brass compression connection end or pack joint for polyethylene pipe, as required. Dielectric unions shall be used to prevent transfer of any electrical stray currents from metallic service lines to metallic water main. The sizes shall range from 1/2" to 2" and shall match the size of specified service line material.

Acceptable manufacturers are listed in the Supplemental Technical Specifications.

2.04. CURB STOPS

Curb stops shall be bronze body construction, ball valves, with Double O-ring stem seals. Curb stops shall conform to AWWA Standard C800. End connections shall be suitable for

copper or brass compression connection or pack joint for polyethylene pipe, as required. Sizes shall be from 3/4" to 2" and shall match the service line size.

Acceptable manufacturers are listed in the Supplemental Technical Specifications.

2.05. CURB BOXES

Curb boxes shall be standard cast iron, sliding or screw type, 1" or 2-1/2" as required, complete with lid and head bolt. Boxes shall be adjustable from 18-inches to 66-inches. The box size will be determined by the Engineer.

Acceptable manufacturers are listed in the Supplemental Technical Specifications.

2.06. METER BOX/METER PIT

Meter boxes shall be high quality, heavy duty, crush resistant plastic pipe. They must have a dual-wall construction with a smooth, white interior, a ribbed/corrugated exterior, and shall be notched on the bottom sides of the pit.

Acceptable manufacturers are listed in the Supplemental Technical Specifications.

2.07. METER BOX FRAME AND LID

Meter box frames and lids shall be cast iron and have a non-recessed lid opening. The meter box frames must be compatible with the meter box.

Acceptable manufacturers are listed in the Supplemental Technical Specifications.

2.08. METER SETTER/METER YOKE

Meter Setters shall be manufactured and tested in accordance with applicable section of AWWA C800 and maintain electrical ground continuity (Bonded).

Acceptable manufacturers are listed in the Supplemental Technical Specifications.

2.09. MISCELLANEOUS SERVICE LINE FITTINGS

Miscellaneous service line fittings such as couplings, adapters, saddles, bends, plugs, service line electrical insulators, etc. shall conform to AWWA Standard C800.

Acceptable manufacturers are listed in the Supplemental Technical Specifications.

PART 3: EXECUTION

3.01. POTHOLE INVESTIGATION

A. Contractor shall pothole all existing services 2 feet on the owner side of the water meter and a minimum of 4 feet on the customer side of the meter to determine material.

B. Work includes hydro-vac excavation, rough grading, and removal of excess excavation materials per Owner specifications, replacement of driveway, roadway, or gravel to existing condition, and any other ancillary work related to potholing to replace the work

area to existing conditions.

C. Water will be supplied by the Owner.

D. Service line size and material shall be documented by both Contractor and Engineer and delivered to Owner upon request.

E. If, at any time, lead services are encountered, Contractor shall immediately coordinate with the Owner and refer to Specification 15205. Contractor shall take care to not disturb or agitate lead service line.

3.02. INSTALLATION OF CORPORATION STOPS

A. Use experienced craftsmen familiar with installation of water service lines when tapping water mains. Make all taps with a suitable tapping machine (Mueller, Ford, Hays or Dresser type) using the proper combined drill and tap. Handheld drilling equipment is not acceptable.

B. Before making the tap, inspect corporation stops for cleanliness, damaged threads, and proper operation of the ball valve prior to installation. Do not install corporation stops that fail this inspection.

C. The main may be tapped along the top half of the pipe as directed by the Engineer or as shown on Standard Details. Use a tapping saddle when the water main wall thickness or material (plastic, concrete or asbestos cement pipeline material) make it unsuitable for direct tapping. Taps should be a minimum of 18” away from pipe bells.

D. In the case of multiple services of small diameter (less than 2” diameter), corporation stops shall be at least 12 inches apart and at least 22-1/2 degrees above or below the location of any adjacent tap(s). Curb stops and boxes and/or meter boxes shall be at least one foot apart. In the case of large diameter multiple services, tap at least 24 inches apart and at least 22-1/2 degrees above or below the location of any adjacent tap(s).

E. Install all corporation stops so that between 2 and 3 threads extend beyond the inside wall of the main. If necessary, make a test tap with the boring bar marked to the proper depth. The corporation stop, when properly installed, will not be shouldered with the main. Do not use lubricants of any type when installing the corporation stop.

F. Use the procedures outlined in AWWA Standard C600 or the DIPRA Field Polyethylene Installation Guide for installing taps on grey iron or ductile iron mains encased in polyethylene.

3.03. INSTALLATION OF SERVICE LINES AND FITTINGS

A. Excavate the service line trench in accordance with Division 2 of these Specifications. Where augering, directional drilling, or moling is permitted follow guidelines provided by the equipment manufacturer including making a proper size hole to launch and receive the unit. If moling, directional drilling, or augering is employed, take appropriate precautions to avoid damaging other utilities and disturbing the unexcavated surface. Contractor is responsible for locating, identifying, and utilizing appropriate precautionary measures to protect existing utilities in accordance with State and Local requirements.

B. Install all services straight and at right angles to the main. If this cannot be accomplished, consult Engineer.

C. All trench services shall be installed with identification tape in accordance with Specification Section 02210.

D. All PE services shall be installed with tracer wire in accordance with Specification Section 02210.

E. All plastic service line connections shall use insert stiffeners of the appropriate length and size.

F. Coupling new service lines to existing service lines is not permitted under paved surfaces or within 10 feet of the meter or curb stop, unless authorized by the Engineer.

G. All service line size and material, on both sides of the meter, shall be verified and recorded.

3.04. INSTALLATION OF CURB STOPS

A. Install curb stops with the operating nut in the vertical position and the curb box centered over the nut. Install curb boxes plum and adjusted to be flush with finished grade. Install and lock curb boxes immediately after installation.

B. After completion of service line installation, prior to backfilling, open the corporation stop slowly to fill the line. When the line is full and all air has been removed, completely open the corporation and close the curb stop. Visually inspect all piping, fittings, and taps for leaks. Backfill and restore the surface the service line trench in accordance with Division 2 of these Specifications.

3.05. INSTALLATION OF METER SETTER

A. Always verify an electrically safe environment before continuing work. Please contact Owner for recommended procedures.

B. Install meter setter with the shut-off valve in the vertical position and the meter box centered over the valve. Install meter boxes plum and adjusted to be flush with finished grade.

C. After completion of service line installation, prior to backfilling, open the corporation stop slowly to fill the line. When the line is full and all air has been removed, completely open the corporation and close the curb stop or inlet valve in meter box. Visually inspect all piping, fittings, and taps for leaks. Backfill and restore the surface of the service line trench in accordance with Division 2 of these Specifications.

3.06. BASIS OF PAYMENT

All service line materials and work shall be provided/performed by the Owner and shall not be included in the Contractor bid.

END OF SECTION 15200

MAXWELL ROAD WATERMAIN RELOCATION

TABLE OF CONTENTS

SUPPLEMENTAL TECHNICAL SPECIFICATIONS

The Technical Specification used for Water Main Installation shall be "The Illinois American Water Company Standard Pipeline Specifications" Eighth Edition, dated 2020. The Supplemental Technical Specifications amend or supplement the technical specifications. All provisions, which are not so amended or supplemented by the Supplemental Technical Specifications, shall remain in full force and effect:

DIVISION 2 – SITE WORK

Section 02210 – Trenching, Backfilling, and Compacting

2.04FILTER FABRIC

A. Acceptable manufacturers:

   a. Mirafi 140N by Mirafi, Inc.

   b. Typar 3401 by DuPont

   c. Propex 4547 by Amoco Fabrics Co

   d. US 120NW by US Fabrics

   e. Advanced Drainage Systems

Section 02220 – Casing Installation (Steel)

2.02CASING END SEAL

A. Acceptable Manufacturers:

   a. Cascade Waterworks Mfg. – Model CCES

   b. APS Standard Model AC Casing End Seal

   c. BWM Manufacturing

2.03CASING INSULATORS

A. Acceptable Manufacturers:

   a. Cascade Water Work Manufacturing Company (Stainless Steel only – Model CCS)

   b. Pipeline Seal and Insulator, Inc. (Carbon Steel with polyvinyl chloride or the Ranger II model)

c. Advanced Products and Systems, Inc. (Model SI)

d. Power Seal Pipeline Products Corp. (Model 4810)

e. RACI (polyethylene model F-60 for 12-inch carrier pipe and smaller). RACI shall not be used for carrier pipe larger than 12-inch.

f. BWM Manufacturing

Section 02225 – Casing Installation (PVC)

2.02CASING END SEAL

A. Acceptable Manufacturers:

a. Cascade Waterworks Mfg. – Model CCES

b. APS Standard Model AC Casing End Seal

c. BWM Manufacturing

DIVISION 15 – MECHANICAL

Section 15000 – Piping – General Provisions

2.02PETROLATUM TAPE COATING

A. Acceptable Manufacturers

a. Tapecoat TC Envirotape

b. Denso Densyl Tape

2.03RUBBERIZED-BITUMEN BASED SPRAY-ON COATING

A. Acceptable Manufacturers:

a. 3M Rubberized Underseal Undercoating 08883

b. Permatex

Section 15105 – Ductile Iron Pipe and Fittings

2.01PIPE MATERIALS

A. Acceptable Suppliers

a. United State Pipe & Foundry Co.

1101 East Pearl Street
Burlington, NJ 08016

b. American Cast Iron Pipe Company
2916 16th Street North

Birmingham, AL 35207

c. McWane

2.02FITTINGS

A. Acceptable Suppliers

a. Sigma (through United States Pipe & Foundry Co.

1101 East Pearl Street
Burlington, NJ 08016

b. Tyler Union (domestic only)
McWane Cast Iron Pipe Co.
P.O. Box 607
Birmingham, AL 35201

c. American Cast Iron Pipe Company
2916 16th Street North
Birmingham, AL 35207

d. Star Pipe Products

B. Joints

a. Bolt manufacturer shall be Cor-Blue

b. Romac Alpha Restrained Joints are allowable in all districts but Alton.

Section 15120 – Polyvinyl Chloride (PVC) Pipe

2.01PIPE MATERIALS

A. Approved manufacturers:

a. J-M Eagle Company, Inc

9 Peach Tree Hill Road
Livingston, NJ 07039
(973)535-1633
www.jmeagle.com

b. Pipe Life Jet Stream

c. Diamond Plastics

d. NAPCO Pipe

Section 15122 – Fusible PVC Pipe

2.02CONNECTIONS AND FITTINGS FOR PRESSURE APPLICATIONS

A. Approved Manufacturers:

Fusible polyvinylchloride pipe shall be used as manufactured under the trade names Fusible C-900®, Fusible C-905®, and FPVC®, for Underground Solutions, Inc., Poway, CA, (858) 679-9551. Fusion process shall be as patented by Underground Solutions, Inc., Poway, CA, Patent No. 6,982,051.

Section 15125 – HDPE Pipe

2.04 Acceptable Manufacturers

A. CPChem Performance Pipe

B. KWH Pipe Ltd

C. Poly Systems Inc.

Section 15130 – Piping Specialties

2.01POLYETHYLENE ENCASEMENT

A. Acceptable Suppliers of Polyethylene Tape: Gorilla Tape

B. Acceptable Suppliers:

a. Approved DI Pipe Manufacturers

2.02 VALVE BOXES

A. Acceptable Manufacturers:

a. Bingham & Taylor

b. Mueller (Streator, Sterling, Chicago Metro)

c. A.Y. McDonald (Chicago Metro)

d. Water Quality Products (Sterling)

e. Sigma Corp

f. Star Pipe Products

g. Tyler Union

2.03 RODS, BOLTS, LUGS, AND BRACKETS

A. Approved Manufacturer is Cor-Blue

a. Sigma Corp

2.04RETAINING GLANDS

A. Acceptable Manufacturers:

a. EBBA Iron, Inc.

P.O. Box 857
Eastland, TX 76448

b. Ford Retaining Glands – 1400 Series for DI, 1500 Series for PVC
c. Sigma Corp

2.05TEST/TRACER BOXES

A. Acceptable Manufacturers:

a. Copperhead Snake Pit Access Box

b. Handley Industries, Inc

2.06MARKING POSTS

A. Acceptable Manufacturers:

a. Rhino

280 University Drive Southwest
Waseca, MN 56093
1-800-522-4343

b. Carsonite International
605 Bob Gifford Boulevard
Early Branch, SC 29916
800-648-7916

c. Proline Safety Products

2.07IDENTIFICATION TAPE

A. Acceptable Manufacturers:

a. Reef Industries, Inc – Terra Tape

b. Proline Safety Products

2.08LOCATION WIRE

A. Acceptable Manufacturers:

a. Copperhead Industries, LLC – Part Number 1230B-HS (OPEN CUT ONLY)

b. Copperhead Industries, LLC – Part Number 1245B-EHS (Horizontal Directional Drilling)

c. Copperhead Industries, LLC – Part Number LSL1230B Connector

d. DryConn Waterproof Connectors – Direct Bury Lug Aqua #90220

e. Neptco, Inc Part #1802W w/ TS-19-LC/IL (Option for Interurban)

2.09RESTRAINED JOINT MARKING TAPE

A. Acceptable Manufacturers:

a. St. Louis Paper & Box Company – Part Number MIAM-010

b. AA Thread

Section 15150 – Gate Valves

2.01 Small Gate Valves

Table 1 – Valve Opening Direction

DISTRICT	OPENING DIRECTION
Alton	Right
Grafton	Left
Cairo	Left
Interurban	Right
Hardin	Left
Lincoln	Left
Pekin	Left
Peoria	Left
Champaign	Left
Pontiac	Left
Streator	Left
Sterling	Left
Chicago Metro	Left
South Beloit	Left

A. Acceptable Manufacturers:

a. Mueller Company

b. Clow (Not Permitted in Alton/Grafton, Interurban)

c. U.S. Pipe (Champaign, Streator, Sterling)

d. American Cast Iron Pipe Company

e. Val-Matic

2.02 Large Gate Valves

A. Valves larger than 12” for use in the Alton and Champaign Districts shall be Butterfly valves, not Gate Valves. See Specification 15155.

Table 1 – Valve Opening Direction

DISTRICT	OPENING DIRECTION
Alton	Right
Grafton	Left
Cairo	Left
Interurban	Right
Hardin	Left
Lincoln	Left
Pekin	Left
Peoria	Left
Champaign	Left
Pontiac	Left
Streator	Left
Sterling	Left
Chicago Metro	Left
South Beloit	Left

B. Acceptable Manufacturers:

a. Mueller Company

b. Clow (Cairo, Interurban)

c. U.S. Pipe

d. Val-Matic

Section 15155 – Butterfly Valves

2.01 Butterfly Valves

Table 1 – Valve Opening Direction

DISTRICT	OPENING DIRECTION
Alton	Right
Grafton	Left
Cairo	Left
Interurban	Right
Hardin	Left
Lincoln	Left
Pekin	Left
Peoria	Left
Champaign	Left
Pontiac	Left
Streator	Left
Sterling	Left
Chicago Metro	Left
South Beloit	Left

A. Acceptable Manufacturers:

a. Henry Platt (Not Chicago Metro)

b. DeZurik (Not Chicago Metro)

c. Mueller (Chicago Metro)

d. Clow (Chicago Metro)

e. Val-Matic Corp

Section 15170 – Tapping Sleeves, Saddles, and Valves

2.02 Tapping Valves

Table 1 – Valve Opening Direction

DISTRICT	OPENING DIRECTION
Alton	Right
Grafton	Left
Cairo	Left
Interurban	Right
Hardin	Left
Lincoln	Left
Pekin	Left
Peoria	Left
Champaign	Left
Pontiac	Left
Streator	Left
Sterling	Left
Chicago Metro	Left
South Beloit	Left

A. Acceptable manufacturers:

~~a. McWane (~~Clow ~~and M&H)~~

~~b. AFC (Waterous)~~

c. U.S. Pipe (Mueller)

2.03STAINLESS STEEL TAPPING SLEEVES

A. Acceptable Manufacturers:

a. JCM

b. Romac Industries

2.04CONCRETE TAPPING SLEEVES

A. Acceptable Manufacturers:

a. JCM

b. Romac Industries

2.05TAPPING SADDLES

A. Acceptable Manufacturers:

a. Bronze Service Saddles

i. Mueller - BR1B Series

ii. Mueller - BR2B Series

iii. Mueller – BR1S Series (for use with PVC)

iv. A.Y. McDonald C-900 #3895

v. A.Y. McDonald DIP #3825

b. Stainless Service Saddles

i. Mueller

Section 15180 – Fire Hydrants

2.01 MATERIAL

A. Hydrants for use in the Alton District shall have a 4 ½ inch valve opening.

B. Acceptable Manufacturers:

a. Mueller Super Centurion ~~Catalog #A421-534 896; 5 1/4 inch valve opening, 4 ½' bury~~

b. Waterous Pacer (Chicago Metro)

c. Clow Valve Company

3.02INSTALLATION

A. Paint Color

a. Interurban

i. Barrel and Caps – Yellow

ii. Hydrant

1. 6" Main – Red

2. 8" Main – Orange

3. 10" & Above - Green

b. Alton – Orange
c. Champaign – Orange
d. Streator – Red
e. Pontiac – Orange
f. Cairo – Yellow
g. Sterling – Orange
h. Chicago Metro - Yellow

Section 15190 – Air Release, Blow-Off Outlets and Related Components

2.01COMBINATION AIR/VACUUM RELEASE VALVES

A. Acceptable Manufacturers:

a. Henry Pratt

b. Val-Matic

2.02BLOW-OFF FLUSHING HYDRANT ASSEMBLY

A. Acceptable Manufacturers:

a. Kupferle Foundry – Tru-Flo Model TF 500

b. Mueller (Chicago Metro)

Section 15200 - Service Lines

2.01COPPER SERVICE LINE MATERIAL

A. Acceptable manufacturers:

a. Core and Main Provided

i. ¾” and 1” Copper – Type L 60’ Coils

ii. 2” Copper – Type K 40’ Coils or 20’ Rigid

b. Kobe Weiland

2.02POLYTHYLENE SERVICE LINE MATERIAL

A. Acceptable manufacturers:

a. Endot Industries (EndoPure PE-3408 only)

b. JM Eagle
c. KWH Pipe
d. Advanced Drainage Systems

2.03CORPORATION STOPS

A. Acceptable manufacturers:

a. A.Y. McDonald – ¾" and 1" – 74701-22

b. A.Y. McDonald – 2" – 74701B-22
c. Mueller - ¾" and 2" – B-25008N
d. Mueller – ¾" and 1" – P-15008N
e. Mueller – ¾" and 2" – P-25008N

2.04CURB STOPS

A. Acceptable manufacturers:

a. Mueller

b. A.Y. McDonald

2.05CURB BOXES

A. Acceptable manufacturers:

a. Mueller

b. Bingham and Taylor (Champaign and Streator)
c. Sigma Corp.
d. A.Y. McDonald

2.06METER BOX/PIT

A. Acceptable manufacturers:

a. Sigma

b. Mueller (Champaign, Chicago Metro)
c. A.Y. McDonald (Champaign, Chicago Metro)
d. Advanced Drainage Systems

2.07METER BOX FRAME AND LID

A. Acceptable manufacturers:

a. Vestal (Not Champaign, Chicago Metro)

b. Mueller (Champaign, Chicago Metro)
c. A.Y. McDonald (Champaign, Chicago Metro, Interurban)
d. Sigma Corp.

2.08METER SETTER/METER YOKE

A. Acceptable manufacturers:

a. A.Y. McDonald

b. Mueller

2.09MISCELLANEOUS SERVICE LINE FITTINGS

A. Acceptable manufacturers:

a. A.Y. McDonald (Champaign and Interurban)
b. Ford (Interurban and Alton)
c. Mueller

END OF SUPPLEMENTAL TECHNICAL SPECIFICATIONS

MAXWELL ROAD WATERMAIN RELOCATION

TABLE OF CONTENTS

Specifications for the watermain work shall consist of the documents contained in Divisions 1, 2, and 15 of the Contract Documents, Supplemental Technical Specification, Standard Specifications for Water and Sewer Main Construction in Illinois, Eighth Edition, 2020, Standard Specifications for Road and Bridge Construction, latest edition, and the Supplementary Specifications and Recurring Special Provisions, latest edition. The more stringent requirements between the specifications listed shall take precedence whenever any disagreement exists.

DUCTILE IRON WATERMAIN 8”
DUCTILE IRON WATERMAIN, 8” DIAMETER, RESTRAINED JOINT PIPE

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the watermain. Joint restraints, tracer wire, location tape, polywrap, excavation, bedding, haunching, initial backfill, and disposal of any removed materials (soil, rock, watermain, water services, etc.) shall be included in the cost of the contract unit price of the watermain. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures necessary for the construction of the pipeline(s). The minimum width and depth of the pipe trench shall be in accordance with the requirements of Specification Section 02210.

WATERMAIN CASING PIPE

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the casing pipe only. The ductile iron watermain pipe and associated items should be included in the above pay item. Casing pipe, casing end seals, casing insulators, strapping, skids, anchors, and harnesses shall be included in the cost of the contract unit price of the PVC casing. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures necessary for the construction of the pipeline(s). The minimum width and depth of the pipe trench shall be in accordance with the requirements of Specification Section 02210. All casing requirements shall be in accordance with the requirements of Specification Section 02225.

FIRE HYDRANT ASSEMBLY COMPLETE

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the installation of the fire hydrant. Excavation, backfill, shoring, polywrap, tracer wire, location tape, testing, disinfection, fittings, and thrust restraint shall be included in the cost of the unit price of the fire hydrant. All fire hydrant requirements shall be in accordance with the requirements of specification section 15180.

GATE VALVE, 8” WITH VAULT BOX

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the gate valve and box. Excavation, backfilling, valve box installation and protection, location tape, tracer wire, rough grading, and removal of excess excavation material shall be included in the unit price of the gate valve and box. All gate valve requirements shall be in accordance with the requirements of specification section 15150.

PRESSURE CONNECTION TO EXISTING WATERMAIN

The contract unit price shall include furnishing all materials to hot tap any existing watermain, including stainless steel tapping tee and valve, and all the labor, equipment, and materials to provide the

excavation, trench support system, maintenance of traffic, thrust block, and surface restoration in order for the Owner to make the final connection of any existing watermain. The contract unit price shall not include the labor to perform the final connection. The maximum trench width shall be in accordance with the requirements of Specification Section 02210.

SELECTED GRANULAR BACKFILL (SPECIAL)

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of selected granular backfill. No payment will be made for aggregate needed outside the maximum normal trench width as described in Specification Section 02210, Part 3.05, Paragraph D. If for any reason the trench width exceeds the maximum trench width defined in Paragraph D above, the Contractor shall provide the additional aggregated for bedding and backfilling at no cost to the Owner as described in Specification Section 02210, Part 3.05, Paragraph E. This pay item also includes the removal, hauling and proper disposal of all excavated material.

TRAFFIC CONTROL AND PROTECTION (SPECIAL)

The contract unit price shall include all layout, installation, maintenance, and removal of traffic control devices as necessary to warn traffic of road closures, detour traffic around the construction site, and prevent traffic from entering the construction zone. All traffic control measures shall conform to the IDOT Standards as described in Specification Section 02899.

PRESSURE TESTING AND DISINFECTION

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the testing and disinfection of the watermain.

PAVEMENT REMOVAL

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the removal of the existing pavement (bituminous and concrete). Saw cutting of the limits of the pavement removal to provide a straight smooth removal edge shall be included in the cost of the contract unit price of the pavement removal.

PORTLAND CEMENT CONCRETE PAVEMENT 8” (JOINTED)

The contract unit price shall include all labor, equipment, and materials which are necessary for the placement of new pavement (bituminous or concrete). Bituminous or concrete pavement shall match the proposed pavement called out on the roadway plans and specifications.

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION
Effective: August 1, 2012 Revised: February 2, 2017

In addition to the Contractor's equal employment opportunity (EEO) affirmative action efforts undertaken as required by this Contract, the Contractor is encouraged to participate in the incentive program described below to provide additional on-the-job training to certified graduates of the IDOT pre-apprenticeship training program, as outlined in this Special Provision.

IDOT funds, and various Illinois community colleges operate, pre-apprenticeship training programs throughout the State to provide training and skill-improvement opportunities to promote the increased employment of minority groups, disadvantaged persons and women in all aspects of the highway construction industry. The intent of this IDOT Pre-Apprenticeship Training Program Graduate (TPG) special provision (Special Provision) is to place these certified program graduates on the project site for this Contract in order to provide the graduates with meaningful on-the-job training. Pursuant to this Special Provision, the Contractor must make every reasonable effort to recruit and employ certified TPG trainees to the extent such individuals are available within a practicable distance of the project site.

Specifically, participation of the Contractor or its subcontractor in the Program entitles the participant to reimbursement for graduates' hourly wages at $15.00 per hour per utilized TPG trainee, subject to the terms of this Special Provision. Reimbursement payment will be made even though the Contractor or subcontractor may also receive additional training program funds from other non-IDOT sources for other non-TPG trainees on the Contract, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving reimbursement from another entity through another program, such as IDOT through the TPG program. With regard to any IDOT funded construction training program other than TPG, however, additional reimbursement for other IDOT programs will not be made beyond the TPG Program described in this Special Provision when the TPG Program is utilized.

No payment will be made to the Contractor if the Contractor or subcontractor fails to provide the required on-site training to TPG trainees, as solely determined by IDOT. A TPG trainee must begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee must remain on the project site through completion of the Contract, so long as training opportunities continue to exist in the relevant work classification. Should a TPG trainee's employment end in advance of the completion of the Contract, the Contractor must promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor must supply a written report for the reason the TPG trainee involvement terminated, the hours completed by the TPG trainee on the Contract, and the number of hours for which the incentive payment provided under this Special Provision will be, or has been claimed for the separated TPG trainee.

Finally, the Contractor must maintain all records it creates as a result of participation in the Program on the Contract, and furnish periodic written reports to the IDOT District EEO Officer that document its contractual performance under and compliance with this Special Provision. Finally, through participation in the Program and reimbursement of wages, the Contractor is not relieved of, and IDOT has not waived, the requirements of any federal or state labor or employment law applicable to TPG workers, including compliance with the Illinois Prevailing Wage Act.

METHOD OF MEASUREMENT: The unit of measurement is in hours.

BASIS OF PAYMENT: This work will be paid for at the contract unit price of $15.00 per hour for each utilized certified TPG Program trainee (TRAINEES TRAINING PROGRAM GRADUATE). The estimated total number of hours, unit price, and total price must be included in the schedule of prices for the Contract submitted by Contractor prior to beginning work. The initial number of TPG trainees for which the incentive is available for this contract is __4__.

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.

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."

80274

AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE)

Effective: January 1, 2008
Revised: April 1, 2023

Description. This work shall consist of furnishing and operating automated flagger assistance devices (AFADs) as part of the work zone traffic control and protection for two-lane highways where two-way traffic is maintained over one lane of pavement in segments where no sideroads or entrances require deployment of additional flaggers. Use of these devices shall be at the option of the Contractor.

Equipment. AFADs shall be the STOP/SLOW or Red/Yellow Lens type mounted on a trailer or moveable cart meeting the requirements of the MUTCD and NCHRP 350 or MASH 2016, Category 4.

General. AFADs shall be placed at each end of the traffic control, where a flagger is shown on the plans. The AFAD shall be setup within five degrees of vertical.

Flagger symbol signs as shown on the plans shall be replaced with “BE PREPARED TO STOP” signs when the AFAD is in operation.

Personal communication devices shall not be used to operate the AFAD.

Flagging Requirements. Flaggers and flagging requirements shall be according to Article 701.13 of the Standard Specifications and the following.

Each AFAD shall be operated by a flagger trained to operate the specific AFAD to be deployed. A minimum of two flaggers shall be on site at all times during operation. Each flagger shall be positioned outside the lane of traffic and near each AFAD’s location.

Flagging equipment required for traditional flagging shall be available near each AFAD location in the event of AFAD equipment malfunction/failure.

For nighttime flagging, the AFAD and flagger shall be illuminated according to Article 701.13 of the Standard Specifications.

When not in use, AFADs will be considered non-operating equipment and shall be stored according to Article 701.11 of the Standard Specifications.

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

80192

CEMENT, TYPE IL (BDE)

Effective: August 1, 2023

Add the following to Article 302.02 of the Standard Specifications:

"(k) Type IL Portland-Limestone Cement .....1001"

Revise Note 2 of Article 352.02 of the Standard Specifications to read:

"Note 2. Either Type I or Type IA portland cement or Type IL portland-limestone cement shall be used."

Revise Note 1 of Article 404.02 of the Standard Specifications to read:

"Note 1. The cement shall be Type I portland cement or Type IL portland-limestone cement."

Revise Article 1019.02(a) of the Standard Specifications to read:

"(a) Cement, Type I or IL .....1001"

80449

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."

80384

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000
Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract the Contractor signs with a subcontractor.

> 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 contracts funded in whole or in part with federal or state funds. 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:
>
> (a) Withholding progress payments;
>
> (b) Assessing sanctions;
>
> (c) Liquidated damages; and/or
>
> (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a

good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform 2.00 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

(a) The bidder documents enough DBE participation has been obtained to meet the goal or,

(b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:
http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

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

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

(a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.

(1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

(2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

(6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

(7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the

bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

(c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.

(d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:

(1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.

(e) DBE as a material supplier:

(1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.

(3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

(a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBE.UP@illinois.gov.

(b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

(1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or

(2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or

(3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

(1) The listed DBE subcontractor fails or refuses to execute a written contract;

(2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;

(3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;

(4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;

(5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.

(6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;

(7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;

(8) The listed DBE is ineligible to receive DBE credit for the type of work required;

(9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;

(10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

(f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.

(g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be

made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

(h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

80029

PORTLAND CEMENT CONCRETE (BDE)

Effective: August 1, 2023

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."

80451

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."

80455

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) Forb Mixture (Below)	1 (1) 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."

80445

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."

80457

SOURCE OF SUPPLY AND QUALITY REQUIREMENTS (BDE)

Effective: January 2, 2023

Add the following to Article 106.01 of the Standard Specifications:

"The final manufacturing process for construction materials and the immediately preceding manufacturing stage for construction materials shall occur within the United States. Construction materials shall include an article, material, or supply that is or consists primarily of the following.

(a) Non-ferrous metals;

(b) Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);

(c) Glass (including optic glass);

(d) Lumber;

(e) Drywall.

Items consisting of two or more of the listed construction materials that have been combined through a manufacturing process, and items including at least one of the listed materials combined with a material that is not listed through a manufacturing process shall be exempt."

80448

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."

80397

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%"

80391

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.”

80437

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 4. 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.

20338

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."

80439

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012
Revised: November 1, 2021

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Sunday through Saturday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

80302

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

"(q) Temporary Sign Supports .....1106.02"

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 manufactured after December 31, 2019 shall be MASH-16 compliant. Category 1 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

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 manufactured after December 31, 2019 shall be MASH-16 compliant. Category 2 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

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-16 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, 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 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-16 compliant is available, an NCHRP 350 or MASH-2009 compliant device may be used, even if manufactured after December 31, 2019."

Revise Articles 1106.02(g), 1106.02(k), and 1106.02(l) 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."

80427

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

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.

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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.

* * * * *

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.